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COMPARATIVE EFFECTS OF PLACEMENT IN SELF-CONTAINED
OR PARTIALLY MAINSTREAMED PROGRAMS ON THE
SELF-CONCEPT, ATTENDANCE, AND ACADEMIC
ACHIEVEMENT OF EMR HIGH SCHOOL STUDENTS

A Dissertation Presented

By

DANIEL ANTHONY BURKE

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

DOCTOR OF EDUCATION

February 1979

Education

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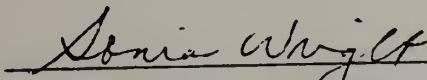
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PREFACE

The term EMR (Educable Mentally Retarded) will be used throughout this study because of the specificity it provides in researching the mainstreaming issue as it relates to a particular group of children with special needs. Labeling of children with special needs has been eliminated in Massachusetts based on the philosophical and legal requirements of Chapter 766, the state's special education law. Special education programs for children with special needs are developed and provided based on the results of each child's evaluation. The child's needs are identified and an individual educational plan is prescribed by the evaluation team to meet the student's special needs.

Labeling of handicapped children has historically had negative implications regarding each child's abilities to perform specific functions or tasks. Furthermore, labels have been inappropriately used by both educators and parents without the necessary accompanying depth of knowledge and understanding of the varied physical, emotional, or educational involvements a specific handicapped condition may have on each child. Therefore, with obviously strong reservations from a personal and professional vantage point, the term EMR will be used in this study as a reference to a specific group of handicapped children.

The issue of special versus regular class placement of educable mentally retarded children is still being debated in the field of special education. This debate has pointed to the inconclusive research that is presently available regarding this issue. In the meantime, educators, parents, and our courts are supporting the placement of EMR children in mainstreaming programs. Primarily, their justification is based on the philosophical, moral, and ethical underpinnings for mainstreaming handicapped children with their non-handicapped peers wherever possible and appropriate to meet the child's needs.

Therefore, the present study will attempt to empirically evaluate the effect of special or partial regular class placement of EMR high school youth. Specifically, pre and post test measures will be maintained in order to assess the academic achievement, self-concept gains, attendance, or drop-out rates of youngsters randomly placed in either placement.

Consequently, educators will be able to gain insights and suggestions in regards to the most effective educational placement of EMR students at the secondary level. In addition, it is hoped that other researchers will continue to explore and evaluate the controversial issue of special or partial regular class placement of EMR youth at the high school level.

ABSTRACT

Comparative Effects of Placement in Self-Contained or Partially Mainstreamed Programs on the Self-Concept, Attendance, and Academic Achievement of EMR High School Students

(February 1979)

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Directed by: Professor Ronald Fredrickson

This study compared the different effects of placement of secondary school educable mentally retarded (EMR) students. Mainstreaming or self-contained placement options for EMR youngsters has been debated continuously by special educators. In this study, academic achievement, self-concept, attendance, and drop-out rates of EMR youth randomly placed in partially mainstreamed or self-contained programs were the dependent variables. Sex was an independent variable.

Specific studies, such as Ainsworth (1969), Blatt (1958), Budoff & Gottlieb (1976), Carroll (1967), Cassidy & Stanton (1964), Elenbogen (1957), Goldstein (1967), Haring & Krug (1975), and Walker (1974) have provided different results in regards to the merits of mainstreaming, partial mainstreaming, or self-contained special class placement of EMR students. These researchers specifically studied the

academic achievement and social development of EMR children in either mainstreaming or self-contained programs. Experimental research available in regards to which program option is considered more effective in meeting the academic and self-concept needs of EMR children is still incomplete.

This study compared the different effects of placements of secondary school EMR youth measured by the Wide Range Achievement Test and the What Would You Do? Secondary Level Self-Concept Scale. Attendance and drop-out rates were also maintained throughout the study. A t-test was used to determine significant difference over a school year in grade equivalent academic mean gains and self-concept of matched EMR youth placed in either academic partial mainstreaming or self-contained special education programs. A t-test was utilized to analyze the results. The .05 level of confidence was sought to reject or not reject each null hypothesis.

Thirty-four EMR high school students were initially selected and matched according to sex, IQ, and age in the study. Seventeen of the 34 EMR students were assigned to partially mainstreamed academic classes, while the other 17 students were placed in self-contained special classes. All students were exposed to regular classes in physical education, art and music. Ten of the original 17 matches, a

total of 20 EMR students, were included in the final analysis of the study. Seven matches were not included in the final analysis because of various administrative and personal reasons.

The results of the study showed that four of the six major null hypotheses were not rejected. No significant difference was found in reading and mathematics grade achievement gains, self-concept growth, or drop-out records between EMR students randomly placed in either partially mainstreamed or self-contained special classes. Both groups EMR students did continue to gain in reading, mathematics, and self-concept gains from the pre to the post test period. The partially mainstreamed group spent about 25 percent of their school day in academic classes and the rest of the time in a special classroom.

The two null hypotheses rejected showed that EMR students assigned to partially mainstreamed academic classes did significantly better in spelling grade achievement gains and attendance records than their counterparts placed in self-contained classes. Significant differences were found at the .05 level of confidence.

The results of this study must be considered encouraging in that EMR students placed in partial mainstreaming academic programs either held their own or did better on the dependent variables than their counterparts in self-

contained special classes. The placement of EMR students in partial mainstreamed academic classes had no detrimental effect on the students that could be observed. EMR students placed in regular classes did better in spelling achievement gains and attendance at school during the study.

Both groups were mainstreamed in the regular school curriculum in non-academic classes of physical education, art and music. What was compared was partial mainstreaming in academic classes with full-time self-contained special class placement. Based on this definition of partial mainstreaming, it would appear that the data supports a finding that placement in regular academic classes for part of the day does not hinder academic achievement or change in self-concept. Both attendance and spelling were actually enhanced by placement in partial mainstreaming programs.

However, more research is needed, utilizing different definitions and various time involvements in partial and full mainstreaming programs of these students. The findings in this study do not suggest that self-contained special class placement is obsolete for EMR students at the high school level. Secondary program alternatives for EMR youngsters need to be evaluated more conclusively, however, in order to plan more appropriate programs for each student.

Special education personnel involved in planning programs for EMR high school students need to consider the

broad spectrum of issues being debated in regards to special versus regular class placement options for these children. Additional research and evaluation of alternative high school special and regular class programs for EMR youth may provide the information necessary for effective future planning and placement decisions.

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C H A P T E R I

INTRODUCTION

Mainstreaming educable mentally retarded children into academic subject areas at all levels in their schooling is a relatively new national concept in the field of special education. The development of mainstreaming programs for educable mentally retarded (EMR) children has primarily involved integration into non-academic subject areas such as physical education, art, music, shop, or home economics. In the past decade, in particular, special educators have been debating the merits of self-contained special classes versus mainstreaming for EMR students as it relates to their academic achievement and social development in school. Therefore, there is a real need to measure empirically the academic achievement and social development gains of EMR children as they remain in self-contained programs or are integrated into academic regular classrooms.

The purpose of the research reported here will be to assess the differential effects of mainstreaming EMR high school youth into regular academic classes as compared to maintaining these students in self-contained special classes. The goal of mainstreaming special education students is in line with the national policy for educational

programming and placement of handicapped students in the least restrictive educational setting. This national policy was set forth in section 612 of the New Education for All Handicapped Children Act of 1975 (Public Law 94-142).

At this point, special educators need to evaluate whether the goal of mainstreaming placements in the least restrictive educational setting for EMR youth is appropriate and has an empirical basis. It is this researcher's concern that the goal of mainstreaming may be based more on philosophical, legal, and legislative underpinnings rather than empirical evidence that indicates better academic achievement and self-concept gains by EMR youth who are mainstreamed.

Mainstreaming does need to be considered an important instructional option for EMR students at the high school level. But mainstreaming may not always be the preferred procedure for educating all EMR students at the senior high level. Mainstreaming may not be as appropriate as recent legislation would suggest. The educational strengths and weaknesses of each EMR youth should determine how much time and what instructional activities the student will receive. However, there is a crucial need for further empirical evidence on the academic and psychological effects of mainstreaming as compared with other instructional procedures. The purpose of this study is to contribute data which will be valuable in designing the best educational program for each EMR youngster.

Why Mainstream?

Public Law 94-142, the Federal Law for the Education for All Handicapped Children Act of 1975, mandates that handicapped children be educated to the maximum extent possible within regular classroom programs with nonhandicapped children. Specifically, the law states in section 612, subsection (5B) that

... procedures need to be established to provide safeguards to guarantee that handicapped children are educated in the least restrictive educational setting to the maximum extent appropriate. Handicapped children, including those children in public or private institutions or other care facilities, should be educated with children who are not handicapped, and that special classes, separate schooling, or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aides and services cannot be achieved satisfactorily. (P. 89, Stat. 781)

This legislative mandate establishes federal standards for states to respond to in making placement decisions on where to educate handicapped children. States and local school districts are now required to adhere to the mainstreaming programmatic philosophy as they provide educational programs for all handicapped children.

Beyond the legislative mandate for mainstreaming, the courts have also ruled in favor of the mainstreaming principle for handicapped children. Parents and educators who were committed to the mainstreaming philosophy for the handicapped had turned to the courts, especially in the past

decade, to obtain the educational programs that they maintained were appropriate and beneficial for handicapped children. Philosophical, ethical, and moral issues have been argued and discussed in these cases with the merits of mainstreaming for both the handicapped and nonhandicapped children apparently gaining support in recent court decisions such as: Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania, 1971; Mills v. Board of Education of the District of Columbia, 1972; Maryland Association for Retarded Children v. State of Maryland, 1974.

Despite the impetus for mainstreaming from both federal and state legislative mandates, in addition to 94-142 and recent court decisions, there does not appear to be any empirical basis in the research for any dramatic shift towards mainstreaming as the most appropriate and beneficial program option for all EMR youth at the secondary level. There does appear to be a split even among special educators as to the pros and cons of either full or partial mainstreaming or self-contained programs for EMR students as they reach the high school. Therefore, a broad range of program options are needed at the high school until sufficient research has been conducted to measure the effectiveness of these options for EMR youth including mainstreaming into academic regular classes.

Secondary educable mentally retarded students, their nonhandicapped peers, and regular class teachers may all

benefit from mainstreaming the mildly handicapped into regular academic classes at the high school level. The programmatic mandate to educate handicapped children in the least restrictive educational environment appropriate for each student has pointed to the need to more thoroughly examine mainstreaming options. Mainstreaming may prove to be a more promising solution for EMR students than the self-contained special class that isolates them from the regular school academic classes. The EMR youth may gain academically by acquiring skills and training in specific content areas from teachers who are highly skilled and knowledgeable in their academic subject areas. EMR students may also develop a better self-concept that will improve their attitudes about school. Also, the EMR youngster's nonhandicapped peers may learn to be more understanding and accepting of their handicapped peers. Moreover, the regular class teachers would gain from the integration of handicapped children into their classes. The mere presence of handicapped students in their classes would require teachers to become more child centered in their teaching approach for the whole class. Also, as much as possible, teachers would consciously be attempting to individualize their instructional programs for the handicapped and other students in the class.

Roadblocks to Mainstreaming

Educable mentally retarded youth at the high school level require specific academic, social, and vocational training prior to their graduation. Generally, these youth have similar characteristics in that they have low academic skills, particularly in reading and mathematics. As they enter ninth grade, EMR students are usually reading anywhere from second to fourth grade level. Their mathematic skills are also somewhere on the second to fourth grade levels. Therefore, they are already anywhere from five to seven years below their grade level in basic academic skills as they begin ninth grade. In addition to their low functional academic levels, these students also have developed a poor self-image of themselves which may lead to a failure attitude toward school. You could compound the problems of some of these children because they may also have a poor home situation along with a minority cultural background that may interfere with their learning in school.

Some additional roadblocks to mainstreaming at the high school are: (a) regular class teachers claim they already have twenty to thirty or more children in their classes to teach and these additional handicapped children require a lot of planning and take a disproportionate amount of their class time to instruct them; (b) secondary schools, because of their traditional departmental structure, tend

to be less flexible to change when compared with the elementary level; (c) secondary school teachers are generally prepared for teaching with a subject matter orientation as opposed to a student focus; (d) regular classroom teachers do not feel they have the specialized training to understand, plan, and implement programs for the wide range of individual needs of these handicapped children; (e) central office and building administrators do not consistently support and encourage their staffs to mainstream these handicapped children where appropriate; (f) most secondary schools do not invest in long-range ongoing in-service training programs in the area of mainstreaming handicapped children; and (g) educators, in general, are not equipped to effectively measure the educational, social, and emotional attainments of these EMR students.

Even though there does appear to be a number of barriers to mainstreaming EMR youth, there are also significant reasons which have been presented to further develop, expand, and evaluate mainstreaming placement options for EMR students at the high school level.

Numerous Definitions

Since 1896 in Rhode Island, where the first special class was established for educable mentally retarded students, there has been an ongoing debate among educators as to when, where, and how to mainstream these students. Therefore,

educators have had considerable problems in defining mainstreaming. The self-contained special class model was developed in the early 1900s to at least allow integration of these EMR youngsters in such areas as lunch, recess, and physical education. From the middle 1900s to present, mainstreaming opportunities in art, music, industrial arts, and home economics were also added as feasible mainstreaming program options for these children. In addition, science and history have proven to be practical academic areas to integrate these students over the last two decades. Regular class teachers with a positive attitude toward the handicapped and flexible regarding reading requirements in their curricula were usually those approached to mainstream EMR students. The question of mainstreaming has always been relative to how much and in what areas can the EMR child benefit academically or socially from being mainstreamed.

Even though mainstreaming does not conclusively have an empirical basis in the research, it has philosophical, moral, and legal support. Despite this support many special educators are not convinced it is a viable option for the handicapped. But, at the same time, there are those special educators who have also concluded that the self-contained special class has proven to be unsatisfactory for EMR children. The research bears out the fact that there is no conclusive evidence that special educators can identify which will either support mainstreaming or self-

contained programming as the only viable program option for EMR students. Chaffin and Geer (no date) maintained that

... within the past decade, special educators have become increasingly dissatisfied with self-contained classes as the major program option for providing educational services to exceptional children. Much of this dissatisfaction has been directed toward special education services for the educable mentally retarded. As other special education services are being considered, there does not seem to be any universally accepted definition of mainstreaming. (p. 1)

Amidst the ongoing debate among special educators in regards to mainstreaming or self-contained classes for EMR youngsters, a clearly defined definition of mainstreaming is needed in order for educators and parents to more effectively plan programs for students.

The definition of mainstreaming has similar characteristics to those of the following writers: Brenton, 1974; Chaffin & Geer, no date; Christoplos, 1973; Deno, 1973; Gallagher, 1974; Kaufman, Gottlieb, Agard & Kukic, 1975; Merwin, 1976; Nyquist, 1970; Reynolds, 1974. Mainstreaming was defined as a change in the philosophy of special education as a move away from self-contained classes as the primary placement option for the EMR child. They basically concurred that there must be a shift toward developing and expanding regular class programs where EMR children could be placed for programs. In the years ahead, this concept may drastically change the organization and direct delivery of services from the special teacher to the regular teacher for EMR students.

There appears to be a universally accepted definition of mainstreaming relative to EMR children. Simply stated mainstreaming is the integration of handicapped children into the regular educational process with their nonhandicapped peers. A number of similar features are included in many of the definitions, such as: (1) a move away from the self-contained classroom placement as a single option for these EMR children; (2) a shift toward the re-integration of these children into regular classrooms; and (3) the need to explore equal educational opportunities for these students. Some additional attributes which were referred to in other definitions of mainstreaming are: (1) the need for more high quality comprehensive educational services and programs for EMR youngsters; (2) the changing role of the regular class teacher who will be assuming the primary teaching responsibility for EMR pupils; the special education teacher's changing role to be a resource and support person to the regular class teacher; and (3) the philosophical commitment to fostering human differences within all children, whether they be handicapped or not.

Even though mainstreaming does have multi-faceted features in various definitions, it still is primarily a concept which attempts to re-integrate handicapped children into programs and activities with their nonhandicapped peers. Therefore, despite the apparent problems that have been encountered by special educators in defining mainstreaming,

placement decisions for individual students have continued based on their academic and/or psychological needs. However, problems of definition and identification of each EMR student's needs persists regarding mainstreaming program options.

Problems in Identification

Mainstreaming is supported for a wide range of exceptional children, including the educable mentally retarded. It has generally been accepted in special education that mental retardation refers to a child who scores below an 80 IQ. These are children who were perceived as problems by educators because of their limited academic and social skills. We are not referring to mentally retarded children who have an IQ below 50 and would be classified as either trainable or profoundly retarded and have very limited skills. However, the EMR students who represent the group between 50-80 IQ have demonstrated that they will benefit from the normal educational setting and have therefore been labeled educable mentally retarded. EMR students have shown that they have learned to become self-sufficient after graduation from school in the job market and society (Dinger, 1961; Porter & Milazzo, 1958). Particularly, there have been EMR students who have acquired skills that equipped them to function as auto mechanics, carpenters, skilled maintenance workers, chefs, machinists, and welders.

It is necessary to explain the category of mental retardation and define the term EMR. Dunn (1963) argued that

over the years, the category mental retardation has defied a definition satisfactory to all of the professional and lay groups concerned with the field. In fact, the names have been changed many times. The preferred term at one time or another was amnesia, mental deficiency or oligophrenia. (p. 54)

Whatever the past preference may have been, EMR is the current preference. But having decided on a name has not really resolved the problem because the issue of what mental retardation is still remains.

However, identifying EMR children in general is easier than identifying them in particular. Identification requires a definition and no definition of mental retardation has been universally accepted. Heber's broad definition of mental retardation has generally been the most widely accepted and applied in the field of special education because of its three broad components. Heber defined mental retardation as: (1) subaverage general intellectual functioning, (2) which originates during the developmental period, and (3) is associated with impairments in adaptive behavior. The term EMR has been applied to pupils who score within the 50-80 IQ on intelligence tests such as the Wechsler Intelligence Scale for Children (WISC) or the Stanford-Binet IQ tests. These IQ tests have been used to assess the intellectual potential of children to learn specific academic tasks that may be required in their public schooling.

