

HOW ELEMENTARY CLASSROOM TEACHERS
MAKE INSTRUCTIONAL ADAPTATIONS FOR
MAINSTREAMED STUDENTS WITH MENTAL RETARDATION

A CASE STUDY


by

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(ABSTRACT)

A descriptive case study was designed to investigate how classroom teachers plan and implement instructional adaptations and accommodations for mainstreamed students. Two elementary school classroom teachers, each receiving two mainstreamed students with mental retardation, were observed to determine factors and strategies involved in making instructional adaptations and accommodations. Preactive teaching processes, including consultative and collaborative planning activities, and classroom teacher perceptions about mainstreaming practices were examined.

Results indicated five primary types of instructional adaptations: acquisitional, parallel, enabling-social, enabling-academic, and structural. In addition, two other strategies were observed: accommodations and return to the resource room for mainstreamed students. Findings indicated acquisitional adaptations facilitated the integration of mainstreamed students, structural adaptations powerfully affected classroom climate and students' interpersonal relationships for both mainstreamed and nondisabled

students, and parallel adaptations had both positive and negative social and instructional implications for mainstreamed students. Enabling-social and enabling-academic adaptations produced increased mainstreamed student participation in classroom instructional activities and experiences. Benefits were found for nondisabled students as well.

Preactive teaching processes included variable use of consultative and collaborative strategies and some use of instructional adaptation planning routines. Teachers' planning processes changed over the course of the year; adaptation-making processes moved from the preactive to the interactive teaching phase. Teachers' reported perceptions of mainstreaming varied during the study, but generally remained positive.

Based on these results, a taxonomy of descriptions of instructional adaptations as well as descriptions of classroom teachers' planning processes as strategies for mainstreaming students with mental retardation in general education classroom instructional activities and classroom teachers' perceptions of the mainstreaming program were derived.

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Chapter 1

Introduction

Purpose of the Study

The purpose of this study was to examine the types and amount of instructional adaptations made by elementary classroom teachers receiving students with mild to moderate mental retardation. In addition, preactive teaching processes, including consultative and collaborative planning activities, and classroom teacher perceptions about mainstreaming practices were examined.

Background

Since the passage of The Education for All Handicapped Children Act (PL 94-142) in 1975 (now known as The Individuals with Disabilities Act, PL 101-476), mainstreaming has been used as a means of meeting the "least restrictive environment" clause of the law. Mainstreaming has been referred to as a way to encourage socialization of general and special education students and to provide a "more normal" educational setting for students with disabilities (Truesdale, 1985).

Kaufman, Gottlieb, Agard, and Kukic (1975) define mainstreaming as:

The temporal, instructional, and social integration of eligible exceptional children with normal peers based on an ongoing, individually determined educational planning and programming process and requires clarification of responsibility among regular and special education administrative, instructional, and supportive personnel (p. 25).

In the mid-1980's, the Regular Education Initiative (REI) (Will, 1986) provided a structure for an expansion of mainstreaming practices so that students with mild disabilities (mildly learning disabled, Chapter I, certain remedial students, mildly mentally retarded, and mildly emotionally disturbed) received needed services in the general education classroom for as much as an entire school day. Previous to the REI, these students would have received needed services in a resource room setting, with only limited mainstreaming experiences in the general education classroom.

Due to the combined impetus of the REI (Will, 1986) and the lack of efficacy of pull-out services (Madden & Slavin, 1983), mainstreaming was expanded to include "integration" and "inclusive education" models. Traditionally, mainstreaming had a strong academic focus; however, the integration and inclusive education models have strong

social and instructional implications. These models reduce or eliminate the use of readiness criteria in making mainstreaming decisions (See Figure 1.1).

Under the "integration" model, students with disabilities, including those with moderate to severe and profound disabilities, are integrated into age-appropriate general education environments to receive needed services without regard for academic, behavioral, or social readiness for these placements (Lipsky & Gartner, 1987; Reynolds, Wang, & Walberg, 1987; Stainback & Stainback, 1985; Wang & Birch, 1984). The "inclusive education" model eliminates the separation of general and special education by having all students with disabilities attend their home school in age-appropriate general education classrooms (Stainback & Stainback, 1990).

Curricular and Instructional Adaptations

Certain writers have discussed the need for instructional and curricular adaptations for mainstreamed students (Reschly, 1987; Reynolds & Birch, 1988; Wang & Birch, 1984). Instructional adaptations refer to modifications of methods, materials, lesson formats, and/or classroom structures for mainstreamed students. Curricular adaptations refer to modifications in the scope, sequence, and/or content of the curriculum for mainstreamed students.

TYPE	CHARACTERISTICS
Traditional Mainstreaming	Students with mild disabilities placed into general education classrooms for certain periods. Student must exhibit readiness for classroom placement.
Integration	Students with disabilities, regardless of severity, are age-appropriately placed into general education schools and classrooms for as much as a full day. Academic, social, and/or behavioral readiness are not criteria for placement.
Inclusive Education	Students with diverse disabilities attend their home or neighborhood school and are age-appropriately placed in general education classrooms for as much as the full school day.

Figure 1.1
Mainstreaming Options

Statement of the Problem

General education teachers need to be willing to make instructional and curricular adaptations, when necessary, for mainstreamed students with diverse disabilities. Instructional and curricular adaptations may vary in degree and by type, but in all cases the classroom teacher should develop adaptations that are directly related to the needs and characteristics of the mainstreamed student.

To date, there is little research on the types of instructional adaptations made by classroom teachers for mainstreamed students (Schumm & Vaughn, 1991; Ysseldyke, Thurlow, Wotruba, & Nania, 1990). The instructional strategies suggested for use by classroom teachers include cooperative learning (Slavin, 1990; Johnson & Johnson, 1984), peer tutoring (Slavin, 1986; Villa & Thousand, 1990), cognitive learning strategies (Bransford & Vye, 1989; Palincsar & Brown, 1984, 1989), direct instruction (Rosenshine, 1979, 1983), lesson design (Samuels, 1986) and specifically determined adaptations such as the Adaptive Learning Environments Model (ALEM) proposed by Wang, Reynolds, and Walberg (1987). Other suggestions are instructional strategies that are non-specific to the type of task or skill being presented to the mainstreamed student, but are components of "good instructional practice" (Jenkins, Pious, & Jewell, 1990; Stainback & Stainback, 1985, 1989).

Little is known about the types of instructional adaptations, behavioral modification strategies, and general curricular changes made by classroom teachers for mainstreamed students with disabilities. Schumm & Vaughn (1991) found that teachers consider (a) the type of task, (b) the number of items in the task, and (c) the student's performance on the task when designing instructional adaptations (p. 18). However, no research was stated that described actual instructional adaptations incorporated by classroom teachers for mainstreamed students.

We do not have definitive research describing the actual types and amount of instructional adaptations designed by general education teachers, developed cooperatively by general and special education teachers, or implemented by general education teachers for mainstreamed mildly and moderately disabled students. Because no research was found, this study was specifically designed to examine the instructional adaptations made by classroom teachers for students with disabilities mainstreamed into age-appropriate general education classrooms.

Scope of the Study

This study examined the strategies used by two elementary classroom teachers in adapting the learning activities and the delivery of instruction for mainstreamed students with mild to moderate mental retardation.

The first objective of this study was to examine the types and amount of instructional adaptations made by the elementary classroom teacher receiving mainstreamed students through the integration model. The central research question was: How do these classroom teachers adapt instruction for mainstreamed students with mild to moderate mental retardation?

In a pilot case study performed prior to this study, it was found that instructional adaptations made for students with mental retardation by intermediate level classroom teachers (grades 4 and 5) developed along several levels: (a) Instructional format adaptations (the use of peer tutoring and cooperative learning strategies), (b) Acquisitional adaptations (techniques designed to help the mainstreamed student acquire the concepts and skills needed for participation in the learning activity), and (c) Teacher planning processes (the preactive teaching decisions and processes used by the teacher in constructing instructional adaptations).

A second objective of this study was to examine changes in the classroom teachers' perceptions of the learning characteristics of the mainstreamed students, the necessity for instructional adaptations, and the social behaviors presented by the mainstreamed students. How did the classroom teacher feel about the mainstreaming program

generally? What were her perceptions of the benefits and problems with mainstreaming students into her classroom? What were the frustrations, conflicts, joys, and challenges of this teacher as she participated in the mainstreaming program? How did the classroom teacher respond to the possible maladaptive behaviors of the mainstreamed students? Did she become more accepting or less accepting of these behaviors over time? Did she accept the need to make academic or social adaptations or modifications as the study evolved? Did she consider these behaviors in designing instructional activities and consequent adaptations for the mainstreamed students?

A third objective was to observe the preactive teaching strategies, including the collaborative and/or consultative practices, utilized by the participating teachers. Did each classroom teacher discuss the mainstreamed students' academic and social strengths and other needs with the special education teachers? What problems or frustrations did participating teachers experience in planning for classroom activities? Did the classroom teachers establish some planning routines for creating instructional adaptations?

Justification for the Study

Since the enactment of PL 94-142, the use of a self-contained setting with supplemental mainstreaming has been the dominant service delivery model for meeting the perceived needs of students with mental retardation, along with meeting the least restrictive environment mandate (Reynolds & Birch, 1988).

Kramer, Piersel, and Glover (1988), in a review of the mental retardation construct, characterized students exhibiting mild to moderate mental retardation as "primarily inefficient learners" (p. 43). They stated "not only are retarded individuals less efficient in formal learning situations, many believe that these individuals are especially deficient in acquiring information and skills in informal situations" (p. 43). They viewed these individuals as also exhibiting deficits in cognitive processes such as those found in the iconic register and working memory, in elementary information processing strategies, and in their ability to access long-term memory.

Despite the problems and challenges associated with mainstreaming students with diverse abilities, there is a detectable shift in districts throughout the country towards these practices (Jenkins, Pious, & Jewell, 1990; Raynes et al., 1991). Integration practices, along with inclusive education, have received added impetus from the REI (Will,

1986). A selective review of the literature in Chapter Two demonstrates the need for further research on methods for developing effective instructional processes for appropriate, productive, and meaningful mainstreaming programs for students involved in integration experiences.

Researchers have studied the willingness of general education teachers to accept students with disabilities and also have studied their attitudes toward and perceptions about mainstreaming (Gans, 1987; Pious, et al., 1990). Other researchers have studied the implementation of certain models involving curricular adaptations (Walberg & Wang, 1987). Overall, their findings support the efficacy of mainstreaming for students with mild disabilities (Epps & Tindall, 1987; Madden & Slavin, 1983; Salend, 1984). Their findings also show teacher support of the concept if general and special educators collaborate in making curricular and non-curricular instructional adaptations for mainstreamed students (Bickel & Bickel, 1986; Madden et al., 1983; Schumm & Vaughn, 1991). However, no studies observed classroom teachers making instructional adaptations for mainstreamed students with mental retardation.

This study went beyond other studies by actually observing and interviewing teachers involved making instructional adaptations. In addition, a number of other factors were observed in making these adaptations, such as

the use of collaborative and consultative practices in designing and implementing learning experiences for mainstreamed students and the classroom teacher's planning strategies and processes in determining instructional designs, structures, and adaptations for mainstreamed students.

A study of this nature has important implications for teachers and researchers interested in utilizing and implementing instructional adaptations for mainstreamed students. This is especially true if the classroom teacher will be responsible for teaching the mainstreamed student for extended periods of time and must create instructional adaptations and accommodations while teaching the student during the day.

