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STABILITY OF SPECIAL EDUCATION SERVICES IN A RURAL AREA: IMPLICATIONS FOR SCHOOL PSYCHOLOGISTS

By

Douglas Wayne Halgren

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ABSTRACT

STABILITY OF SPECIAL EDUCATION SERVICES IN A RURAL AREA: IMPLICATIONS FOR SCHOOL PSYCHOLOGISTS

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Douglas Wayne Halgren

A three year retrospective study of 654 rural special education students was conducted to determine what proportion had a change in classification and/or programming, what factors were associated with change, and what factors were predictive of change. The study included all handicapped students from preschool through secondary school. Information was gathered through a record review and parent survey. Factors investigated included family income, parent satisfaction, grade level, MDT membership consistency, gender, IQ, current achievement, and classification.

Change was found to be more common than is generally perceived, as 38.2% of the students had a classification change (21.9% by termination and 16.3% by reclassification). Changes in the type of program occurred for 32.8% and time in special education occurred for 71.2% of the students in classroom programs. Rates of changes varied significantly between classifications. Bivariate analysis revealed that grade level and comorbidity were significantly related to classification and programming changes. In addition, student IQ, gender and MDT member consistency were significantly related to programming changes. The student's initial classification was significantly predictive of change in

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classification and programming while IQ and MDT special education teacher membership consistency were significant predictors of change in programming. Implications for school psychologists as clinicians, consultants, and researchers are discussed.

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I. INTRODUCTION

School psychologists at the local school level are called on to provide professional leadership in determining the effectiveness of special education programs, in recognizing the need for changes in policies and practices and in making recommendations in this regard. In addition, they play a role in identifying and communicating exemplary practices which could be implemented at the local level. This responsibility stems from the psychologist's concern for the individual handicapped child and with the provision for the best possible education for that individual. School psychologists, then, are change agents (Teglasi, 1985) for the school, the parent, and the child. What tools do they have to enable them to recognize needs in order to influence change for the betterment of schools, families, and individuals? One of the most powerful tools would be a thorough empirically-based knowledge of a variety of factors impacting educational outcomes for handicapped children. This type of information would be valuable at the state and national level, but even more pertinent at the local school level.

Educational programs and services which are "free and appropriate" became the right of handicapped students in 1975

with the passage of Public Law 94-142, the Education for All Handicapped Children Act (U.S. Congress, 1975). Under this federal law part of the states' responsibilities is to provide "child count" data to document numbers of students served. These documents have shown that there have been growing numbers of students (from 3.70 million in 1976-77 to over 4.42 million in 1986-87) across the country in special education at a cost of over 1.6 billion dollars annually, an increase of more than sixteen times that reported only nine years earlier (Office of Special Education and Rehabilitative Services, OSERS, 1984, 1985, 1988). Still, these monies account for less than 4% of the educational expenses experienced at the state and local school level to fund special education programming (Will, 1986).

Nationally, change has occurred not only in the cost and numbers served but in the composition of the handicapped student population. The learning disabilities category, for example, has increased dramatically while there has been a decrease in the mentally retarded category. The Tenth Annual Report to Congress, comparing the number of students served from the period of 1976-77 to 1986-87, indicated an increase in the learning disability area of 141.6%, while a decrease in the mentally retarded area of 31.5% during the same time (Office of Special Education and Rehabilitative Services, OSERS, 1988). Algozzine and Korinek (1985) have indicated that growth has occurred primarily in high prevalence handicap categories [mildly handicapped: Speech and Language

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Impaired (SLI), Learning Disabled (LD), Emotionally Impaired (EI), Educably Mentally Impaired (EMI)] while low prevalence categories [Trainably Mentally Impaired (TMI), Severely Mentaly Impaired (SMI), Severely Multiply Impaired (SXI), Visually Impaired (VI), Autistic Impaired (AI), Hearing Impaired (HI), Physically and Otherwise Health Impaired (POHI)] have remained relatively stable. Several authorities (Algozzine & Korinek, 1985; Forness, 1985; Gerber, 1984; Hallahan, Keller, & Ball, 1986; and Noel & Fuller, 1985) have considered the stability of state child count reports and have analyzed incidence levels across states in order to identify trends in classification. These efforts, cross-sectional in nature, have addressed global issues, such as, the stability of incidence rates of handicapping conditions across and between states.

In cross-sectional research different students at different age levels are studied. This type of analysis cannot speak to questions about the stability of special education classification and programming, or influences impacting it, since each person is studied at only one point in time. These studies, addressing placement trends and program practices involving special education students, are speculative when applied to the individual student. In longitudinal research, on the other hand, the same special education students are observed over time. In this way the degree of stability of classification and programming can be determined for each student. In addition, data regarding

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factors associated with change or lack of change can be collected. Trends and patterns that groups of students share can be discovered. School psychologists may then determine which specific variables may relate to probable outcomes in the future.

How would longitudinal information be helpful for school psychologists?

Longitudinal information would be helpful in at least four ways: one, in determining student eligibility; two, in determining the severity of the handicap; three, in providing feedback about local special education practices; and four, in shaping state and federal policy. First, an increase in longitudinal information would help the Multidisciplinary Teams (MTD) and Individual Eduactional Planning (IEP) meetings operating at the local school district level. Although eligibility criteria are set by law, in borderline cases there may be factors which should be taken into consideration before classification is determined and again at the time of re-evaluations. A knowledge of these stability factors would enhance the decisions made at these meetings. Do particular factors (e.g., district size, grade level, parent income, student achievement level) influence initial classification decisions or raise or lower the chances of being initially classified or retaining handicapping classifications over time? School psychologists, in communicating with administrators, teachers, and parents need to know what impact certain

factors tend to have over time within the student's school district.

Second, longitudinal information would be helpful in determining the severity of a handicap. Although it is reasonable that the type of classification should have some functional relationship to the nature of programming provided, this information alone is not sufficient. The decision regarding program appropriateness is based on both subjective and objective factors related to the severity of the handicap. Longitudinal information could shed light on which factors are the most salient guiding points related to the severity and inveteracy of the handicap and level of programming need. If various factors were found to be associated with differing severity levels, psychological assessments could ensure that those factors are addressed as part of the evaluation. Intervention strategies could be tailored not only to the nature of the handicap but to the severity of the handicap. Perhaps some children would benefit from a short term intensive "shot-in-the-arm" method of treatment rather than long term approaches with education provided in a separate tract.

Third, longitudinal information would assist the school psychologist acting as a consultant in the local districts by providing feedback about the implementation of its special education policies and practices. Local districts operate under differing philosophies and procedures which determine the manner in which services are provided to special

education students within the district. The need for this type of feedback may be more pronounced in rural areas where there is often more emphasis placed on local control and direction (Benson, 1985). Having follow-up information about the impact of the chosen procedures and practices would provide a basis for the evaluation of the effectiveness of the policies. Political and social philosophies and directives shift over time and dramatically influence the means of providing services. Armed with empirical data, the local district would be in a much better position to respond to challenges for sudden and sweeping change. A current example of pressure for such a change is the Regular Education Initative (REI). As a minimum objective, REI seeks to restructure special education for the mildly impaired. The thrust of the effort is to provide services whenever possible in a supported regular education setting rather than "pull out" special education classrooms. A combination of general, special, and compensatory education efforts into a unified service delivery system is promoted. It is not argued that all handicapped students would be appropriately served in this fashion. As a result of these changes there would be decreased attention given to psychoeducational assessment for purposes of classification by the school psychologist. Instead there would be an increase in assessment directly related to instructional programs. On what basis are local districts to determine the most appropriate placement? What factors best predict the

liklihood of successful integration into regular educational programs and which indicate that regular education settings are not an appropriate option?

Finally, it is possible that an analysis of variables, based on aggregated empirical information at the local school level could provide a basis for shaping state policies. Based on follow-up information related to classification and programming issues within special education, there may be an increase in the precision of some rules and legislative positions. The fine-tuning of eligibility criteria in areas now dealt with on a generic level (i.e., LD and EI) is an example.

Of concern in this longitudinal study are a number of stability issues for individuals who have been receiving special education services over a 3.0 year interval. These stability issues include eligibility classification, type of service, and frequency of service. Changes within these areas will be investigated as they relate to the following variables: family variables (family income and parent satisfaction) school variables (initial classification, grade level, and MDT membership) and child variables (IQ, current achievement, and gender).

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II. Review of Literature

Before considering longitudinal studies which track over time individuals who are the recipients of special education services, related issues which shape current policy and practice will be discussed. These issues include the Multi-Disciplinary Team process, parent participation, and assessment of handicapped students. From there, longitudinal studies of special education students will be examined with an eye toward the significant factors relating to educational outcomes.

Related Issues

The Team Process

With the passage of PL 94-142 the federal role in special education moved dramatically from an encouraging one to a mandating one. Major components of the law provided that all handicapped students be identified and provided a free and appropriate public education, that due process procedures be implemented, that educational programs be individualized with annual reviews of progress, and that services be provided in the least restrictive environment appropriate for meeting the student's needs (Brewer and Kakalik, 1979). The initial effort was to establish services for those who were handicapped. These services are established through a team process. Several constraints assert themselves into this group dynamic. Particularly

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potent influences have been found to be the referral statement itself (Potter, Ysseldyke, Regan, & Algozzine; 1983), the desire to appease the teacher (Ysseldyke, Algozine, Richey, & Garden; 1982), as well as, teacher attitudes toward special education, time of the school year, availability of room in the special education room, current administrative policies, the demographics of the school's students, and budget constraints (Mehan, Hartwick, & Meihls; 1986). The weight of these separate influences would vary depending on the nature of decisions that were required; however, the presence of these factors certainly would work to decrease the stability of the decisions that are made.

After placement there was to be an ongoing effort to insure that as much of the student's education was within regular education as possible. The least restrictive programming requirement established an expectation that programming was not stagnant within special education over the years, but rather that there would be movement of special education students toward reintegration into regular education programs. Re-evaluations were to consider whether the student continued to meet the criteria of a particular handicap. The IEP then would determine the extent to which special education services would continue to be necessary in meeting the student's changing needs. Evaluating the extent of student change in terms of both special education classification and programming is at the forefront of the re-evaluation process. It is within the LD area that the team

process and its decisions making practices have been most extensively investigated. As part of the controversy regarding the reliability of diagnostic criteria for the LD classification, the stability of team classification judgements have been analyzed. Teams have not shown an ability or willingness to accurately use diagnostic information (i.e., Algozzine and Ysseldyke, 1981; Shepard & Smith, 1981; Ysseldyke, Algozzine, & Epps, 1983; and Ysseldyke, Algozzine, Shinn, & McGue, 1982). The high degree of unreliability may be specifically related to the difficulties (definition and measurement) within the LD classification. A comparison with classifications other than LD is not possible because of the lack of research. These LD studies are based on team decisions at one point in time. A question in the present study however is how this MDT decision stands up over time (re-evaluation 3 years later).

Although there are many concerns about the effectiveness of MDTs and calls for modification in the process (Abselson and Woodman, 1983; Fleming and Fleming, 1983; Pfeiffer, 1983; Yoshida, 1980, 1983), the law requires that a team make classification and programming decisions. The members of a MDT are called upon to collaboratively consider the pertinent information. Group dynamics often take place which draw the attention away from considering eligibility criteria. For instance, Kaiser and Woodman (1985) have noted that the team process is often encumbered by socioemotional constraints which cloud communications. Although decisions are reached,

those attending the meetings are not aware of how plans were formulated or who on the team initiated the ideas (Ysseldyke, 1986). Processes such as developing the role of each participant, gaining a knowledge of each others' competencies, and building group dynamics take time and experience. Because of this, Abbelson and Woodman (1983), note that "new" MDT teams would certainly be expected to function differently in several ways than those that have worked together for sometime. Of interest in this study is whether teams that are "new" in composition make different types of decisions than those which remain unchanged across evaluations. In other words, across two separate meetings at which classification and programming issues are decided, does MDT member consistency relate to the outcome of the meeting?

Parent Participation

Since MDTs have been established, the parents' role in the process has been studied. Goldstein, Strickland, Turnball, and Curry (1980) and more recently Vaughn, Bos, Harrell and Laskey (1988) have found that parents take a passive role in IEP meetings. They ask few questions and make few comments; they usually report that they are satisfied with the meetings. Leyser (1988), through questionaires sent to parents, found that although attendance of IEP's varied between urban (67%) and rural (75%) families, both groups reported high levels of satisfaction with the educational programs. Between 85% and 90% of the parents surveyed indicated that they were satisfied with the services

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and agreed that the services were needed.

According to Gerber, Banbury, Miller and Griffin, (1986) special educators have mixed opinions about the basic purpose and value of parents' participation in the IEP process. They found evidence that special education teachers were comfortable with parents in the position of passive recipient as over two-thirds of them did not see having the IEP written prior to the meeting as detrimental to the parents' participation. Vaughn et.al (1988) conclude that rather than parents taking the role of partner and participant in program development they continue to be observers of the educational-decision making process. It is within the school psychologist's role to combat the complacency by encouraging parents to participate more actively in the team process (NASP Standards, 1984).

What if parents are not satisfied with the IEP results? Does the role and contribution of the parent change so that their voice results in significantly different IEP outcomes? Walker, Singer, Palfrey, Orza, Wender, & Butler (1988) in an urban study found that when parents did not agree with school personnel there was a greater liklihood of the student being reclassified. Does this pattern of increased rate of change generalize to other geographical areas? This study will investigate the impact of parent satisfaction on classification and programming decisions in rural settings.

Assessment

An area of great interest and time committment for

school psychologists is the assessment of students. Assessment serves two primary functions 1) the determination of eligibility and 2) the designing of programs which will be tailored for the individual (Tucker, 1981). There is much to weigh in determining the nature of assessment tools to be used in preplacement evaluations and reevaluations of special education students (Ysseldyke and Marston, 1982). The most appropriate measures are dictated by the type of decisions that need to be made (Mehrens and Lehmann, 1984). For both preplacement evaluations and reevaluations data is commonly gathered in the intellectual and achievement areas on handicapped children regardless of the classification.

Several researchers found that during the first several years of implementation of PL 94-142, there had often been almost exclusive reliance placed on I.Q. measures when making placement decisions (Backman, 1975; Hannaford, Simon, & Ellis, 1975; Matuszek & Oakland, 1979; and Smith & Knoff, 1981). Recently this reliance has been found more likely to continue when the classification decision being pondered is one of mental retardation (Furlong and LeDrew, 1985).

For a variety of handicapped students the WISC-R has demonstrated highly consistent results across time (Avant, 1985; Elliott and Boeve, 1987; Henggeler and Tavormina, 1979; Martin, 1979; Vance, Blixt, Ellis, and Debell, 1981). This has held true when the variables of ethnic group and special education category were examined. In addition, the WISC-R compares well with other tests. When compared with the WISC

(Eno & Woehlke, 1980; and Udziela & Barclay, 1984) and Stanford-Binet Intelligence Scale-1972 norms (Covin & Sattler, 1985) investigators working with special education children, found the results to be very consistent on a longitudinal basis.

Longitudinal studies have also compared the relationship between the WISC-R and the WAIS-R. Sattler, Polifka, Polifka, and Hilsen (1984) found the IQ results to be highly stable across measures with adolescent special education students over a four year interval. Zimmerman, Covin, and Woo-Sam (1986), however, found the reliability between measures to be dependent on the functioning level of the subjects. Near the average range, WAIS-R results were highly consistent with the WISC-R (3 to 5 points higher). The difference became more marked at lower ability levels so that within the 40 to 50 IQ range the difference was as much as 18 points. The equivalence of the WISC-R and WAIS-R was also investigated with individuals in residential settings. Again there were increased differences between the two tests for TMI compared to EMI students (Rubin, Goldman, and Rosenfeld; 1985).

In summary, these studies find the WISC-R to be technically adequate and have longitudinal stability with special education children. Since the IQ is commonly gathered information, the question arises whether I.Q. results relate to changes in classification and programming over time? More specifically, would different levels of IQ

predict various educational outcomes?

Like IQ assessment, the assessment of academic achievement has been a part of the school psychologist's role from the discipline's beginning (Bardon, 1982; Tindall, 1979). There are many decisions that the psychologist has to make in determining the most appropriate achievement measures to be used. Recently there is growing concern regarding the lack of specificity about intervention planning that is derived from standardized measures. In addition, there is criticism about the technical adequacy of some popular standardized diagnostic tests (Gerken, 1985; Reschly, 1988; Ysseldyke and Marston, 1982). Polls, however, show that these instruments continue to be frequently employed. When individually administered standardized diagnostic test information is available the question, pertinent to this study, is whether this information about achievement has a significant effect in determining future student classification and programming. More specifically, is updated achievement information useful in determining the type and amount of intervention required?

Longitudinal Studies

To date, have researchers seen the need for and conducted longitudinal studies? What have been the results of those studies in terms of identifying variables of practical significance for students receiving special education services? The following review of longitudinal

studies considers these questions at the preschool, and school age levels.

Only recently has the need for longitudinal studies been recognized in special education circles. Shinn (1986) notes that the great majority of our efforts in special education is focused on an initial diagnostic stage. Most of the data collected on a student is prior to placement within special education. Gartner & Lipsky, (1987) point out that there is really no provision or requirement in the present data-gathering system (at the federal government level) on special education students to follow what happens after they are once identified. Identification issues need to be addressed as honestly as possible, but then attention should be given to changes that occur over time not only for the sake of the individual student but for that of the school, the district, the state, and the federal levels. A recent report to Congress (Office of Special Education and Rehabilitative Services, OSERS, 1985) identifies this weakness and highlights the need to strive to evaluate the quality of service. This report indicates that special education services are now generally available and that children's and parents' rights are protected in attaining the services. More emphasis is now being turned to the effectiveness of the educational programs that are available. One recommended approach for conducting this assessment is the completion of longitudinal studies with samples of handicapped students (Office of Special Education and Rehabilitative Services,

OSERS, 1985, p. xxi). Beginning with the Eighth Annual Report to Congress, the analysis will go beyond the question of how many are served to include an analysis of the effectiveness of programs and services provided. Are they effective academically and efficient economically? Rather than consistently "front-end-load" the decision making process on the basis of initial diagnostic data there needs to be an additional concerted effort to apply an understanding of patterns of change usually experienced between various student and treatment interactions. For example, what is the difference between students who are terminated from special education programs before high school and those who are not? In order to gain a perspective on these issues, we need to review longitudinal studies which have already been completed. However, when there is a search for longitudinal studies regarding the stability of placements and what happens to students' services after they are placed, there is very little on which to draw.

Preschool Studies

Several studies have been completed which address the longitudinal effects of involvement in preschool programs. Of these, some are relevant to the present study in that they monitor the effectiveness of their programs in preventing special education placement. Guinagh & Gordon (1976) followed-up on children served through a parent training program. Through the third grade, they found that fewer children were placed in EMR or TMR classes if parents had

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participated in the program for 2 to 3 years. The program was most effective when parents became involved when their child was 3 to 12 months of age.

Lazer (1978) conducted a longitudinal study of several model preschool programs from around the country which had provided intervention programs to low income families. These children were not identified as handicapped at the start of their involvement in the programs. The findings showed highly significant benefits from the early intervention lasting into later school performance. These children required special education less frequently and were retained less frequently.

A survey of results from forty longitudinal intervention programs with high-risk infants was summarized by Stedman (1977). Attention was brought to the importance of early intervention services which were home based and which treated both the family and child. The impact of a stimulating environment was most powerful in the early years of childhood when the most rapid growth and development take place. The effects of early intervention are enhanced by the involvement of the parents. If families are highly disorganized, then external supportive environments may be beneficial. Interventions are more effective when begun during the language emergent years (one to two years of age).

The Seventh Annual Report to Congress (1985) was very supportive of increased preschool special education efforts citing studies (Berreuta-Clement, Schweinhart, Barnett,

Epstein, & Weikart, 1984; Garland, Stone, Swanson, & Woodruff, 1981; Lazer, 1979; Moore, Anderson, Frederrick, Baldwin, & Moore, 1979; Roy Littlejohn Associates, Inc., 1982; Schweinhart and Weikart, 1980; Stock, Newborg, Wnek, Schneck, Gabel, Spurgeon, & Ray, 1976; and Weikart, Bond, and McNeil, 1978) which supported the effectiveness of early education. These reports documented change or noticeable improvements in developmental rates of handicapped children following intervention during the preschool years. They discussed gains, but not in terms of improvement to the point of no longer requiring special education services. Garland et. al. (1981), however, did make estimations of the percentage of students that would no longer require special education services. First, their review of the literature pointed out various intervention programs reporting gains and increased rates of development for a variety of moderate and severe handicapping conditions (ie., mental retardation, orthopedically handicapped, emotionally impaired, severely and profoundly impaired). On the basis of these gains they concluded that comprehensive early intervention services for children and their families were effective. They asserted that the most benefits were realized when services began within the birth to two year range. Second, projections were then made as to the impact of early development gains on the numbers of children who would be terminated from special education following these interventions. When services did not begin until the age of 8 years, they projected that there

would be no attrition from special education to regular education (through graduation or 18 years of age). If services were to begin by age 6 years, they projected a gradual reduction in students requiring service so that by the age of 18 years, 32% of the students would have been terminated from special education services. Much greater termination rates were projected if services began during the preschool years. If services began by age 2 years, 70% of the students would be terminated and if services began at birth, 74% of the students would be terminated. These projection rates were based on graduation data from several early intervention programs. There are a number of problems with these projections. The type and severity of handicap were not described for students used in making the projections and the extent to which they matched those discussed in the review (moderate to severe handicaps) was not analyzed. The Ypsilanti Perry Preschool Project (Schweihart and Weikart, 1980; and Weikart, Bond, and Mcneil, 1978) for example, included in the analysis by Garland et. al. (1981), was a program for disadvantaged preschoolers who were not classified as handicapped.

Another problem concerns the reliability of identifying any but the most severely handicapped children at an early age with the result that the make-up of the handicapped population changes dramatically once children reach school age. In spite of the numerous problems with the projections for rates of termination from special education, it is these

types of reports which are serving as the catalyst for a major expansion of services for the preschool handicapped (ie., P.L. 89-313).