There are limited substitutes for measuring the special needs of these EMR students. However, the Wechsler and Stanford-Binet IQ tests have both been criticized for being culturally biased in that they were initially standardized for the white middle class population. Therefore, there are reservations as to the accuracy of these IQ scores for the minority populations, especially black and chicano, along with children from lower socio-economic status families. Throughout most of the twentieth century since the beginning of special classes, the IQ score of a child has been the major criteria used in making a decision on placement in a special class. Special educators have learned from past mistakes that there are grave consequences if a student is mislabeled and placed in a special class.

The IQ test, like any test, is not infallible. It is possible that a student may score a 75 on the IQ test but may have the potential for average intelligence. It is also possible that a child may score 55 on an IQ test and not really have the potential to be educable. Therefore, educators must remain flexible in using IQ scores. These scores must always be used in conjunction with other measures in diagnosing a student's educational potential.

Furthermore, Robinson and Robinson (1965) pointed out that

... in the light of the history of controversy about the nature of intelligence, its organization, its predictability and its susceptibility to change, it is

not surprising that no single definition of mental subnormality has ever been satisfactory to all concerned. The IQ tests are the most widely used criteria for defining mental retardation. Intelligence tests have provided an index of intellectual potential. They provide the greatest amount of information about the intellectual status of a child in the least amount of time. (p. 31)

Despite such controversies, special educators have for practical and empirical reasons continued to utilize these IQ scores. Generally in the past, these children were identified as EMR and placed in self-contained special classes. Unfortunately, the label of EMR tended to stigmatize the students placed in these self-contained programs. Educators have reported that the EMR label stigmatized them and affected their acceptance by peers and their own self-concept. In addition, once these children were identified as EMR they were placed in self-contained programs and seemed to be locked into this placement for their entire school career.

Historical Perspective

The history of society's treatment of EMR children has not been a happy one. Those who were thought of as feebleminded were generally excluded from normal social intercourse in the schools. Sometimes these EMR children were confined to a secluded life at home or to a state institution for the retarded. Society did not know what to do with these children. They were typically excluded from

the public schools because the schools had no programs for them. These EMR children were kept at home by their parents who felt guilty about their handicap. Recent authors (Audette, 1975; Bruininks & Rynders, 1971; Jackson, 1974; Reynolds, 1974) have referred to these excluded and neglected children as ones who all too often became further handicapped by inadequate, restrictive, and unequal educational opportunities.

Then, in 1896, a significant breakthrough occurred in Rhode Island. The state of Rhode Island recognized the potential of EMR children to learn in some ways from an integrated public school educational program. EMR pupils were provided self-contained classes in the public schools. These classes were considered the first public day school programs for the educable mentally retarded children. Self-contained classes were felt to embody a more flexible approach to educating EMR children than institutional placement, since it enabled EMR children to enjoy normal social intercourse with other children in a public school setting. Statistics later indicated that by 1963 approximately ninety percent of retarded children in special education programs were receiving instruction in self-contained special classes (Mackie, 1969).

The initial efforts of special educators in self-contained classes was to provide training to the EMR students in reading, writing, and arithmetic. Educators began to

observe the benefits derived from society assuming an obligation to educate these intellectually less gifted children. Self-contained special classes were designed to provide EMR students with a more individualized academic program and a smaller teacher-student ratio. Self-contained classes were also established to develop a more positive self-concept for EMR pupils.

Nevertheless, for all its real benefits what has come to be known as the self-contained program has proved to have some shortcomings. The research has not shown any conclusive results in supporting that EMR students do make more significant academic gains in self-contained classes than those who are maintained in regular classes. To the contrary, EMR pupils who were mainstreamed in regular classes showed better academic achievement than those in self-contained classes. Self-contained classes imply a segregation of EMR children from their nonhandicapped peers. Even though the self-contained class implies a segregation of EMR children, there have been mixed results in the research as to where EMR children gain more in their social development.

In 1968, Dunn wrote an article that raised a number of issues that seemed to reverse the trend toward the proliferation of self-contained classes as the primary option in special education for educable mentally retarded children. It was his thesis that

... we must stop labeling deprived children, such as ones from low socio-economic backgrounds and non-standard English speaking children, as mentally retarded. The expensive proliferation of self-contained special schools and classes raises serious educational and civil-rights issues which must be squarely faced. (Dunn, 1968, pp. 5 & 6)

Even though others had previously questioned the efficacy of self-contained classes for educable retarded children as being the only public school placement option afforded EMR children, Dunn's article seemed to come at an opportune time. Special educators began to take a more critical look at the present system of providing educational services for EMR children.

Conclusion

There are a number of pros and cons about mainstreaming handicapped children. Moreover, empirical studies have shown us that all handicapped children do not always benefit academically or socially from either mainstreaming in regular classes or placement in self-contained special classes. Therefore, educators must plan to implement flexible program options within their schools such as total mainstreaming within regular classes, partial integration programs, or self-contained special classes for EMR children. Those children who may need additional special educational services that cannot be provided adequately within the regular classroom environment would receive programming in a special class or resource room. Those children and their

regular class teachers in the mainstreaming programs are going to require supplementary aid, training programs, and services in order for the handicapped child to obtain his/her specific educational goals and objectives within that regular classroom.

Educators need to further analyze the results of academic and self-concept research studies in regards to EMR children integrated into mainstreamed regular classes or self-contained special classes. Even though empirical studies have not shed any conclusive evidence on the merits of either placement, specific insights can be obtained from a review of the literature which will assist in educational planning and placement decisions for EMR students. Furthermore, educators will become more informed and aware of the conflicting results and interpretations presently available in the research.

In light of the inconclusive findings to date, special educators should assume the leadership in the challenge to conduct more comprehensive evaluation regarding program alternatives for EMR children. The results of additional evaluation of various appropriate program options for EMR students should define and clarify where the academic or self-concept needs of EMR youngsters can be more effectively provided. Program effectiveness studies will benefit the decision-makers for future programming placements of EMR children.

As educators continue to debate the issue of whether or not to mainstream EMR children, they should refer to the results of empirical studies to date in regards to this issue. At that point, they may realize that their time and energy may best be utilized in planning, implementing, and evaluating the academic and social benefits of a broad range of program options for educable mentally retarded children at the high school level in our public school systems.

The purpose of this study will be to assess the differential effects of mainstreaming EMR high school youth into regular classes as compared to maintaining these students in self-contained special classes. Hopefully, the additional research will provide insights to special educators in pinpointing the effects of either placement on EMR youngsters academic achievement, self-concept gains, attendance, and drop-out records in school.

C H A P T E R I I
REVIEW OF THE LITERATURE

There is a need to study the basis for decisions to place educable mentally retarded children in partially mainstreamed regular classes or in self-contained special classes. Presently, the debate continues among special educators in regards to whether partial mainstreaming or self-contained programs would be the preferred program placement for EMR children. Cassidy and Stanton (1964) stated that "implicit in the tremendous expansion of special class programs in public schools throughout the United States has been the largely untested assumption that special class placement is superior to other educational provisions for mentally retarded children" (p. 8). The controversy of special versus regular class placement of EMR pupils is still of paramount importance. Educators must assess the merits of partial integration and self-contained placements for EMR students.

Self-contained special classes for EMR youth were initially established to provide a more conducive classroom environment to meet the individual academic and social development needs of these pupils. Self-contained classes were designed for students who had similar levels of

achievement and academic potential. Smaller teacher-student ratios were built into the organization of these classes.

Goldstein further pointed out that

... the rationale for special classes for educable mentally retarded children has sound logical and psychological bases. Clearly, children who cannot maintain the learning-performance pace dictated by the regular class program require educational provisions consonant with their rate of learning. Since the turn of the century special education provisions have consisted of grouping some 10 to 20 children who are somewhat homogeneous with respect to IQ and age in a classroom at a regular elementary or secondary school. The educational program in the special class is usually a decelerated, simplified and truncated version of what is going on in regular grades. (1967, p. 580)

Mainstreaming of educable mentally retarded children into some regular academic classrooms is an effort to meet their academic and/or self-concept needs in an educational setting with their nonhandicapped peers. Special educators are interpreting a free appropriate public school education for EMR handicapped children to be a broad range of program options, including partial mainstreaming in regular classes for some students. In the past, regular academic programs have proven to be effective placements for specific EMR students in meeting their academic and/or self-concept needs. Furthermore, nonhandicapped students and regular class teachers become more directly involved in the provision of educational programs for EMR students. Placements of EMR youngsters in regular academic programs or self-contained programs needs to be further examined in the research in

light of the benefits of each placement to meet the academic and social development needs of EMR students.

Academic Achievement

Regular class vs. special class. It has generally been conceded that educable retarded children either partially or fully integrated into regular classes do better in academic achievement than their counterparts who are in self-contained classes all day. Researchers such as Carroll (1967); Elenbogen (1957); Haring & Krug (1975); Thurstone (1959) have generally reached similar conclusions in their studies. Their studies varied in the size of their samples from as large as 1,273 EMR children in the Thurstone (1959) study to 39 students in the Carroll (1967) experiment.

An extensive investigation by Thurstone (1959) was done in 83 schools in North Carolina. There were 1,273 children in the first academic study: 797 male; 476 female. Nine hundred and twelve were white and 361 were Black Americans. All the children scored within the 50-79 IQ range on the Stanford Binet and were between the ages of 6-16 years old with the following breakdown: 50-59 IQ, 278 children, 21.84%; 60-69 IQ, 500 children, 39.28%; 70-79 IQ, 489 children, 38.41%. In addition, children were compared by age groups, such as: 6-10 years old, 394 children, 30.95%; 11-13 years old, 586 children, 46.03%; 14-16 years old, 290 children, 22.78%. The subtests of the Stanford Achievement

Test were used to measure academic achievement of children in special and regular classrooms. In the 6-10 year old group, the regular class placement was better at a highly significant level than special class placement for EMR children. The 11-13 year old group performed significantly better academically in regular class placement. The 14-16 year old group of EMR children performed better academically in regular classrooms but not at as high as the other age groups. The EMR children in regular classes performed at a higher significance level on paragraph meaning, word meaning, spelling, and arithmetic reasoning than EMR children in special classes. There was no significant difference between children in special and regular classes on the arithmetic computation subtest.

Thurstone (1959) also conducted a second year follow-up study of 765 of the 1,273 EMR children in her first year study. These children were all retested. The special class had 565 children, whereas the regular classes had 200 children. Even though EMR children in regular classes still performed better in academic achievement than the EMR students from special classes during the second year of the study, it was not as significant in superiority of regular class placement as in the first year of the study.

Elenbogen (1957) performed a study in the elementary public schools in Chicago in 1956 to obtain information regarding the comparative success of two groups of EMR children

under different environments either in special or regular classes. The two groups of children were matched in chronological age, sex, intelligence quotient, and school district. The mean chronological age was 13.46 for both groups. The mean intelligence score was 70.5 for the children in regular grades and 70.8 for the special class group. Intelligence quotient data were taken from the most recent test results which were individually administered by qualified psychologists. Academic achievement in reading and arithmetic was measured by means of the Stanford Achievement Tests. No more than five children were tested at any one time. Test results of the standardized achievement tests in reading and arithmetic showed higher mean scores for the children not receiving special class training over children in special classes in paragraph meaning, word meaning, arithmetic computation, and arithmetic reasoning. Differences between mean scores of the two groups were statistically significant in paragraph meaning, word meaning, and arithmetic computation.

In another study by Carroll (1967), 39 students with IQ scores between 60-80 were studied. The 39 children for this study needed to be of elementary age and were from five major suburban school districts. The sample consisted of 12 males and seven females in the partially integrated group with 13 males and seven females in the segregated group. The mean CA for the EMR partially integrated group was 8.16 years and 8.28 years for the EMR segregated group.

They had no previous experience in special education. This study was done over an eight month interval and compared results with pre and post test scores on the Illinois Index of Self Derogation and the Wide Range Achievement Test. The results of the investigation partially supported the hypothesis that EMR children in a segregated setting would show less growth in academic achievement than would EMR children in a partially integrated setting over a period of one academic year. In the area of reading, the EMR children in a partially integrated setting made significant growth, but no significant differences were found in the areas of spelling and arithmetic.

Haring and Krug (1975) conducted a study of 48 elementary-age students classified as EMR who lived in an economically deprived area in a large city. Students were randomly selected and divided into matched integrated and segregated groups and placed in four classrooms of 12 students each. The objective was to initiate an experimental individualized instructional program that would facilitate the return of special education students to regular classes. A one-year follow-up study was done after 13 of the 48 students who were in the special education class were placed in regular classes. The study analyzed the academic and social adaptation of the 13 students based on rankings by teachers in nine academic and nine social areas. During October and again in May both groups (segregated and integrated)

were administered the Gray Oral Reading Test and the Wide Range Achievement Test (WRAT). The fall Gray scores were used for matching the students. The end of the year test scores subtracted from the fall scores indicated that the formerly segregated group made a gain of nine months. The WRAT scores indicate that the students with special education training made a mean gain of 13 months in reading and 9 months in mathematics; while the matched subjects made a mean gain of 7 months in reading and 6 months in math. After analyzing the pre and post results of these tests, it was determined that a high number of children who are in special education are capable of making normal growth in regular programs. It is significant to note in this study that the intervention employed by the researchers involved an intensive academic and social preparation training program for the EMR students before they were placed in the mainstream.

Goldstein (1967), on the other hand, conducted a study in three Illinois counties which previously had no special class provisions for educable mentally retarded children and the EMR children in special classes showed better academic achievement scores. Special classes were established in the three counties. Of the approximately 2,000 children screened who were beginning first grade, 129 scored in the range of 56-85 IQ on the Primary Mental Abilities test. The 129 children were then divided into two groups by random procedure. One group was placed in special

class while the other children were placed in regular classrooms. The special classes continued for four years. Testing was an annual event. Goldstein did indicate that the analysis of achievement test scores over the four years of the study was difficult because of the variety of instruments used. The standardized test used over the last three years was the Metropolitan Achievement Test and other series of diagnostic measures. Specifically, among the children with an IQ of 80 or below, the experimental group of EMR children in special classes exceeded the control group of EMR children in regular classes in language achievement (Metropolitan Achievement Test), spelling (MAT), oral reading (Gray Oral Reading Test), tachistoscope word recognition (Durrell), and sound blending (Monroe). On the other hand, the low-IQ experimental children tended to be inferior to the control group in word discrimination (MAT) and reading comprehension (MAT).

Achievement in quantitative skills was determined by the Arithmetic Computation and Problem Solving subtests of the Metropolitan Achievement Test battery. For the low-IQ children, there is an increasing divergence in achievement between the experimental and control groups with a markedly greater achievement evidenced by the group of special class EMR children. For the low-IQ children, except for the first year, experimental children were significantly higher in arithmetic computation scores than the control children.

The results of the arithmetic problem solving and concepts subtests administered in the fourth year indicated significant differences in favor of the low-IQ experimental children when compared with the low-IQ control children. In summary, the results for the low-IQ children with an average IQ of 80 or below on the subtests of the Metropolitan Achievement Test pertaining to arithmetic computation and problem solving support Goldstein's hypothesis that EMR children in self-contained special classes would do better academically than would partially integrated children. This investigation found that educable mentally retarded children in special classes were superior to those in regular classes in arithmetic computation and problem solving, most aspects of reading and language use, and in basic social studies information. Goldstein (1967) concluded that "past investigations focusing upon academic achievement all found either no appreciable differences between special classes or regular classes or a superiority in regular classes. His study showed better academic achievement scores for EMR children from special classes" (p. 596).

Walker (1974) conducted a study in six Philadelphia public schools with EMR children in self-contained or resource room programs. Three control schools were selected to match three experimental schools in pupil population, racial composition, socioeconomic status, and geographic locations. Control and experimental groups of EMR children

in self-contained and resource room programs respectively were matched on chronological age, IQ, and reading level. The means for the 29 experimental subjects in the resource room program at the onset of the program were: age, 10.0; IQ, 69.0; and reading level, preprimer. The means for the 41 control students who were in regular classes in the study were: age, 9.8; IQ, 68.8; and reading level, preprimer. The three subtests of the Stanford Achievement Test (word reading, vocabulary, and arithmetic) were administered to both groups in October 1971 and again in June 1972. Analysis of variance on grade equivalent gains between the two test administrations revealed that experimental subjects (resource room pupils) had higher mean gains in word reading and vocabulary than the children in the self-contained class. The difference in arithmetic gains of the two groups was not significant.

Some investigators have sought to determine the effects of mainstreaming on the academic achievement of EMR children by comparing the performance of children in special classes with that of children placed in a variety of integrated settings. These studies found no significant differences in academic achievement in either placement. In one such study, Budoff and Gottlieb (1976) randomly assigned 31 EMR pupils to regular and special classes. The students ranged in age from 7.7 to 14 years. All subjects had attended segregated special classes in one of three inner city schools

for at least one year prior to the study. Nine of the 17 assigned to regular class were male, while seven of the 14 assigned to the special class were male. The mean IQ was approximately 70 for both groups. The pupils placed in the regular classes were supported by a 40 minute academic resource room each day. Metropolitan Achievement Tests were administered to pupils at the end of one year of treatment. Results of analyses of covariance on standard scores attained at the last two test administrations, with scores on the initial test administration covaried, revealed no difference in reading or arithmetic achievement between integrated and segregated students at either time.