Limitations of the Study

The research method used was the descriptive case study method. As such, the study was limited to in-depth observations of two elementary classroom teachers and four mainstreamed students. With the use of this method, transferability or generalizability to other settings may not always be possible, though it is hoped that the richness of the observations will make clear the key issues involved in constructing instructional adaptations for mainstreamed students.

Definition of Terms

Instructional Adaptations: Instructional adaptations are described by Baker and Zigmond (1990) as the reorganizing of daily routines and instructional practices to accommodate mainstreamed students. For the purposes of this study, instructional adaptations are those changes made in instructional routines, classroom structures, lesson design, instructional activities, and instructional delivery by classroom teachers receiving mainstreamed students.

Inclusive Education: Sailor (1991) and Stainback and Stainback (1985) described inclusive education as permitting students with diverse disabilities, including those with severe and profound disabilities, to be educated in their home or neighborhood school in an age-appropriate general education classroom setting. Special education supports would be provided within the context of the general education class and other integrated environments (Sailor, 1991).

Integration: Sailor (1989) described integration as "locating students with disabilities on regular school campuses" (p. 62). Such integration would be age-appropriate and within proximity of general education classes, would allow for transportation with non-disabled students, would reflect the natural proportion of students with disabilities in the school district at large, and would promote the

inclusion of each student with disabilities in all school activities in which nondisabled students of comparable ages are included. However, integration of special education students would not necessarily occur in their home or neighborhood school.

Least Restrictive Environment (LRE): Public Law 101-476 requires that students be placed in that setting or program having the least restrictions and the most normative atmosphere in which a student with disabilities can be placed. Programs for students with disabilities are to be individualized, based on the student's needs at that time, and be provided in "appropriate" placements (Jones, 1981). A "continuum of services" (Reynolds, 1962), the "cascade system" (Deno, 1970), the "Adapted Learning Environments Model" (Wang, Gennari, & Waxman, 1985) and others may serve in constructing an appropriate system of services or to determine an appropriate setting for the student with disabilities in the least restrictive environment.

Mainstreaming: The principle of mainstreaming refers to the provision of opportunities for students labeled as disabled who are in special education settings to spend a portion of their time in general education for instruction (Lipsky & Gartner, 1989). Mainstreaming practices vary in intensity and duration, along with appropriateness (Reynolds & Birch, 1977). Students may be mainstreamed in general

education classrooms from very brief periods to a majority of the day, or placed in a part-time special education "resource" classroom in which they receive special help for reading and math (Stein, Leinhardt, & Bickel, 1989).

Mental Retardation: The Virginia Department of Education's Regulations Governing Special Education Programs for Handicapped Children and Youth in Virginia (1990) defines mental retardation as: "significantly subaverage general intellectual functioning existing concurrently with deficits in adaptive behavior and manifested during the developmental period, which adversely affects a child's educational performance" (34 CFR 300.5b:4, page 15). Six other general dimensions or individual characteristics are also considered as the basis for classifying students as mentally retarded. These dimensions are used in various combinations to define each of the conditions specified by federal law: achievement, social behavior and emotional adjustment, motor skills, communication/language, and sensory status (Reschly, 1987).

Mild Mental Retardation: Reschly (1987) discussed fundamental characteristics of the levels of retardation. One characteristic is the student's performance on individually administered measures of general intellectual functioning [IQ tests]. Persons with mental retardation

score between 50 and 75 on IQ tests. Other characteristics follow within the six other dimensions listed above.

Moderate Mental Retardation: Persons with a moderate degree of mental retardation receive an IQ score in the range of about 35 to 50 (Reschly, 1987). Again, characteristics of the other six dimensions listed earlier are considered in classifying a child as moderately mentally retarded.

Summary of Chapter 1

This chapter presented a justification for the present study based on the need for mainstreaming as a method for meeting the least restrictive environment clause of the law, the increasing use of integration and mainstreaming practices in general education schools, and the necessity of adaptations based on the needs and characteristics of mainstreamed students in order for appropriate, productive, and meaningful instruction to occur. This study was planned to contribute to the understanding of instructional methods, instructional adaptations, and observed adaptation-making processes by classroom teachers for mainstreamed students.

A review of the literature disclosed little research on curricular or instructional adaptation methods in mainstreaming situations and showed that more work is needed in determining the types, amounts, and qualities of effective practice in making instructional adaptations for

mainstreamed students with diverse disabilities. No research based on direct observations of classroom teachers involved in making instructional adaptations for mainstreamed mentally retarded students was found.

Chapter 2

Review of Related Literature

A review of the literature disclosed a wide variety of research, reviews, articles, and publications concerning the Regular Education Initiative, mainstreaming and integration practices, and opinions and perspectives of general and special educators about mainstreaming practices. Fewer empirical reports were found concerning structural adaptations to facilitate mainstreaming practices such as cooperative learning, peer tutoring, adaptive learning environments and models, and individualized programming. Very few reports were found concerning the types of functional or instructional adaptations actually implemented by classroom teachers for mainstreamed students with disabilities. This was supported by a recent article authored by Schumm and Vaughn (1991) in which they reported their search yielding few studies, chapters, or books addressing curricular adaptations made by general education teachers for special education students.

Major topics of research included studies using consultation and/or collaborative practices in designing programs for mainstreamed students, cooperative learning activities and peer tutoring for mainstreamed students, adaptive learning environments and programs for such students, cogni-

tive strategy instruction for students, and perceptions of general and special educators toward mainstreaming practices and implementation strategies.

Research was found concerning teacher decision-making processes in general and some research on instructional modifications for mainstreamed students with mild academic disabilities in particular. This research related to planning decisions and processes used by teachers in constructing instructional adaptations. No studies were found that dealt specifically with instructional adaptation decision-making and preactive teaching processes when mainstreaming students into general education settings.

This chapter is divided into several sections. These sections describe research and journal articles related to mainstreaming practices; instructional arrangements for mainstreamed students; consultation and collaborative practices in making instructional adaptations; instructional format adaptations (specifically, cooperative learning strategies and peer tutoring experiences); adaptive learning models; cognitive instructional strategies; and, preactive teaching processes. Each section was deemed important to the case study.

Mainstreaming Practices

According to Epps and Tindal (1987), an underlying assumption in the field of special education has been that not all students prosper in identical educational environments or programs. Therefore, assessment procedures and classification systems have been devised to match students with appropriate interventions so that each student received optimal treatment.

In response to the goals of providing appropriate educational opportunities for special education students in the least restrictive settings, the practice of mainstreaming evolved. A concise definition of mainstreaming was given by Epps and Tindal: "Mainstreaming refers to multiple service levels at which a range of administrative and instructional options as well as a variety of staff utilization patterns are available" (p. 213).

Caster (1975) gave a more detailed definition that included: Providing the most appropriate education, looking at the educational needs of the child rather than clinical or diagnostic labels, determining alternatives that help general educators serve children in the regular setting (using consulting teachers, methods and materials specialists, itinerant teachers, and resource room teachers), and uniting the skills of general education and special education so that all children may benefit (p.174).

Caster also discussed what mainstreaming is not:

Returning all exceptional children to general education classes, permitting students with special needs to remain in general education classrooms without the support services they need, and removing the detailed and specialized program that some students need but cannot be provided in most regular education settings (p. 174).

Much attention has been devoted over the last six decades in studying the efficacy of special education placement. Much of the research work from the 1930's to about 1970 hypothesized that separate classes were more effective (Heller, Holtzman, and Messick, 1982). Studies from the late 1960s to the present showed the mainstream to be the preferred placement for students with mild handicaps (Madden & Slavin, 1983; Polloway, 1984; Ysseldyke, Thurlow, Wotruba & Nania, 1990). Some writers indicated findings that showed general and special education personnel generally pleased with the current delivery practices and not interested in making significant changes to these practices (Semmel, Abernathy, Butera, & Lesar, 1991).

One common component of mainstreaming is that special education students be educated, at least partially, in general education settings. Special education students generally receive education in one of three settings: (a) self-contained classrooms from which they are mainstreamed

to some extent, (b) resource rooms in which they receive special help (i.e., students are "pulled out" of the regular classroom to receive this instruction, usually in reading, speech, and/or math), or (c) general education classroom placement in conjunction with a resource teacher helping the student at least daily in order to certify the mainstreamed student is maintaining competency (Stein, Leinhardt, & Bickel, 1989).

Implementation of Mainstreaming: Perceptions of Special and General Education Teachers

Students mainstreamed into general education classrooms are a heterogeneous group who may need to have their instructional materials, activities, and presentations modified based on their abilities and deficits (Cohen & Lynch, 1991). Some authors feel that with proper training and resources classroom teachers can modify or adapt instructional practices to meet student needs (Cohen & Lynch, 1991; Madden & Slavin, 1983; Slavin, Madden & Leavey, 1984; Wang & Walberg, 1983). Positive outcomes have been shown for mainstreamed students through the use of "effective schools" teaching practices, the use of cooperative learning, peer instructional methods, variables affecting time-on-task, and grouping variables at the school site (Bickel & Bickel, 1986; Raynes, Snell, & Sailor, 1991).

Research on instructional modifications and arrangements for mainstreamed students with mild to moderate mental retardation is extremely limited. Ysseldyke, Thurlow, Wotruba, and Nania (1990) state the problem with the lack of this research:

In fact, very little is known about either the instructional arrangements teachers use for students with mild handicaps in regular settings or the effectiveness of various instructional arrangements. The only factors for which information is available are class size and student-teacher ratios (p. 4).

Ysseldyke, Thurlow, Wotruba, and Nania (1990) prepared a questionnaire for a national sample of general education teachers involved with mainstreaming programs. The questionnaire items were based on literature about adapted education and instruction, focusing on the use of alternative instructional arrangements to meet the needs of individual students in classrooms. The questionnaire asked for information about teachers' practices and opinions regarding structural arrangements and adaptive instruction for mainstreamed students.

Results for structural arrangements showed that almost one-half utilized the services of another adult in the classroom (aides, other teachers, or volunteers), less than

one half of the teachers used small groups in instruction; and almost sixty percent (60%) of the teachers stated they would not change their methods of instruction if no students with disabilities were present.

The most frequently cited methods of instruction for classrooms receiving students with mild disabilities included direct instruction, cooperative learning groups, discovery methods, independent work, and multimethod approaches (Bickel et al., 1986). When given a list of fifteen statements describing various instructional adaptations that the teachers were to rate on desirability of the adaptation and the extent of the teacher's ability to make the adaptation, the teachers listed the desirability much higher than the feasibility.

Likewise, a recent study by Whinnery, Fuchs, and Fuchs (1991) showed that special and remedial educators perceived greater competence and willingness to assist students with disabilities in the classroom than general educators did to teach them. They found one factor affecting teachers' sense of competence and willingness to mainstream is knowledge about facilitating instructional and behavioral strategies. Their findings indicated teachers need more knowledge of effective interventions and more skill in implementing these interventions in mainstream settings.

In an examination of elementary teacher's instructional practices for mainstreamed students with mild disabilities, Baker and Zigmond (1990) found teachers using undifferentiated, large-group instruction, "taught by the book" (i.e., taught with unswerving adherence to the teacher's manuals). Teachers did not make professional decisions about what they taught their students; instead they followed the sequence of lessons outlined in the teachers' manuals, deviating only if required by district mandates. They also found that a majority of the teachers had a "mindset on conformity, not accommodation" (p. 525).

