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ABSTRACT

The dissertation reports on a study which examined the mainstreaming practices and decisionmaking processes used in Pittsburgh Public Schools' elementary schools and investigated whether learning disabled (LD) students assigned to mainstream academic classes differed academically and behaviorally from non-mainstreamed LD students. The study was conducted in two phases: (1) selection and assessment of a sample of mainstreamed and non-mainstreamed students (grades 2, 3, and 4), and (2) an examination of mainstreaming decisionmaking processes through the use of a structured interview with school personnel. Students were administered a battery of academic and behavioral instruments and teachers reported on behavior problems. Ss were further compared with non-mainstreamed peers. Results of achievement data indicated little difference in reading scores of mainstreamed and non-mainstreamed second graders, although differences increased markedly with increased grade level. There was a large number of non-mainstreamed Ss who possessed behavioral attributes reported to be needed for mainstreaming but who were not mainstreamed. Structured interviews in phase 2 revealed that mainstreaming decisions were based on academic and behavioral strengths and weaknesses and identified patterns of participation by teachers, administrators, parents, and support staff in educational planning team meetings. Findings indicated high participation levels for special education teachers and administrators but low levels for regular educators and support personnel. (CL)

FACTORS IN MAINSTREAM DECISION MAKING

[Final Report]

By

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I. INTRODUCTION

A. General Statement

With the passage of Public Law 94-142, the Education for All Handicapped Children Act (1975), educators have been faced with the responsibility of mainstreaming handicapped children. This responsibility is not without its problems. One major problem is that mainstreaming means different things to different people. For example, Turnbull (1977) views mainstreaming as a legislative and judicial preference used mainly to balance the interests of children and schools. Chaffin (1974) defines mainstreaming as an alternative program "characterized by the retention of the mildly retarded in the regular classroom with supplemental support being provided to the regular classroom teacher" (p. 6). The parent advocacy publication, Closer Look, points out that "mainstreaming covers a variety of alternatives, and placements should be made on the basis of individual needs" (p. 5).

Not only is there a great deal of difference in the way experts view mainstreaming, but there are also problems in the actual process of making mainstreaming decisions. Cruickshank (1977) suggests that many school principals fail to understand the nature of the difficulties facing handicapped children who are placed in the mainstream. Therefore, these administrators may be unable to make appropriate mainstreaming decisions. According to Cruickshank (1977), this has become an increasingly important problem because the principal, as the admin-

strative head of the school, often acts as the representative of the Local Education Agency (LEA) and is therefore responsible for the delivery of program modifications. Kaufman, Agard, and Semmel (1979) speculate that many mainstreaming decisions are made for administrative convenience and are not related to the needs or characteristics of the child. The need to examine each student from several points of view led to the development of the widespread use of multidisciplinary planning teams.

While the increased use of these planning teams to determine educational changes has been the subject of several recent research projects (Gilliam, 1979; Yoshida, Fenton, Maxwell, & Kaufman, 1978), there appears to be little research to support why some students are placed in one program as opposed to another. The purpose of this investigation was to study the mainstreaming practices and decision making processes being used by elementary school personnel in the Pittsburgh Public Schools and to determine whether learning disabled (LD) students who were assigned to academic classes in the mainstream differed in certain academic and behavioral characteristics from LD students who were not mainstreamed.

II. REVIEW OF THE LITERATURE

A. Definitions and Implications of Least Restrictive Environment

The mainstream of education or LRE is defined by Public Law 94-142 as follows:

> Mainstream - The Least Restrictive Environment - Each public agency shall insure: (1) that to the maximum extent appropriate, handicapped children including children in public or private institutions or other care facilities, are educated with children who are not handicapped, and that (2) 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 the regular classes cannot be achieved satisfactorily. (P.L. 94-142, 121a.550)

Public schools are now required by law to implement appropriate models of education for their handicapped students to assure the education of students in least restrictive environments. But there appears to be considerable confusion and disagreement regarding what elements are necessary in a valid mainstreaming effort (MacMillan & Semmel, 1977). This disagreement over the defining characteristics has resulted in confusion in the development and use of procedures to implement programs. Although the term "mainstreaming" has dominated much of the recent literature in the field of special education, an exact definition of this term remains elusive. In a review of articles about mainstreaming, Friend (1980-81) reports that Birch in his definition of mainstreaming "incorporated 14 descriptors, not to mention a panoply of related nomenclature, that have resulted from mainstreaming practices" (p. 8). Beery (1972) while not directly defining mainstreaming, suggested that main-

streaming practices be critically examined for three elements: that a continuum of programs for children with special needs be provided; that "pull out" programs be reduced; and that consultants to the regular classroom be utilized as much as possible.

One common facet in all interpretations of mainstreaming is the provision that special students should be educated, at least in part, in the regular classroom with non-handicapped students. Lilly (1970) in his "zero-reject model" stated that no mentally retarded child, except the most severely retarded, should be excluded from the regular educational program or placed in a special class. Additionally, Adamson and Van Etten (1972) postulated that no single educational program can be appropriate for all children and that some students may really need a varied range of special services. There appears to be no definition that is "universally" acceptable thus far, but some experts in the special education field point out the need to examine mainstreaming practices in terms of three components, i.e. temporal, instructional, and social integration (Kaufman, Gottlieb, Agard, & Kukic, 1975).

In the past the emphasis on the administrative aspects of integrating exceptional children into the regular grades has tended to establish a perspective that mainstreaming is based primarily on the amount of time a child spends in the regular classroom. Even though many experts agree that mainstreaming is more than just time spent with non-handicapped students, Chiba and Semmel (1975), Carrol (1970) and Ballard and Zettel (1977) state that the most frequently used measure of mainstreaming is still the amount of time spent with non-handicapped students in the regular classroom. According to Semmel, Gottlieb, and Robinson (1979) temporal integration is certainly a necessary element,

but is not sufficient in and of itself, and mainstreaming should also include an appropriate match between pupil and environment.

Part of that appropriate environment is instructional in nature. The following review examines the role of academic achievement in instructional integration, the importance of social characteristics in mainstreaming, the role of school personnel in the mainstreaming process and research in the use of multidisciplinary teams.

B. Academic Achievement in Instructional Integration

Although there is a strong moral and legal argument for the integration of the handicapped, there is also a strong need to fit the child to the type of recommended placement. The success of most programming for the handicapped, as well as the non-handicapped, is judged by the progress or lack of progress in academic achievement. A number of studies have indicated that intensive academic preparation is a necessary prerequisite for successful mainstreaming. In an investigation of teaching methods by Haring and Krug (1975), 48 EMR children were randomly assigned to four special classes, 24 to two experimental classes and 24 to two control classes. Children in the experimental class were given intensive instruction in the areas of math and reading. At the end of the school year, the children in the experimental group gained an average of eleven months more in math and reading achievement than did the children in the control classes. Thirteen of the 24 children were referred for placement in mainstream classes. A follow-up study of these 13 children indicated that 10 children had been successfully integrated into regular classrooms. Haring and Krug (1975) concluded that intensive academic preparation was a necessary element for a successful transition into mainstream classes.

After reviewing the records of 52 deaf children who had been transferred from schools for the deaf to public schools, Connor and Connor (1960) reported that only one-half of these children had achieved a successful integration. The author concluded that success in the mainstream was related to strong parental support, an ability to communicate prior to placement, and high achievement in the area of reading.

In a study of criteria used in determining a learning disabled child's readiness for mainstreaming, Wilkes, Bireley, and Schultz (1975) asked 120 professional educators to rate the importance of a set of 41 criteria developed for use in this study. This group of professionals consisted of 16 learning disabilities supervisors, 30 school psychologists, 51 learning disabilities teachers, and 33 regular class teachers with mainstreaming experience. The list of criteria contained statements concerning the child's academic work, behavioral characteristics and placement criteria. All four groups of professionals agreed that adequate preparation and ability to handle academic situations were important pre-mainstreaming criteria needed for successful integration.

Semmel, Gottlieb, and Robinson (1979) stated that there are few regular classroom teachers who change their teaching styles and methods to accommodate the needs of integrated handicapped students. Therefore, it would appear that the achievement level in those subjects into which handicapped students are mainstreamed should be as close to the achievement levels of non-handicapped students as possible.

Additionally, there is evidence in the research (Siders, 1979) that supports the need for such pre-mainstreaming planning practices as a part of classroom integration plans. Siders (1979) also indicates,

however, that there is no literature that states that such academic planning is done as a routine matter before making mainstreaming placements.

C. Importance of Social Characteristics in Mainstreaming

Another area of critical concern in the area of mainstreaming is that of social integration (Kaufman, Gottlieb, Agard, & Kukic, 1975). Social integration refers to the relationship between a handicapped child and members of his/her normal peer group. Social integration can also be defined in terms of physical proximity, interaction, assimilation, and acceptance.

In studies of the social acceptance of mildly retarded students by their non-handicapped peers, integrated retarded students were found to be less accepted than were segregated retarded students (Gottlieb, 1974; Goodman, Gottlieb, & Harrison, 1972). In a study by Vacc (1968) utilizing a play as a sociometric device, it was concluded that emotionally disturbed children integrated into regular classrooms were less accepted and more rejected than were their normal peers in the same mainstream classrooms.