Another study by Ainsworth (1959) assessed three specific placements of EMR children at grades one and two. After 500 children were screened, 193 who met the criteria established, such as IQ, CA, MA, Rural-Urban differences, and sex distribution, were selected for the study. The mean IQ of each group was 62. There were 67 children placed in regular classes with services from an Itinerant Specialist and 48 were placed in self-contained special classes. There were 78 placed in regular classes. There was a pre-test, a test at six months, and a test after one year. The California Achievement Test, Gates Primary Reading Test, and WISC Individual IQ test were utilized as measuring instruments. After post test comparison and analyses of standard achievement tests and academic tests, which were created for the

study, it was determined that the groups of children in different placements did not differ significantly in the amount of improvement between February of 1958 and January of 1959. All three groups did improve significantly on the standardized tests during this time period, yet when any two or three groups were compared academically there was no significant difference.

Summary on academic achievement. Even though the assumption has generally been that EMR students in regular or partially integrated regular classes do better in academic achievement than their EMR peers in self-contained classes, the evidence in the research is not that conclusive. Over the past three decades, results of research studies have shown that there are some EMR pupils who benefit from both regular or special class placements. In most cases, EMR students in regular classes had done better academically than their counterparts in special classes on reading achievement, but there were no significant difference in achievement gains in arithmetic computation, problem solving, or spelling in many of the studies. Also, it is difficult to analyze or pinpoint in these studies how special educators have generally concluded that EMR students in regular classes do better in academic achievement. Judging from the research, it appears that special educators need to provide program options for EMR children in both regular, partially mainstreamed or self-

contained classes depending on the learning and/or behavior strengths of the student.

It is also important to reiterate that it was a common practice for EMR children with the most severe learning and/or behavior problems in regular classrooms to be referred for special class placement. In recent studies, researchers have designed specific interventions to assist and support the EMR student and teacher prior to and during mainstreaming in regular classes. The results of these studies have usually indicated that EMR students who are trained and prepared for mainstreaming are able to perform at a rate to allow regular class placement (Haring & Krug, 1975). Research studies that implement these types of intervention should be continued and expanded to provide long-term studies. Long-term research studies are needed to provide administrators, teachers, and parents with a definitive direction to proceed in placing EMR pupils at various levels in school. Probably, it will continue to be a decision based on the best placement for the individual child. Rather than endorsing one or the other program prototypes, researchers might be directed at determining those learning characteristics of individual pupils that are indicators that he/she would succeed in a particular type of class. Then a decision based on individual learning style and needs could be made.

Social and Personal Adjustment

Regular vs. special class. Most research studies tend to support the self-contained program in meeting the social and personal adjustment needs of EMR students. EMR children require programs to meet their needs in developing a better self-image along with expanding their social competence skills. Robinson and Robinson stated that

... according to a growing body of evidence social competence and social adjustment are the areas in which retarded children profit most greatly from special class experience. Since the most poorly adjusted children tend to be placed in special classes in the first place, such evidence strongly suggests that the special class probably is better suited to the tasks of providing the retarded child with friends, a chance to overcome a crippling sense of failure and more adequate preparation for employment. (1965, p. 466)

In the past two decades, a large number of studies have been done which have focused on the issue of whether the regular or special class provides the best environment and program in meeting the affective needs of the educable retarded child. The affective needs of the EMR have been described in studies in terms of their social adjustment by self-concept measures, behavior changes, peer, and teacher ratings of the EMR child.

Social adjustment--self-concept. The consensus has been of researchers that the special class placement is the most favorable placement for the EMR child in supporting his/her self-concept. Past studies (Blatt, 1958; Cassidy and

Stanton, 1964; Goldstein, 1967; Warner, Thrapp, Walsh, 1973) have shown results which support special class placement. Blatt (1958) conducted an investigation with 125 children, 75 of whom were special-class children. Each child was in the process of completing at least two years of special class elementary education. The children were between the chronological ages eight and 16. Girls were 29 percent of the special class children, while 30 percent of the regular class children were girls. After each child received an individual intelligence evaluation by a certified psychometrician, 75 of the children were diagnosed as being educable mentally retarded. The regular and special class children were compared by the New York City Scale of Social Maturity and Social Stability in addition to the California Test of Personality. Results indicated that mentally retarded children in both special classes and regular classes appear to have a greater degree of personality maladjustments than typical children. Also, mentally retarded children in special classes appear to be more socially mature and emotionally stable than mentally retarded children in regular classes. Comparisons in this study were based on scales that have no established validity or reliability so therefore Blatt's conclusions must be considered suspect statistically.

In a later study, Goldstein (1967) selected a population of 129 EMR children and randomly placed them in special and regular classes at the first grade level. Children

were interviewed one month after the beginning of the second school year of the project. In regards to the EMR child's relationship with neighborhood peers after school, the main effect of special-class placement seems to be a reduction in the probability of interaction between the educable mentally retarded child and the other children in the neighborhood.

Another hypothesis tested was that children in the special class would show a greater degree of success-approaching and a lesser degree of failure-avoiding than children in the control group. Success-approaching would be evidenced by originality, fluency, and flexibility in thought, greater freedom of action in which the individual risks being wrong, and a lower degree of anxiety in performing school-related tasks. Evidence suggested that the regular class children faced many possibilities of failure in their school work. The findings of Goldstein were as follows:

... (a) the EMR children in the special class experimental group scored consistently higher than EMR children in the regular class control group on verbal tests of originality, fluency, and flexibility of thought, (b) the special class children in the experimental group took greater risks in being wrong by attempting to answer a greater number of difficult questions in an orally administered questionnaire, and (c) there were little differences in levels of anxiety during oral reading. The results of this investigation pointed to a better adjustment by EMR children in special classes to both school and home. (1967, pp. 596-597)

Carroll (1967) investigated the effects of segregated

and partially integrated school programs on the self-concept of educable mentally retarded children. There were 39 EMR students selected for this study. The mean CA was approximately eight years for both groups. All children in the study were administered the Illinois Index of Self-Derogation, which was developed at the University of Illinois by Goldstein (1964). This instrument was standardized for EMR children between 60-85 IQ's. During a pre and post-test period of one academic school year, the hypothesis which predicted that EMR children in a segregated setting would show less improvement in self-concept than would EMR children in a partially integrated setting was supported. EMR children in a segregated setting tended to derogate themselves more than EMR children in a partially integrated setting. Those EMR youngsters who remained in a regular classroom one-half day had a significant decrease in self-derogation. This was interpreted to mean a better self-concept at the end of eight months of schooling.

In 1973, Warner, Thrapp and Walsh did a study to determine and analyze the attitudes of EMR children in special classes. They randomly selected 369 children from special classes in five school districts in California. Their IQ's ranged from 56 to 74 with a group mean of 66. Their ages ranged from eight years and nine months to 17 years and six months. The majority of the children enrolled in these classes were either black or bilingual and lived

for the most part in low-income homes. Each subject was personally interviewed on five questions after a period of observation and familiarization. Results indicated that 61 percent had no desire to be in some other class in their particular school. Younger children had a more favorable attitude toward their placement in a special class, with 53 percent indicating they thought they were in a special class "to learn," "to read," or "to catch up." This positive attitude decreased to 34 percent at the junior-high level and to 18 percent at the senior-high level. These statistics point to a real concern for special educators in viewing options other than special class placement for EMR children at the junior- and senior-high level because of such a significant decrease of positive attitudes of EMR youth toward placement in self-contained classes.

Peer acceptance. A number of studies (Baldwin, 1958; Bruininks, Rynders & Gross, 1974; Chennault, 1967; Johnson, 1950; Johnson & Kirk, 1950; Lapp, 1957; Rucker, Howe & Snider, 1969; Strauch, 1970) were conducted which indicated that EMR children were isolated or rejected by their non-retarded classmates. Johnson's (1950) study showed rather clearly that the mentally handicapped children were significantly more isolated and rejected than the typical children in the same classes. Comparisons were made in 25 regular classes at five different grade levels (1-5). All the

educable mentally handicapped children were in regular classes in these communities because neither community had organized special classes for the mentally handicapped.

Johnson said:

... regular classes were not meeting the needs of the mentally handicapped children. In addition to being significantly different from their classmates intellectually and academically, the mentally handicapped children were also segregated socially in spite of their physical presence within the grade group. When classmates were asked why they rejected the mentally handicapped children, their replies were not in terms of intelligence or comparative academic abilities. Rather, they were rejecting the mentally handicapped primarily because of unacceptably aggressive behavior. (1950, pp. 86-87)

In most of the other peer acceptance studies, the nonretarded children generally based their opinions of the EMR child on their objectionable acting out behavior traits and not on the basis of the child's mental capacity.

Baldwin (1958) studied 572 non-mentally retarded children and 31 mentally retarded children in 22 fourth, fifth, or sixth grade classes in a large public metropolitan school system in an eastern state. Of the non-mentally retarded children, 49.5 percent were boys and 50.5 percent were girls; whereas among the mentally retarded children, 45.2 percent were boys and 54.8 percent were girls. The median age for the total group was 10.7 years. The variation in the intelligence quotients among the 22 classes was wide. The Ohio Social Acceptance Scale was used and the results pointed to lower social acceptance of the mentally

retarded children than the non-retarded children in the regular grades.

Both Johnson and Kirk (1950) and Lapp (1957) used a sociometric questionnaire to analyze peer acceptance of EMR children. Johnson and Kirk (1950) interviewed 698 children in 25 classes in Illinois. The Lapp (1957) study was made in nine regular classes and one special class in Garfield Heights Elementary School, Ohio. Both studies reached similar conclusions: EMR were rejected more often than their nonretarded peers.

The Peer Acceptance Scale utilized in a study for Bruininks, Rynders & Gross (1974) was administered to 1,234 nonretarded peers. This sociometric questionnaire was a modified version of the Rucker (1967) adaptation of the Ohio Social Acceptance Scale. The Peer Acceptance Scale did take into account children in urban and suburban school settings in order to determine the social acceptance of mildly retarded children by their nonretarded peers. There were 65 elementary school age mildly retarded subjects in the urban and suburban districts who averaged between 10 and 11 years of age and had mean IQ's of 75 and 69, respectively. The IQ scores for both retarded samples ranged from 50 to 85. Nonretarded pupils were selected from the regular classrooms attended by the retarded pupils. Since neither district practiced retention to any great extent, retarded children had similar chronological ages (CA) as their peers. The

retarded children were almost 50 percent boys and girls. The retarded children in the urban district had 33 boys and 17 girls. In the suburban district there were five boys and 10 girls. An interesting result of this study was that when peers of the same sex in urban settings rated mildly retarded children they had significantly higher peer ratings than nonretarded children, whereas suburban mildly retarded children received significantly lower ratings than nonretarded children. However, no appreciable differences were obtained between retarded and nonretarded samples in level of peer acceptance in either setting when ratings of boys and girls were combined. The statistical variable of opposite sex raters seemed to have a significant effect on altering the results of this study.

Rucker, Howe & Snider (1969) investigated the social acceptance of EMR children in junior high academic and non-academic regular classes. Rucker et al. (1969) modified the Ohio Social Acceptance Scale to make its direction appropriate for the junior high level. This instrument was administered in 30 regular junior high classes to measure various aspects of acceptance of 23 EMR special class pupils participating in these classes with 1,101 nonretarded pupils. The subjects consisted of twenty-three retarded students with a mean IQ score of 71 (range 54 to 80 and mean CA of 14 years 9 months (range 11-5 to 16-3)). The 14 boys and nine girls were divided between the two special classes. The retarded

subjects were enrolled in regular classes for 16 academic classes such as science and history. In addition, EMR children were integrated into 14 nonacademic classes, such as physical education and home economics programs. The 1,010 in these 30 regular classes made up the group of non-retarded subjects. The median class enrollment for the nonretarded subjects was thirty in academic classes and thirty-nine in the nonacademic areas. The results of this investigation seem to support the following conclusions:

... (a) retarded children participating in regular junior high classes are less accepted than their nonretarded classmates; (b) retarded children are as low in the social structure of nonacademic classes such as physical education as they are in academic classes such as science; (c) retarded children overestimate their social acceptance in regular classes; and (d) the more popular children in a special class tend to be more accepted by the nonretarded. (Rucker et al., 1969, p. 621)

Another study germane to social acceptance of EMR children was done by Chennault in 1967. Her study consisted of a pre-test, post-test, and control-group design. Sociometric scales were administered to 282 pupils in eight intermediate and eight junior high special classes for the mentally retarded. Subjects selected for the study were the 64 most unpopular children from the 16 special classes. Chennault used an experimental treatment of a group activity which was the planning, rehearsal, and presentation of a single dramatic skit. The participants included experimental special class children, two of whom were the least

accepted and the two most accepted in a single class. The EMR students participating in this study improved significantly in peer acceptance and in their perceived peer acceptance. This study did demonstrate the technique of a group activity in a dramatic skit that proved effective in making status gains for unpopular EMR children. An important consideration in any study would be the long-term impact of the experimental technique used in a study and how it is able to maintain the behavior change of the EMR students.

Contrary to many previous findings, studies by Clark (1964) and Renz and Simensen (1969) found that special class EMR's were not rejected with greater frequency than their normal classmates and normal subjects used the same variables to describe EMR children that they used to describe nonretarded children. Clark (1964) studied 163 normal children, 80 boys and 83 girls, with a mean IQ of 112.07 enrolled in three fourth and three fifth grade classes in a suburban elementary school in New York having an enrollment of 1,200 children. His method of inquiry was to show the normal subjects, during an interview, photographs of EMR children in the same wing of the school, who were identified only as some children in the school. His study attempted to ascertain how these 163 normal children perceived and described 13 EMR children, three girls and 10 boys in a special class, ranging in age from 11-10 and 12-8 and in IQ from 63 to 75 (Full Scale WISC). In this school, educable

mentally retarded children participated in gym classes and other activities with the children in the regular grades. Clark stated that "the image of the special class which emerges from this study does not suggest that the majority of children in the regular grades derogate the special class" (pp. 293-294).

Renz and Simensen (1969) conducted a study similar to Clark's in 1964. Their results supported his results. Renz and Simensen (1969) made their study in a public junior high school in a county system in Maryland. The school was located in a compact community that represented a wide spectrum of socioeconomic backgrounds. All of the 1,000 children in the school resided in the same geographic area so that they had the opportunity for association within the community as well as within the school setting. Special education classes had been in existence for 15 years. All EMR special class children in the county had been integrated in the following areas: transportation, lunch, extracurricular activities and/or recess, music, and physical education. A random sample of 100 students was drawn from 285 students in the seventh grade. To be included in the study, the pupil had to be capable of recognizing photographs of one of the EMR subjects and one of the normal subjects that were used as stimulus objects. Of the 100 students, 57 met this criterion. Of the 14 special class members, seven had taken the Stanford-Binet, their mean score was 76.71. The

remaining seven children had a mean Wechsler full-scale IQ of 72.00.

Students were interviewed separately and shown alternate photographs of the EMR and normal students. Each child was only identified as a member of the seventh grade in their school. Statements about each student were classified according to one of 19 sub-units adapted from Clark's study. The four distinct psychological units (identification, association, description, and evaluation) were used to classify responses from subjects. Renz and Simensen concluded from their study that:

... normal adolescents did not perceive and describe EMR adolescents exclusively in terms of their intellectual limitation or special class placement. They did, in fact, use the same variables to describe the retardates that they used for other members of their school community. In brief, this investigation showed that although the EMRs were segregated for instructional purposes it did not follow that, by necessity, they were socially segregated. (1969, p. 407)

Summary of social adjustment--self-concept and peer acceptance studies. The majority of the research supported special classes as a more favorable placement to meet EMR youngsters' affective needs. These children were not as afraid to fail and were proved to be more success-approaching than EMR youngsters in regular classes. However, a number of peer acceptance studies demonstrated that EMR children were isolated and rejected by their nonretarded classmates. Even though EMR students gained more individually in social

and self-concept improvement in a special class, there still appears to be a serious concern regarding their rejection and lack of acceptance by their nonhandicapped peers.

Methodological Critique of Past Research

Some of the criticisms of research methodology employed in previous research made the results of the studies questionable. The criticisms of past studies included (a) uncontrolled selection of children, (b) not considering preplacement experiences of special class children, (c) unclear educational program goals of special and regular classes, and (d) evaluation with measurement instruments of questionable validity and reliability.

Selection of children. A major methodological problem in many experiments was the selection of the sample. There were studies which did not utilize a random sampling method in assigning or selecting EMR students for either the experimental or control groups in their studies; for example, in the Elenbogen (1957), Ainsworth (1959), and Thurstone (1959) studies. Goldstein clearly delineated the most obvious selection problem in past studies:

... in some studies, educable mentally retarded children already in established special classes were compared with those with similar IQ in regular classes. While the groups might have been comparable in IQ, mental age, and socioeconomic background, they may not have been the same in other important aspects. It is necessary to recognize that assignment to a special class is influenced by the 'nuisance value'

of the retarded child in the regular class. Thus, children with serious learning and/or behavior problems are given preference when assignment decisions are made. It is probable, then that retarded children already in special classes are inferior to retarded children in regular classes in academic and personality factors--exactly those variables that are measured when comparing the classes. It is, therefore, hardly surprising that these studies found the educable mentally retarded children in regular classes superior in academic achievement. (1967, pp. 581-582)

Baldwin (1958), Cassidy & Stanton (1964), and Robinson & Robinson (1965) also made reference to this problem because it was a common practice that the most objectionable behavior and/or learning problem EMR students in the regular classes were referred to the special classes.

Preplacement experience of the special class children. The effects of school experiences of EMR pupils prior to special class placement were uncontrolled in and sometimes even unknown in such studies as Carroll (1967), Bruininks, Rynders & Gross (1974), and Haring and Krug (1975). Kirk (1964) and Goldstein (1967) referred to the lack of control in various studies in regards to preplacement experiences in special or regular classes prior to the study being implemented. Goldstein maintained that:

... few educable mentally retarded are placed in special classes early in their school careers. Most are permitted to fail in regular classes for two, three, or four years before referral is made. A typical special class will have in it children with varied experiences in regular classes. A reasonable evaluation of special classes should not be contaminated by the confounding effects of previous regular class

experience, which may have serious effects on motivation for learning and social adjustment in the classroom. (1967, p. 583)

This variable of preplacement experiences of special class children has not received sufficient attention in certain studies and therefore raises reservations about the conclusions reached in those studies.