Conversely, Dileo and Meloy (1990) performed a study concurrent with a series of inservices being given to teachers in a Pennsylvania school district. The program objectives were to instruct classroom teachers regarding the general characteristics of students with disabilities, to demonstrate effective instructional strategies for use with mainstreamed students, and to provide a means for special and classroom teachers to exchange and share ideas. At the conclusion of the program, they noted positive changes in attitudes between classroom teachers and special educators and in classroom teachers' attitudes toward special education students. Another finding was that fewer general education teachers felt more training was needed in specific

techniques to be successful in teaching learners with special needs.

In a study to determine teachers' perceptions of the desirability and feasibility of adaptations for mainstreamed students in general education classes, Schumm and Vaughn (1991) developed an "Adaptation Evaluation Instrument." This was given to a representative sample of classroom teachers at various grade levels (K-12).

Findings indicated significant differences between all items in terms of their desirability and feasibility, with teachers indicating that all adaptations are more desirable than feasible. Establishing routines appropriate for mainstreamed students, providing reinforcement and encouragement, establishing expectations, and involving the mainstreamed student in the whole class activities were seen as highly feasible adaptations. The commonalities were that those adaptations requiring little individualization in terms of planning, instruction, and altering the environment were viewed by classroom teachers as being most feasible.

The least feasible adaptations included communicating with mainstreamed students, adapting regular materials, using alternative materials, using computers, and providing individualized instruction. The classroom teachers participating in this study identified adaptations in

materials and instruction as neither desirable nor feasible when teaching special learners.

Teacher perceptions of the Regular Education Initiative (Will, 1986) were surveyed by Semmel, Abernathy, Butera, and Lesar (1991). In surveying 381 special and general education teachers, the researchers found favorable opinions toward current "pull-out" programs and did not find these educators requesting changes in current program delivery models. The educators also favored "protecting" current delivery methods and models for students with mild disabilities (p. 19).

Ammer (1984) investigated two questions: How do classroom teachers participate in the mainstreaming process? What factors enhance or detract from the effectiveness of mainstreaming? He found three factors influencing classroom teachers' attitudes toward and participation in the IEP process: (a) formal coursework in special education, (b) grade level the respondents taught, and (c) communication and sharing of responsibility between special and general educators (p. 19). Closely associated with communication was the need to develop cooperative sharing of responsibility for mainstreamed students.

A list of classroom teachers' perceptions of some of the major strengths and weaknesses of mainstreaming was generated through their study. Generally, classroom teachers believed that mainstreaming helped to improve the academic

and social/behavioral performance of students with disabilities. The findings also suggested that time constraints and lack of assistance too often accompanied individualization and diminished the success of the process.

Salend (1984) presented guidelines and procedures for developing and implementing successful mainstreaming programs. These were based on a comprehensive review of mainstreaming studies up to that date. Factors found in the review included: developing criteria for mainstreaming, preparing students with disabilities for the mainstream (such as teaching them social interaction skills), preparing nondisabled students, promoting communication between classroom teachers and special educators, providing inservice training, and evaluating student progress.

His findings showed that mainstreaming can have positive effects on the academic and social development of students with disabilities. He wrote that if these positive effects are to be realized, however, educators must devise and implement programs that incorporate these factors that contribute to successful mainstreaming.

Slavin and Madden (1989) performed an analysis of in-place classroom programs integrating students with disabilities into the general educational program. They identified two comprehensive classroom programs that were effective in increasing the achievement levels of special

needs students: "continuous progress" models and cooperative learning models. After this identification, they extracted the features or principles that are shared by the two sets of programs. These features included instruction directed to individual students' needs and provided in small, homogeneous groups; direct instruction from the teacher; constant assessment of students' progress and the existence of a structured hierarchy of skills that students are expected to master.

Consultative and Collaborative Practices in Adapting Instruction for Mainstreamed Students

Articles and research studies showed the necessity and the effectiveness of consultation and collaboration among special education teachers, specialists, and general education teachers in developing instructional adaptations for mainstreamed students with mild and moderate mental retardation. Jenkins, Pious, and Jewell (1990), in a review of basic assumptions about the Regular Education Initiative (REI), wrote that partnerships between general and special educators is a "generally good educational strategy." They read the spirit of the REI as "the classroom teacher and the specialist form a partnership in terms of instruction, but the classroom teacher is ultimately in charge" (p. 487).

Salend (1984) suggested that the success of mainstreaming is often dependent on the quality of communication and

support between general and special educators. Based on his studies, "communication and cooperation among educators should be an ongoing process, starting with the decision to mainstream a student into a specific classroom" (p. 37).

The need for strong communication between special education and general education teachers when integrating and mainstreaming students has been substantiated by researchers. Ammer (1984) performed a study of mainstreaming in which general educators identified lack of communication as a serious hindrance to successful integration of students with disabilities into general education classrooms. His study revealed a significant correlation between lack of communication between educators and minimal classroom accommodations. Similar findings were given by Cantrell and Cantrell (1976), Jenkins and Mayhall (1976), and Miller and Sabatino (1978).

The need to prepare receiving classroom teachers for mainstreamed students was shown to be another critical component of collaborative-consultation strategies. Salend and Hanke (1981) presented several informational factors special educators should provide to regular educators prior to mainstreaming a student. These factors included academic achievement, social development, supplementary support services, medical and prosthetic information, and preparedness for entering the mainstream.

Some writers considered the need for new support structures for receiving general education teachers. Stainback and Stainback (1986) gave an overview of the use of "teacher assistance teams" in providing support to teachers in general education classes. A team might include two or more people, such as students, parents, administrators, classroom teachers, school psychologists, speech and hearing specialists, and/or learning and behavior experts. The team would meet to problem-solve and to exchange ideas or methods designed to assist the classroom teacher. The major benefit of the approach then would be a reduction in the frustrations of the classroom teacher receiving the mainstreamed student.

Benefits for both mainstreamed students and classroom teachers using consultant models were shown by some researchers. Nevin and Thousand (1987) reviewed research supporting consultant models. Based on their review, they concluded:

Teachers in schools with a consulting teacher assumed more direct roles and engaged in more direct activities with handicapped learners' referral, assessment, curriculum development, implementation or teaching/learning activities, and evaluation when compared to their counterparts (p. 277).

The possibility for conflict between classroom and special education teachers involved in mainstreaming programs has been indicated by some writers. Glatthorn (1990) discussed the relationship between the classroom teacher and the special education teacher and characterizes it as "a complex one fraught with several types of serious conflict" (p. 29). He listed the potential conflicts as (a) the conception of the role of the special educator, (b) the frames of reference possessed by each of the two groups (i.e., the ways in which each group characteristically views teaching and learning), and (c) the "crucial" area of methods and materials. He also felt that special education teachers and classroom teachers differ in their perceptions of each other's competence in working with students with mild disabilities.

Glatthorn identified four consultation models in the current literature: (a) The triadic model, in which the special educator/consultant provides assistance to the classroom teacher, who in turn, uses the assistance to help the handicapped students; (b) The systems model, in which the special educator/consultant assists the classroom teacher to assess, set objectives for, plan for, treat, and evaluate the progress of the student; (c) The Vermont model, which is a collaborative effort of state and local education agencies and university personnel to provide consultative services

throughout Vermont; and, (d) The collaborative consultation model, in which educators with diverse expertise generate creative solutions to mutually identified problems.

Medway and Updyke (1985) reviewed one hundred twenty five (125) studies published between 1970 and 1982 and then reduced the number to 54 that met more specific criteria. Behavior and attitudes of the students with disabilities were found to have significantly improved through the use of consultation between the classroom teachers and special educators involved.

Recently, a term has appeared that denotes a merging of consultation and collaborative practices called "collaborative consultation" (West & Idol, 1990). This practice includes the consultative aspects along with the teaming and problem solving characteristics of the collaborative model.

West and Idol (1990) described collaborative consultation as a problem-solving process as well as a service delivery option for students with mild disabilities. They identified three major purposes of collaborative consultation: to prevent learning and behavioral problems, to remediate learning and behavioral problems, and to coordinate instructional programs. They listed and explained the stages in the consultative process and gave planning and

problem-solving options for use as either a service delivery option or as a problem-solving process.

West and Idol presented a distinction between collaboration and cooperation: Cooperation assumes that two or more parties, each with separate and autonomous programs, agree to work together to make all such programs more successful. Collaboration implies the parties involved share responsibility and authority for basic policy decision making and work together to define the problem(s), design an appropriate program, carry out their relevant responsibilities, and then evaluate the impact of what they have done.

In writing that "The potential effects of collaborative education far surpass the time and effort required to provide it" (p. 149), Harris (1990) discussed the need for collaboration in schools and the generic consultation skills that collaborators should possess in order to work well together.

Instructional Adaptations Involving Cooperative Learning Experiences for Mainstreamed Students with Disabilities

Adapting instruction through the use of cooperative learning strategies by classroom teachers for mainstreamed students with mild academic disabilities has been studied for almost two decades (Johnson & Johnson, 1974, 1986; Slavin & Stevens, 1991). These studies show positive effects on social acceptance (Madden & Slavin, 1983; Stevens, Slavin, & Farnish, 1989) and academic achievement of mainstreamed students (Johnson & Johnson, 1986, 1987; Slavin, 1990, 1991) .

Students with academic disabilities, including those with mild to moderate mental retardation, are mainstreamed into classrooms and then distributed among cooperative learning groups within the classroom (Slavin, 1984). The rationale for including these students in cooperative learning experiences is that student achievement will increase due to the supportive and motivational aspects of involving peers learning together and due to students providing explanations to one another within the proximal zone of development of their peers (Slavin, 1990, 1991; Slavin & Stevens, 1991).

According to Slavin and Stevens (1991), cooperative learning methods that have been used and evaluated as means of mainstreaming students with academic disabilities fall

into two major categories: (a) Johnsons' methods (Johnson & Johnson, 1986, 1987) and Student Teams Achievement Division (STAD) (Slavin, 1986) and (b) Cooperative Integrated Reading and Composition (CIRC) (Stevens, Madden, Slavin, & Farnish, 1987) and Team Assisted Individualization (TAI) (Slavin, 1985).

Research using the above approaches showed positive achievement effects varying in strength and significance. Studies using TAI and CIRC to facilitate mainstreaming has found positive effects on the achievement and social acceptance of mainstreamed students. Several experiments described by Madden and Slavin (1983) using the TAI approach showed increased achievement in reading and mathematics for students with mild academic disabilities. Similar findings were presented by Slavin (in Sharan, 1990) for the CIRC program studies involving mainstreamed students showing increased achievement, skill mastery, and retention.

ADAPTING INSTRUCTION FOR MAINSTREAMED STUDENTS THROUGH PEER TUTORING PRACTICES

Peer tutoring systems have been used with success in a variety of settings involving students with disabilities and those without disabilities (Jenkins & Jenkins, 1987). Benefits to the tutor and the tutee have been documented (Gallucci, 1990; Slavin, 1986; Villa & Thousand, 1990). In

cross-age tutoring programs, the gains in achievement were often as great for the tutor as for the tutee (Slavin, 1986). Benefits for both the tutor and the tutee included: increased academic success, development of positive self-esteem, and development of positive social interaction skills.