In an attempt to find reasons for the poor social acceptability of handicapped students, non-retarded children were asked why they rejected certain retarded students. The major reason given for rejection was anti-social behavior such as fighting, bullying, and classroom misbehavior (Baldwin, 1958; Johnson, 1950).

Even when social intervention techniques were implemented in an effort to improve social and behavioral skills, it appeared that handicapped students remained less socially acceptable (Shellhaas, 1969).

Wilkes et al. (1975) found in a survey of opinions of learning disabilities teachers that a child's behavior in the classroom had more bearing on the decision to mainstream than did the child's academic performance in the classroom. School psychologists in this same study indicated that appropriate behavior was an important factor in making mainstreaming decisions, but was not the most important criteria.

These studies indicate that students who are selected to be mainstreamed should have better behavior than students who do not get mainstreamed, but no one has examined this supposition to date.

D. Importance of Involvement of School Personnel in Mainstreaming

School personnel have an extremely important role in the integration of the handicapped and the decisions that led to such integration. Kaufman et al. (1975) stress that mainstreaming is achieved by coordinated planning and programming by regular and special education administrative, instructional, and support personnel. If mainstreaming is to be effective, then educational personnel must be willing to cooperate in efforts to provide the most appropriate educational programs for all handicapped children. Kaufman, Agard, and Semmel (1979) found in analyzing the results of Project PRIME that decisions to reintegrate EMR children into regular classrooms were apparently independent of learner background, characteristics of teachers or other students, or available instructional programming. They hypothesized that the decision for integration was more likely to be based on some administrative variable that had not yet been isolated by the investigators. In attitudinal studies of regular education teachers, there appeared to be a general air of pessimism toward the concept of mainstreaming and a pervading feeling that such practices would lower the standards of mainstream

instruction (Meyers, McMillan, & Yoshida, 1975; Shotel, Iano, & McGettigan, 1972). Payne and Murray (1974) indicated that urban administrators had a higher level of acceptance toward the handicapped than did their suburban counterparts. In general, both teachers and administrators voiced reluctance toward the practice of mainstreaming handicapped students (Semmel et al., 1979), but no one had studied how the mainstreaming process actually occurs.

E. Research Concerning Multidisciplinary Teams

A great deal of work and preparation goes into making initial placement decisions for handicapped children. Public Law 94-142 requires school personnel to come together as a multidisciplinary team to make placement decisions. The multidisciplinary or planning team may include regular and special education teachers, administrative and supervisory staff and/or support personnel (Bickel, 1980; Braun, 1977; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Palmer, 1980; Rucker & Vautour, 1981).

The placement team is generally responsible for determining eligibility for special services, establishing educational goals and objectives, and determining programming decisions (Yoshida, Fenton, Maxwell, & Kaufman, 1978). Until recently, such decisions had been made by a single individual or "gatekeeper," usually the school psychologist (Bickel, 1980; Yoshida et al., 1978). The development of these educational, planning or multidisciplinary teams has aroused the interest of researchers in the field of special education and psychology.

Yoshida et al. (1978) have assessed the roles, relationships, participation levels and professional satisfaction of members of educational planning teams. The results of these studies indicate that team members from different professions differ in the level of self-perceived participation during planning team meetings. Support personnel (school psychologists, counselors, and social workers) and administrators appear to have higher participation scores than do medical personnel, regular, and special education teachers. However, a weak relationship was also found between role and satisfaction by all school personnel except regular and special education teachers and school psychologists. According to the authors, the most significant findings of these studies are that participation correlates positively to satisfaction, attendance at a meeting does not translate into participation or satisfaction, and regular education teachers are low in both participation and satisfaction. The latter finding is particularly important given that the role of regular educators is critical to the development and implementation of a mainstream educational programming for the handicapped child.

In a similar investigation, Gilliam (1979) studied the contributions and status rankings of planning committee participants. Utilizing a questionnaire, 130 committee members were asked to rank order the 15 roles most often represented in planning teams according to their importance in the planning process. A follow-up study was conducted in which participants evaluated actual contributions in the five areas of diagnosis, planning, placement, implementation, and due process. The results of this study indicated that planning team members may perceive role stereotypes in terms of expected contributions and generally, these expectations were valid in terms of actual contributions.

In a pilot study of longstanding planning teams, Vautour (1977) found that these teams place exceptional children more appropriately than do individual team members acting alone. Appropriate placements were determined through follow-up consultations with the receiving special education teachers. Additionally, the size of the team had little effect on the appropriateness of placement selections. For example, teams with four to ten members appeared to have similar success or failures in selecting appropriate placements as did teams with three members.

Vautour (1977) also examined the exercise of influence on team decisions. The results of this study indicated that a person's knowledge of appropriate placements correlates positively with the influence exerted over fellow team members. In addition, these results refuted the notion that the role of chairperson or possession of special training also indicates a higher level of influence.

Crowell (1977) replicated Vautour's study to test out the notion that teams who had worked as teams over a long period of time may gradually identify knowledgeable team members and subsequently rely on them for decisions. In this study, however, team members were not familiar with fellow team members in the experimental groups to which they were assigned. The findings of Crowell's study were identical to Vautour's study, i.e., those team members high in knowledge also had a high level of influence over other team members.

This research is focused on factors affecting the decision-making of multidisciplinary teams in placement decisions but there is no research which examines the decision-making process that takes place when students are considered to be ready for reintegration into the mainstream.

F. Summary

There is a great deal of confusion about mainstreaming. This confusion includes a lack of clarity about the definition, necessary elements, and what it takes to deliver appropriate programming (MacMillan & Semmel, 1977). Although many authors have studied the importance of social acceptance of the handicapped by the non-handicapped, there is little evidence that indicates any effort has gone into determining what acceptable behavior levels will be appropriate for successful mainstreaming.

The research also indicates that the achievement levels in those subjects into which handicapped students are mainstreamed should be as close to the achievement levels of non-handicapped students as possible (Semmel et al., 1979; Wilkes, Bireley, & Schultz, 1975). But according to Siders (1979) there is no literature that states that such academic planning is done as a routine matter before making mainstreaming decisions.

Mainstreaming has been discussed as a set of distinct elements, i.e. temporal, instructional and social integration. In practice, however, these elements are mutually interdependent (Kaufman et al., 1979). Additionally, each component of mainstreaming affects, and is affected by, the school and classroom climates. The tenor of these climates is greatly influenced by key school personnel. However, those school personnel responsible for making appropriate mainstream decisions have indicated negative and pessimistic views toward handicapped children and the practice of mainstreaming (Semmel et al., 1979). A major reason given was a concern that the standards of the regular classroom

will be lowered and education for the non-handicapped will suffer as a result (Meyers, MacMillen, & Yoshida, 1975). "Furthermore, little information is available regarding the criteria that schools employ to decide who gets mainstreamed and for how much time" (Semmel et al., 1979, p. 79).

Public Law 94-142 required school personnel to come together as a team in order to determine eligibility for special services, to establish educational goals and objectives, and to determine programming decisions (Yoshida et al., 1978). Recent research concerning these multidisciplinary teams has examined the perceived roles and satisfaction of team participants, and the effectiveness of both preservice and inservice educational programs. Most of the research thus far has focused on team behavior at the time of placement. Little research is available, however, on how teams operate later when making decisions about mainstreaming.

Although there has been an abundance of recent research involving the growth and development of multidisciplinary teams, there is no research which addresses one specific problem area, i.e. what are the student characteristics and the decision-making process which allow some students the opportunity to be mainstreamed for academic subjects while others are not. The purpose of this study was to examine both student characteristics and the decision-making process engaged in by administrators and teachers responsible for making mainstreaming decisions, and to better understand the mainstreaming process.

III. THE PROBLEM

A. Rationale

The enactment of the Education for All Handicapped Children Act of 1975 has brought forth many far-reaching changes for professionals in the field of special education. One very significant change has been the introduction of a multidisciplinary team that is responsible for the planning and implementation of programs for handicapped students. Although the use of "teams" in the human services field has been evident for many years, it was only with the passage of P.L. 94-142 that these multidisciplinary teams became federally mandated in education.

According to Rucker and Vautour (1981), a number of research projects have been initiated in an effort to study the decision-making of such teams. Yoshida, Fenton, Maxwell, and Kaufman (1976) examined the relationship between role, participation, and satisfaction during planning team meetings. In a later study concerning the recognition of team goals, Fenton, Yoshida, Maxwell, and Kaufman (1979) revealed that less than a three-fourths majority of team members surveyed recognized the team's duty to make specific decisions. The research thus far has addressed the role of the team in making initial referral and placement decisions, but there is little evidence in the literature regarding how decisions about subsequent mainstream placements are made.

B. Statement of the Problem

Students placed in elementary classrooms for children with learning disabilities usually spend up to fifteen percent of their

instructional day outside the special education classroom (Leinhardt, Zigmond, & Cooley, 1981). This time is spent in non-academic "mainstream" classes with students from mainstream programs. Placement into these non-academic subjects (art, music, physical education and/or library) is made on a routine basis, usually without consideration for either academic or behavioral characteristics.