There are other longitudinal studies, however, which do not support such generalized optimistic outcomes for early intervention efforts. Raber and Frechtling (1985) investigated the longitudinal stability and outcomes of children who had been identified as handicapped while of preschool and kindergarten ages. They had two focuses: 1) to examine the efficacy of early identification procedures and, 2) to monitor the educational progress of the children who had been identified. They found that early child find practices had been effective since these children had more severe handicaps and were identified and placed in intense services prior to school age. Milder handicaps were identified after children reached school age. The second focus is of particular relevance to this study. They investigated the degree of change in level or intensity of services required by students as a measure of program effectiveness. Less service over the 3 to 9 years follow-up period would be considered successful or effective services while an increase would not be considered effective. They followed children into the elementary school grades monitoring the services received. Children who had been identified during the preschool years (more severe handicaps) were analyzed separately from those identified during the kindergarten years (milder handicaps).

Preschoolers were followed over a 4 to 9 year period depending on their age when services were initiated. It was found that socioeconomic status (SES) was the strongest predictor of the age of the child when services began. Although this group was quite stable at the time of follow-up, there was some variability as 13% were no longer considered handicapped. Of the 87% still classified as handicapped 17% had moved to a less restrictive environment and 17% required a greater amount of service. A majority (53%) continued to receive the same amount of service as when they began. As an indication of the severity of the handicaps identified at the preschool level, 60% continued to require self-contained full time special education placements.

They found a number of variables related to the changes in service. Children beginning at lower levels of service (consultive or itinerant) were more likely to be nonhandicapped at the time of follow-up. Those beginning at higher levels of service (i.e., self contained classrooms) were more likely to remain unchanged. The original special education classification was also closely related to the degree of change in status. Of the preschoolers identified as SLI, 20% were nonhandicapped while another 38% were only receiving consultive services at the time of follow-up. For those identified as multiply handicapped, 5% were nonhandicapped and 9% were receiving consultive services at the time of follow-up. The factor of age was significant in

that those identified at younger ages (less than 4) were more likely to remain in full time special education placements then those identified at or after 4 years, who tended to receive only itinerant services. Among children moving to less restrictive environments, Blacks, low SES, and single parent families were underrepresented. In contrast, children with these demographic characteristics tended to require greater levels of service over time. At the time of follow-up, 42% retained the same primary handicap, while 45% had some change in the primary handicap. The researchers note, "Many will show the emergence of a different primary problem later in elementary school" (Raber & Frechtling, p. 29). The investigators emphasize that lack of reduction in service might not necessarily indicate that the service has been ineffective. They caution reseachers to remember that special education spans a broad range of handicaps and services, that we must be realistic about the severity of some handicaps, and that early intervention can have an impact on the degree of change in classification and services received, depending upon the child's SES, gender and race.

In summary, these preschool studies draw conflicting conclusions as to whether preschool intervention changes the prognosis for receiving later special education support. The focus of study has most often been family factors (ie, family SES, race, family structure) with less attention given to other variables. Those studies revieved by Garland et. al. (1981) resulted in a simple linear model where age of

handicap identification and onset of special education services were inversely related to the percentage of students who would be terminated from special education by the time of high school graduation. Apparently, regardless of handicapping condition, the earlier services begin the greater the likelihood the student would be terminated from special education. Raber and Frechtling (1985), however, found the relationship to be much more complex. First, although early intervention services were found to have an impact, a number of factors were related to the outcome. For preschoolers, the age of identification was related to the classification received. The classification was related to the percentage of future changes in classification and programming. Nearly half of the children in their study that were receiving special education did have a change in classification, but they were reclassified rather than terminated from special education in elementary school. One of the key questions, then, relevant to the present study is whether preschool intervention relates to later eligibility and programming in special education. In addition, what are the differences in outcomes related to gender, family SES, and handicapping condition? And, what are the effects of these factors on the educational prognosis?

School Age Studies

Before considering the longitudinal studies which have been conducted at the elementary and secondary school levels, attention will be given to the perceptions of school

psychologists and special education personnel regarding the re-evaluation process. If little change in eligibility and programming is expected, will little change be realized?

Perhaps, for many school psychologists and other school professionals, Hartshore and Hoyt (1985) were correct when they described re-evaluations as, unfortunately, a "seemingly insignificant routine" (p. 207). In their review of re-evaluation practices they investigated the prevalence of this viewpoint. They found general support for the perception that re-evaluations do not result in major changes in children's programs. In their review of the legal requirements of a re-evaluation, they concur that much of the current emphasis in practice is an unnecessary redoing of tests when so little changes. Rather than spend valuable time giving tests, they encourage an examination of the kinds of progress that the student is making within the placement. Keeping in mind the unlikelihood of change in classification, they de-emphasize eligibility and placement considerations and emphasize the assessment of educational goals and objectives. The focus of assessment then shifts toward generating information relevant for making program plans within the present placement. In the present study, the question arises as to the validity of their confidence that special education placements (eligibility and programming decisions) are so stable. Are we certain that so few students actually leave special education or change eligibility categories? Are these re-evaluations, as

Hartshore and Hoyt would suggest, serving only a perfunctory purpose? There is not enough data presently available to answer these questions, especially if one hopes to generalize policy and procedures across different educational settings.

The longitudinal studies, few in number, which address the extent of changes made within special education can be divided into two groups, those which primarily analyze classification issues and those which primarily consider programming issues. Classification issues will be considered first.

Classification

Gavin and Elliot (1985) conducted a survey of the perceptions of school psychologists, directors of special education, and state consultants related to the re-evaluation process. Although viewed as a process that has significant impact on the handicapped, it was also considered to be primarily a reconfirmation of the past diagnostic and placement decisions. In estimating the degree of change at the time of the re-evaluation, school psychologists indicated there would be very little difference found. For the learning disabled and emotionally impaired categories, they estimated a change of 2% to 3%. For the mentally impaired they estimated a change of 1%. As part of the study, Gavin & Elliot then reviewed records of students to determine an actual rate of change for a sample of students. Rates of changes in classification were as follows: learning disabled, 4.5%; emotionally impaired, 8.3%; and mentally impaired,

8.5%. Rates of changes in placement varied from changes in classification: learning disabled, 6.8%; emotionally impaired, 0%; and mentally impaired, 6.1%. They concluded that there was a relatively low incidence of perceived and actual change in classification and placement and that the need for an automatic re-evaluation on each student is of questionable merit. Some suggested ways for circumventing the current mandated responsibility were made. Surprisingly, they do not regard the sizable difference between perceptions and practice as meaningful. They also do not mention the impact that the perceptions of professionals may have in suppressing the rate of change that diagnostic data alone may justify.

What rates of change in classification have been found in other studies? Raber and Frechtling (1985) investigated kindergarten identified children. They found that change was somewhat different than that found for preschoolers as generally milder handicaps are left to be identified at the school age. With this group, after an interval of three or four years, 32% were no longer handicapped, as opposed to 13% for the preschool group. Of those who continued to be identified as handicapped, 39% were in less restrictive environments, 30% remained the same, and 31% required a greater amount of service. Some statistically significant factors were related to outcome differences for kindergarten identified children. The factors of SES and racial status were related to the intensity of service received even when

handicapping condition and placement level were controlled. Lower SES students tended to remain in more intensive service conditions. Whites tended to enter the system earlier and through different channels than Blacks. SLI and LD students as opposed to other classifications were primarily involved in status changes. Girls also tended to have more of a change in status than boys.

Emotionally impaired and behaviorally disordered students in a small city (population 170,000) were followed up by Fassbender (1986). In this ten year retrospective study of 122 students originally identified as Emotionally Disturbed, 61% remained classified as EI throughout the study, 29% were reclassified (11% to LD and 18% to MR) and 10% were terminated (returned to regular education). Fassbender concluded that EI classifications are very stable over time. Follow-up status of those who remained EI found that 43% had moved out of the district, 13% were in residential treatment, 05% were in private/parochial school, and 31% had dropped out of school. Only 08% had either graduated or were continuing in their schooling. Those who had been reclassified were significantly more likely (72%, $p < .01$) to have graduated or to have continued in school.

Within the area of stability of classifications, the factor of termination from special education services has received surprisingly little study. Despite the voluminous Annual Reports presented to Congress, information regarding decertification is not collected (Gartner and Lipsky, 1987).

This gap in the data makes it particularly difficult to assess the nature of change within the special education population. "Knowing that the size of the special education population has increased does not tell us whether fewer children have been terminated or more children have been identified" (Walker et. al., 1988, p. 394). Are we to assume that educational handicaps are endless and once identified the individual will always require special education? Cautioning against drawing conclusions about the degree of change in the size and composition of special education classifications based on cross-sectional data, Walker, et. al. (1988) conducted a longitudinal study involving 1,829 elementary school children in three urban school districts. The two year follow-up study addressed the following questions:

1. What proportion of special education students remain in their school district? Who is most likely to leave?
2. What proportion are terminated from the program? Who is most likely to be terminated?
3. What proportion remain in special education but under a different primary handicap designation? Who is most likely to be reclassified?

A review of student records was combined with individual parent interviews to gain information about the students. Among the significant findings were that very few special education students (7.7%) left their schools during the two year period compared to national census figures.

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Additionally, of those who had a change in classification (either terminated or reclassified) were those who had been classified as speech impaired. After the two year interval 54% of these had some change, making this the "most fluid special education designation". Other categories demonstrating considerable change included learning disabled (21.5% changed), emotional/behavioral impairment (23.2% changed), and physical/multiple handicaps (25.2% changed). Other impairments showed less than 10% change within the original classification, reflecting what was felt to be more permanent handicaps (mental retardation, hearing impaired, and vision impaired). In general, changes in classification were highly related to the initial primary handicapping condition. Speech and language impaired and learning disabled were most likely to be terminated. Within these groups they found grade level to influence termination in that children in grades 4 to 6 were more likely to be terminated than those in K to 3. Children who were emotionally/behaviorally impaired were more likely to be re-classified than terminated. They also found a pattern of reclassification related to parent agreement with the child's handicap, such that when there was a lack of congruence between the parents and school personnel there was also a greater likelihood of the student being reclassified.

Wolman, Thurlow and Bruininks (1989) investigated the rate of classification change by reclassification of students with mild handicaps (SLI, EMI, EI, LD) in a suburban setting.

Reviewing the records of tenth, eleventh, and twelfth grade students (who had received at least two years of special education and had not been terminated from special education prior to the tenth grade) through elementary and secondary school they found that as many as 24% were reclassified at least twice. The SLI were most likely to change as 66% were reclassified. The other classifications were changed considerably less frequently (LD 18%, EMI 14%, EI 4%). The statistically significant differing rates of change resulted in classifications shifting in size across grade levels. Most of the change took place during the secondary school level (60%) compared to the elementary (24%). During the secondary school level LD students were most likely to be reclassified, indicating that student grade level impacts the timing of classification changes.

Three predictors of change accounted for 40% of the variance in classification changes. These predictors of reclassification were 1) initially being classified SLI, 2) the student's IQ level, and 3) reading level. The initial classification of SLI accounted for a majority of the variance (27%) by itself as many of these students moved to a handicapping condition which required more intensive programming during the secondary school years.

Programming Issues

Turning now to programming issues, Edgar, Heggelund and Fisher (1988) found preliminary results which bring attention to the importance of the initial placement decision when a

child reaches school age. They followed 582 special education preschoolers two years into elementary school. As preschoolers the children had been in programs serving either mild handicaps (SLI & LD), EMI, or severe handicaps (SMI, TMI, sensory and motor handicapped). When it was time for transition to the elementary school program, 13% were placed in regular education programs without any type of special education support (19% of the mildly handicapped, 12% of the EMI, and 6% of the severely handicapped). An additional 19% were placed in regular education with special support services. The other students (64%) were placed in self-contained or resource room settings. After two years, the stability of the placements was very high ranging from 75% to 100% for both those placed in special and regular school settings. The investigators concluded that IEP decisions when entering school are important as there appears to be high stability for the decisions at least through the first two years of the elementary. These findings indicate that there may be critical periods for changes and if a student begins a level of educational programming with a certain classification there is momentum set for it to remain unchanged. This study lends merit to the importance of the transition between preschool and elementary school levels.

Stability of programming issues were also addressed by McKinney & Speece (1986) and Welch (1982) for students within the learning disabled category. McKinney and Speece (1986) investigated the stability of achievement and behavioral

patterns on a longitudinal basis. Over the 3 years the students were followed, there was a tendency toward switching behavioral subtype patterns (normal, attention deficit, withdrawn, and problem behavior clusters); however, students remained in what were considered to be either adaptive or maladaptive patterns. Achievement trends were followed within behavioral subgroups. No difference was observed after the first year, but adaptive behavior students were better than problem behavior students by the end of the second year, and better than attention deficit students by the end of the third year. These significant achievement differences were noted in reading (word recognition and comprehension), but not in the mathematics area. The authors suggested that some differentiation of services on the basis of behavioral subtypes may be more helpful in meeting specific needs of students.

Welch (1982) also investigated trends across time within the learning disabled group and specifically the effectiveness of the timing of intervention efforts with these students. Progress in reading and mathematics was evaluated over a 7 year period. The grade level at which intervention began was compared to differences in levels of achievement. With reading, significant differences in rates of learning were observed across time with early intervention enhancing students' performance. Intervention prior to the fourth grade was found to be crucial for benefits to occur. Statistically significant differences in learning rates were

found when intervention was initiated prior to third grade. With mathematics, a different trend was noted. Although significant differences in rates of learning were observed across grades, here (in mathematics) intervention at or above the fourth grade level appeared crucial for intervention to positively affect learning rate. The most sensitive time seemed to be the sixth grade level. This study points to the importance of the interaction between grade level at intervention and subject area. Significant differences were found in learning rates in systematic trends across time and the differences were attributed to the grade level of the student when intervention was initiated.

The above LD studies looked at some trends within a single diagnostic category over time. Travis, Thomas and Fuller (1985), considering several classifications, found that time interval within special education was a significant variable related to change in the amount of special services a student received. The degree to which special education students moved in the direction of less restrictive environments was investigated for groups of mildly handicapped (EMI, LD, and EI). They examined the effects of age (young= 5 to 10: old= 11 to 16), disability, and time interval (10 intervals of 3 months each) on the percentage of time spent in regular education. They found an increase in the percentage of time spent in regular education across all the classifications and the two age groups. Within the classifications, each showed an increase over time, however,

for the EI group the rate of increase was more rapid than for the EMI or LD groups. During the three years of the study younger students increased from under 20% to nearly 40% of their time spent in regular education. Older students increased from under 40% to slightly over 60% of their time in regular education. Several explanations are offered for the difference between younger and older students' rate of change. A greater desire for peer acceptance, more severe handicaps being diagnosed earlier, and more non-academic options becoming available were possible reasons for the difference. The "curricular factor" seemed particularly apropos. "A curricular factor may also be present. At the early elementary level, much time is spent on the fundamentals of learning. Thus, a child with learning problems who would have difficulty grasping these skills in the regular instruction may need more intense individualized work within the special classroom. However, at the high school level, more regular education options (ie., electives, vocational education, work study programs, etc.) may be appropriate and beneficial for integrating handicapped students" (p. 529). The relation of age and disability to achievement was also investigated. They found that when pretest academic differences were controlled for that neither age nor disability had a significant impact on follow-up achievement. It would have been interesting to know if the extent of achievement gains were related to percentage of increased time in regular education.

At the school age level then there are widely varied reports of the degree of change in special education classifications and programming. It is difficult to draw any conclusions as there are few studies and each has pursued separate issues. The focus of investigation during school years has most often been on school and child variables (as opposed to the family variables at the preschool age). Some studies indicate rates of change nearly five times the rate of others (e.g., rates of change within the LD classification from 4.5% to 21.5%). What adds to the difficulty of analysis is the lack of description of students being investigated (e.g., grade level or severity of handicap). Even though studies give scattered results regarding factors related to changes in classification and programming some continuity seems to be emerging around several factors. There is some evidence that changes in classification either by termination or reclassification are related to initial classification and grade level. Changes in classification by reclassification have found recent, but still meager, support for association with other factors, such as, parent agreement with the handicap, IQ, and achievement levels. The degree of change appears to differ across classifications. Studies addressing programming issues have found that the factors of grade level and behavorial subtype have some support as important influences.

The present study is a partial replication of the

longitudinal works of both Walker's et. al. (1988) study with elementary, urban students and Wolman's et. al., (1989) suburban study of factors related to reclassification. It will be a partial replication in that several aspects of stability within special education as dealt with in Walker's study will be investigated. Percentage of change in a student's classification category (ie., terminated, relassified, and no change) will be examined. The effect of family income, initial primary handicap (ie., SLI, LD, EI, MR, AI, HI, VI, POHI) and parent satisfaction level (ie., very satisfied to very unsatisfied) on changes in special education status will be considered.

The present study is also a partial replication of the Wolman et. al., (1989) work, in that IQ and achievement information was gathered. Wolman et. al. also followed students for a longer period of time than other studies allowing time for re-evaluations to be completed for each student. In addition to these replicative factors, this study will be extended to include several other aspects of stability, and investigate their relationship to changes that may occur.

Unique aspects of the present study

There are several ways in which this study differs from past research by Walker et. al. (1988) and Wolman et. al. (1989).

(1) The present study will be conducted with children attending rural rather than urban and suburban schools. No other longitudinal study examining these issues has been conducted in a rural area.

(2) The extension will include an investigation of the effects of grade level (ie., preschool, elementary, and secondary) on change in classification (termination in addition to Wolman's examination of reclassification). No other longitudinal study has examined these classification issues across this range of grade levels.

(3) In addition to changes in classification, there will be an investigation of factors related to change in the programming including type of service (ie., consultation, resource room, or self-contained services) and the frequency of service.

(4) Frequency of service will be investigated on both a categorical level (ie., same, increase, or decrease) and a continuous level (ie., number of minutes of programming).

(5) The relationship of alteration of professional staff (functioning on the MDT) to special education decisions regarding eligibility and programming will be investigated.

(6) IQ and achievement results will be based on individually administered measures rather than group measures.

III. METHODOLOGY

Study Site

In the present study, an ex post facto approach was used to examine several factors and the relationship of each to changes in classification and programming for students who were labeled as handicapped. A 3.0 year follow-up study of special education students served within the Cheboygan-Otsego-Presque Isle Intermediate School District (ISD) was conducted. Within the ISD there are 10 local districts which are primarily responsible for providing the special education services. These local districts range in student population from 200 to 2775 students at follow-up. This attendance range meets the definition of a rural school district as one with less than 3,000 students (Hughes & Clark, 1981). Some services to low incidence handicapped are provided through cooperative agreements among local districts or the ISD (e.g., AI, HI, VI, SMI, TMI programs).

Subjects

There were 654 students identified by state guidelines which are modeled closely after the federal guidelines (see Appendix A). Table 1 indicates the primary classification of students who were receiving special education services during the 1984-85 school year and were followed through the 1987-88 school year. The SMI classification in this study was a compilation of TMI, SMI, and SXI students. The S/M classification was a compilation of AI, HI, POHI, and VI

TABLE 1

Number of students by handicapping classification

Classification	1984-1985	1987-1988
Learning Disabilities (LD)	211	202
Speech and Language Impaired (SLI)	211	44
Educably Mentally Impaired (EMI)	31	34
Severely Mentally Impaired (SMI)	79	87
Emotionally Impaired (EI)	63	64
Sensory/Motor Impaired (S/M)	59	51
All Handicapped	654	482

students.

The sample consisted of the identified and placed special education students who had not graduated from school prior to the end of the '87-'88 school year. Identified students who transferred into the ISD were included when there was pertinent data on file for the time period of the study. The subjects were overwhelmingly white: 2.3% were American Indian; no other racial groups were represented. A breakdown of subject characteristics (age by grade level, gender, and family SES) is shown in Table 2.

Procedure

The specific areas investigated included selected information on family (their income and their satisfaction with services), school (grade level and MDT membership) and child (gender, IQ, current achievement, and initial classification) variables. The data were collected through review of the school records and parent questionnaire.

The school records were reviewed with particular

attention given to the Individual Education Plan (IEP) and the Multidisciplinary Educational Team (MET) reports. These records included both individual student files and records which had been stored on microfiche. All records were examined by this investigator and were located in the ISD central administration building. In addition, twenty five records were selected randomly for reexamination. This reliability procedure found no differences in the recording of the data.

Specific information was gathered with regards to classification (diagnosis), type of service, and frequency of service during the 1984-1985 school year. Specifically, the data gathered from the files included: gender, initial grade

Table 2

Subject Characteristics

		Initial Classification					
Feature	SLI	LD	EI	EMI	SMI	S/M	Total
Age/months							
Preschool M	65	--	46	81	53	49	59
(n=90) SD	19	--	0	0	18	21	20
Elementary M	103	135	128	130	130	117	121
(n=435) SD	22	27	26	30	28	29	29
Secondary M	182	179	183	185	231	179	198
(n=129) SD	21	13	20	13	33	15	33
Gender							
% Males	66	78	75	55	49	54	67
% Females	34	22	25	45	51	46	33
Family SES							
% Poor	32	26	52	69	42	31	36
% Not Poor	68	74	48	31	58	69	64

level, local school district, initial primary handicapping classification, number of concurrent classifications, whether therapy was received and the type of therapy, whether consultative or classroom services were received and the type of service received, and the total number of minutes in therapy and classroom services each week. The MDT members were also recorded. Subsequent educational plans were reviewed, through June, 1988, with the same information gathered. Comparisons of the data were made to determine any changes that had occurred in the classification or programming areas since the time of the 1984-1985 school year. Other information collected from the files included the results of IQ (initial and follow-up results) and achievement tests (follow-up results) which had been individually administered (see Table 3).