Lipsky and Gartner (1987), in a review of peer tutoring practices involving students with disabilities, found tutee benefits accrued through the individualization and additional time in instructional activities provided. They also found that tutoring provided the "scaffold" of instruction that some students need to learn new material. For tutors, according to Lipsky and Gartner, there is the opportunity to practice activities for which learning has occurred, but mastery has not yet been attained, or for which learning in one setting has been achieved but not yet generalized to other settings.

Advantages and benefits for both sets of students (i.e., students with disabilities and their non-disabled peers) have been supported through research. Jenkins and Jenkins (1981) reported on programs where students labeled as disabled benefit both as tutors and as tutees in both academic skills and social behavior. Likewise, Delquadri, Greenwood, Whorton, Carta, and Hall (1986) reviewed a large series of studies using classwide or other peer tutoring

approaches for special education students. Positive effects were shown for students with mild mental retardation. The procedures were successful in increasing academic performance, enabling these students to continue in general education programs.

Studies performed by Strain and Odom (1986), along with others selected for review by them, showed specific effects for peer tutoring and social initiations including increases in: The positive social responses of all subjects; the positive social initiations of a few subjects; the length of social exchanges by target children; and, the responses, initiations, and length of interactions when generalization settings are developmentally integrated. They concluded that the peer social skills represent a "legitimate" instructional domain, a domain with "significant developmental and social consequences that reach far beyond the classroom" (p. 543).

Suggestions for effective peer instruction have been identified by certain researchers. Heron and Harris (1987) suggested that for peer instruction to be effective, it was important that peers volunteer to engage in the instruction and the classroom teacher monitor the instruction to determine if the instruction has truly occurred.

Stainback and Stainback (1987) cited research studies supporting gains in achievement for students with disabili-

ties participating in peer tutoring and "buddy" systems. They also felt an added advantage of these programs was that students were given an opportunity to learn about and practice the "interdependent nature" of society, reflecting the ways in which people share and assist with one another and to accept responsibility for the achievement of goals by others as well as themselves.

Bransford and Vye (1989) wrote of the need for students to experience "coached practice" rather than the more frequently used "solitary practice" (p. 196). They listed characteristics of coached practice: monitor and regulate students attempts at problem solving for precision and accuracy, encourage reflection on the processes used in problem-solving, assess mastery or progress through problem-solving exercises, create "teachable moments" (p. 197) for contrasting ideas and strategies used in problem-solving, choose problem-solving experiences "that help students develop component skills in the context of attempting to achieve overall meaningful goals" (p. 198), and foster coaching through peer tutoring and cooperative learning experiences. Their findings indicated such techniques are transferable to all populations of students.

Adaptive Learning Environments and Models

The Adaptive Learning Environments Model (ALEM) was designed to make instructional provisions meeting the various social and academic needs of individual students with disabilities in general education classrooms (Wang, 1980). According to Wang (1987) adaptive instruction is:

An alternative educational approach designed to achieve the overall goal of enabling each student to experience schooling success through a systematic process of making instructional accommodations that meet the unique learning characteristics and needs of individual students (p. 101).

Adaptive instruction necessitates individualized planning, but does not require that teachers work with individual students or that students work alone. Cooperative learning, small group instruction, one-to-one tutoring, peer tutoring, and teacher directed instruction can all be part of the adaptive instruction for classrooms containing students with disabilities. Adaptive instruction is designed to meet the needs of each student through the use of individualized instruction, small and large group instruction, and teacher-directed as well as student-initiated learning (Wang, 1980; Wang & Walberg, 1985).

The ALEM has been used as a core general education program, a special education program, a mainstreaming program for students with mild to moderate disabilities, and in conjunction with other compensatory programs such as Chapter I (Wang, 1981, 1987; Wang & Birch, 1984; Wang, Peverly, & Randolph, 1984; Wang, Rubenstein, & Reynolds, 1985).

The focus of the ALEM design is the modification of the conditions in the learning environment to accommodate the needs and characteristics of exceptional students. The ALEM has five major components:

1. Basic skills concentration consisting of highly structured and hierarchically organized prescriptive learning activities;
2. An instructional/learning management system using available resources;
3. A family involvement component aimed at fostering home/school communication and interaction;
4. A flexible grouping and instructional team design; and,
5. A data-based staff development program providing written plans and procedures for increasing the capabilities of staff members to initiate and monitor implementation of the model in the school.

Students in ALEM classrooms are taught to plan and monitor their own learning, and are held responsible for planning, managing, and completing teacher-prescribed and self-selected learning tasks within determined time limits (Wang et al., 1985).

Wang and Walberg (1983) found positive student achievement and attitudinal outcomes in ALEM classrooms where "mildly to moderately handicapped and gifted students are integrated on a full-time basis" (p. 63). Results included increased perceptions of self-competence and peer acceptance (Wang, Peverly, & Randolph, 1984). Achievement and attitudinal data showed favorable performance by nondisabled students in the mainstreamed classes as well (Wang, Rubenstein & Reynolds, 1985).

Results from the Wang and Walberg (1986) study suggested:

Programs with adaptive instruction features can be effectively implemented in regular classrooms in a variety of school settings. Further, these features can lead to positive learning outcomes for students with diverse characteristics and needs (p. 186).

In a review of teaching techniques for students with disabilities, Epps and Tindal (1987) listed several other models that are considered "steps toward the development of

specific, prescriptive environments that are not only highly related to achievement but also capable of experimental manipulation" (p. 234). Besides the ALEM listed earlier, other models include the Active Mathematics Teaching model from the University of Missouri (Good, Grouws, & Ebmeier, 1983) and the Direct Instruction Model designed through the University of Oregon (Becker, Engelmann, Carnine, & Rhine, 1981). Also, The Syracuse Community-referenced Curriculum Guide for Students with Moderate and Severe Disabilities (Ford, Schnorr, Meyer, Davern, Black & Dempsey, 1989) is listed by some writers as an additional source for information about instructional and curricular adaptations.

The Active Mathematics Teaching model uses components of (a) daily review, (b) development, (c) seatwork, (d) homework assignments, and (e) special reviews. According to Epps and Tindall, although the adaptations and applications to other populations and settings are less consistent than the ALEM, the methodology behind most of the research is well-developed.

Direct Instruction is based on strong, direct communication between the teacher and the learner and the logical development of the essential features in teaching concepts (Engelmann & Carnine, 1982). Application of the principles involved is in small group formats of three to seven participants.

Concepts are presented in sequential order of difficulty and are related to what students already know (Rosenshine, 1979, 1983). Teachers model the correct performance of the skill and they closely monitor student acquisition of the skill through guided practice, recitation, independent practice, or other application activities (Stein et al., 1989). In direct instruction, the teacher controls instructional goals, chooses materials appropriate for the student's ability, and paces the instructional episode (Rosenshine, 1979; 1983).

The Syracuse Community-referenced Curriculum Guide for Students with Moderate and Severe Disabilities (Ford et al., 1989) describes adaptations for functional skills related to the classroom teacher's instructional objectives. Students with moderate to severe disabilities would be taught through (1) regular objectives, (2) regular-adapted objectives, (3) regular-embedded objectives, and (4) functional adaptations. The Guide gives examples of each type listed above and provides the reader with checklists and planning sheets in developing curriculum for these students.

Cognitive Instructional Strategies for Mainstreamed Students With Disabilities

Experimental research concentrating on the information processing strategies that mediate learning on the part of the student has grown in recent years (Doyle, 1979). Much of

the research work has focused on cognitive learning strategies such as student rehearsal, elaboration, imaging, organizing, self-questioning, and summarizing activities (Palincsar & Brown, 1984). These activities are believed to facilitate the acquisition of knowledge for students (Bransford & Vye, 1988).

Cognitive instruction holds promise for the instruction of mainstreamed students with mild to moderate mental retardation due to the students' lack of "efficient" learning strategies (Polloway & Smith, 1987). Research evidence suggests that cognitive learning strategies can be taught to these students and that, once learned, use of the strategies leads to increases in student learning and consequent achievement (Stein et al., 1989).

In response to increasing failure rates of students with mild mental retardation and learning disabilities mainstreamed into classrooms, Smith and Smith (1989) designed a study that addressed three questions:

1. Which teaching methods will make materials and information more learnable?
2. Which teaching methods will teach specific study skills that transfer to all content areas?
3. What must the student know in order to choose and use a study skill wisely and independently?

A specialized program of study skills was developed as an intervention and support structure for the mainstreamed students. Program features included teaching mainstreamed students specific study skills and techniques and emphasizing skill transfer for the resource programs to content application. The model consisted of three phases: teacher training, synchronized teaching schedule, and follow-up to the training.

The pilot was successfully implemented in this school. All of the students functioned reasonably well academically in the secondary classrooms in which they were mainstreamed, according to the authors.

Teacher Preactive Decision-Making Processes for Determining Instructional Arrangements for Mainstreamed Students with Disabilities

Research defining teacher judgments and instructional decision-making processes is a relatively recent addition to the realm of knowledge concerning instructional practices in mainstream settings. Preactive and interactive decisions have been explored by Peterson, Marx, and Clark (1978), Yinger (1979). Hunter (1984) also has written of the "constant stream of professional decisions that affects the probability of learning" (p. 169). These decisions are made and implemented before, during, and after interaction with students.

Research on teacher decisions describes two types of decisions: Preactive decisions and interactive decisions (Peterson et al., 1978). Preactive decisions are those defined as decisions the teacher makes prior to instruction. Interactive decisions are those the teacher makes during the act of teaching or instruction (Peterson et al., 1978).

Yinger (1979) characterized preactive teaching processes as those which take place "before and after school, during recess, and at other times when the teacher is alone in the classroom" (p. 163). He suggested that the most important thing teachers do during these times is planning.

Yinger related Doyle's finding that teaching behavior is controlled and shaped by the classroom environment. Teacher planning then becomes the tool by which teachers "manipulate the environments that later shape and control their own behavior" (p. 164). Yinger's study examined teacher planning strategies containing problem-solving and decision-making processes and constructed models of teacher planning behaviors based on naturalistic inquiry.

Although no studies were found that specifically dealt with preactive processes in making instructional adaptations for mainstreamed students with disabilities, models of preactive teaching behavior hold promise in understanding the process of making instructional adaptations for these students.

Bransford (1979) presented an organizational framework for constructing learning activities which involved four aspects of the learning process: (a) characteristics of the learner, (b) learning activities, (c) criterial tasks, and (d) nature of the materials. This framework can be used to guide inquiries into preactive and interactive teacher decision-making.

Borko, Cone, Russo, and Shavelson (1979) described a model for preactive decision making that views the teacher as "an active agent who selects a teaching skill or strategy in order to help students reach some goal" (p. 138). The choice of the skill or strategy is based on information about the student, the teacher's beliefs and purposes, the nature of the instructional task, the constraints of the situation, and the availability of alternative strategies and materials. Their studies were performed in a laboratory environment, but later replications have shown generalizability of results to the classroom teacher at site schools (Shavelson, 1983).

Tyler (1950) constructed a model of curriculum planning that was later elaborated by Taba (1962). This model recommended four steps to effective planning: specify objectives, select learning activities, organize learning activities, and specify evaluation procedures. Clark and Yinger (1979) described this model as a "rational means-ends one in which

a planner's first task is to decide on the desired ends, or what is to be accomplished, and then to select the appropriate learning activities to accomplish them" (p. 109).