Placements into mainstream academic subjects (e.g., reading, math, spelling, language arts, science, social studies) do not occur as a matter of routine, but are assumed to be the result of thoughtful decision-making among teachers and school administrators. It is also assumed that each student's academic and behavioral characteristics are examined critically before academic mainstreaming is recommended. This assumption, however, has not been supported in the literature (Semmel et al., 1979). As school systems become increasingly pressured to comply with mandates of P.L. 94-142, it also becomes increasingly important to examine the critical factors operating in the decision to place handicapped students into mainstream academic subjects. The major objective of this study is to examine decision-making factors which affect placement of students into academic subjects in the mainstream. In an effort to identify critical factors, the following questions will be pursued:

1. How do students who are mainstreamed differ academically and behaviorally from those who are not?

2. What are the factors that allow some students to be mainstreamed while others are not?

C. Delimitation of the Study

This investigation includes only students enrolled in self-contained elementary classrooms for the learning disabled in the Pittsburgh Public Schools.

D. Definition of Terms

Mainstreaming - In general, mainstreaming means that to the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities, are educated with children who are not handicapped, and special classes, separate schooling or other removal of handicapped children from the regular education environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily (P.L. 94-142, Section 121a.550). For the purposes of this study, mainstreaming means the process of educating handicapped children into academic subjects with their non-handicapped peers in the regular classrooms.

Learning Disabilities - Children with special learning disabilities exhibit a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language. These may be manifested in disorders of listening, thinking, talking, reading, writing, spelling, or arithmetic. They include conditions which have been referred to as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, developmental aphasia, etc. They do not include learning problems which are due primarily to visual, hearing, or motor handicaps, to mental retardation, emotional disturbance, or to environmental disadvantage (National Advisory Committee to the Office of Education's Bureau of Education for the Handicapped).

IV. METHODOLOGY

The purpose of this investigation was to study the mainstreaming practices and decision making processes used by elementary school personnel in the Pittsburgh Public Schools and to determine whether learning disabled (LD) students who were assigned to academic classes in the mainstream differed in certain academic and behavioral characteristics from learning disabled students who were not mainstreamed.

This study was conducted in two phases. The first phase incorporated the selection and assessment of a population of mainstreamed and non-mainstreamed students in selected target schools. Target schools were those 20 schools in which at least one learning disabled student was enrolled in an academic subject during the 1980-81 school year. There were 23 LD classrooms in these 20 schools. The second phase consisted of an examination of mainstream decision making processes through the use of a structured interview. This interview was administered to school personnel in target schools who were responsible for making mainstreaming decisions which involved students in the sample.

A. Phase I - Student Characteristics

Subject Selection

The first phase of the study involved all second, third, and fourth grade students enrolled in 23 target classrooms for the learning disabled in which at least one student was mainstreamed for an academic subject during the 1980-81 school year. These students were divided into two groups,

i.e. those students who had been mainstreamed (N = 40) and their non-mainstreamed classroom peers (N = 112).

Instrumentation

The following academic and behavioral instruments were administered to all students in the study.

The Reading 360 Initial Screening Test (Clymer, Humphrey, & McCullough, 1971), the reading placement test for the Ginn reading series, is the adopted reading series used in the Pittsburgh Public Schools. This instrument is used in both special and mainstream classes and measures competency in decoding, encoding, and reading comprehension for students in kindergarten through fifth grade. This placement test yields a reading level score which correlates with grade levels. The average learner is expected to master levels and 7 in second grade, complete level 8 and begin level 9 in grade 3, plete level 9 and begin level 10 in grade 4, and finish level 10 and begin level 11 in fifth grade. Teachers in classes for the learning disabled utilize those placement tests to verify a student's reading level placement.

The McMillan Mathematics Placement Test (Series M, 1976) consists of a series of five tests which are criterion referenced to measure one child's performance against established mastery criterion rather than against the performance of other students. These tests are designed to place children in the appropriate levels (grades one through five) of the McMillan Mathematics Series (Series M). Exercises on the Placement Test have been constructed to measure a wide range of skills with respect to the learning goal. This mathematics series is used in many special education and mainstream remedial classes in the Pittsburgh Schools and produces a grade level score.

Although the literature states that behavior is a major factor in the acceptance of the handicapped student by his non-handicapped peers (Gottlieb, 1974), there is no device for assessing student behavior in the Pittsburgh Public Schools. The Walker Problem Behavior Identification Checklist (WPBIC) (Walker, 1976) was used to chart observable classroom behaviors in this study.

The 50 checklist items initially developed were from teacher descriptions of classroom behavior problems. A random sampling of thirty teachers was drawn from a population of elementary teachers in an Oregon school district. Each teacher was asked to nominate those children in their classes who exhibited chronic behavior problems. Observable descriptions of overt behavior were derived from teacher interviews yielding a pool of 300 items. Fifty of the most frequently mentioned behaviors were selected for inclusion in the checklist. Some sample questions are as follows: "Has temper tantrums;" "Has no friends;" "Refers to himself as dumb, stupid, or incapable;" and "Must have approval for tasks attempted or completed." A panel of behavioral scientists was then asked to rate each item's weight or influence in handicapping a child's present adjustment. Interjudge reliability (r_{11}) was .83 and the means of the five judges on all items were pooled and assigned as score weights for the scale items. The checklist was normed on a population of 534 elementary school children. The reliability of the WPBIC has been estimated by the Kuder-Richardson split-half method and the test-retest method. The split-half reliability coefficient obtained on the WPBIC was .98 with a standard deviation of 10.53 and a standard error of measurement of 1.28. The purpose of this checklist

was to assess the level of inappropriate behaviors exhibited by subjects being examined in this study.

Procedures

A list of all second, third, and fourth grade learning disabled students in the 23 target classrooms was developed and mainstreamed and non-mainstreamed students were identified in the Spring of 1981. The data in Table 1 indicates the number and percent of mainstreamed and non-mainstreamed students in each grade.

Table 1

Distribution of Mainstreamed and Non-Mainstreamed Students by Grade

Grade	Mainstreamed Students N	%	Non-Mainstreamed Students N	%
2	9	(22.5)	34	(30.0)
3	14	(35.0)	40	(36.0)
4	17	(42.5)	38	(34.0)
Total	40	(100.0)	112	(100.0)

In June, 1981 each of the 23 teachers in the sample was asked to complete a Walker Problem Behavior Identification Checklist for each student in a target classroom.

B. Phase II - Decision Making

Subject Selection

For the second phase of the study, subjects were the 23 teachers and 20 principals responsible for making mainstreaming decisions for the learning disabled students in the study.

Instrumentation

The type of interview used in this study is commonly referred to as the "Open-end funnel" interview. Specifically the interview began with very broad questions and comments and narrowed down progressively to the important point or points desired of interest in this study. This interview began with a clarification question regarding the mandates of P.L. 94-142 and narrowed down to specific questions regarding decisions which involve special education students being mainstreamed in that particular school.

The contents of the interview were divided into three general sections, i.e. an introductory question designed to determine the interviewee's understanding of mainstreaming; fourteen questions oriented toward student characteristics; and eleven decision-making process questions. A copy of the interview is available in Appendix A.

Procedures

Using a table of random numbers, 40 non-mainstreamed students were randomly selected from the 112 non-mainstreamed classroom peers. The names of these students were inserted into the interview instrument in pairs consisting of a mainstreamed and non-mainstreamed classroom peer. When a target school or classroom had more than one pair of students, only that section of the interview concerning student

characteristics was repeated. Twenty principals and 23 learning disabilities teachers in the target schools were interviewed individually by a graduate student assistant who had been trained in the techniques of interviewing.

V. RESULTS

A. Phase I Analysis

The purpose of this investigation was to study the mainstreaming practices and decision-making processes used in the Pittsburgh Public Schools and to determine whether learning disabled (LD) students who were assigned to academic classes in the mainstream differed in certain academic and behavioral characteristics from learning disabled students who were not mainstreamed.

This study was conducted in two phases. Phase I specifically addresses research question number one, "How do students who are mainstreamed differ academically and behaviorally from those who are not?"

The first phase of this study examined academic and behavioral scores of second, third, and fourth grade learning disabled students in target classrooms. Students were assessed by their special education teachers utilizing The Ginn Reading 360 Initial Screening Test, The McMillan Mathematics Placement Test, and The Walker Problem Behavior Identification Checklist (WPBIC). Reading scores were reported by the Ginn series reading levels. Mathematics scores were indicated by grade equivalency scores which are reported in the McMillan Series M manual. Behavior scores were reported according to guidelines in The Walker Problem Behavior Identification Checklist manual. Data in Tables A through W in Appendix B report reading levels, math grade equivalencies and behavior checklist scores for the mainstreamed and non-mainstreamed students in each of the 23 target classrooms.