The parent questionnaire which was mailed to the parents of all the subjects included a letter of introduction from the ISD and from the investigator. Parents of 223 students returned the self-addressed postcard from the investigator. An additional 40 non-responders (10.3% of available nonresponders) were randomly selected and contacted by telephone to determine whether the responses of nonresponders differed from those of responders. No significant differences were found on the dependent variables between those who responded by mail or by telephone (see Table 4). In total, 40.2% of the parents responded. Parent satisfaction with the child's "overall special educational

Table 3

IQ, achievement and MDT results by initial classification

Data type		Initial Classification					
		SLI	LD	EI	EMI	SMI	S/M
Initial IQ							
VSIQ	M	73.3	88.9	92.9	61.6	48.0	77.6
	SD	10.0	12.4	14.0	11.4	14.5	12.6
PSIQ	M	77.9	96.6	99.4	61.9	51.7	83.8
	SD	12.8	16.2	14.3	11.8	10.5	5.9
FSIQ	M	77.7	91.8	95.5	61.1	30.4	68.2
	SD	12.5	13.3	13.8	9.8	16.9	28.7
Follow-up IQ							
VSIQ	M	85.5	86.9	94.1	64.0	45.4	74.9
	SD	15.4	13.0	14.5	11.1	13.5	19.5
PSIQ	M	93.5	95.4	103.9	67.7	49.1	76.9
	SD	16.6	15.4	17.2	15.3	11.5	27.1
FSIQ	M	86.5	90.0	96.7	62.3	28.4	65.0
	SD	17.6	13.6	17.5	13.2	16.8	26.5
Achievement							
Reading	M	79.0	76.7	86.4	59.5	50.3	75.6
	SD	14.3	10.5	15.7	14.7	6.8	20.3
Math	M	75.9	80.0	85.0	54.9	54.2	75.1
	SD	12.0	13.2	15.9	15.3	9.0	18.2
Written	M	79.8	75.4	83.6	62.7	51.4	82.4
Lang	SD	10.7	9.9	15.2	13.9	9.8	19.1
MDT Members							
Non teachers							
% same		46.6	44.0	37.3	21.4	52.0	57.1
% different		53.4	56.0	62.7	78.6	48.0	42.9
Teachers							
% same		33.3	18.1	24.0	22.2	57.7	26.1
% different		66.7	81.9	76.0	77.8	42.3	73.9

program" was assessed, for both the 84/85 and 87-88 school years, using a 4-point scale ranging from "very dissatisfied" to "very satisfied". It should be emphasized that this parent survey did not elicit parent satisfaction about specific changes in classification or programming. The parent information was also gathered after the IEPs had been concluded. Parents also indicated whether their child received a reduced price or free lunch. These data were used to operationally define "poor" and "not poor" (reduced or free lunch=poor). Both Walker et. al. (1988) and this study's measure of "poor" and "not poor" are based on the U.S. Government weighted average poverty thresholds for total family size (U.S. Bureau of Census, 1987).

Table 4.

Comparison of parents responding by card or phone as related to percentage of change in classification and programming

	Percentage		Significance
Educational Outcome	change card/phone	no change card/phone	statistic Chi Square/p
Classification			
1984-85	34.3/23.7	65.7/76.3	1.724/p=.19
1987-88	17.0/22.5	83.0/77.5	0.351/p=.55
Type of Program			
1984-85	30.9/43.2	69.1/56.8	2.018/p=.16
1987-88	31.0/43.6	69.0/56.4	1.742/p=.19
Time in Program			
1984-85	69.8/71.1	30.2/28.9	0.025/p=.87
1987-88	67.9/70.0	32.1/30.0	0.005/p=.94

Data Organization

Independent Variables

The clarification of the independent variables of family income and parent satisfaction was discussed under the procedure section above. The organization of other independent variables including initial classification, grade level, MDT composition, I.Q., and achievement is presented here.

The initial classifications were recategorized because of the small number of cases in the low incidence classifications. Eleven classifications were reduced to six [1=SLI, 2=LD, 3=EI, 4=EMI, 5=Severely Mentally Impaired (SMI combining TMI, SMI, and SXI students) and 6=Sensory/Motor (S/M combining POHI, HI, AI, and VI students).

Grade levels were categorized into three groups according to commonly occurring divisions in education. Preschoolers were defined as students from birth until kindergarten or 6 years of age. Elementary students were defined as those students from kindergarten or 6 years of age until seventh grade or fourteen years of age. Secondary students were defined as those from seventh through twelfth grade or from fourteen through twenty five years of age.

MDT composition was determined by recording the names of team members who addressed handicapping criteria and programming needs. The special education teacher who attended the meeting often changed independently of the other team members. Because of this the special education teacher

was removed from the MDT variable and his/her consistency across the time interval was collected as a separate variable. In this way the MDT was not considered different if the special education teacher was the only member of the team to change. MDT composition and special education teacher were categorized as same or different. Same referred to each discipline represented by the same individual over the follow-up interval. The MDT was determined to be different when at least one discipline was represented by an individual other than the person attending the meeting held prior to the end of the '84-'85 school year.

IQ results from the Wechsler Intelligence Scale for Children-Revised (Wechsler, 1974) Verbal, Performance, and Full Scale scores were collected. For the more severely impaired students IQ results were often based on measures such as the Cattell Infant Intelligence Scale (Cattell, 1940), the Leiter International Performance Scale (Leiter, 1969), the Merrill-Palmer Scale (Stutsman, 1948), or the Stanford-Binet Intelligence Scale form L-M (Terman & Merrill, 1960). Since these scales yield a single score, the results were coded as full scaled scores only. Since the testing was not always completed the year of the review, the records were searched for the most recent psychological reports prior to the '84-'85 or '87-'88 school years. The IQ scores were categorized into five levels on the basis of a modification of Wechsler's (1974) classifications (1=1 to 69, 2=70 to 79, 3=80 to 89, 4=90 to 99, and 5=100 to 150).

Current achievement was based on the Woodcock-Johnson Psycho-Educational Battery (Woodcock & Johnson, 1977) results in areas of reading, mathematics and written language cluster scores. Achievement scaled scores were categorized into four levels using divisions similar to those used for I.Q. (1=1 to 69, 2=70 to 79, 3=80 to 89, 4=90 to 130). The categories were reduced to four since, unlike the IQ results, there were few identified students performing at or above a standard score of 100 (reading 4.2%; mathematics 6.2%; written language 3.1%). Achievement data was not gathered for the '84-'85 school year not only because at the time a variety of achievement measures were being used within the ISD district and comparison of results would have been problematic, but also because of measurement problems associated with computing gain scores. By the '87-'88 school year the use of the Woodcock-Johnson Psycho-Educational Battery was standard practice within the ISD district.

Dependent Variables

The dependent variables recorded from the IEP reports included change in classification (same, reclassified or terminated), change in type of service, and change in frequency of service. Type of service was categorized on the basis of restrictiveness. Restrictiveness was rated from least to most in terms of disruption of the regular education programming. Type 1 was a service which consisted of consultant services only. Type 2 was a service which consisted of resource room programming. Type 3 was a service

which consisted of categorical room programming. Because of the difficulty in differentiating the type of service on the basis of some IEP plans, it was necessary to determine the nature of funding for the program in order to consistently establish the type of service. Therapy (ie., O.T., P.T., and Speech & Language therapy) was recorded separately from the services provided by a special education teacher.

Frequency of service was defined as the number of minutes of special education service scheduled during a week of school. Data on therapy and program services were collected separately. The frequency was then categorized as same, more or less after comparing the initial and follow-up IEPs.

Questions and Hypotheses

Question I: Proportion of Change Observed

What proportion of special education students have a classification (diagnosis) and/or program (type and frequency of service) change after a minimal interval of three years in special education?

Hypotheses

A. The percentage of change of special education classification will be greatest for SLI, less for EI and LD, and least for MR, and S/M impairments.

B. Within the MR categories the EMI will show a greater change in classification, type of service, and frequency of service than the SMI.

C. Programming (type and frequency of service) is more likely to change than the student's handicapping condition.

Question II: Factors Related to Change

What factors are related to changes in classification and programming for rural special education students?

Hypotheses

A. There will be no difference between low and high income families with respect to percent of change in classification, type of service, and frequency of service.

B. There will be a greater percentage of change when parents are dissatisfied rather than satisfied with respect to classification, type of service, and frequency of service.

C. There will be no difference between preschool, elementary, and secondary students with respect to percent of change in classification, type of service, and frequency of service.

D. There will be a lower percentage of change in classification, type of service, and frequency of service when the professional decision makers are the same rather than different over time.

E. There will be no difference between males and females with respect to percent of change in classification, type of service, and frequency of service.

Question III: Factors Predicting Change

What are the effects of initial classification, grade level, I.Q., current achievement, family income, parent satisfaction, MDT composition, and gender variables on follow-up classification and program?

Hypotheses

A. The variable of student's I.Q. will have a positive effect on change in classification, type of service, and frequency of service.

B. The variable of student's current level of achievement will have a positive effect on change in classification, type of service, and frequency of service.

C. The variable of initial classification will have a

positive effect on classification, type of service, and frequency of service.

Statistical Analyses

To synthesize and summarize the information for the students reviewed, two approaches were employed, descriptive and inferential statistics. Descriptive statistics (means, frequencies, and cross tabulations) were used to aggregate the information across cases and to present the percentages of children who experienced different outcomes according to their family, school and student characteristics. The Chi Square test statistic was used to examine whether the obtained proportions of change differed significantly between groups. Tables presenting the Chi Square data for each analysis will be presented in Appendix B.

The inferential statistic of multiple logistic regression was used to examine the effects of family, school and student characteristics on change in classification and programming. In addition, an analysis of variance (ANOVA) was used to investigate whether there were significant differences among the means of minutes (frequency) of service on several independent factors. The factors investigated included: family income, parent satisfaction, grade level, MDT composition, gender, student IQ, student achievement, comorbidity, and school size. The SMI classification was consistently removed from the analysis since these students received the maximum number of minutes. Their inclusion worked to violate the basic assumptions regarding a normal

Table 5

Hypotheses, variables and statistics of present study

Ho:	Independent Variable	Dependent Variable	Statistic
I-A	Classification SLI > EI&LD > MR&S/M	% change in classification	Chi-Square
I-B	Classification EMI > SMI	% change in classification & programming	Chi-Square
I-C	Programming > Classification	% change in classification & programming	Chi-Square
II-A	Family Income Poor=Not poor	% change in classification & programming	Chi-Square
II-B	Parent Satisfaction Satisfied=Dissatisfied	% change in classification & programming	Chi-Square
II-C	Grade Level No Differences	% change in classification & programming	Chi-Square
II-D	MDT Members Different > Same	% change in classification & programming	Chi-Square
II-E	Gender Males=Females	% change in classification & programming	Chi-Square
III-A	Student IQ	Change in classification & programming	Logistic Regression
III-B	Current Achievement	Change in classification & programming	Logistic Regression
III-C	Student Classification	Change in classification & programming	Logistic Regression

distribution. In addition, in the analysis of student IQ and current achievement there continued to be a concern regarding the meeting of the assumption of equal variances across groups. The ANOVA procedure is robust to violations of the assumption and is conservative when larger variances are associated with larger groups as was generally the case in the analysis of IQ and achievement in this study (Glass and Hopkins, 1984).

Limitations

There are several limitations in this study, two of which are common to the retrospective approach. First is the presence of variable coverage. The data as it is naturally gathered in the schools is not of a universal nature across handicapping conditions. Because diagnostic criteria require differing data, different types of information are accumulated. In terms of assessment information gathered in this study, gaps are evident. Table 6 shows the percentage of students for which IQ data were collected for the '84-'85 and '87-'88 school years and achievement data for the '87-'88 school year. It is evident that few of the SLI and S/M students are given IQ or achievement measures. For these students IQ and achievement data were usually generated when there was consideration being given to either reclassification or the addition of another handicapping classification.

The second limitation common to retrospective studies is missing data. An example of this was the high percentage

Table 6

Percentage of subjects with assessment data and parent responses available

	Initial Classification					
Data type	SLI	LD	EI	EMI	SMI	S/M
Initial IQ						
Verbal	4.7	93.7	86.8	64.3	14.1	12.7
Performance	4.7	94.2	86.6	57.1	16.7	9.1
Full Scale	7.9	94.2	94.3	92.9	92.3	38.2
Follow-up IQ						
Verbal	20.5	94.7	77.4	92.9	21.8	29.1
Performance	20.5	94.7	75.5	92.9	21.8	25.5
Full Scale	22.1	94.7	81.1	100.0	93.6	38.2
Follow-up Achievement						
Reading	18.9	93.7	90.6	92.9	12.8	20.0
Arithmetic	18.4	93.2	90.6	92.9	12.8	20.0
Written Language	17.4	90.0	83.0	92.9	6.4	16.4
Family SES % Responding	32.7	34.6	33.3	41.9	57.0	49.2
Satisfaction % Responding						
1984-85	33.6	33.2	33.3	41.9	51.9	52.5
1987-88	18.5	31.8	31.7	45.2	57.0	49.2

(see Table 6) of parents who did not respond to the parent survey resulting in unavailable data regarding their satisfaction with their child's special education services and regarding whether or not their child received a reduced or free lunch. Conclusions were based on respondents (including those randomly sampled by phone). Related to this is the unknown number of parents who might have chosen not to apply for reduced or free lunch when in fact they may have qualified making the accuracy of this criteria less certain.

Another limitation was in the categorical approach of determining frequency of programming. From the initial to the follow-up period the criteria for determining whether a child was receiving "more", "less" or the "same" time was on the basis of a comparison of minutes of service on the IEP. Therefore it would be theoretically possible for a student to be given more or less on the basis of a very minor change in service time. In defense of this approach, however, the IEP's are actually written in larger blocks of time (ie., generally one hour per day segments).

Additionally, it must be noted that an "hour" may have different meanings between districts and schools. When an IEP specified an hour of special education time it was consistently considered to be sixty minutes of time. In actuality, however, there was some variability between what individual schools considered to be an hour of class time.

Also related to the time of service was a change in the ISD policy for writing in the service time during the

interval of the study. During the 1984-85 school year specific programming times were established in the IEP. By the 1987-88 school year the times were written as a range of service allowing for some flexibility in scheduling for emergencies. The median of this range was the service time which was used in the analysis of frequency. However, those cases which varied regularly from the median would not have accurately been depicted in the results. It was also the median that was used in determining an increase or decrease in time of service.

There is a further limitation associated with the unreliability of the special education criteria in determining handicapping classifications. As would be expected there is debate about reliability of the classifications at the individual, school district, state, and national levels. This unreliability would limit the degree to which the results would generalize to other districts.

Another special education issue is that during the interval of the study the REI movement was in its infancy and since that time has become a significant ideological position and influence of change. The difference in the context of special education during and after the study would be a limitation in its applicability to current practice.

Finally, although all available cases within the tri-county ISD area were analyzed this study was limited to a rural white area of a midwestern state. The generalizability

to urban and suburban or multiracial areas is questionable.

IV. RESULTS AND DISCUSSION

Before considering the questions and hypotheses of concern in this study, two factors will be discussed and analyzed which affected the number of students who could be followed for the three year interval. These factors include the percentage of students who moved (either out of, within, or into the district) and the percentage of students who left school for other reasons (drop out or death).

Following this explanation three questions are addressed regarding changes experienced by special education students over time. Initially, questions regarding the proportion and nature of change in classification and programming (categorically dependent variables of student status, type of services, and frequency of service) are considered. Next, specific family, school and student factors are investigated regarding their relationship to change in classification and programming. An expanded presentation of the frequency of service variable on an interval level (minutes of programming) is delineated. Each factor is studied to determine if there are significant differences across dependent variables. Finally, factors are analyzed to determine which are significant predictors of change.

Student Mobility

Population changes during the 3 year interval

Table 7 presents the mobility of students by their initial classification status during the '84-'85 school year.

Students moving in three ways resulted in only 76.8% of the special education students remaining in the same local school district across the three year period. In addition, 2.6% of the students could not be followed because of dropping out of school or death during the interval. A total of 9.0% of the initial student group was not available because of moving out of the ISD, dropping out of school or death.

Students moving out of the district

First, 6.4% of the students moved out of the ISD area. Although the rates of moving out of district varied between initial classifications, the percentage did not differ significantly (χ^2=7.98; p=.158; see Table B-1). The two most mobile diagnostic classifications were the SLI (9.5%) and the EMI (9.7%) students. Within the moderately mobile range were LD (5.7%), EI (4.8%) and S/M (5.1%) students. The least likely to leave the ISD was the SMI (1.3%) student.

Students moving within the district

Second, a number of students moved to different local districts within the ISD service area. The frequency of moving within the ISD was nearly the same as that for moving out of the area as 6.0% of the students made such a move. Again there were differences in the rate between initial classifications, but these differences were not significant (χ^2=7.87; p=.163; see Table B-2). In order to investigate posssible differences between classifications that move, those who moved out of the ISD and within the ISD were combined. There continued to be no significant differences

between the handicap groups (X^2=7.83; p=.166; see Table B-3). Again the SMI were the least likely to move (3.8%). LD, SLI, EMI moved between schools at the rate of 4.7%, 5,2% and 6.5%

Table 7

Population Changes Between the 84-85 and 87-88 School Years

		% moved		
Initial Classification	% Left School	OUT	WITHIN	INTO
SLI	0.5	9.5	5.2	1.4
LD	4.0	5.7	4.7	14.7
EI	11.7	4.8	11.1	19.0
EMI	0.0	9.7	6.5	9.7
SMI	0.0	1.3	3.8	21.5
S/M	1.8	5.1	11.9	6.8
ALL HANDICAPS	2.6	6.4	6.1	10.7
X^2 (5df)^	14.67	7.98	7.87	37.77
p ≤	.0007	.1576	.1633	.0001

^ between handicapped classifications

respectively. The most change was noted for S/M (10.2%) and EMI (11.1%) students. Combining the percentage of students moving out and within the area resulted in somewhat higher rates of student movement than that reported by Walker et. al., (1988) as 12.5% of the students left their '84-'85 local school district. However, the total percentage when considered as the result of an additive annual rate would be very similar. At 4% of students moving each year, Walker's two year study would be at 8% (the reported rate) and this three year study is at 12% as expected. Comparison with the Wolman et.al. (1989) study, specifically regarding the percentage of students moving, is not possible since they

combined students who had moved and dropped out (27.0%).

Students moving into the district

The third source of student movement was accounted for by those (10.7%) who moved into the ISD area. Highly significant (χ^2=37.77; p≤.0001; see Table B-4) differences between initial classifications were noted. Two classifications were clearly more frequently represented by those moving into the ISD area. The SMI moved in at over twice (21.5%) the average rate for all handicapped students. This was due, in part, to active placement programs by the Department of Mental Health and local Community Mental Health Agencies servicing the ISD area. Many developmentally disabled individuals are placed into newly built or developed AIS group homes and contract foster homes in Northern Lower Michigan.

Another group with a high rate of moving into the area was the EI students as 19.0% moved. Whereas, Walker et al., (1988) found EI students to move out of district at a median rate, in this rural area EI students were somewhat below the median for moving out of ISD, but tended to change schools within the area more frequently. They move into the area at nearly twice the rate of other mildly handicapped students.

The LD students were also somewhat above average in terms of moving into the area, while SLI were considerably below average. This is probably related to a narrower range of years during which the majority of initial referrals are made. Most speech and language referrals are made during the

primary education years.

Student drop-outs or death

The percentage of students who left school, either because of dropping out or death, is delineated in Column 1 of Table 7. One student within the SLI classification died during the interval. A total of 2.6% of the students left school. There were significant differences (X^2=4.94; p=.026; see Table B-5) in drop out rates between initial classification groups although only LD and EI categories analyzed. Other categories had insufficient or no drop outs to be analyzed.

The overall drop out rate of 2.6% is a meaningless figure for comparison with other studies since it is based on all handicapped students regardless of grade level. When the comparison is made with only secondary level students, the rates rise to LD at 15.5%, S/M at 16.6% and EI at 38.8%. These rates are probably underestimates since the secondary age level included students from the seventh grade level on. There were no drop out students reported in the other handicapping categories. These rates are somewhat lower than the 29.1% (1985) drop out rate reported for all handicapped students in the state of Michigan (Tenth Annual report to Congress, 1988). Yet, these rates are considerably higher than the the 2 to 3 percent drop-out rate experienced by all students across surveyed schools in the ISD.

Fassbender (1986) found a high drop out rate among the EI students although the nature of the school setting (urban,

suburban, rural) was not described. She found a 31% drop out rate for students who remained classified as EI throughout their schooling. This rate decreased to 9% when students were reclassified. This study supports her finding, then that among those classified as handicapped EI students are clearly at the greatest risk for dropping out of school.

Analysis of population changes

A comprehensive analysis of the reasons for student mobility could not be addressed directly in this study as comprehensive information was not gathered as to reasons for moving. However, information on two factors, 1) parent satisfaction with special education services, and 2) family income was gathered which could be compared to families that had moved within and into the ISD area. No significant difference was found in parent satisfaction between those who moved (into and within the district) and did not move (χ^2=.148; p=.7009; see Table B-6). Family income, however, was related to moving (χ^2=12.37; p=.0004; see Table B-7). Among families that did not move, 31% were "poor", while among those who did move, 60% were "poor". There was also a difference between families making different types of moves. Of those who moved within the ISD area 44.4% were "poor", while 64.5% of those moving into the ISD were "poor". These findings are in contrast with Walker et al., (1988), who used comparable measures of income. The criteria for "poor" in both studies was based on the U.S. Government weighted average poverty thresholds for total family size. In

contrast to this study, they found that the "not-poor" families were more likely to leave the school district. One explanation offered in their study was that "poor" families were less likely to move because they were not able to afford doing so. In this study of a rural area, the opposite pattern is found. The "poor" may be more mobile because less expensive housing options are available.

One group would tend to inflate the percentage of "poor" represented in both non-moving and moving categories. These are the Community Mental Health clients. With these students, most of whom are within the SMI classification, the criterion of "poor" (ie., free lunch) is automatically met regardless of family or foster family income. Those students who were in the area were very unlikely to leave thus raising the percentage of non-movers who were "poor". In addition, they also moved into the area at a high rate (21.5%) during the study, increasing the percentage of "poor" moving into the ISD area.

Although both Wolman et. al. (1989) and Raber and Frechtling (1985) reported similar rates of family movement (27 and 34 percent respectively) and Travis, Thomas, and Fuller (1985) found lower rates (19.7% moved; 5.3% dropped out), none investigated reasons for families moving. Other studies did not address the percentage of student mobility. The present study would support Walker's conclusion that family movement was . . . "primarily related to the child's family background and not the school program" (p. 396).

Question I: Proportion of change

What proportion of special education students have a classification (diagnosis) and/or program (type and frequency of service) change after an interval of three years in special education?

Hypothesis A The percentage of change of special education classification will be greastest for SLI, less for EI and LD, and least for EMI, SMI, and S/M.

Table 8 presents classification changes for the students followed. The overall percentage of special education students with a classification change was 38.2%. The individual classifications were significantly varied in the proportion of change experienced (χ^2=176.57; p≤.0001; see Table B-8).

Subhypothesis 1

When the classifications were grouped as hypothesized the SLI (78%) changed classifications significantly more often than the combined group of EI and LD (23%) students (χ^2=130.35; p≤.0001; see Table B-9). There were greater rates of change for SLI students and this part of the directional hypothesis was supported.

Subhypothesis 2

The rate of change was not significantly different between the EI and LD group (23%) and the combined group of EMI, SMI, S/M (18%) students (χ^2=1.43; p=.232; see Table B-10). This part of the hypothesis did not result in a significant difference and therefore this part of the directional hypothesis was not supported. The overall hypothesis regarding the degree of change in classification

between categories was not supported.