MacDonald (1965) and Eisner (1967) departed from this model and advocated the "integrated ends-means model." Their claim was that teachers do not begin their planning by thinking about objectives and then proceeding to decisions about activities, and then about evaluation. They believed teachers first focus on the type of learning activity and objectives emerged through the context of the activity. Their model reflected integration of the "ends" for the learning activities with the "means" for the learning.

Zahorick's (1970) work on classroom planning by teachers showed teachers' planning decisions did not always follow logically from a specification of objectives. He found the specification of objectives not a particularly important planning decision with the teachers involved in his studies.

Zahorick studied the planning of 194 teachers and found content to be taught was one of the most important decisions made by the teachers. Teachers reported this was most often the first decision they made in the preactive process.

Peterson, Clark, and Marx (1978) utilized "think aloud" techniques to examine twelve teachers' preactive planning. Teachers were given 90 minutes to plan a day's lesson on

material they had not seen before. Teachers were asked to think aloud as they planned for the lesson. Planning statements were coded in a number of categories.

The largest proportion of teacher planning statements focused on the content to be taught. After this, the teachers were most concerned with the instructional process. The instructional process included intended student activities as well as planned teacher strategies and activities. The findings were consistent with Zahorick's in that selection of student learning activities was frequently mentioned by teachers as an important planning decision. Statements concerning the learner, the materials, and the objectives were seldom mentioned by teachers in the study, even though a list of desired cognitive and affective student objectives was given to the teachers by the researchers.

Shavelson and Stern (1981), in a review of research to date on teachers' pedagogical thoughts, judgments, and decisions, presented findings of research on preactive teaching processes. Their findings included:

1. Instructional activity is the basic instructional unit of planning and action in the classroom.
2. Teachers focus on tasks.

3. Embedded in the tasks are teachers' concerns about content, activities, students, and goals.

4. Teachers are more concerned with the selection of content for the purpose of building tasks rather than with the structure of the subject matter.

5. Teachers consider information about students, especially student ability when planning instruction.

Yinger (1977) found that one teacher's preactive processes formed a three-stage, problem solving task including (a) problem finding where content, goals, knowledge and experience combined to yield an initial conception of the activity worthy of future consideration; (b) problem formulation and solution involving progressive elaboration of the activity; and, (c) activity implementation emphasizing evaluating and routinizing the teacher's repertoire of knowledge and experience, which play an important role in future preactive teaching processes.

McCutcheon (1980) related research performed in 1978 in several Virginia school districts. The researchers worked in each classroom for several hours a week during the school year to study the planning process, the nature of the curriculum emerging from the plans, and various conditions influencing the plans.

She described the "richest form" of planning--the complex mental dialogue called reflective thinking--that teachers engage in before writing the plans or teaching a lesson. She thinks mental planning "is probably the most professional activity of teaching, for it gives teachers the opportunity to relate theoretical knowledge to particular cases" (p. 9). Functions for planning include psychological support, envisioning the lesson, and making the lesson plan "more robust" by anticipating potential disturbances or "short circuits" (p. 11).

Chapter Summary

This chapter reviewed research related to current mainstreaming practices, including instructional arrangements for mainstreamed students with mild to moderate mental retardation. Studies on consultation and collaborative practices were noted as they relate to the construction of instructional adaptations for mainstreamed students. Research related to classroom structural adaptations (such as the use of peer tutoring, cooperative learning experiences, adaptive learning environments and models, and cognitive instructional strategies) with mainstreamed students was presented.

Research related to preactive teaching processes was provided as a structure for the emerging characteristics of teacher planning in making instructional adaptations for

students with mental retardation. Research determining classroom teachers' perceptions of mainstreaming practices, instructional adaptations, and behavioral interventions was also noted.

The present study was needed because no research was found that traced a teacher's planning and decision-making processes in designing and implementing instructional adaptations for mainstreamed students with mild to moderate mental retardation students. Guides such as the Syracuse Community-referenced curriculum are not directly evolved from empirical research, and they tend to operate from the assumption that classroom teachers base curriculum decisions on individual goals for children, while Yinger (1978; 1979) Peterson, Marx and Clark (1978) strongly suggest that teachers operate from a very different base. For that reason, along with the increasing use of mainstreaming techniques for diverse learners and because of the greater discrepancy between mainstreamed students compared to non-disabled students likely with integrated educational practices as stated, examining the instructional adaptations made by classroom teachers is of great significance to educators involved with mainstreaming practices.

Chapter 3

Method

Overview

This was a case study designed to examine the types and amount of instructional adaptations made by elementary classroom teachers receiving students with mild to moderate mental retardation. The study included observations and descriptions of preactive teaching (planning) processes, actual instructional adaptations, and teacher perceptions of the mainstreaming program. Data were collected through structured and unstructured interviews, observations, audio and videotape, and documents describing teacher planning processes or actual implementation of instructional adaptations for the students with mental retardation.

The Research Issue

As principal of the elementary school in which this study was conducted, this researcher was very interested in the development and general effectiveness of the mainstreaming program in the school.

The school's mainstreaming program began in 1989 with four students having moderate mental retardation. The staff embraced a model of mainstreaming called "integration," differing from traditional mainstreaming in that students

were placed into chronological age-appropriate classrooms rather than placed into skill-appropriate classroom settings. If skill readiness and academic functioning were the criteria for placement, a 10 year old student with mild mental retardation functioning at a second grade level would be mainstreamed into a second grade classroom. In an integration model, this same student would be placed in a fifth grade, with age-appropriateness the criterion for placement.

The faculty had received two one-hour inservice training sessions about mental retardation and three one-hour sessions on general instructional adaptation strategies at the beginning of the school year in which this study was performed. The inservices were led by the special education teachers and the principal-researcher.

At these inservices the special education staff had described and given examples of general instructional adaptations to prepare classroom teachers for the mainstreamed students. Special education teachers described instructional adaptations such as multi-level teaching and curriculum overlap (such as those found in Ford, Davern, & Schnorr in Stainback & Stainback, 1992) and adaptations to goals, objectives, materials, personal support (such as peer tutoring and the use of teacher aides), and modifications in work and response modes. However, it was not until the

spring of 1992 that adaptations such as those found in The Syracuse Curriculum Manual (Schnorr, Ford, Davern, Park-Lee, & Meyer, 1989) were presented to classroom teachers. It is important to note that the adaptations made by classroom teachers and noted in this study were not labeled by this researcher as found in that source. Instead, descriptions of possible adaptations and some limited strategies to implement adaptations were presented in these inservices.

This study noted the amount and analyzed the types of instructional adaptations made by elementary classroom teachers receiving mainstreamed students with mild to moderate mental retardation. The research topic was "How do these classroom teachers adapt instruction for students with mild to moderate mental retardation mainstreamed into their classrooms?" A secondary topic was "What were these teachers' perceptions about the mainstreaming program and did these perceptions change over time?"

The decision-making processes used by the classroom teacher in constructing the adaptations were also investigated. How does the classroom teacher use preactive processes in considering the abilities and behaviors of the student with disabilities in designing instruction and in making instructional adaptations? Are preactive teaching process models (e.g., Shavelson & Stern, 1983; Yinger, 1977; and Yinger & Clark, 1979) embedded in the observed teacher's

preactive activities? Are these models embedded in the process of constructing instructional adaptations?

The amount of consultative and collaborative interactions in which the classroom teacher engaged with the specialists was examined. Did the classroom teacher actually use information from these meetings or interactions in her planning? Did the specialist offer advice the classroom teacher found helpful?

Design of the Study

A descriptive case study examining two elementary teachers over the course of a school year was developed to meet the objectives of the study. Although 11 of 19 general education teachers on the staff were participants in the mainstreaming program, one fifth grade teacher and one fourth grade teacher exhibited special interest in making instructional adaptations for mainstreamed students. Neither teacher had participated in the mainstreaming program before. Each teacher participating in the study received two students with mental retardation: one student with mild mental retardation and one student with moderate mental retardation.

These two teachers were selected because of their willingness to receive mainstreamed students and their interest in making instructional adaptations. In order to lessen any potential bias, all teachers participating in the

mainstreaming program were frequently observed. However, data were observed, coded, and analyzed primarily for the two teachers described above. By including two teachers in the study, it was possible to draw cross-case conclusions (Yin, 1989). To increase construct validity, the assistant principal and the two teachers directly involved in the study reviewed drafts of the results after observations and interviews concluded. Additionally, the two special education resource teachers read the descriptions and results to further validate the findings.

The units of analysis for the case study were each of the two teachers' elementary classrooms containing the mainstreamed students and their non-disabled peers. The following areas were the focus of observations: (a) lessons or lesson segments involving mainstreamed students within the classroom setting and taught by the classroom teacher, (b) each classroom teacher's use or non-use of instructional adaptations during observations, (c) each classroom teacher's feelings and perceptions toward mainstreaming practices and how these feelings and perceptions changed over the course of the school year, and (d) the classroom teacher's preactive teaching processes and activities in relation to making instructional adaptations for mainstreamed students.

Setting

The setting for this study was an elementary school located in a suburban area of northern Virginia. Four hundred seventy-nine general education students in grades kindergarten through fifth grade attended the school. The school was also a "special education center" housing two special education classes for students with moderate and mild mental retardation. Five students with moderate mental retardation and twelve students with mild mental retardation attended the school, bused from locations throughout the county. Only one of these students lived in the attendance area of this school.

The school contained nineteen general education classrooms: Four half-day kindergarten sessions housed in two classrooms (one morning session and one afternoon session in each of two classrooms), four first grades, four second grades, and three each of third, fourth, and fifth grades. With the exception of kindergarteners, all students attended school for a full day. Transportation arrangements were made so that special education students arrived and departed at the same times as general education students.

A variety of resource staff supported the school's programs. Part-time specialists included a learning disabilities specialist, a speech and language pathologist, an occupational therapist, a physical therapist, a guidance

counselor, and a teacher of the gifted. A full-time reading resource specialist served remedial and other students. Other instructors included an art teacher, music teacher, library and media services specialist, and a physical education teacher.

The school also housed a cafeteria with staff, three cafeteria monitors for lunch periods, and three custodians. A speech resource room, a computer lab with 24 computers, an art lab, an outdoor science lab, library, gymnasium, cafeteria, music room with various instruments, and another resource room containing the learning disabilities and reading resource programs were located at the school.

The school was almost thirty years old but was well-equipped, clean, and recently painted. Some paint chipping is noticeable on door jambs due to repeated over-painting with different colors of paint. However, the teachers and administration take pride in the school, as evidenced by the varied student products on display in hallways and the inviting atmosphere of the lobby, hallways, and office areas.

The composition of the school was heterogeneous, with approximately 75% of the students being Caucasian, 15% African-American, and the remainder various cultures (Native American, 5%; Middle Eastern countries, 3%; Far Eastern, 2%).

The general education program was an elementary model with self-contained classes. The classroom teacher was responsible for the teaching of reading, spelling, handwriting, composition, mathematics, social studies, science, and health. A specialist teaches certain portions of the Family Life Education curriculum (a sex education course taught in grades K-10) during eight sessions for fourth and fifth graders in the fall. Students traveled to art, music, PE, and library classes. The classroom teacher was expected to teach their students at least one hour weekly in the computer lab.

Teachers worked together in grade level teams to make curricular decisions involving pacing, sequencing, methods, and activities for each of the subjects. Teachers talked about student performance, instruction, and other issues in their grade level meetings held twice monthly.