Table 2 shows the means and standard deviations of the reading levels of the second, third and fourth grade students who were mainstreamed in reading related subject areas (n = 19) and those of the 112 students who had not been mainstreamed in any academic subject. Reading related subjects included spelling, science, social studies, reading and language arts. Since the number of students varies greatly among the six groups, tests of significance were not carried out. However, an examination of the means reveal very little difference between the means of the mainstreamed and non-mainstreamed second grade students. Third and fourth grade mainstreamed students scored 1.6 and 1.9 grade levels higher than their non-mainstreamed peers respectively. Appendix C contains a frequency distribution of the reading level scores for mainstreamed and non-mainstreamed students.

Table 2

Means and Standard Deviations of Reading Levels of Students Mainstreamed for Reading and Non-Mainstreamed Peers by Grade

Grade Level	Mainstreamed Students N	$\bar{X}$	S.D.	Non-Mainstreamed Students N	$\bar{X}$	S.D.
2	3	6.7	1.52	34	6.2	.98
3	6	9.0	.63	40	7.4	1.31
4	10	9.2	1.61	38	7.3	1.34

The data in Table 3 reports the means and standard deviations of the math achievement scores of students mainstreamed in math (n = 28) and non-mainstreamed students by grade level. Since the number of students varies greatly among the six groups, tests of significance were not

carried out. However, an examination of the means reveals only slight differences between mainstreamed and non-mainstreamed students in the area of math at all three grade levels. A frequency distribution of the math mainstreamed and non-mainstreamed students may be found in Appendix C.

Table 3

Means and Standard Deviations of Math Grade Equivalents of Students Mainstreamed for Math and Non-Mainstreamed Peers by Grade

Grade Level	Mainstreamed Students N	$\bar{X}$	S.D.	Non-Mainstreamed Students N	$\bar{X}$	S.D.
2	7	2.8	.77	34	2.4	.60
3	9	3.4	.45	40	3.2	.80
4	12	4.1	.70	38	3.4	.92

Data in Table 4 indicate the means and standard deviations of behavior checklist scores of mainstreamed and non-mainstreamed students by sex. Since the number of students varies greatly among the four groups, tests of significance were not carried out. However, an examination of the means reveals little difference in the levels of problem behaviors for both mainstreamed and non-mainstreamed males and females. Comparisons cannot be made between male scores and female scores because different levels of problem behavior are acceptable for each sex. According to the data available in The Walker Problem Behavior Identification Checklist test manual, acceptable behavior checklist scores range between 0 and 12 for females while scores of 0 through 22 are acceptable for males. The data in Table 4 indicate that females in general scored closer to the

unacceptable level of behavior than did their male counterparts. The range of behavioral scores for the 32 females was 0 through 62 while the range of scores for the 120 males was from 0 to 67.

Table 4

Means and Standard Deviations of Behavior Checklist Scores for Mainstreamed and Non-Mainstreamed Students by Sex

	Mainstreamed Students			Non-Mainstreamed Students		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
Males	33	14.2	15.82	87	16.0	10.90
Females	7	10.6	8.14	25	13.8	13.94

Utilizing data available in The Walker Problem Behavior Identification Checklist manual, levels of adequate and inadequate behavior were determined for the 40 mainstreamed students and the 112 non-mainstreamed students by sex, and are indicated by + (adequate) and - (inadequate) scores in Appendix B. Raw scores are also available in the tables in Appendix B. Data in Table 5 indicate that 80% of the mainstreamed students had adequate behavior while 69% of the non-mainstreamed students also had adequate behavior. Sixty-five percent of the mainstreamed students were on level in reading as compared with 52% of the non-mainstreamed students. Additionally, 76% of the mainstreamed students were on grade level in math as compared with 52% of their non-mainstreamed counterparts.

Table 5

A Summary of Achievement and Behavior Status of Mainstreamed and Non-Mainstreamed Learning Disabled Students

	Mainstreamed						Non-Mainstreamed					
	Adequate Behavior		Inadequate Behavior		Total		Adequate Behavior		Inadequate Behavior		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Reading												
On Level	20	(50)	6	(15)	26	(65)	39	(35)	19	(17)	58	(52)
Not on Level	12	(30)	2	(5)	14	(35)	38	(34)	16	(14)	54	(48)
Total	32	(80)	8	(20)	40	(100)	77	(69)	35	(31)	112	(100)
Math												
On Level	27	(68)	3	(8)	30	(76)	43	(39)	15	(13)	58	(52)
Not on Level	5	(12)	5	(12)	10	(24)	34	(30)	20	(18)	54	(48)
Total	32	(80)	8	(20)	40	(100)	77	(69)	35	(31)	112	(100)

In order to examine more closely students who had been mainstreamed for specific subjects, these students were compared with their non-mainstreamed grade peers within each of the 23 target rooms. The raw data for Table 6 is available in Appendix B. For comparison of achievement levels, mainstreamed students were divided into three groups, i.e. those students mainstreamed for reading (n = 12), those students mainstreamed for math (n = 21), and those students who were mainstreamed for both reading related subjects and math (n = 7). Of the 40 mainstreamed students, six students did not have grade-mates available in their classrooms for comparison. Of these six students, three had been mainstreamed in reading, one in math, and two in both math and reading related subjects. Therefore, only 34 of the mainstreamed students were used for the comparisons summarized in Table 6.

In comparing the 20 mainstreamed students who were mainstreamed for math with their 64 non-mainstreamed classmates, data indicate that 20 of the non-mainstreamed classmates had higher math grade equivalents than their mainstreamed counterparts while 17 students had the same grade equivalents, and 37 students had lower math scores than those who had been mainstreamed for math.

The nine students mainstreamed in reading related subjects were compared with their 27 non-mainstreamed grade peers. Two of the students who were not mainstreamed for reading related subjects were higher than their mainstreamed peers, seven had the same reading level, and 18 had a lower reading level than students mainstreamed for reading related subjects. Students who had been mainstreamed for both math and reading related subjects scored higher than nine and ten of their 12 non-mainstreamed peers in math and reading, respectively.

Mainstreamed students were also compared with non-mainstreamed grade appropriate peers in the area of behavior. The thirty-four mainstreamed students were compared with 101 non-mainstreamed students. Data indicate that 49 of the non-mainstreamed students had more problem behaviors than their mainstreamed classmates, 4 had the same behavioral checklist score and 48 had fewer behavior problems.

Table 6

Summary of Comparison of Mainstreamed and Non-Mainstreamed Grade-Appropriate Students in the Areas of Math, Reading, and Behavior Within Individual Classrooms

	Mainstreamed Subject				
	Math	Reading Related	Both Math and Reading Related		All Mainstreamed
Score Compared	Math	Reading	Math	Reading	Behavior Checklist*
Number of Mainstreamed Students	20	9	5	5	34
Number of Non-Mainstreamed Comparison Peers	64	27	12	12	101
Number of Non-Mainstreamed Classmates Higher Than Mainstreamed Students	20	2	3	0	49
Number of Non-Mainstreamed Classmates the Same as Mainstreamed Students	17	7	0	2	4
Number of Non-Mainstreamed Classmates Lower Than Mainstreamed Students	27	18	9	10	48

*Higher behavior checklist score indicates more problem behaviors

Summary of Phase I

In general the results of achievement data indicate little differences between the reading scores of mainstreamed and non-mainstreamed second grade students. However, these differences increase markedly as the grade level increases. A further comparison of achievement scores indicate very little difference between grade equivalents in math of both mainstreamed and non-mainstreamed students regardless of grade level. An examination of the behavioral checklist scores of the 32 females and 120 males reveals that females in general scored closer to the unacceptable level of behavior than did male students. However, there was little difference between the behavioral checklist scores of mainstreamed and non-mainstreamed students regardless of sex.

Results also indicate that over two-thirds of the mainstreamed students were on grade level in reading. Additionally, over one-half of the non-mainstreamed subjects were also on level in the area of reading. Over three-fourths of the mainstreamed students were on grade level in math as compared with slightly over one-half of the non-mainstreamed students.

A further comparison of mainstreamed students with their non-mainstreamed age mates within each of the 23 target classrooms reveals that 37 of the 64 non-mainstreamed students were the same or higher than the mainstreamed students in the area of math while only 9 of the 27 non-mainstreamed students scored the same or higher than their non-mainstreamed peers in reading. In comparing scores on the behavior checklist, data indicate that there were almost as many non-mainstreamed students who had fewer problem behaviors than mainstreamed students as there were non-mainstreamed students who had a greater number of problem behaviors than mainstreamed students.

B. Phase II Analysis

The second phase of this study consisted of an examination of the mainstream decision making processes through the use of a structured interview. This interview was administered to those school personnel who were responsible for making mainstreaming decisions which involved the students in the sample. The 20 principals and 23 special education teachers, in schools in which academic mainstreaming had occurred during the previous year, were interviewed individually.

The completed interview forms were coded with a school number, and either a principal number or a teacher number. The responses on the interviews were separated into teacher and principal responses. Data obtained from the interviews were sorted into categories of similar responses

This phase specifically addressed research question number two, "What factors allow some students to be mainstreamed while others are not?"