Hypothesis B Within the mentally impaired classifications EMI students will show a greater change in classification, type of service, and frequency of service than SMI students.

Highly significant differences were found in all three areas. EMI students were more likely (X^2=19.79; p≤.0001; see Table B-11) to have a change in classification than SMI students. The type of program (X^2=27.40; p≤.0001; see Table B-12) and the frequency of programming (X^2=68.84; p≤.0001; see Table B-13) were also much more likely to change for EMI students. The directional hypothesis was supported.

Table 8

Special Education Status in Spring 1988 by Intial Handicap

		Spring 1988 Status of students*		
Initial Handicap 1984-85	N	Terminated (%)	Reclassified (%)	No Change (%)
SLI	211	54.7	22.9	21.9
LD	211	10.0	11.4	74.6
EI	63	5.0	16.7	66.7
EMI	31	0.0	39.3	60.7
SMI	79	0.0	5.1	94.9
S/M	59	10.7	14.3	73.2
ALL	654	21.9	16.3	59.1
X^2 (5df)		181.09	27.56	176.57
p≤		.0001	.0001	.0001

* percentages include students who left school from Table 7

note: Some percentages do not equal 100 due to rounding.

Discussion about classification changes

Termination changes

With regards to changes by termination (removal of special education labels), the percentage across all classifications was 21.9%. The likelihood of being terminated from special education was strongly correlated with the child's initial classification. SLI were clearly the most frequently terminated (54.7%), followed by the S/M and LD who had rates of termination at 10.0% and 10.7% respectively. EI were terminated at a lower rate (5.0%). None of the EMI or SMI students were terminated during the study. The above pattern of change in classification by termination was similar to that found by Walker et. al. (1988) who found 17.2% termination over a two year period and that of Raber and Frechtling (1985) who found a 13% termination rate for preschoolers over a three to nine year period. For kindergarten identified students Raber and Frechtling found 32% were terminated after either a three or four year interval.

The termination rate within the SLI group varied across studies. Walker found 33% terminated over two years yielding an annual rate of 16.5%. This rate when prorated over three years (49.5%), is close to the 54.7% found in this study. Raber and Frechtling (1985) found the SLI termination rate at 39% over three to four years. This rate in their study with kindergarten students was lower than Walker and this study reflecting what may be a correlation between time

of identification and severity of the SLI problem. The earlier identified may show less improvement within the first three to four years of treatment. Later identified SLI children may have simple articulation problems which may be more readily remediated than the more obvious and pervasive language/articulation deficits recognized in kindergarten. Conclusions can not be reached since there are no records of the type of SLI problems or measures of severity which would be necessary for such an analysis.

The LD students were somewhat less likely to be terminated in this study (10.0% compared to Walker's 14.9%). The same is true for EI students (5.0% to 9.1%). Fassbender (1986) found a 10% EI termination rate over ten years. Although S/M were the second most likely to be terminated (10.7%), it is difficult to compare this group with Walker et. al., (1988) as they dealt with sensory impairment separately. Edgar, Heggelund, and Fisher (1988) followed students identified prior to school age. After two years in school they found termination rates were 19%, 12%, and 6% for mildly impaired (LD, SLI, and Behavior Disordered), EMI, and severe impairments (SMI, S/M) respectively. Except for the EMI classification it is impossible to compare rates directly because of the combining of categories. Their study found 6% termination for the EMI students while there was no termination found for this group in this study. Wolman et. al. (1989) did not address classification changes by termination.

The length of study between Walker's and this study (2 versus 3 years) resulted in slightly greater rates of termination over more time (21.9% versus 17.2%). Across the mildly handicapped categories, however, the rates of termination were greater after a two year interval than the three year interval. The re-evaluation process which is required to occur every three years did not work to increase rates of termination, when compared with the rates reported by Walker et al., (1988). The reasons for this are difficult to address because of the lack of information about the severity of the handicaps identified within the studies. One possible reason would be the combination of elementary and secondary students which depressed the overall rate of change in the present study. The rate of change was greater for elementary (26.2%) than secondary (11.0%) students.

Reclassification changes

With regards to reclassification changes, students were less frequently reclassified (16.3%) than terminated (21.9%). This was due to the high rate of termination for SLI students, the only classification for which termination exceeded reclassification. The differences in rates of reclassification were again strongly related to initial classification (χ^2=27.56; p≤.0001; see Table B-14). EMI and SLI students were most frequently reclassified (39.3% and 22.9% respectively). Moderate rates of reclassification were noted for EI students (16.7%), S/M (14.3%) and LD (11.4%). Few of the SMI students were reclassified (5.1%). These

reclassification changes across all handicaps were at a slightly higher rate than that found by Walker (16.3% to 12.3%). Wolman et. al. (1989) found 24% of the special education students were reclassified at least once over the span of their formal education. Among the studies conducted by Fassbender, Raber and Frechtling, Walker, Wolman and this study, rates of change by reclassification vary extensively within individual classifications. For SLI students the rates ranged from 20% to 66%, for LD students from 6.6% to 18%, for EMI students from 7.7% to 39.3%, and for EI students from 4% to 38.8%. There is, therefore, great variability in reclassification findings across studies of different populations (urban, suburban, rural) and over varying time periods (two through twelve years). As was true for change by termination, a meaningful analysis of the variation is impossible since none of these studies addressed the severity of the handicaps of the students being served.

Two areas merit further analysis. A high rate of reclassification was observed for EMI students: 3.4% were reclassified as EI, 10.3% as LD, and 24.1% as SMI. This rate of change reflects the apparent use of the initial EMI classification with borderline cases. The MDT might be inclined to place the less stigmatizing label on young borderline children. In time, some more clearly manifest other, more severe educational disabilities. For example, several of these students do not progress at the rate expected for EMI students. This pattern is frequently

followed by developmentally disabled (eg., Down's Syndrome children) who may perform within the EMI range on tests emphasizing concrete language and visual-motor skills during the preschool years. As abstract language and conceptual knowledge become more of a focus of evaluation, many no longer demonstrate the same rate of development that they had on initial evaluations.

A number of SLI students were also reclassified (.5% to S/M, .5% to SMI, 2.6% to EMI, 5.7% to EI, and 14.1% to LD). Experience shows that most of these students were likely to be receiving services for a language delay as compared to/or in addition to an articulation problem. When reclassified, these students tend to require more intense services than students who were not originally SLI (mean minutes of programming per week: LD, 636 minutes; EI, 707 minutes; SLI, 772 minutes). It would be wise for school psychologists to be more aware of these students for possible early and intensive intervention. Severe language delays are indicative of high risk for extensive special education programming during the student's remaining school years. Providing services for these children merely comparable to those with simple articulation problems is of questionable value. Further studies are needed to determine the effectiveness of more intensive programming options for language delayed children in rural settings.

Overall, there was some evidence for a cumulative rate of reclassification for the SLI and LD students. For the SLI

the percentage reclassified seems similar for 2 (20.0%) or 3 (22.9%) year periods of time. When followed through high school, however, the rate reaches as high as 66% (Walker et al., 1988; Wolman et al., 1989). Also, with LD students the rate increased from 6.6% over 2 years and 11.6% over 3 years to 18% over the entire school career. EMI students demonstrated a wide range of change rates (9 to 39%). Attempts to analyze patterns are speculative and few generalizations can be applied beyond the local school setting. One finding about classification changes (both termination and reclassification) is not speculative: a considerable rate of change exists within special education over time. Although the changes were most frequent for SLI students, they also occur with regularity in the other mildly handicapped classifications. Generally over twenty percent of the mildly impaired (EI, EMI, and LD) students experienced a change in classification. Even change within what is considered the more severe low incident sensory handicaps (S/M) is not uncommon (25%). The SMI experienced the least change over time.

These rates of change are certainly much higher than the "rare" occurrence (1 to 3 percent) reported by Gavin and Elliott (1985) as that which is perceived by school psychologists. There is a considerable difference in rates of change between their study and those reviewed here (Fassbender, Raber and Frechtling, Walker et. al., and Wolman et. al.) and in this study. The reasons for such varying

rates of change may possibly be related to differences in local school policy and practices. It is important to note that their conclusion, that change in diagnosis is rare, may not be generally accepted. Their resultant recommendation to change the process in which re-evaluations are conducted may be only applicable to those districts where classification changes are a rare occurrence.

Hypothesis C Programming (type and frequency of service) is more likely to change than the student's handicapping condition.

Are the type of service and frequency of service more likely to change than the student's handicap classification? To compare rates of change between classification and programming, changes were recoded on a change/no change dichotomy. On this basis, there was significantly more change in both the type of programming as compared to classification (χ^2=58.64; p≤.0001; see Table B-15) and in frequency of service as compared to classification (χ^2=22.49; p≤.0001; see Table B-16). Of the students receiving classroom services, classification changes occurred for 21.9% of the students while type of service (consultant, resource room, categorical room placements) changes occurred for 32.8% of the students and frequency of service changes occurred for 71.2% of the students. The directional hypothesis was supported as both restrictiveness (type) of service and frequency of service demonstrated significantly greater change than the student's classification.

Discussion about programming changes

What proportion of special education students by classification have a program change (type and frequency) after an interval of three years in special education? Table 9 presents the percentage of change in programming that took place over the 3 year interval. Programming changes were investigated in two ways, first with regards to the type of program and second, by the frequency of service. The type

Table 9

Special Education Programming in Spring of 1988 by Initial Handicap

	Spring 1988 Programming for Students still in the system					
	Type			Frequency		
Initial Handicap 1984-85	less %	same %	more %	less %	same %	more %
SLI	3.4	49.4	47.1	23.0	14.9	62.1
LD	25.1	64.0	10.9	50.0	13.1	36.9
EI	26.0	62.0	12.0	48.0	10.0	42.0
EMI	7.1	67.9	25.0	21.4	14.3	64.3
SMI	0.0	100.0	0.0	1.3	94.9	3.8
S/M	6.0	60.0	34.0	24.0	32.0	44.0
ALL	13.9	66.9	19.2	32.2	28.8	39.0
X^2 (5df)	48.84	52.87	79.36	71.83	207.26	68.52
ps	.0001	.0001	.0001	.0001	.0001	.0001

note: Some percentages do not equal 100 due to rounding.

(restrictiveness) of program remained the same for two thirds (66.9%) of the students. Of these, the SMI students showed no change as they were consistently found in full-time categorical programs. Of those who did have a change in the type of program, there was a greater percentage of students

moving into a more restrictive program (19.2%) rather than a less restrictive program (13.9%). Table 9 shows that when there was a change in type of program EMI, SLI and S/M students received more restrictive programming while LD and EI students received less restrictive programming over time. Overall, of those students who remained in special education there were significant differences between initial classifications in the percentage of students which stayed the same (χ^2=52.87; p≤.0001; see Table B-17) or moved to more (χ^2=79.36; p≤.0001; see Table B-18) or less (χ^2=48.84; p≤.0001; see Table B-19) restrictive programs.

Most other studies reviewed did not address change in type of service over time. One exception is Edgar, Heggelund and Fisher (1988) who followed handicapped students for two years after placement at a kindergarten age. They found a decrease in the percentage of EMI (21% to 14%) and mildly impaired (LD, SLI, and behavior disordered) (53% to 41%) served within regular education classrooms with or without supportive assistance. By contrast, the severely impaired (SMI and S/M) demonstrated an increase in regular education placements (21% to 35%). Although there is agreement with the present study that SLI and EMI students change toward more restrictive classroom programs, there is disagreement with regards to the type of change experienced by LD, EI, SMI and S/M students. This disagreement is difficult to interpret since, while Edgar et. al. (1988) students began in regular education placements, the restrictiveness of initial

placements varied for students in the present study.

There were significant differences in the frequency of special education services related to the initial classification of the student (same $\chi^2=207.26$; $p\leq.0001$; see Table B-20; more $\chi^2=68.52$; $p\leq.0001$; see Table B-21; and less $\chi^2=71.83$; $p\leq.0001$; see Table B-22). Of the special education students who were not terminated, only 28.8% of the students received the same amount of service over time. Those with changes in the frequency of service were split almost evenly between more (39.0%) and less (32.2%). For the EI and LD groups nearly as many received less as received more service over time. EMI, SLI, and S/M, on the other hand, received more time in special education programs over time rather than less.

Two other studies looked at frequency of service over time. Raber and Frechtling (1985) following kindergarten identified students for three or four years found 39% received less, 30% received the same, and 31% received more more time in special education. These rates of change are consistent with the present study. In their investigation of change within individual classifications they found no change in frequency of service for mentally impaired or sensory impaired. Their finding is consistent with the present study for the SMI group while it is inconsistent for the EMI and S/M groups. Again, this may be due to their focus on early elementary years. In their study, more SLI and LD students received less service than more service over time. These

findings are consistent with the present study for the LD but not for the SLI students.

Travis, Thomas, and Fuller (1985) found a consistent pattern of decreased time in special education across mildly handicapped categories (LD, EI, EMI) covering both the elementary and secondary grade levels. Between categories, they found significant differences in the rates of movement into regular education with EI students showing the highest transition rate out of special education. Their study unlike the present study was not retrospective in nature. In the present study, however, there was no clear direction of change as LD and EI students made changes both toward more and less time in special education. In contrast to Travis et. al. the EMI students in the present study moved dramatically toward more time in special education rather than less.

Overall, in the present study a considerable rate of change was found in classification (38.2%) and an even greater rate of change in programming over a three year interval. Although two-thirds of the students remained in the same type of program (32.8% changed), nearly three-fourths had a change in the amount of service (71.2% changed). The degree of variability differs significantly in all areas between initial classifications.

Question II: Factors Related to Change

What factors are related to change in classification and programming for rural special education students?

Many factors have been studied to investigate their relationship to changes that occur in classification and programming. The several factors considered in this study include family variables (family income and parent satisfaction), school variables (grade level and MDT composition) and child variables (gender, IQ and achievement levels).

Hypothesis A There will be no difference between low and high income families with respect to percent of change in classification, type of service, and frequency of service.

It was found that family income was not significantly related to changes in classification (χ^2=.215; p=.643; see Table B-23), or programming [type (χ^2=.681; p=.409; see Table B-24) or frequency of service (χ^2=.117; p=.732; see Table B-25)]. There was a failure to reject the null hypothesis regarding family income and percent of changes in classification and programming.

Although both poor (67.4%) and not poor (70.3%) were equally likely to retain the same classification, when change did occur significant differences (χ^2=12.45; p≤.001; see Table B-26) were apparent in the nature of change. The students from poor families were more likely to be reclassified (69.0% to 27.7%), while the students from not poor families were more likly to be terminated (72.3% to 31.0%) from special education. The nature of the

reclassifications was not examined.

In the programming area, nonsignificant categorical trends were evident in the nature of change (ie., less or more restrictive program or less or more time in special education). First, with regards to type of service (χ^2=2.22; p=.136; see Table B-28), the not poor moved toward less restrictive programs (39.5%) more often than the poor (21.7%). Second, with regard to frequency of service (χ^2=1.36; p=.243; see Table B-29), both poor (33.8%) and not poor (31.5%) retained the same amount of service at an even rate over time. When changes were made to reduce time spent in special education, the poor were overrepresented (45.3% vs 35.3%) and when time was increased, the poor were underrepresented (54.7% vs 64.7%).

When analyzed at the continuous level (time in special education) nonsignificant (F=2.73; p=.101) differences were found between poor and not poor. The differences were not consistent across handicapping conditions, however. Service times were essentially the same for EI, SMI and S/M students. Relatively large differences in service were noted for other categories. LD students who were poor spent 24% more time in special education than not poor LD students. SLI who were reclassified and receiving classroom services spent 30% more time in special education when poor. In contrast, EMI students who were not poor recieved 30% more time in special classrooms. These differences within categories did not reach significance (F=2.73; p=.101) apparently because of the

small number of cases within single categories with family income information available.

Changes in the frequency of service were related significantly (F=4.88; p=.029) to family income. Over the 3 years studied, poor students received a decrease of 112.4 minutes (total of 894.2) of special classroom services. An increase of 100.8 minutes (total of 750.1) was received by the not poor student. The timing of program changes was related to grade level. Preschool identified students who were poor had large increases in services initially. Decreases in services were noted at the elementary and especially secondary grade levels. Preschool identified students who were not poor had relatively stable services at the preschool level, large increases at the elementary level, and moderate decreases at the secondary level.

Raber and Frechtling (1985) found SES to be related to changes in classification and programming for preschool and kindergarten identified children who were followed longitudinally. Other preschool studies had also indicated that risk of referral and placement in special education were related to family income. Walker et al., (1988) and Wolman et al., (1989), however, working with elementary and secondary students in urban and suburban settings, respectively, did not find family income to be related to changes in special education classification. It was at the preschool grade level where differences in the nature of programming between income groups were most evident. Another

complication in the analysis of this factor is that although the criteria were identical between Walker et. al. (1988) and the present study consistency across all studies may be lacking because of differences in the definition of SES variables, such as, "poor".

In summary, at the categorical level classification and programming changes not related to family income. There was a failure to reject the null hypothesis regarding differences in rate of change. At the continuous level, significant differences between income groups were found in the pattern of change in frequency of service. Both income groups moved toward the mean and differences may have been influenced by the different percentages of responders between various classifications. Although the differences were statistically significant, the practical importance is questionable. It is encouraging to note that with regard to changes in classification and programming a SES bias is not operative at the categorical level.

Hypothesis B There will be a greater percentage of change when parents are dissatisified rather than satisified with respect to classification, type of service, and frequency of service.

The second family variable was that of parent satisfaction with the special education services. It was hypothesized that there would be a greater percentage of change when parents are dissatisfied rather than satisfied. At the categorical level, there was not support for parent satisfaction being a significant factor related to changes in

classification (X^2=.693; p=.405; see Table B-30), or programming [type of service (X^2=.011; p=.916; see Table B-31), or frequency of service (X^2=1.518; p=.218; see Table B-32)]. There was not support for the directional hypothesis that there would be significantly greater rates of change when parents were dissatisfied rather than satisfied.

When a change in classification did occur, parent satisfaction, as measured on a global basis, was not related to the nature of the change (X^2=1.936; p=.164; see Table B-33). Of the students experiencing a change in programming, parent satisfaction was not related to the nature of the change, ie., more or less restrictive (X^2=.458; p=.498; see Table B-34). In the area of frequency of service, parent satisfaction was related to the nature of change (X^2=4.936; p=.026; see Table B-35). When parents were dissatisfied students were more likely to receive more (79.3%) rather than less (20.7%) time in special education. When parents were satisfied changes in time were more evenly distributed between receiving more (56.8%) and less (43.2%) time in special education.

When frequency of service was further analyzed on a continuous level, differences in programming were not significant between levels of parent satisfaction. The initial parent report of satisfaction ('84-'85 school year) was not related to significant (F=1.552; p=.205) differences in programming at that time. Also, follow-up reports of satisfaction were not significantly (F=.069; p=.976) related

to follow-up minutes of programming. In terms of changes in amount of programming during the interval differences were not significantly ($F=1.454$; $p=.232$) related to parent satisfaction (ie., very satisfied or very dissatisfied). The students of very satisfied parents averaged a decrease in programming of 28.4 minutes (mean of 808.8 minutes per week) over the time of the study. Students of very dissatisfied parents averaged an increase of 237.3 minutes (mean of 850.0 minutes per week).

With students that receive large increases in special education services, it is likely that the schools are also concerned. Dissatisfaction on both the parents and schools part may be related to the frustrating nature of lack of progress even though intervention has occurred. The result is an increase in special education programming. Walker et. al., (1988) had found parent satisfaction to be a significant factor related to reclassification of a student. Unfortunately, Wolman et. al., (1988) did not address these family variables when investigating reclassification patterns of students. What accounts for the mixed results between Walker et. al. and the present study even though operational definitions of parent satisfaction were identical? Although both studies recognized differences based on parent satisfaction, the nature of the differences are not the same. Walker et. al. in their prospective study had found that parent satisfaction was associated with changes in student classifications. In the present retrospective study,

however, parent satisfaction regarding special education services was not found to be related to changes in classifications, except in the nature of change in frequency of service. When examined on a continuous level, parent dissatisfaction was found to be related to sizeable increases in special education programming. Other considerations which may moderate the effect of the family variables are the size and financial standing of the school district. When students demonstrate substantial difficulties or the family is dissatisfied, some rural districts have few alternatives to implement before turning to special education. In these districts, then, even though the parents may be dissatisfied, the school is compelled to provide assistance. The one option it has is special education. In rural areas, there are especially few alternatives even within special education. Before definitive conclusions can be reached, however, additional studies addressing the interaction of family variables and student outcomes are needed.

Confounding factors in analyzing parent satisfaction from these results are the obvious differences in students and the differing rate of responders between classifications. Students of very satisfied parents are more often from low incidence categories than high incidence categories. Also, the percentage of parent response was greater from low incident categories than from high incidence categories. It is also important to point out that parent satisfaction was gathered after the IEPs had been completed and the survey

asked only for the parent satisfaction regarding special education services in general rather than the parents satisfaction regarding the specific changes in classification and programming investigated in this study.

Hypothesis C There will be no difference between preschool, elementary, and secondary students with respect to percent of change in classification, type of service, and frequency of service.

In this section, two school factors, the initial grade level (Hypothesis C) as well as the make-up of the MDTs (Hypothesis D), will be analyzed with respect to change in classification and programming.

Investigated at the categorical level, initial grade level was a significant factor related to changes in classification (χ^2=16.633; p≤.001; see Table B-36) and programming [type of service (χ^2=7.222; p=.027; see Table B-37), and frequency of service (χ^2=32.645; p≤.001; see Table B-38)]. The null hypothesis regarding grade level would be rejected for classification and programming changes.

As Table 10 shows, in terms of classification changes, secondary students remained the same a greater percentage of the time than elementary or preschool students. Reclassification occurred at the lowest rate in secondary school, at an average rate in elementary school, and most often during the preschool years. Termination again occurred at the lowest rate in secondary school while at a somewhat higher rate in elementary school than during preschool. The differences in rates of termination and reclassification were

Table 10

Changes in classification and programming by initial grade level

Outcomes	Percentage of change		
	preschool	elementary	secondary
Classification			
same	56.8	57.1	78.0
reclassified	24.7	16.7	11.0
terminated	18.5	26.2	11.0
Type of Program			
less	4.5	14.2	18.2
same	56.7	66.2	76.2
more	38.8	19.5	5.0
Frequency			
less	19.4	34.4	34.3
same	28.4	21.2	51.0
more	52.2	44.4	14.7

not significant ($X^2=4.562$; $p=.102$; see Table B-39) between grade levels.