Educational program goals. Another methodological problem which has been referred to consistently in the research is the lack of clear program goals in both the special and regular classes for educable retarded children. Such studies as Ainsworth (1959), Bruininks, Rynders & Gross (1974), and Budoff and Gottlieb (1976) are examples of studies which did not make explicit if there were distinct program goals in both special and regular classes for EMR students. Johnson called for studies to:

... determine what knowledge and skills are needed to aid the mentally-handicapped children to become socially competent and economically self-sufficient adults. Following this, we need to know what type of a school situation (regular or special classes) more adequately provides them with these necessary skills. (1950, p. 88)

Johnson (1962) later contended that "in order to achieve these objectives, the children must be provided with the experiences necessary to develop the attitudes, knowledge, skills and concepts essential to the acquisition of basic academic skills, social competences and vocational abilities" (p. 63).

Because special classes, generally speaking, still have significant differences in curriculum requirements and teacher qualifications it becomes very difficult to generalize results from studies comparing special and regular class placements of children. Individual special and regular class programs should be defined in terms of competency based curriculum options which their programs can provide. Then researchers can assign students randomly to each program and measure the success of these children in the two controlled settings. There is a need for a clear description of special and regular class curriculum in order to measure program effectiveness.

Assessment instruments. Some researchers (Blatt, 1958) have concluded their studies with explanations that the results are questionable because they used a measuring instrument which was not fully validated. Another example of obtaining inconsistent test data was a study conducted by Goldstein in 1967. Goldstein pointed to the difficulty in comparing the results in the first few years of his study because of the variety of test instruments he used. Therefore, researchers must give more careful consideration to validating their measuring instruments prior to conducting their study.

In addition, Goldstein pointed out another major concern in evaluating academic achievement in special classes:

... within the special class, academic subjects fit into a context which also emphasizes social and occupational learning. In this sense, academic subjects are intended to be a means toward an end, rather than ends in and of themselves. Thus, evaluation of a special class program needs to take into account such concepts as social adjustment, motivation, and self-concept. Without a balanced assessment, therefore, a real picture of the efficacy of the special class cannot be obtained. (1967, p. 584)

Summary of critique. Even though past research studies that measured the efficacy of special classes for educable mentally handicapped children reveal certain methodological inadequacies, there are still those that have produced statistically reliable findings. Every research study is a compromise, it is virtually impossible to control all the variables that affect how a child learns in school. Therefore, researchers must either control specific variables or account for their impact on their study. In particular, the following methodological areas should be considered when designing or reviewing studies on the issue of special class placement for EMR pupils: (a) control over the selection of children; (b) consideration to preplacement experiences of the special class children; (c) describing program goals and curriculum offerings in special or regular classes; and (d) utilizing valid and reliable measures to gauge the effectiveness of special and regular class placement in academic, psychological, and social adjustment achievement of the EMR students. It would appear, however, that these methodological problems apply to both special and mainstreamed populations when comparative studies are made.

Post School Adjustments

From studies such as Dinger (1961) and Porter and Milazzo (1958) special educators can obtain some insights into the post school adjustment of EMR children. Porter and Milazzo (1958) studied 12 EMR adults who went to special classes and 12 who attended regular classes in their school days. Interviews were used to obtain information about the social, economic, and employment competence of the two groups of EMR adults. Even though they felt that the number of cases in each group in this study was too small to allow conclusions of a definite nature, Porter and Milazzo did conclude that:

... several phases of the data do seem to indicate a strong tendency toward an overall advantage for the persons who had attended a special class during their school years. The most important difference between the two groups seems to be in the greater frequency of employment of the persons from the special class group. Persons who have attended special class also seem to conform better to social standards as represented by fewer arrests, slightly more church attendance, and less drifting from one place to another. (1958, p. 420)

Furthermore, on a more practical level, Dinger (1961) attempted to determine which positive post-school adjustments can and are being made by EMR pupils. A random sample of 614 names was selected from the 1,500 total names recorded in the special education files of former pupils of that department in Altoona, Pennsylvania. A mailing address was located for 421 of these individuals or their parents and

a brief personal data questionnaire was sent to these people. Three hundred and thirty three or 79.3% of the 421 persons provided the desired information. Dinger visited 100 of the subjects in their own homes in order to observe the family living conditions and to secure a historical description of the subjects in terms of their educational, military, occupational, marital, financial, community, and leisure time activities and to secure their opinions on, and suggestions for, the content of a proposed curriculum for retarded pupils.

Dinger's study did cite some significant statistics in regards to some of the following information:

... (a) 79 percent of the group still felt that they would be in favor of making a further effort at securing a diploma through adult evening school if this were possible, (b) 59 percent of the group secured their present job through the efforts of friends or relatives. The school played a part in securing only 2% of the present jobs held by this group, (c) 82 percent of the group were entirely self-supporting, (d) over 75 percent of this group do not belong to any socializing type of activity such as teams, clubs, or lodges, and (e) newspaper and magazine subscriptions were reported by 66% and 79% of this supposedly non-reading group respectively. (1961, pp. 355-356)

Summary

With the advent of recent discussions and explorations of other program options for EMR students, it is necessary to review studies focusing on the controversial issue of special versus regular class placement in the research. Authors such as: Bruininks & Rynders, 1971; Dunn,

1963, 1968, 1973; Johnson, 1962; Keogh & Levitt, 1976; Kirk, 1964; Lilly, 1970, 1971; MacMillan, 1971, pointed to the need for more conclusive efficacy studies on this issue. In addition to the issue of the effectiveness of special versus regular class placement for EMR children, there is also the issue of the benefits of partial integration programs and the self-contained special class model for these children. Researchers have generally concluded that educable mentally retarded children either in partial or fully integrated mainstreaming programs do better in academic achievement than their counterparts who are in self-contained special classes. But there is also a consensus among researchers who have found that EMR children in self-contained special class placements have fared more favorably in their social development than EMR pupils who are mainstreamed into regular classes.

The issue of self-contained special classes or regular classes for EMR pupils requires more studying by researchers. Despite the added attention this issue has received during the past three decades, special educators are still debating the pros and cons of these program options for specific EMR children. In the meantime, special educators need to maintain a wide range of program options at all levels in their schools. However, in the years ahead, researchers should be able to shed additional light on the merits of either academic achievement or social development

gains for EMR students who are either placed in special classes, partially mainstreamed programs, or full-time regular classes at various levels in the school system. Furthermore, special educators need to carefully evaluate the results of research studies completed to date in order to broaden their perspectives in rendering program placement decisions for individual EMR pupils.

Educators must further clarify with EMR children their needs in terms of academic skills, social competences, and vocational abilities to succeed in society. These skills should be taught during their school years in the most appropriate placement to allow them to become productive and responsible citizens in their communities. When these skills are clearly defined within school systems, it will become more meaningful to study the issue of special or regular class placement for EMR children. At that point, efficacy studies will be comparing different placement options based on long-term program goals for EMR children.

Consequently, the study reported here will concentrate on the differential effects of placement of EMR students in self-contained special classes as compared to partially integrated placement. The study will center on the effect of these program placements on EMR youths' academic achievement, self-concept gains, or attendance at school. In addition, the effects of these placements and the students' sex differences will be studied and analyzed

in regards to academic achievement, self-concept gains, and attendance at school. Therefore, the results of this study should provide some necessary data and insights in the use of mainstreaming and special classes at the high school level.

C H A P T E R I I I

METHODOLOGY

Introduction

Mainstreaming handicapped children into regular classrooms is a national and state policy. This policy of placement of handicapped students in the least restrictive educational environment is in Massachusetts law Chapter 766 and set forth in Section 612 of the Federal Education for All Handicapped Children Act of 1975 (Public Law 94-142) implemented nationally in October of 1977.

A number of empirical studies have been conducted as to the effectiveness of various mainstreaming program options for educable mentally retarded (EMR) students. Generally, researchers have concluded that educable mentally retarded children either in partially or fully integrated mainstreaming programs do better in academic achievement than their counterparts who are in self-contained special classes. However, researchers have also found that EMR children in the self-contained classes have fared more favorably in their social development.

The present study continues this line of research in examining the effectiveness of self-contained or partially integrated program placements for EMR students at the

secondary level. The researcher attempted to ascertain the differential effectiveness of the two program placement options in meeting the academic and social needs of EMR students.

The primary goal of this study is an investigation of the differences in academic achievement and self-concept of EMR youth when they are placed in either partially mainstreamed programs within regular classes or segregated in self-contained special classes at the high school level. As it is pointed out later, all 10 of the EMR students were placed in one or more regular academic class in their partial mainstreaming programs. Of the 10 placed in regular academic classes, six were placed in just one regular academic class. Three were placed in two regular academic classes. One student was integrated for three regular academic classes during a normal five period school day. The integrated EMR youth were placed in either earth science, social studies and/or mathematics courses. There were only three EMR youngsters who were integrated into mathematics courses. All 20 EMR students in either self-contained or placed in partially mainstreamed programs were placed in nonacademic regular classes such as gym, music and art. One EMR student was placed in a regular English class.

Hypotheses

The main hypothesis of the study was that there will be no significant difference in academic and self-concept gains as measured by the Wide Range Achievement Test and the What Would You Do? Self-Concept Scale from October to June between EMR youth who were partially mainstreamed into some academic regular classes and those who were placed in self-contained special classes. In addition, it was expected that there will be no significant difference in attendance records or drop-out rates from October to June between EMR youth who were partially mainstreamed into some regular classes and those who were placed in self-contained special classes. The following six null hypotheses were postulated and tested in the study. The rejection level for each hypothesis was at the .05 level of significance.

Academic achievement.

Hypothesis I--Math. There will be no statistically significant difference between EMR youths in mathematic achievement who were randomly assigned to either partially mainstreamed regular academic classes or self-contained programs as measured by the Wide Range Achievement Test (WRAT).

Hypothesis II--Reading. There will be no statistically significant difference between EMR students in reading achievement who were randomly assigned to either

partially mainstreamed regular academic classes or self-contained programs as measured by the WRAT.

Hypothesis III--Spelling. There will be no statistically significant difference between EMR students in spelling achievement who were randomly assigned to either partially mainstreamed regular academic classes or self-contained programs as measured by the WRAT.

Self-concept gains.

Hypothesis IV--Self-concept. There will be no statistically significant difference between EMR youngsters in self-concept gains who were randomly assigned to either partially mainstreamed regular academic classes or self-contained programs as measured by the What Would You Do? Self-Concept Scale.

Attendance and drop-out records.

Hypothesis V--Attendance. There will be no statistically significant difference between EMR youth in daily attendance who were randomly assigned to either partially mainstreamed regular academic classes or self-contained programs as measured by daily attendance records.

Hypothesis VI--Drop-outs. There will be no statistically significant difference between EMR students in drop-out rates who were randomly assigned to either partially mainstreamed regular academic classes or self-contained programs as measured by drop-out rate records.

Sub-hypotheses: sex differences. In addition to the six major hypotheses, there were four sub-hypotheses tested in regards to the effect of sex differences on academic achievement, self-concept gains, attendance, and drop-out rates. The following null hypotheses were tested. The rejection level for each hypothesis was at the .05 level of significance.

Sub-hypothesis I. There will be no statistically significant difference between EMR girls who were randomly assigned to either partial mainstreamed or self-contained special classes in academic achievement, self-concept gains, or attendance records.

Sub-hypothesis II. There will be no statistically significant difference between EMR boys who were randomly assigned to either partial mainstreamed or self-contained special classes in academic achievement, self-concept gains, or attendance records.

Sub-hypothesis III. There will be no statistically significant difference between EMR boys or girls who were randomly placed in partial mainstreamed regular academic classes in academic achievement, self-concept gains, or attendance records.

Sub-hypothesis IV. There will be no statistically significant difference between EMR girls and boys who were randomly assigned to self-contained programs in academic achievement, self-concept gains, or attendance records.

Setting

This study will be carried out in an urban high school in Massachusetts. This high school has a total of 2,000 students. Of these students, there are 46 students who are programmed in four special education classes in the lowest academic level of the high school. This school was chosen because of its size; it is in an urban school district which has a significant number of students who met the major criteria of the study of having an IQ between 50-80. This school is similar in organizational and architectural design, as well as in educational structure and curriculum, to most urban high schools in Massachusetts.

The physical plant of the school has three levels. Each curriculum area such as science, mathematics, social studies, English, foreign languages, business, and special education are located in specific sections of the school. The four special education self-contained classes are located in the lowest level of the school.

The educational organization and curriculum of the regular education programs are provided on a traditional departmental model. Therefore, each academic department area has a designated head who has the responsibility for planning, coordinating, and implementing their content areas. Within this department structure, programs are provided in academic content areas to students on homogeneous levels in

their regular classes.

Another important consideration for the selection of this setting was the willingness of the Superintendent of Schools, Director of Special Education, and Principal to participate in the study. There was a shared concern to appropriately measure the effectiveness of their special and regular education programs for EMR youth at the high school.

Subjects

Thirty-four EMR students who had IQ's between 50-80 were matched according to age, IQ, and sex. Two local school psychologists reviewed matches to assure comparable groups. After matching the pairs, one EMR student was randomly assigned to either partially mainstreamed programs or placed in self-contained special classes. The students ranged from 13 to 19 years of age and 50 to 79 in IQ scores.

Staff

The four teachers of self-contained special education classes at the high school had an average of 14 years of teaching experience. Their sex, teaching experience, and degrees are presented in Table 1. The six regular academic teachers at the high school have an average of 11 years of teaching experience. Their characteristics are presented in Table 2.

TABLE 1
Teachers of Self-Contained Special Education Classes

Teachers	Sex	Years of Teaching Experience	Degrees
1	F	1	B.A.
2	M	29	B.A., M.A.
3	F	4	B.A.
4	F	22	B.A., M.A. + 30 credits

TABLE 2
Teachers of Regular Academic Classes

Teachers	Sex	Years of Teaching Experience	Degrees
1	F	5	B.A.
2	M	18	B.S., M.A. + 60 credits
3	F	3	B.A.
4	M	11	B.A., M.S.
5	F	3	B.S., B.A.
6	F	27	B.A.

All special and regular education teachers were blind to the purpose and scope of this study.

Dependent and Independent Variables

The dependent measures of academic achievement were the reading, mathematics, and spelling subtests and total scores as measured by the Wide Range Achievement Test (WRAT). Self-concept gains were measured by the What Would You Do? Secondary Scale. Records of attendance and drop-out were also kept.

The independent variables were the two program placements where EMR students received instruction. The self-contained special education classes provided small group (5-10 students) and individualized instruction to primarily EMR students. The regular academic programs offered programs in teaching the subject content area for the lower academically functioning students at the high school including the EMR children.

Descriptions of Program Placements

Self-contained programs. The special education teachers in the self-contained programs at this urban high school provide instruction in the areas of reading, language, mathematics, writing, and pre-vocational training. There are four special education teachers and three teacher aides who provide instruction to students in these classrooms.

During each class period, there are usually five to ten youngsters receiving special education services in each class.

Partial mainstreamed programs. Seventeen of the EMR students were mainstreamed into specific regular classes during part of their school day. These students were in all instances integrated for one, two or three of the five academic instructional periods during a normal school day, such as: social studies, basic mathematics, and earth science. Most of the regular classes have a 25 to 1 student-teacher ratio. The regular class teachers had reviewed the individual educational plans for each student integrated into their classes. The individual educational plans contain information relative to the student's learning style and his/her academic strengths and weaknesses. The regular class programs are basically traditional in nature. This high school is organized on the departmental model. Therefore, the primary focus of the regular class programs is the content of the subject being taught. The EMR students were integrated into regular academic classes designed for the lower academic functioning regular students.

Instruments

WRAT--the 1976 edition. Several methods of estimating the validity of a test are used in the development of educational tests. The most important among them are: (1) the correlation

of test results with outside criteria such as teachers' ratings or chronological age, (2) the correlation of the scores of one achievement test with those of another, (3) the correlation of the achievement scores with mental ability or intelligence ratings, and (4) a factor analysis of a large number of abilities to determine the factor loadings inherent in each subtest.

The WRAT subtests indicate orderly and progressive increases of raw scores with age, except on adults after 35. This factor does not imply that the correlation between raw score and age increment is a high one. The correlation is moderately and significantly positive.

Another measure of validity applied on the WRAT subtests was the comparison of WRAT subtest scores with the level of achievement of groups differing in general ability, educational proficiency, and cultural opportunity. A group of mentally retarded adolescents were compared with four other groups such as a group of adolescent college students referred for career planning or personality evaluation. The results were unequivocal in demonstrating the high sensitivity of the WRAT tests to various educational and environmental conditions.

Cross validation was also used to compare the three parts of the WRAT scale. Correlation coefficients were calculated between the test scores of the reading, spelling, and arithmetic subtests for all age levels included in the

sampling. In the 13 to 18 age range with 200 individuals included for each age level, correlation scores ranged from as low as .646 to as high as .928. The intercorrelations between the three WRAT subtests are highly significant.

The 1976 edition of the WRAT had subtests in reading, spelling, and arithmetic. Level II is intended for persons from 12 years 0 months to adulthood. Altogether, the three subtests take between 20 and 30 minutes to administer. The reading subtest measures a person's ability to recognize, name, and pronounce words. The spelling subtest measures a person's ability to copy marks resembling letters, writing their name, and writing single words to dictation. The arithmetic subtest measures a person's ability to count, read number symbols, solve oral problems, and perform written computations (see Appendix A).

The WRAT satisfies statistical conditions of reliability most adequately. Numerous population groups of different degrees of homogeneity have been studied by the authors of the test during the past 20 years. The reliability coefficients on the reading, arithmetic, and spelling subtests for persons with an age range from 13 to 18 ranged from .955 to .988. The standard errors of measurement for this same age group ranged from 1.13 to 1.70. These scores were determined on raw scores obtained on samples of 200 individuals selected in such a way as to represent probability distributions of achievement based on normative data.