The school's student council and its officers worked to promote communication and "school spirit" within the student population. One of the classrooms elected a mainstreamed student as their representative to the council. The council sponsored several "school spirit days" monthly, organized roller skating nights, sponsored a 50's dance, and participated in service projects. Students, teachers, parents, and the administration of the school became involved in many of these activities.

Extra curricular activities were available after school to all interested students. Hands-on Science, Art Smart, scouting opportunities, and talent show rehearsals were some of the extra-curricular events held for students. General education students appeared to participate in these events more than the special education students, possible due to constraints imposed upon special education students by busing arrangements.

School Culture

Change is a constant in this school. This was made clear to the faculty and staff prior to this principal's arrival three years ago. Before he began his duties, this principal had visited the school several times, sent packets of articles and research to be shared with all faculty members, and planned meeting times with the faculty during the summer. Before his first year as principal at this school, he was able to fill nine vacancies. As of the time of this study, sixteen of thirty classroom teachers had been hired by this principal. The potential faculty member's openness to change was one of the criteria for hiring.

The teachers had been involved in a number of instructional initiatives during the three years this principal had been at the school. Initiatives in the areas of mainstreaming, staff development programs, and

instructional planning and implementation have occurred during those years.

The mainstreaming program shifted from a traditional skills-placement model to an integration model (placement of students in a chronological age-appropriate classroom). This shift began in the 1989-90 school year with five students exhibiting moderate mental retardation. During the 1990-91 school year, the integration program was expanded to include the program for students with mild mental retardation. During the 1991-92 school year, the mainstreaming program was expanded even further, with the mainstreamed students beginning each school day in their integrated placements from the first day of school.

Staff development programs shifted from brief inservices given by the principal at the monthly faculty meetings to three in-depth courses taught yearly by the resident faculty on topics relevant to research and development of elementary school curriculum (such as cooperative learning strategies and integrated language arts instruction).

Recently, the kindergarten through second grade faculty wrote and implemented a curriculum reflecting whole language principles and philosophy taught in thematic, interdisciplinary units. The teachers worked not only as

grade level teams but also as a cluster of grades to coordinate implementation across the grade levels.

Although this school does not operate under a formal site-based management plan, teachers are given much freedom to determine a number of curricular and other decisions. Teachers plan in grade level teams. At times, several grade levels will plan together in clusters (such as kindergarten through grade 2). At other times, the faculty will make certain curricular decisions. Faculty meetings evidence use of cooperative learning techniques and shared decision-making with the administration. Additionally, a number of committees work to implement faculty, administration, and community concerns.

Participants

The mainstreaming program at this school involved eleven of the nineteen elementary classroom teachers. Of those teachers receiving mainstreamed students with mental retardation, two were kindergarten teachers, two were second grade teachers, two were third grade teachers, two were fourth grade teachers, and three were fifth grade teachers.

Although many of these teachers were perceived by the special education teachers and the administration as performing well with the mainstreaming program, this study was developed to examine instructional adaptations made by classroom teachers new to the program. Two teachers were

selected for the study because of their special interest in the mainstreaming program and because of their overall effectiveness as classroom teachers. One teacher selected for this study was a fourth grade teacher currently in her third year of teaching and the other teacher selected for the study was a fifth grade teacher with a total of six years of teaching experience, the last two years spent at this school.

The Case Study Protocol

A protocol to guide the study was organized according to guidelines recommended by Yin (1989). The protocol used in the research follows.

Protocol Question:

How is the mainstreaming program organized in an elementary school, how do classroom teachers make instructional adaptations in the learning environment, who helps them make these adaptations, and what are their perceptions about the adaptations and the program?

Sources of Data:

Classroom teachers

Special education teachers and specialists

School and school district organizational chart

Program and Curriculum Guides

School counselor

Newspaper, journal, or other related articles about
the school's mainstreaming program

Strategies:

Structured interviews with general education
teachers

Description of the school (setting, the school's
history with special education, student
population(s), location, staff, instructional
organization, curricula, styles of teaching)

Descriptions of the perceptions of general and special education teachers about mainstreaming and what he/she/they are doing with it

Descriptions of the classroom teachers' teaching style and what they feel affects mainstreaming

Descriptions of the "typical day" for teachers with mainstreamed students

Descriptions of the adaptations made (curriculum, instructional strategies)

Descriptions of the adaptation-making process (classroom teacher's decision-making processes along with consultation and teaming practices)

Descriptions of the amount of time spent and the kind of interactions observed between the classroom teacher and mainstreamed student(s)

Method

Data Collection

Data were collected through structured and unstructured interviews, observations, audio and videotape, and documents such as planbooks, newspaper articles, and other items related to the mainstreaming program and the instructional adaptations made by the classroom teacher. Most of the data were collected as part of the principal's normal supervisory

duties and instructional leadership activities during the school year.

The collection of data relating to teachers' preactive processes required developing a different system. A matrix was designed to structure observations of the teachers' planning process interviews (see Figure 3.1). These interviews were held to discuss the planning for particular lessons evidencing instructional adaptations. It was during these discussions that most of the data concerning the struggles and conflicts the classroom teacher felt while planning for mainstreamed students were collected.

Instructional adaptations in the classroom were observed and then were followed with interviews held with these two classroom teachers. The interviews varied in format and length, and were held several times a week during the course of the study.

Data were collected in the two classrooms during the entire school year. At least one hour three times weekly were spent in each of the two classrooms observing the teachers, mainstreamed and other students, delivery of instruction, and instructional adaptations made for the mainstreamed students. Some classroom observations were made in which no mainstreamed students were present. These observations were intentionally made to examine each classroom's learning environment, instructional activities,

Teacher decisions:

Week of _____

	REGULAR STUDENTS	MAINSTREAMED STUDENTS
General Goals		
Materials		
Activities		
Objectives		
Assessment of Student Mastery of Objective(s)		
OTHER NOTES:		

Figure 3.1

Coding Matrix: Teacher Planning Activities

and the teacher's interactions with students when mainstreamed students were not present.

Other classrooms receiving mainstreamed students were visited and discussions held concerning program implementation with the other teachers involved in the mainstreaming program, but not to the same degree as for the two teachers involved with this study. This was done to minimize potential researcher bias and to maintain a feeling of inclusion in the program with other teachers.

Observations and interviews provided qualitative data about the classroom instructional programs. During the initial classroom observations, information was gathered on the types of classroom activities, seatwork, teacher presentation styles, grouping arrangements for instruction, and reinforcement techniques. Observations were made of the teacher performing preactive teaching processes and participating in collaborative-consultative planning sessions with special education staff.

A protocol was designed to guide the observations and to examine types and amount of instructional adaptations viewed, the features of preactive teaching processes, and the characteristics of collaborative-consultative planning sessions (Biklen & Bogdan, 1982) (see Figure 3.2). Researcher's notes were used to create categories which were then transferred to a series of matrices used to identify

The setting:

Classroom seating arrangements

Classroom environment

The Lesson:

Teacher preparations (background information,
visuals, etc.)

Lesson format (lecture/discussion; other
model of teaching incorporated)

Components of the lesson

The Students:

Student interactions

Student involvement: active/passive

Cooperative learning/peer tutoring

Other areas:

Pacing of the lesson

Teacher's vocabulary

Structural changes

Figure 3.2

Classroom Observation Guide

components of the instructional adaptations observed (see Figure 3.3). The matrices were also used to examine teacher perceptions of the effectiveness of the adaptations in the daily interviews.

In the descriptions of the teachers that follow, the teacher as learner is examined--the demands, conflicts, and struggles that occurred for each teacher as she worked to integrate the mainstreamed student. Later, the "shifts" in instructional delivery methods, learning materials, and classroom environment made by each teacher during the course of the study were described. Additionally, the methods by which the teacher attempted to "make sense" of the curriculum through decision-making methods and collaborative/consultative strategies in making adaptations for mainstreamed students were examined.

Data Analysis

Procedures for developing grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990), based on inductive analysis of data, were used in encoding and data analysis. Data were collected, coded, analyzed, and arranged into theoretical categories and their properties (Parker & Gehrke, 1986). The categories and properties were then analyzed to develop working hypotheses and to provide direction for the next stage of data collection. Stages of data collection and analysis followed, comprising the method

Date:	Time:	Series:	Page in Series:
Describe Setting of Mainstreamed Student:			
Activities Observed:	Objects:	Surrounding persons:	

Figure 3.3

Sample Recording Sheet

Adapted from:

Dobbert, Marion L. (1984) Ethnographic Research,
New York: Praeger Publishers.

List the observable markers of the general atmosphere:

DESCRIPTIONS:		
Mainstreamed Learner:	Characteristics: Tutor	Characteristics: Group/Class
Action/ Interaction:	Action/ Interaction:	Action/ Interaction:

called "constant comparative" data collection (Glaser, 1978).

The teachers were observed and adaptations noted. Protocols were developed to note the types and amount of instructional adaptations made for the special education students mainstreamed into each class. Coding categories, properties, and their dimensions for instructional adaptations emerged by early January, with final constructs of these categories determined by early March.

Stimulated-recall techniques (Parker et al., 1986) were used in the follow-up interviews conducted after each observation day. The decisions each teacher used in creating the adaptations were described by each teacher during the interview.

Interview data were organized into six cells as suggested by Patton (1990): (a) experience/behavior questions, (b) opinion/values questions, (c) feelings questions, (d) knowledge questions, (e) sensory questions, and (f) background/demographic questions. Patton suggests that researchers vary these cells by framing questions according to dimensions of time (past, present, and future). Consequently, a matrix was developed to utilize these facets in the interview protocol. Descriptive questioning (Goetz & LeCompte, 1984) was used at the onset of the preliminary

interviews to establish setting and context for teacher decision-making and adaptation-making.

Analysis of the protocols for the observations, interviews, and adaptations followed. Further comparisons were made as data analysis continued.

The constant comparative method of qualitative analysis occurs in four phases: (a) comparing incidents and generating categories based on features that make two incidents the same or different, (b) integrating categories, (c) delimiting the emerging theory, and (d) writing theory (Glaser & Strauss, 1967; Parker et al., 1986). Developing categories and their properties should develop in a recursive process of coding and comparing, along with synthesis of emerging hypotheses and, later, theory (Rogers, 1984).

Summary of Chapter 3

This chapter presented a scope of the study and of the research issues. Features of mainstreaming and the special education processes were given as a framework for the research issue and design. A research protocol was given along with research questions. The setting and the teachers observed in the study were described.

Methods for data collection were presented. Forms of data analysis were given at the close of the chapter.

Chapter 4

Results

Introduction

The purpose of this study was to examine the amount and types of instructional adaptations made by elementary classroom teachers for mainstreamed students with mild and moderate mental retardation. The study also examined preactive teaching processes, including consultative and collaborative planning activities, and classroom teacher perceptions about mainstreaming practices.

In this section the two teachers involved with the study are described. Their perceptions about the mainstreaming program, along with their frustrations, conflicts, struggles, and challenges as they worked with the mainstreaming program, are presented.

Later, the types and amount of instructional adaptations that emerged in this study are reported: Acquisitional, parallel, enabling-social, enabling-academic, and structural adaptations. In addition, some of the preactive teaching processes, including collaborative and consultative strategies used by the general education and special education teachers in planning for mainstreaming are given.

