1-1-1991

A comparison of student cognitive and social achievement for handicapped and regular education students who are educated in an integrated versus a substantially separate classroom.

Cornelia E. Costello
University of Massachusetts Amherst

A COMPARISON OF STUDENT COGNITIVE AND SOCIAL ACHIEVEMENT FOR HANDICAPPED AND REGULAR EDUCATION STUDENTS WHO ARE EDUCATED IN AN INTEGRATED VERSUS A SUBSTANTIALLY SEPARATE CLASSROOM

A Dissertation Presented

by

CORNELIA E. COSTELLO

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

May 1991

School of Education

A COMPARISON OF STUDENT COGNITIVE AND SOCIAL ACHIEVEMENT FOR HANDICAPPED AND REGULAR EDUCATION STUDENTS WHO ARE EDUCATED IN AN INTEGRATED VERSUS A SUBSTANTIALLY SEPARATE CLASSROOM

A Dissertation Presented

by

CORNELIA E. COSTELLO

Approved as to style and content by:

Patricia Anthony, Chair

Susan Grady, Member

H. Swaminathan, Member

Marilyn Haring-Hidore, Dean
School of Education

ACKNOWLEDGEMENTS

First, I would like to thank my husband Dave, for his love, inspiration, sacrifice, and endurance through this endeavor.

To my children, Maura, Neil and Sheila, thank you for your patience and providing encouragement during my times of frustration.

My sincere thanks to my dissertation chair, Dr. Patricia Anthony, research consultant Dr. Hari Swaminathan and Dr. Susan Grady. I could not have a more supportive committee.

I would like to thank Bob Budak, John Bunker, and Mary Ann Cohen for the technical assistance with my charts and tables. I could not have done this without them.

Thank you Kristen Eichleay for use of the Special Education Technology Center and providing sound advice.

I would like to thank my friend Kathi Mullin for being a good listener and picking up the slack when I was nonfunctional.

Thank you Bob Sigliano and Rita Rinella for being there when I needed you both desperately.

A special thanks to Dr. Bill Henderson, and all the O'Hearn School staff without whom none of this would have been possible.

Sincere thanks to Loretta Baugh and Clare Figler of Psychological Services for use of their personnel, equipment and advice.

Finally, thank you Boston Public School parents, teachers, principals and school psychologists for allowing me to complete this study.

ABSTRACT

A COMPARISON OF STUDENT COGNITIVE AND SOCIAL ACHIEVEMENT FOR HANDICAPPED AND REGULAR EDUCATION STUDENTS WHO ARE EDUCATED IN AN INTEGRATED VERSUS A SUBSTANTIALLY SEPARATE CLASSROOM

MAY 1991

CORNELIA E. COSTELLO

B.S., BRIDGEWATER STATE COLLEGE

M. ED., NORTHEASTERN UNIVERSITY

ED.D., UNIVERSITY OF MASSACHUSETTS

Directed by: Professor Patricia Anthony

This study was undertaken as a result of growing concern among parents, special educators, administrators, and policy makers throughout the United States over the efficacy of the approaches being used to educate students with mild to severe handicaps.

Qualitative and descriptive research have dominated the literature on this subject, whereas this study used quantitative research to determine the strengths and weaknesses of integrated versus substantially separate programming.

The purpose of this study was to evaluate the effects of integration on both regular and special needs kindergarten students in Boston Public Schools' East Zone district.

A comparative study of the cognitive and social achievement of kindergarten students in the pilot program (experimental groups) and their counterparts who were not in the pilot program (control groups) was conducted.

The data for this study was collected using a pre/posttest design. A total of 87 students were tested for this study. There were 46 kindergarten I four year old students, and 41 kindergarten II, five year old students.

The McCarthy Scales were used for the pretest and posttest of cognitive achievement. The Vineland Social Maturity Scales were used for the pretest and posttest of social achievement.

In order to test the hypotheses presented the following comparisons were carried out for both instruments:

Experimental Group 1 versus Control Group 1

Integrated regular education kindergarten I students were compared with segregated regular education kindergarten I students.

Experimental Group 2 versus Control Group 2

Integrated special education kindergarten I students were compared with segregated special education kindergarten I students.

Experimental Group 3 versus Control Group 3

Integrated regular education kindergarten II students were compared with segregated regular education kindergarten II students.

Experimental Group 4 versus Control Group 4

Integrated special education kindergarten II students were compared with segregated special education kindergarten II students.

Comparison of change scores for integrated versus segregated groups were analyzed using an analysis of variance procedure.

The overall outcome indicated that kindergarten students achieve more in integrated settings on tests of cognitive and social achievement.

TABLE OF CONTENTS

LIST OF TABLES

CHAPTER I

INTRODUCTION

Background of the Problem

It has been fifteen years since the federal Education of All Handicapped Children Act, (P.L. 94-142), was passed guaranteeing handicapped children access to a free and appropriate public education. At the time P.L. 94-142 became law, it was estimated that eight million children needed special education services, only half were being served in a way appropriate to their needs; and one million were not in school at all (Meyen, 1978).

Over the past decade the number of children receiving special education services has increased 20% (O'Neil 1988). According to the U.S. Department of Education Eleventh Annual Report to Congress, approximately 4.5 million students with disabilities received specialized educational services in the 1987-88 school year. This represents 11% of the total school population (U.S. Department of Education, 1989), which is a 21.2% increase over the figure reported in 1976-77. As the number of children receiving services increased, parents, educators, and policy makers began to question the approaches used to educate these students, i.e., separate classes. The criticism was that special education had become a whole

separate system, tracking only the best and brightest of handicapped students into the regular education system (Davis 1989).

To eradicate the weakness of the present system, Madeline Will, the Director of the Office of Special Education and Rehabilitation Services (OSERS), proposed in 1986 that handicapped children be placed back into the regular education classroom and be educated on an equal basis with regular education students.

Researchers in the field of Special Education who have advocated for Will's proposal (Gartner and Lipsky, 1989; Lilly, 1986; Reynolds, Wang and Walberg, 1987; Stainback and Stainback, 1984; and Wang, Reynolds and Walberg, 1986) argue that "mere access" to the current general education mainstream is not enough. The proponents state that only within the regular education classroom will handicapped students be educated on an equal footing with general education students. Opponents of Will's proposal (Gerber, 1988; Hallahan, Keller, McKinney, Lloyd, & Bryan, 1988; Keogh, 1988; Mesinger, 1985) claim that this merger is impossible without the support of regular educators. These same opponents fear that Will's proposal is merely a cost efficiency measure which "turns back the clock" on civil rights for handicapped students resulting in a return to the pre P.L. 94-142 era.

Statement of the Problem

There was a growing concern among parents, special educators, administrators, and policy makers throughout the United States over the efficacy of the approaches being used to educate students with mild to severe handicaps. Instructing low-achieving children was not a new problem in education. Most recently Wang, Reynolds, and Walberg (1987) have focused their attention and concern on what they have called a "second system". The second system is special education. They have identified serious problems which range from the individual child (e.g., unacceptable progress and improper classification) to what happens to the entire public school system (e.g., fragmentation, wasted resources, and loss of local control). Since the present system of special education was not working, educators have developed new pilot models which integrate students with disabilities into regular public education classrooms.

Will (1986) has proposed several solutions which are designed to serve students effectively in the regular education classroom. Gartner and Lipsky (1989), Lilly (1986), Reynolds, Wang and Walberg (1987) Stainback and Stainback (1984) and Wang, Reynolds and Walberg (1986) have taken similar positions. These authors have proposed solutions to this problem which has been referred to as the regular education initiative, or the REI. Over the past two years massive amounts of literature have been devoted to this topic. In 1986 a Council for Exceptional Children task force reviewed the published work discusssing the REI and identified over 250

questions that must be addressed before the initiative becomes operational. Jenkins, Jewell, and Pious, (1990), state that it is clear from the attention generated by the REI that there is large scale agreement that the way low-achieving children are educated is seriously flawed and large scale disagreement about how to improve it. Can REI models match or improve educational outcomes for all students?

Purpose of the Study

The purpose of this study was to evaluate the effects of integration on both regular and special needs kindergarten students.

The disagreement over how to educate is much larger than the way special needs children are educated. This study will effect both special education and regular education students.

The pilot program used in this study was a regular education initiative model program. The setting for this study was in the Boston Public School System. One urban elementary school was chosen to be a pilot program integrating special and regular education students in the same classroom. For the first year, only kindergarten students participated.

Research Questions

The research questions to be answered by this study were:

1. What type of setting is the best educational practice for all students?
2. What type of setting is best for handicapped students?
3. What type of setting is best for regular education students?
4. Can students' cognitive achievement improve more in segregated or integrated settings?
5. Can students' social achievement improve more in segregated or integrated settings?
6. Does one group benefit more than another?
7. Of the two skills being measured (cognitive and social), does one improve more than the other depending on the setting?

Significance of the Study

This study was significant because it strengthened the literature in the area of determining the best educational practice for all students. Specifically it determined if:

1. regular education students' cognitive achievement improved more in segregated regular education classes or in classes which integrate regular and special needs students;
2. special education students' cognitive achievement improved more in segregated special education classes or in classes which integrate regular and special needs students;

3. regular education students' social achievement improved more in segregated regular education classes or in classes which integrate regular and special needs students;
4. special education students' social achievement improved more in segregated special education classes or in classes which integrate regular and special needs students.

The study determined how special education students were better prepared to study, work and live in an integrated world. Motivation and self esteem for all students were compared in both integrated and substantially separate settings. A per pupil cost analysis can be assessed as a result of the pilot study.

Qualitative and descriptive research have dominated the literature on this subject, whereas this study used quantitative research to determine the strengths and weaknesses of integrated versus substiantially separate programming.

Definition of Terms

Adaptive Behavior Generally used in referring to an individual's ability to meet standards set by society for his/her cultural group. The American Association on Mental Deficiency considers three areas of performance in assessing adaptive behavior maturation, learning, and social adjustment.

Annual Goals Activities or achievements to be completed or attained within a year. Annual goals are required to be stated for handicapped children when writing individualized education programs (IEPs), as directed in Public Law 94-142.

BEH An abbreviation for the Bureau of Education for the Handicapped. This is the major unit within the federal government responsible for administration and educational policies affecting handicapped children and youth.

Behavior Modification A technique used to change behavior; it applies principles of reinforcement learning.

CEC Abbreviation for the Council for Exceptional Children.

Consent Used in reference to obtaining permission from parents to evaluate a child or to place a child in a program. PL 94-142 contains specific provisions regarding consent. The reader is referred to Section 121a.500, Federal Register, August 23, 1977, Vol. 42, No. 163.

Deficit A term used to describe a level of performance that is less than expected for an individual.

Developmental Disabilities Conditions which originate in chilhood and which result in a significant handicap for the individual. These include conditions such as mental retardation, cerebral palsy, epilepsy, and conditions associated with neurological damage.

Due Process Used in an educational context, the term refers to procedures and policies established to ensure equal educational opportunities for all children. PL 94-142 contains due process procedures specific to handicapped children.

Free Appropriate Public Education (FAPE) Used in PL 94-142 to mean special education and related services which are provided at public expense, which meet requrements of the state educational agency, and which conform to the individualized education program (IEP) requirement of PL 94-142.

Habilitation A process of improving an individual's performance. It could apply to a broad range of skills and abilities. Often used in referring to services provided to severely handicapped individuals in the process of preparing them for employment opportunities.

Handicapped The term handicapped is more restrictive than the term exceptional in that it does not include the gifted. When the gifted are to be included in referring to a population of students requiring special instruction, assistance, or equipment, the term exceptional is generally applied.

Incidence As applied to exceptional children, incidence refers to the number of individuals who at some time in their life might be considered exceptional.

Individualized Education Program (IEP) A requirement of PL 94-142 which specifies that an educational plan must be developed in writing and maintained for each handicapped child. The IEP must include a statement of the child's current level of educational performance, annual goals, short-term instructional objectives, specific services to be provided, information and dates services are to be provided, and criteria for evaluation.

Integration Used in the context of special education, this term refers to the placement of handicapped children in educational programs also serving nonhandicapped children.

LEA An abbreaviation for Local Education Agency. Often used in referring to public school districts.

Least Restrictive Environment When applied to the education of exceptional children, the term refers to the principle that handicapped children should be educated with nonhandicapped peers in regular educational settings whenever possible. allowances are made for placement in special classes or other settings when they are the least restrictive based on needs of the individual involved.

Mainstreaming The practice of educating handicapped children in regular educational settings. This generally involves the placement of handicapped children in regular classrooms and the provision of support services when necessary. The practice is gaining wide popularity in meeting educational needs of the midly handicapped.

Mandate A requirement that specific tasks or steps are to be carried out; i.e., federal and state laws exist which mandate that educational services be provided to all handicapped children and youth.

Mental Age A level of intellectual functioning based on the average for individuals of the same chronological age.

Mental Retardation or Mental Deficiency Incomplete intellectual development of such a kind and to such a degree that the individual cannot adapt to the normal environment so as to exist independently, free of supervision, control or external support.

Moderate Retardation In AAMD classification system 3 to 4 SD's below the mean IQ of 100; IQ range 40 to 54, with associated deficits in adaptive behavior.

Naturalized Environments A study of objects in their own environment, with a design relatively free of intervention or control.

Nondiscriminatory Testing Refers to the use of instruments for assessing performance of individuals which allow for the individual being tested to perform maximally on those skills or behaviors being assessed. Tests discriminate against individuals when the norms are inappropriate, the content of the items does not relate to the individual's cultural background, the examinee does not understand the language of the items or of the person administering the test, or when sensory problems interfere with performance on the test.

Nonintegrated For purposes of this study---a setting that does not have both special needs and general education students taught in the same classroom. Synonymous with segregated

.

Normalization An ideology that has been emphasized as a principle of human service; addresses the provisions of patterns of life for the handicapped which are as close as possible to those of members of society in general. This principle has received particular support in reference to improving services for the mentally retarded.

Occupational Therapy Involves engaging individuals or groups in activities designed to enhance their physical, social, psychological, and cognitive development. Occupational therapy is a major service provided by most rehabilitation centers.

Parametric Study Characteristics of populations or elements using a random sample.

Paraprofessional A person trained as an assistant to a professionally qualified teacher. Some states have certification requirements for paraprofessional.

Perceptual Motor Combining the sense of perception with motor development.

Pilot Study A study being done for the first time.

Public Law 93-380 Educational Amendments of 1974 passed August 21, 1974.

Public Law 93-516 An amendment passed by Congress broadening the application of Section 504 of the Rehabilitation Act of 1973 to include educational services among those services be covered by the Act.

Public Law 94-142 The Education for all Handicapped Children Act of 1975. (See the Federal Register, August 23, 1977, Vol. 42, No. 163, for details on the rules governing this Act.)

Random Sample A sample drawn in such a way so that each element has as equal and independent chance of being included.

Regular Education Initiative (REI) An initiative by special educators to fully access regular education classes for any special needs student. This is considered full inclusion in a regular education class not mainstreaming.

Remediation Correction of deficiency. Often used in referring to correction of academic deficits; e.g., reading problems .

SEA An abbreviation for State Education Agency. Commonly used in referring to the department in state goverment with primary responsibility for public school education.

Section 504 Refers to Section 504 of the Rehabilitation Act of 1973. This section contains requirements designed to guarantee the civil rights of the handicapped. (See the Federal Register, May 4, 1977, Vol 2, No. 86.)

Segregated For purposes of this study---a setting that does not have both special needs and general education students taught in the same classroom. Synonymous with nonintegrated.

Severe Retardation In the AAMD Classification system, 4 to 5 SD's below thr mean IQ of 100; IQ range of 25 to 39 with associated deficits in adaptive behavior.

Severely Handicapped Represents the lower end of a continuum of handicaps that range from mind to profound in degree; often these possess two or more handicaps.

Special Education A program option for exceptional children involving the assignment for children with similar instructional needs to a class taught by a certified special teacher. In Massachusetts, the type of special education program the child will receive services in and how much time, if any, he or she will spend outside the regular classroom depends on the prototype. Prototypes are as follows:

Prototype 502.1 A regular classroom program monitored by a special education teacher.

Prototype 502.2 A regular classroom program with up to 25% of the time spent in specialized services.

Prototype 502.3 A regular classroom program with up to 60% ofthe time spent in specialized services.

Prototype 502.4 A special class inside a regular public school, in a small group, composed of students with similar needs.

Prototype 502.5 A day school program held in a building separate from the regular school.

Prototype 502.6 A residential program which requires that a child live at a separate school.

Prototype 502.7 A home or hospital.

Prototype 502.8 A preschool program for children three and four years old where 50% of the children are special needs.

Prototype 502.9 A diagnostic program for up to eight weeks to help the evaluation team learn enough to recommend an appropriate program.

Prototype 502.10 A program provided through the Bureau facilities under the control of the State Departments of Mental Health, Public Health, and Youth Services or other agencies.

Support Services Special services provided to exceptional children beyond their basic educational program, Such services may include speech therapy, occupational therapy, physical therapy, music, therapy, tutoring, and psychological services.

Underchiever This is an individual who does not achieve at a level expected for his of her age and ability level. The term generally is applied in reference to academic performance in school.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

One of the most controversial issues presently receiving attention in special education journals is the Regular Education Initiative. The Regular Education Initiative (REI), is a movement advocating that the general education system assume unequivocal, primary responsibility for all students in our public schools---including handicapped students as well as those students who have special needs of some type but have not been identified as handicapped (Davis 1989). The proposed merger of special and regular education into a unitary system has attracted both strong advocates and critics.

Integration of students with disabilities into regular public education classrooms is a relatively new concept thrust into the public awareness by the passage of PL 94-142, the Education of All Handicapped Act, (1975). The "free and appropriate" education and the "least restrictive environment" provisions of the Act raise controversial, legal and educational issues. One of the primary difficulties with the interpretation of integrated public education is the discrepancy between the educational concept of "mainstreaming" and the legal interpretation of the "least restrictive environment" (Gent & Mulhauser, 1988). The interpretation difficulties of PL 94-142 along with the democratic and philosophical implications

of civil rights legislation have complicated the educational placement of special needs students.

What does this merger mean? Does it mean all students in public schools today will be educated in the regular education classroom? Is this the optimum learning situation for all students?

REI advocates contend that despite studies' findings regarding the success/failure of integrating students with disabilities into the public schools, the argument is moot. Federal legislation, P.L. 94-142, mandates that children with disabilities must be educated in integrated settings to the maximum extent posssible (Campbell v. Tallageda County, 1981; In re Holly S., 1986; Thomas and Jacqueline M. et al. v. the School District of Waukesha, 1984; School District of Marathon et al. v. Jennifer P., 1985; Pennsylvania Association for Retarded Citizens v. Commonwealth of Pennsylvania, 1972; Roncker et al. v. Walter et al., 1983). REI advocates state that efficacy studies should be utilized for determining more efficient, cost effective, and educationally sound methods for instructing special needs students within the continuum of the least restrictive alternative (Gent & Mulhauser, 1988).

Proponents of REI call for a dissolution of the present dual system (regular and special education functioning separately), to be replaced by a unitary educational system (Reynolds, Wang & Walberg, Sapon-Shevin 1987; Stainback & Stainback, 1984; Will, 1986). These advocates argue that the current special education delivery system is beset with a multitude of problems. They see it as based on flawed logic, as discriminatory, as programmatically ineffective, and as

cost inefficient (Davis, 1989). Whereas during the 1960's and 1970's special education advocacy groups were asking for "greater access to the mainstream," today these groups are asking for "full access to a restructured mainstream" (Skrtic, 1987). Advocates argue that "mere access" to the current general education mainstream is not enough. Because of the deficiencies in organizational structure of regular education, along with its present inability to respond effectively to individual student diversity and difference, regular education requires a major reconstitution if it is to meet the needs of handicapped and other special needs students (Edgar, 1987, 1988; Reynolds et al., 1987; Skrtic, 1987, 1988).

REI opponents (Gerber, 1988; Hallahan, Keller, McKinney, Lloyd, & Bryan, 1988; Keogh, 1988; Mesinger, 1985) generally attempt to qualify their positions, claiming not to be necessarily opposed to the merger of regular and special education per se, but rather advocating a more cautious approach to the issue. They argue that the REI movement is based on some basic false assumptions and that it lacks a rigorous research base. Opponents maintain that if the REI is adopted too quickly on a widespread basis, it could bring serious harm to the very students it is designed to help. Furthermore, Gartner & Lipsky, (1987), agree that the REI debate has largely taken place among researchers and scholars who are affiliated with special education departments at universities and colleges, where regular educators have had an extremely limited role in these discussions. Davis (1989) also noted that others have recognized this situation and have cited this lack of participation as a major reason why the REI is

likely to be ineffective. One of the most frequently cited references, Lieberman (1985), criticized Stainback & Stainback's (1984) call for a merger of regular and special education as similar to "a wedding in which we, as special educators, have forgotten to invite the bride" (p. 513). Lieberman (1985), continued by stating:

> We cannot drag regular educators kicking and screaming into a merger with special education. The daily evidence on mainstreaming attitudes is too overwhelming. This proposed merger is a myth, unless regular educators for reasons far removed from 'it's best for the children,' decide that such a merger is in their own best interests. This is something that we will never be able to point out to them. They will have to come into it in their own way, on their own terms, in their own time. How about a few millenia? (p. 513)

Many regular educators feel caught in an "excellence versus equity" trap (Sapon-Shevin, 1987; Shepard, 1987; Toch, 1984; Yudof, 1984). Regular educators feel the public pressure to improve the overall academic performance level of their students, but now must also attempt to "accommodate" difficult to teach students within their classes, which may result in the overall decrease of student achievement scores (Gersten, Walker, & Darch, 1988; Kauffman, Gerber, & Semmel, 1988).