The reliability measures reported for all three subtests are adequate. However, the authors still cautioned that the subtests should be utilized considering their high reliability coefficients based on the sample studied. Jastak and Jastak (1965) reported that "the most reasonable guess concerning the clinical reliability of the WRAT is that the coefficients vary from .90 to .95 for each subtest with an average reliability of .93" (p. 14).

What Would You Do? Secondary Level. The What Would You Do? secondary level self-concept scale is an inferential self report. Inferential self report measures are devised so that their chief purpose is camouflaged. Inferences regarding a person's attitudes and interests are thus made from an individual's responses to more oblique stimuli. These measures are, in general, less fakeable than the direct self report devices because it is less clear to the respondent what the "appropriate" response should be.

Measures of self-concept distributed by the Instructional Objectives Exchange undergo a continual process of evaluation and revision during developmental stages. Procedures that are generally undertaken are: (1) subject matter reviews by experts in the field, (2) reviews by educational evaluators, and (3) appraisals by teachers in the grade levels concerned. The self-concept tests that contain complete measures are field tested for purposes of

development prior to publication.

Periodic revisions of the self-concept measures involve complete reviews and changes in the following areas: (a) addition of new objectives, (b) rewording of inappropriate or ambiguous objectives, (c) restructuring or reordering of the material, (d) incorporation of areas reflecting new developments in the field or teaching approaches, and (e) refinement or deletion of items contained in existing measures.

Staff members of the Instructional Objectives Exchange initially used several exotic attempts that were devised and rejected as being impractical or invalid. A few approaches seemed to be defensible and these were tried out with learners, first in groups of five to ten children and then, after revision, on larger groups (such as a full class) in the grade levels for which the inventory was designed.

According to the staff at the Instructional Objectives Exchange, the What Would You Do? Scale which yields estimates of one's self-concept was subjected to considerable scrutiny throughout the various phases of development. Not only were measures tried out on learners, but the validity of the general rationale, and the scoring of particular individual items were constantly checked with members of the Instructional Objectives Exchange staff as well as external consultants.

The What Would You Do? is a 19 item self-concept inventory that presents a series of fictitious situations, each followed by four possible action response alternatives (see Appendix B). The person completing the inventory is asked to choose one of the four alternatives that is most like what he/she would think or do. Two of the four choices are designed to reflect the behavior or thoughts of one who possesses a positive self-concept, two choices reflect the behavior of one who possesses a negative self-concept. The person selects one of the four alternatives. The number of positive alternatives selected by an individual constitute his/her score.

The situations posed in the instrument were drawn from the literature regarding self-concept, principally the writings of Coopersmith (1967) and Wylie (1967) and deal with the following dimensions: (a) accomodation to others, (b) expectations of acceptance, (c) courage to express opinions, (d) willingness to participate, and (3) expectations of success. Students should be able to complete this instrument in 15 to 20 minutes. Also, the administrator of this instrument is advised that if he/she feels that the student's reading abilities will prohibit their completing the measure in this time period then the questions should be read orally. The pilot study was used to refine procedures. In all, 1,229 pupils were involved in the revision field tests. Eleven schools were involved. Based on

economic and social information available from administrative staff in these schools, five of these schools were identified as representing low socioeconomic status, five as representing middle socioeconomic status, and one as representing high socioeconomic status neighborhoods.

Internal consistency and the test-retest stability index for the What Would You Do? scale were obtained during its revision. Testing of internal consistency index was done with 137 secondary students and had a reliability of .78. The test-retest stability index was conducted with 182 secondary students and produced a reliability of .69. The revision of the measures of self-concept resulted in a series of refined and revised measures, more defensibly based on field test data from a more representative learner population. The What Would You Do? measure appears to be a reasonably reliable instrument for measuring self-concept gains of high school age youth. While no studies were found where this self-concept scale was used with EMR students, a review of the items by special education personnel indicated the item content was familiar to EMR students and was suitable to use in this study if they were read slowly and orally. Also, each question needed to be briefly explained to each student prior to asking for an answer.

Analysis of data. A t test with repeated measures was utilized to analyze the data. Two-tailed t test

at the .05 level of significance was used to measure differential gains of students from each placement. Pre and post test scores on the WRAT and the What Would You Do? Self-Concept Scale were scored to determine the contrasting effects between these two program placements.

The dependent variables yielded continuous scores at pre and post measures and met the requirements for the t test design. Since the study utilized paired-subjects groups it used the t test to measure differences in mean gain scores for each group.

Possible confounding variables such as age, sex, IQ, and program placement will be hopefully controlled by randomization. All students who were in self-contained programs in 1976-77 were either randomly assigned to remain in self-contained classes or partially integrated programs in some regular classes.

Population

Thirty-four EMR youngsters were selected from the self-contained program prototype at the high school. Students were then individually matched according to age, IQ, and sex to a comparable student. At that point, 17 of the 34 students were randomly assigned to regular academic classes in partial mainstreaming programs and the matched 17 were assigned to self-contained classrooms. Students were then administered pre and post test instruments at the

beginning and end of the 1977-78 school year to measure academic and self-concept gains for a full school year.

After matching 34 EMR students according to age, IQ, and sex, 17 youngsters were randomly assigned to both partially mainstreamed academic classes and self-contained special classes. At the conclusion of less than one month of the study, it was necessary for four individual students assigned to regular classes to be returned to the special class. These decisions were based primarily on the individual youngster's lack of social maturity or academic skills to maintain a meaningful performance in the regular class.

Two other matched pairs were eliminated when two EMR students dropped out of school. One student was from the partially mainstreamed program and he never returned to school after encountering problems with the law. The other student from the self-contained program, moved in the middle of the year, yet never enrolled in the new school system. Another EMR student's pre test scores were considerably lower than her previous school testing records indicated. Subsequently, her post test scores represented extensive gains which contributed to skewing the initial statistical analysis results. There were 20 EMR students involved in the study to its conclusion. Ten EMR youth still remained in the partially mainstreamed regular academic classes while 10 EMR youngsters remained in their self-contained special classes.

Individual IQ's and ages of the 20 EMR youth is presented in Table 3. The IQ's of the 10 EMR youngsters in partially mainstreamed programs ranged from 53 to 77 with a mean of 62.9. The self-contained group had a range from 50 to 79 with a mean of 66.

The ages of the 10 EMR students in the partially mainstreamed classes ranged from 14 years and eight months to 17 years and six months, with a mean of 17.14. The self-contained group's ages ranged from 14 years and five months to 18 years and six months, with a mean of 17.13.

Procedure

A series of steps were taken in order to complete this study. They were as follows:

1. Guidance staff at this high school reviewed the student records of children currently in the self-contained program to obtain a basic data sheet on students, including the following information: IQ, age, sex, and program placement for the 1976-77 school year.

2. A pilot study with the What Would You Do? Scale was conducted with eight EMR youth between 13 and 18 years of age. The pilot study provided an opportunity to study the test administration procedures, oral instructions, vocabulary, and general procedures with EMR youth. Also, time studies were kept to plan time requirements for the testing needed in the study. In addition, the pilot study

TABLE 3

Descriptive Mean IQ's and Ages for Experimental
and Control Group by Sex

	Pair	IQ Scores of Experimental Group	IQ Scores of Control Group	Ages of Experimental Group	Ages of Control Group
Girls	1	71	79	18.0	18.5
	2	69	72	17.4	17.3
	3	58	67	14.8	14.5
	4	60	70	17.5	17.8
Boys	5	67	72	18.0	17.8
	6	60	65	16.4	16.4
	7	53	50	15.1	15.1
	8	60	72	18.6	18.0
	9	54	50	18.6	18.6
	10	77	63	17.0	17.3
Mean Scores		62.9	66	17.14	17.13

* A t-test conducted on the IQ means of the two groups indicated a significant difference at the .01 level. In order to have the best match by previous program placement, age and sex, the IQ means were different but with the experimental partially mainstreamed group with the lower IQ means. Thus any difference in outcome measures in favor of the partially mainstreamed group could not be neutralized by the IQ scores in their favor.

with EMR students was used to investigate the feasibility of using this test in the study.

3. At least six meetings took place between the experimenter and the Director of Special Education in the school system during the six months prior to the beginning of the school year to discuss the study to be conducted at the high school.

4. The researcher met at the beginning of the school year with the two school psychologists who administered the WRAT and Self-Concept Scale to the EMR students. The main objective of this meeting was to answer questions and to provide direction to the school psychologists administering the tests.

5. All 34 students were administered the Wide Range Achievement Test and the Self-Concept Measure, What Would You Do?--Secondary Level Scale from the Instructional Objectives Exchange in September and October, 1977. These tests were administered orally and on an individual basis for each student.

6. Attendance and drop-out records were maintained by the Principal's office on all EMR students in the study.

7. In June of 1978, all students were re-administered the same tests taken at the beginning of the school year to gather individual measures of progress for the 1977-78 school year.

8. All test results were statistically analyzed and interpreted by the experimenter.

Summary

EMR youth need a broad range of educational programs at the secondary level. These programs must focus on the individual academic, social, and emotional needs of EMR youngsters. The high school level is the final preparation period for these youth prior to their graduation into society.

Pre and post test measures of academic achievement, self-concept gains, attendance, and drop-out records will be maintained to analyze whether any significant growth has occurred during the period of the study. Specifically, the study utilized matching and randomization in assigning EMR students to partially mainstreamed or self-contained classes. A t-test was used to show whether significant growth occurred between EMR youth randomly assigned to either program placement.

C H A P T E R I V

RESULTS

This study measured the benefits of specific regular and special education program alternatives in meeting the cognitive and affective needs of EMR youth. An evaluation of achievement of basic academic skills, self-concept gains, attendance, and drop-out records were undertaken to compare the effect of placement of EMR youngsters in partially mainstreamed regular academic classes or self-contained special classes.

A secondary purpose of the study was to attempt to describe and analyze the effect of sex differences on EMR students' achievement placed in partially mainstreamed or self-contained programs. Secondary educators need to consider the broad range of sex variables that may affect an adolescent EMR child's achievement and behavior from a program placement in school. Ongoing program development and improvement may result from evaluating both regular and special education program alternatives for EMR boys and girls.

Findings

The statistical findings of the study are combined

into one summary in Table 4. Supporting data and raw scores for each student on all measures are included in the Appendix. Following a review of the major findings of this study in the next section, each null hypotheses will be listed and findings either rejecting or not rejecting will be presented.

The issue of partial mainstreaming versus special class placement of EMR high school students was studied and analyzed in order to compare the different effects of regular or special class options. The results of their academic gains as measured by the Wide Range Achievement Test and their self-concept gains as measured by the What Would You Do? Secondary Scale were compared using a t-test to analyze the results. Also, daily attendance and drop-out records were maintained throughout the study. The two-tailed test was applied in order to find differences in either progression or regression from the pre to the post test period.

Data in Table 4 indicates the grade equivalent mean scores and standard deviations of EMR students randomly placed in partially mainstreamed regular academic classes in the pre and post test periods as follows: 3.50 (2.21) to 3.73 (2.05) in mathematics; 3.10 (1.83) to 3.54 (1.74) in reading; 3.30 (1.65) to 3.69 (2.21) in spelling; 9.60 (3.58) to 11.20 (4.00) in self-concept, and had an average of 12.70 (17.85) absences for 147 school days during the course of the study.

TABLE 4

Mean Gain Scores, Standard Deviations, and t-Test Values for Academic Achievement, Self-Concept and Attendance Records for the EMR Groups of Students

Variable	Mean Gains		Mean Gains		t-Value
	Experimental Group (Partially Mainstreamed)	S.D.	Control Group (Self-Contained)	S.D.	
Math	.23	.494	.30	.311	.53
Reading	.44	.437	.36	.216	1.50
Spelling	.39	1.19	.24	.309	3.31*
Self-Concept ^a	1.6	2.11	1.7	1.94	-.348
Days Absent	12.7 ^b (147)	17.85	34 ^b (147)	23.32	-5.99*

* $p < .01$.

N = 20.

^aMaximum score on Self-Concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.

Pre and post test grade equivalent mean scores and standard deviations of EMR students in the self-contained special classes were 2.79 (1.87) to 3.09 (1.72) in mathematics; 2.44 (1.91) to 2.80 (1.81) in reading; 2.96 (1.96) to 3.20 (1.76) in spelling; 10.80 (3.02) to 12.50 (3.00) in self-concept, and an average of 34.00 (23.28) days absent out of 147 school days in the study.

The mean scores of the youngsters placed in regular academic programs were slightly higher in both the pre and post test periods on the academic measures. The EMR students placed in self-contained programs had a higher mean score in the pre and post self-concept test and in the post test analysis of attendance at school during the study.

Two-tailed t-tests for dependent groups at the .05 level of significance with a t value of 2.262 were employed to assess the changes in academic achievement, self-concept growth, and attendance. The results in Table 4 reveal the statistical analysis. There were no significant differences in self-concept, mathematics, or reading achievement gains of EMR students assigned to either placement. EMR students placed in partially mainstreamed programs did significantly better in spelling gains than their counterparts in self-contained classes. However, EMR students in the self-contained placement had a significantly higher rate of absenteeism than EMR students placed in partially mainstreamed programs. These findings would be the same at the

.01 level of confidence with a t value of 3.250.

Academic achievement.

Hypothesis I--math. There will be no significant difference in mathematics achievement scores for youngsters who were randomly assigned to either partially mainstreamed regular academic classes or self-contained classes as measured by the Wide Range Achievement Test. The hypothesis was not rejected. The results in Table 4 indicate the findings from the statistical analysis. EMR students placed in regular academic classes showed no greater difference in mean gains than the self-contained group. Even though both groups showed an increase in their mean grade equivalent gains from the pre to the post test period, experimental group from 3.50 to 3.73 and control group from 2.79 to 3.09, there was no significant difference between the two groups in mathematics achievement. The individual mathematics gains of EMR youth by matched pairs and sex are shown in Appendix C. The range of achievement scores differences was from -1.0 to a high achievement of .9 in grade equivalent gains.

Hypothesis II--reading. There will be no significant difference in gains in reading between youngsters who were randomly assigned to either partially mainstreamed regular academic classes or self-contained special classes as measured by the Wide Range Achievement Test. The hypo-

thesis was not rejected. In Table 4, the results of the statistical analysis are listed. Both groups of EMR students showed movement toward a higher mean grade equivalent score from the pre to the post test period, experimental group from 3.10 to 3.54 and control group from 2.44 to 2.80. However, no significant differences were found. The individual reading gains of EMR youth by matched pairs and sex are indicated in Appendix D. There was a range of growth from .1 to 1.6 in grade equivalent gains.

Hypothesis III--spelling. There will be no significant difference in gains in spelling between youngsters who were randomly assigned to either partially mainstreamed regular academic classes or self-contained special classes as measured by the Wide Range Achievement Test. The hypothesis was rejected. The results of the statistical analysis are presented in Table 4. The EMR students placed in partially mainstreamed regular classes demonstrated significantly higher mean gains than the self-contained group. Both groups showed an increase in their grade equivalent mean gains from the pre to the post test period, experimental group from 3.30 to 3.69 and control group from 2.96 to 3.20. The individual spelling gains of EMR youngsters by matched pairs and sex are listed in Appendix E. The range of spelling grade achievement gains ranged from a regression of -.4 to a high of .8 grade level gain.

Self-concept gains.

Hypothesis IV--self-concept. There will be no significant difference in gains in self-concept between students who were randomly assigned to either partially mainstreamed regular academic classes or self-contained special classes as measured by the What Would You Do? Secondary Level Self-Concept Test. The hypothesis was not rejected. In Table 4, the results of the statistical analysis are listed. The EMR students placed in either partially mainstreamed or self-contained programs showed improvement in mean gains, experimental group from 9.20 to 11.20 and the control group from 10.80 to 12.50. The pre and post test mean gains of both groups demonstrated an increase in self-concept developments, however, no significant difference was found between the two groups. The individual self-concept gains of EMR students by matched pairs and sex is presented in Appendix F. The range of gains was from zero growth to a high of 7 positive responses.

Attendance and drop-out data.

Hypothesis V--attendance. There will be no significant difference in attendance between EMR youngsters who were randomly assigned to either partially mainstreamed regular academic classes or self-contained special classes as measured by daily attendance records. The hypothesis was rejected. Total days absent during the 147 school

days during the study was recorded by the special education teachers. In Table 4, the results of the statistical analysis are presented. The EMR youngsters placed in partially mainstreamed classes demonstrated a significantly better attendance record in school than the EMR students placed in self-contained programs. The average days absent of EMR students in regular classes for the 147 days included in the study was 12.70 as compared to 34.00 days absent for EMR youth placed in self-contained classes. The individual attendance data of EMR youth by matched pairs and sex is shown in Appendix G. The range of absenteeism was from zero days absent to a high of 63 days absent. The mean days absent of the partially mainstreamed students was 12.70 while the self-contained youngsters had a mean of 34 days absent.

Hypothesis VI--drop-outs. There will be no significant difference in dropping out of school for EMR students who were randomly assigned to either partially mainstreamed regular academic programs or self-contained special classes as determined by attendance records. The hypothesis was not rejected. One EMR student from each placement dropped out of school at approximately the same time during the half-way point of the school year. The EMR student in the partially mainstreamed program encountered difficulty with the law and never returned to school. The EMR student in the self-contained program moved in the middle of the year and never re-entered school in the new community of residence.

Therefore, there was no difference in the drop-out rates from students in either program placement.

General Findings for
Sub-Hypotheses: Sex Differences

In addition to the statistical analysis of the 20 EMR students' academic achievement, self-concept gains, daily attendance and drop-out records, sex differences were analyzed utilizing the same matched EMR students. All of the EMR youth in the study were matched according to age, sex, and IQ. The four studies of sex differences statistically analyzed the EMR students' gains in academic achievement in mathematics, reading, spelling, self-concept gains, and daily attendance at the .05 level of significance.