In terms of type of program changes, there were significant ($X^2=7.222$; $p=.027$; see Table B-37) differences related to grade level. Overall, there was a steady increase with grade level in the percentage of students receiving the same type of programming. The elementary school level was very close to the average for all grades with most students (66.2% of elementary students) maintaining the same level of programming over time. For those elementary students that did experience a change in type of program, changes toward more restrictive services (19.5% of elementary students) were more likely than less restrictive (14.2% of elementary students) services. For those identified in the preschool

years the changes were almost uniformily toward a more restrictive type of programming. In the secondary school, however, although change is less frequent when it does occur there is a moderate shift toward less restrictive type of programming. The differences between grade levels in students changing to more or less restrictive settings was highly significant (X^2=25.550; p≤.001; see Table B-40).

In terms of frequency of service, there was a greater percentage of change (71.2%) than with type of program (32.8%) and again initial grade level was significantly (X^2=32.645; p≤.001; see B-38) related to the changes. The pattern of change mirrored that of the type of program except that fewer students remained the same over time. Most students initially in the preschool age group moved toward more rather than less time in special education services. At the elementary school level this tendency continued, but in a less dramatic way. At the secondary school level the nature of change reverses, and over twice as many students who do have a change in amount of service receive less service. The differences between grade levels and change to more or less time in special education was highly significant (X^2=19.006; p≤.001; see Table B-41).

When initial grade level was investigated on a continuous scale of minutes of service it was significantly related to the amount of classroom programming at follow-up (F=13.724; p≤.001) and changes in the amount of service (F=4.972; p=.008) during the time interval.

Raber and Frechtling (1985) made some comparison between rates of change in classification which took place for children who had been identified at either the preschool or the kindergarten levels. They found some differences between these two groups. Students who were initially identified in kindergarten were 2.5 times more likely to be terminated than those identified as preschoolers. The tendency to place kindergarten students in more restrictive programs in elementary school nearly doubled the rate for preschoolers. The present study supports the increased rates of termination of children identified at the elementary level over that occurring in preschool. Termination rates increased from 18.5% to 26.5% in the transition from preschool to elementary school. This increase is considerably less dramatic than what Raber and Frechtling found and probably reflects the moderating influence of considering all of the elementary grades rather than only kindergarten.

Also, in contrast to Raber and Frechtling, rather than increased rates of more restrictive programming the rate dropped from 38.8% to 19.5% from the preschool to elementary grades. In this rural area, preschool services are provided on a consultant basis within the child's home. Only the most severely handicapped children would be placed in a program prior to school age. Therefore, when the child becomes school age if any special education classroom services are found to be necessary the student would have a change toward a more restrictive type of service. This practice is unlike

that described by Raber and Frechlting where several program placements were available prior to school placement. Once already in a special education program the chances for change were reduced for students at the preschool level.

Travis et al., (1985) found both young and old students move toward less time in special education over a three year interval. Secondary students spent a greater percentage of time in regular education (40 to 60%) compared to elementary students (20 to 40%). The movement toward spending less time in special education varied among classifications. When individual students were tracked however, the pattern was for elementary students to gradually move toward greater integration into regular education and for secondary students to move at a faster rate.

The present study did not find similar patterns of change. At the elementary level more students received an increase (44.4%) in amount of service rather than a decrease (34.4%). Not until the secondary level did the rate of change favor less time in special education. The trend, however, varied by initial classification (see Table 11). Only secondary LD students received noticably more service in regular education programs over time. This shift did not occur until the high school grades since they were at least in the seventh grade at the initial study time. There was little change for EI or elementary LD students over time.

For students initially classified EMI there was a considerable decrease in time in regular education. This

dramatic change was due to the number of students who were reclassified SMI from the EMI group (24.1%) and moved in large part to full time categorical room placements. For students who continued to be classified EMI at the time of follow-up, the trend was in the opposite direction. For elementary students 33.8% and for secondary students 49.6% of

Table 11

Number of minutes and percentage of time in regular education by mildly handicapped students

		84-85 Minutes/Percentage	87-88 Minutes/Percentage
LD	elementary	1128.3/62.7	1094.1/61.0
	secondary	1175.3/65.4	1458.4/81.1
EI	elementary	1042.8/57.9	1090.8/61.0
	secondary	1086.1/60.4	1099.1/61.1
EMI	elementary	805.0/44.7	439.3/25.0
	secondary	835.7/46.3	539.7/30.0

their time was in regular education. Overall, in these rural districts it appears that change for the LD student is related to grade level, while for the EI and EMI student it is more closely related to the classification. Interestingly, although the students did not demonstrate an increase in percentage of time in regular education as Travis et al., (1985) had found, they nevertheless spent as much, if not more, time in regular education programs.

Wolman et. al., (1989) investigated the rate of

reclassification across elementary (combination of preschool and elementary levels) and secondary levels and found the majority of change to occur at the secondary level. In the suburban schools studied, over 60% of the reclassifications occurred at the secondary level compared to 24% during the elementary grades. In the present study in a rural setting, however, the secondary grades were the most stable (12% reclassified) with a greater percentage of reclassification occurring at the elementary level (68% reclassified) and an additional 20% reclassified at the preschool level. Termination was also most likely to occur during the elementary grades (79.9%) compared to the secondary level (9.0%) and the preschool level (11.2%).

Termination rates were not investigated by Wolman et. al. (1989) and they chose to exclude students who had been terminated prior to the secondary grade level (grade 10). From Raber and Frechtling, Walker et. al., and the present study it was consistently noted that the most frequent type of classification change for the SLI student was termination. Therefore, Wolman et. al. followed a much reduced SLI group at the high school level. The higher rates of reclassification, out of context of termination, would tend to inflate the timing of changes that occur within the SLI category at the secondary level. Also, these studies may point out a difference between urban/suburban and rural delivery systems. It is likely that there are a greater number of services and alternatives available in and around

the cities. Services in urban and suburban areas, provided for one classification (eg., SLI), may be extended for longer periods of time than in rural areas.

Hypothesis D There will be a lower percentage of change in classification, type of service, and frequency of service when the professional decision makers are the same rather than different over time.

A second school factor investigates the relationship between school personnel attending the MDT and IEP meetings, and the nature of the decisions made on the classification and programming to be provided. It was hypothesized that there would be a lower percentage of change in classification, type of service, and frequency of service when the professional decision makers (ie., itinerants and special education teachers) were the same rather than different over time.

Within this ISD, the non-teaching professionals are staff members of the ISD and travel usually to several different local schools. The itinerant staff may vary at the local school level from year to year as different school assignments are made. There is also a tendency for different grade levels to be assigned to different professionals. In order to investigate the impact of professional decision makers on percentage of change more precisely, the MDT was broken into two groups: the itinerants and the special education teachers.

Itinerants Staff

First, considering the non-teaching or itinerant staff

(ie., school psychologists, social workers, speech therapists, etc.) and whether personnel changes between three year re-evaluations influence the rate of change for students, nonsignificant differences were found in rates of change in classification (χ^2=2.760; p=.097; see Table B-42). Significant differences, however, were found in rates of change in programming [type of service (χ^2=15.616; p≤.001; see Table B-43) and frequency of service (χ^2=8.1374; p=.004; see Table B-44)]. The hypothesis that there would be a lower rate of change when the itinerant staff remained the same was supported for programming decisions, but there was not support for a lower rate of change for classification decisions.

Regarding the rate of change in classification, when the itinerant staff was the same across meetings it did not significantly lower the chance for change (Same = 42.9%; Different = 36.2%). There were, however, significant (χ^2=65.118; p≤.001; see Table B-45) differences in the nature of changes made. It seems that the natural tendency for a MDT is to reconfirm decisions which have already been made. It is reasonable that a group working together would maintain prior perceptions of a student's need. Those teams which have at least one "new" member have a source for different perceptions and may entertain other classification possibilties. When the itinerants remained the same they were much more likely to terminate (84.2%) rather than reclassify the student (15.8%). When the itinerants were

different they were more likly to reclassify (68.1%) than terminate (31.9%). MDT's that have been together on a particular case, being familiar with the student, are more likely to terminate ("We know this child and we know what he/she can do"). For the stable team to reclassify may be unfortunately perceived as admission of error. Teams with new members are less familiar with a particular student and are more likely to reclassify ("The other team made a mistake").

Perhaps a similar dynamic comes into play here as that described by O'Reilly, Northcraft, & Sabers (1989) as a "confirmation bias" for students being evaluated initially. At the time of initial evaluation the evaluators tend to perferentially gather and attend to information which confirms their hypothesis (ie., teacher referral, etc.) while failing to attend to information which may be contradictory to their hypothesis. With re-evaluations the "confirmation bias" may be even stronger since it is known that the student has already been identified as handicapped. When the evaluators are the same over time, a change may bring about misgivings about reversing a former decision and disrupting the ongoing services.

When type of program is considered, there is a lower percentage of change when the itinerant members were the same (22.0%) rather than different (39.8%). Both groups slightly more often choose more restrictive rather than less restrictive programming options (nonsignificant differences

χ^2=.162; p=.687; see Table B-46). This pattern held true for frequency of service as well. When the itinerant members were the same, there was somewhat of a lower percentage of change (63.6% to 75.9%). The overall pattern for both MDT groups was again to choose more time (nonsignificant differences, χ^2=.585; p=.444; see Table B-47) in special education rather than less. These programming decisions are not unexpected as the members of the MDT teams tend to change between levels of schooling (eg., elementary, secondary). In addition, in small rural districts there may often be little choice in the type of program available. Therefore, the changes regarding the type of program may follow closely the pattern of programs that are established across grade levels within the school system. Thus, changes or lack of them, between school grade levels would certainly affect both the make-up of the MDT and the program options. When the time of service was analyzed on a continuous level, the itinerant staff members being the same/different was not significantly related to the time a student was in a classroom program (F=.164; p=.686) or related to changes in these services over time (F=1.111; p=.293).

Special Eduaction Teachers

Second, considering the teaching staff and whether personnel changes between three year re-evaluations influence the rate of change for students, with regard to classification decisions, there were not significant differences (χ^2=.747; p=.387; see Table B-48). When the

teacher was the same there was a 22.5% rate of change in classification. When the teacher was different the rate decreased to 18.5%. Although the rates of change did not differ significantly the nature of the changes differed significantly (χ^2=9.668; p≤.002; see Table B-51). When changes were made, there was greater likelihood of reclassification (93.8% versus 65.2%) over termination when the teachers were different over time.

With regards to changes in type of program (χ^2=42.415; p≤.001; see Table B-49) changes related to the same teacher attending the meeting were highly significant. When the teacher was the same, only 2.1% of students made a change in the type of program, however, when the teacher was different 37.3% made a change. Differences in the nature of change (ie., to more or less restrictive services) was not significantly related to teacher consistency (χ^2=3.277; p=.070; see Table B-52).

With regards to changes in frequency of service (χ^2=29.798; p≤.001; see Table B-50) the special education teacher being the same or different over time was again highly significant. There was less of a chance of the amount of time in a program changing when a teacher was the same (44.7%) rather than different (75.5%). Teacher consistency was not, however, related to the nature (more or less time) of the change (χ^2=2.656; p=.103; see Table B-53). The directional hypothesis that there would be a lower percentage of change when special education teachers were the same was

supported for programming decisions (type and frequency of service), but there was not support for a lower percentage of change in classification.

When investigated on a continuous basis, teacher consistency was highly correlated with the number of minutes in a program at follow-up ($F=4.799$; $p=.029$), but was not significantly related to changes in the minutes of programming over time ($F=1.767$; $p=.185$). When the teacher remained the same the students averaged 899.6 minutes of classroom time at follow-up and an increase of 64.1 minutes over time. When the teacher was different the students averaged 736.0 minutes of classroom time at follow-up and a decrease of 36.5 minutes over time. Part of the reason for this difference was that teachers being the same is indicative of a self-contained program serving a broader range of ages as is found with the more severe handicaps. This reason alone cannot explain the difference in total, however, as there were not significant ($\chi^2=3.544$; $p=.170$) differences in the rates of teachers which were found to be same or different across types of programming (consultation, resource room and categorical room services).

Hypothesis E There will be no difference between males and females with respect to percentage of change in classification, type of service, and frequency of service.

Having completed an analysis of findings related to family and school factors, in the following section we will focus on several child factors (gender, student I.Q., and

student achievement) and some additional concerns will be addressed as they relate to change in classification, type of service and frequency of service.

There was no significant difference in the classification decisions made (χ^2=.405; p=.524; see Table B-54) for males and females. This finding is consistent with that of Walker et. al., Wolman et. al., and Raber and Frechtling as gender was not found to be related to changes in classification either at the elementary or secondary school levels. Also, no significant differences were found in the nature of change (ie., reclassification or termination) related to gender (χ^2=.116; p=.733; see Table B-57).

Raber and Frechtling found gender to be related to the type of service which was provided at the time of follow-up. With initial classification and level of service held constant, males were more likely to be in more restrictive types of programs at follow-up than females. In contrast, Edgar, Heggelund and Fisher (1988) tracking change in the type of program did not report differences in the outcome related to gender. In this study, rates of change in type of program related to gender were significant (χ^2=4.102; p=.043; see Table B-55) as 36.1% of the males made a change compared to 26.6% for the females. The percentage of students moving to more restrictive programs was greater for females (males 52.6%; females 73.2%) while males moved into less restrictive programs significantly (χ^2=5.224; p=.022; see Table B-58)

more often than females (47.4% to 26.8%).

No report of a difference related to gender was referred to by Travis, Thomas and Fuller in their follow-up of the percentage of time spent in regular education. In the present study a significant difference (X^2=7.948; p=.005; see Table B-56) was found for changes in frequency of service. Males had changes in the amount of time in special education more often than females (males, 76.4%; females 63.0%). For those that did change there was nearly an equal percentage of students receiving more time in their programs (males 53.8%, females 57.7%) and less time in special education placements (males, 46.2%, females 42.3%). These trends in the nature of change were not significant (X^2=.340; p=.560; see Table B-59). Significant differences related to gender were in changes in both type and frequency of service, but not for classification changes. There was a failure to reject the null hypothesis regarding gender and differences in percentage of change across classification and programming.

Are these patterns also evident when investigating the actual minutes of programming? Gender was unrelated to the amount of time in therapy (F=.448; p=.504) or changes in amount of therapy (F=.0005; p=.982). A student's gender was not significantly (F=2.776; p=.097) related to the number of minutes in a classroom program at the time of follow-up (mean minutes for males=747.17; mean minutes for females=843.59). Also, there was no significant difference in change of amount of service over time (F=.023; p=.879) related to gender.

In the present study, gender was found to be unrelated to changes in classification. The type of programs were significantly different related to gender. Changes in frequency of service were found to be related to gender on a categorical level, but not on a continuous level. Females received more time in special education. Although more males are placed in special education (67.3% to 32.7% in this district) when females are placed they are apparently more severely handicapped as they are given more time in special education. In terms of change in classification decisions, a gender bias is not operative. In terms of programming decisions, however, a gender bias is evident for changes in both type and frequency of service. The nature of the bias may well begin in the decision as to who should be referred and then continued with different interventions being provided. Without further information on the severity of the handicaps the scope of the bias could not be determined.

Student I.Q.

Another child factor is the student's I.Q. I.Q. scores as measured by the WISC-R were categorized on the basis of a modification of Wechsler's Intelligence Classifications. First, I.Q. categories were analyzed for a relationship with rate of change in classification. Significant differences were not found between Verbal Scale I.Q. (χ^2=7.893; p=.096; see Table B-61); Performance Scale I.Q. (χ^2=2.327; p=.676; see Table B-64) or Full Scale I.Q. (χ^2=4.961; p=.291; see Table B-69) and percentage of change in classification. When

I.Q. was categorized, Verbal and Performance scale results showed a decreasing rate of change ranging from 30-40% for the 1-69 IQ category to approximately 15-20% for IQ's within the 90-99 category. The Full Scale IQ showed the least change at the 1-69 IQ category because it included single scores for many within the SMI classification. When the SMI group was included the mean Full Scale IQ was 73.7 and when this group was excluded the mean IQ was 88.4. None of the SMI students experienced a change in classification thus depressing the overall rate of change. Another confounding factor in trying to analyze change in classification was that change was a combination of two different outcomes, that being reclassification and termination. Unfortunately, there were insufficient cases of change by termination or reclassification to be analyzed separately across the IQ categories. When evaluated separately neither termination nor reclassification rates were significantly different across I.Q. levels. The Full Scale score came closest to significance (χ^2=4.458; p=.216). From visual inspection of the data it was evident that with increasing IQ there was is a decreasing rate of reclassification and an increasing rate of termination. Of those reclassified, three quarters of the cases had an IQ score under 90. In contrast, of those students terminated only 15.4% had an IQ below 80. Therefore, of the two outcomes, reclassification clustered more frequently with lower IQ and termination clustered more frequently with higher IQ. When added together, they

resulted in a flat classification change rate across IQ categorical levels.

When mean I.Q. differences between outcome groups were analyzed on a continuous basis with the SMI excluded (The SMI were excluded because of no change occurring in classification), significant differences were found across scales: Verbal Scale ($F=4.933$; $p=.002$), Performance Scale ($F=8.350$; $p\leq.001$), and Full Scale ($F=8.245$; $p\leq.001$). Students who were reclassified had significantly lower IQ's than students who remained the same, were terminated, or dropped out (see Table 12). In addition, students who remained unchanged had significantly lower IQ's than students who were terminated or who dropped out. The significance of these findings remained essentially the same when only mildly handicapped (EI, EMI, & LD) were analyzed.

Based on group administered IQ or aptitude tests Wolman

Table 12

Student Outcome and I.Q.

	Means		
Outcome	VSIQ	PSIQ	FSIQ
Same	87.8	94.7^	88.4^
Reclassified	79.3*	83.2*	77.8*
Terminated	96.2	106.9	100.7
Dropped Out	94.3	106.6	99.4

^ .05 between same and terminate or dropped out
* .05 between reclassify and all other outcomes

et. al. found IQ to be a significant predictor of categorical change in classification by reclassification. The authors did not specify whether IQ predicted lower or higher reclassification rates. Because of this it is impossible to determine if there were consistent findings between studies. In spite of this IQ does serve as one indication of possible change in classification and in the nature of the change. Differences between outcomes were not only statistically significant but of practical significance. Students that remained the same generally performed within the Dull Normal range of Wechsler's classifications. Students that were reclassified performed within the Borderline range and those that were terminated or dropped out performed within the average range. This finding underscores the importance of gathering IQ data. This could serve the school psychologist by bringing to mind questions related to the likelihood of change and its impact on program options within the district. Knowledge of trends in this area within a district would also serve to increase opportune communication between MDT members by way of interdiscplinary referrals and coordination of services.

Second, in the programming area, changes in type and frequency of service were analyzed at the categorical level. With regard to changes in type of program, Verbal Scale I.Q. was not significant (χ^2=7.971; p=.0926; see Table B-62), however, Performance Scale I.Q. (χ^2=14.590; p=.006; see Table B-65) and Full Scale I.Q. (χ^2=.289; p≤.001; see Table B-68)

were significantly related. The percentage of change in type of program increased from less than 10% within the 1-69 IQ category to 50% in the 100 and above IQ category. The nature of the change was fairly consistent. With increasing IQ there was a decreasing percentage of students changing into more restrictive settings, while there was an increasing percentage of students moving into less restrictive settings. For students with IQ's within the 100 and above category, there continued to be a high rate of change into less restrictive programs; however, there was also an increase in the percentage of students moving into more restrictive programs. This may be due to other factors becoming dominant within the higher IQ categoies. Some EI students, for example, had considerably above average cognitive skills, but were placed in the highly restrictive settings. In cases like this, behavioral and emotional needs may play a greater role in determining the type of program. Again the IQ was related to change in the type of program and would be one indicator of the severity within a classification and thus helpful in determining the level of intervention.

Table 13 shows the mean I.Q. levels (the SMI were excluded because of no change in type of service) between types of program outcomes (same, more or less). When analyzed on a continuous basis significant differences were found across Verbal Scale ($F=4.746$; $p=.010$), Performance Scale ($F=8.495$; $p\leq.001$), and Full Scale I.Q. ($F=11.247$; $p\leq.001$). For each IQ scale a similar pattern of change was

found. Mean I.Q.s were very similar for students remaining in the same type of service and for those moving into more restrictive types of service while both of these groups had significantly lower IQs than students moving into less restrictive types of services. These significant findings continued to be true when only the mildly handicapped (EI, EMI, LD) were examined.

With regard to changes in frequency of service the Verbal Scale (X^2=20.135; p≤.001; see Table B-63), Performance Scale (X^2=15.381; p=.004; see Table B-66), and Full Scale I.Q.s (X^2=117.768; p≤.001; see Table B-69) were again significantly related to change. The pattern of change, when all students were included, for all three IQ scales resulted in a bell shaped curve with the apex at the 80-89 IQ category, followed by a gradual reduction in rate of change

Table 13

Mean IQ for Type and Frequency of Service Outcomes

Educational Outcome	Mean VSIQ	PSIQ	FSIQ
Type of Service			
Same	84.9	90.3	83.5
More	84.5	90.2	84.4
Less	91.8^	101.4^	96.2^
Frequency of Service			
Same	89.2	96.7	80.8
More	84.7	90.3	85.2
Less	87.4	94.5	89.7*

^ .05 between less and other types of service
* .05 between less and same frequency of service

with IQ's either above or below this range. Rates of change were even between more and less time. As with type of programming change, the percentage of students with IQs above 100 receiving more service in special education increased.

When analyzed on a continuous basis (with the SMI excluded) significant differences continued to be noted only on the Full Scale IQ compared to the educational outcomes of same, more, or less time of service (Verbal Scale: $F=1.427$; $p=.242$, Performance Scale: $F=2.059$; $p=.130$, and Full Scale: $F=3.932$; $p=.021$). When only mildly handicapped (EI, EMI, & LD) were investigated there was no significant difference found between mean IQs of students receiving the same, more, or less service over time.

Categorical results including all classifications found IQ was not significantly related to change in classification, but that IQ was related to programming changes. When IQ was analyzed on a continuous basis, with the SMI group excluded, significant differences were found between classification outcomes of reclassification and termination. Students that were reclassified had lower IQs than students who remained the same or were terminated. Students that were terminated had IQs higher than those who remained the same. In the programming area, IQ was related to changes in type and frequency of programming across classifications.