The interview began with a question designed to determine the participants' perception of the definition of mainstreaming. In general, both principals and teachers defined mainstreaming as "educating handicapped students with their non-handicapped peers in the regular classroom."

The remainder of the interview was divided into two parts. The first group of nine questions referred to a specific set of mainstreamed students (n = 40), and a randomly selected set of non-mainstreamed classroom peers (n = 40). These questions were concerned with the process by which specific mainstream decisions were made. Data in tables seven through fourteen indicate the percent of cases reported by principals and teachers in response to this group of questions. When asked to state who initiated the mainstreaming process for a particular mainstreamed student from his/h

school or classroom, principals indicated that the special education teacher was the initiator in 85% of the cases while teachers indicated the same response in 75% of the cases (Table 7).

Table 7

Initiator of the Mainstreaming Process as Perceived by Principals and Teachers

	Principals %	Teachers %
Special Education Teacher	85.0	75.0
Parent/Parents	5.0	5.0
Principal	2.5	5.0
Mainstream Teacher	5.0	0.0
Psychologist	0.0	2.5
Mainstreaming had been determined in the previous year	2.5	12.5

Both principals and teachers responded that mainstreaming was usually initiated within the first month of the school year (Table 8). However, in almost one quarter of the cases, principals did not know when the actual mainstreaming process had been initiated.

Table 8

Principal and Teacher Perceptions of When the Mainstreaming Process was Initiated

	Cases Reported by Principals %	Cases Reported by Teachers %
Beginning of school year--within the first month	35.0	62.5
End of the first semester	22.5	20.0
End of year--during last month	0.0	2.5
Had been determined during the previous year	20.0	15.0
Don't know	22.5	0.0

Both principals and teachers indicated that in the majority of the forty cases, once the mainstreaming process was initiated, placement in the regular classroom actually occurred in a period of one or two days or within two weeks (Table 9).

Table 9

Principal and Teacher Perceptions of the Length of the Mainstreaming Decision Making Process

	Cases Reported by Principals %	Cases Reported by Teachers %
Within one or two days	35.0	47.5
Within one or two weeks	45.0	32.5
A month or longer	12.5	12.5
Don't know	7.5	7.5

When asked who else was involved in each of the mainstreaming processes, both principals and teachers named the mainstream teacher as an active participant in one-half of the cases (Table 10).

Table 10

Principal and Teacher Perceptions of Additional Personnel Involved in the Mainstreaming Process

	Cases Reported by Principals %	Cases Reported by Teachers %
None	17.0	17.0
Mainstream Teacher	50.0	50.0
The Multidisciplinary Team	15.0	15.0
Special Education Supervisor	8.0	8.0
Parents	5.0	5.0
Other auxillary personnel	5.0	5.0

As noted in Table 11, both teachers and principals agreed that mainstream placement in the regular classroom was viewed as a temporary arrangement in almost two-thirds of the forty cases.

Table 11

Principal and Teacher Perception of the Longevity of Mainstreaming Placements

	Cases Reported by Principals %	Cases Reported by Teachers %
Permanent	37.5	37.5
Temporary	62.5	62.5

As shown in Table 12, when asked to describe the mainstreaming process that is supposed to be followed, principals indicated satisfaction with the current mainstreaming process. In marked contrast to the principals' responses, special education teachers indicated that a multidisciplinary team approach should be used.

Table 12

Principal and Teacher Perception of Appropriate Mainstreaming Process

	Cases Reported by Principals %	Cases Reported by Teachers %
A multidisciplinary team should be used	15.0	78.3
Current process should be used	85.0	21.7

When asked why the forty students in the sample were mainstreamed, principals reported that the acquisition of good academic skills was a reason for mainstreaming in 100 percent of the cases examined. Teachers indicated a need for good academic skills in ninety percent of these same cases. Appropriate behavior and adequate social skills were reported by the principal in ninety-five percent of the cases as an additional reason for mainstreaming. In 98% of the cases teachers also indicated appropriate behavior as justified for mainstreaming. In 37% of the cases both principals and teachers indicated parental desires as another reason for implementing mainstreaming (Table 13).

Table 13

Reasons for Mainstreaming Students As Reported by Principals and Teachers

	Cases Reported by Principals N	%	Cases Reported by Teachers N	%
Good academic skills	40	(100)	36	(90)
Appropriate behavior and social skills	38	(95)	39	(98)
Parental desires	15	(37)	15	(37)
Administrative expediency	--		--	

Table 14

Reasons for Not Mainstreaming Students As Reported by Principals and Teachers

	Cases Reported by Principals N	%	Cases Reported by Teachers N	%
Poor academic skills	36	(90)	39	(97)
Inappropriate behavior and social skills	6	(15)	4	(10)
Parents did not want their child mainstreamed	4	(10)	4	(10)

As is indicated in Table 14, in the majority of cases reported both principals and teachers indicated that poor academic skills were the major reasons for not mainstreaming students.

The second set of questions on the teacher and principal interview examined their general perceptions of the mainstreaming process as it operated in each of the twenty schools. When the 20 principals and 23 learning disabilities teachers were asked what started them thinking about mainstreaming a student (Table 15), teachers focused on the student's performing on or above grade level. Although thirty percent of the principals agreed with the teachers' response, thirty-five percent also felt that initiating mainstreaming procedures was not their responsibility.

Table 15

Principal and Teacher Perceptions of Criteria Necessary for Referral Initiation

	Principal (N = 20) %	Teacher (N = 23) %
When a child is performing at or above grade level	30.0	73.9
When a child's behavior is appropriate	0.0	8.7
When there is a combination of both appropriate behavior and good academic skills	25.0	8.7
Need to comply with the law	10.0	8.7
It is not my responsibility	35.0	0.0

According to the data in Table 16, both principals and special education teachers agreed that the special education teacher is the person who usually initiates the mainstreaming referral process.

Table 16

Principal and Teacher Perceptions of Who Usually Initiates the Mainstream Referral

	Principal (N = 20)	Teacher (N = 23)
The special education teacher	100.0%	100.0%

Both groups of participants stated that parents would also be likely to initiate a mainstreaming request. However, in almost one-third of the responses, it was indicated that no one in addition to the special education teacher was likely to initiate a referral. The results also indicated only a minor role for the psychologist in the initiation phase (Table 17).

Table 17

Principal and Teacher Perception of Additional Personnel Involved in the Initiation of a Referral

	Principal (N = 20) %	Teacher (N = 23) %
Special Education Supervisor	5.0	8.8
Parent/Parents	45.0	39.2
Psychologist	15.0	4.3
Mainstream Teacher	0.0	8.7
Educational Aide	0.0	4.3
Principal	0.0	4.3
No one else	35.0	30.4

Each group was asked to describe their perceived role in the mainstreaming process. As indicated in Table 18, principals saw themselves as catalysts, initiators, and arbitrators, while the majority of teachers perceived themselves not only as initiators and catalysts, but also as resource persons to the mainstream classroom.

Table 18

Principal and Teacher Perceptions of His/Her Role in the Mainstreaming Process

	Principal (N = 20) %	Teacher (N = 23) %
I act as a catalyst to insure proper placement	45.0	34.8
I act as the initiator in the referral process	20.0	43.4
I act as an arbitrator in the referral process	20.0	0.0
I assure compliance with the law	5.0	4.3
I act as a resource to the mainstream	0.0	17.5
I do not have an active role in the referral process	10.0	0.0

Eighty percent of the principals interviewed considered themselves to be the person responsible for making the final decision regarding mainstreaming, while 21.7% of the teachers shared this view. Another 21.7% felt the special education teacher made the final decision and 43.5% felt that this was the responsibility of the multidisciplinary team (Table 19).

Table 19

Principal and Teacher Perceptions of Who is Responsible for the Final Decision in the Mainstreaming Process

	Principal (N = 20) %	Teacher (N = 23) %
Principal	80.0	21.7
Special Education Teacher	10.0	21.7
Multidisciplinary Team	0.0	43.5
Parents	10.0	4.4
Special Education Supervisor	0.0	8.7

The data in Table 20 indicate that both groups perceived that the mainstream teacher has an active role only after the mainstreaming decision has been made and this role is supportive in nature.

Table 20

Principal and Teacher Perceptions of the Role of the Mainstream Teacher in the Mainstreaming Process

	Principal (N = 20) %	Teacher (N = 23) %
Active role during decision-making process	5.0	4.0
Inactive role during decision-making process	10.0	13.0
Active role only after the fact--supportive in nature	85.0	83.0

Additionally, both teachers and principals agreed that parents do not play an active role during the mainstreaming process, but that they become active only after the process is completed (Table 21).

Table 21

Principal and Teacher Perceptions of the Parent's Role in the Mainstreaming Process

	Principal (N = 20) %	Teacher (N = 23) %
Inactive role during mainstreaming process	40.0	61.0
Active role during mainstreaming process	20.0	4.0
Active role only after the fact	40.0	35.0

When asked what other personnel are involved in mainstreaming a student, 90% of principals and 74% of teachers indicated that no other personnel were involved (Table 22).