Another aspect to think about is parents' and students' feelings and involvement in the REI. Marantz (1988) cited the growing, and increasingly hostile, arguments that have been taking place in Massachusetts between parents of children in regular education and local/state education administrators

relative to the perceived favoritism being granted to children with special needs at the financial and programmatic expense of nonhandicapped children.

The REI debate has produced similarly frustrating dilemmas for many special education administrators and teachers (Davis, 1989). Davis (1989) states that special educators are being asked to alter some of their very basic philosophical and educational beliefs, as well their practices. He also notes it is not uncommon that special education directors and teachers feel guilt, anger, suspicion, and possibly even betrayal by much of what is embodied in the principles of the REI. For some it may be an issue of feeling threatened or losing an established professional identity.

Conclusions

What can be accomplished as a result of discussing the pros and cons of the Regular Education Initiative? Can both regular and special education students (moderate to severe) learn to the maximum extent possible in the same educational environment? What is education's responsibility to students who deviate from the norm? These are the questions that were answered as a result of the discussion of the issues surrounding the Regular Education Initiative.

Historical Perspective

National Laws and Perspectives

A review of federal legislation illustrates the increased involvement of federal government during the past 30 years in developing programs and providing benefits for the handicapped which will be shown in this review.

Weintraub, Abeson, Ballard, & LaVor (1976) identified 195 federal laws specific to the handicapped enacted between 1927 and the passage of PL 94-142, the Education for All Handicapped Act, in 1975. Of these laws, 61 were passed during the period of March 1970 through November 1975. In 1974, 36 federal bills which directly or indirectly affected the handicapped or gifted were signed into law (LaVor, 1976).

When federal laws are passed, they are often followed by legislation at the state level to bring state statutes into compliance with the federal law. Weintraub et al. (1976) reported that: In 1975 a survey of state law indicated that all but two states had adopted some form of mandatory legislation for the handicapped. The survey further revealed that 37 of the 48 states with mandatory legislation had adopted their current special education legislation since 1970. Massachusetts passed its law for the handicapped in 1971. It was called Chapter 766. Of note is that this period of extensive expansion corresponds with the beginning of civil rights movement (Weintraub et al., 1976).

The history of civil rights is closely related to parent and special interest group effectiveness in influencing the

educational status of exceptional children (Meyen, 1978). The progression of these activities is seen starting with the well known case of Brown v. Board Education, (1954), where it was decided that educational segregation based upon race was unconstitutional. To those concerned with the rights of disabled children, the Courts extending the equal protection clause of the Fourteenth Amendment of the Constitution to children of all races was a very positive omen (Berres & Knoblock, 1987). Following this case, nonracial educational inequities were struck down by the lower courts. According to Burgdorf (1975), the lower courts heard testimony from various professionals in the field of education who stated that separating children into isolated groups and assigning labels to them have a stigmatizing effect upon those children.

In Wolf v Legislature of the State of Utah (1969), the court ruled that a sense of inferiority and not belonging effects the motivation of a child to learn. Segregation, even though perhaps well intentioned, under the apparent sanction of the law and state authority, has a tendency to retard the educational, emotional and mental development of children. Wolf brought together the concepts of stigma and segregation.

Meyen (1978) states that in 1955 if you had visited a school district in the U.S. with an enrollment of approximately 5,000 students and asked for a tour of the facilities and programs serving exceptional children, you would have been shown 'the' self-contained special class as the most popular model for providing services to exceptional children. Children in these classes would have been identified as educable mentally retarded or emotionally disturbed. Although the

special education director might have referred to children with "learning problems," the director would not have mentioned resource rooms, consulting or itinerant teachers, or learning disabled children (Meyen, 1978).

In Massachusetts, an early recognition of state responsibility for children with special educational needs came with the special commission set up in 1952 by the legislature to investigate the training facilities available for children classified as mentally retarded. Three years later, (when there were estimated to be some 600 classes for 7,000 children classed as 'trainable' in public schools) this commission was able to assert that society had a moral duty to educate children who were mentally retarded, and what they needed were special classes and services. Further, it said that the education of these children was provided for in the state constitution and that negligence in planning a school program to meet their needs denies them an equal opportunity for education, the lack of which may cause them to become a burden to society rather than an asset (Vaughan & Shearer, 1986).

In 1957 the federal government gave money for research into special education and teacher training, but no funds for classrooms. Classroom funds came in 1965 with the Elementary and Secondary Education Act which established a grant program for the purpose of assisting states in the initiation, expansion and improvement of programs and projects for the education of handicapped children (Meyen, 1978).

Between 1968 and 1970, a group of parents from Boston, aided by a lawyer, demanded that Boston School Department and the State Department of Education provide appropriate services for a small number of mis-classified children and re-examine all children in special classes for the mentally retarded, which at the time were the only public alternative to regular classrooms. As the debate gathered steam, it emerged that the problem was not simply one of misdiagnosis, but a far wider one that affected children with a whole variety of special needs, many of whom were excluded from school altogether (Vaughan & Shearer, 1986). At this time several local reports: The Way We Go To School: The Exclusion Of Children In Boston, and Suffer The Children (Massachusetts Advocacy Center, 1967), showed that of 40,000 children in Massachusetts with emotional disturbance, only half were getting any special help at all and 16,000 of the 30,000 estimated to have a mental handicap were getting no services. In its 1974 report, Children Out of School in America, the Children's Defense Fund estimated that nearly two million children between the ages of 7 and 17 were not in school at all. Some states had 4.8% to 6% of children out of school (Meyen, 1978). This percentage dealt directly with handicapped children and segregation.

A series of major court decisions in the 1970's affirmed the Fourteenth Amendment's protection of disabled children. In 1971, Pennsylvania Association for Retarded Children v Commonwealth of Pennsylvania (PARC), successfully sued the Commonwealth for failure to provide access to a free public education for all children with developmental disabilities. One

part of the district court's decree mandated that Pennsylvania should educate the plaintiff's children in programs most like those provided for nondisabled children.

One year later, in Mills v. Board of Education (1972), U.S. District Court Judge Joseph Waddy ruled in favor of parents and guardians of seven District of Columbia students who had been denied a publicly-supported education. In his decree, Waddy stated that all children regardless of the nature of their handicap, were entitled to an appropriately publicly-funded education. It is important to note that Waddy prohibited the District of Columbia from failing to educate its handicapped students on the basis of financial hardship. The implication was that if a school system was experiencing financial constraints, then all student groups should be effected equally, not just students with disabilities. These two decisions were the opening victories in a series of court decisions proclaiming the right of handicapped children to an education. In 1975, the federal Education of All Handicapped Children Act, PL 94-142, guaranteed for the first time that children and young people so identified should have access to a free and appropriate public education, and that this should be in the least restrictive environment possible, which means as near as possible to where people without handicaps are educated. By the time this federal legislation was passed, it was officially estimated that eight million children needed special education services, but that only half were being served in a way appropriate to their needs, while one million were not in school at all (Meyen, 1978).

The growing legal challenge to segregated treatment of children with disabilities was supported by a number of special education and developmental disabilities advocates who challenged the established practices within their own fields. Two Scandinavian theorists, Bank-Mikkelsen and Bengt Nirje, developed and advanced the concept of normalization, i.e. people with developmental disabilities ought to be accorded the same type of life experiences accorded to people without disabilities (Berres & Knoblock, 1987).

The deinstitutionalization movement, which was concurrent with normalization, used tactics ranging from expose, i.e. Willowbrook, to providing expert testimony to Congress on the degradation and the ineffectiveness of institutionalizing children (Blatt, 1973). The logical extension of concepts such as normalization and practices such as deinstitutionalization to the public schools meant an ever increasing effort to mainstream or serve children in the least restrictive setting possible (Birch, 1974). Acceptance of both the normalization principle, (Nirge, 1969; Wolfensberger, 1972), and the integration mandate presupposes a personal attitude that affirms the developmental potential and rights of all human beings regardless of type and severity of disability (Berres & Knoblock,1987).

REI opponents (Gerber,1988; Keogh,1988; & Mesinger 1985) suggest it is noteworthy for proponents to examine the literature on mainstreaming. The definition of mainstreaming by Kaufman, Gottlieb, Agare and Kukic (1975) best represents the philosophical ideals of mainstreaming: "Mainstreaming

refers to the temporal, instructional, and social integration of eligible exceptional children with normal peers" (p.40). With all good intentions, unfortunately, mainstreaming as typically practiced results in:

(a) handicapped children being poorly accepted and, or socially rejected by nonhandicapped peers (Ballard, Corman, Gottlieb, & Kaufman, 1977; Bryan, 1974, 1978; Gottlieb, 1975; Morgan, 1977); (b) low or negative rates of social interaction between handicapped and non handicapped children (Allen, Benning, & Drummond, 1972; Bryan, 1976; Ray, 1974);

(c) little if any modeling effects for mainstreamed handicapped children (Apolloni, and Cooke, 1978; Cooke, Apolloni, and Cooke,1977; Marburg, Houston, and Holmes, 1976).

Handicapped children remaining in self-contained classrooms tend to be better accepted and less rejected by nonhandicapped peers than handicapped children that have been mainstreamed into regular classrooms (Goodman, Gottlieb, & Harrison, 1972; Gottlieb & Budoff, 1973; Iano, Ares, Heller, McGettigan, & Walker, 1977).

While these points are well taken, why are proponents in direct conflict with this viewpoint? When mainstreaming in the 1970s was practiced, it was typically a pull out situation. The student went to a few regular education classes, but belonged to the special class. Full integration to the mainstream is what the proponents of the REI are demanding (Skrtic,1987).

The 1980's Call for Excellence

During the 1980's, support for special education programs eroded in the wake of reform that swept the nation calling for academic excellence. Numerous reports on the state of schooling were published by prestigious commissions and task forces during the 1980's which chided public schools for their apparent failure to foster academic excellence and achievement (Gross & Gross 1985). Cain and his colleagues (Cain et al., 1984) criticized the exclusionary nature of the reports combined definition of excellence, stating: "A normative definition is inequitable for it measures all students against the same standard and does not provide for variation in abilities and aspirations. Such a definition neither encompasses nor acknowledges the diversity of America's students." (p. 487).

In April 1983, a report was issued that initiated a wave of educational reforms. This report, A Nation at Risk (National Commission on Excellence in Educaton, 1983) was a report card on the nation's schools that clearly pointed out a need for improvement, and suggested more emphasis on the basics. There was a national move towards the use of testing to measure basic educational attainment (Vaughan & Shearer, 1986). Concern about special education was swept into this debate, due to states' difficulties in implementing the federal law.

In (1981), the Comptroller General of the United States issued a report to Congress regarding the Unanswered Questions on Educating Handicapped Children in Local Public

Schools, and found, based on a review of ten states, some signs of confusion. There was a lack of clarity about precisely which children should be eligible for special education help (and so federal funds). There was often a failure to implement the strict requirements of Individual Educational Plans. There were inadequate staff for monitoring local education agencies; and federal evaluation of different states' performance was inadequate (Vaughan & Shearer, 1986).

In the wake of this report came an official response which sought to undermine the tenets of P.L. 94-142 rather than strengthen it. "In August, 1982, the U.S. Department of Education launched its proposals to amend the regulations under the Act in ways which might, as it claimed, have eased the financial and administrative burden but would have also weakened parents rights" (Vaughan & Shearer, 1986, p. 4). Support for P.L. 94-142 was evidenced by the 30,000 letters of protest that flooded into the Department of Education in Washington as did the huge numbers of protesting witnesses at regional hearings (National Council on Disability, 1989). The proposed amendments were dropped.

In April, 1985, President Reagan appointed Dr. Eileen Gardner to a newly created post in the National Office of Educational Philosophy and Practice. She made no secret of the philosophy and practice she would implement, having outlined both at some length in an essay published by the Heritage Foundation the previous year (Vaughn &Shearer, 1986). The Heritage Foundation Report (May 11,1984) states:

> The Education for All Handicapped Act rests on the questionable assumption that the responsibility for disabled individuals is primarily society's as a civil right, rather than the family's with the help of society such legislation although enacted by well-meaning politicians, has directed funding, attention, and policy to the special student. The evidence shows, regretably, that such programs yield minimal positive results for that student and generally damaging results for the normal child (pp. 1-2).

The Heritage Foundation report called for the dismantling of the Department of Education and proposed that special schools be established to meet the special needs of students "who cannot easily be incorporated into a normal school program" (p.2). The report's general claim was that "laws for the education of the handicapped have drained the resources from the normal school population, probably weakened the quality of teaching and falsely labled normal children" (p.12) and its subsequent recommendation that "public schools should not be required to educate those children who cannot, without damaging the main purpose of public education function in the normal class setting" (p.13). There was something of a national outcry following Dr. Gartner's appointment to her official position. She resigned after a matter of days (Vaughn & Shearer, 1986).

Mara Sapan-Sheven, (1987) stated that the report was significant for several reasons. First, the Heritage Foundation currently exercises considerable influence on the federal administration and has been a powerful lobbying force in the Congress. Second, many of the views expressed in the Heritage Foundation report are merely explicit statements of views

presented more subtly in several other national reports. Direct concerns are raised in the Heritage Foundation report about the effects of the competition between funds for "gifted" and "handicapped" in the wake of pressing national economic concerns.

. There is a perception that students with disabilities have a separate system, called special education, that will address all their needs. There is a separate funding stream for them, separate classes for them, separate teachers for them, separate rights for them, etc. Many believe they are well provided for in their separate system, and in fact, better provided for than many other groups of students (National Council on Disability, 1989, p.35).

Statistics On Disabled Being Served

When the National Council on Disability (1989) compared the outcome indicators for students with disabilities and indicators for students without disabilities it appeared that students with disabilities were significantly lagging behind their nondisabled peers. Other statistics also confirmed the following:

Where only 15% of all adults aged 18 and over have less than a high school education, 40% of all persons with disabilities aged 16 and over did not finish high school (Harris and Associates, 1986).

Where the dropout rate is 25% for all students, it is 36% for students with disabilities (Wagner, 1989).

Where 56% of all students participate in postsecondary education programs, only 15% of students with disabilities do (Wagner, 1989).

While the unemployment rate is about 5% nationally, a full 66% of all Americans with disabilities between the age of 16 and 64 are not working (Harris and Associates, 1986). According to a recent Census Bureau report (U.S. Department of Commerce, Bureau of the Census, 1989) the unemployment rate of people with disabilities is 14.2%.

There is a growing concern among special educators and administrators of special education over the efficacy of the approaches currently being used to educate students with moderate to severe handicaps. Recent literature ranges from calls for totally abandoning the present system (Heritage Foundation Report, 1984; Reynolds, Wang & Walberg, 1987; Will, 1986), to assertions that more, not fewer, students may be helped through special education services (Keogh, 1988).

Buttram & Kershner, (1988) pointed out that in a study on special education achievement in 1986, 31 large cities were studied, only seven of these cities evaluate special education students' achievement; only three cities conduct longitudinal student outcome studies; and only nine special education directors saw that these were needed. When the productivity of the special education profession is examined in the area of learning disabilities, the literature suggests that little attention has been given to improving instruction. This point is illustrated by the work of Lessen, Dudzinski, Karsh, and Van Acker, (1989) who reviewed research on learning disabilities published in nine journals from 1978 through 1987. They found

that research on academic intervention constituted only 4% of the articles published during that ten year period. Achievement outcomes are fullfilled individually by each student's IEP (Individualized Educational Plan).

Educational programs have been developed for all special needs students based on the assumption, true or false, that they are different; they do not fit the normal mold; they possess deficits and disadvantages of some type and degree that require atypical interventions (Davis,1989). The needs of students with handicapping conditions have led many parents and professionals to accept separate if, "quality education". This kind of system has promoted feelings of social segregation (Berres & Knoblock, 1987; Davis, 1989).

According to the U.S. Department of Education, Eleventh Annual Report to Congress approximately 4.5 million students with disabilities received specialized educational services in the 1987-88 school year, or 11% of the total school population (U.S. Department of Education, 1989). This number represents a 21.2% increase over the figure reported in 1976-77. The largest single population of eligible handicapped students is labeled learning disabled (47%), followed by speech impaired (23.2%), mentally retarded (14.6%), and emotionally disturbed (9.1%). The number of children receiving services for learning disabilities, currently the largest handicap, increased by more than 140%.

National statistics indicate that 41% of students receiving special education services receive them in a resource room setting; 26% receive special education services

in a regular education setting; 24% receive special education services in a separate classroom, and 8% receive special education services in a separate public school, private school or residential facility, correctional facility or homebound environment (O'Neil, 1988).

The number of children receiving special education services through federal programs has increased nearly 20% over the past decade (O'Neil, 1988). The vast majority of students served in special education are very mildly handicapped. At least half of the learning disabled population could more accurately be described as slow learners, as children with second-language backgrounds, as children who are naughty in class, as those who are absent often or move from school to school, or as average learners in above average school districts (O'Neil 1988). These students are being educated apart from the regular education milieu.

Fundamental questions are being raised about the accuracy of procedures for student referral and evaluation (National Council on Disability, 1989). According to a study by Ysseldyke (1987), more than 80% of the student population could be classified as learning disabled by one or more of the definitions presently in use.

Data from 28 large cities indicate that referral rates vary from 6% to 11% as a percentage of total enrollment. The percentage of students who are referred then placed in special education varies even more, from 7.8% to 91.8% (Council of Great City Schools, 1986). In addition, Walker (1987, p.110) has pointed out that examination of "the variation in statistics between general classroom placements at the state level and

the state funding formulas indicate that states provide financial incentives for separate placements, or which traditionally have had dual systems of services, place students disproportionately in more restrictive placements."

Least Restrictive Environment

Will (1986) explained two key principles of the least restrictive environment clause of the Education for All Handicapped Act; first, the least restrictive environment requires an educationally compelling justification for any proposed separate schooling of handicapped children; and second, even where some segregation may be necessary, there still must be as much student to student contact and integration as possible.

Because the state and federal laws addressing such issues as least restrictive programming, mainstreaming, and integration are vague, the actual degree to which the concepts are implemented is often determined at the local level (Massachusetts D.O.E., 1989). This means that the main regulatory force behind the mandates is a state education department, which generally accepts a district's status as long as it assures minimal compliance with the requirements of PL 94-142. While this practice is not unreasonable, given that many districts still have not achieved even minimal compliance, it hardly acts as an incentive for districts to exceed minimal standards (Berres & Knoblock, 1987).

As Chapter I and other regular education support systems have been cut, teachers find it easier to place a student into

special education. McGill-Franzen (1987) points out that the increase in the number of students identified as learning disabled neatly matches the decline in Chapter I participants over the past decade. Gartner & Lipsky, (1989), have also noted that this was a factor which has increased the separateness.

> ....partly as a result of a narrow reading of the stricture that federal aid supplement and not supplant local efforts, school practices in remedial education, so called bilingual education, and special education, have favored separate, 'pull-out' programs. Teacher training programs in general and special education, the absence of alternative models and paradigms of integration, made unlikely any other outcome. Additionally, given the reduction in support for remedial education programs in their period, school systems had limited resources with which to support options within general education (p.107).

Current Local Research

To explore the extent to which segregation of students with disabilities characterizes special education in Massachusetts, the Massachusetts Advocacy Center reviewed school census data collected by the Massachusetts Department of Education. The Center examined eleven years of data, from 1974 to 1985, taken from the School System Summary Reports issued by the Department of Education's Bureau of Data Collection and Processing. These reports present statistics for each school system October 1 of every year. In order to examine trends over time the Center analyzed these statistics presenting the number of students served in each prototype.

Historically, the Center used two methods to compare information about placement practices from one time period to the next. First, the Center compared the number of students served in integrated and segregated prototypes over the years. Second, the Center compared the change in the placement rate for integrated and segregated prototypes. The placement rate is defined as the number of students placed in a particular prototype divided by the total special education population, with the results multiplied by 100. In other words, the rate is the number of students placed in a particular prototype for every 100 students in special education.

Special education laws were passed in response to widespread isolation and exclusion of students with disabilities from regular education programs. If the laws were being implemented, data would indicate that more disabled students would be gaining access to the mainstream each year. Thus, at a minimum, data analysis would show yearly increases in the rate students are placed in the more integrated prototypes since the passage of the law in 1974, through 1985. Such a trend would indicate that schools have made some progress in removing barriers to the educational mainstream.