It should be noted that neither the special education teachers nor the receiving classroom teachers initially labeled the adaptations during the study. These labels were generated after detailed analysis of the observations and discussed the appropriateness of those labels with each participant later in the study. Additionally, it should be noted that the labels for the instructional adaptations found in this study were developed by this researcher and may bear little resemblance to labels describing adaptations found in other literature. All names have been changed to respect the confidentiality of participants in this study.

Teachers' Perceptions

Jill, the Fifth Grade Teacher

Jill enjoys teaching in a challenging environment. For three years prior to arriving in Virginia in 1990, Jill taught in an inner city school in Los Angeles. Challenges abounded there: Violence, deprivation, shortages of materials and books, uncaring parents (and even some staff members), and large classes were often the case. Even so, she felt those challenges were "completely different" and "maybe even easier at times" when she compared her teaching in Los Angeles to her teaching with mainstreamed mentally retarded students in this suburban district.

Jill was in her sixth year of teaching, her second year in Virginia, when asked to participate in the

mainstreaming/integration program at our school. She would receive two mentally retarded boys: Mark, an eleven year old student with moderate mental retardation and Tim, a ten year old student with mild mental retardation. Both boys had been involved in the mainstreaming program for the two previous school years.

Other teachers on staff considered Jill to be a "super teacher." Her grade-mates asked her for advice about teaching certain units and about the learning games, centers, and other high interest activities she frequently incorporated in her teaching. They also worked closely with her to develop their grade level nine week plans. On many occasions, other teachers stopped by to see her before or after school to look at displays and projects her class had created. During the mid-winter, Jill taught a five hour course to the faculty on developing interdisciplinary strategies and units. Teachers consistently rated Jill's organization, content, teaching style, motivation, and preparation for this course in the highest categories.

The decision to place these students in her class was made by the special education teachers. They felt that this was the best placement for these two students.

Jill was excited about participating in the program. She stated: "Since coming here a year ago I've wanted to be included in this program. I've heard some super things about

it from other members of the staff." The special education teachers felt that she would take the time to create the supportive teaching and learning environment in her classroom essential for the mainstreamed students.

Throughout the study, Jill emphasized that many good things were occurring in her classroom due to the mainstreaming program. She stated:

I've included format changes, used more cooperative learning strategies, and changed many activities to include Mark and Timmy in the class. I don't know if I would have made some of those changes otherwise. Even though there have been times when I've been frustrated and upset [with Mark's behaviors] at times, I have to say that the other kids have been great and Mark and Timmy have come a long way.

Jill had conflicting feelings about the mainstreaming program at certain points during the school year. At one point she noted, "I guess I was a little naive: I thought I would be receiving a lot more help with aides and teachers with this. This is just not the case." She returned to this theme several times during the school year. Despite the many gains she noted for the mainstreamed and the other students as a result of this program, some lingering doubts about behavior management and program effectiveness were

noted. She felt that Mark (the student with moderate mental retardation) was "more of a handful," but Timmy (the student with mild mental retardation) was the more easily mainstreamed of the two boys. She stated in May:

Timmy was OK to have in class--he could do so much and he was usually interested in what we were doing. Mark, though, was really challenging. I didn't know what to do sometimes when he was really misbehaving and creating horrible disruptions. And there were so few academic things he could do. The other kids were great, though. I have to give them credit. They were more prepared than I was [for mainstreaming].

In almost every interview, Jill discussed Mark's disrupting behaviors and whether or not progress was being made. We discussed her opinions and feelings about Mark's progress in these areas. At one point she stated:

I think it all revolves around his [Mark's] mood. I can almost tell as soon as he walks through the door whether or not it's going to be a successful period or not. His mood makes all the difference in the world. Sometimes the kids can shake him out of it, but other times no matter what we do he is not interested and he just creates problems. then I have to send him back [to the resource room].

Jill described a "desperate search" for successful activities and strategies to use with Mark during early interviews held in September 1991. At one of the first monthly meetings planned as a staff development session and discussion group for teachers involved in mainstreaming activities, Jill stopped the discussion in progress saying:

Look, I am really having problems keeping one of mine on any kind of task. Anybody have any ideas for me? I'm about at the end of my rope. It seems to go well when his teacher [resource teacher] is in [the room], but it all falls apart when she leaves.

The facilitator (the role of facilitator rotated among the teachers on the site team) heard Jill's "plea," departed from the planned agenda and opened the meeting to developing problem-solving strategies for Jill. Other classroom teachers made suggestions including: (a) using the listening station in her room as a reward or quiet activity for him, (b) shortening the periods he is in the classroom, and (c) pairing him with a peer or grouping him with several peers to help "control" his behaviors.

The special education resource staff members were actively involved in monitoring all mainstreamed students' behavior, providing supplemental work and other activities

for them, and responding to classroom teachers' and mainstreamed students' concerns and problems.

Each special education teacher had an assistant, but they had fairly substantial caseloads. The teacher of the program for the moderately mentally retarded was assigned five students. Two of those students were five years old and were mainstreamed into the kindergarten classrooms for only brief periods due to their limited attention span. The other three children were placed in age appropriate classrooms for varying amounts of time: One was mainstreamed in a second grade; another was mainstreamed for brief periods in a third grade classroom; and the remaining student, Mark, mainstreamed into fifth grade.

The teacher and assistant assigned to the program for the mildly mentally retarded were responsible for twelve students, also mainstreamed into age-appropriate classrooms throughout the building. Jill and the other teachers knew that the resource teacher would not be available to stay in the general education classroom for extended periods. The special education staff did, however, visit classrooms periodically throughout the day and monitored each child. The classroom teachers understood that if they needed "help" in some way, they could summon the resource teacher or assistant and request that the mainstreamed child leave the classroom for a period of time.

Jill incorporated a number of the suggestions given to her from that meeting and from other discussions held with the resource teachers. She reported at subsequent interviews that Mark enjoyed the listening station and this helped her "get through" sustained reading periods or quiet work times. One tape, music of the Civil War period, was one of Mark's favorites. Mark's peer helpers taped stories from the basal reader and some of Mark's favorite picture books for this center. Jill also tried to find tapes that might relate to content area studies. For example, she located tapes using actual sounds of falling rain, peals of thunder, and wind for a science unit on weather. She related that these types of tapes were extremely successful.

By mid-winter, Mark appeared comfortable with many of the teaching and learning routines used in the classroom. Jill reported: "Things are somewhat easier now. The other students can help him instead of my helping him when it's needed. They are good about keeping him [Mark] involved in some way." Timmy had blended in very well, also. She stated, though, that Timmy "had to use a lot of visual things. He, of course, can't read like the rest, but we try to get him to follow the pictures in the story or point to what's happening."

The teacher completed a variety of charts during some story discussions showing the story sequence, webbing, plot

development, and/or vocabulary words in context. She would involve Timmy by having him point to the chart, trace words, follow a story sequence, or read certain key words in the story web. According to Jill, Timmy loved to point to the words or trace the sequence, for example, with only a little help from his peers. Jill felt these activities did "a lot for Timmy," by increasing his self-esteem through being "valued" by his peers.

Near the middle of March, Jill described what she called a "revelation" about her "conflicting feelings":

I've done a lot of thinking about what my worries have been. I guess my greatest worry was that with Mark I would lose control of the class. You know, his outbursts and all--and what would all the parents think? But I have to tell you, I think I'm over that now. The kids seem to take it in stride and I'm finding that some of these things don't bother me as much. I guess you'd say I had a "control problem". Maybe so.

"Control problems" were related not only to behavior of mainstreamed students but also to consultative and collaborative planning sessions, too. "Control issues" sometimes emerged when the special education teachers met with Jill to plan Mark's and Timmy's participation in the classroom. On one such occasion, a control issue developed

concerning several class project assignments. Jill did not want the boys to be assigned the work because she felt the parents would end up doing the work and that would "add to the parent's burden." The special education teachers prevailed, however, and the projects were assigned.

Jill reported that:

This is the first time I've felt like I was "overruled" by a peer. I don't quite understand, they're [the mainstreamed students] my children, yet they're not my children. I was kind of taken by surprise with my feelings and the outcome of that session!

When the projects were returned, though, she was "pleasantly surprised." In a brief interview held one afternoon following the return of the projects, Jill stated:

I can't get over the nice work that the boys and their parents did for these projects. Look at what Timmy's mother did--she let him write and then she retyped it and made further adaptations. He was so excited to share it. And Mark's was really good! He pointed and said a few words when he shared it with the class. Everybody was as excited about his work as he was.

Jill made adaptations for the boys throughout the school year, but she felt her adaptations "were much better

during the second semester." When asked about this she responded: "I guess I'm more relaxed about it [the program] and I'm finding that the other kids are making some of these adaptations for me, too." She said she used many more visual adaptations for Timmy and used games, picture books, manipulatives, and the listening center for Mark.

She continued to express concerns about the quality of the learning experiences for the mainstreamed students throughout the study. On one occasion she expressed these thoughts:

Even though we're seeing improvements with their behavior and even with their work--particularly Timmy's reading and spelling--I'm just not sure that I am giving them the quality [of instruction] I'm giving the others. I don't know how to explain it; Timmy loses his place so often, even in the lower reading group, when we are reading or discussing a story. He can't read any of the stories at any of the grouping levels, so we have him follow along, point to charts, or whatever to keep his interest. But he sometimes gets so confused with his thoughts and we have to stop and take him back over it. I don't mind going back over it, you understand; it's just that I don't know that it's effective.

She stated similar feelings and concerns about Mark:

I went through a period of time about mid-September through late October that I dreaded the door opening and Mark arriving. That sounds terrible, I know. But he'd come in with things from the resource room to do in the room and then he would refuse to do anything. Then he'd start going around the room and next thing we knew, we had real problems. Then, almost by accident, we found some things he really liked to do: Stamp papers when the kids needed their papers corrected, pass out supplies for science lab, or other things like that when he would enter the room. Things went much better after that.

I still worry that the learning was not the best for him. We learned to include him in different things and in different ways and the kids enjoyed it. In fact, they really enjoyed him. But I don't know that I really taught him.

In late May we met to discuss the year--her experiences with the mainstreaming program, her growth as a teacher through participation in the program, the other students and their involvement with the integration program. She was largely positive about the mainstreaming program in most discussions:

I've grown a lot this year--there's no doubt. In fact, being involved with this program has forced me to deal with some nagging concerns about teaching and our curriculum in general. I've felt all along that we needed to make some changes there and this forced me to deal with it. I think the [other] kids got just as much out of it as the mainstreamed kids did. I really feel that.

My big complaint is still that we needed more help with Mark and probably kids like him. Even then, he made pretty incredible progress this year. I feel good about him going to middle school and being able to participate more fully. His speaking improved, now he can say a few words and they're very articulate and appropriate, and that's been a big step for him. I have to say that it really has made a difference for me and [all] the kids.

Kerri, the Fourth Grade Teacher

Kerri accepted a position at this school upon graduation from college in 1989. This was her third year of teaching, all of which was done at the fourth grade level. In the short time that she had taught at the school, she had developed a reputation among parents as being a caring and fine teacher. Several "request letters" were received by the school administration during each of the last two summers from parents requesting her as their child's teacher.

The faculty was impressed with her work, also. They voted her to be their representative on the local education unit, to serve on the school district's committee to restructure science teaching in elementary schools, and to serve on the math textbook adoption committee. She possessed an easy and natural manner and was popular with staff.

She seemed a natural choice for two girls we wanted to place age-appropriately in the fourth grade. Kerri was very excited about receiving the students: Libby, a student with moderate mental retardation and Lora, a student with mild mental retardation. Kerri was very excited, although a little "jittery" about receiving them in her classroom.