IQ differences which are significant across classifications are difficult to interpret. At first glance an obvious point seems to surface. With higher IQs there is

change toward less restrictive types of programs and less amounts of time in special education. Similarly, with lower IQs there is change toward more restrictive types of programs and more time in special education. These findings were highly significant without the SMI group included and even more so with them included. But does this hold true within single classifications. For mildly handicapped (EI, EMI, LD) the significant differences continued to be present for changes in classification and type of program. For frequency of programming, however, the differences were no longer significant for Verbal Scale ($F=1.329$; $p=.267$), Performance Scale ($F=1.414$; $p=.246$) or Full Scale IQ ($F=2.675$; $p=.071$). Therefore when the span of classifications was narrowed IQ was not found to be related to the amount of time spent in special education. However, across and within classifications student IQ was found to be related to changes in classification and type of programming. These findings, although based on group data, could be helpful to the school psychologist as one important indicator of severity of a specific handicap, serve as an indication of risk for change to a more impacting classification (ie., LD over SLI), and in planning for the most appropriate intervention. The findings indicate that IQs below 80 or above 90 could be signals that change in classification and type of program is more likely in the student's future.

Current Achievement

Another student factor considered was current achievement in reading, mathematics and written language. Significant relationships were not found between classification changes and reading (χ^2=2.518; p=.472; see Table B-70), mathematics (χ^2=5.682; p=.128; see Table B-73), or written language (χ^2=2.517; p=.472; see Table B-76). No significant relationships were found between type of service and reading (χ^2=4.036; p=.258; see Table B-71), mathematics (χ^2=2.203; p=.531; see Table B-74), or written language (χ^2=2.262; p=.520; see Table B-77). No significant relationships were found between frequency of service and reading (χ^2=4.185; p=.242; see Table B-72), mathematics (χ^2=4.734; p=.192; see Table B-75), or written language (χ^2=2.96; p=.398; see Table B-78). In addition, little pattern or trend was visually appparent. One exception to this was in the area of mathematics which did approach significance. It appeared that as mathematics scores increased the percentage of students experiencing a change in classification decreased.

When analyzed on a continuous basis, with the SMI again excluded due to no change in classificaiton, there were significant differences between student classification changes and reading (F=5.522; p=.005), mathematics (F=14.547; p≤.001) and written language (F=5.757; p=.004). Table 14 displays the differing achievement levels obtained by various student outcomes. Wolman et. al. found reading achievement

Table 14

Student Outcome and Achievement

Student Outcome	Mean Standard Score Reading	Mathematics	Written Language
Same	77.30^	79.35^	76.34^
Reclassified	74.26*	71.55*	74.08*
Terminated	88.82	95.00	87.91
Dropped Out	84.00	83.67	80.67

^ .05 between same and terminated
* .05 between reclassified and terminated

level to be predictive of categorical changes by reclassification. There was no analysis of the nature of the relationship between reading and reclassification making a comparison of results impossible. In the present study, students that were reclassified had significantly (.05 level using the Student-Newman-Keuls procedure) lower academic achievement in reading, mathematics and written language than students who were terminated. In addition, there were significant differences between students who remained the same and those who were terminated (.05 level using the Student-Newman Keuls procedure).

Again at the continuous level (with the SMI excluded) differences between type of service outcomes (same, more, less) were not significant with reading (F=1.680; p=.188), mathematics (F=2.573; p=.078), or written language (F=.044; p=.958). Likewise, with frequency of service significant outcome group differences were not found in reading (F=.755; p=.471), mathematics (F=1.861; p=.157), or written language

(F=.036; p=.965). Achievement was not found to be related to changes in programming, either in type or frequency of the services received.

Overall, although at the categorical level achievement was not found to be related to change in either classification or programming, achievement when measured on a continuous basis was found to be significantly related to changes in classification only. Students with the lowest mean achievement were reclassified while those with the highest mean achievement were either terminated or dropped out. Current achievement was not found to be related to whether students received more or less restrictive types of programs or who received more or less time in special education. Considering that schools are in the achievement business and that school psychologists increasingly discuss the need to change the emphasis in re-evaluations with a focus on a more detailed analysis of achievement (academic progress) it is interesting that achievement played such a small role in special education stability issues.

Achievement measures are used to address eligibility criteria, however, research has shown that test scores, including achievement scores, have not been used consistently in a manner described in the criteria (Shepard and Smith, 1981). Also, a considerable overlap on psychometric measures, including academic achievement, has been found to the degree that there were no reliable differences found between groups (LD and low achievers) of students (Ysseldyke,

Algozzine, Shinn and McGue, 1982). Achievement information is routinely gathered and used in making eligibility decisions, but once a student is placed in special education the question remains as to its significance in determining the services provided. Apparently, other criteria become more prominent in determining classification and programming changes. Behavioral factors, such as, disruptiveness in the classroom, noncompliance with directions and assignments, and poor motivation to participate in regular education may become more influential than achievement information.

Number of Concurrent Classifications

Number of concurrent classifications was also examined as it related to changes in classification and programming. The number of concurrent classifications of the student was found to be significantly (X^2=23.256; p≤.001; see Table B-79) related to change in classification. The rate of change in classification over time decreased from 44.3% for students with a single classification to 21.8% for students with two or more classifications. The nature of change (reclassification or termination) was also significantly (X^2=34.317; p≤.001; see Table B-82) related to number of concurrent classifications. Students with a single classification were more likely to be terminated (64.4%) rather than reclassified (35.6%). Students with two or more classifications, on the other hand, were much more likely to be reclassified (93.1%) rather than terminated (6.9%).

Significant differences were also found in rates of programming change. The type of program change rate varied significantly (χ^2=21.411; p≤.001; see Table B-80) between students with one classification and those with two or more. Students with a single classification (39.2%) changed more often than students with two or more classifications (17.6%). Frequency of programming was significantly (χ^2=31.466; p≤.001; see Table B-81) different between students with two or more rather than with one classification. Students with a single classification had a change rate of 78.8% compared to only 51.9% for those with more than one classification. The nature of change was not significantly related to comorbidity for type of service (χ^2=.087; p=.768; see Table B-83) or frequency of service (χ^2=1.677; p=.195; see Table B-84).

When frequency of service as compared to number of concurrent classifications was analyzed on the continuous basis of minutes of programming, significant (F=32.678; p≤.001) differences between groups were found. The mean number of minutes of service at the time of follow-up was 677.0, 1032.5, and 1541.7 for students with one, two, and three or more classifications respectively. Significant differences were also found in the change in amount of service over time (F=6.139; p=.002). Over the three years, students with a single classification experienced a decrease of 68.7 minutes per week in special education. Students with two clasifications on the other hand averaged an increase of 160.9 minutes of service per week. Those with three or more

classifications experienced an decrease of 103.1 minutes each week.

Clarizio (1990) indicated that the number of concurrent classifications (comorbidity) was related to greater risk for substantial problems both in the home and school settings. Citing work from mental health agencies, having more than one presenting problem provides an indication as to the severity of the difficulties. In the educational setting, the present study confirms this view as students with more than one classification were found to have significantly less change in classification or programming over time. The increased frequency of time in special education for students with more than one classification is indicative of pervasive and life impacting handicaps.

School Size

School size was also investigated regarding changes in classification and programming. Schools were grouped, at the time of follow-up, as large (class B school), medium (class C school), and small (class D school) based on the Michigan High School Athletic Association ranking of schools. In regards to classification changes, there was the least percentage of change within large districts (42.9%), somewhat more within small sized schools (45.0%), and the highest rate within medium districts (48.9%). The differences were not significant (χ^2=1.017; p=.601; see Table B-85).

In regards to changes in the type of service there was little difference related to school size. Small size

districts had the least change (37.6%), medium schools had a somewhat higher percentage of change (39.3%), and large schools had the highest rate of change (40.7%). These differences did not reach significance (χ^2=.263; p=.877; see Table B-86). The frequency of service followed a similar pattern of change with little difference related to school size (χ^2=.024; p=.890; see Table B-87). Small sized schools were least likely to have a change in amount of service (83.0%), medium districts were slightly more likely to have a change (83.9%), while large districts were the most likely to change (85.1%) the amount of service for a student over time.

When the factor of school size was analyzed on a continuous basis nonsignificant differences continued to be apparent (F=2.019; p=.134). The average number of minutes in special education was quite similar for large (791.6 minutes weekly) and medium (842.3 minutes weekly) schools, both of these being slighly greater than that for individuals attending small (686.5 minutes weekly) schools. Nonsignificant differences (F=1.463; p=..233) were also found in the amount and direction of change in time of service between school sizes. Students in large districts had an average increase of less than 1.0 minutes in special education, while students in medium size schools had an increase of 42.9 minutes of service. Students in small schools, however, averaged a decrease in service of 100.4 minutes in special education over the interval.

Question III: Factors Predicting Change

What are the effects of family income, parent satisfaction, grade level, MDT composition, gender, IQ, current achievement, and initial classification variables on follow-up classification and programming?

Hypothesis A Student I.Q. will have a positive effect (correlation) on change in classification, type of service, and frequency of service.

Student I.Q. (whether Verbal, Performance, or Full Scale) did not fit a model of change versus no change in student classification. In attempting to fit a model of change it was necessary to include the initial classification since the SLI/not SLI factor was the most salient predictor. This raised the difficulty, however, that few of the SLI students were administered individual I.Q. measures, especially those who remained only SLI over time. The insufficient numbers resulted in many empty cells in the statistical analysis. No combination of additional or other factors were able to sufficently fit the model of change versus no change in classifcation. Therefore, support for IQ having a positive effect on change in classification was not gathered.

In regards to changes in the type of service, student I.Q. was found to be predictive of change. Combined with initial classification, student I.Q. adequately fit the model of change versus no change in type of program. Both factors were recoded in the computation. Initial classification was recoded on the basis of SLI versus not SLI students. Student I.Q. was recoded as I.Q. of 84 and below versus 85 and above.

This cut off score was employed as it was one standard deviation below the mean and was also the approximate mean of the Verbal, Performance, and Full Scale I.Q. results. On this basis, initial Verbal Scale I.Q. (X^2=.153; p=.696), initial Performance Scale I.Q. (X^2=.154; p=.926), and initial Full Scale I.Q. (X^2=.929; p=.628) fit the model of change in type of program. Type of program was categorized on the basis of restrictiveness, in that, consultive, resource room, and categorical room programming options were investigated.

Verbal Scale I.Q. was a significant predictor (Z=3.15; p≤.001) of change as students with an I.Q. of 85 and above had a likelihood of 1.58 to 1.0 of having a change in type of program. Students with an I.Q. of 84 and below had a likelihood of .632 to 1.0 of having a change in type of program.

Performance Scale I.Q. was a significant predictor (Z=2.63; p=.002) of change in type of program. Students with a Performance I.Q. of 85 and above had a likelihood of 1.51 to 1.0 of having a change in type of program compared to a likelihood of .661 to 1.0 for students with an I.Q. of 84 and below.

Student Full Scale I.Q. was also a significant predictor (Z=5.58; p≤.001) of change in type of service. Students with a Full Scale I.Q. of 85 and above had the likelihood of 2.09 to 1.0 of a change, while students with a Full Scale I.Q. of 84 and below had the likelihood of .479 to 1.0 of a change.

In regards to frequency of service, none of the I.Q. measures in combination with other factors were able to fit the model of change versus no change.

In summary, student I.Q. was found to be a significant predictor for changes in type of program only. Because of missing data and variable coverage student I.Q. did not adequately fit the model of change in classification or frequency of service as there was insufficient information to complete statistical computations. The hypothesis regarding the effect of student I.Q. was only supported for programming changes.

Wolman et. al. found IQ based on group administered aptitude tests to be a significant predictor of reclassification with the mildly handicapped (EI, EMI, LD, and SLI). The nature of their prediction was that with higher IQ there were increased rates of reclassification. In the present study higher rates of reclassification were associated with lower IQ. The significance of IQ was not able to be computed as the data was not available except for changes in the type of program. These results indicated that IQ was predictive with lower IQs indicating change toward more restrictive types of programs and higher IQs indicating change toward less restrictive types of programs. Table 15 shows a consistent pattern of decreasing IQ with placements in more restrictive placements. Other studies have not explored IQ, but there is a need for further studies to investigate the predictive nature of IQ.

Table 15

Mean IQ of students placed in different types of programs

Type of Program	IQ		
	Verbal	Performance	Full Scale
Consultation	93.3	104.8	98.6
Resource Room	88.4	97.4	91.9
Categorical Room	80.2	86.4	79.6

Hypothesis B Student current achievement will have a positive effect (correlation) on change in classification, type of service, and frequency of service.

Student achievement levels were not found to adequately fit models of change in classification, type of service, or frequency of service. The achievement levels in reading, mathematics, and written language were recoded on a dichotomous basis. In order to be consistent with the division of IQ achievement was divided by using standard scores of 84 and below as compared to standard scores of 85 and above. None of the achievement measures fit the models of change when combined with other salient factors. The hypothesis regarding the effect of student achievement on change in classification and programming was not supported.

The primary reason that achievement did not fit a model of prediction of change in classification or programming was the extent to which variable coverage was present. Consistently less than half of the handicapped students had

achievement data available in their files (reading 47%, mathematics 47%, written language 44%). In this study it was not possible to combine achievement factors with initial classification (SLI/not SLI) because students with a primary handicap of SLI rarely had achievement results available. In this regard it is interesting to note that the criteria for many special education classifications require that the impairment "adversely affects educational performance" when achievement data is not consistently gathered.

As discussed earlier, on a continuous analysis achievement, in this study, was related to change in classification, but not programming. Wolman et. al. found achievement level in reading (group administered achievement tests in grade 11) to be predictive of reclassification. In the present study, however, achievement in reading, mathematics and written language on an individually administered scale were not able to be sucessfully entered into models to determine the predictive significance for either classification or programming changes.

Hypothesis C Initial classification will have an effect (correlation) on change in classification, type of service, and frequency of service.

The factors which best fit the model of change versus no change in classification were a combination of initial classification and initial grade level. Together these factors fit the model well (X^2=.284; p=.868). In order to have sufficient numbers of students in each category, both factors were recoded on a dichotomous basis. Initial

classification was recoded on the basis of SLI and not SLI. Initial grade level was recoded to combine preschool and elementary students compared to secondary students. Including additional terms (current achievement, family income, parent satisfaction, MDT composition, or gender) was not successful because there were not enough cases and empty cells occurred.

With this combination of predictors, initial classification was a very significant factor ($Z=13.059$; $p \leq .001$). Other things being equal, the net effect of being classified SLI was that there was a 3.69 times greater likelihood of a change in classsification than for all other handicapped categories combined. Initial grade level will be discussed below.

In terms of programming changes, initial classification was again found to be a significant predictor of change in the type of service. The factors of initial classification combined with the initial Performance Scale I.Q. fit the model of change versus no change very well ($X^2=.154$; $p=.926$). It was again necessary to recode the two factors to dichotomous variables. Initial classification was recoded on the basis of SLI versus not SLI. Initial Performance I.Q. was recoded on the basis of an I.Q. of 84 and below versus 85 and above. Within this design, initial classification was highly significant ($Z=4.816$; $p \leq .001$) as a predictor of change. Students that were classified as SLI were 2.13 times more likely to have a change in the type of program than

other special education students. Performance Scale IQ was discussed above.

In the area of frequency of service, initial classification was again a significant predictor of change. Initial classification and special education teacher consistency across IEP meetings best fit the model of change versus no change (χ^2=.602; p=.740). Initial classification was recoded on a dichotomous basis which combined LD, EI, EMI, and S/M students compared to SLI and SMI students. Special education teacher consistency remained coded on a same/different basis.

In this combination, initial classification was a highly significant predictor of change in amount of service (Z=10.032; p=.001). Students intially classified as LD, EI, EMI, or S/M were 5.21 times more likely to experience a change in frequency of service than those classified as SLI or SMI.

The hypothesis regarding the effect of initial classification as a significant predictor of change in classification and programming was strongly supported.

The present finding regarding initial classification operating as a significant predictor of change is consistent with previous literature. Raber and Frechtling (1985) found that preschool and kindergarten children identified as SLI were more likely to be terminated or to require less intensive programming than children with other handicaps after an interval. In addition, a greater percentage of

children identified during preschool compared to kindergarten (80% to 61%) would remain in special education indicating the greater severity of those identified earlier. At the elementary school level, Walker et. al. found initial classification to be significantly predictive of a change in classification by either termination or reclassification. Again, students that were SLI were more likely to have a change than students with other handicaps.

At the secondary level, Wolman et. al. found the SLI condition to be the most significant predictor of change in classification by reclassification. The SLI category alone accounted for 27% of the variance of the nearly 40% that was explained by the variables used. The SLI classification is consistently associated with change that occurs across grade levels. The problem with this predictive factor is that it lumps all other classifications together and says little about change within these groups other than they are less likely to experience a change. The question remains as to the predictors within the other classifications.

Studies seeking to to find significant predictors, such as the present one, are at a great disadvantage because of the problems associated with missing data and variable coverage. The information that is normally gathered to meet eligibility criteria of the individual classifications does not readily support a systematic study across classifications or within a specific classification across factors. Attempts to combine any other factors with initial classification

(SLI/not SLI) met with very limited success. Without the initial classification variable the other factors were not able to adequately match a model of change.

Other Factors

As noted above, initial grade level when combined with initial classification fit the model of change versus no change in student classification. Grade level, although it worked to increase the significance of initial classification was not a significant predictor ($Z=-.071$; $p=.472$) of change in classification. The likelihood of change was very similar whether a student was in preschool and elementary (.993 to 1.0) or secondary (1.007 to 1.0) grade levels.

Although several studies reviewed spanned more than one grade level (preschool, elementary, secondary) this was usually not the primary focus of the study and little attention was given to it. Differences that may be observed between grade levels seem to be especially influenced by local school policy and practices. This topic is an important one, but one which needs to be studied and understood at the local school district level.

Another factor in combination with initial classification adequately fit the model of change versus no change in student classification. This factor was the number of concurrent classifications. When recoded on the basis of one versus two or more classifications and SLI versus not SLI the model of change fit very well ($\chi^2=.002$; $p=.968$). Initial

classification was very significant (Z=13.018; p≤.001); however, the number of concurrent classifications was not (Z=-.394; p=.348). Little has been written on the impact of concurrent classifications and the effect on severity and duration of a handicap in the school setting. Further study of this factor is needed. Other factors including family income, parent satisfaction, MDT composition, and gender, either singly or in combinations, were not found to fit the model of change versus no change in student classification.

Outside of initial classification and student I.Q., none of the other factors attempted fit the model of change in type of program. Regarding frequency of programming, special education teacher consistency in combination with initial classification was found to fit the model well (X^2=.602; p=.740). In this combination initial classification was highly significant (Z=10.032; p≤.001); however, special education teacher consistency was not (Z=1.150; p=.125).

In combination with family income, however, special education teacher consistency was a significant predictor of change in frequency of service. These two factors fit the model of frequency change nearly as well as initial classification and teacher consistency (X^2=.627; p=.661). Special education teacher consistency was now, in this combination, highly significant (Z=-5.562; p≤.001) in predicting change in frequency of service. If the teacher remained the same the odds were .362 to 1.0 of a change in frequency but increased to 2.763 to 1.0 when the teacher was

different over time. At this time there are no other studies which address the influence of teacher consistency on changes in special education over time. Again, further studies of this factor are needed.

Family income in this combination was not significant (Z=-.547; p=.291). The odds of a change in frequency of service varied little between "poor" (.905 to 1.0) and "not poor" (1.105 to 1.0).

V. SUMMARY AND RECOMMENDATIONS

This dissertation was a retrospective study of special education students (including all handicapping classifications) within a rural area. Three principal questions were investigated. First, what proportion of handicapped students have a change in classification and/or program over a three year period? Second, what factors are related to the changes that occur, and third, what factors predict these changes?

In order to answer these questions 654 students from preschool to graduation were followed over a three year period. Specific information was collected regarding family (income and parent satisfaction), school (grade level and MDT membership), and child (gender, IQ, current achievement, and classification) factors as well as some additional factors. Classification and programming issues were analyzed over time with respect to the percentage of change that occurred, on a bivariate basis with respect to factors related to change, and on a logistic regression basis with regard to factors which best predict change. In addition, amount of programming time (minutes), student IQ, and current achievement were analyzed on a continuous level with respect to possible group differences between outcomes of the dependent variables.

With regard to the percentage of change in classification it was found that 21.9% of the students were terminated and 16.3% were reclassified within the three years

yielding a total rate of change of 38.2%. Highly significant between classification differences were found in the rate of change. Consistent with previous studies, SLI students were most likely to change while SMI students were least likely to change. Of particular interest was that over 21.5% of the mildly impaired (EI, EMI, LD) and the S/M students had a change in classification. Changes in programming were more frequent as 32.8% of the students had a change in type of program and 71.2% had a change in the amount of time in special education. The rate of change again significantly varied between classifications.

What factors were related to these changes? On the basis of bivariate analysis two factors were significantly related to change in both classification and programming (including type and frequency of service). These factors were initial grade level and number of concurrent classifications. In addition, student gender and IQ, as well as, consistency of MDT (itinerant and special education teacher) members were related to change in programming including both type and frequency of service. As measured in this study, family income, parent satisfaction, student achievement and school size were unrelated to change in either classification or programming.

Intial grade levels showed that for students experiencing change in classification preschoolers were more often reclassified while elementary students were more often terminated. The secondary grades were the most stable for

classification. Programming, both type and frequency, became increasingly stable across grade levels. Of the students changing, preschoolers more often moved to more restrictive programs and more time in special education while secondary students more often moved to less restrictive programs and less time in special education.

Consistency of MDT itinerant and teacher members was significantly related to the nature of change. When the MDT members were consistent across evaluations there was more likely to be termination of service rather than reclassification. When MDT members were "new", changes in classification were more likely to be reclassifications. Programming changes were less likely when MDT members were consistent across IEPs.

Across all classifications, IQ (Performance and Full Scale WISC-R scores) was related to changes in programming. Lower IQs were related to receiving more restrictive programming and more time in special education, while higher IQs were related to receiving less restrictive programming and less time in special education. The pattern of change in time of service was no longer significant when only the mildly handicapped (EI, EMI, LD) were considered.

Gender was related to programming changes in that males were more likely to move toward less restrictive settings and reduced time in special education than females.

What factors were predictive of changes in classification and programming? Initial classification was a

significant predictor of change in all classification and programming areas. Student IQ was a significant predictor of change in type of program and MDT teacher consistency was a significant predictor of change in frequency of service.

In terms of classification, change was most likely to occur for the SLI student who was at the preschool or elementary grade level and had one special education classification. The nest most likely to change was the EMI student (by reclassification) during the elementary grade level.