However, analysis of special education placement practices through 1985 reveals several trends which indicate that schools statewide have moved backwards, away from integration. Analysis of statistics shows a dramatic increase in the rate of placing students with disabilities in the most segregated public school prototypes, particularly separate

special education classrooms. Further, despite the legislative goal of reducing the use of totally segregated schools, data show no decrease in the rate for isolating students in separate day schools. "These data constitute convincing evidence that state and local education agencies have violated the letter and spirit of the law" (Massachusetts Advocacy Center, May 1987). The Department of Education's own statistics suggest the need for action by the department itself, as well as by local school committees, to investigate the practice of inappropriately segregating disabled students and to move steadily and forcefully towards integrated education. This data and many recent articles in professional journals show that since 1985 there has been an awareness that special education is growing and local education agencies are not complying with the law on the least restrictive environment.

In Massachusetts, 76% of special needs children were placed in resource rooms in 1986-1987 (Massachusetts Department of Education, 1988). Resource rooms refer to classrooms staffed by a special education teacher and sometimes a paraprofessional, where students identified as having mild to moderate special needs may spend up to 60% of their instructional time. The resource rooms are also known as pull-out programs; in other words, the students assigned to such programs miss specific instructional time in their regular education classroom to receive services in a resource room from the special education teacher. For 1986-1987, 20% of Massachusetts special needs students were placed in separate programs within public school buildings (Massachusetts Department of Education, 1988). Special needs

students assigned to separate programs within school buildings may spend from 60% to 100% of their instructional time in such segregated settings; these programs also may be referred to as pull-out programs.

Boston and Integration

The laws are replete with references to integration as the preferred strategy yet it is not happpening in Boston, except for a few isolated cases. Data released by Massachusetts Advocacy Center in 1987 states that the trend toward segregation of students with disabilities since 1975 is even more pronounced in Boston. In 1985, the rate for placing Boston disabled students in segregated programs was almost twice as high as the the statewide rate; Boston students receiving special education are nearly three times more likely to be served in totally segregated day schools than students in the rest of the state; and Boston students with disabilities are also placed in restrictive in-school programs (502.3) at a rate 49% higher than the rate for the rest of the Commonwealth (Senate Committee on Post Audit Oversite, p.152).
Massachusetts 766 law passed in 1972 and served as a national model for the federal law P. L. 94-142. Boston was a forerunner in the education of the handicapped. The belief by teachers and administrators was that students needed to be taught in a way specific to their disability. In 1974 Boston's special education classes consisted of students of various disabilities all in the same classroom. Due to the inability to provide for the individual needs of students who had specific

learning styles, hearings were being lost at the state level to private schools that could provide specific teaching strategies (Boston Public Schools Special Education End of the Year Report, 1975) Presently, Boston has twenty-six different catagories of special needs classes (Appendix E). Boston has become more specialized so as to tailor to the individual needs of each child. Separating out into such specific catagories has labeled and stigmatized students which is far from the intention of the law, which stresses the least restrictive environment. The question is: With all this special treatment from teachers who are experts in specific disability areas, have these students' cognitive and social achievement improved or has the separateness and nonmembership to the norm had negative effects on their development? In Boston, even when children with disabilities attend the same school along with their nonhandicapped peers at the same age level, they may remain in a self-contained special education classroom all day. They often arrive via separate transportation systems, enter and leave through a separate entryway which is chosen because it is more "accessible" than the main entry. They may not share recess or extra curricular activities with their nonhandicapped peers, and may even eat lunch in the special education classroom. These separations preclude the numerous, natural interaction times which occur for most children. As a result, children in these classes may be as socially isolated from their nonhandicapped peers as are children who attend a segregated, handicapped-only school.

The research evidence suggests that the educational practices currently used in educating students in Boston needs attention.

REI Proponent Viewpoints

Current research in special education calls for the integration of regular education and special education; and for the development of a partnership between regular and special education (O'Neil, 1988; Will, 1986; Gartner & Lipsky, 1987; Reynolds, Wang, & Walberg, 1987). An increasing number of authorities have pointed out that the distinction between regular and special education is an ill-conceived, inefficient, and counter-productive historical anomaly (Bilken, 1985; Peterson, Albert, Foxworth & Tilley, 1985; Reynolds & Birch, 1977; Steinback & Steinback, 1984). These critics argue that the present dual system of education entails the unnecessary duplication of services, division of resources, dissipation of advocacy potential, and segregation of students (Knoll & Meyer, 1986).

Contrary to popular belief, there is no magic about special education. There exists a myth in the field of education that supports the fundamental differences between regular and special education (Knoll and Meyer, 1986). This myth has both perpetuated and been fostered by this separation of services. Stainback, & Stainback, (1984) critically analyze this myth as follows:

(a) There is said to be two distinct groups of students; regular students are normal and special students

deviate from the norm on some significant characteristic. In reality, the normal student does not exist; instead, every student is a unique combination of physical, intellectual, psychological, and social characteristics.

(b) Special education students are said to require individualized services to meet their educational needs. In actuality, individualized instruction could significantly enhance the achievement of all students.

(c) There is said to be two (or more) discrete groups of instructional methods, one for regular classes and another for special students. In fact, there are no "special" instructional methods which differ fundamentally from those used with most children (p. 107).

As evidenced by the analyzation presented here, the majority of special needs students are being instructed apart from the regular education environment. The research does not speak favorably of the "pull-out" programs. According to O'Neil (1988), many experts cite the lack of continuity in mildly disabled students' learning when they are shuffled off to assorted separate programs. Will (1986) says, "this pull-out approach....it is driven by a conceptual fallacy: That poor performance in learning can be solely understood in terms of deficiencies in the learning environment" (p. 10). In referring to current practices in the field of education, experts say that present practices suffer from (1) fragmented approaches, (2) a dual system, (3) stigmatization of students, and (4) placement decisions which are becoming a battleground between parents and schools (Gartner & Lipsky, 1987; Will, 1986).

The alarming drop-out rate of students enrolled in secondary special education programs as well as the data available on the post school experiences of handicapped students bring to the educational forefront the issue of the effectiveness of current practices in special education. According to E. Edgar, (1987), research on the post school experience of handicapped students is not encouraging. More than 30% of students enrolled in secondary special education programs drop out. These students neither graduate nor find adequate employment opportunities.

> In 50 recent studies comparing the academic performances of mainstreamed and segregated students with handicapping conditions, the mean academic performance of the integrated group was in the 80th percentile, while the segregated students scored in the 50th percentile. A review of programs for academically handicapped students found no consistent benefits of full time special education programs. Rather, it found full or part time regular class placements more beneficial for students' achievement, self-esteem, behavior, and emotional adjustment (Gartner & Lipsky, 1987, p. 375).

The Education for All Handicapped Act of 1975 (P.L. 94-142) mandates that all handicappped children be educated in the least restrictive environment to the maximum extent possible. Segregation in public schools is illegal in this country, unless the student's handicapping condition is such that a more restrictive placement is warranted. (Affleck, Madge, Adams & Lowenbraun 1988). School systems are specifically required to integrate disabled students for both academic and nonacademic activities. Separate sections of the

laws and regulations address participation in nonacademic and extracurricular activities such as meals, recess, athletics, recreation and special interest groups (MA. D.O.E., July,1983, p.27). As federal regulations note, requirements for nonacademic regular education participation are especially important for children who require placement in segregated settings for much of the day.

Social Issues

Social integration and community-based curriculum are the major issues in the education of students with handicaps (Kregel, 1985). Social integration of students with disabilities with their nonhandicapped peers is not a new idea. Examples of successful integration exist throughout the United States (Taylor, 1982). But the question asked by many educators is why integrate when many of the services required by students with disabilities may be different from those typically available to students in the regular classroom (Davis, 1989)?

How will these students with disabilities live as adults? People with disabilities must be allowed to become full participants in society. This can only happen if people with disabilities are known and accepted by their peers (Bilken,1985). Students with special needs must receive the services they require, but can these be delivered in a regular education setting? Is it possible that this is beneficial to everyone, including nonhandicapped students and their teachers

who receive an education in human differences and similarities that simply cannot be taught except by experience?

Fostering positive attitudes toward handicapped people is increasingly being viewed as a responsibility of the public schools (McHale & Simeonsson, 1980; Donaldson, 1980; Voeltz,1980,1982). Indeed as Martin (1974) cautioned, unless educators develop strategies for creating an attitude of acceptance in students in regular education toward their handicapped peers, "we will be painfully naive, and I fear we will subject many children to a painful and frustrating educational experience in the name of progress" (Fiedler & Simpson, 1987, p.342).

In (1983) MacKenzie addressed the interrelationship between regular and special education. He concluded that special education has been viewed by administrators as being separate from and competing with regular education. In an article by Wang & Reynolds (1987), they conclude that special education has contributed to an increasing disjointedness in school programs. As Hobbs (1980) noted, by placing a person in a separate catagory or system of education it becomes possible to treat the person in ways that would not be tolerated were he or she a fully accepted member of the regular or so called normal group.

The integration of children who have disabilities into regular neighborhood schools is crucial for the attainment of the following goals (Johnson & Meyer 1985):

(a) the development of positive attitudes by nonhandicapped persons toward persons with disabilities to prepare for an adult society in which diverse people are expected to live and work together (Voeltz,1980; 1982);

(b) the normalization of the social status of persons with disabilities to facilitate their participation in typical environments and situations enjoyed by others who are not handicapped (Voeltz, 1984);

(c) the development of a social context to enable nonhandicapped children to master skills needed to interact constructively with persons with disabilities (Strain, Odum, & McConnell,1984; Voeltz, 1982);

(d) the development of friendships and other positive social relationships by persons with disabilities (Voeltz, 1984).

Numerous reports document the positive outcomes which result from integration and peer interactions between children with disabilities and their nondisabled peers (Brady, 1984; Brinker, 1984; Donder & Nietupski, 1981; McHale & Simeonsson, 1980; Meyer, et al., in press; Voeltz,1980, 1982; Voletz & Brennan, 1984). Also there is an abundance of research indicating that handicapped individuals are likely to encounter negative and stereotypic attitudes from various population groups as they grow and mature (Baum &Wells, 1985; Donaldson, 1980). Yet, until very recently, interactions between children with disabilities and their nonhandicapped

peers have primarily been episodic and relatively artificial in nature (Meyer-Voletz, Johnson & McQuarter, 1983).

Integration specialists (Johnson & Meyer, 1985; Stetson 1984; Taylor, 1982). have developed a list of reasons why the goal of integration is important.

1. Awareness of Similarities, Not Differences: provides opportunities to learn about the sameness of people.
2. Preparation for Adulthood: promotes generalization of learning through instruction, preparation, and relationships in a community environment.
3. Improved Learning: provides motivation and real life expectations for social and academic growth.
4. Friendships Develop: provides normal opportunities for age appropriate relationships through shared activities and learning experiences.
5. Effective Use of Resources: provides for efficient use of school personnel through collaboration and shared responsibilities.
6. Team Building: results in increased creativity and problem solving among school personnel.
7. Quality of Education: provides all students with teaching styles that promote successful learning.
8. Support of Civil Rights: supports Public Law 94-142 which entitles all children with disabilities to free, appropriate public education in the least restrictive environment

There is one consistent message in all the materials on effective integration reviewed; "Integration works when people are committed to it" (Taylor, 1982, p.48).

In her study of national practices Stetson (1984) emphasized that commitment by administrators, teachers, and parents was a critical component in the design and implementation of effective strategies to accomplish integration. Leadership is crucial to ensure that disabled students are not only physically present in the public school building, but that they are socially part of the life of the school along with other children (Bilken, 1985). Building principals, in particular, are responsible for the climate of their schools. Their attitude to a goal such as integration, equality, and excellence will have a tremendous impact upon the way these ideals are realized. A first step toward integration is for the principal to provide leadership to all the students not just the students in regular education (Bilken, 1985). Similarly, the zone superintendent can facilitate integration by supporting those at the school level who are attempting to integrate, and by anticipating problems or source of opposition. In their study of Hawaii's integration effort, Meyer and Kishi (1985) found that a proactive integration plan and a timetable at the district and state level were identified by all those involved as critical to success. This integration plan included strategies to inform interested constituencies (e.g., parents) about the planned changes and the early establishment of a model but "typical" class in one of the public schools which could serve as a fishbowl of excellence. Those who otherwise opposed such changes as unworkable or who needed reassurance that it could be done were then able to see a first hand example.

Opponents Viewpoints

REI opponents previously mentioned approach this initiative with caution because they feel much more research needs to be undertaken.

> A change in any established system requires preparation and careful planning, but a change like integration demands more than usual attention to planning issues. It is fraught with misconceptions and able to excite high emotions on the part of parents and staff: Who are these kids? Don't they need constant medical supervision? Don't they have the kind of behavior that is dangerous to the regular kids? Won't other kids make fun of them? Won't the regular kids curriculum suffer? Are these kids really getting what they need? Is the system just doing this to save money (Hallahan, Keller, McKinney, Lloyd & Bryan, 1988, p. 30)?

The National Council on Disability (1989) heard arguments that separate schools have an important place in educating students with disabilities. The demand for a continuation of special schools is based on the facts that appropriate services for low incidence populations such as blind and deaf students are unavailable in many regular classrooms. It was also stated that many students with disabilities even with support fail in regular classrooms, and that, for deaf children, adequate language and psychological development and cultural and socialization opportunities can only be found in special schools. The nature and quality of services was a critical issue raised by witnesses who advocated for either separate schools or substantially separate classes in public schools (The National Council on Disability, 1989). "There are many professionals in public

schools, both in regular and special education, who do not believe that students with moderate and severe disabilities are best served in integrated classrooms" (Berres & Knoblock, 1987, p.14). Their reasons vary, ranging from the degree of intense instruction to teacher expertise.

Gent and Mulhauser (1988) note that the judicial interpretation of the Education for All Handicapped Act to date contain no expressed or implied requirement that schools maximize the potential of children with disabilities. Rather, the provision of a basic "floor of opportunity" regarding equal access and related services is emphasized (Yanok, 1986). The question of determination of educational benefit as it relates to appropriateness was at issue in Board of Education of the Hendrick Hudson Central School District v. Rowley (1982), where the court ruled that no single criterion could be applied to the wide range of actual and potential achievement needs among students with special needs. Consequently, each case must be reviewed on an individual basis (Yanok, 1986).

The Education of All Handicapped Act (EAHCA) requires the availability of a full continuum of service delivery systems for individuals with disabilities. This continuum of services has been described in detail and viewed as progressing from the "less desirable" (more restrictive) to "more desirable" (less restrictive) in the educational literature (e.g., Brown et al., 1977) and in the community habilitation literature (Elder, Conley, & Noble, 1986). In one case, St. Louis Developmental Disabilities Treatment Center Parents' Association et al. v. Mallory et al. (1984), the plaintiffs argued that denying students with disabilities the

opportunity to interact with their nonhandicapped peers by affirming placement in a segregated facility did not comply with the provisions of the EAHCA. The plaintiffs therefore reasoned that all segregated schools should be closed. The court ruled that the wholesale closure of segregated schools would deny that potential placement option for students with disabilities.

Implications from the resolution of cases such as St. Louis on the continuum of service philosophy are important to parents, professionals, and legal representitves regarding future litigation. This case supports the opponents view in that integration may not be of maximum benefit for all students and continuum of service may not only be beneficial for the most severely handicapped in segregated schools but continuum of service at the public school may also beneficial.

Principals' Role

Besides not being informed about all the legal issues surrounding special education, building principals are confused by the Regular Education Initiative. Many principals feel that they have not had the proper training to take on this responsibility, nor, in some cases consider this added responsibility to be unrealistic given the many other demands and pressures currently being placed on them in the educational reform movements (Gent & Mulhauser, 1988).

Teachers' Role

Gent and Mulhauser (1988) also point out that "for many others, there appears to exist a genuine concern that regular education is still not ready in either attitude or instructional capabilities to adequately meet the needs of students with handicaps" (p. 443). "Many special educators are skeptical and untrusting of a regular education system they have been taught to suspect. They harbor feelings of guilt for abandoning their students and feel betrayed by former highly respected professors who seem to be suggesting a total philosophical flip-flop" (Gent & Mulhauser, 1988, p.443).

Cosden (1989) is concerned with curricula and instructional designs for special needs learners in the regular education classroom. She states that the curricula for the norm are more academic and the social and occupational skills are more important for the special needs learner. Therefore the teacher must weigh the cost of allocating time to the lowest and slowest when that takes time from direct instruction to higher functioning more responsive students. Cosden (1989) also notes that the greatest single piece of feedback received from regular educators is: "Besides socializing, why are these students in regular classes? What are they learning? What are we able to teach them?" (p. 5-6.).

Parent and Student Role

Meyen (1989) reflects that while students in special education are defined primarily by their instructional needs, the field has not shown major concern for the development of empirically based quality instruction.

There has been widespread absence of consumers in the REI debate (Davis, 1989). Although several observers (e.g., Bilken, 1985; Blatt, 1981; Bogdan & Taylor,1982; Davis,1982; McCall & Davis,1988; Skrtic, 1988) have argued for greater consumer involvement in the overall special education process, rarely are students' and parents' attitudes, feelings, and opinions directly assessed regarding what is being done to them under the guise of sound educational practices.

Summary

Gent & Mulhauser (1989) gave a brief review of the data base concerning the Regular Education Initiative and integration literature:

1. A paucity of research in the area of school age students with disabilities in integrated settings is a concern;
2. A marked discrepancy exists in the literature concerning the success of students with severe disabilities in integrated settings and the failure of students with mild disabilities in similar settings,-- an apparent incongruent finding is in need of explanation;

3. The lack of clear differentiation is evident among the social aspects of integration as they apply in the lives of individuals with mild disabilities and individuals with severe disabilities;
4. The use of qualitative and descriptive research, while valuable in the broader context of special education, often seems to dominate the literature, whereas appropriate quantitative research might be more beneficial to ascertain the strengths and weaknesses of current programming.

The need for specific research with children labled profoundly or multiply handicapped in integrated settings has been shown throughout this review. Only when the data base using integrated placements for severely handicapped proves to be positive will parents, professionals and the courts recommend these placements.

Using the existing data base, one can only affirm Tindal's (1985) conclusion that "the only conclusion that can be made at this time is that no conclusion is yet available about special education efficacy" (p. 109).

If the present special education system is not working to the maximum benefit of special education students, then educators should be open to another way. The conclusion drawn from this review is that there needs to be continued research of the REI and this research needs to include the students, parents, teachers, and administrators from both regular and special education.

CHAPTER III

METHODOLOGY

The data for this study was collected using a pre/post test design.

This study was conducted in the Boston Public School System. The Boston Public School System has an enrollment of 55,186 students. There are 118 public schools (15 high schools, 22 middle schools, 76 elementary schools, 2 early learning centers, and 3 specialized schools). There are 12,927 students receiving special education services within ten program prototypes (See Definition of Terms).

Procedure

It was required that anyone interested in conducting research in the Boston Public Schools first obtain written permission from the Boston Public School's Office of Research and Development. After permission was secured from the Office of Research and Development, permission was obtained from the zone superintendents and school principals at each school involved in the study (Appendix A).

Subjects

The Patrick O'Hearn Elementary School, located in the Dorchester Community in the East Zone, was designated a model integration school by the Boston School Committee in September 1988. In October 1988, an Advisory Committee was developed to plan for the model integration school. Starting in September of 1989, special needs and regular education kindergarten students were instructed in integrated classrooms. During the 1989-1990 school year, plans were developed to phase in the integration of regular and special needs students in grades 1-5.

The overall goal of the model integrated program was to help all children learn and succeed in integrated classrooms. The school intended to create a stimulating and supportive learning environment for both special needs and regular education students. Social skills training and disability awareness activities were developed to assist students in interacting positively. Cooperative learning strategies and individualized attention were initiated to assist all students in achieving educational objectives. It was agreed that students would benefit from a variety of learning strategies. Strong parental involvement and community support were key factors set in place to insure the success of this new model program. Staff participated in extensive training and professional development activities prior to the commencement of the pilot program as well as continuing these activities on an ongoing basis.

The schools selected to participate in the study were the Patrick O'Hearn Elementary, the William Endicott Elementary, the Lucy Stone Elementary, the John Marshall Elementary and the Joseph Lee Elementary, all the schools were located in the East Zone, which is geographically east of Boston proper. The schools participating in the study were all within a five mile radius of each other.

In order to assess the success of the new integration program, a pilot study at the Patrick O'Hearn was conducted.

A total of 87 students were tested for this study. There were 46 kindergarten I (KI) four year old students, and 41 kindergarten II (KII), five year old students. The population was tricultural, being primarily composed of African-American, Hispanic and Anglo-American.

This chapter describes the location, sample population, instruments used, materials, design, and procedures.

Design

The purpose of this study was to evaluate the effects of integration on both regular and special needs kindergarten students. A comparative study of the cognitive and social achievement of kindergarten students in the pilot program (experimental groups) and their counterparts who were not in the pilot program (control groups) was conducted. A pre/posttest design was used. Pretests were conducted in September and posttests were conducted in June.