Table 22

Principal and Teacher Perceptions of Additional Personnel Involved in the Mainstreaming Process

	Principal (N = 20) %	Teacher (N = 23) %
No one else	90.0	74.0
Supervisor	10.0	8.7
Mainstream Teacher	0.0	13.0
Psychologist	0.0	4.3

Those principals and teachers who acknowledged the use of additional personnel indicated that these personnel were used as resource persons or as supporters to the students (Table 23).

Table 23

Principal and Teacher Perceptions of the Role of Additional Personnel

	Principal (N = 20) %	Teacher (N = 23) %
No one else is involved	90.0	74.0
Acts as a resource to the mainstream teacher	10.0	13.0
Acts in a supportive role to student	0.0	13.0

The majority of both teachers and principals stated there is no formal process in their school for deciding the appropriate academic or behavioral levels for students who are being considered for mainstreaming in the regular classroom (Table 24).

Table 24

Assessment Processes Used in Their Schools as Reported by Principals and Teachers

	Principal (N = 20) %	Teacher (N = 23) %
No formal assessment is present in our school	85.0	70.0
A formal assessment is present in the school	10.0	30.0
Don't know	5.0	0.0

Summary of Phase II

The results of the interviews conducted in Phase II of this study indicate that principals and special education teachers are seen as the only consistently active participants in the decision making process. Although the mainstream teacher was reported to have a major role in some cases involving specific students, he/she was not perceived to have a significant role in the mainstreaming process in general. Additionally, teachers and principals reported that parents could also be likely participants, but when asked to describe the role of the parents in some specific cases, both teachers and principals indicated that parents had only a minor role in mainstream decision making.

When given the opportunity to describe the mainstreaming process as it is supposed to be "if there were no constraints," principals reported that the process currently being used in their school was the best method, while the majority of teachers reported that mainstreaming decisions should be determined through a different process utilizing a multi-disciplinary approach. In fact, in an examination of the specific cases, the multi-disciplinary team was reported to have been utilized in only fifteen percent of the target cases. Most teachers indicated that the multi-disciplinary team has the final word in the decision making process, while principals saw themselves as the final decision maker.

In most cases, teachers and principals reported that the acquisition of good academic skills was the major justification for making a mainstreaming referral. Good behavior and appropriate social skills were additional reasons. Both groups also indicated that poor academic

skills were the major reasons for not mainstreaming a student, but neither group indicated that inappropriate behavior was necessarily a major detriment to being mainstreamed. Finally, both principals and teachers stated that there is no formal assessment process used in their schools to aid in determining mainstreaming decisions.

VI. DISCUSSION, IMPLICATIONS AND SUMMARY

A. Discussion of the Results

The present study was an investigation of mainstreaming practices and decision making processes used by elementary school personnel in the Pittsburgh Public Schools. The first phase of this study examined the academic and behavioral differences between mainstreamed and non-mainstreamed students in elementary classrooms for the learning disabled. The second phase included an examination of mainstream decision making processes through the use of a structured interview. This interview was administered to school personnel who were responsible for making mainstreaming decisions involving the students in Phase I of the study.

The research question in Phase I asked, "How do students who are mainstreamed differ academically and behaviorally from those who are not?" Results of Phase I of the study reveal very few differences between mainstreamed and non-mainstreamed students academically or behaviorally. Three instruments, The Ginn Reading 360 Initial Screening Test, The McMillan Mathematics Placement Test, and The Walker Problem Behavior Identification Checklist, were used to measure the academic and behavioral levels of learning disabled students in the 23 target classrooms. An examination of the means of math scores of mainstreamed and non-mainstreamed students by grade level revealed no marked differences between the scores of these two groups. This was also true of the means of second grade reading scores. There were, however, reading level differences between mainstreamed and non-mainstreamed students in both third and fourth grades. Results indicate that many of the mainstreamed

students were on level in math and reading but this was also true of their non-mainstreamed colleagues.

When asked in the interview in Phase II what characteristics a student should possess to be considered for mainstreaming, teachers and principals indicated a student should have good academic skills. The mainstreamed students' achievement test scores generally support this statement. On the other hand, teachers and principals reported that students were not mainstreamed because they lacked good academic skills. However, it was found that a little over one-half of non-mainstreamed students scored on or above grade level in either math or reading.

Teachers and principals also indicated that the acquisition of appropriate behavior and social skills was a prerequisite for mainstreaming consideration. One-fifth of the mainstreamed students had behavior that placed them in the inadequate behavior range while over one-third of the non-mainstreamed students were on level in math or reading and had appropriate behavior levels. Thus, there were a large number of non-mainstreamed students who had those behavioral attributes reported to be needed for mainstreaming but who were not mainstreamed into the regular classroom.

It should be considered that this discrepancy between what is stated by teachers and principals as necessary criteria for mainstreaming and the actual achievement and behavioral levels of mainstreamed and non-mainstreamed students in the target schools could be due to several factors. It may be that instruments used to gather academic data did not accurately reflect the differences between mainstreamed and non-mainstreamed students. Additionally, the behavior checklist may not have identified those target

behaviors that teachers believe are deterents to mainstreaming success. However, the WPBIC had been developed by regular elementary teachers and was designed to identify those behaviors that are unacceptable in mainstream classrooms. When interviewed, teachers and principals had indicated that certain academic and behavioral characteristics should be present before mainstreaming is considered. It may also be that the format of the interview instrument did not allow participants an opportunity to expand on those student characteristics used in making mainstreaming decisions.

It is also possible that teachers and principals may be unaware of or are unable to verbalize certain subtle academic or behavioral characteristics which may lead them to make or not make mainstreaming decisions. For example, teachers may respond negatively to an individual child on the basis of appearance without recognizing the importance of that factor in the decision making process. On the other hand, teachers may develop positive feelings about a child based on personality or other factors and mainstreaming decisions may be inadvertently influenced by such feelings. In addition, achievement test scores and personal interview data cannot accurately reflect the classroom climate. Nor can these scores reveal the subtle interactions between fellow students. Mainstreamed students were compared within individual classrooms with their non-mainstreamed peers (Table 6). However, these scores do not reveal the interpersonal dynamics of student relationships within target classrooms, nor do they identify the manner in which these relationships may exert subtle influences over school personnel in making mainstreaming decisions.

The second phase of this study addressed the research question, "What are the factors that allow some students to be mainstreamed while others are not?" The purpose of the interview was to examine the mainstream decision making processes used by the 20 principals and 23 teachers in the target schools. When asked why certain decisions were made about 40 mainstreamed and 40 non-mainstreamed students, teachers and principal indicated that these decisions were made based on academic and behavioral strengths and weaknesses. However, as indicated in the previous discussion, data in this study revealed that achievement scores do not always support this perception.

The remaining questions in the interview in Phase II examined the decision making processes in each of the target schools. Public Law 94-142 requires school personnel to come together as a multidisciplinary or planning team. These teams may include regular and special education teachers, administrators and supervisors, and/or support personnel (Bickel, 1980; Braun, 1977; Fenton, Yoshida, Maxwell, & Kaufman, 1979; Palmer, 1980; Rucker & Vautour, 1981). Yoshida et al. (1978) in assessing the roles, relationships, and participation levels of educational planning team members indicated a higher participation level for administrators and support personnel than for regular and special education teachers. In the interviews in this study special education teachers and principals were also asked to define roles and participation levels of personnel in their schools.

As contrasted with previous research, the findings of this study indicate a high participation level for special education teachers and a low participation level for support personnel (psychologists, social workers). However, data obtained from the interviews in this study,

indicate an agreement with previous research which indicates a high participation level for administrators and a low participation level for regular educators. In specific cases, teachers and principals indicated that regular education teachers were active participants in fifty percent of the cases, but when asked to define the level of participation of regular education teachers in general, principals and teachers indicated that mainstream teachers have an active role only after the process is completed and mainstreaming decisions have been made. The latter finding is particularly important given that the role of regular educators is critical to the development and implementation of mainstream educational programming for the handicapped students (Yoshida et al., 1978). The failure of the regular educator to participate in mainstream decision making may make it more difficult for special education teachers to become familiar with the curriculum and teaching techniques used in the mainstream classroom. In some cases the special education teacher may be reluctant to send learning disabled students to a mainstream classroom because of a fear that the mainstream teacher may not be adequately prepared to meet the special needs of these students. Therefore, the lack of participation of the regular educator may affect the outcome of the decision making process as well as make the implementation of those decisions more difficult.

An additional mandate of Public Law 94-142 is that of parental involvement. When asked what role parents play in determining mainstreaming decisions, principals and teachers indicated that parents seem to have a low participation level as initiators, participants, and decision makers in general. However, when asked to describe what

additional personnel may become involved in the initiation of a referral, almost half of the principals and teachers saw parents as possible initiators.

Bickel (1980) and Yoshida et al. (1978) reported that until recently educational programming for special children has been made by a single individual or "gatekeeper." This "gatekeeper" was usually the school psychologist. When asked to identify personnel who might act as initiators or participants in the educational planning for the specific subjects in this study, principals and teachers indicated that a minimal role was played by the school psychologist.