Sub-hypothesis I. There will be no significant difference between EMR girls who were randomly assigned to either partially mainstreamed or self-contained special classes in academic achievement, self-concept gains, or attendance records.

This hypothesis was not rejected with one exception. In Table 5, the results of the statistical analysis are listed. The mean gains and standard deviation scores of the EMR girls placed in partially mainstreamed classes were as follows: .12 (.818) in math; .65 (.660) in reading; .45 (.207) in spelling; 1.50 (1.28) in self-concept and

TABLE 5

Mean Gain Scores, Standard Deviations, and
t-Test Values for Academic Achievement, Self-Concept
Gains and Attendance Records for EMR Girls

Variable	Mean Gain Experimental Group-Girls (Partially Mainstreamed)	S.D.	Mean Gain Control Group Girls (Self-Contained)	S.D.	t-Value
Math	.12	.818	.27	.457	-.550
Reading	.65	.660	.47	.250	.758
Spelling	.45	.207	.45	.236	0
Self-Concept ^a	1.50	1.28	1.00	.816	1.73
Days Absent	4.00 (147) ^b	3.16	39.00 (147) ^b	27.82	-4.62*

*p < .01.

N = 8.

^aMaximum score on self-concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.

4.00 (3.16) in attendance.

The mean gains and standard deviation scores of the EMR girls who were placed in self-contained programs were as follows: .27 (4.57) in math; .47 (.250) in reading; .45 (.236) in spelling; 1.00 (8.16) in self-concept; and 39.00 (27.82) in days absent. The total gains of the experimental or control groups were not significantly different in academic achievement, self-concept gains or attendance at the .01 level of significance with a t value of 5.841. However, there was significant difference found at the .05 level with a t value of 3.182 in days absent. EMR girls assigned to partially mainstreamed classes had better attendance records at school during the course of the study.

Sub-hypothesis II. There will be no significant difference between EMR boys who were randomly assigned to either partially mainstreamed or self-contained special classes in academic achievement, self-concept gains, or attendance records.

This hypothesis was not rejected with one exception. The results of the statistical analysis are presented in Table 6. The total gains of the EMR boys in the experimental group (partially mainstreamed) and control-group (self-contained) were not significantly different in academic achievement, self-concept gains or attendance at the .01 level of significance with a t value of 4.032. The only exception found was at the .05 level of significance with

TABLE 6

Mean Gain Scores, Standard Deviations, and t Test Values for Academic Achievement, Self-Concept Gains and Attendance Records for EMR Boys

Variable	Mean Gains by Experimental Group-Boys (partially Mainstreamed)	S.D.	Mean Gains by Control Group-Boys (Self-Contained)	S.D.	t-Value
Math	.30	.154	.32	.223	.367
Reading	.30	.154	.28	.173	.367
Spelling	.35	.350	.10	.282	3.110*
Self-Concept ^a	1.66	2.65	2.16	2.40	-.780
Days Absent	18.50 (147) ^b	21.60	30.66 (147)	21.86	-1.790

*p < .01.

N = 12.

^aMaximum score on self-concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.

a t value of 2.571 in spelling achievement. The EMR boys assigned to partially mainstreamed programs did significantly better in mean spelling achievement gains than the boys in the special classes.

The mean gains and standard deviation scores of the EMR boys who were placed in partial mainstreaming classes were as follows: .30 (.154) in math; .30 (.154) in reading; .35 (.350) in spelling; 1.66 (2.65) in self-concept; and 18.50 (21.60) in days absent. The mean gains and standard deviation scores for the EMR boys who were assigned to self-contained programs were as follows: .32 (.223) in math; .28 (.173) in reading; .10 (.282) in spelling; 2.16 (2.40) in self-concept; and 30.66 (21.86) in days absent.

Sub-hypothesis III. There will be no significant difference between EMR boys or girls who were randomly placed in partially mainstreamed regular academic programs in academic achievement, self-concept gains, and attendance records.

The hypothesis was not rejected. Two-tailed t -tests for independent groups were utilized to analyze differences in the two groups at the pre and post test periods. The results of the statistical analysis are listed in Table 7. The mean gains and standard deviation scores of the EMR girls placed in partially mainstreamed classes were as follows: .12 (.818) in math; .65 (.660) in reading; .45 (.207) in spelling; 1.50 (1.28) in self-concept; and 4.00 (3.16)

TABLE 7

Mean Gain Scores, Standard Deviation, and t Test Values for Academic Achievement, Self-Concept Gains and Attendance Records for EMR Girls/Boys

Variable	Mean Gains Girls-Partially Mainstreamed		Mean Gains Boys-Partially Mainstreamed		t-Value
	S.D.		S.D.		
Math	.818	.12	.154	.30	-.528
Reading	.660	.65	.154	.30	1.29
Spelling	.207	.45	.350	.35	.515
Self-Concept ^a	1.28	1.50	2.65	1.66	.110
Days Absent	3.16	4.00	21.60	18.50	-1.30
		(147) ^b		(147) ^b	

^aMaximum score on self-concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.

in days absent. The mean gains and standard deviation scores of the EMR boys assigned to partially mainstreamed classes were as follows: .30 (.154) in math; .30 (.154) in reading; .35 (.350) in spelling; 1.66 (2.65) in self-concept; and 18.50 (21.60) in days absent. The total gains of the EMR boys or girls placed in partially mainstreamed regular academic classes were not significantly different at the .01 or .05 levels of significance in academic achievement, self-concept gains, or attendance records.

Sub-hypothesis IV. There will be no significant difference between EMR girls or boys who were randomly assigned to self-contained programs in academic achievement, self-concept gains, attendance and drop-out records.

The hypothesis was not rejected. Two tailed t-tests for independent groups were employed to analyze differences in the two groups at the pre and post test periods. In Table 8, the results of the statistical analysis are presented. The mean gains and standard deviations of the EMR girls placed in self-contained classes were as follows: .27 (.457) in math; .47 (.250) in reading; .45 (.236) in spelling; 1.00 (.816) in self-concept; and 39.00 (27.82) in days absent. The mean gains and standard deviation scores of the EMR boys assigned to self-contained classes were as follows: .32 (.223) in math; .28 (.173) in reading; .10 (.282) in spelling; 2.16 (2.40) in self-concept; and 30.66

TABLE 8

Mean Gain Scores, Standard Deviations, and t Test Values for Academic Achievement, Self-Concept Gains, and Attendance Records for EMR Girls/Boys

Variable	Mean Gains Girls-Self- Contained	S.D.	Mean Gains Boys-Self Contained	S.D.	t-Value
Math	.27	.457	.32	.223	-.198
Reading	.47	.250	.28	.173	1.47
Spelling	.45	.236	.10	.282	2.09
Self-Concept ^a	1.00	.816	2.16	2.40	-.920
Days Absent	39.00	27.82	30.66	21.86	.616
	(147) ^b		(147)		

^aMaximum score on self-concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.

(21.86) in days absent. The total gains of the EMR boys or girls placed in self-contained programs were not significantly different at the .01 or .05 level of significance in academic achievement, self-concept gains, or attendance records.

Summary of Findings

Educable mentally retarded youngsters attending high school who were randomly placed in partially mainstreamed regular classes or self-contained special classes showed no significant difference in mathematics, reading, or self-concept gains. Also, no significant difference was found in drop-out rates of EMR youth from either placement. However, EMR students integrated for part of their school day did significantly better in spelling achievement and their attendance at school for the course of the study.

With only two exceptions, the sex difference studies of EMR girls or boys placed in partially integrated or segregated programs did not point to any significant difference between the sexes in academic achievement and self-concept gains or better attendance records at school. EMR girls randomly placed in partially mainstreamed classes had significantly better attendance at school than EMR girls placed in self-contained classes. The other exception indicated that EMR boys assigned to partially mainstreamed regular classes did better in spelling achievement than the

EMR boys placed in self-contained special classes.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

Introduction

The purpose of this study was to determine whether children randomly placed in either partially mainstreamed or self-contained program placements would gain more in academic achievement, self-concept improvement, and have better attendance and drop-out records at school. This study was conducted from October to June in one school year. Pre and post tests along with attendance records were administered and maintained for all high school EMR students included in the study.

A t test was conducted on grade equivalent mean gains for each group of EMR youth. Two-tailed tests at the .01 and .05 level of confidence were used to measure differential gains of students from each placement. Pre and post test academic and self-concept tests were administered. The results revealed that there was no significant difference in mathematics, reading, and self-concept gains between the two groups. EMR youth placed in partially mainstreamed academic programs did significantly better in spelling achievement and in their attendance at school. There was, however, no difference found in the drop-out rates of EMR

youngsters from either program placement. Therefore, four of the six major null hypotheses were not rejected.

Summary of Results

The summary of the results of the statistical analyses will be presented by each hypothesis. Therefore, academic achievement, self-concept gains, attendance, and drop-out records of the EMR groups of children will be analyzed.

Academic achievements.

Math. The results of the study reported here are consistent with the findings in Ainsworth (1959); Budoff & Gottlieb (1976); Carroll (1967); Walker (1974) studies. These studies also found no significant difference in mathematics gains between EMR students placed in mainstreaming or self-contained classes. The results of this study also, in part, concurred with the findings in Thurstone (1959) study. His results also pointed to no significant difference in gains in arithmetic problem solving skills of children in either placement. However, Thurstone (1959) did find a significant difference in gains for EMR youngsters placed in regular classes in arithmetic reasoning. Goldstein (1967) conducted an extensive study which showed that EMR children placed in special classes did better in mathematics achievement gains.

There were three out of ten EMR youth who were

randomly placed in partially mainstreamed regular mathematics courses. The other seven EMR youngsters were partially mainstreamed into either earth science, social studies, English or a combination of these regular classes.

Partial integration was implemented cautiously by the school staff because of the lower mental ability and functional levels of a significant number of the ten EMR students randomly assigned to regular academic classes. Five of the ten EMR students who were assigned to partially mainstreamed classes had IQs in the 50-60 range. Also, four of the ten EMR students had mathematics grade equivalent pre-test scores from Kindergarten to grade two. Therefore, most of the EMR students assigned to regular academic classes would be unable to have a meaningful and successful placement in regular mathematics classes. Consequently, there was basically no contrast in placements of where EMR youth were receiving their mathematics instruction. There was also no attempt to control teaching methodology in either special or regular class placement.

Both groups of EMR students showed movement toward a higher mathematics mean grade equivalent score from the pre to the post test period, experimental group from 3.50 to 3.73 and control group from 2.79 to 3.09.

This study was not necessarily a true test of mainstreaming because of the limited number of EMR students integrated into regular mathematics classes.

Reading. Both groups of EMR students showed movement toward a higher mean grade equivalent score from the pre to the post test period, experimental group from 3.10 to 3.54 and control group from 2.44 to 2.80. However, no significant differences between the two groups were found. The results of this study are consistent with the findings of Ainsworth (1959) and Budoff & Gottlieb (1976), who also found no significant difference in reading gains of EMR youngsters placed in either mainstreaming or self-contained classes. On the other hand, other studies (Carroll, 1967; Elenbogen, 1957; Thurstone, 1959; Walker, 1974) reached conclusions that EMR youngsters in mainstreaming classes achieved higher mean grade equivalent reading gains than their counterparts in self-contained special classes. To the contrary, Goldstein (1967) study demonstrated that EMR children in special classes did significantly better in most aspects of reading gains than EMR students placed in mainstreaming programs.

For many of the same reasons already mentioned under mathematics, the two groups of EMR students were not in contrasting placements for their reading instruction. Five of the ten EMR youth randomly selected to be placed in partially mainstreamed regular classes had IQs in the 50-60 range. Also, five of the ten EMR students to be integrated into regular classes had reading grade equivalent pre test scores ranging from kindergarten to second grade. Two of the re-

maining five EMR youngsters integrated had lower third grade level reading pre test scores. Only one EMR youth was placed in a regular English class. Again, caution prevailed in random placement decisions into regular academic classes based on the significant number of lower IQ EMR students available in the study.

Even though the reading scores of both EMR groups of students showed improvement, no significant difference toward a higher mean grade equivalent score was found.

This study was not necessarily a true test of mainstreaming, because only one EMR student was integrated into a regular English class.

Spelling. The EMR students placed in partially mainstreamed regular classes demonstrated significantly higher mean gains than the self-contained group. Both groups showed an increase in their grade equivalent mean gains from the pre to the post test period, experimental group from 3.30 to 3.69 and control group from 2.96 to 3.20. Only a few research studies have specifically studied spelling achievement. Thurstone (1959) study also pointed to better spelling gains of EMR children placed in regular classes. There was no significant difference found in spelling gains from either placement in the Carroll (1967) study.

Again, there was no control of specific placements in teaching spelling. Spelling instruction was certainly considered a part of the special class training, but not

specifically delineated as part of any of the regular academic classes in their content area. The reasons for the significantly better achievement of the EMR students placed in regular classes is difficult to explain. Although 19 of the 20 EMR students in the study received most of their spelling instruction in special classes, the group integrated into regular classes did significantly better in achievement. It appears from reviewing the spelling gains in Appendix E that three of the ten EMR youngsters integrated into regular academic classes contributed heavily to the measured gains of the partially mainstreamed students. Statistical variation may not be due to instructional gains but to random statistical variations.

The spelling mean gains on grade equivalent scores of both EMR groups showed movement toward higher scores. However, the integrated EMR group did significantly better in spelling achievement gains. Because there was no specific contrasting placements for spelling instruction for the partially mainstreamed or self-contained EMR children, there only appears to be the explanation that three of the ten EMR youth in partially mainstreamed classes gained significantly in spelling this school year. Their spelling equivalent gains contributed heavily to the partially mainstreamed group doing significantly better statistically.

Self-concept. The EMR students placed in either partially mainstreamed or self-contained programs showed

improvement in mean gains, experimental group from 9.20 to 11.20 and the control group from 10.80 to 12.50. The pre and post test mean gains of both groups demonstrated an increase in self-concept improvement. . Clark (1964) and Renz and Simensen (1969) studies concurred with the findings of no difference as in this study. Their basic contention was that even though EMR students are isolated for instructional purposes it didn't follow that, by necessity, they were socially segregated from their peers.

To the contrary, most studies regarding the special versus regular class placement of EMR children relate that there was no difference in self-concept gains. The following studies (Blatt, 1959; Cassidy & Stanton, 1964; Warner, Thrapp & Walsh, 1973) concluded that EMR students placed in self-contained special classes were more socially mature and emotionally stable than EMR children placed in regular classes. Goldstein (1967) explained that EMR youngsters in regular classes faced many more possibilities of failure in their school work. However, special class EMR children showed a greater degree of success-approaching and a lesser degree of failure-avoiding than EMR children in regular classes.

The findings in this study showed no difference from either placement on the EMR student's measured self-concept. Although partial mainstreaming is an attempt to reintegrate EMR youth into classes with their non-handicapped

peers, it has its limitations. The placement of EMR youth in one or two regular academic classes out of five instructional periods during one school year does not appear to be sufficient mainstreaming to expect significant change in improving their self-concepts. The self-concept gains of EMR youth from either placement were minimal aside from one student who achieved seven more positive answers on the 19 item scale. The high school age EMR youth have many factors in their school, family, and social lives that appear to have varying degrees of impact on measurement of self-concept. Because of these many variables, it becomes increasingly difficult to isolate and measure what variable may have had the most direct affect or lack of affect on their self-concept.

The mean gains in self-concept for both EMR groups showed improvement. Yet, neither the integrated nor the segregated group did significantly better than the other. The results here point to no difference in either placement on self-concept measures. Therefore, partial mainstreaming into one or two regular academic classes resulted in minimal changes in self-concept measurement for these EMR youth.

Attendance. The EMR youngsters placed in partially mainstreamed classes demonstrated a significantly better attendance record in school than the EMR students placed in self-contained programs. The average days absent of EMR

students in regular classes for the 147 days included in the study was 12.70 as compared to 34.00 days absent for EMR youth placed in self-contained classes.

The placement of EMR youth into partially mainstreamed regular academic classes appeared to have a positive effect on their attendance at school. The EMR student integrated into these regular classes may have viewed this as an opportunity for more social mixing with their non-handicapped peers. In addition, the regular class placement may have been viewed as a challenge socially or academically in contrast to the repetitiveness and less challenging self-contained special class program. The variety and combination of different placements obviously may have produced a better attitude about attending school more frequently. Another explanation of this better attendance was that the integrated group may have viewed their total school program with more hope and as a more meaningful experience.

Drop-out rates. There was one drop-out from each program placement. Two of the 34 EMR youngsters included in the pre test period did drop-out at the mid-year point of the school year. This figure is six percent of the total sample of 34 EMR youngsters.

The findings that six percent of EMR youth in this school year dropped-out of school prior to the completion of their high school programs represents another area that needs to be further examined and analyzed in future research.

One EMR student had dropped out of school after encountering difficulty with the law while the other student dropped out of school after moving from the community. These findings do not appear to present any conclusions to further explain. The drop-out issue regarding EMR youth requires further examination in future research.

Sub-Hypotheses: Sex Differences

In general, the results indicate that there were no sex differences in regards to academic and self-concept gains in addition to attendance records between EMR girls integrated into regular classes or segregated into special classes. The only exception at the .05 level of significance to these findings was that the EMR girls placed in partially mainstreamed classes did better in their self-concept improvement. This finding may indicate that EMR girls may be more positively affected by being placed in mainstreaming classes with their nonhandicapped peers than EMR girls segregated in self-contained special classes.

There was also no significant difference found between EMR boys in academic achievement, self-concept gains, or attendance when placed in either program placement. The only exception at the .05 level of significance was where EMR boys in partially mainstreamed programs did significantly better in spelling achievement than their counterparts placed in self-contained special classes. This exception

is difficult to explain except for the contention that two of the six EMR boys integrated into regular academic classes gained significantly more than any other EMR boys from either placement.