The research questions to be answered by this study were:

1. What type of setting is the best educational practice for all students?
2. What type of setting is best for handicapped students?
3. What type of setting is best for regular education students?
4. Can students' cognitive achievement improve more in segregated or integrated settings?
5. Can students' social achievement improve more in segregated or integrated settings?
6. Does one group benefit more than another?
7. Of the two skills being measured (cognitive and social), does one improve more than the other depending on the setting?

Selection of Participants

Boston Public Schools are separated into four zones. The four zones are: North, East, West, and High School. Students in elementary and middle school comprise the North, East and West Zones. These three zones are geographic, where the High School Zone is citywide. Boston has a controlled choice student assignment plan. Parents make choices about schools within their zone, and Boston Public Schools tries to assign students to one of their choices, within certain controls that ensure desegregation. All students have choice, including most special needs and bilingual programs. There are three separate assignment rounds from February 12 to June 14. Applications

are accepted during each round, but the largest number of seats are available in round 1. Assignments during these three rounds are "batch processed," that is all applications will be held and processed all at once at the end of the round. Each student was assigned a random number by the computer and their assignment was made in that order. The student designated number one was assigned first, then the student designated number two was assigned second etc. Assignments took into account three factors: the student choices, seat availability, and racial guidelines.

Subjects in the integrated pilot program attended kindergarten I and kindergarten II at the Patrick O'Hearn Elementary School in Dorchester.

Regular education students were assigned in the normal way according to the student assignment plan. When a regular education student was assigned to the pilot program through the normal assignment process, a flyer explaining the pilot program was mailed to their parents/guardians.

Special education students in the experimental groups were selected after two criteria were met: (1) the student lived in the east zone, and (2) the parent agreed to have his/her child participate in the model integration program. After these criteria were met a list of interested parents was given to the program advisors from the early childhood liaisons. The final selection of students occurred in May, 1989. The Advisory Committee for the Patrick O'Hearn model integration pilot program met with the parents of the special needs students in June to explain the program in more detail.

At that time, all parents gave verbal agreement to whatever testing and interviewing were necessary. It was explained that pre and posttesting on cognitive and social achievement would be completed at the beginning and end of the school year. An open house was held in September for all parents of students in the model program. The research procedure was explained again, but this time to parents of both special needs and regular education students. These parents signed a written permission for participation and testing (see appendices for permission and follow up letters). It was explained that monthly observations and interviews would take place in accordance with teacher and principal schedules.

Subjects in the control groups (segregated regular education only) and (segregated special education only) were selected to match the experimental groups on several variables:

1. race and ethnicity
2. socio-economic status
3. geographic area of school
4. willing teacher/principal participants
5. teacher/student ratio
6. cognitive and social ability
   (for segregated special education only)
7. extended day (special and regular education 5 year old kindergarten II students)

Parents from control groups were sent letters describing in detail the pilot program and asking for their permission to have their children as participants in the control group (see

appendix for letters). If the parents had any questions regarding any of the pre/post testing procedures, it was explained that they should feel free to call.

Experimental Groups

The students in the experimental groups were kindergarten students at the O'Hearn School in Dorchester, taking part in a new pilot program integrating mild to severe special needs students and regular education students in the same classroom. A total of 40 students were divided into four experimental groups at the O'Hearn School in Dorchester.

The four experimental groups were:

1. regular education four year old students in the integrated pilot program (15 students)
2. special education four year old students in the integrated pilot program (6 students)
3. regular education five year old students in the integrated pilot program (14 students)
4. special education five year old students in the integrated pilot program (5 students)

Subjects selected for the experimental groups were all selected from the east zone. Regular education students were assigned through the normal assignment process. Special education students were selected by early childhood liasons and teachers after specific criteria were met. All four year old students went to school for half a day. All five year old students went to school for a full day (extended day program).

The teacher/student ratio for the four year old students was 2:16. The teacher student ratio for the five year old students was 2:21 with an additional teacher assistant for two special needs students. There were also additional support staff (physical therapist, occupational therapist, speech therapist) that worked with both four and five year old groups rather than take a specific student out of the class for individual therapy.

Control Groups

The students in the control groups were kindergarten students at the William Endicott, Lucy Stone, Joseph Lee, and John Marshall Schools in Dorchester. These students are regular and special needs students who were instructed in nonintegrated classes.

The four control groups were:

1. regular education four year old students taught in a setting where there are no special education students in a kindergarten I classroom (15 students)
2. special education four year old students taught in a substantially separate primary transitional class (PTC) for students with mild to moderate developmental delays (10 students)
3. regular education five year olds taught in a setting where there are no special education students in a kindergarten II classroom (12 students)

4. special education five year old students taught in a substantially separate primary transitional class (PTC) for students with mild to moderate developmental delays (10 students)

Subjects selected for the control groups were all selected from the east zone. Both regular and special education students were assigned through the normal assignment process. The regular education four year old students (control group 1) were in the kindergarten I class at the Lucy Stone School in Dorchester. The regular education five year old students (control group 2) were in the extended day kindergarten II class at the William Endicott School in Dorchester.

Special education students in the control group were assigned to the Joseph Lee School and the John Marshall School in Dorchester as part of the normal student assignment process. Special education students in the control groups were matched to special education students in the pilot program. The students in the control groups were similar in disability, age, cognitive achievement, social achievement, socio-economic status, and resided in the same zone.

The special education students in the control groups were taught in substantially separate classes with a teacher/student ratio of 1:12, and a teacher assistant (paraprofessional) assigned to each class.

Instrumentation

The McCarthy Scales were used for the pre and posttest cognitive achievement. The Vineland Social Maturity Scales were used for the pre and posttest social achievement.

The rationale for choosing the McCarthy and the Vineland was specific to the group being tested and what was being measured for this group. The group that was measured had a very wide range of cognition and social ability. The students have intelligence ranging from severely delayed to above average. The ages of the students were four and five. The socio-economic income level of 65% of the students' families was below $20,000 per year. All of the students lived in the inner city.

Cultural values, customs, and child rearing practices influence children's learning and behavior patterns in ways which often make norms useless, both in adaptive behavior observations and standardized intelligence tests (DeAvila, 1976).

The variables of importance for each individual testing instrument for this population would be:

Identifying criteria

1. ability to keep the attention of the student;
2. wide range of cognition;
3. nonculturally biased;
4. clarity of questions;

Validity

1. validity;
2. reliability;
3. context;

Practical

1. easy to administer;
2. easy to score.

The Vineland Social Maturity Scales fulfilled all the variables of importance for this group. The McCarthy Scales fulfilled all the variables of importance but the practical aspects. The amount of time it took to administer the McCarthy was any where from one to two hours per student. Testing 87 students on this one instrument for both pre and posttesting was lengthly. It took additional time to score these instruments. There are not many instruments that can be successful with both special and regular education students. The strengths of the McCarthy outweigh its weaknesses by far. It has excellent norms and standardization. It assesses a variety of cognitive and motor skills. The test is attractive, and most important children, find it interesting.

McCarthy Scales

The McCarthy Scales of Children's Abilities (MSCA) is designed to assess a variety of intellectual and motor abilities for children aged 2 1/2 to 8 1/2 years.

The McCarthy Scale was developed by the Dorothea McCarthy and published by The Psychological Corporation in 1972; it was designed to measure children's cognitive and motor abilities. The McCarthy consists of 18 short mental and motor tests grouped into five scales: Verbal, Perceptual-Performance, Quantitative, Memory, and Motor. The first three are nonoverlapping and are combined into the General Cognitive Index (GCI), a measure of overall cognitive functioning that is similar to the IQ. The Verbal, Perceptual-Performance, and Quantitative Scales are each unified by the content of their test items (words, concrete materials, and digits). In addition the Verbal Scale requires vocal responses while the Perceptual-Performance Scale demands only nonverbal responses. By contrast, the Memory and Motor Scales are process oriented. The Memory tests overlap with Verbal, Perceptual-Performance, or Quantitative, depending on their content, and therefore are all included in the GCI. The Motor Scale, though overlapping somewhat with other scales, is very unique in that it includes three noncognitive gross motor tests. The scores obtained for each child are: the General Cognitive Index, a standard score with a mean of 100 and a standard deviation of 16; Scale Indexes (standard scores with a mean of fifty and a standard deviation of 10) on each of the five specific scales; and a rating of the child's hand dominance based on observations during the administration of the Motor tests.

The tests are grouped in a variety of combinations, with several appearing on the two of the five scales, McCarthy (1972) describes these as follows:

1. Verbal: Consists of five measures of verbal expression and verbal concept formation, including Pictoral Memory, that asks the child to recall a series of pictures named by the examiner; Word Knowledge consisting of two parts: receptive language and picture vocabulary (part one) and defining words (part two); Verbal Memory requiring the child to repeat a series of words or sentences (part one) and retell a story after the examiner has told it (part two); Verbal Fluency in which the child names objects in a catagory within a time limit; and Opposite Analogies where the child completes sentences with an appropriate opposite word.

2. Perceptual-Performance: Consists of seven measures of perceptual and spatial abilities and nonverbal reasoning including Block Building, in which the child copies formations of blocks; Puzzle Solving, requiring the child to put together a series of simple colorful puzzles; Tapping Sequence, in which the child copies a series of notes on a toy xylophone; Right-Left Orientation, given only to children above five years who are asked to differentiate right and left on oneself and on a picture of a boy; Draw-A-Design, asking the child to copy a series of geometric designs; Draw-A-Child, where a child draws a picture of a child who is the same sex as self; and Conceptual Grouping, a logical classification task on which the child sorts brightly colored blocks on the basis of size (large and small), shape (circle and square), and color (three colors).

3. Quantitative: Consists of three measures of facility with numbers, basic pre-arithmetic concepts, and arithmetic reasoning, including, Number Questions, requiring the child to solve oral arithmetic problems; Numerical Memory, in which

the child recalls simple digits, including digits forward (part one) and digits reversed (part two); and Counting and Sorting, requiring the child to count blocks and sort them into equal groups, and display knowledge of such concepts as "each" and ordinal numbers.

4. Memory: Consists of four measures of short term auditory and visual memory from the first three scales; Pictoral Memory, Tapping Sequence, Verbal Memory, and Numerical Memory.

5. Motor: Consists of five measures of fine and gross motor coordination, including two tasks from the the Perceptual-Performance Scale (Draw-A-Design and Draw A Child), plus Leg Coordination, requiring the child to perform gross motor tasks, such as walking a straight line, standing on one foot, and skipping; Arm Coordination, requiring the child to bounce a ball, (part one), catch a bean bag (part two), and throw a bean bag at a target (part three); and Imitative Action, requiring the child to copy a series of the examiner's movements, such as twiddling thumbs and looking through a tube.

Vineland

The Vineland is an adaptive behavior scale. Doll (1935) defined adaptive behavior as, the performance of the daily activities required for personal and social sufficiency. Adaptive behavior is age related. Adaptive behavior increases and becomes more complex as a person grows older. For

younger children, activities such as dressing and getting along with playmates are important; for adults, holding a job and managing money are necessary. Adaptive behavior is defined by the expectations of other people. The adequacy of a person's adaptive behavior is judged by those who live, work, and interact with an individual. Adaptive behavior is defined by typical performance not ability. For example, if a child can reiterate rules of safety in street crossing but has never crossed a street, then the behavior is considered inadequate (Kaufman & DiCuio, 1975).

Edgar A. Doll, the author of the Vineland Social Maturity Scale (1935, 1965) was a major pioneer in the objective assessment of adaptive behavior. His view was that social competency should be compared with intellectual functioning, measured by instruments like the Binet Scales. In his six criteria of mental deficiency, Doll, (1954), listed social competence as the first and most important. He also broadened the concept of adaptive behavior to include a wide range of areas and domains. He classified six different catagories on his scale: (1) self-help, (2) eating, (3) self-direction, (4) socialization, (5) locomotion, and (6) occupation.

From the 1930s to the 1960s, IQ scores dominated the classification of mental retardation. In 1973, 1977, and 1983 the American Association of Mental Deficiency published several revised editions of its manual, which included deficits of adaptive behavior and intelligence as criteria for diagnosis of mental retardation (Grossman, 1973). Heber (1959, 1961), and Grossman (1973, 1977, 1983), have stated that deficits in adaptive behavior, as well as intelligence must be

substantiated before a person is classified as mentally retarded. Since the passage of P.L. 94-142, stringent guidelines for the assessment of handicapped children, including adaptive behavior, were clearly specified in the law (Patrick & Reschly, 1982).

Data Collection

For this study the following procedure was utilized. The McCarthy and the Vineland were administered to the students in September for the pretest and in June for the posttest. School psychologists, teachers, and graduate students were recruited to conduct pre and posttests. The graduate student volunteers who tested the students were completing their practicum in school psychology. Teachers were assigned to assess the students on the Vineland. Parents helped with any background information that was necessary for the Vineland. Several school psychologists and graduate students were assigned to conduct the pre and posttesting of the McCarthy Scales. Psychologists, teachers and graduate students attended a brief training session on the Vineland and the McCarthy Scales. It was insured during their training that the same person administer and score the pretests and posttests. The researcher scheduled time slots for students and assessors at each of the schools. Psychologists, graduate students, and teachers scored all tests. All score sheets were checked and rechecked by the researcher for addition and other possible errors. Raw scores were used for all analyses.

Data was collected at each of the schools by the researcher at the end of the pretest sessions and again at the end of the posttest sessions.

Hypotheses

There are four major hypotheses:

Hypothesis I: There are no differences in the cognitive achievement of regular education students in an integrated classroom and the cognitive achievement of regular education students in the nonintegrated classroom.

Hypothesis II: There are no differences in the cognitive achievement of special education students in an integrated classroom and the cognitive achievement of special education students in a substantially separate classroom.

Hypothesis III: There are no differences in the social achievement of regular education students in an integrated classroom and the social achievement or regular education students in a nonintegrated classroom.

Hypothesis IV: There are no differences in the social achievement of special education students in an integrated classroom and the social achievement of special education students in a substantially separate classroom.

In order to test these hypotheses the following comparisons were carried out:

Experimental Group 1 versus Control Group 1

Integrated regular education kindergarten I students were compared with segregated regular education kindergarten I students.

Experimental Group 2 versus Control Group 2

Integrated special education kindergarten I students were compared with segregated special education kindergarten I students.

Experimental Group 3 versus Control Group 3

Integrated regular education kindergarten II students were compared with segregated regular education kindergarten II students.

Experimental Group 4 versus Control Group 4

Integrated special education kindergarten II students were compared with segregated special education kindergarten II students.

CHAPTER IV

ANALYSIS OF DATA AND RESULTS

This study was conducted to ascertain whether integrated settings improved kindergarten students' cognitive and social achievment. Students were assessed on their improvement of cognitive and social achievement using standardized tests. Students in segregated and integrated settings were tested. After testing was completed, data were analyzed to test the major hypotheses. Qualitative data collected outside the established hypotheses relevant to the study are presented in this chapter. Hypothesis were tested for kindergarten I (KI), four year old students and for kindergarten II (KII), five year old students.

Kindergarten I, four year old students will be discussed first.

Kindergarten I

Hypothesis 1

Hypothesis 1 states there are no differences in the cognitive achievement of regular education students in an integrated classroom and the cognitive achievement of regular education students in the nonintegrated classroom.

Regular education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School

were compared with regular education students in a nonintegrated classroom at the Lucy Stone School. The chart of the raw data showing the results of all testing completed for kindergarten I students is provided in Appendix C. Status were assigned to each group for computer purposes.

Status 1 students were regular education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 3 students were the control group of regular education students in a nonintegrated classroom at the Lucy Stone. A one way analysis of variance comparing the change scores on the McCarthy Scale was carried out. The letter N represents the number of students tested. When the scores of Status 1 students were compared with Status 3 students the following differences were found:

TABLE 1. Comparison of Change Scores for Integrated Regular Students and Segregated Regular Students on the McCarthy Scales for KI

INTEGRATED			
	N	MEAN	SD
Pretest	15	129.93	21.608
Posttest	15	181.47	17.924
Change	15	51.5	62.41

SEGREGATED			
	N	MEAN	SD
Pretest	15	135.13	40.697
Posttest	15	150.07	37.688
Change	15	14.93	15.38

The mean difference of change is significant at .000

The pretest and posttest means for the children in the integrated regular K1 classroom were 129.93 and 181.47 respectively. The mean change from pretest to posttest was 51.50. For the segregated group, the pre and posttest means were 135.13 and 150.07 respectively; the mean change was 14.93. The analysis of variance indicated that there is a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the cognitive achievement of regular education students taught in an integrated versus a segregated classroom. Kindergarten I regular education students taught in an integrated classroom improve significantly more on a test of cognitive achievement than those taught in a segregated classroom.

Hypothesis II

Hypothesis II states there are no differences in the cognitive achievement of special education students in an integrated classroom and the cognitive achievement of special education students in a substantially separate classroom.

Special education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with special education students in segregated (special education only) classrooms at the Joseph Lee and John Marshall Schools.

The chart of the raw data showing the results of all testing completed for kindergarten I students is provided in Appendix C.

Status 2 students were special education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 4 students were the control group of special education students in a segregated (special education only) classroom at the Joseph Lee and John Marshall. A one way analysis of variance comparing the change scores on the McCarthy Scale was carried out. When the scores of Status 2 students were compared with Status 4 students the following differences were found:

TABLE 2. Comparison of Change Scores for Integrated Special Students and Segregated Special Students on the McCarthy Scales for KI

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	6	73.167	20.154	Pretest	10	89.5	19.512
Posttest	6	115.833	18.702	Posttest	10	104.5	21.48
Change	6	42.6	8.36	Change	10	18.8	8.2

The mean difference of change is significant at .000

The pretest and posttest means for the special needs children in the integrated K1 classroom were 73.167 and 115.833 respectively. The mean change from pretest to posttest was 42.6. For the segregated group, the pre and

posttest means were 89.5 and 104.500 respectively; the mean change was 18.8. The analysis of variance indicated that there is a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the cognitive achievement of special education students taught in an integrated versus a segregated classroom.

Kindergarten I special education students taught in an integrated classroom improve significantly more on a test of cognitive achievement than KI students taught in a segregated classroom.

Hypothesis III

Hypothesis III states there are no differences in the social achievement of regular education students in an integrated classroom and the social achievement or regular education students in a nonintegrated classroom.

Regular education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with regular education students in a nonintegrated classroom at the Lucy Stone School. The chart of the raw data showing the results of all testing completed for kindergarten I students is provided in Appendix C.

Status 1 students were regular education students participating in the experimental pilot integrated program at

the Patrick O'Hearn. Status 3 students were the control group of regular education students in a nonintegrated classroom at the Lucy Stone. A one way analysis of variance comparing the change scores on the Vineland was carried out.

When the scores of Status 1 students were compared with Status 3 students the following differences were found:

TABLE 3. Comparison of Change Scores for Integrated Regular Students and Segregated Regular Students on the Vineland Scales for K1

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	15	5.518	0.475	Pretest	15	5.351	0.584
Posttest	15	7.737	0.716	Posttest	15	6.006	0.992
Change	15	2.22	23.94	Change	15	0.66	0.41

The mean difference of change is significant at .000

The pretest and posttest means for the children in the integrated regular K1 classroom were 5.518 and 7.737 respectively. The mean change from pretest to posttest was 2.22. For the segregated group, the pre and posttest means were 5.351 and 6.006 respectively; the mean change was .66. The analysis of variance indicated that there was a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the social achievement of regular education students taught in an integrated versus a segregated classroom. Kindergarten I regular education students taught in an integrated classroom improved significantly more on a test of social achievement than those taught in a segregated classroom.

Hypothesis IV

Hypothesis IV states there are no differences in the social achievement of special education students in an integrated classroom and the social achievement of special education students in a substantially separate classroom.

Special education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with special education students in segregated (special education only) classrooms at the Joseph Lee and John Marshall Schools.

The chart of the raw data showing the results of all testing completed for kindergarten I students is provided in Appendix C.

Status 2 students were special education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 4 students were the control group of special education students in a segregated (special education only) classroom at the Lee and Marshall. A one way analysis of variance comparing the change scores on the Vineland was carried out. When the scores of Status 2

students were compared with Status 4 students the following differences were found:

TABLE 4. Comparison of Change Scores for Integrated Special Students and Segregated Special Students on Vineland Scales for K1

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	6	5.13	0	Pretest	10	4.9	0.595
Posttest	6	6.593	1.248	Posttest	10	6.13	0.929
Change	6	1.46	1.25	Change	10	0.23	0.725

The mean difference of change is significant at .612

The pretest and posttest means for the special needs children in the integrated K1 classroom were 5.13 and 6.593 respectively. The mean change from pretest to posttest was 1.46. For the segregated group, the pre and posttest means were 4.9 and 6.13 respectively; the mean change was .23. The analysis of variance indicated that there was not a significant difference in the mean of the change scores between the two groups.

Conclusion

There is no difference in the social achievement of special education students taught in an integrated versus a segregated classroom. Kindergarten I special education

students taught in an integrated classroom improved more from pretest to posttest but not significantly more on a test of social achievement than KI students taught in a segregated classroom.