Conversely, change was least likely to occur for the SMI student who was at the secondary grade level and had more than one special education classification.

Conclusions

1. There was a greater percentage of change in the classification and programming of special education students than what many school psychologists and special educators perceive there to be. These higher rates have now been found across urban, suburban, and rural communities.
2. Rates of change in classification and programming varied significantly between initial classifications.
3. Programming changes were significantly more frequent than classification changes.
4. In terms of grade level, classification and programming becomes more stable with higher grade levels. These

different rates of change suggest that special education, in this rural area, operates as three subsystems with varying priorities and concerns rather than as a singular system.

5. The special education criteria serve primarily as a cut off score for eligibility, but the same criteria do not operate as a means for determining severity of need. Because of this the eligibility criteria do not provide a means of comparing students within or between classifications.
6. The SLI students were more likely to experience a change than other students. The EI and LD students, when grouped, did not experience more frequent change than the EMI, SMI, and S/M students, when grouped.
7. The initial classification of SLI was highly predictive of change in both classification and programming.
8. Within the mentally impaired classifications there was significantly more change in classification and programming for the EMI student than the SMI (including TMI and SMI) student.
9. In terms of MDT composition, consistency of decision makers at IEPs had a significant impact on the nature of change experienced by students. When the MDTs remained the same there was a greater likelihood of termination and when they were different there was a greater likelihood of reclassification.
10. Analyzed on a categorical basis, family factors of income

and parent satisfaction were not significantly related to changes in classification or programming.

11. Analyzed on a categorical basis, the school factor of grade level (preschool, elementary, and secondary) was significantly related to change in both classification and programming. MDT composition was related to change in programming.
12. Analyzed on a categorical basis student factors of gender, IQ, and achievement (reading, mathematics and written language) were not related to changes made in classification. Student IQ and gender were related to change in type and frequency of programming.
13. Analysis of outcomes on a continuous basis resulted in more statistically significant findings than when analyzed on a categorical basis, but few of the findings were of practical utility for the school psychologist. An important exception to this was the IQ differences found between classification outcomes of termination, reclassification, and remaining the same. Students that were reclassified had significantly lower IQs than other students. Students that were terminated had significantly higher IQs (Performance and Full Scale) than students that remained the same.
14. Student achievement was not found to be related to change on a categorical basis. When analyzed on a continuous basis achievement was related to classification changes, but not programming changes. Students that were

reclassified had significantly lower achievement scores than students that were terminated.

15. The number of concurrent classifications was significantly related to change in classification and programming. Changes occurred at a greater rate for students with a single classification than for students with two or more classifications.
16. Males were more likely to experience a change in the time spent in special education than females.
17. School size was not related to change in classification or programming.
18. In a rural area "poor" families were found to be more mobile than "not poor" families.
19. A greater percentage of special education students drop out of school than regular education students. Drop out rates vary significantly between special education classifications.
20. Few students across classifications had similar data gathered. As information is naturally gathered in these rural schools the problem of variable coverage often negates investigations of the effect various factors have either singularly or in combination on student services.
21. There are a limited number of factors which were predictive of change. The findings are based on combinations of several classifications and at this time the applicability within a single classification remains a question.

Implications for School Psychologists as Clinicians

Several points surfaced regarding change for special education students that have practical application for school psychologists.

1. Differences in rate of change between grade levels would be of use in prioritizing cases for re-evaluation. If a choice had to be made between referrals, the younger student would be the first priority since it was found there was increasing stability of services over time.
2. Since comorbidity is an indication of severity and is related to chances of change in special education, the number of concurrent classifications could be considered in developing appropriate services for students. For example, some students with one classification may benefit from a short term intensive service where return to regular education is considered an imminent possibility. This could make treatment more complex, but would increase the options available to students and staff.
3. The age when a student was identified and services began are sometimes related to severity and should not be lost information.
4. Leadership on the MDT tends to be the responsibility of the school psychologist. An awareness of the influence of team membership consistency on the decision making process would be helpful.

5. Changes made in either programming or classification should not be considered as error. Both the special education system and the child change over time. The nature, extent and possible mixture of educational handicaps are likely to change over time.
6. There has been a growing trend, fueled by fiscal restraints, criticisms of testing procedures, and advocacy for cross categorical services, toward redesigning the re-evaluation process. Part of the reform design places a greater emphasis on intervention (ie., design, observe, and assess interventions) with decreasing emphasis given to eligibility concerns. This study, however, underscores the importance of comprehensive re-evaluation services including a review of eligibility criteria. The relatively high rates of change within most categories stress the importance of the re-evaluation process.
7. Advocates of special education reform have argued that IQ assessment should only be conducted with a small percentage of students evaluated (Reschly, 1988). In this study, however, IQ was found to be related to different types of change in classification. Information regarding student IQ continues to be an important determinant of severity and duration of a handicap. This information is essential in developing interventions tailored to student needs and in insuring that services are provided within the least restrictive environment.

Implications for School Psychologist as Consultant

1. In some classifications there is support for increased efforts in the areas of advocacy and design of preventative programming. SLI students, for example, with lower IQs were likely to be reclassified and receive programming which was more restrictive and intense. Knowledge of this increased likelihood would give the school psychologist reasons to advocate for preventative programming. Through more expedient communication with the Speech and Language therapist individuals at risk could be identified sooner and involved in services to ameliorate future educational difficulties.
2. The current lack of measures of severity suggests that school psychologists should develop measures of status and progress in special education which would relate to potential changes in classification and programming. Criteria need to be available which provide more sensitive information than eligibility criteria. As empirically based criteria are developed, they need to be made overtly clear to the student, parents, staff and administration. Rather than have "hidden" or unknown criteria, knowledge of the basis for change would be beneficial for everyone involved.
3. Information concerning the impact of MDT member consistency or inconsistency over time would be important information for schools personnel when determining staff

assignments.

4. School psychologists may need to advise districts that are forced to reduce the amount of dollars spent on re-evaluations. How could cut backs in service be accomplished with minimal risks? The present study points out several guidelines. For re-evaluation purposes:
   a) Priority should be given to younger (preschool and elementary) rather than older (secondary) students.
   b) Priority should be given to students other than those within the SMI, SXI, or TMI classifications.
   c) Priority should be given to students with one rather than more than one classification.
   d) Priority should be given to male rather than female students.
   e) Priority should be given to students with higher rather than lower IQs.
5. School administrators should become aware of the significantly different decisons that MDTs make when the same or different over time. MDTs that remain the same are more likely to terminate a student while those that are different are more likely to reclassify a student.

Implications for School Psychologists as Researchers

Many of the factors which have been traditionally heralded as important influences in what happens to children in school were investigated in this study. Few were found to

be related to changes that occur in special education classification and programming. This finding would support the following needs:

1. There needs to be an investigation of other factors that may be related to change. Within each handicapping classification, factors related to change need to be studied to glean those which affect classification and programming over time.
2. There needs to be further investigation of the differences in special education related to grade level. Many studies reviewed considered a single grade level for examination so little information has been generated as to the extent and nature of the differences between grade levels.
3. There needs to be further investigation of the impact of the stability of the MDT on the types of decisions made at IEPs. There has been some study of the effectiveness of team function but little in regard to the nature of the MDTs decisions over time.
4. There is a need for developing indicators of the severity of a handicap. At this time there is very little means to determine the similarity or disparity amoung a group of students within a classification. The present study found that achievement was not related to changes made in classification or programming. Some pertinent efforts have been reported such as McKinney and Speece with their work in differentiating students on the basis of

behavioral patterns. Social-emotional scales may provide practical information predictive of the needed intensity of programming over time. Also, Singer, Palfrey, Butler, and Walker (1989) have utilized a functional analysis of various behaviors as a means of comparing students across and within school systems.

5. There needs to be research to determine empirically whether changes need to be made in re-evaluation criteria compared to eligibility criteria (eg., should the cutoff score for LD be lower or higher after having been identified). Research also needs to determine whether specific exiting criteria should be developed for each classification.
6. There needs to be research to gain more information about the factor of concurrent classifications. Varying levels of risk and programming needs may be able to be associated with differing combinations of handicaps.
7. Additional longitudinal studies should investigate change within special education in the context of the REI movement.
8. There is a need for research on the students that are terminated from special education and returned to regular education. There is not enough information to know if leaving special education is really a favorable outcome or for which students it is more likely a favorable outcome.
9. There needs to be further research on the differing

decisions that MDTs may make depending on the consistency of team members across evaluations. Does the degree of change on the team relate to the rate of difference in decisions?

APPENDICES

APPENDIX A

REVISED ADMINISTRATIVE RULES FOR SPECIAL EDUCATION

R 340.1704 Determination of trainable mentally impaired.

Rule 4.(1) The trainable mentally impaired shall be determined through manifestation of all of the following behavioral characteristics:

(a) Development at a rate approximately 3 to 4 1/2 standard deviations below the mean as determined through intellectual assessment.

(b) Lack of development primarily in the cognitive domain.

(c) Impairment of adaptive behavior.

(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team which shall include a psychologist.

(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1705 Determination of educable mentally impaired.

Rule 5.(1) The educable mentally impaired shall be determined through the manifestation of all of the following behavioral characteristics:

(a) Development at a rate approximately 2 to 3 standard deviations below the mean as determined through intellectual assessment.

(b) Scores approximately within the lowest 6 percentiles on a standardized test in reading and arithmetic.

(c) Lack of development primarily in the cognitive domain.

(d) Impairment of adaptive behavior.

(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team which shall include a psychologist.

(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1706 Determination of emotionally impaired.

Rule 6.(1) The emotionally impaired shall be determined through manifestation of behavioral problems primarily in the affective domain, over an extended period of time, which adversely affect the person's education to the extent that the person cannot profit from regular learning experiences without special education support. The problems result in behaviors manifested by 1 or more of the following characteristics:

(a) Inability to build or maintain satisfactory interpersonal relationships within the school environment.

(b) Inappropriate types of behavior or feelings under normal circumstances.

(c) General pervasive mood of unhappiness or depression.

(d) Tendency to develop physical symptoms or fears associated with personal or school problems.

(2) The term "emotionally impaired" also includes persons who, in addition to the above characteristics, exhibit maladaptive behaviors related to schizophrenia or similar disorders. The term "emotionally impaired" does not include persons who are socially maladjusted, unless it is determined that such persons are emotionally impaired.

(3) The emotionally impaired shall not include persons whose behaviors are primarily the result of intellectual, sensory, or health factors.

(4) A determination of impairment shall be based on data provided by a multidisciplinary team, which shall include a comprehensive evaluation by both of the following:

(a) A psychologist or psychiatrist.
(b) A school social worker.
(5) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1707 Determination of hearing impaired.

Rule 7.(1) The term "hearing impaired" is a generic term which includes both deaf persons and those who are hard of hearing and which refers to students with any type or degree of hearing loss that interferes with development or adversely affects educational performance in a regular classroom setting. The term "deaf" refers to those hearing impaired students whose hearing loss is so severe that the auditory channel is not the primary means of developing speech and language skills. The term "hard of hearing" refers to those hearing impaired students with permanent or fluctuating hearing loss which is less severe than the hearing loss of deaf persons and which generally permits the use of the auditory channel as the primary means of developing speech and language skills.
(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team which shall include an audiologist and an otolaryngologist or otologist.
(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1708 Determination of visually impaired.

Rule 8.(1) The visually impaired shall be determined through the manifestation of both of the following:
(a) A visual impairment which interferes with development or which adversely affects educational performance.
(b) One or more of the following:
(i) A central visual acuity for near or far point vision of 20/70 or less in the better eye after routine refractive correction.
(ii) A peripheral field of vision restricted to not more than 20 degrees.
(iii) A diagnosed progressively deteriorating eye condition.
(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team which shall include an ophthalamologist or optometrist.
(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1709 Determination of physically and otherwise health impaired.

Rule 9.(1) The physically and otherwise health impaired shall be determined through the manifestation of a physical or other health impairment which adversely affects educational performance and which may require physical adaptations within the school environment.
(2) Determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team, which shall include 1 of the following:
(a) An orthopedic surgeon.
(b) An internist.
(c) A neurologist.
(d) A pediatrician.
(e) Any other approved physician as defined in Act No. 368 of the Public Acts of 1978, as

amended, being §333.1101 et seq. of the Michigan Compiled Laws.

(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1710 Determination of speech and language impaired.

Rule 10.(1) The speech and language impaired shall be determined through the manifestation of 1 or more of the following communication impairments which adversely affects educational performance.

(a) Articulation impairment, including omissions, substitutions, or distortions of sound, persisting beyond the age at which maturation alone might be expected to correct the deviation.

(b) Voice impairment, including inappropriate pitch, loudness, or voice quality.

(c) Fluency impairment, including abnormal rate of speaking, speech interruptions; and repetition of sounds, words, phrases, or sentences, which interferes with effective communication.

(d) One or more of the following language impairments: phonological, morphological, syntactic, semantic, or pragmatic use of aural/oral language as evidenced by both of the following:

(i) A spontaneous language sample demonstrating inadequate language functioning.

(ii) Test results, on not less than 2 standardized assessment instruments or 2 subtests designed to determine language functioning, which indicate inappropriate language functioning for the child's age.

(2) A handicapped person who has a severe speech and language impairment but whose primary disability is other than speech and language shall be eligible for speech and language services pursuant to R 340.1745(a).

(3) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary team which shall include a teacher of the speech and language impaired.

(4) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1711 "Preprimary impaired" defined; determination.

Rule 11.(1) "Preprimary impaired" means a child through 5 years of age whose primary impairment cannot be differentiated through existing criteria within R 340.1703 to R 340.1710 or R 340.1713 to R 340.1715 and who manifests an impairment in 1 or more areas of development equal to or greater than 1/2 of the expected development for chronological age, as measured by more than 1 developmental scale which cannot be resolved by medical or nutritional intervention. This definition shall not preclude identification of a child through existing criteria within R 340.1703 to R 340.1710 or R 340.1713 to R 340.1715.

(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team.

(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1713 "Specific learning disability" defined; determination.

Rule 13.(1) "Specific learning disability" means a disorder in 1 or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain disfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor

handicaps, of mental retardation, of emotional disturbance, of autism, or of environmental, cultural, or economic disadvantage.

(2) The individualized educational planning committee may determine that a child has a specific learning disability if the child does not achieve commensurate with his or her age and ability levels in 1 or more of the areas listed in this subrule, when provided with learning experiences appropriate for the child's age and ability levels, and if the mutlidisciplinary evaluation team finds that a child has a severe discrepancy between achievement and intellectual ability in 1 or more of the following areas:

(a) Oral expression.
(b) Listening comprehension.
(c) Written expression.
(d) Basic reading skill.
(e) Reading comprehension.
(f) Mathematics calculation.
(g) Mathematics reasoning.

(3) The individualized educational planning committee shall not identify a child as having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of any of the following:

(a) A visual, hearing, or motor handicap.
(b) Mental retardation.
(c) Emotional disturbance.
(d) Autism.
(e) Environmental, cultural, or economic disadvantage.

(4) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team, which shall include at least both of the following:

(a) The child's regular teacher or, if the child does not have a regular teacher, a regular classroom teacher qualified to teach a child of his or her age or, for a child of less than school age, an individual qualified by the state educational agency to teach a child of his or her age.

(b) At least 1 person qualified to conduct individual diagnostic examinations of children, such as a school psychologist, a teacher of speech and language impaired, or a teacher consultant.

R 340.1714 Determination of severely multiply impaired.

Rule 14.(1) Students with severe multiple impairments shall be determined through the manifestation of either of the following:

(a) Development at a rate of 2 to 3 standard deviations below the mean and 2 or more of the following conditions:

(i) A hearing impairment so severe that the auditory channel is not the primary means of developing speech and language skills.

(ii) A visual impairment so severe that the visual channel is not sufficient to guide independent mobility.

(iii) A physical impairment so severe that activities of daily living cannot be achieved without assistance.

(iv) A health impairment so severe that the student is medically at risk.

(b) Development at a rate of 3 or more standard deviations below the mean or students for whom evaluation instruments do not provide a valid measure of cognitive ability and 1 or more of the following conditions:

(i) A hearing impairment so severe that the auditory channel is not the primary means of developing speech and language skills.

(ii) A visual impairment so severe that the visual channel is not sufficient to guide independent mobility.

(iii) A physical impairment so severe that activities of daily living cannot be achieved without assistance.

(iv) A health impairment so severe that the student is medically at risk.

(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team, which shall include a psychologist and, depending upon the handicaps in the physical domain, the multidisciplinary evaluation team participants required in R 340.1707, R 340.1708, or R 340.1709.

(3) A determination of impairment shall not be based solely on behaviors relating to environmental, cultural, or economic differences.

R 340.1715 "Autism" defined; determination.

Rule 15.(1) "Autism" means a lifelong developmental disability which is typically manifested before 30 months of age. "Autism" is characterized by disturbances in the rates and sequences of cognitive, affective, psychomotor, language, and speech development.

(2) The manifestation of the characteristics specified in subrule (1) of this rule and all of the following characteristics shall determine if a person is autistic:

(a) Disturbance in the capacity to relate appropriately to people, events, and objects.

(b) Absence, disorder, or delay of language, speech, or meaningful communication.

(c) Unusual, or inconsistent response to sensory stimuli in 1 or more of the following:

(i) Sight.

(ii) Hearing.

(iii) Touch.

(iv) Pain.

(v) Balance.

(vi) Smell.

(vii) Taste.

(viii) The way a child holds his or her body.

(d) Insistence on sameness as shown by stereotyped play patterns, repetitive movements, abnormal preoccupation, or resistance to change.

(3) To be eligible under this rule, there shall be an absence of the characteristics associated with schizophrenia, such as delusions, hallucinations, loosening of associations, and incoherence.

(4) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team. The team shall include, at a minimum, a psychologist or psychiatrist, a teacher of speech and language impaired, and a school social worker.

(5) A determination of impairment shall not be based solely on, behaviors relating to environmental, cultural, or economic differences.

R 340.1703 Determination of severely mentally impaired.

Rule 3.(1) The severely mentally impaired shall be determined through manifestation of all of the following behavioral characteristics:

(a) Development at a rate approximately 4 1/2 or more standard deviations below the mean as determined through intellectual assessment.

(b) Lack of development primarily in the cognitive domain.

(c) Impairment of adaptive behavior.

(2) A determination of impairment shall be based upon a comprehensive evaluation by a multidisciplinary evaluation team which shall include a psychologist.

(3) A determination of impairment shall not be based solely on behaviors relating to. environmental. cultural. or economic differences.

APPENDIX B

TABLES PRESENTING CHI SQUARE DATA

Table B-1

Students moving out of district

n row pct	not out	out	
SLI	191 90.5%	20 9.5%	211 32.3%
LD	199 94.5%	12 5.7%	211 32.3%
EI	60 95.2%	3 4.8%	63 9.6%
EMI	28 90.3%	3 9.7%	31 4.7%
SMI	78 98.7%	1 1.3%	79 12.1%
S/M	56 94.9%	3 5.1%	59 9.0%
	612 93.6%	42 6.4%	654 100.0%

Classification

Table B-2

Students moving within the district

Classification	n row pct	not within	within	
	SLI	200 94.8%	11 5.2%	211 32.3%
	LD	201 95.3%	10 4.7%	211 32.3%
	EI	56 88.9%	7 11.1%	63 9.6%
	EMI	29 93.5%	2 6.5%	31 4.7%
	SMI	76 96.2%	3 3.8%	79 12.1%
	S/M	52 88.1%	7 11.9%	59 9.0%
		614 93.9%	40 6.1%	654 100.0%

Table B-3

Combination of moving out of and within district

	n row pct	not moved	moved	
Classification	SLI	180 85.3%	31 14.7%	211 32.3%
	LD	189 89.6%	22 10.4%	211 32.3%
	EI	53 84.1%	10 15.9%	63 9.6%
	EMI	26 83.9%	5 16.1%	31 4.7%
	SMI	75 94.9%	4 5.1%	79 12.1%
	S/M	49 83.1%	10 16.9%	59 9.0%
		572 87.5%	82 12.5%	654 100.0%

Table B-4

Students moving into the ISD district

n row pct	not into	into	
SLI	208 98.6%	3 1.4%	211 32.3%
LD	180 85.3%	31 14.7%	211 32.3%
EI	51 81.0%	12 19.0%	63 9.6%
EMI	28 90.3%	3 9.7%	31 4.7%
SMI	62 78.5%	17 21.5%	79 12.1%
S/M	55 93.2%	4 6.8%	59 9.0%
	584 89.3%	70 10.7%	654 100.0%

Classification

Table B-5

Students drop outs

	n row pct	not dropped	dropped	
Classification	LD	191 96.0%	8 4.0%	199 47.3%
	EI	53 88.3%	7 11.7%	60 14.3%
		244 94.2%	15 5.8%	259 100.0%

Table B-6

Students moving and parent satisfaction

	n row pct	parent satisfaction not satisfied	satisfied	
moving	did not move	37 17.4%	176 82.6%	213 86.2%
	moved	5 14.7%	29 85.3%	34 13.8%
		42 17.0%	205 83.0%	247 100.0%

Table B-7

Students moving and family income

	n row pct	family income poor	not poor	
moving	did not move	65 31.0%	145 69.0%	210 84.0%
	moved	24 60.0%	16 40.0%	40 16.0%
		89 35.6%	161 64.4%	250 100.0%

Table B-8

Students with a change in classification

n row pct	no change	change	
SLI	42 21.9%	150 78.1%	192 31.3%
LD	148 74.4%	51 25.6%	199 32.5%
EI	40 66.7%	20 33.3%	60 9.8%
EMI	17 60.7%	11 39.3%	28 4.6%
SMI	74 94.9%	4 5.1%	78 12.7%
S/M	41 73.2%	15 26.8%	56 9.1%
	362 59.1%	251 40.9%	613 100.0%

Classification

Table B-9

Change of SLI students compared to LD & EI students

n row pct	Classification no change	change	
SLI	42 22.0%	149 78.0%	191 43.9%
LD & EI	188 77.0%	56 23.0%	244 56.1%
	230 52.9%	205 47.1%	435 100.0%

Table B-10

Change of LD & EI students compared to EMI, SMI, S/M students

n row pct	Classification no change	change	
LD & EI	188 77.0%	56 23.0%	244 60.2%
EMI, SMI, S/M	132 82.0%	29 18.0%	161 39.8%
	320 79.0%	85 21.0%	405 100.0%

Table B-11

Change of EMI students compared to SMI students

		Classification		
	n row pct	no change	change	
Classification	EMI	17 60.7%	11 39.3%	28 26.4%
	SMI	74 94.9%	4 5.1%	78 73.6%
		91 85.8%	15 14.2%	106 100.0%