As EMR boys or girls were compared separately, there did not appear to be any major finding to further point to sex difference effects in this study. Furthermore, no sex difference effect was found between EMR boys or girls in gains who were randomly integrated into regular academic classes or self-contained special classes.

Previous study of EMR children placed in partial or full mainstreaming regular classes or self-contained special classes have basically indicated that EMR students in regular classes achieved higher grade equivalent gains in academic achievement. However, EMR youngsters who were placed in self-contained programs gained more in self-concept, social maturity, and emotional stability. In general, the issue of special versus regular class placement of EMR children at all school levels needs more comprehensive study. The present study has attempted to measure the effect of special or part-time regular class placement on EMR high school youth's academic achievement, self-concept gains, attendance and drop-out records.

Limitations of the Study

The scope of the present study was limited as

follows:

1. The instructional goals and objectives of both the regular and special education programs at the high school were not clearly specified,

2. This study measured global academic and self-concept gains of EMR pupils and not the impact of other variables and how they affect a student's learning performance.

3. The population sample of the study was limited to one secondary urban school in Massachusetts.

4. Instruments utilized in the study present summative data at the cognitive and affective level in both programs without pinpointing the dynamics of the causality factors that affected the learner's outcomes.

5. Instruments utilized to assess academic and self-concept change are limited in a sense that they are nationally used standardized instruments rather than locally normed.

6. There was no uniform day to day control of the regular classroom placements and the teaching modes used in any placements. Both groups were mainstreamed in non-academic classes such as physical education, art and music, thus limiting the differential effects of partial academic mainstreaming studies in this research.

7. Most EMR students included in this study had been in segregated classes for most of their school experience. Therefore, the effect of a one year placement in some academic regular classes on academic achievement or self-concept for EMR students may be minimal in comparison to the effects of their past school experience.

Implications of the Study

The implications for studying the program effectiveness of self-contained or partial mainstreamed placements of EMR secondary students include the following:

1. The assessment of EMR youths' cognitive and affective progress, maintenance, or regression in two program placements at the secondary level may be helpful to the development of further research.

2. The study adds further information as to the effectiveness of different types of programming options for EMR youth at the secondary level.

3. This study further identifies the individual differences of EMR students as it relates to their progress in academic achievement and measured gains in self-concept.

4. Other school systems and states can utilize this

research data to judge the differences of self-contained and partial mainstreaming programs for secondary school EMR students and make decisions accordingly.

Recommendations

Academic-self-concept instruction. The teaching of the basic academic skills such as reading, mathematics, and spelling along with self-concept improvement will continue to be priorities in educational programming for EMR youth at the high school level. These skills are needed for these youngsters in preparation for their transition into the mainstream of our society. EMR youth will always have specific deficiencies that will consistently interfere with their successful adjustment in society. What many of us have learned to take for granted in everyday life situations, may present serious dilemmas and have specific psychological effects on EMR youth throughout their lives. Educators have to be responsive to this reality in rendering placement decisions for EMR youth.

Past research has generally shown that regular class placements of EMR children provides a better placement for their academic grade achievement in reading and math. This study did not support this position, except in

spelling achievement. The findings in this research again point to the need for more conclusive research to be conducted in order to make a determination regarding the most effective high school program placement for EMR youth to meet their academic needs.

In addition, most previous research supported the special class placement for EMR children in regards to their self-concept improvement. Special classes for EMR students to date have basically been supported in that these classes best meet their self-concept and social developmental needs. Primarily, special classes are intended to provide more individualized instruction for each student because there are less students in the class as opposed to the regular classes. Also, special classes provide a more comfortable and protective environment for EMR youngsters to learn.

Others contend that most EMR children in special classes have a variety of behavioral problems also. EMR children are therefore subjected to modeling poor behavior traits of specific EMR children in special classes as opposed to emulating better behavior traits of nonhandicapped students. Therefore, additional behavior problems develop that may interfere with their learning. Furthermore, they also claim that special classes do not prepare EMR children for the demands and realities of society in this comfortable and protective special class setting.

These differences among supporters and critics of special classes again point to the need for additional research in evaluating the effectiveness of special versus regular class placement of EMR youngsters in order to meet their self-concept needs.

There are potentially a wide variety of complex variables that may affect the attendance or drop-out records of EMR youth. Their family-home life, school personnel, school program, peers, and the cultural environment where they live are just some of the variables that may have varying degrees of influence on their attendance and motivation to complete their graduation requirements. These factors need to be further analyzed in the research in order for educators to plan appropriate programs for EMR youth at the high school level.

Special classes must be available as an option for children who cannot maintain the learning pace required in regular class programs. For some EMR children at an early age, special classes or resource rooms can be utilized as remedial classrooms that will provide EMR children with the necessary learning and behavior skills they need to be integrated successfully in regular classrooms. In addition, special classes may serve as the primary placement for instructional purposes to meet the educational and social adjustment needs of the EMR child. As EMR children reach junior and senior high school, there needs to be a signi-

ficant shift in program focus. Not only is it important to continue to instruct the student in basic academic skills and social competence, but also the curriculum needs to include pre-vocational and vocational preparation programs for their transition from school to community living and job placement.

The results in this study alone do not provide the necessary conclusive results for future program placement decisions for EMR high school youth. In addition to the high number of lower IQ EMR students included in the study, there were also other limitations such as the limited number of EMR youth available in one urban high school to thoroughly study the issue of partial mainstreaming and special class placement of EMR high school students. This study should provide a variety of insights for researchers in future considerations in conducting studies relative to program evaluations in regards to EMR youth at the secondary level. Full mainstreaming, partial mainstreaming, and self-contained special classes may all be effective secondary program options for specific EMR students. However, special educators need to be able to pinpoint more specifically the variables which will determine successful placement alternatives for EMR high school youth to continue to learn basic academic skills, develop their self-concepts, and maintain good attendance records at school.

Suggestions for Future Research

Specifically, the following areas need evaluation in regards to educating EMR students at the high school level:

1. More field based comparative research studies are needed in regards to measuring the effectiveness of various secondary program options such as full mainstreaming, partial mainstreaming and self-contained special classes for EMR youngsters in meeting their individual cognitive and affective needs. Even though specific modifications will be needed in the administration and interpretation of the What Would You Do? Secondary Self-Concept Scale and the Wide Range Achievement Test in testing high school EMR youth, these instruments should be further utilized in evaluating these placement alternatives for EMR students.

2. More study is needed of the specific effects of teaching methodology and curriculum materials utilized in regular or special class programs. More uniform day to day control of these factors in each environment should provide more meaningful explanations of the variables which more directly affect how EMR high school youngsters learn academically and develop their self-concept.

3. Attendance and drop-out prevention are areas which require further study in regards to EMR high school youth. Many variables may have varying degrees of impact

on an EMR student's attendance or drop-out rate from school. Therefore, the complexities of the variables of home, school, peers, or cultural environment may all have to be assessed in tandem as they affect the attendance and drop-out rates of EMR youth.

The results of this study must be considered encouraging in that EMR students placed in partial mainstreaming programs either held their own or did better than their counterparts in self-contained special classes. The placement of EMR students in partial mainstreamed regular academic classes had no detrimental effect on the students. To the contrary, EMR students placed in regular classes did better in spelling achievement gains and attendance at school during the study. However, because of the limitations of the study in not being able to insure regular attendance in all academic mainstreamed classes, caution must be used prior to fully endorsing partial academic mainstreaming for all EMR students. It is still too early to decide. However, additional evaluation may provide the information necessary to maximize our efforts in special education. The development of a cost and programmatic effective regular class model for secondary EMR youngsters is needed in the field of special education.

The purpose of specific mainstreaming programs still needs to be more clearly delineated and understood in order to assess the anticipated outcomes of the program.

Teachers, parents, and administrators need to plan the specific objectives for integrating the EMR youth prior to placement. Then, evaluation models could be developed to incorporate the key features of the specific mainstreaming program whether it be academic training, self-concept improvement, attendance, or drop-out prevention (Jones, Gottlieb, Guskin and Yoshida, 1978).

The mainstreaming movement has been influenced by educators and parents and has resulted in strong support for it. These efforts have culminated in court decisions along with federal and state legislative and regulatory acts decreeing placement of handicapped children in the "least restrictive environment" or specifying regular class placement as preferable to special class placement (Ryor, 1976; Martin, 1976).

Mainstreaming of EMR high school students should continue to be a priority in planning and designing individual programs for these youngsters. However, these placement decisions need to be based more on empirical research findings in regards to whether full mainstreaming, partial mainstreaming, or special classes are the most effective options to meet the academic and self-concept needs of EMR high school youth.

Educators, parents, students, and citizens should join together in designing, implementing, and evaluating the effectiveness of secondary program alternatives for

EMR youngsters. A cooperative effort of this nature could begin to more clearly define effective educational program options for EMR students.

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Name Sex: M. F. Birthday Chron. Age
 School Grade Reading
 Referred by Spelling
 Date Examiner Arithmetic

PAGE 1: SPELLING I & II

-		/	\	o	x	└	└	└	+	^	└	Δ	□	U	▽	□	□

Name _____ 31. _____

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7. _____ 22. _____ 38. _____

8. _____ 23. _____ 39. _____

9. _____ 24. _____ 40. _____

10. _____ 25. _____ 41. _____

11. _____ 26. _____ 42. _____

12. _____ 27. _____ 43. _____

13. _____ 28. _____ 44. _____

14. _____ 29. _____ 45. _____

15. _____ 30. _____ 46. _____

FOR INDIVIDUAL AND GROUP COMPARISONS USE ONLY STANDARD SCORES ON PAGES 16 TO 42 OF MANUAL.

LEVEL I Grade Norms										LEVEL II Grade Norms													
Raw Scores		Score		Grade		Score		Grade		Score		Grade		Score		Grade							
Test	Cumul. Score	1	N 5	12	KR 4	23	1.5	34	3.0	45	5.7	56	10.3	0	Kg 2	11	4.0	21	6.7	31	9.0	41	12.4
		2	N 8	13	KR 5	24	1.6	35	3.2	46	6.0	57	10.9	1	Kg 6	12	4.3	22	6.8	32	9.3	42	12.8
		3	Pk 1	14	KR 6	25	1.7	36	3.5	47	6.3	58	11.5	2	Gr. 1.0	13	4.6	23	7.0	33	9.6	43	13.2
		4	Pk 2	15	KR 7	26	1.8	37	3.7	48	6.5	59	12.2	3	1.3	14	4.9	24	7.2	34	9.9	44	13.6
		5	Pk 3	16	KR 8	27	2.0	38	3.9	49	6.8	60	13.0	4	1.6	15	5.2	25	7.4	35	10.2	45	14.0
		6	Pk 4	17	KR 9	28	2.2	39	4.2	50	7.2	61	13.8	5	1.9	16	5.5	26	7.6	36	10.5	46	14.4
		7	Pk 5	18	Gr. 1.0	29	2.3	40	4.5	51	7.7	62	14.5	6	2.2	17	5.8	27	7.8	37	10.8	47	15.0
		8	Pk 6	19	1.1	30	2.5	41	4.7	52	8.2	63	15.2	7	2.6	18	6.1	28	8.1	38	11.2	48	15.7
		9	Kg 1	20	1.2	31	2.6	42	5.0	53	8.7	64	15.9	8	3.0	19	6.3	29	8.4	39	11.6	49	16.4
		10	Kg 2	21	1.3	32	2.7	43	5.3	54	9.2	65	16.7	9	3.3	20	6.5	30	8.7	40	12.0	50	17.2
		11	Kg 3	22	1.4	33	2.9	44	5.5	55	9.7			10	3.7								

17 21 9 5 8 3 Fingers. 8 fingers 9 or 6? 42 or 28? 17
 3 pennies, spend 1? _____; 3 + 4 apples? _____; 9 marbles, lose 3? _____ 20

WRITTEN PART

1 + 1 = _____ 6 5 3 2
 4 - 1 = _____ + 2 - 3 + 40 4 × 2 = _____ 23 29 75
 × 3 - 18 + 8

4 5 2 \$ 6 2 . 0 4 1 1/2 hr. = _____ min. 6) 9 6 8
 1 3 7 6 + 2 = _____ - 5.3 0
 + 2 4 5 1/3 + 1/3 = _____

1 1/5 = _____ 7/8 - 5/8 = _____ 8 2 3 4 5/6
 × 9 6 3 1/3 2/3 of 35 = _____
 + 2 1/2
 1/2 yd. = _____ in. 1 3/4 = _____/4

2 7) 3 8 4 5/4 yr. = _____ mo. Multiply: 7.9 6
 5 3 0.8
 - 1 1/2 2 1/3 doz. = _____
 2/3 = _____/12

Which is more? Find the average of Write as a percent
 7/8 or 13/15 Ans. _____ 24, 18, 21, 26, 17 4 1/2 × 3 1/3 = _____
 Ans. _____ 3/4 = _____%

3/10 + 1/4 = _____ 8/9 × 2/4 × 1/2 = _____ Write as decimal:
 2/3 = _____ 20% of 120 = _____

6^2 = _____ 8.2) 6 2 . 7 0 3 Change to familiar numerals: (- 5) (+ 9) = _____
 M C X L II = _____

Find interest on Solve: Find square root: √ 3 3 4 . 8 9
 \$300 at 4 1/2% for 7 mo. y + (9 - 8y) = 6 5
 Ans. _____ y = _____

ARITHMETIC—LEVEL I: FOR INDIVIDUAL AND GROUP COMPARISONS USE ONLY STANDARD SCORES ON PAGES 16 TO 29 OF MANUAL.

Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade		
1	N.5	6	Pk.6	11	Kg.4	16	Gr.1.0	21	1.9	26	2.8	31	4.2	36	5.3	41	6.3	46	7.6	51	10.7	56	14.2
2	N.8	7	Pk.8	12	Kg.5	17	1.2	22	2.1	27	3.0	32	4.5	37	5.5	42	6.5	47	8.2	52	11.4	57	14.9
3	Pk.1	8	Kg.1	13	Kg.6	18	1.4	23	2.2	28	3.2	33	4.7	38	5.7	43	6.7	48	8.8	53	12.1	58	15.6
4	Pk.2	9	Kg.2	14	Kg.7	19	1.6	24	2.4	29	3.6	34	5.0	39	5.9	44	7.0	49	9.4	54	12.8	59	16.3
5	Pk.4	10	Kg.3	15	Kg.9	20	1.8	25	2.6	30	3.9	35	5.2	40	6.1	45	7.2	50	10.0	55	13.5		

- 1. Counts 1-5
- 2. Counts 6-15
- 3. Reads 3
- 4. Reads 5
- 5. Reads 6
- 6. Reads 17
- 7. Reads 41
- 8. Pennies 3-1
- 9. Apples 3 + 4
- 10. Marbles 9-3

WRITTEN PART

$\begin{array}{r} 43 \\ + 6 \\ \hline \end{array}$	$\begin{array}{r} 94 \\ - 64 \\ \hline \end{array}$	$\begin{array}{r} \$4.95 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 726 \\ - 349 \\ \hline \end{array}$	$2\frac{1}{2} + 1\frac{1}{2} = \underline{\hspace{2cm}}$	$\begin{array}{r} 229 \\ 5048 \\ 63 \\ + 1381 \\ \hline \end{array}$
--	---	---	---	--	--

$9 \overline{) 4527}$	$1\frac{1}{2} \text{ ft.} = \underline{\hspace{2cm}} \text{ in.}$	$2 - \underline{\hspace{2cm}} = \frac{1}{4}$	Add: $\begin{array}{r} 6\frac{1}{4} \\ 1\frac{5}{8} \\ 4\frac{1}{2} \\ \hline \end{array}$	$\begin{array}{r} 809 \\ \times 47 \\ \hline \end{array}$	Write as percent: $.42 = \underline{\hspace{2cm}}\%$
-----------------------	---	--	---	---	---

Subtract: $\begin{array}{r} 10\frac{1}{4} \\ 7\frac{2}{3} \\ \hline \end{array}$	Multiply: $\begin{array}{r} 6.23 \\ \times 12.7 \\ \hline \end{array}$	Find average: 34, 16, 45, 39, 27 Ans. $\underline{\hspace{2cm}}$	Write as decimal: $52\frac{1}{2}\% = \underline{\hspace{2cm}}$	Write as percent: $\frac{3}{8} = \underline{\hspace{2cm}}\%$	$2.9 \overline{) 308.85}$
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Add: $\begin{array}{r} 3 \text{ ft. } 6 \text{ in.} \\ 5 \text{ ft. } 5 \text{ in.} \\ 8 \text{ ft. } 11 \text{ in.} \\ \hline \end{array}$	$M + 2 = 5$ $M = \underline{\hspace{2cm}}$ $2x = 3$ $x = \underline{\hspace{2cm}}$	$6 \times 3\frac{7}{8} = \underline{\hspace{2cm}}$ $15\% \text{ of } 175 = \underline{\hspace{2cm}}$	Write as common fraction in lowest terms: $.075 = \underline{\hspace{2cm}}$ The complement of an angle of $30^\circ = \underline{\hspace{2cm}}$
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$4^3 = \underline{\hspace{2cm}}$	If $a = 7, b = 3,$ $a^2 + 3b = \underline{\hspace{2cm}}$	$\frac{1}{4}\% \text{ of } 60 = \underline{\hspace{2cm}}$ $66 \text{ sq. ft.} = \underline{\hspace{2cm}} \text{ sq. yd.}$	Solve: $\frac{7 - (6 + 8)}{2} = \underline{\hspace{2cm}}$	Add: $-x - y = 23$ $x - y = 22$ \hline
----------------------------------	---	--	--	---

Factor: $r^2 + 25 = 10r$ Ans. $\underline{\hspace{2cm}}$	$\frac{r^2 - 5r - 6}{r + 1}$ Ans. $\underline{\hspace{2cm}}$	Change to familiar numerals: MDCXCI = $\underline{\hspace{2cm}}$ Find interest on \$1,200 at 6% for 70 days. Ans. $\underline{\hspace{2cm}}$	$3p - q = 10$ $2p - q = 7$ P = $\underline{\hspace{2cm}}$ q = $\underline{\hspace{2cm}}$	$\sqrt{2ax} = 6$ x = $\underline{\hspace{2cm}}$ $\frac{7}{17} = \frac{6}{x}$ x = $\underline{\hspace{2cm}}$
--	---	---	---	--

Find square root: $\sqrt{67081}$ Ans. $\underline{\hspace{2cm}}$	$\log_{10} \left(\frac{1}{100}\right)$ Ans. $\underline{\hspace{2cm}}$	$\log_5 5\sqrt{5}$ Ans. $\underline{\hspace{2cm}}$	Reduce: $\frac{k^2 + k}{k^2} \cdot \frac{3k - 3}{k^2 - 1}$ Ans. $\underline{\hspace{2cm}}$	Find root: $2x^2 - 36x = 162$ Ans. $\underline{\hspace{2cm}}$
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ARITHMETIC—LEVEL II: FOR INDIVIDUAL AND GROUP COMPARISONS USE ONLY STANDARD SCORES ON PAGES 30 TO 42 OF MANUAL.

Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade		
0	N.9	4	Kg.2	8	Gr.1.0	12	2.9	16	4.9	20	6.3	24	7.1	28	8.5	32	10.8	36	12.8	40	14.9	45	17.7
1	Pk.2	5	Kg.4	9	1.5	13	3.4	17	5.3	21	6.5	25	7.4	29	9.0	33	11.3	37	13.3	41	15.4	46	18.3
2	Pk.5	6	Kg.6	10	1.9	14	3.9	18	5.7	22	6.7	26	7.7	30	9.5	34	11.8	38	13.8	42	15.9	47	18.9
3	Pk.9	7	Kg.8	11	2.3	15	4.4	19	6.1	23	6.9	27	8.0	31	10.1	35	12.3	39	14.4	43	16.5	48	19.5
																				44	17.1	49	20.0

LEVEL II

Two letters in name (2)

A B O S E R T H P I U Z Q

milk city in tree animal himself between chin split form 25
 grunt stretch theory contagious grieve toughen aboard triumph 33
 contemporary escape eliminate tranquillity conspiracy image ethics 40
 deny rancid humiliate bibliography unanimous predatory alcove 47
 scald mosaic municipal decisive contemptuous deteriorate stratagem 54
 benign desolate protuberance prevalence regime irascible peculiarity 61
 pugilist enigmatic predilection covetousness soliloquize longevity abysmal 68
 ingratiating oligarchy coercion vehemence sepulcher emaciated evanescence 75
 centrifugal subtlety beatify succinct regicidal schism ebullience 82
 misogyny beneficent desuetude egregious heinous internecine synecdoche 89

FOR INDIVIDUAL AND GROUP COMPARISONS USE ONLY STANDARD SCORES ON PAGES 16 TO 42 OF MANUAL.

LEVEL I - GRADE NORMS

LEVEL II - GRADE NORMS

Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade	Score	Grade						
1	N 5	16	Kr 6	36	37 1 9	53	5 3	66	5 3	79	8 1	92	12 9	0	Pk 5	16	1 3	29	4 4	42	6 8	55	9 3	68	13 0	81	16 8
2	N 8	18	Kr 7	38	2 0	54	3 5	67	5 5	80	8 4	93	13 3	1	Pk 8	17	1 5	30	4 6	43	6 9	56	9 6	69	13 2	82	17 1
3	Pk 1	19	20 Kr 8	39	4 0	55	3 6	68	5 7	81	8 7	94	13 7	2	Kr 1	18	1 7	31	4 8	44	7 1	57	9 9	70	13 5	83	17 4
4	Pk 2	21	Kr 9	41	2 2	56	3 8	69	5 9	82	9 0	95	14 1	3	Kr 2	19	1 8	32	5 0	45	7 3	58	10 2	71	13 8	84	17 7
5	Pk 4	22	Gr 10	42	4 3	57	3 9	70	6 1	83	9 3	96	14 5	5	Kr 3	20	2 0	33	5 2	46	7 5	59	10 5	72	14 1	85	18 0
6	Pk 5	23	1 1	44	2 4	58	4 1	71	6 3	84	9 7	97	14 9	7	Kr 4	21	2 2	34	5 4	47	7 7	60	10 8	73	14 4	86	18 3
7	Pk 7	24	2 5	45	4 6	59	4 2	72	6 5	85	10 1	98	15 4	8	Kr 5	22	2 4	35	5 6	48	7 9	61	11 3	74	14 7	87	18 6
8	Pk 9	26	2 7	47	2 6	60	4 4	73	6 7	86	10 5	99	15 8	9	Kr 6	23	2 6	36	5 8	49	8 1	62	11 6	75	15 0	88	19 0
9	Kr 1	28	2 9	48	2 7	61	4 5	74	6 8	87	10 9	100	16 2	10-11	Kr 7	24	2 8	37	6 0	50	8 3	63	11 9	76	15 3	89	19 5
10-11	Kr 2	30	3 1	49	2 8	62	4 7	75	7 0	88	11 3			12	Kr 8	25	3 2	38	6 2	51	8 5	64	12 2	77	15 6		
12	Kr 3	32	3 3	50	2 9	63	4 8	76	7 2	89	11 7			13	Kr 9	26	3 5	39	6 3	52	8 7	65	12 4	78	15 9		
13-14	Kr 4	34	1 7	51	3 0	64	5 0	77	7 5	90	12 1			14	Gr 10	27	3 9	40	6 5	53	8 9	66	12 6	79	16 2		
15	Kr 5	35	1 8	52	3 1	65	5 1	78	7 8	91	12 5			15	1 1	28	4 2	41	6 6	54	9 1	67	12 8	80	16 5		

LEVEL I

cat see red to big work book eat was him how 26
 then open letter jar deep even spell awake block size 46
 weather should lip finger tray felt stalk cliff lame struck 56
 approve plot huge quality sour imply humidity urge 64
 bulk exhaust abuse collapse glutton clarify 70
 recession threshold horizon residence participate quarantine 76
 luxurious rescinded emphasis aeronautic intrigue repugnant 82
 putative endeavor heresy discretionary persevere anomaly 88
 rudimentary miscreant usurp novice audacious mitosis 94
 seismograph spurious idiosyncrasy itinerary pseudonym aborigines 100

A R Z H I Q S E B O 10

Two letters in name (2)

A B O S E R T H P I U Z Q 25

APPENDIX B

Directions for Administration

It is expected that students will be able to complete the questions in the instrument in approximately 15-20 minutes. If the administrator feels that the students' reading abilities will prohibit their completing the measure in this time period, the questions should be read orally to the students.

After distributing copies of the booklets to the students, read the directions aloud. Provide ample time for the students to ask questions. Emphasize that only one alternative is to be selected for each item.

Emphasize that there are no "right" or "wrong" answers. Therefore, students need not worry if other students' responses are different from their own.

Remind the students that they are not to write their names on the booklet or answer sheet.

If the students ask questions regarding interpretations of the items, emphasize that the measure calls for general impressions regarding each statement.

Scoring

Each item presents two positive alternatives (that is, responses indicative of high self esteem) and two negative alternatives (indicative of low self esteem). Students are to be scored one point for each positive response. Thus, a total of 19 points is the maximum

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WHAT WOULD YOU DO?

Secondary Level

Description and Rationale

This 19-item inventory presents a series of fictitious situations, each followed by four actions or interpretations. The person completing the inventory is asked to choose one of the four alternatives that is most like what he would think or do.

Two of the four choices are designed to reflect the behavior or thoughts of one who possesses a positive self concept, two choices to reflect the behavior of one who possesses a negative self concept. The number of positive alternatives selected by an individual constitute his score.

The situations posed in the instrument were drawn from the literature regarding self concept, principally the writings of Coopersmith⁹ and Wylie,¹⁰ and deal with the following dimensions: (a) accommodation to others, (b) expectations of acceptance, (c) courage to express opinions, (d) willingness to participate, (f) expectations of success.

⁹Coopersmith, op. cit.

¹⁰Wylie, op. cit.

score possible. It does not matter which of the two positive alternatives available for each item the student selects.

Responses may be recorded on an IBM-type answer sheet and machine scored. If hand scoring is to be utilized, a scoring template may be prepared by punching the two positive alternatives for each question and counting the number of marks which appear through the punched holes when the template is placed over the answer sheet.

Alternatives which are to be scored as positive responses are as follows:

- | | | | |
|---------|----------|----------|----------|
| 1. a, c | 6. a, b | 11. a, c | 16. a, d |
| 2. c, d | 7. b, d | 12. a, b | 17. b, d |
| 3. b, d | 8. a, d | 13. a, d | 18. a, d |
| 4. a, c | 9. a, d | 14. a, b | 19. a, b |
| 5. b, c | 10. a, b | 15. a, c | |

An average score for a group of students may be computed by summing the students' individual scores and dividing by the number of students in the group.

WHAT WOULD YOU DO?

Secondary Level

Directions: For each item in the booklet mark the answer sheet (A, B, C, or D) for one of the four descriptions which is most like what you would think or do.

For example:

- 1) You are having dinner with your family and there are only enough vegetables left for one person. You:
- A) put them on your plate quickly.
 - B) offer them to someone else.
 - C) suggest that it is time for dessert.
 - D) excuse yourself.

If description (B) is most like what you would do, you should mark the answer sheet as follows:

- 1) A B C D
 :: X :: ::
 :: X :: ::

There are no right or wrong answers, so respond to each item as honestly as you can. Do not write your name on your answer sheet.

class. The teacher asks the class to quiet down. You

A) continue to explain in a whisper.
B) stop talking and start working quietly.
C) ask the teacher if you may continue explaining the problem to your friend.
D) write your friend a note telling him you'll explain the problem later.

2. You are nominated for a class officer and so is your friend. You know that your friend wants the office. You

A) decide not to accept the nomination.
B) think that your friend will be upset if you run.
C) accept the nomination.
D) think that your friend should not mind if you run.

3. You are shopping in a department store. You start up the stairway which is quite narrow. A large lady starts walking up the stairs behind you. When she gets right behind you, you

A) move out of her way as soon as possible.
B) politely ask her not to rush you.
C) begin to walk faster so she will not be blocked.
D) smile at her but do not move out of her way.

4. You are at the beach with your friends and you fall asleep. When you wake up, no one is there. You decide that they

A) are getting hot dogs.
B) have gone home without you.
C) are probably taking a walk.
D) have moved to another spot in order to go surfing.

5. You are offered an opportunity to spend a month with a family in another city. How do you feel about it? You

A) don't want to go.
B) want to go.
C) want to see another city.
D) will not feel comfortable without your best friend.

6. You are taking a bus downtown. While you talk to your friend you miss your stop. You

A) get off and take a bus the other way.
B) get a transfer and wait for a bus back to your stop.
C) frown at your friend and leave the bus without speaking.
D) don't know what to do next.

school. The teacher asks for someone to help you get to know out books. You

A) hope she doesn't call on you.
B) volunteer, thinking it will help you get to know the other students.
C) look around the class to see who has volunteered.
D) think that the teacher seems nice, so you volunteer.

8. Your family is getting ready to go out together. You mother asks you to help her get ready. You

A) wash the dishes.
B) pretend that you didn't hear her.
C) don't want to go.
D) pack a lunch for the family.

9. You are asked to run for a class officer which you know you would enjoy, but your competition will be rough. You

A) will probably run.
B) will definitely not run.
C) will probably not run.
D) will definitely run.

10. Your club is planning to put on a play. You want to play one of the roles.

A) play one of the roles.
B) paint the scenery.
C) be out of the city the day of the play.
D) have as little to do with the play as possible.

11. Some of the kids you know are participating in an "Environment Club" clean-up of local parks. You think

A) you'd like to join to paint the shabby benches.
B) the kids are wasting their time and energy.
C) it would be fun to paint signs that said, "The Environment Committee was here."
D) the project is a little silly.

12. There is going to be a party at your house. You will probably

A) prepare the food.
B) be the host or hostess.
C) do as little as possible.
D) make up an excuse for not coming.

13. Some of the kids at your school are forming social clubs. You will probably

A) be asked to join one.
B) not be told about them.

- A) take good care of the dog.
- B) think that someone else in the family will take care of him.
- C) let your mother take over caring for the dog when you are tired of him.
- D) you are tired of him.

14. Your homeroom teacher is choosing several nominees for graduation officers.

- A) She will probably choose you.
- B) She thinks you would be a good nominee.
- C) She will probably not think to ask you to be a nominee.
- D) The teacher probably will not choose you.

15. You and your friend are putting together a school humor magazine. You expect that many

- A) students will buy your issues.
- B) students will think your paper is dull and corny.
- C) teachers will think it is quite clever.
- D) parents will complain about certain articles.

16. Your school club is electing a representative to attend a statewide convention. Your chances of being sent to the convention are

- A) good.
- B) non-existent.
- C) poor.
- D) fair.

17. Imagine that you are an adult, and looking for a job. Which one would you take?

- A) A job that pays well but that you probably won't enjoy.
- B) A job in which you can have the freedom to develop ideas of your own.
- C) A job where you won't have to work more than 40 hours per week.
- D) A job which does not pay too well in the beginning but in which you can advance quickly.

18. There will be a contest in several subjects at school. You expect to

- A) do well in most subjects.
- B) do poorly in most subjects.
- C) do poorly in some subjects.
- D) do well in some subjects.

19. Your mother and father are giving you a dog. It will be your responsibility to take care of the dog. You will probably

APPENDIX C

Math Achievement Mean Gains
by Sex for Experimental and
Control Groups

	PARTIALLY MAINSTREAMED			SELF-CONTAINED			
	Pair	Post	Pre	Individual Gains	Post	Pre	Individual Gains
Girls	1	5.4	4.9	.5	6.3	5.7	.6
	2	5.3	4.4	.9	3.8	3.4	.4
	3	3.5	3.4	.1	1.5	1.9	-.4
	4	2.9	3.9	-1.0	2.4	1.9	.5
Boys	5	8.3	7.7	.6	5.3	4.9	.4
	6	1.8	1.5	.3	2.9	2.3	.6
	7	4.4	4.2	.2	3.5	3.4	.1
	8	1.7	1.5	.2	1.4	1.0	.4
	9	3.2	2.9	.3	0	0	0
	10	K.8	K.6	.2	3.8	3.4	.4

APPENDIX D

Reading Achievement Mean Gains
by Sex for Experimental and
Control Groups

	PARTIALLY MAINSTREAMED				SELF-CONTAINED		
	Pair	Post	Pre	Individual Gains	Post	Pre	Individual Gains
Girls	1	6.4	6.2	.2	6.6	5.8	.8
	2	3.8	3.2	.6	4.6	4.4	.2
	3	2.8	2.6	.2	1.8	1.3	.5
	4	4.8	3.2	1.6	1.8	1.4	.4
Boys	5	5.0	4.4	.6	5.1	4.8	.3
	6	1.5	1.3	.2	2.4	1.8	.6
	7	2.8	2.6	.2	1.8	1.5	.3
	8	2.4	2.2	.2	1.5	1.3	.2
	9	5.3	5.0	.3	1.1	1.0	.1
	10	K.6	K.3	.3	1.3	1.1	.2

APPENDIX E

Spelling Achievement Mean Gains
by Sex for Experimental and
Control Groups

	PARTIALLY MAINSTREAMED			SELF-CONTAINED			
	Pair	Post	Pre	Individual Gains	Post	Pre	Individual Gains
Girls	1	7.2	6.8	.4	7.4	6.8	.6
	2	4.2	3.7	.5	4.8	4.6	.2
	3	3.2	3.0	.2	2.6	1.9	.7
	4	4.0	3.3	.7	1.8	1.5	.3
Boys	5	4.8	4.0	.8	4.9	4.6	.3
	6	2.4	2.2	.2	2.2	2.6	-.4
	7	2.0	1.9	.1	2.3	2.2	.1
	8	2.3	2.2	.1	2.6	2.2	.4
	9	4.8	4.0	.8	K.6	K.6	0
	10	2.0	1.9	.1	2.8	2.6	.2

APPENDIX F

Self-Concept Mean Gains
by Sex for Experimental
and Control Groups

	PARTIALLY MAINSTREAMED				SELF-CONTAINED		
	Pair	Post	Pre	Individual Difference	Post	Pre	Individual Difference
Girls	1	17	14	3	16	14	2
	2	12	11	1	11	11	0
	3	3	1	2	8	7	1
	4	14	14	0	13	12	1
Boys	5	10	9	1	18	17	1
	6	12	11	1	15	8	7
	7	12	12	0	11	10	1
	8	10	9	1	12	11	1
	9	12	5	7	10	8	2
	10	10	10	0	11	10	1

* Maximum score on the self-concept test was 18 positive answers.

APPENDIX G

Days Absent by Sex for *
Experimental and Control Groups

Pair	PARTIALLY MAINSTREAMED		SELF-CONTAINED
	Post	Individual	Post-Individual
	Records	Records	Records
Girls	1	3	0
	2	6	54
	3	7	63
	4	0	39
Boys	5	5	10
	6	60	4
	7	4	25
	8	21	52
	9	4	58
	10	17	35

* Out of 147 school days included in the study.

APPENDIX H

Pre and Post Grade Equivalent Mean Scores and Standard Deviations for the Control and Experimental Groups on Academic Achievement, Self-Concept, and Attendance Data

Variable	Mean Experimental Group			Mean Control Group		
	Pre	SD	Post	Pre	SD	Post
Math	3.50	2.21	3.73	2.79	1.87	3.09
Reading	3.10	1.83	3.54	2.44	1.91	2.80
Spelling	3.30	1.65	3.69	2.96	1.96	3.20
Self-Concept ^a	9.60	3.58	11.20	10.80	3.02	12.50
Days Absent			12.70 (147) ^b			34.00 (147) ^b

N = 20.

^aMaximum score on Self-Concept test = 18.

^bNumbers in parentheses indicate the number of school days counted in the study.