These results are in contrast with previous research which indicated a high participation level for support personnel (Yoshida et al., 1978). The findings of this study suggest that there may have been a shift in levels of responsibility in the process of educational planning for exceptional children. Principals and teachers also saw themselves as the most consistently active persons throughout the decision making process, however, teachers indicated that these planning decisions should be made through a multidisciplinary team effort. Principals, in general, reported that they were content with the way the process was currently being handled in each of their schools.

Public 94-142 mandated the use of multidisciplinary teams in the initiation and planning for all exceptional children. Although these teams appear to be active when a child is placed into a special program, it also appears that mainstreaming decisions are made in general without the benefit of team decision making. It appears that if a child needs the benefit of a multidisciplinary team to be placed into a special

education classroom, it also makes good sense that a team decision should be employed to take the child out of special education classrooms. Thus, responses of the participants in this study seem to indicate some confusion about the participation levels of school personnel when statements concerning specific decisions are compared with responses about the decision making process in general. It may be that this apparent confusion regarding the role of supportive school personnel is due to a misunderstanding of the mandates of the law. Public Law 94-142 does indicate that a local agency representative, the child's teacher, one or both of the child's parents, and other persons at the discretion of the parents or agency personnel must be involved "when there is a change in the child's educational program or related services." Perhaps school personnel do not view a recommendation for mainstreaming as a significant change in educational programming. Additionally, the use of multidisciplinary teams in the field of education is a relatively new concept. It may be that school personnel are unfamiliar with teaming techniques and therefore may inadvertently discourage team interactions.

B. Implications for Future Research

The findings of this study suggest that additional research should be conducted concerning the mainstream decision making processes currently in use throughout the country. There appears to be confusion regarding what is said to happen, what the stated basis is for making mainstreaming decisions, and what really occurs in the schools. From the findings of this study and the results of previous research it is suggested that the following areas should be examined:

1. A further examination of the characteristics of mainstreamed and non-mainstreamed students should be made in order to identify attributes important to the mainstream decision making process. Such research

should include follow-up studies to determine the outcome of the decision making process and should involve students from other disabilities in addition to learning disabled students.

2. Additional study of roles and participation levels is also indicated. Such a study should be extended to include other school personnel and parents.

3. It may also be that the role of the multidisciplinary team in the schools should be studied. Specifically, it should be examined whether teams should be used to make programming decisions and if so, how these teams can be used in a more effective fashion.

4. If the present study were to be replicated the use of alternate achievement and behavioral test measures would be recommended. Additionally, the interview instrument could be modified to include additional school personnel. The format could also be changed to an open-ended design. This change may afford school personnel an opportunity to express ideas and feelings in a freer fashion.

5. In view of the variability within and between schools, future research must look more closely at factors within individual schools and classrooms. Factors that might affect mainstreaming within a school are the number of regular classrooms available for placement of learning disabled students, the support services available to the mainstream teacher, the number of identified special education students in that school and the amount of previous inservice training in mainstreaming provided to school personnel.

C. Summary

The purpose of this investigation was to study the mainstreaming practices and decision making processes used by elementary school personnel in an urban school system and to determine whether learning disabled students who were assigned to academic classes in the mainstream differed in certain academic and behavioral characteristics from learning disabled students who were not mainstreamed. Participating in the study were 23 learning disabilities teachers, 20 elementary school principals, 40 mainstreamed learning disabled students, and 112 non-mainstreamed learning disabled students.

This study was conducted in two phases. The first phase incorporated the selection and assessment of a sample of mainstreamed and non-mainstreamed learning disabled students in selected target schools. The second phase consisted of an examination of mainstreaming decision making processes through the use of a structured interview. This interview was administered to school personnel in target schools who were responsible for making mainstreaming decisions which involved students in the sample.

Three instruments were used to assess academic and behavioral characteristics of students in the sample: The Ginn Reading 360 Initial Screening Test; The McMillan Mathematics Placement Test; and The Walker Problem Behavior Identification Checklist. Math and reading scores of mainstreamed students were compared with those of the total student group and with those of non-mainstreamed peers in each of the target classrooms. Results of these analyses revealed very little difference between mainstreamed and non-mainstreamed learning disabled students in the subject areas of math and reading. Results of these behavior checklist data revealed no marked behavioral differences between mainstreamed and non-mainstreamed males or females.

Responses of principals and teachers in the second phase of the study indicated that decisions to mainstream are based on academic and behavioral characteristics, but the data in Phase I did not seem to clearly support these perceptions.

The results of the principal and teacher interviews also indicate some confusion about roles and levels of participation for support personnel, parents, and regular educators in the decision making process. Implications for future research are discussed.

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APPENDICES

APPENDIX A

INTERVIEW INSTRUMENT

1.0 In the long history of special education, mainstreaming has only recently become an important issue. But mainstreaming means different things to different people. I am trying to determine how mainstreaming is interpreted by personnel in the Pittsburgh Public Schools.

1.1 How do you define mainstreaming?

2.0 Another interest is to understand how mainstreaming is accomplished in our schools. I would like you to describe the mainstreaming process by telling me about one of your students who has been mainstreamed.

2.1.a. _____ has been mainstreamed for _____. Please describe how this was accomplished.

2.1.1 Who initiated this process?

2.1.2 When was this process initiated?

2.1.3 How long did this process take?

2.1.4 Who else was involved?

2.1.5 Is this viewed as a temporary or a permanent arrangement?

2.2 Now I would like you to think of a hypothetical student who is to be mainstreamed since we know sometimes the process is different in theory than it is in practice. I would like you to describe the process that is supposed to be followed if all resources were available and there were no constraints.

2.3 _____ has not been mainstreamed for academic subjects. Was she/he referred for mainstream? If not, could you tell me why _____ was not thought to be ready for mainstreaming?

3.0 You have mentioned that students were mainstreamed or not mainstreamed because:

Mainstreamed	Not Mainstreamed
___good academic skills	___poor academic skills
___appropriate behavioral and social skills	___inappropriate behavioral and social skills
___parental desires	___parent did not want
___administrative expediency	___administrative ruling
___other	___other

Is that right?

3.1 What starts you thinking about mainstreaming a student?

3.2 What characteristics must a student possess for you to consider a mainstream referral? Let's divide these characteristics into two sections: academic and behavioral.

3.2.1 What academic characteristics?

3.2.2 What behavioral characteristics?

4.0 The mainstreaming process involves many people performing many different roles. Some of the people who have already been mentioned are:

Special education teacher _____

Principal _____

Psychologist _____

Parent(s) _____

Other _____

Is that correct?

4.1 Who usually initiates the mainstream referral process?

4.1.1 Is there anyone else who might initiate this process?

4.2 What is your role in this mainstreaming process?

4.3 Who is responsible for making the final decision as to whether a student is mainstreamed?

4.4 What is the role of the mainstream teacher in the mainstreaming process?

4.5 What part do parents play?

4.6 What other personnel are involved in mainstreaming a student? (e.g. principal, school psychologist)

4.6.1 What is his/her role?

5.0 To be used if answers have not revealed this information.

5.1 Do you have a formal process for deciding what are appropriate academic and/or behavioral levels; for example, checklists or formal or informal testing?

5.1.1 Describe.

APPENDIX B

SCORES OF MAINSTREAMED AND NON-MAINSTREAMED STUDENTS IN TARGET SCHOOLS

Table A

Scores of Mainstreamed and Non-Mainstreamed Students in School 01

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
000	2	Spelling	5	3.3	+ (7)
002	2	--	5	2.0	+ (4)
004	2	--	4	2.9	+ (5)
001	2	--	7	2.9	+ (11)
003	3	Social Studies	9	3.9	+ (5)
005	3	Spelling	8	3.3	+ (11)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table B

Scores of Mainstreamed and Non-Mainstreamed Students in School 02

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
012	2	Math	6	1.6	+ (4)
007	2	--	6	1.6	+ (3)
008	2	--	6	1.9	+ (15)
009	2	--	6	3.0	+ (16)
010	2	--	6	1.9	+ (1)
011	2	--	6	1.3	+ (13)
013	2	--	6	1.9	- (31)
014	2	--	6	1.9	+ (1)
006	4	--	6	1.6	+ (11)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table C

Scores of Mainstreamed and Non-Mainstreamed Students in School 03

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
018	3	Math	7	3.3	+ (4)
015	3	--	6	3.3	+ (8)
016	3	--	6	2.6	+ (11)
017	4	--	9	3.6	+ (19)
019	4	--	9	3.6	+ (11)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table D

Scores of Mainstreamed and Non-Mainstreamed Students in School 04

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
026	2	Math	6	3.0	+ (9)
027	2	--	7	2.6	+ (10)
028	2	--	6	2.6	- (23)
025	3	Math	7	4.0	+ (6)
022	3	--	8	4.3	+ (11)
020	4	--	8	4.0	- (12)
021	4	--	9	1.9	+ (10)
023	4	--	7	4.3	+ (2)
024	4	--	9	4.0	+ (9)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table E

Scores of Mainstreamed and Non-Mainstreamed Students in School 05

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
029	4	Math	8	3.3	+ (4)
030	4	--	5	1.3	+ (14)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table F