Kindergarten II

Regular education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with regular education students in a nonintegrated classroom at the William Endicott School. The chart of the raw data showing the results of all testing completed for kindergarten II students is provided in Appendix D.

Hypothesis I

Hypothesis I states there are no differences in the cognitive achievement of regular education students in an integrated classroom and the cognitive achievement of regular education students in the nonintegrated classroom.

Status 1 students were regular education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 3 students were the control group of regular education students in a nonintegrated classroom at the William Endicott. A one way analysis of variance comparing the change scores on the McCarthy Scales was carried out. When the scores of Status 1 students were

compared with Status 3 students the following differences were found:

TABLE 5. Comparison of Change Scores for Integrated Regular Students and Segregated Regular Students on the McCarthy Scales for K2

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	14	164.714	30.838	Pretest	15	159.917	19.496
Posttest	14	187.143	33.713	Posttest	15	173.333	23.623
Change	14	22.42	13.29	Change	15	13.42	10.15

The mean difference of change is significant at .074

The pretest and posttest means for the children in the integrated regular KII classroom were 164.714 and 187.143 respectively. The mean change from pretest to posttest was 22.42. For the segregated group, the pretest and posttest means were 159.917 and 173.333 respectively; the mean change was 13.42. The analysis of variance indicated that there is not significant difference in the mean of the change scores between the two groups.

Conclusion

There is not difference in the cognitive achievement of regular education students taught in an integrated versus a

segregated classroom. Kindergarten II regular education students taught in an integrated classroom improved more on a test of cognitive achievement than those taught in a segregated classroom when looking at the improvement of change scores of the integrated group yet the difference was not considered significant.

Hypothesis II

Hypothesis II states there are no differences in the cognitive achievement of special education students in an integrated classroom and the cognitive achievement of special education students in a substantially separate classroom.

Special education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with special education students in segregated (special education only) classrooms at the Joseph Lee and John Marshall Schools. The chart of the raw data showing the results of all testing completed for kindergarten II students is provided in Appendix D.

Status 2 students were special education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 4 students were the control group of special education students in a segregated (special education only) classroom at the Joseph Lee and John Marshall. A one way analysis of variance comparing the change scores on the McCarthy Scale was carried out. When the scores of Status 2 students were compared with Status 4 students the following differences were found:

TABLE 6. Comparison of Change Scores for Integrated Special Students and Segregated Special Students on the McCarthy Scales for K2

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	5	67..200	29.44	Pretest	10	105.2	22.22
Posttest	5	123.6	36.08	Posttest	10	114.3	26.361
Change	5	56.4	18.45	Change	10	9.1	10.34

The mean difference of change is significant at .000

The pretest and posttest means for the special needs children in the integrated KII classroom were 67.200 and 123.600 respectively. The mean change from pretest to posttest was 56.4. For the segregated group, the pretest and posttest means were 105.200 and 114.300 respectively; the mean change was 9.1. The analysis of variance indicated that there was a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the cognitive achievement of special education students taught in an integrated versus a segregated classroom.

Kindergarten II special education students taught in an integrated classroom improved significantly more on a test of cognitive achievement than kindergarten II students taught in a segregated classroom.

Hypothesis III

Hypothesis III states there are no differences in the social achievement of regular education students in an integrated classroom and the social achievement or regular education students in a nonintegrated classroom.

Status 1 students were regular education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 3 students were the control group of regular education students in a nonintegrated classroom at the William Endicott. A one way analysis of variance comparing the change scores on the Vineland was carried out. When the scores of Status 1 students were compared with Status 3 students the following differences were found:

TABLE 7. Comparison of Change Scores for Integrated Regular Students and Segregated Regular Students on the Vineland Scales for K2

INTEGRATED			
	N	MEAN	SD
Pretest	14	5.401	0.534
Posttest	14	9.231	0.975
Change	14	3.83	1.26

SEGREGATED			
	N	MEAN	SD
Pretest	12	5.522	0.243
Posttest	12	7.886	1.385
Change	12	2.36	1.9

The mean difference of change is significant at 0.006

The pretest and posttest means for the children in the integrated regular KII classroom were 5.401 and 9.231 respectively. The mean change from pretest to posttest was 3.83. For the segregated group, the pre and posttest means were 5.522 and 7.886 respectively; the mean change was 2.36. The analysis of variance indicated that there was a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the social achievement of regular education students taught in an integrated versus a segregated classroom. Kindergarten II regular education students taught in an integrated classroom improve more on a test of social achievement than those taught in a segregated classroom.

Hypothesis IV

Hypothesis IV states there are no differences in the social achievement of special education students in an integrated classroom and the social achievement of special education students in a substantially separate classroom.

Special education students in the integrated classroom (experimental pilot program) at the Patrick O'Hearn School were compared with special education students in segregated (special education only) classrooms at the Joseph Lee and John Marshall Schools. The chart of the raw data showing the results of all testing completed for kindergarten II students is provided in Appendix D. Status 2 students were special education students participating in the experimental pilot integrated program at the Patrick O'Hearn. Status 4 students were the control group of special education students in a segregated (special education only) classroom at the Joseph Lee and John Marshall Schools A one way analysis of variance comparing the change scores on the Vineland was carried out. When the scores of Status 2 students were compared with Status 4 students the following differences were found:

TABLE 8. Comparison of Change Scores for Integrated Special Students and Segregated Special Students on the Vineland Scales for K2

INTEGRATED				SEGREGATED			
	N	MEAN	SD		N	MEAN	SD
Pretest	5	4.45	1.54	Pretest	10	4.6	0.73
Posttest	5	7.446	1.489	Posttest	10	5.972	1.007
Change	5	2.996	4.85	Change	10	1.31	0.55

The mean difference of change is significant at .000

The pretest and posttest means for the special needs children in the integrated K II classroom were 4.450 and 7.446 respectively. The mean change from pretest to posttest was 2.996. For the segregated group, the pretest and posttest means were 4.6 and 5.972 respectively; the mean change was 1.31. The analysis of variance indicated that there was a significant difference in the mean of the change scores between the two groups.

Conclusion

There is a difference in the social achievement of special education students taught in an integrated versus a segregated classroom.

Kindergarten II special education students taught in an integrated classroom improved significantly more on a test of social achievement than kindergarten II students taught in a segregated classroom.

Both regular and special students achieve more on a test of social achievement when taught in integrated classrooms.

Results

Kindergarten I

The kindergarten I integrated regular education experimental groups' change scores were significantly higher in both cognitive and social testing. The kindergarten I integrated special education experimental groups' change scores were significantly higher in cognitive testing but the analysis of variance procedure found there was no difference on the improvement of social test scores in integrated versus segregated classrooms. The integrated group improved more than the segregated group on the test of social achievement but the significance level was not high enough to reject the null hypothesis.

There are several reasons that explain these results. The experimental group had two teachers. These teachers were chosen among a pool of excellent candidates to team teach in the pilot program. Their expertise and enthusiasm were repeated to the researcher throughout interviews of the parents, teachers and the administration. The two teachers taught 1/2 day kindergarten to two groups (morning and afternoon) of 16 students. The total number of students in the KI pilot program was 32. There were 13 regular education students and three special needs students in the morning session. There were also 16 students in the afternoon session

twelve regular education students and four special needs students. Of the 25 regular education students in the pilot program, 15 were tested and compared with 15 regular education students in the control group. Ten students were taken from the morning session and five were taken from the afternoon session. Preschool students tend to score better in the morning than the afternoon.

The control regular education group had only a single teacher. There were 17 students in the morning session, two of whom did not get permission to participate. These two were enrolled when the testing sessions were over. The reason this class was chosen as a control group was because of the small teacher student ratio which was originally 1:15. Most kindergarten classes had a ratio of 1:25, teacher/student ratio. The teacher for this class was a veteran who had taught in the system for over 25 years. The racial make up was generally the same. The students came from the same geographic area. The teacher/student ratio could be a factor influencing the scores. Self-esteem of the students that was evident in cooperative learning and peer tutoring situations may have contributed to the differences. Positive self-esteem of students shown throughout the year during observations and through social assessment could be a factor in improving academic achievement. Extraneous variables such as history and maturation will naturally have an effect. Another extraneous variable, positive expectation of the teacher may have an influence. It was possible integration may have had a positive effect on teachers and in turn motivated the teachers.

Kindergarten II

Both regular and special education students achieved more on a test of social achievement when taught in an integrated classroom. Special education students achieved more on a test of cognitive achievement when taught in an integrated classroom. Regular education students' test scores on cognitive achievement improved when taught in an integrated setting but not to an acceptable significance in order to reject the null hypothesis. The mean difference of the change scores was higher in the integrated classroom.

There are several reasons that explain these results. The teacher/student ratio for this particular experimental group was 2:21. There were two severely handicapped students who were unable to be tested quantitatively on these standardized instruments. There was a paraprofessional assigned to help with the severely handicapped students. Fourteen regular education students and five special education students were tested from this group The control group's teacher/student ratio was 1:13. There was one student not tested from this group. This student started school after the study was initiated.. Both experimental and control groups, special and regular were all day kindergartens. Teachers in both experimental and control groups were young and enthusiastic about their classes. The teachers from the experimental group were chosen from a group of well qualified candidates for the new integrated pilot program. The regular and special education teachers from the control groups were hired through

the normal hiring process. In the normal hiring proces, teachers are selected from the seniority pool. The racial makeup of the regular education control group was slightly different. This control group had 87% minorities where the experimental group of regular education students had 75% minorities. The testing instruments chosen have shown to be completely racially nonbiased. The students came from the same geographic area. Again, most students were tested in the morning. The quality of teaching and teaching methods for all groups could have been confounding variables. Expectations of the teachers for all the kindergarten groups could have been one of the confounding variables. For the experimental group, the positive self-esteem shown throughout the year during observations and through the social assessment could have been a factor in improving the academic achievement. History and maturation must also be taken into consideration as extraneous variables. For many students, this was their first school experience.

Limitations

There were many general limitations to this study. This is an urban system which is approximately twenty-five percent special education. The needs of an urban system cannot be generalized. Also, urban systems service a wide array of special needs students which cannot be generalized to other populations. The supports needed to have a unitary system for this population would be different than any other.

There were several specific limitations to the study.

The first was the selection of subjects. Special needs subjects in the experimental pilot were not selected randomly. Bias may have occurred by selecting only those students whose parents were interested in the model program. Parental approval was one of the criteria. Second, was the recruitment of staff. The selection of teachers was not through the seniority pool. A new principal was hired specifically for the implementation of the model program. Teachers were selected by a screening committee. The new principal was selected by the zone superintendant. There were special and regular education teachers who did not believe in integration, however, none of these teachers were selected to teach in the model program. The Advisory Committee felt strongly that parental approval and commitment by teachers and the principal would be major components of the success of the pilot program. Third, the special needs students counterparts in substantially separate classes, even though their assignment was random, were selected on the basis of the same age, geographical area, disability, cognitive level, social level, and socio-economic status. The teachers and early childhood liasons were asked to select students who most closely matched the students in the pilot program on the variables mentioned. Fourth, the teacher/student ratio may have been a factor of limitation.

When a pre/post test design is used there exists a possibility of statistical regression.

A major external validity factor which might have affected this research is the Hawthorne Effect. The teachers and principal were selected because of their philosophy, expertise and enthusiasm toward integration.

CHAPTER V

RECOMMENDATIONS

Chapter 766 (1986), the Massachusetts state law, defines a special needs child as: "A child because of temporary or more permanent adjustment difficulties or attributes arising from intellectual, sensory, emotional, or physical factors, cerebral dysfunctions, perceptual factors or other specific learning impairments, or any combination thereof, is unable to progress effectively in a regular education program and requires special education." This broad definition, has had a major effect on the escalating numbers of students referred to special education.

In Boston, the special education population has grown in the past ten years by 1,210 students at a time when total enrollment decreased by 8,635. Meanwhile students entering substantially separate programs grew 9 percent a year. According to the Boston Municipal Research Bureau, (1990) it costs approximately $5000 for each regular education student; $5800 for each bilingual student; and $15,361 for each special education student.

Special education has increased yet this study indicates that there may be a better way to educate children in Boston.

Creating effective schools requires the realization that the structure and climate of a school can make the difference to successful student functioning. Educators have identified a number of variables contributing to school effectiveness (i.e. class size). The experimental pilot program had many of these

variables. One of these variables, the recognition of the principal being the school leader, setting clear goals toward academic achievement, creating a predictable, orderly learning environment where there were high expectations and a value on diversity was extremely clear for the experimental group. These variables may have biased the research but the question that was most important to be answered was: What constitutes the best educational practice for all students?

The option of full integration should be available in each zone. System wide and school based strategies need to be developed. Specific recommendations from regular education need to be initiated. Integration has been shown at the kindergarten level to be very positive both cognitively and socially. Additional information which would clarify issues in this pilot study should be initiated for future studies.

Strategies for School Personnel

An integration subcommittee has been formed to develop recommendations to further integration of students with disabilities as a result of this pilot study. School personnel need to:

1. Develop a document which would demonstrate a system-wide commitment to integration and contain the specific benefits of integration discussing the differences between integration and mainstreaming;

2. Develop a document with specific goals and timelines that would significantly impact on the system;

3. Based on the goals and timelines developed, initiate timely, systematic, comprehensive training for all parties affected by integration, also ongoing professional development and training should occur to assure longitudinal access and expertise;

4. Staffing and class sizes which are critical components should be based on individual needs of students.

Suggestions For Future Studies

This project has provided useful information about kindergarteners performance in integrated and segregated classes. The following suggestions are made for future studies:

1. This study should be replicated using a random sample. Such a study would provide more accurate data and provide information to whether full integration should be a widespread practice.

2. A longitudinal study should be conducted with this same group to compare the increase or decrease in cognitive and social achievement over time.

3. A qualitative study should be conducted using daily logs as well as the results from questionnaires and surveys. The information provided through this study could reach all those involved at a specific school and their feelings about integration and how it is actually working.

APPENDIX A

LETTERS OF APPROVAL TO CONDUCT RESEARCH

IN THE BOSTON PUBLIC SCHOOL SYSTEM

BOSTON PUBLIC SCHOOLS

DIVISION OF PLANNING AND RESOURCE ALLOCATION

RESEARCH PROPOSAL NOTIFICATION FORM

The research proposal described below has been:

_x_ APPROVED ____ DISAPPROVED

Maryellen Donahue

Maryellen Donahue, Director
Office of Research & Development

Name of Researcher: Cornelia Costello

Affiliation: University of Massachusetts - Amherst

Title of Proposed Research Project: The Comparison of Student Cognitive and Social Achievement in INtegrated Versus Substantially Separate Classes in the Boston Public Schools

Comments:

OFFICE OF RESEARCH & DEVELOPMENT

RESEARCH PROPOSAL REVIEW FORM

Enclosed please find a proposal to conduct educational research in the Boston Public Schools. If we approve this study your zone/school would be directly involved. This document is being sent to you for your input. Please return this completed form directly to my office. Thank you.

Comments:

Maryellen Donahue

Maryellen Donahue, Director
Office of Research and Development
726-6200 x5800

Name of Researcher: Cornelia Costello

Affiliation: University of Massachusetts

Title of Proposed Research Project: The Comparison of Student Cognitive and Social Achievement in Integrated Versus Substantially Separate Classes in the Boston Public Schools

Topic of Proposed Research: SPED

REVIEWER: (check one) _____ SUPPORT _____ REJECT

Reasons: _____

Signature: _____

Please Print Your Name: Clifford B. Janey

Please check one:

Zone Superintendent Zone EAST

Headmaster/Principal School _____

Other Department _____

OFFICE OF RESEARCH & DEVELOPMENT

RESEARCH PROPOSAL REVIEW FORM

Enclosed please find a proposal to conduct educational research in the Boston Public Schools. If we approve this study your zone/school would be directly involved. This document is being sent to you for your input. Please return this completed form directly to my office. Thank you.

Comments:

Maryellen Donahue

Maryellen Donahue, Director
Office of Research and Development
726-6200 x5800

Name of Researcher: Cornelia Costello

Affiliation: University of Massachusetts

Title of Proposed Research Project: The Comparison of Student Cognitive and Social Achievement in Integrated Versus Substantially Separate Classes in the Boston Public Schools

Topic of Proposed Research: SPED

REVIEWER: ✓ (check one) ✓ SUPPORT ___ REJECT

Reasons: _____

Signature: William Henderson

Please Print Your Name: William Henderson

Please check one:

Zone Superintendent — Zone East

Headmaster/Principal ✓ — School O'Hearn

Other — Department _____

OFFICE OF RESEARCH & DEVELOPMENT

RESEARCH PROPOSAL REVIEW FORM

Enclosed please find a proposal to conduct educational research in the Boston Public Schools. If we approve this study your zone/school would be directly involved. This document is being sent to you for your input. Please return this completed form directly to my office. Thank you.

Comments:

Maryellen Donahue

Maryellen Donahue, Director
Office of Research and Development
726-6200 x5800

Name of Researcher: Cornelia Costello

Affiliation: University of Massachusetts

Title of Proposed Research Project: The Comparison of Student Cognitive and Social Achievement in Integrated Versus Substantially Separate Classes in the Boston Public Schools

Topic of Proposed Research: SPED

REVIEWER: (check one) _____ SUPPORT _____ REJECT

Reasons: _____

Signature: E.T Leo M Howard

Please Print Your Name: Leo M. Howard E.L.

Please check one:

Zone Superintendent — Zone East

Headmaster/Principal — School W. E Endicott

Other — Department _____

OFFICE OF RESEARCH & DEVELOPMENT

RESEARCH PROPOSAL REVIEW FORM

Enclosed please find a proposal to conduct educational research in the Boston Public Schools. If we approve this study your zone/school would be directly involved. This document is being sent to you for your input. Please return this completed form directly to my office. Thank you.

Comments:

Maryellen Donahue

Maryellen Donahue, Director
Office of Research and Development
726-6200 x5800

Name of Researcher: Cornelia Costello

Affiliation: University of Massachusetts

Title of Proposed Research: The Comparison of Student Cognitive and Social Achievement in Integrated Versus Substantially Separate Classes in the Boston Public Schools

Topic of Proposed Research: SPED

REVIEWER: (check one) ✓ SUPPORT ____ REJECT

Reasons: _____

Signature: Jacqueline J. Hogan

Please Print Your Name: Jacqueline J. Hogan

Please check one:

Zone Superintendent — Zone East

Headmaster/Principal ✓ — School Lucy Stone

Other — Department _____

APPENDIX B

LETTERS TO PARENTS AND SPECIAL EDUCATION TEACHERS

BOSTON PUBLIC SCHOOLS

SPECIAL EDUCATION

September 25, 1989

Dear Parent of

This year the O'Hearn school in Dorchester has implemented a model kindergarten integration program where there are special needs learners and regular education learners in the same classroom.

The overall goal of the model integrated program is to help all children learn and succeed in the larger community environment. The school will create a stimulating and supportive learning environment for all students. Real life expectations will naturally occur while disabled and nondisabled learn together and learn from each other, while enhancing social and academic growth.

Strong parent involvement and community support will be key factors in the success of the new program.

We would like to compare the academic and social achievement of both the special needs and typical students to their peers in special needs only classes and regular education typical kindergarten classes. The students will be given the normal kindergarten screening and a social skills screening at both the beginning and the end of the year.

We would like your permission to have your child be part of this research. The names of students <u>will</u> <u>not</u> be used so that their privacy is protected.

Thank you for your cooperation. Boston Public Schools wants to be able to gain knowledge about the best programs practices for all children. It is only through research that this is possible.

If you have any questions, please call 726-6200 x5966.

Sincerely,

Nelia Costello

Nelia Costello
Program Advisor
Special Education

Please sign and return as soon as possible.

I give my permission to have my (son/daughter)

_____ be part of the research.

child's name

Signature _____

parent/guardian

BOSTON PUBLIC SCHOOLS

SPECIAL EDUCATION

November 29, 1990

Dear Parent of

As you know your child has been tested prior to school starting for the normal kindergarten screening.

Thank you for giving your consent to have your child tested at both the beginning and end of the year.

During our meetings prior to school opening the pilot program was explained. As you know in order to see what gains have been made by the pilot program, the children will be tested again in June.

The students will be given an academic and a social test. Even though these were explained at the meeting. I would like to make it clear for those who may not have been able to attend.

The social test for the kindergarten children includes activities such as dressing and getting along with playmates. How the child is performing now compared to the end of the year is important.

I hope in signing the consent that it was understood that at <u>any time</u> you can choose <u>not</u> to participate in the testing. You can end their participation without having any impact in their program. Tests of groups will be compared not individuals. As was agreed upon in advance, only numbers will be used not names. Names connected with numbers will be kept in a locked file and destroyed at the end of the pilot study.

If you have any questions about the testing that you feel have not been fully explained please call at any time.

As we have explained at the meeting, results of this research will be shared with all of you. If you have specific questions regarding your child's performance that you do not understand please call.