Table B-12

		Type of Program		
	n row pct	no change	change	
Classification	EMI	19 67.9%	9 32.1%	28 26.4%
	SMI	78 100.0%	0 0.0%	78 73.6%
		97 91.5%	9 8.5%	106 100.0%

Table B-13

		Frequency of Program		
	n row pct	no change	change	
Classification	EMI	4 14.3%	24 85.7%	28 26.4%
	SMI	74 94.9%	4 5.1%	78 73.6%
		78 73.6%	28 26.4%	106 100.0%

Table B-14

Students with a change by reclassification

n row pct	reclassified yes	 no	
Classification			
SLI	44 22.9%	148 77.1%	192 31.3%
LD	23 11.4%	176 88.6%	199 32.5%
EI	10 16.7%	50 83.3%	60 9.8%
EMI	11 39.3%	17 60.7%	28 4.6%
SMI	4 5.1%	74 94.9%	78 12.7%
S/M	8 14.3%	48 85.7%	56 9.1%
	100 16.3%	513 83.7%	613 100.0%

Table B-15

Change in type of program compared to classification

	Type of program		
n total pct	no change	change	
Classification			
no change	274 59.4%	86 18.7%	360 78.1%
change	36 7.8%	65 14.1%	101 21.9%
	310 67.2%	151 32.8%	461 100.0%

Table B-16

Change of frequency of program compared to classification

	Frequency of Program		
n total pct	no change	change	
Classification			
no change	123 26.6%	238 51.5%	361 78.1%
change	10 2.2%	91 19.7%	101 21.9%
	133 28.8%	329 71.2%	462 100.0%

Table B-17

Students with same type of service

Classification	n row pct	type of service change	 no change	
SLI		44 50.6%	43 49.4%	87 18.6%
LD		63 36.0%	112 64.0%	175 37.4%
EI		19 38.0%	31 62.0%	50 10.7%
EMI		9 32.1%	19 67.9%	28 6.0%
SMI		0 0.0%	78 100.0%	78 16.7%
S/M		20 40.0%	30 60.0%	50 10.7%
		155 33.1%	313 66.9%	468 100.0%

Table B-18

Students with change to more restrictive type of service

Classification	type of service: not more	type of service: more	
	n row pct		
SLI	46 52.9%	41 47.1%	87 18.6%
LD	156 89.1%	19 10.9%	175 37.4%
EI	44 88.0%	6 12.0%	50 10.7%
EMI	21 75.0%	7 25.0%	28 6.0%
SMI	78 100.0%	0 0.0%	78 16.7%
S/M	33 66.0%	17 34.0%	50 10.7%
	378 80.8%	90 19.2%	468 100.0%

Table B-19

Students with change to less restrictive type of service

n row pct	type of service not less	less	
Classification			
SLI	84 96.6%	3 3.4%	87 18.6%
LD	131 74.9%	44 25.1%	175 37.4%
EI	37 74.0%	13 26.0%	50 10.7%
EMI	26 92.9%	2 7.1%	28 6.0%
SMI	78 100.0%	0 0.0%	78 16.7%
S/M	47 94.0%	3 6.0%	50 10.7%
	403 86.1%	65 13.9%	468 100.0%

Table B-20

Students with change/no change in frequency of service

Classification	frequency of service: change	no change	
	n row pct		
SLI	74 85.1%	13 14.9%	87 18.6%
LD	153 86.9%	23 13.1%	176 37.5%
EI	45 90.0%	5 10.0%	50 10.7%
EMI	24 85.7%	4 14.3%	28 6.0%
SMI	4 5.1%	74 94.9%	78 16.6%
S/M	34 68.0%	16 32.0%	50 10.7%
	334 71.2%	135 28.8%	469 100.0%

Table B-21

Students with not more/more in frequency of service

n row pct	frequency of service not more	more	
Classification			
SLI	33 37.9%	54 62.1%	87 18.6%
LD	111 63.1%	65 36.9%	176 37.5%
EI	29 58.0%	21 42.0%	50 10.7%
EMI	10 35.7%	18 64.3%	28 6.0%
SMI	75 96.2%	3 3.8%	78 16.6%
S/M	28 56.0%	22 44.0%	50 10.7%
	286 61.0%	183 39.0%	469 100.0%

Table B-22

Students with not less/less in frequency of service

n row pct	frequency of service not less	less	
Classification			
SLI	67 77.0%	20 23.0%	87 18.6%
LD	88 50.0%	88 50.0%	176 37.5%
EI	26 52.0%	24 48.0%	50 10.7%
EMI	22 78.6%	6 21.4%	28 6.0%
SMI	77 98.7%	1 1.3%	78 16.6%
S/M	38 76.0%	12 24.0%	50 10.7%
	318 67.8%	151 32.2%	469 100.0%

Table B-23

Change on dependent variables related to family income

	Classification		
n row pct	no change	change	
poor	60 67.4%	29 32.6%	89 36.0%
not poor	111 70.3%	47 29.7%	158 64.0%
	171 69.2%	76 14.2%	247 100.0%

Table B-24

	Type of Program		
n row pct	no change	change	
poor	56 70.9%	23 29.1%	79 38.9%
not poor	81 65.3%	43 34.7%	124 61.1%
	137 67.5%	66 32.5%	203 100.0%

Table B-25

	Frequency of Program		
n row pct	no change	change	
poor	27 33.8%	53 66.2%	80 39.2%
not poor	39 31.5%	85 68.5%	124 60.8%
	66 32.4%	138 67.6%	204 100.0%

Table B-26

Nature of change on dependent variables related to family income

n row pct	Classification termin- ation	 reclass- ifcation	
poor	9 31.0%	20 69.0%	29 38.2%
not poor	34 72.3%	13 27.7%	47 61.8%
	43 56.6%	33 43.4%	76 100.0%

Table B-28

n row pct	Type of Program more	 less	
poor	18 78.3%	5 21.7%	23 34.8%
not poor	26 60.5%	17 39.5%	43 65.2%
	44 66.7%	22 33.3%	66 100.0%

Table B-29

n row pct	Frequency of Program more	 less	
poor	29 54.7%	24 45.3%	53 38.4%
not poor	55 64.7%	30 35.3%	85 61.6%
	84 60.9%	54 39.1%	138 100.0%

Table B-30

Change on dependent variables related to parent satisfaction

	Classification		
n row pct	no change	change	
dissatisfied	30 71.4%	12 28.6%	42 17.1%
satisfied	135 66.5%	68 33.5%	203 82.9%
	165 67.3%	80 32.7%	245 100.0%

Table B-31

	Type of Program		
n row pct	no change	change	
dissatisfied	25 67.6%	12 32.4%	37 18.6%
satisfied	108 66.7%	54 33.3%	162 81.4%
	133 66.8%	66 33.2%	199 100.0%

Table B-32

	Frequency of Program		
n row pct	no change	change	
dissatisfied	8 21.6%	29 78.4%	37 18.5%
satisfied	52 31.9%	111 68.1%	163 81.5%
	60 30.0%	140 70.0%	200 100.0%

Table B-33

Nature of change on dependent variables related to parent satisfaction

n row pct	Classification reclass- ification	 term- ination	
dissatisfied	7 63.6%	4 36.4%	11 13.9%
satisfied	28 41.2%	40 58.8%	68 86.1%
	35 44.3%	44 55.7%	79 100.0%

Table B-34

n row pct	Type of Program more	 less	
dissatisfied	9 75.0%	3 25.0%	12 18.2%
satisfied	35 64.8%	19 35.2%	54 81.8%
	44 66.7%	22 33.3%	66 100.0%

Table B-35

n row pct	Frequency of Program more	 less	
dissatisfied	23 79.3%	6 20.7%	29 20.7%
satisfied	63 56.8%	48 43.2%	111 79.3%
	86 61.4%	54 38.6%	140 100.0%

Table B-36
Change on dependent variables related to grade level

Classification			
n / row pct	no change	change	
preschool	46 56.8%	35 43.2%	81 13.5%
elementary	231 56.9%	175 43.1%	406 68.2%
secondary	85 78.0%	24 22.0%	109 18.2%
	364 60.9%	234 39.1%	598 100.0%

Table B-37
Type of Program

n / row pct	no change	change	
preschool	38 56.7%	29 43.3%	67 14.3%
elementary	198 66.0%	102 34.0%	300 64.1%
secondary	77 76.2%	24 23.8%	101 21.6%
	313 66.9%	155 33.1%	468 100.0%

Table B-38
Frequency of Program

n / row pct	no change	change	
preschool	19 28.4%	48 71.6%	67 14.3%
elementary	64 21.3%	236 78.7%	300 64.0%
secondary	52 51.0%	50 49.0%	102 21.7%
	135 28.8%	334 71.2%	469 100.0%

Table B-39

Nature of change on dependent variables related to grade level

n row pct	Classification reclass- ification	 term- ination	
preschool	20 57.1%	15 42.9%	35 15.0%
elementary	68 38.9%	107 61.1%	175 74.8%
secondary	12 50.0%	12 50.0%	24 10.2%
	100 42.7%	134 57.3%	234 100.0%

Table B-40

n row pct	Type of Program more	 less	
preschool	26 89.7%	3 10.3%	29 18.7%
elementary	59 57.8%	43 42.2%	102 65.8%
secondary	5 20.8%	19 79.2%	24 15.5%
	90 58.1%	65 41.9%	155 100.0%

Table B-41

n row pct	Frequency of Program more	 less	
preschool	35 72.9%	13 27.1%	48 14.4%
elementary	133 56.4%	103 43.6%	236 70.6%
secondary	15 30.0%	35 70.0%	50 15.0%
	183 54.8%	151 45.2%	334 100.0%

Table B-42

Change on dependent variables related to consistency of itinerant MDT members

		Classification: no change	Classification: change	
	n row pct	no change	change	
itinerants	same	152 57.1%	114 42.9%	266 44.7%
	different	210 63.8%	119 36.2%	329 53.3%
		362 60.8%	233 39.2%	595 100.0%

Table B-43

		Type of Program: no change	Type of Program: change	
	n row pct	no change	change	
itinerants	same	135 78.0%	38 22.0%	173 37.0%
	different	177 60.2%	117 39.8%	294 63.0%
		312 66.8%	155 33.2%	467 100.0%

Table B-44

		Frequency of Program: no change	Frequency of Program: change	
	n row pct	no change	change	
itinerants	same	63 36.4%	110 63.6%	173 37.0%
	different	71 24.1%	224 75.9%	295 63.0%
		134 28.6%	334 71.4%	468 100.0%

Table B-45

Nature of change on dependent variables related to consistency of itinerant MDT members

		Classification: reclassification	Classification: termination	
	n / row pct			
itinerants	same	18 15.8%	96 84.2%	114 48.9%
	different	81 68.1%	38 31.9%	119 51.1%
		99 42.5%	134 57.5%	233 100.0%

Table B-46

		Type of Program: more	Type of Program: less	
	n / row pct			
itinerants	same	21 55.3%	17 44.7%	38 24.5%
	different	69 59.0%	48 41.0%	117 75.5%
		90 58.0%	65 42.0%	155 100.0%

Table B-47

		Frequency of Program: more	Frequency of Program: less	
	n / row pct			
itinerants	same	21 51.8%	17 48.2%	38 24.5%
	different	69 56.3%	48 43.8%	117 75.5%
		90 58.1%	65 41.9%	155 100.0%

Table B-48

Change on dependent variables related to consistency of teacher MDT member

		Classification: no change	Classification: change	
	n / row pct			
teacher	same	80 77.5%	23 22.5%	103 28.5%
	different	211 81.5%	48 18.5%	259 71.5%
		291 80.4%	71 19.6%	362 100.0%

Table B-49

Type of Program

		no change	change	
	n / row pct			
teacher	same	93 97.9%	2 2.1%	95 26.8%
	different	163 62.7%	97 37.3%	260 73.2%
		256 72.1%	99 27.1%	355 100.0%

Table B-50

Frequency of Program

		no change	change	
	n / row pct			
teacher	same	52 55.3%	42 44.7%	94 26.5%
	different	64 24.5%	197 75.5%	261 73.5%
		116 32.7%	239 67.3%	355 100.0%

Table B-51

Nature of change on dependent variables related to consistency of teacher MDT member

		Classification: reclassification	Classification: termination	
	n / row pct			
teacher	same	15 62.2%	8 34.8%	23 32.4%
	different	45 93.8%	3 6.3%	48 67.6%
		60 84.5%	11 15.5%	71 100.0%

Table B-52

		Type of Program: more	Type of Program: less	
	n / row pct			
teacher	same	2 100.0%	0 0.0%	2 2.0%
	different	36 37.1%	61 62.9%	97 98.0%
		38 38.4%	61 61.6%	99 100.0%

Table B-53

		Frequency of Program: more	Frequency of Program: less	
	n / row pct			
teacher	same	25 59.5%	17 40.5%	42 17.6%
	different	90 45.7%	107 54.3%	197 82.4%
		115 48.1%	124 51.9%	239 100.0%

Table B-54

Change on dependent variables related to student gender

		Classification: no change	Classification: change	
	n / row pct			
gender	male	241 59.9%	161 40.1%	402 67.2%
	female	123 62.6%	73 37.4%	196 32.8%
		364 60.9%	234 39.1%	598 100.0%

Table B-55

		Type of Program: no change	Type of Program: change	
	n / row pct			
gender	male	202 63.9%	114 36.1%	316 67.2%
	female	113 73.4%	41 26.6%	154 32.8%
		315 67.0%	90 33.0%	470 100.0%

Table B-56

		Frequency of Program: no change	Frequency of Program: change	
	n / row pct			
gender	male	78 24.6%	242 76.4%	317 67.3%
	female	57 37.0%	97 63.0%	154 32.7%
		135 28.7%	336 71.3%	471 100.0%

Table B-61

Change on dependent variables related to student Verbal Scale IQ

	n / row pct	IQ category 1	2	3	4	5	
Classification	same	23 12.2	32 17.0	57 30.3	37 19.7	39 20.7	188 77.0
	changed	15 26.8	9 16.1	13 23.2	7 12.5	12 21.4	58 23.0
		38 15.6	41 16.8	70 28.7	44 18.0	51 20.9	244 100.0

Table B-62

	n / row pct	IQ category 1	2	3	4	5	
Type of Service	same	29 19.3	28 18.7	44 29.3	22 14.7	27 18.0	150 63.6
	changed	8 9.3	12 14.0	24 27.9	19 22.1	23 26.7	86 36.4
		37 15.7	40 16.9	68 28.8	41 17.4	50 21.2	236 100.0

Table B-63

	n / row pct	IQ category 1	2	3	4	5	
Time of Service	same	13 34.2	6 15.8	2 5.3	6 15.8	11 28.9	38 16.0
	changed	24 12.0	34 17.1	66 33.2	36 18.1	39 19.6	199 84.0
		37 15.6	40 16.9	68 28.7	42 17.7	50 21.1	237 100.0

Table B-67

Change on dependent variables related to student Full Scale IQ (SMI included)

	n / row pct	IQ category 1	2	3	4	5	
Classification	same	89 33.8	28 10.6	47 17.9	44 16.7	55 20.9	263 78.0
	changed	20 27.0	14 18.9	15 20.3	9 12.2	16 21.6	74 22.0
		109 32.3	42 12.5	62 18.4	53 15.7	71 21.1	337 100.0

Table B-68

	n / row pct	IQ category 1	2	3	4	5	
Type of Service	same	98 43.2	28 12.3	39 17.2	33 14.5	29 12.8	227 69.0
	changed	11 10.8	14 13.7	19 18.6	19 18.6	39 38.2	102 31.0
		109 33.1	42 12.8	58 17.6	52 15.8	68 20.7	329 100.0

Table B-69

	n / row pct	IQ category 1	2	3	4	5	
Time of Service	same	78 73.6	7 6.6	4 3.8	6 5.7	11 10.4	106 32.1
	changed	31 13.8	35 15.6	55 16.7	46 13.9	57 17.2	224 67.9
		109 33.0	42 12.7	59 17.9	52 15.8	68 20.6	330 100.0

Table B-70

Change on dependent variables related to student reading

	n / row pct	achievement category 1	2	3	4	
Classification	same	59 27.6	63 29.4	69 32.2	23 10.7	224 70.6
	changed	29 32.6	20 22.5	30 30.3	13 14.6	99 29.4
		88 29.0	83 27.4	96 31.7	36 11.9	303 100.0

Table B-71

	n / row pct	achievement category 1	2	3	4	
Type of Service	same	53 30.5	51 29.3	52 29.9	18 10.3	174 59.0
	changed	34 28.1	33 27.3	41 33.9	13 10.7	121 41.0
		87 29.5	84 28.5	93 31.5	31 10.5	295 100.0

Table B-72

	n / row pct	achievement category 1	2	3	4	
Time of Service	same	19 44.2	11 25.6	9 20.9	4 9.3	43 14.5
	changed	69 27.3	73 28.8	84 33.2	27 10.7	253 85.5
		88 29.7	84 28.4	93 31.4	31 10.5	296 100.0

Table B-73

Change on dependent variables related to student mathematics

	n / row pct	achievement category 1	2	3	4	
Classification	same	55 25.8	47 22.1	62 29.1	49 23.0	213 70.8
	changed	33 37.5	19 21.6	24 27.3	12 13.6	88 29.2
		88 29.2	66 21.9	86 28.6	61 20.3	301 100.0

Table B-74

	n / row pct	achievement category 1	2	3	4	
Type of Service	same	58 33.5	33 19.1	46 26.6	36 20.8	173 59.0
	changed	30 25.0	34 28.3	36 30.0	20 16.7	120 41.0
		88 30.0	67 22.9	82 28.0	56 19.1	293 100.0

Table B-75

	n / row pct	achievement category 1	2	3	4	
Time of Service	same	19 45.2	7 16.7	9 21.4	7 16.7	42 14.3
	changed	69 27.4	60 23.8	74 29.4	49 19.4	252 85.7
		88 29.9	67 22.8	83 28.2	56 19.0	294 100.0

Table B-73

Change on dependent variables related to student mathematics

	n / row pct	achievement category 1	2	3	4	
Classification	same	55 25.8	47 22.1	62 29.1	49 23.0	213 70.8
	changed	33 37.5	19 21.6	24 27.3	12 13.6	88 29.2
		88 29.2	66 21.9	86 28.6	61 20.3	301 100.0

Table B-74

	n / row pct	achievement category 1	2	3	4	
Type of Service	same	58 33.5	33 19.1	46 26.6	36 20.8	173 59.0
	changed	30 25.0	34 28.3	36 30.0	20 16.7	120 41.0
		88 30.0	67 22.9	82 28.0	56 19.1	293 100.0

Table B-75

	n / row pct	achievement category 1	2	3	4	
Time of Service	same	19 45.2	7 16.7	9 21.4	7 16.7	42 14.3
	changed	69 27.4	60 23.8	74 29.4	49 19.4	252 85.7
		88 29.9	67 22.8	83 28.2	56 19.0	294 100.0

Table B-76

Change on dependent variables related to student written language

	n / row pct	achievement category 1	2	3	4	
Classification	same	56 28.4	71 36.0	46 23.4	24 12.2	197 69.9
	changed	26 30.6	24 28.2	26 30.6	9 10.6	85 30.1
		82 29.1	95 33.7	72 25.5	33 11.7	282 100.0

Table B-77

	n / row pct	achievement category 1	2	3	4	
Type of Service	same	51 32.1	49 30.8	39 24.8	20 12.6	159 58.0
	changed	30 26.1	47 40.9	29 25.2	9 7.8	115 42.0
		81 29.6	96 35.0	68 24.8	29 10.6	274 100.0

Table B-78

	n / row pct	achievement category 1	2	3	4	
Time of Service	same	13 38.2	9 26.5	9 26.5	3 8.8	34 12.4
	changed	69 28.6	87 36.1	59 24.5	26 10.8	241 87.6
		82 29.8	96 34.9	68 24.7	29 10.5	275 100.0

Table B-79

Change on dependent variables related to comorbidity

		Classification: no change	Classification: change	
	n row pct			
categories	one	258 55.7%	205 44.3%	463 77.7%
	two or more	104 78.2%	29 21.8%	133 22.3%
		362 60.7%	234 39.3%	596 100.0%

Table B-80

		Type of Program: no change	Type of Program: change	
	n row pct			
categories	one	205 60.8%	132 39.2%	337 72.0%
	two or more	108 82.4%	23 17.6%	131 28.0%
		313 66.9%	155 33.1%	468 100.0%

Table B-81

		Frequency of Program: no change	Frequency of Program: change	
	n row pct			
categories	one	72 21.3%	266 78.7%	338 72.1%
	two or more	63 48.1%	68 51.9%	131 27.9%
		135 28.8%	334 71.2%	469 100.0%

Table B-82

Nature of change on dependent variables related to comorbidity

	n row pct	Classification reclass- ification	 term- ination	
categories	one	73 35.6%	132 64.4%	205 87.6%
	two or more	27 93.1%	2 6.9%	29 12.4%
		100 42.7%	134 57.3%	234 100.0%

Table B-83

	n row pct	Type of Program more	 less	
categories	one	76 57.6%	56 42.4%	132 85.2%
	two or more	14 60.9%	9 39.1%	23 14.8%
		90 58.1%	65 41.9%	155 100.0%

Table B-84

	n row pct	Frequency of Program more	 less	
categories	one	141 53.0%	125 47.0%	266 79.6%
	two or more	42 61.8%	26 38.2%	68 20.4%
		183 54.8%	151 45.2%	334 100.0%

Table B-85
Change on dependent variables related to school size

		Classification: no change	Classification: change	
	n / row pct			
Size	large	172 57.1%	129 42.9%	301 58.1%
	medium	45 51.1%	43 48.9%	88 17.0%
	small	71 55.0%	58 45.0%	129 24.9%
		288 55.6%	230 44.4%	518 100.0%

Table B-86
Type of Program

		no change	change	
	n / row pct			
Size	large	143 59.3%	98 40.7%	241 61.8%
	medium	34 60.7%	22 39.3%	56 14.4%
	small	58 62.4%	35 37.6%	93 23.8%
		235 60.3%	155 39.7%	390 100.0%

Table B-87
Frequency of Program

		no change	change	
	n / row pct			
Size	large	36 14.9%	205 85.1%	241 61.6%
	medium	9 16.1%	47 83.9%	56 14.3%
	small	16 17.0%	78 83.0%	94 24.0%
		61 15.6%	330 84.4%	391 100.0%

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