Scores of Mainstreamed and Non-Mainstreamed Students in School 06

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
031	3	--	7	2.6	+ (17)
034	3	--	8	3.3	+ (18)
035	3	--	8	3.0	- (25)
033	4	Math	7	3.3	- (57)
032	4	--	8	3.3	- (35)
037	4	--	9	4.3	+ (14)
038	4	Math	9	4.3	- (29)
039	4	--	8	3.6	- (36)
036	4	--	5	2.0	- (17)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table G

Scores of Mainstreamed and Non-Mainstreamed Students in School 07

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
040	2	--	8	1.6	- (23)
041	2	--	6	1.9	- (36)
043	2	--	6	3.0	- (52)
044	2	--	6	3.3	- (14)
045	2	--	4	2.0	- (62)
042	3	Math	8	4.3	- (56)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table H

Scores of Mainstreamed and Non-Mainstreamed Students in School 08

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
047	2	Math/Reading	8	2.9	+ (11)
046	2	--	6	1.6	+ (12)
051	2	--	6	3.3	+ (8)
048	3	Reading	9	3.6	+ (1)
049	3	--	6	3.9	- (22)
050	3	-	6	2.0	+ (9)
052	3	--	8	2.9	+ (13)
053	3	--	9	2.9	- (19)
054	3	--	7	2.0	- (25)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table I

Scores of Mainstreamed and Non-Mainstreamed Students in School 09

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
058	3	Math	7	3.3	+ (15)
059	3	Math	7	3.3	+ (4)
060	3	English	9	3.9	+ (2)
055	3	--	6	2.6	+ (7)
056	3	--	7	3.3	+ (19)
057	3	--	7	4.0	+ (10)
061	4		7	3.6	- (34)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table J

Scores of Mainstreamed and Non-Mainstreamed Students in School 10

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
063	4	Readir. /Math/ Science, Social Studies	11	4.3	+ (15)
064	4	--	10	4.0	- (22)
062	4	--	6	2.9	+ (19)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table K

Scores of Mainstreamed and Non-Mainstreamed Students in School 11

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
067	2	Math	7	2.3	+ (12)
065	2	--	7	3.0	+ (4)
066	2	--	6	2.9	+ (7)
068	2	--	6	1.9	- (18)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table L

Scores of Mainstreamed and Non-Mainstreamed Students in School 11

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
074	2	Math	7	3.9	+ (17)
075	2	--	6	1.9	- (28)
072	2	--	8	3.0	+ (12)
076	3	Math	8	2.9	- (22)
070	3	--	10	2.9	+ (5)
073	3	--	8	3.0	+ (11)
069	4	Reading, Math, Language, Social Studies, Spelling, Handwriting	12	6.0	+ (5)
071	4	--	7	3.0	+ (9)
077	4	--	8	2.6	+ (11)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table M

Scores of Mainstreamed and Non-Mainstreamed Students in School 11

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
078	4	Math	6	4.0	+ (5)
080	4		10	3.6	- (35)
079	4	--	8	3.6	+ (0)
082	4	--	12	3.0	- (37)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table N

Scores of Mainstreamed and Non-Mainstreamed Students in School 12

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
088	3	Math	7	3.0	+ (15)
083	3	--	8	1.9	+ (0)
084	3	--	9	4.3	+ (3)
085	4	--	5	1.6	+ (11)
086	4	--	7	3.6	+ (19)
087	4	--	7	3.0	+ (21)
089	4	--	7	4.3	- (28)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table 0

Scores of Mainstreamed and Non-Mainstreamed Students in School 13

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
091	3	--	7	3.3	+ (8)
093	3	--	5	3.0	+ (8)
095	3	--	6	1.6	+ (10)
097	3	--	8	2.6	- (23)
094	4	Math	9	3.9	- (13)
099	4	Math	7	3.6	+ (13)
100	4	Math	7	3.9	+ (6)
090	4	--	8	3.9	+ (12)
092	4	--	6	3.6	+ (6)
096	4	--	7	4.0	+ (15)
098	4	--	9	4.3	+ (11)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table P

Scores of Mainstreamed and Non-Mainstreamed Students in School 14

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
102	3	Reading/Math	9	3.3	+ (6)
103	3	--	6	3.6	+ (8)
104	3	--	6	2.6	+ (11)
105	4	Math/Science	8	3.9	+ (6)
106	4	Science	7	2.9	- (16)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table Q

Scores of Mainstreamed and Non-Mainstreamed Students in School 15

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
108	2	Math	7	3.6	+ (11)
111	2	Spelling	7	2.0	+ (8)
114	2	Math	7	2.6	+ (8)
109	2	--	6	2.6	+ (0)
112	2	--	7	2.6	+ (6)
113	2	--	5	2.6	+ (3)
115	2	--	7	2.9	+ (8)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table R

Scores of Mainstreamed and Non-Mainstreamed Students in School 16

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
117	3	--	10	4.3	+ (2)
118	3	--	10	3.3	+ (6)
120	4	Spelling	10	4.3	- (25)
116	4	--	10	4.3	+ (6)
119	4	--	7	3.6	+ (3)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table 5

Scores of Mainstreamed and Non-Mainstreamed Students in School 17

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
127	3	--	7	3.6	+ (4)
129	3	--	10	4.3	+ (5)
125	4	Reading	9	3.0	- (67)
128	4	Reading	7	2.3	+ (10)
121	4	--	7	4.3	+ (3)
123	4	--	8	3.6	+ (19)
124	4	--	7	3.6	- (41)
126	4	--	6	4.3	+ (6)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table T

Scores of Mainstreamed and Non-Mainstreamed Students in School 18

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
130	4	Reading/Math	10	4.3	+ (7)
131	3	--	9	3.3	+ (16)
132	3	--	8	3.6	- (23)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table U

Scores of Mainstreamed and Non-Mainstreamed Students in School 19

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
137	2	--	7	2.6	- (27)
138	2	--	4	1.6	- (23)
139	2	--	6	3.0	+ (15)
141	2	--	8	3.0	- (28)
142	2	--	6	1.9	- (29)
135	3	Reading/Math English/ Spelling	10	3.6	+ (6)
136	3	--	8	4.3	+ (7)
140	3	--	6	3.3	- (24)
143	3	--	6	1.6	- (31)
134	3	--	7	2.6	- (15)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table V

Scores of Mainstreamed and Non-Mainstreamed Students in School 19

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
144	4	Science	9	3.6	+ (11)
146	4	Science	9	4.6	+ (7)
145	4	--	8	3.0	- (14)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

Table W

Scores of Mainstreamed and Non-Mainstreamed Students in School 20

Student	Grade	Mainstream Subject[1]	Reading Level[2]	Math Grade[3]	Behavior Score[4]
147	2	--	8	3.3	+ (6)
149	3	--	8	4.6	+ (15)
150	3	--	7	4.0	+ (5)
151	3	--	7	3.6	- (38)
153	3	--	S	3.3	+ (7)
155	3	--	7	2.6	- (40)
156	3	--	6	1.6	+ (17)
152	4	Math	9	4.3	+ (6)
148	4	--	8	4.3	+ (8)
154	4	--	8	4.0	+ (11)
157	4	--	6	1.6	+ (5)

1. Subjects in which students were mainstreamed.
2. Reading scores based on the Ginn 360 Initial Screening Test manual.
3. Math grade equivalency based on the McMillan Placement Test manual.
4. A plus (+) indicates adequate behavior, a minus (-) indicates inadequate behavior according to criteria in the Walker Problem Behavior Identification Checklist manual. Scores in parentheses indicate raw scores; adequate behavior for females falls between 0 and 12; for males between 0 and 22.

APPENDIX C

FREQUENCY DISTRIBUTIONS OF MATH AND READING LEVELS OF MAINSTREAMED AND NON-MAINSTREAMED STUDENTS BY GRADE

Table A

Frequency Distribution of Reading Levels of Mainstreamed and Non-Mainstreamed Students by Grade

Reading Level	Number of Mainstreamed Students			Number of Non-Mainstreamed Students		
	Grade Level			Grade Level		
	2	3	4	2	3	4
4				2		
5	2			3	1	3
6	2		1	19	11	5
7	6	6	5	6	10	11
8	2	4	2	4	11	10
9		4	5		3	6
10	1	2			4	3
11		1				
12		1				

Table B

Frequency Distribution of Math Levels of Mainstreamed and Non-Mainstreamed Students by Grade

Math Grade Levels	Number of Mainstreamed Students			Number of Non-Mainstreamed Students		
	Grade Level			Grade Level		
	2	3	4	2	3	4
1.3				1		1
1.6	1			4	3	3
1.9				8	1	1
2.0	1			2	2	1
2.3	1		1			
2.6	1			6	7	1
2.9	1	2	1	4	3	1
3.0	1	1	1	6	3	4
3.3	1	5	2	3	8	1
3.6	1	1	2		4	10
3.9	1	3	3		1	1
4.0		1	1		2	5
4.3		1	4		5	8
4.6			1		1	
6.0			1			