Sincerely,

Nelia Costello

Nelia Costello
Program Advisor
Special Education

BOSTON PUBLIC SCHOOLS

SPECIAL EDUCATION

Dear _____:

Thank you so much for your willingness to participate in the research for the model kindergarten integration program at the O'Hearn school.

I am enclosing a letter to the parents of the students you will be testing. I would be very helpful if you were able to call the parents or send a note home from you endorsing and supporting the project. Better program design for all students is the goal for all. Screening instruments will be used within the first month of school then again at the end of the school year. The screening instruments used are the McCarthy and the Vineland.

If there are any questions, please call me either at work 442-1184 or at home after 7:00 p.m. 825-2876.

Your cooperation if thoroughly appreciated.

Sincerely,

Nelia Costello

Nelia Costello
Program Advisor
Special Education

APPENDIX C

KINDERGARTEN I RAW DATA

	status	mccarthy pre	mccarthy post	vineland pre	vineland post	mc/pp/diff	vin/pp/diff
1	1	100	146	5.63	6.75	46	1.12
2	1	126	205	5.13	8.45	79	3.32
3	1	153	177	5.63	8.85	24	3.22
4	1	124	181	5.13	8.05	57	2.92
5	1	115	180	5.13	7.75	65	2.62
6	1	120	178	5.63	7.75	58	2.12
7	1	127	187	5.13	8.05	60	2.92
8	1	147	197	6.15	8.85	50	2.70
9	1	111	177	5.13	6.75	66	1.62
10	1	135	171	5.13	6.75	36	1.62
11	1	105	194	6.23	8.05	89	1.82
12	1	159	210	5.13	7.75	51	2.62
13	1	169	191	6.23	7.75	22	1.52
14	1	152	181	6.23	7.75	29	1.52
15	1	106	147	5.13	6.75	41	1.62
16	2	40	92	5.13	5.13	52	0.00
17	2	71	122	5.13	5.13	51	0.00
18	2	86	128	5.13	6.75	42	1.62
19	2	88	121	5.13	7.75	33	2.62
20	2	93	138	5.13	8.05	45	2.92
21	2	61	94	5.13	6.75	33	1.62
22	3	102	120	5.13	5.63	18	0.50
23	3	124	130	5.13	5.63	6	0.50
24	3	105	146	5.13	5.63	41	0.50
25	3	176	191	6.75	8.45	15	1.70
26	3	123	137	5.13	5.63	14	0.50
27	3	118	102	5.13	5.63	-16	0.50
28	3	220	231	6.83	8.45	11	1.62
29	3	120	128	5.13	5.63	8	0.50
30	3	96	135	5.13	5.63	39	0.50
31	3	102	140	5.13	5.63	38	0.50
32	3	188	196	5.13	5.63	8	0.50
33	3	126	134	5.13	5.63	8	0.50
34	3	177	193	5.13	5.63	16	0.50
35	3	170	168	5.13	5.63	-2	0.50
36	3	80	100	5.13	5.63	20	0.50
37	4	82	113	5.13	5.63	31	0.50
38	4	74	94	3.83	5.63	20	1.80
39	4	77	81	5.13	5.63	4	0.50
40	4	67	88	5.13	5.63	21	0.50
41	4	82	100	3.83	5.13	18	1.30
42	4	96	110	5.13	6.15	14	1.02
43	4	127	158	5.13	6.15	31	1.02
44	4	80	91	5.13	6.15	11	1.02
45	4	91	110	5.63	8.45	19	2.82
46	4	119	100	5.13	6.75	19	1.62

APPENDIX D

KINDERGARTEN II RAW DATA

	status	mccarthy pre	mccarthy post	vineland pre	vineland post	mc/pp/diff	vin/pp/diff
1	1	159	192	3.83	10.30	33	6.47
2	1	177	172	5.63	8.45	-5	2.82
3	1	186	203	5.63	10.30	17	4.67
4	1	123	152	5.13	8.28	29	3.25
5	1	135	182	6.03	8.05	47	2.02
6	1	117	125	5.13	8.45	8	3.32
7	1	191	218	5.63	8.45	27	2.82
8	1	208	234	5.13	10.30	26	5.17
9	1	176	203	5.63	8.85	27	3.22
10	1	199	238	5.13	10.30	39	5.17
11	1	171	186	5.83	10.30	15	4.47
12	1	178	201	5.63	10.30	23	4.67
13	1	173	181	5.63	8.45	8	2.82
14	1	113	133	5.63	8.45	20	2.82
15	2	28	91	2.03	5.13	63	3.10
16	2	88	119	5.63	8.45	31	2.82
17	2	87	155	5.13	8.45	68	3.32
18	2	90	166	5.63	8.45	76	2.82
19	2	43	87	3.83	6.75	44	2.92
20	3	140	153	5.63	8.45	13	2.82
21	3	167	199	5.63	8.45	32	2.82
22	3	176	181	5.63	6.15	5	0.52
23	3	194	210	5.63	8.45	16	2.82
24	3	185	201	5.63	8.45	16	2.82
25	3	152	161	5.13	6.15	9	1.02
26	3	137	149	5.13	6.15	12	1.02
27	3	144	152	5.63	9.03	8	3.40
28	3	167	177	5.63	8.45	10	2.82
29	3	136	134	5.13	6.15	-2	1.02
30	3	171	180	5.83	10.30	9	4.47
31	3	150	183	5.63	8.45	33	2.82
32	4	115	121	5.13	6.15	6	1.02
33	4	134	140	5.13	6.15	6	1.02
34	4	82	102	3.83	5.13	20	1.30
35	4	117	137	5.13	6.15	20	1.02
36	4	91	88	3.83	5.13	-3	1.30
37	4	82	99	3.83	5.13	17	1.30
38	4	93	105	5.13	6.15	12	1.02
39	4	123	127	5.13	6.15	4	1.02
40	4	136	155	5.63	8.45	19	2.82
41	4	79	69	3.83	5.13	-10	1.30

APPENDIX E

SPECIAL NEEDS CODING SYSTEM

SPECIAL NEEDS
CODING SYSTEM

	Services
A	Supportive Academic Remediation (SAR)
B	Learning Adaptive Behavior (LAB)
C	Supportive Academic Remediation w/Resource Services
D	Developmental Day Care (DDC)
E	Early Childhood
F	Support Academic Remediation/Pre Voc.
G	Learning Disabilities w/Resource Services
H	Hearing Impaired
I	Integrated Setting/Reintegration
J	LAB / LD
K	Diagnostic Setting
L	Learning Disabilities (LD)
M	Multi Handicapped
N	Learning Adaptive Behavior w/Resource Service
O	Educational and Social Development
P	Physically Handicapped
Q	LAB Cluster / McKinley
R	Resource Room
S	Speech
T	Talented and Gifted/Learning Disabilities
U	Language Base/Learning Disabilities
V	Vision
W	Aphasic
X	Autistic
Y	Primary Transitional
Z	Hard of Hearing

BIBLIOGRAPHY

Adams, A., Affleck, J., Lowenbraun, S., & Madge, S. (1988). Integrated classroom versus resource model: Academic viability and effectiveness. Exceptional Children, 4, 339-348.

Affleck, J.Q., Madge, S., Adams, A. (1988). Integrated model versus resource model: Academic viability and effectiveness. Exceptional Children, 54, (4), 330-348.

Allen, K.E., Benning P.M., & Drummond, T.W. (1972). Integration of normal and handicapped children in a behavior modification preschool: A case study. In G. Semb (Eds.), Behavior analysis and education. Lawrence, KS: University of Kansas Press.

Apollini, T., Cooke, T. (1975). Peer behavior conceptualized as a variable influencing infant and toddler behavior. American Journal of Orthopsychiatry, 1, 4-17.

Apolloni, T., & Cooke, T.P. (1978). Integrated programming at the infant, toddler and preschool levels. In M.J. Guarlnick (Eds.), Early intervention and the integration of handicapped and nonhandicapped children. Baltimore: University Park Press.

Ball, S.H., & Bogatz, G.A. (1973). Research on Sesame Street: Some implications for compensatory education. In Compensatory Education for Children, Ages 2 to 8. Edited by Julian C. Stanley. Baltimore: Johns Hopkins University Press.

Ballard, M., Corman, L., Gottlieb, J., & Kaufman, M.J. (1977). Improving the social status of mainstreamed retarded children. Journal of Educational Psychology, 69, 605-611.

Baum, D., Wells, C. (1985). Promoting handicapped awareness in preschool children. Teaching Exceptional Children, 23, 282-287.

Berres, M.S., & Knoblock, P. (1987). Program models for mainstreaming: Integrating students with moderate to severe disabilities. Rockville, MD: Aspen Publishers, Inc.

Bilken, D. (1985). Achieving the complete school: Strategies for effective mainstreaming. New York: Teachers College.

Birch, J.W. (1974). Mainstreaming: Educable mentally retarded children in regular classes. Minneapolis: University of Minnesota Leadership Training Institute/Special Education.

Blatt, B. (1973). Souls in extremis: An anthology on victims and victimizers. Boston: Allyn & Bacon.

Blatt, B. (1981). In and out of mental retardation: Essays on educability, disability and human policy. Austin, TX: Pro-Ed.

Board of Education of Henrick Hudson Central School District v. Rowley, 458 U.S. 176, 102 S.Ct. 3034, 73, 2d 690 (U.S.S. Ct. 1982).

Bogden, R., & Taylor, S. (1982). Inside out: The social meaning of mental retardation. Toronto: University of Toronto Press.

Boston Municipal Research Bureau, (personal communication, December 30, 1990).

Boston Public Schools, (1975). Special education: End of the year report. Unpublished manuscript.

Brady, M.P., Shores, R.E., Gunter, P., McEvoy, M.A., Fox, J.J., & White, C. (1984). Generalization of an adolescent's social interaction behavior via multiple peers in a classroom setting. Journal of the Association for Persons with Severe Handicaps, 9, 278-286.

Brinker, R., & Thorpe, M. (1984). Integration of severely handicapped students and the proportion of IEP objectives achieved. Exceptional Children, 51 (2), 168-175.

Brown v. Board of Education of Topeka. 347 U.S. (1954).

Brown, L., Wilcox, B., Santag, E., Vincent, B., Dodd, N., & Gruenwald, L. (1977). Towards the realization of the least restrictive educational environment for severely handicappped students. Journal of the Association of Persons with Severe Handicaps, 2 (4), 195-201.

Bryan, T.S. (1974). Peer popularity of learning disabled children. Journal of Learning Disabilities, 7, 621-625.

Bryan, T.S. (1976). Peer popularity of learning disabled children: A replication. Journal of Learning Disabilities, 9, 307- 311.

Bryan, T.S. (1978). Social relationships and verbal interactions of learning disabled children. Journal of LearningDisabilities, 11, 107-115.

Burgdorf, R.L., Jr. (1975). The doctrine of the least restrictive alternative. Unpublished manuscript. Columbia, SC: Council for Handicapped People.

Buttram, J.L. & Kershner, K.M. (1988). Special education in America's cities: A descriptive study. Philadelphia: Research for Better Schools.

Cain, L., Melcher, J., Johns, B., Ashmore, J., Callahan, C., Draper, I., Beveridge, P., & Weintraub, F. (1984). Reply to "a nation at risk." Exceptional Children, 50, 484-494.

Campbell v. Talladega County Board of Education and the Board of Education of the State of Alabama. 518F. Supp. 47 (N.D. Ala. 1981).

Commonwealth of Massachusetts, Department of Education. Chapter 766 (1986), p.1.

Commonwealth of Massachusetts, Department of Education. Status of educational collaboratives. July, 1983, p.27.

Commonwealth of Massachusetts Senate Committee on Post Audit and Oversite, (1985), p.152.

Commonwealth of Massachusetts, Department of Education. End of the year report, fiscal year, 1988.

Commonwealth of Massachusetts, Department of Education, (personal communication July 27, 1989).

Cooke, T.P., Apolloni, T., & Cooke, S.A. (1977). Normal preschool children as behavior models for retarded peers. Exceptional Children, 43, 531-532.

Cosden, M.A. (1989). Expanding the role of special education. Teaching Exceptional Children, Winter, 4-7.

Council of Great City Schools, (1986). Special education: Views from America's cities. Washington, DC: Author.

Davis, W.E. (1982, April). I'm glad you finally asked: Students' reactions to their special education program experiences. Paper presented at the international conference of The Council for Exceptional Children, Houston,TX.

Davis, W.E. (1989). The regular education initiative debate: It's promises and problems. Exceptional Children, 55 (5), 440- 446.

DeAvila, E. (1976). Mainstreaming ethnically and linguistically different children: An exercise in paradox or a new approach? In R.I. Jones (Eds.). Mainstreaming and the minority child. Reston, VA: Council for Exceptional Children.

Doll, E.A. (1935). A genetic scale of social maturity. American Journal of Orthopsychiatry, 5, 180-188.

Doll, E.A. (1953). The measurement of social competence. Minneapolis: Educational Test Bureau.

Doll, E.A. (1965). Vineland Social Maturity Scale. Circle Pines, MN: American Guidance Service.

Donaldson, J. (1980). Changing attitudes toward handicapped persons: A review and analysis of research. Exceptional Children, 46, 504-514.

Donder, D., & Neitupski, J. (1981). Nonhandicapped adolescents teaching playground skills to their mentally retarded peers: Toward a less restrictive middle school environment. Education and Training of the Mentally Retarded, 16, 270-276.

Edgar, E. (1987). Secondary programs in special education: Are many of them justified? Exceptional Children, 53, 535-561.

Edgar, E. (1988, March). New directions for education as an intervention for quality of life. Paper presented at the international conference of the Council for Exceptional Children, Washington, DC.

Education for All Handicapped Children Act of 1975 (P.L. 94-142). 20 U.S.C. Enacted November 29, 1975.

Elder, J.K., Conley, R.W., & Noble, J.H., Jr. (1986). The service system. In W.E. Kiernan & J.A. Stark (Eds.), Pathways to employment for adults with developmental disabilities, (pp. 53-66). Baltimore: Paul H. Brookes.

Fiedler, C., Simpson, R. (1987). Modifying the attitudes of nonhandicapped high school students toward handicapped peers. Exceptional Children, 4, 342-349.

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

Gartner, A., & Lipsky, D.K. (1989, June). Equity and excellence for all students. Written testimony presented to the National Council on Disability, Washington, DC.

Gent, P.J., Mulhauser, M.B. (1988). Public integration of students with handicaps: Where it's been, where it's going and how it's getting there. Journal for the Association of Persons with Severe Handicaps, 13 (3), 188-196.

Gerber, M.M. (1988). Tolerance and technology of instruction: Implications for special education reform. Exceptional Children, 54, 309-314.

Gersten, R., Walker, H., Darch, C. (1988). Relationship between teachers' effectiveness and their tolerance for handicapped students. Exceptional Children, 54, 433-438.

Goodman, H., Gottlieb, J., & Harrison, R.H. (1972). Social acceptance of EMR's integrated into a nongraded elementary school. American Journal of Mental Deficiency, 76, 412-417.

Gottlieb, J. (1975). Attitudes toward retarded children: Effects of labeling and academic performance. American Journal of Mental Deficiency, 79, 268-273.

Gottlieb, J., & Budoff, M. (1973). Social acceptability of retarded children in nongraded schools differing in architecture. American Journal of Mental Deficiency, 78, 15-19.

Gross, B., & Gross, R. (Eds.).(1985). The great school debate: Which way for American education? New York: Simon & Shuster.

Grossman, H.J. (1973). Manual on terminology and classification in mental retardation (rev.). Washington, DC: American Association on Mental Deficiency.

Grossman, H.J. (1983). Clasification on mental retardation (rev.). Washington, DC: American Association on Mental Deficiency.

Hallahan, D.P., Keller, C.E., McKinney, J.D., Lloyd, J.W., & Bryan, T. (1988). Examining the research base of the regular education initiative: Efficacy studies and the adaptive learning environment model. Journal of Learning Disabilities, 21 (1), 29-35; 55.

Harris, L., & Associates. (1986). International center for the disabled survey of disabled Americans: Bringing disabled Americans into the mainstream. New York: Author.

Heritage Foundation, (1984). The crisis: Washington shares the blame. The Heritage Foundation Backgrounder. Washington,DC: The Heritage Foundation, Spring, 1-13.

Hobbs, N. (1980). An ecologically oriented service-based system for classification of handicapped children. In E. Salzmeyer, J. Antrobus, & J. Gliak (Eds.). The eco system of the risk child. New York: Academic Press.

Iano, R.P., Ayres, D., Keller, H.B., McGettigan, J.F. & Walker, V.S. (1974). Sociometric status of retarded children in an integrative program. Exceptional Children, 40, 267-271.

In re Holly S. (1986). 1986-1987 EHLR 508: 140.

In the matter of the School District of Marathon and Marathon County Handicapped Board of Education v. Jennifer P. (1985). 1985-1986 EHLR 507: 141.

In the matter of Thomas and Jacqueline M. and Larry Barthen and Carol Kay on behalf of Patrick v. The School District of Waukesha (1984). 1984-1985 EHLR 506: 259.

Jenkins, J.R., Jewell, M., & Pious, C.G. (1990). Special education and the regular education initiative: Basic assumptions. Exceptional Children, 56 (6), 479-491.

Johnson, R.E., & Meyer, L. (1985). Program design and research to normalize peer interactions. In M.P. Brady & P.L. Gunter (Eds.), Integrating moderately and severely handicapped learners: Strategies that work, (pp. 79-101). Springfield, IL: Thomas.

Kaufman, A.S., & DiCuio, R.F. (1975). Separate factor analyses of the McCarthy Scales for groups of black and white children. Journal of School Psychology, 13, 10-18.

Kaufman, A.S. (1973 a). Analysis of the McCarthy Scales in terms of Guilford's structure of intellect model. Perceptual and Motor Skills, 36, 967-976.

Kaufman, A.S. (1973 b). Comparison of the performance of matched groups of black children and white children on the Wechsler Preschool and Primary Scale of Intelligence. Journal of Consulting and Clinical Psychology, 41, 186-191.

Kaufman, A.S. (1973 c). Comparison of the WPPSI, Stanford-Binet, and McCarthy Scales as predictors of first grade achievement. Perceptual and Motor Skills, 36, 67-73.

Kaufman, A.S. (1975). Factor structure of the McCarthy Scales at five age levels between 2 1/2 and 8 1/2. Education and Psychological Measurement, 35, 641-656.

Kaufman, A.S. & Kaufman, N.L. (1977). Research on the McCarthy Scales and its implications for assessment. Journal of Learning Disabilities, in press.

Kaufman, A.S., & Kaufman, N.L. (1977). Clinical evaluation of young children with the McCarthy Scales. New York: Grune & Stratton.

Kaufman, A.S. (1982). An integrated review of almost a decade of research on the McCarthy Scales. In T.R. Kratoch (Eds.), Advances in School Psychology, (Vol. 2, pp. 119-169). Hillsdale, NJ: Erlbaum.

Kaufman, A.S. & Kaufman, N.L. (1977). Research on the McCarthy Scales and its implications for assessment. Journal of Learning Disabilities, in press.

Kaufman, A.S. & Kaufman, N.L. (1983). K-ABC: Kaufman Assessment Battery for Children: Interpretive Manual. Circle Pines, MN: American Guidance Service.

Kaufman, M., Gottlieb, J., Agare, J., & Kukic, M. (1975). Mainstreaming: Toward an explication of the construct. In E.L. Meyer, G.A. Vergason, & R.J. Whelan (Eds.), Alternatives for teaching exceptional children. Denver: Love Publishing.

Kauffman, J.M., Gerber, M.M., & Semmel, M.I. (1988). Arguable assumptions underlying the regular education initiative. Journal of Learning Disabilities, 21 (1), 6-11.

Keough, B.K. (1988). Improving services for problem learners: Rethinking and restructuring. Journal of Learning Disabilities, 21 (1), 19-22.

Knoll, J. & Meyer, L. (1986). Principles and practices for school integration of students with severe disabilities: An overview of the literature. In M. Berres and P. Knoblock (Eds.), (in press). Managerial models of mainstreaming. Rockville, MD: Aspen.

Kregel, J. (1985). Training for community integration. Exceptional Parent, 15, 39-44.

LaVor, M.L. (1976). Federal legislation for exceptional persons: A history. In F.J. Weintraub, A. Abeson, J. Ballard, & M.L. LaVor (Eds.), Public policy and the education of exceptional children. Reston, VA: The Council for Exceptional Children.

Lessen, E., Dudzinski, M., Karsh, K., & Van Acker, R. (1989). A survey of ten years of academic intervention with learning disabled students: Implications for research and practice. Learning Disabilities Focus, 4 (2), 106-122.

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

Lipsky, D.K., & Gartner, A. (1989). The current situation. In D.K. Lipsky & A. Gartner (Eds.), Beyond special education: Quality education for all. Baltimore: Paul H. Brookes.

Mackenzie, D.E. (1983 a). Research for school improvement: An appraisal of some recent trends. Educational Researcher, 12 (4), 5-17.

Mackenzie, D.E. (1983 b). School effectiveness research: A synthesis and assessment. In P.C. Duttweiler (Eds.), Educational productivity and school effectiveness. Austin, TX: Southwest Educational Development Laboratory.

Marantz, S. (1988, April 15). Special needs: Advocates twist law, critics say. The Boston Globe. pp. 1&18.

Marburg, C.C., Houston, B.K. &Holmes, D.C. (1976). Influence of multiple models on the behavior of institutionalized retarded children: Increased generalization to other models and other behaviors. Journal of Consulting and Clinical Psychology, 44, 514-519.

Martin, E. (1976). Mainstreaming as a national policy. In P.H. Mann (Eds.), Shared responsibility for handicapped students: Advocacy and programming (pp. 13-15). Coral Gables, FL: University of Miami Training and Technical Assistance Center.

Massachusetts Advocacy Center, (1987). Out of the mainstream. Boston: Hart Printing.

Massachusetts Advocacy Center, (1967). Suffer the children. Boston: Hart Printing.

Massachusetts Advocacy Center, (1967). The way we go to school: The exclusion of children in Boston. Boston: Hart Printing.

McCarthy, D. (1972). Manual for the McCarthy Scales of Children's Abilities. NewYork: The Psychological Corporation.

McCaul, E., & Davis, W.E. (1988). Special education students' perceptions relative to the strengths, weaknesses, and efficacy of their own programs. Manuscript submitted for publication.

McGill-Franzen, A. (1987). Failure to learn to read: Formulating a policy problem. Reading Research Quarterly, 22, 475-490.

McHale, S., & Simeonsson, R. (1980). Effects of interactions on nonhandicapped childrens' attitudes toward autistic children. American Journal of Mental Deficiency, 85, 18-27.

Mesinger, J.F. (1985). Commentary on: A rationale for the merger of special and regular education, or, is it now time for the lamb to lie down with the lion? Exceptional Children, 51, 510-512.

Meyen, E.L. (1978). Exceptional children and youth. Denver: Love Publishing.

Meyen, E.L. (1989) Quality instruction for students with disabilities. Teaching Exceptional Children, Winter, 12-13.

Meyer, L.H., & Kishi, G.S. (1985). School integration strategies. In K.C. Lakin & R.H. Bruininks (Eds.), Strategies for achieving community integration of developmentally disabled citizens (pp. 231-252). Baltimore: Brookes.

Meyer-Voeltz, L., Johnson, R.E., & Mcquarter, R.J. (1983). The integration of school aged children and youth with severe disabilities: A comprehensive bibliography and selective review of research and program development needs to address discrepancies in the state of the art. Minneapolis, MN: Minnesota Consortium Institute, University of Minnesota.

Mills v. Board of Educationof the District of Columbia. 348F Supp. 866 (D.D.C. 1972).

Morgan, S.R. (1977). A descriptive analysis of maladjusted behavior in socially rejected children. Behavioral Disorders, 3, 23-30.

National Commission on Excellence in Education. (1983). A nation at risk: The imperative for educational reform. Washington, DC: U.S. Government Printing Office No. 065000 001772.

National Council on Disability. (1989, September). The Education of students with disabilities: Where do we stand? A report to the President and the Congress of the United States. Washington, DC: Library of Congress Catalog Number 89-600746.

Nirje, B. (1969). The normalization principle and its human management implications. In R. Kugel & W. Wolfensberger (Eds.), Changing patterns in residential services for the mentally retarded (pp. 179-195). Washington, DC: Presidents Committee on Mental Retardation.

O'Neil, J. (1988). How 'special' should the special education curriculum be? ASCD Curriculum Update, September, 27.

Organization for Economic Cooperation and Development (O.E.C.D.). (1986). Young people with handicaps: The road to adulthood. Paris, France: Author.

Patrick, J.L., & Reschly, D.J. (1982). Relationship of state educational criteria and demographic variables to school system prevalence of mental retardation. American Journal of Mental Deficiency, 86, 351-360.

Pennsylvania Association for Retarded Citizens v. Commonwealth of Pennsylvania, 344F Supp. 1257 (E.D. PA 1971) and 343F Supp. 279 (E.D. PA 1972).

Peterson, D., Albert, S.S., Foxworth, A.M., Cox, L.S. & Tilley, B.K. (1985). Effective schools for all students: Current efforts and future directions. Teaching Exceptional Children, 17, 106-110.

Ray, J.S. (1974). Behavior of developmentally delayed and nondelayed toddler-age children: An ethological study. Unpublished doctoral dissertation, George Peabody College for Teachers, Nashville.

Report to Congress from the Comptroller General. (1981). Unanswered questions on educating handicapped children in local public schools. Washington, DC: National Institute of Education.

Reynolds, M.C., & Birch, J. (1977). Teaching exceptional children in all of America's schools. Reston, VA: The Council for Exceptional Children.

Reynolds, M.C., Wang, M.C., & Walberg, J. (1987). The necessary restructuring of special and regular education. Exceptional Children, 53, 391-397.

Ronker et al. v. Walter et al., 700F 2d 1058 (6th Cir. 1981). Cert. denied S. Ct. 81 (1983).

Saint Louis Developmental Disabilities Treatment Center Parents' Association et al. v. Mallory et al. 591F. Supp. 14116 (W.D. MO. 1984).

Sapon-Shevin, M. (1987). The national education reports and special education: Implications for students. Exceptional Children, 53, 300-306.

Shepard, L. A. (1987). The new push for excellence: Widening the schism between regular and special education. Exceptional Children, 53, 327-329.

Skrtic, T.M. (1986). The crisis in special education knowledge: A perspective on perspective. Focus on Exceptional Children, 18 (7), 1-16.

Skrtic, T.M. (1987 a). An organizational analysis of special education reform. Counterpoint, 8 (2), 15-19.

Skrtic, T.M. (1987 b). The national inquiry into the future of education for students with special needs. Counterpoint, 8 (1), 6.

Skrtic, T.M. (1988). Response to the January executive commentary: No more noses to the glass. Exceptional Children, 54, 475-476.

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

Stetson, F. (1984). Critical factors that facilitate integration: A theory of administrative responsibility. In N. Cerro, N. Haring, & R. York (Eds.), Public school integration of severely handicapped students: Rationale issues and progressive alternative(pp. 65-81). Baltimore: Brookes.

Strain, P.S., Odom, S.L., & McConnell, S. (1984). Promoting social reciprocity of exceptional children: Identification, target behavior selection, and intervention. Remedial and Special Education, 5 (1), 21-28.

Taylor, S.J. (1982). From segregation to integration: Strategies for integrating severely handicapped students in normal schools and community settings. Journal of the Association for the Severely Handicapped, 7 (3), 42-49.

Tindal, G. (1985). Investigating the effectiveness of special education: An analysis of methodology. Journal of Learning Disabilities, 18, 101-112.

Toch, T. (1984, November). The dark side of the excellence movement. Phi Delta Kappan, 173-176.

U.S, Department of Education (1989). Eleventh annual report to the Congress on the implementation of the Handicapped Act. Washington, DC: Author.

U.S. Department of Commerce, Bureau of the Census. (1989). Labor force status and other characteristics of persons with a work disability: 1981 to 1988. Current Population Reports, Special Studies (Series P-23, No. 160). Washington, DC: U.S. Government Printing Office.

Vaughan, M., & Shearer, A. (1986) Mainstreaming in Massachusetts: How special education became ordinary in one state in America. London, England: Centre for Studies on Integration in Education.

Voeltz, L.M. (1980). Children's attitudes toward handicapped peers. American Journal of Mental Deficiency, 84, 455-464.

Voeltz, L.M. (1982). Effects of structured interaction with severely handicappped peers on children's attitudes. American Journal of Mental Deficiency, 86, 380-390.

Voeltz, L.M. (1984). Program and curriculum innovations to prepare children for integration. In N. Cerro, N. Haring, & R. York (Eds.), Public school integration of severely handicapped students: Rationale issues and progressive alternative (pp. 155-183). Baltimore: Brookes.

Voeltz, L.M., & Brennan, J. (1984). Analysis of interactions between nonhandicapped and severely handicapped peers using multiple measures. In J.M. Berg (Eds.), Perspectives and progress in mental retardation, Vol. 1: Social, psychological, and educational aspects (pp. 61-72). Baltimore: University Park Press.

Wagner, M. (1989). The transition experience of youths with disabilities: A report from the national longitudinal transition study. Menlo Park, CA: SRI International.

Wagner, M. & Shaver, D.M. (1989). Educational programs and achievements of secondary special education students: Findings from the national longitudinal transition study. Menlo Park, CA: SRI International.

Walker, L.J. (1987). Procedural rights in the wrong system. In A. Gartner & T. Joe (Eds.), Images of the disabled/disabling images. New York: Praeger Publishers.

Wang, M.C., Reynolds, M.C., & Walberg, H.J. (1987). The handbook of special education: Research and practice. Oxford, England: Pergamon.

Wang, M.C., Reynolds, M.C., & Walberg, H.J. (in press). Rethinking special education. Educational Leadership.

Weiner,J. (1975). PL-94-142, (p. 42). In A. Gartner & D. Lipsky, Beyond special education: Toward a quality education for all students (p. 375). Harvard Educational Review,1987,57, 367-395. Boston, MA: President and Fellows of Harvard College.

Weintraub, F.J., Abeson, A., Ballard, J., & LaVor, M.L. (1976). Public policy and the education of exceptional children. Reston, VA: The Council for Exceptional Children.

Will, M. (1986). Educating students with learning problems: A shared responsibility. U.S. Department of Education. (ED279149).

Wolf v. Legislature of the State of Utah, Civil No. 102626, 3rd. Jud. Dist. Ct. (Utah, Jan. 8, 1969).

Wolfensberger, W. (1972). The principle of normalization in human services. Toronto: National Institute on Mental Retardation.

Wolfensberger, W. (1983). Social role valorization: A proposed new term for the principle of normalization. Mental Retardation, 21, 234-239.

Yanok, J., (1986). Free appropriate public education for handicapped children: Congressional intent and judicial interpretation. Remedial and Special Education, 7, 49-53.

Ysseldyke, J.E. (1987). Classification of handicapped students. In M.C. Wang, M.C. Reynolds, and H.J. Walberg (Eds.), Handbook of special education: Research and practice: Vol.1 Learner characteristics and adaptive education. New York: Pergamon Press.

Yudof, M.G. (1984, March). Educational policy research and the new consensus for the 1980's. Phi Delta Kappan, 456-459.

McCARTHY SCALES OF CHILDREN'S ABILITIES

Record Form

NAME _____ AGE _____ SEX _____

HOME ADDRESS _____

NAMES OF PARENTS OR GUARDIAN _____

SCHOOL _____ GRADE _____

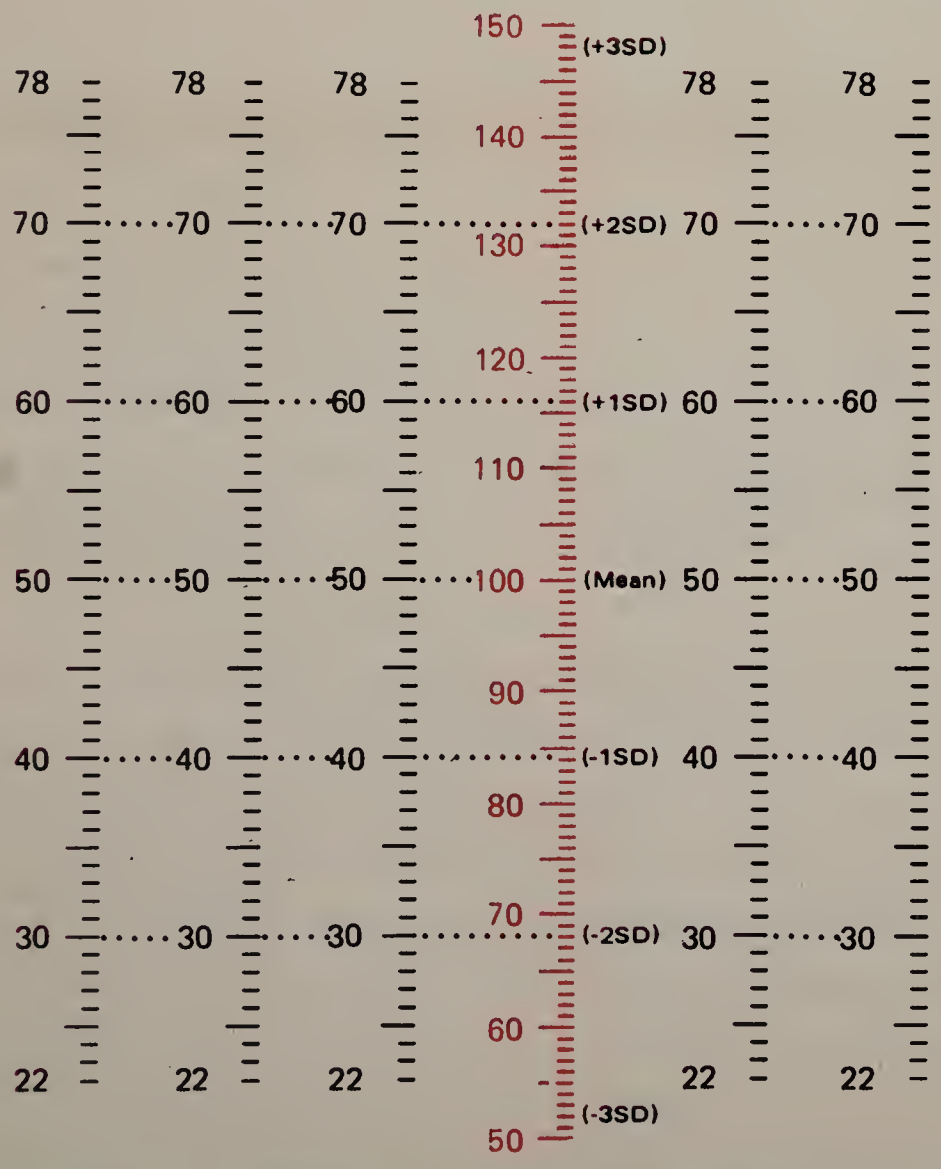
PLACE OF TESTING _____ TESTED BY _____

REFERRED BY _____

MSCA PROFILE

Enter the 6 Scale Indexes on the appropriate lines below. Then circle the mark representing the Index for each Scale. Draw a line connecting the circles. Note that the values for GC are different from those for the other Scales.

SCALE INDEX	Verbal	Perceptual-Performance	Quantitative	General Cognitive	Memory	Motor
	_____	_____	_____	_____	_____	_____



	Year	Month	Day
Date Tested	_____	_____	_____
Date of Birth	_____	_____	_____
Age	_____	_____	_____

COMPOSITE RAW SCORES AND SCALE INDEXES

Enter the composite raw scores from the back cover. *Obtain the composite raw score for GC by adding V+P+Q.* Determine the corresponding Scale Indexes from Table 16. (See page 151 of manual for detailed directions.)

Scale	Composite Raw Score	Scale Index
Verbal (V)	_____	_____
Perceptual-Performance (P)	_____	_____
Quantitative (Q)	_____	_____
General Cognitive: Add composite raw scores V+P+Q	_____	_____ GCI
Memory (Mem)	_____	_____
Motor (Mot)	_____	_____

LATERALITY

(Enter information from Laterality Summary on page 5.)

Hand _____

Eye _____

Printed in U.S.A.

The Psychological Corporation, Cleveland, Ohio 44130

76-152AS 9-188731

1. BLOCK BUILDING

Discontinue after failure on both trials of 2 consecutive items.

	Score		Best Score
	Trial 1	Trial 2	
1. Tower	(0-3)	(0-3)	(0-3)
2. Chair	(0-2)	(0-2)	(0-2)
AGE 5 START → 3. Building	(0-2)	(0-2)	(0-2)
4. House	(0-3)	(0-3)	(0-3)
		Total	Max.=10

Test 1

2. PUZZLE SOLVING

Discontinue after 3 consecutive failures.

	Time Limit	Performance Time	Circle Obtained Score*
1. Cat	30″		0 1
2. Cow	30″		0 1
AGE 5 START → 3. Carrot	30″		0 1 2
4. Pear	60″	(0″-60″)	0 1 2 3 4 1″-20″ 5
5. Bear	90″	(0″-90″)	0 1 2 3 4 5 6 7 31″-45″ 8 1″-30″ 9
6. Bird	120″	(0″-120″)	0 1 2 3 4 5 6 7 31″-60″ 8 1″-30″ 9

*For items 4-6, bonus points for quick performance are given *only if the child completes the puzzle perfectly.*

Total Max.=27 × ½ =

Test 2
(Round half-scores up)

3. PICTORIAL MEMORY

Exposure Time	Response Time	Response	Score
Allow 10″	Allow 90″	Button ☐ Fork ☐ Paper Clip ☐ Horse ☐ Padlock ☐ Pencil ☐	(0-6)

Test 3

4. WORD KNOWLEDGE

Discontinue if score on Part I is less than 6. Discontinue Part II after 4 consecutive failures on that part.

PART I. PICTURE VOCABULARY

Card — Response	Score
1. Apple ☐ Tree ☐ House ☐ Woman ☐ Cow ☐	(0-5)
2. Clock	(0-1)
3. Sailboat	(0-1)
4. Flower	(0-1)
5. Purse	(0-1)
Total (Part I)	Max.=9

PART II. ORAL VOCABULARY

Discontinue Part II after 4 consecutive failures.

Response	Score (0-2)
AGE 5* START → 1. Towel	
2. Coat	
3. Tool	
4. Thread	
5. Factory	
6. Shrink	
7. Expert	
8. Month	
9. Concert	
10. Loyal	
Total (Part II)	Max.=20

*For age 5, start at the indicated item. If items 1 and 2 of Part II are passed, give 9 points for Part I. (See manual.)

Part I + Part II = Test 4

5. NUMBER QUESTIONS
Discontinue after 4 consecutive failures.

	Right Answer	Response	Score (0-1)
1. Ears	Two		
2. Noses	One		
3. Heads	One		
4. Toys	Three		
5. Balloons	Two		
6. Candy	Six		
7. Pennies	Seven		
8. Apples	Twelve		
9. Crayons	Six		
10. Ball	Eighty		
11. Secret	Four		
12. Cookies	Three		
		Total	Max.=12

× 2 = _____ Test 5

6. TAPPING SEQUENCE

	Tapping Order	Score Trial 1	Score Trial 2	Score Trial 3	Best Score
1.	1 - 2 - 3 - 4	(0-2)	(0-2)	(0-2)	(0-2)
Continue only if child plays item 1 correctly, and discontinue after 2 consecutive failures on items 2-8.					Score (0-1)
2.	1 - 3 - 4				
3.	2 - 4 - 1				
4.	4 - 1 - 2 - 3				
5.	2 - 3 - 1 - 4				
6.	1 - 4 - 3 - 2 - 3				
7.	4 - 2 - 3 - 1 - 2				
8.	1 - 2 - 4 - 3 - 2 - 1				
				Total	Max.=9

Test 6

7. VERBAL MEMORY
Discontinue Part I after 3 consecutive failures. If child earns 8 or more points (out of 30) on Part I, give Part II.

PART I. WORDS AND SENTENCES	Score
1. toy - chair - light	(0-3)
2. doll - dark - coat	(0-3)
3. after - color - funny - today	(0-4)
4. around - because - under - never	(0-4)
Do NOT stress the underlined words in items 5 and 6.	
5. The boy said good-bye to his dog every morning before he went to school.	(0-7)
6. The girl tied a pretty pink ribbon on her doll before she went out.	(0-9)
Total (Part I)	Max.=30

× ½ = _____ (Round half-scores up)

Test 7, Part I

PART II. STORY Give Part II if child earned 8 or more points (out of 30) on Part I. Response	Score (0-1)
1. Term used for Bob	
2. Term used for the woman	
3. Term used for the letters	
4. Bob walking to store	
5. Bob saw woman	
6. Wind blew letters	
7. Bob shouted, "I'll get them for you!"	
8. Bob was careful	
9. Bob picked up letters	
10. Woman was happy	
11. Woman thanked Bob	
Total (Part II)	Max.=11

Test 7, Part II

8. RIGHT-LEFT ORIENTATION

Administer only to children aged 5 and above. Discontinue after failure on 5 consecutive items.

	Score (0-1)
1. Show me your right hand.	
2. Which is your left ear?	
*3. Touch your right eye with your left hand.	
4. Put your chin in your left hand.	
5. Cross your left knee over your right one.	
6. Show me Roger's left knee.	
7. Show me Roger's right elbow.	
*8. Show me Roger's left foot with your right hand.	
*9. Put your right hand on Roger's right shoulder.	

*Enter score for each part separately. *Both* parts must be failed for the item to be considered a failure.

Total — Max.=12

Test 8

9. LEG COORDINATION

Discontinue after item 5 if both trials of Items 1-5 are failed.

	Score		Best Score	Notes
	Trial 1	Trial 2		
1. Walking backwards	(0-2)	(0-2)	(0-2)	
2. Walking on tiptoe	(0-2)	(0-2)	(0-2)	
3. Walking a straight line	(0-2)	(0-2)	(0-2)	
4. Standing on one foot	(0-2)	(0-2)	(0-2)	
5. Standing on other foot	(0-2)	(0-2)	(0-2)	
6. Skipping	(0-3)	(0-3)	(0-3)	

Total — Max.=13

Test 9

10. ARM COORDINATION

Give Part II even if Part I is failed. Discontinue Part II if all 3 trials of item 1, Part II, are failed. Give Part III even if Part II is failed.

PART I. BALL BOUNCING

Trial 1		Trial 2		Best Score	Preferred Hand
Number of Bounces	Score	Number of Bounces	Score		
(0-15)	(0-7)	(0-15)	(0-7)	(0-7)	R L B

(Part I)

Number of Bounces	Score
15	7
12-14	6
9-11	5
6-8	4
3-5	3
2	2
1	1
0	0

PART II. BEANBAG CATCH GAME

Give Part II even if Part I is failed. Discontinue Part II if all 3 trials of item 1 are failed.

	Trial	Score (0-1)	
1. Both hands	1		
	2		
	3		
2. Preferred hand	1		Preferred Hand R L
	2		
	3		
3. Other hand	1		
	2		
	3		
Total (Part II)		Max. = 9	

PART III. BEANBAG TARGET GAME

Give Part III even if Part II is failed.

	Trial	Score (0-2)	
1. Preferred hand	1		Preferred Hand R L
	2		
	3		
2. Other hand	1		
	2		
	3		
Total (Part III)		Max.=12	

11. IMITATIVE ACTION

	Score (0-1)	
1. Cross feet		
2. Fold hands		
3. Twiddle thumbs		
4. Sight through tube		Eye Used R L

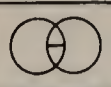
Total — Max.=4

Test 11

Part I + Part II + Part III = Test 10

12. DRAW-A-DESIGN

Discontinue after 3 consecutive failures.

	Pass-Fail	Score	Preferred Hand
1. 		(0-1)	R L B
2. 		(0-1)	R L B
3. 		(0-1)	R L B
4. 		(0-2)	R L B
5. 		(0-2)	R L B
6. 		(0-3)	R L B
7. 		(0-3)	R L B
8. 		(0-3)	R L B
9. 		(0-3)	R L B

Total: Max.=19

Test 12

13. DRAW-A-CHILD

Administer only if child earned 1 or more points on Test 12.

	Score (0-2)	Preferred Hand	Child's Comments
1. Head		R L B	
2. Hair			
3. Eyes			
4. Nose			
5. Mouth			
6. Neck			
7. Trunk			
8. Arms and hands			
9. Attachment of arms			
10. Legs and feet			

Total: Max.=20

Test 13

LATERALITY SUMMARY

HAND DOMINANCE

Test 10, Part I	Ball bouncing	R	L	B
Test 10, Part II, item 2	Beanbag catch	R	L	
Test 10, Part III, item 1	Beanbag throw	R	L	
Tests 12 & 13, all items	Drawing	R	L	B
	Totals	R	L	B

HAND DOMINANCE

Check one: (See pages 148-149 of manual.)

- ☐ Dominance Established (Right-Handed)
- ☐ Dominance Established (Left-Handed)
- ☐ Dominance Not Established
- ☐ Not Scorable

EYE USED IN SIGHTING (Test 11, item 4)

Check one: (See page 149 of manual.)

- ☐ Right
- ☐ Left
- ☐ Not Scorable

14. NUMERICAL MEMORY

Discontinue Part I after failure on *both* trials of any item. If child earns 3 or more points on Part I, give Part II and discontinue after failure on *both* trials of any item.

PART I. FORWARD SERIES	Trial 1	Trial 2	Score (0-2)
1.	5 - 8	4 - 9	
2.	6 - 9 - 2	5 - 8 - 3	
3.	3 - 8 - 1 - 4	6 - 1 - 8 - 5	
4.	4 - 1 - 6 - 9 - 2	9 - 4 - 1 - 8 - 3	
5.	5 - 2 - 9 - 6 - 1 - 4	8 - 5 - 2 - 9 - 4 - 6	
6.	8 - 6 - 3 - 5 - 2 - 9 - 1	5 - 3 - 8 - 2 - 1 - 9 - 6	
		Total (Part I)	Max.=12

Test 14, Part I

PART II. BACKWARD SERIES	Trial 1	Trial 2	Score (0-2)
1.	9 - 6	4 - 1	
2.	1 - 8 - 3	2 - 5 - 8	
3.	5 - 2 - 4 - 9	6 - 1 - 8 - 3	
4.	1 - 6 - 3 - 8 - 5	6 - 9 - 5 - 2 - 8	
5.	4 - 9 - 6 - 2 - 1 - 5	3 - 8 - 1 - 6 - 2 - 9	
		Total (Part II)	Max.=10

× 2 = [ ]

Test 14, Part II

15. VERBAL FLUENCY

	Time Limit	Record Responses Verbatim	Score (0-9)
1. Things to eat Examples: bread, potatoes	20″		
2. Animals Examples: cat, bear	20″		
3. Things to wear Example: shoes	20″		
4. Things to ride Example: bus	20″		
		Total	Max.=36

Test 15

16. COUNTING AND SORTING

If child passed 9 or more items on Test 5, give full credit on Test 16. Otherwise, administer Test 16 and discontinue after 4 consecutive failures.

	Score (0-1)
1. Takes 2 blocks	
2. Takes 3 more blocks	
3. Answer: 5	
4. Puts 2 blocks on each card	
5. Answer: 2	
6. Puts 5 blocks on each card	
7. Answer: 5	
8. Point: 2nd block from left	
9. Point: 4th block from right	
Total	Max.=9

Test 16

17. OPPOSITE ANALOGIES

	Score (0-1)
1. The sun is *hot*, and ice is _____.	
2. I throw the ball *up*, and then it comes _____.	
Continue only if child answers at least one of items 1 and 2 correctly, and discontinue after 3 consecutive failures on items 3-9.	X
3. An elephant is *big*, and a mouse is _____.	
4. Running is *fast*, and walking is _____.	
5. Cotton is *soft*, and rocks are _____.	
6. A lemon is *sour*, and candy is _____.	
7. Feathers are *light*, and stones are _____.	
8. Syrup is *thick*, and water is _____.	
9. Sandpaper is *rough*, and glass is _____.	
Total	Max.=9

× 2 = [ ]

Test 17

18. CONCEPTUAL GROUPING

Discontinue after 4 consecutive failures.

	Number Right	Number Wrong	Right Minus Wrong	Score
1. Little, big				(0-1)
2. Red, yellow, blue				(0-1)
3. Square, round				(0-1)
				X
4. Square blocks	(0-6)	(0-6)	(0-6)	(0-2)
5. Big yellow blocks	(0-2)	(0-10)	(0-2)	(0-2)
6. Big round red block				(0-1)
7. Small blue square				(0-1)
8. Large blue square				(0-1)
9. Large yellow circle and small yellow square				(0-2)
Total				Max.=12

Test 18

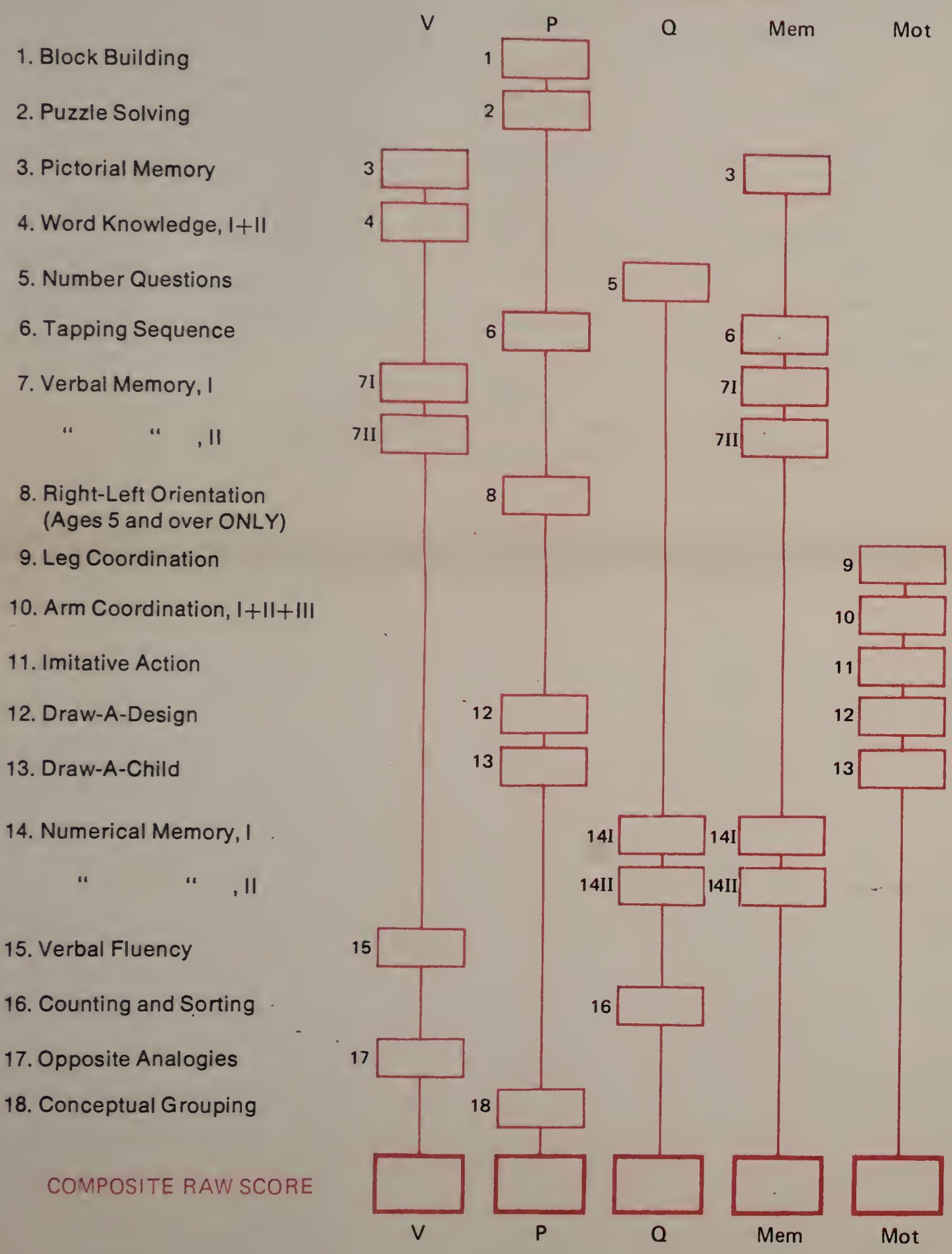
NOTES:

COMPUTATION OF COMPOSITE RAW SCORES

1. Enter the *weighted raw scores* which are in the shaded boxes on pages 2-7 of the record form. For each test, enter the score in the box(es) bearing that test's number. (For example, the score for Test 3 is entered in 2 boxes.)
2. Sum the scores in each of the 5 columns. Enter the totals in the *composite raw score* boxes at the foot of the page.
3. Transfer the *composite raw scores* to the front cover. (Open the booklet and turn it over so that the front and back covers are side by side.) Enter the scores in the Composite Raw Score column in the box labeled "Composite Raw Scores and Scale Indexes."

(For more detailed directions on the completion of the record form, see Chapter 7 of manual.)

WEIGHTED RAW SCORES



AGS

Vineland Social Maturity Scale

BY EDGAR A. DOLL, Ph.D.

NAME Last First Sex Grade Date Year Month Day

Residence School Born Year Month Day

M.A. I.Q. Test Used. When Age..... Years Months Days

Occupation Class.... Years Exp Schooling

Father's Occupation Class.. Years Exp Schooling

Mother's Occupation Class.... Years Exp. Schooling.

Informant.. Relationship Recorder.....

Informant's est. Basal Score

Handicaps. Additional pts.....

REMARKS:

Total score..

Age equivalent...

Social quotient...

Category*	Score*	Items	Age Periods O - I	LA Mean
C	..	1. "Crows", laughs		.25
SHG	..	2. Balances head		.25
SHG	..	3. Grasps objects within reach		.30
S	..	4. Reaches for familiar persons		.30
SHG	....	5. Rolls over		.30
SHG	.	6. Reaches for nearby objects		.35
O	....	7. Occupies self unattended		.43
SHG	...	8. Sits unsupported		.45
SHG	....	9. Pulls self upright		.55
C	.....	10. "Talks": imitates sounds		.55
SHE	.....	11. Drinks from cup or glass assisted		.55
L	.....	12. Moves about on floor		.63
SHG	..	13. Grasps with thumb and finger		.65
S	..	14. Demands personal attention		.70
SHG	....	15. Stands alone		.85
SHE	....	16. Does not drool		.90
C	...	17. Follows simple instructions		.93

* Key to categorical arrangement of items:

SHG — Self-help general C — Communication L — Locomotion
SHD — Self-help dressing SD — Self-direction O — Occupation
SHE — Self-help eating S — Socialization

For method of scoring see "The Measurement of Social Competence."

AMERICAN GUIDANCE SERVICE, INC
PUBLISHERS BUILDING, CIRCLE PINES MINNESOTA 55014

I - II

L	18. Walks about room unattended	1.03
O	19. Marks with pencil or crayon	1.10
SHE	20. Masticates food	1.10
SHD	21. Pulls off socks	1.13
O	22. Transfers objects	1.20
SHG	23. Overcomes simple obstacles	1.30
O	24. Fetches or carries familiar objects	1.38
SHE	25. Drinks from cup or glass unassisted	1.40
SHG	26. Gives up baby carriage	1.43
S	27. Plays with other children	1.50
SHE	28. Eats with spoon	1.53
L	29. Goes about house or yard	1.63
SHE	30. Discriminates edible substances	1.65
C	31. Uses names of familiar objects	1.70
L	32. Walks upstairs unassisted	1.75
SHE	33. Unwraps candy	1.85
C	34. Talks in short sentences	1.95

II - III

SHG	35. Asks to go to toilet	1.98
O	36. Initiates own play activities	2.03
SHD	37. Removes coat or dress	2.05
SHE	38. Eats with fork	2.35
SHE	39. Gets drink unassisted	2.43
SHD	40. Dries own hands	2.60
SHG	41. Avoids simple hazards	2.85
SHD	42. Puts on coat or dress unassisted	2.85
O	43. Cuts with scissors	2.88
C	44. Relates experiences	3.15

III - IV

L	45. Walks downstairs one step per tread	3.23
S	46. Plays cooperatively at kindergarten level	3.28
SHD	47. Buttons coat or dress	3.35
O	48. Helps at little household tasks	3.55
S	49. "Performs" for others	3.75
SHD	50. Washes hands unaided	3.83

IV - V

SHG	51. Cares for self at toilet	3.83
SHD	52. Washes face unassisted	4.65
L	53. Goes about neighborhood unattended	4.70
SHD	54. Dresses self except tying	4.80
O	55. Uses pencil or crayon for drawing	5.13
S	56. Plays competitive exercise games	5.13

V - VI

O	57. Uses skates, sled, wagon	5.13
C	58. Prints simple words	5.23
S	59. Plays simple table games	5.63
SD	60. Is trusted with money	5.83
L	61. Goes to school unattended	5.83

VI - VII

SHE	62. Uses table knife for spreading	6.03
C	63. Uses pencil for writing	6.15
SHD	64. Bathes self assisted	6.23
SHD	65. Goes to bed unassisted	6.75

VII - VIII

SHG	66. Tells time to quarter hour	7.28
SHE	67. Uses table knife for cutting	8.05
S	68. Disavows literal Santa Claus	8.28
S	69. Participates in pre-adolescent play	8.28
SHD	70. Combs or brushes hair	8.45

VIII - IX

O	71. Uses tools or utensils	8.50
O	72. Does routine household tasks	8.53
C	73. Reads on own initiative	8.55
SHD	74. Bathes self unaided	8.85

IX - X

SHE	75. Cares for self at table	9.03
SD	76. Makes minor purchases	9.38
L	77. Goes about home town freely	9.43

X - XI

C	78. Writes occasional short letters	9.63
C	79. Makes telephone calls	10.30
O	80. Does small remunerative work	10.90
C	81. Answers ads: purchases by mail	11.20

XI - XII

O	82. Does simple creative work	11.25
SD	83. Is left to care for self or others	11.45
C	84. Enjoys books, newspapers, magazines	11.58

XII - XV

S	85. Plays difficult games	12.30
SHD	86. Exercises complete care of dress	12.38
SD	87. Buys own clothing accessories	13.00
S	88. Engages in adolescent group activities	14.10
O	89. Performs responsible routine chores	14.65

XV - XVIII

C	90	Communicates by letter	14.95
C	91.	Follows current events	15.35
L	92.	Goes to nearby places alone	15.85
SD	93.	Goes out unsupervised daytime	16.13
SD	94.	Has own spending money	16.53
SD	95.	Buys all own clothing	17.37

XVIII - XX

L	96.	Goes to distant points alone	18.05
SD	97.	Looks after own health	18.48
O	98.	Has a job or continues schooling	18.53
SD	99.	Goes out nights unrestricted	18.70
SD	100.	Controls own major expenditures	19.68
SD	101.	Assumes personal responsibility	20.53

XX - XXV

SD	102.	Uses money providently	21.5+
S	103.	Assumes responsibility beyond own needs	21.5+
S	104.	Contributes to social welfare	25+
SD	105.	Provides for future	25+

XXV+

O	106.	Performs skilled work	25+
O	107.	Engages in beneficial recreation	25+
O	108.	Systematizes own work	25+
S	109.	Inspires confidence	25+
S	110.	Promotes civic progress	25+
O	111.	Supervises occupational pursuits	25+
SD	112.	Purchases for others	25+
O	113.	Directs or manages affairs of others	25+
O	114.	Performs expert or professional work	25+
S	115.	Shares community responsibility	25+
O	116.	Creates own opportunities	25—
S	117.	Advances general welfare	25—

AGS AMERICAN GUIDANCE SERVICE, INC. Publishers' Building, Circle Pines, Minnesota 55014

Name _____ Examiner _____ Date _____

McCARTHY SCALES OF CHILDREN'S ABILITIES

Drawing Booklet

TEST 12. DRAW-A-DESIGN

TEST 13. DRAW-A-CHILD

Printed in U.S.A.

The Psychological Corporation 7500 Old Oak Blvd. Cleveland, Ohio 44130

77-167S 9-188624

TEST 12. DRAW-A-DESIGN

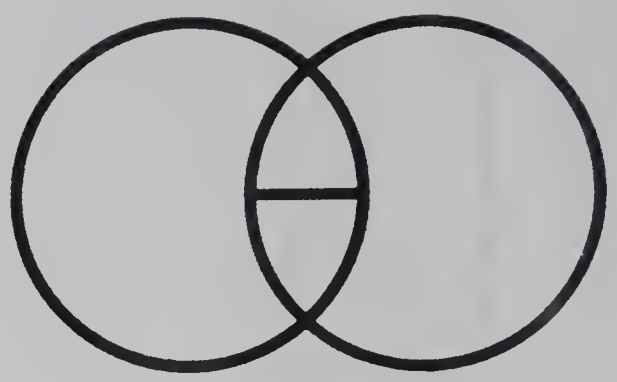
1.

3.

4.

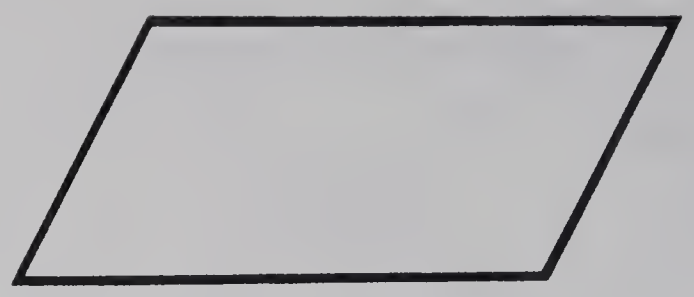
5.

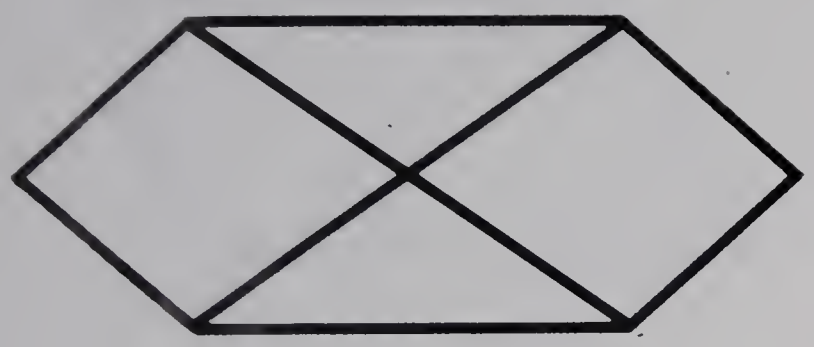
6.



7.

8.





TEST 13. DRAW-A-CHILD

60 A B C D E