Each student presented challenges to the teacher. Libby was a very impulsive, non-verbal student. Lora had been misdiagnosed as autistic early in her school life and had "learned" certain "autistic traits" that the staff was

working hard to eliminate. In limited mainstreaming attempts the year before, both girls had performed reasonably well in the classroom during certain times. This was their first year participating with more intensive mainstreaming efforts.

Kerri often met with the special education staff to discuss each student's progress. The special education staff was very impressed by this. They were also very impressed with Kerri's immediate desire for the two students to be fully integrated into her room.

Kerri stated often in her interviews that she found she was having problems with mainstreaming "only because I'm having trouble making sense out of what's important in this curriculum!" Elaborating, she stated:

I find myself going over my plans for the [nondisabled] students and then thinking about what to do with Libby and Lora. What should be their level of involvement? What should I require? And then I go back and think that's what I should be thinking about for all of my students.

She considered planning for the mainstreamed students a "struggle throughout" the year. After additional hours of planning alone and with the special education staff, her solution was to plan less before instruction and make more

planning decisions "on the fly" (that is, during actual teaching). She stated:

I think it deals more with knowing what they know. I find that it's really easy to make adaptations for them in language arts and math. Surprising, isn't it? But it really is. And I find that making adaptations in the content areas is easier if I don't spend too much time planning ahead. Things just sort of happen and most of the time that's really good.

Kerri felt "pretty good" about her mainstreaming program "most of the time." The special education staff described her work as "remarkable," but Kerri described it as "pleasurable, but I do have some major struggles with it." Kerri described "struggles" with several aspects of the program: (a) What academics should she stress with a fairly low-functioning moderately mentally retarded individual? (b) Is an age-appropriate placement allowing the child to do some things that come naturally for her mental age, such as "play?" and, (c) How do I "sift through" the curriculum to determine the essential elements for the mainstreamed students?

Kerri described her approach to mainstreamed student participation in "academics" as "I look for ways to have Libby and Lora do something much like the things the other

students are doing." If she was teaching reading, she involved Libby and Lora with peer tutors and had them listen to the story while the tutor read it to them, color a picture about the story they had just heard, or talk about the story with their peer tutor. Kerri would select stories that were similar to those being studied in class. During the second semester, Kerri involved both girls in reading groups almost daily, whereas in the first semester they were only occasionally part of the reading group.

Kerri described language arts and math as the easiest subjects for which to make adaptations. Kerri stated: "When you think about it, they can write and learn to spell just like the rest of the children. We just had to find out what they could write and what they could spell." She utilized peer tutors to help the mainstreamed students write sentences about favorite stories, holiday celebrations, and other experiences.

About the other subjects she stated:

For those students, I have to think "away" from the academics. In other words, I need to think about what can they do and try to do something they can do with us. I have to "break it down" for them. Then I find that in social studies, for example, it's really hard to "break it down." We do lots of things like outlining, discussions,

mapping, and other things that are hard for these students to do. We've worked together to find ways to include them--I've even had a Jamestown fort built by the students in the back of the room to include Libby and Lora--but it's hard sometimes to plan for them.

Kerri tried to create plans that would include the students as much as possible. Sometimes she had them sit with the group and felt "that should be a goal all by itself--just to have them be with and socialize with the group was a big step."

She said she "ran into trouble" when she planned too many things that separated the mainstreamed students from the non-disabled students. She stated she looked at the "processing skills" involved with the content area subjects to find ways of including the mainstreamed students. She structured lessons to include more "doing" kinds of activities. She felt that she became "more successful" in creating "doing" or "process-oriented" content area activities as the year progressed.

Kerri described another "piece of the struggle" as the planning process for these kinds of activities. She said:

I found I was getting all hung up on too many objectives and goals for these lessons. And then I simply started thinking "What do I want them to

get from this?" Once I started to think in those terms, my planning got easier. In fact, I really think my whole teaching got better.

The resource teachers often used examples from Kerri's room at the site team meetings. These examples showed ways in which the mainstreamed students could be socially and academically integrated into almost all learning activities. They described ways that Kerri involved both mainstreamed students in mapping skills, studies of colonial life, and various other social studies activities. Teachers asked Kerri about her planning processes and how she developed these activities. She responded:

In late October and early November I finally said "This is too much. I'm planning too many segregated activities." At that point I started making preliminary plans for possible kinds of activities that could be done in most lessons. I guess now I sketch out with the class what we're going to do in class and then determine how they [the mainstreamed students] can fit into it. Actually, it's working.

Kerri had one other major "struggle." It came into focus one spring day when she noticed Libby playing in the sand spread at the bottom of the climbing apparatus in back of the building.

It just sort of struck me: We aren't allowing her time to do this sort of thing. I know I've included puppets and other "play-type" activities, in my teaching, but sometimes I feel like she just should be allowed to do some of the things that come naturally--like playing in the sand.

Despite some of the struggles that she expressed, in her final interview Kerri strongly described her opinions about the program:

I have to say that I think we have all gained so much from mainstreaming. When I think about the way Libby and Lora acted before and what little they "knew" before, I'm truly astounded. They have come so far--and I am so proud. I only wish that I was more organized about my teaching and the way I tried to get them involved in lessons. But I have to say that we've improved with that, too.

Probably the strongest statement made in the study and the core finding of the study was made by Kerri during this same interview:

In some ways I think I've revolutionized my teaching this year. I used to think the only way to have students practice or to assess what they've learned was to do seatwork, for example. Now I can honestly say that that isn't true. As I

look back at it, I'm using seatwork time less and less. I've figured out other things to do.

Those "other things" were strong use of cooperative learning, peer tutoring, group work, and alternative forms of seatwork. Despite the conflicts and struggles she had during the year, she strongly defended the program and was looking forward to receiving mainstreamed students the next year.

Types of Adaptations

Features and specific descriptions of instructional adaptations observed in classrooms during the study are explained in this section. For the purposes of this study, instructional adaptations are modifications made to instructional format, delivery of instruction, methods, media, or materials to facilitate integration of mainstreamed students. No major curricular modifications were noted in the study (i.e., changes to the scope, sequence, or content of the prescribed curriculum for each grade level). However, classroom teachers appeared to change a very limited amount of curricular content in some of the observed adaptations for mainstreamed students.

The results of this study revealed five primary forms of instructional adaptations used by these elementary classroom teachers: Acquisitional, parallel, enabling-social, enabling-academic, and structural adaptations (see

Figure 4.1). Additionally, two other strategies were used by classroom teachers: Accommodation (permitting the mainstreamed student to remain in the classroom, but the classroom teacher did not make any instructional adaptations for the student) and returning the student to the resource room (see Figure 4.2).

The following sections detail each instructional adaptation, giving features of each. It is important to note that the labels describing each of the adaptations in this section may not match the labels and adaptations found in other literature.

Acquisitional Adaptations. Acquisitional adaptations were modifications made to the content, tasks, practice session, or the activity within certain lessons to permit mainstreamed students to acquire an understanding of the skills and/or concepts presented in the lesson. Acquisitional adaptations were, therefore, an adaptation of the teacher's instructional objective(s) for that lesson. These adaptations for the mainstreamed student(s) usually featured a selected portion of the lesson objective or objectives presented to the nondisabled students. These adaptations were designed by classroom teachers, sometimes with the help of resource teachers, to promote mainstreamed students' participation in the objective for the lesson.

ADAPTATION	DEFINITION
ACQUISITIONAL	Adaptation(s) developed for mainstreamed student to acquire some understanding of and fluency with the concept(s) or skill(s) in the lesson presented to non-disabled students
PARALLEL	Learning activity for mainstreamed student related to the learning objective or subject but dissimilar to nondisabled peers' instructional activities; parallel activity is academically-oriented but is usually performed independently by the mainstreamed student
ENABLING: Social	Additions to teacher routines and classroom processes to instruct mainstreamed and nondisabled students in the development of "helping" behaviors for both mainstreamed students and nondisabled students (to facilitate partner and group learning activities and structures)
ENABLING: Academic	Adaptations to classroom academic routines, media, and materials to teach mainstreamed students to attend to and accomplish basic academic tasks
STRUCTURAL	Adaptations to general classroom structural routines, lesson formats, and instructional activities to facilitate increased participation of mainstreamed student(s)

Figure 4.1
Observed Adaptations

OTHER OPTIONS	REASON(S)
<p>ACCOMMODATIONS</p>	<p>Used by classroom teacher due to:</p> <p>(1) Complexity of general education classroom instructional activities and tasks</p> <p>(2) Potential for disruptiveness by mainstreamed student(s)</p> <p>(3) Mainstreamed students' lack of interest in subject, lesson, activity, or concepts</p> <p>(4) Teacher's determination that parallel adaptations are not appropriate or possible for mainstreamed student(s)</p>
<p>RETURN TO RESOURCE ROOM</p>	<p>Due to:</p> <p>(1) Disruptiveness of mainstreamed student</p> <p>(2) Mainstreamed student's lack of attentiveness to classroom activities</p> <p>(3) Specialized instruction by special education resource staff</p>

Figure 4.2
Alternative Strategies

Classroom teachers specifically designed these adaptations to promote mainstreamed students' involvement in skills, activities, and concepts and to broaden students' conceptual background and understanding of the skills or concepts with classroom studies. Although mainstreamed students worked on the same skill or concept as the other students during acquisitional adaptations, the intensity and duration of practice, the level of engagement with the task(s), and attainment of skill mastery were not nearly the same as with their nondisabled peers.

At times, mainstreamed students, particularly students with mild mental retardation, could perform acquisitional adaptation activities independently. Mainstreamed students with mild mental retardation often were able to work on these adaptations without peer tutors, but did need some guidance from the classroom teacher either during the concepts presentation or during the guided or independent practice segments of a lesson. Mainstreamed students with moderate mental retardation required peer tutors or peer helpers and some additional teacher assistance to complete activities.

As stated earlier, adaptations in materials and directions for the presentation of the skills to mainstreamed students were observed, but the practice and product were often the same or similar to that given to non-

disabled students. Mainstreamed students "succeeded" in skill mastery occasionally, but they appeared to participate confidently and consistently in all observed situations involving these adaptations. Whenever observed performing these adaptations, the excitement with which they worked on their tasks or projects and the positive interactions they had with their peers were noted.

When acquisitional adaptations did not succeed with a mainstreamed student, it was usually due to the mainstreamed student's disinterest in the activity or sometimes it was due to the time of day. Sometimes a completely different result occurred with an almost identical adaptation when placed after lunch or right before recess, for example. On other occasions, the acquisitional activity did not work well for the student because the activity was at a level too complex for the mainstreamed student to participate.

Although classroom teachers did not use the term "acquisitional adaptations" in their discussions, they did describe these particular adaptations as the "least strenuous" of the types of adaptations for which to plan. "Once I realized what I wanted them to 'get' from the activity, it made planning and teaching much easier," stated Kerri, the fourth grade teacher.

It appeared that acquisitional adaptations emerged rather easily from the teachers' planning processes once

they determined the abilities and interests of the mainstreamed student. Later in the study less planning was evident for these adaptations because teachers often created these adaptations during the interactive phase. Both teachers expressed ease and confidence with making these adaptations "on the fly" (that is, during actual instructional phases), as Kerri expressed it. Kerri described this process in an interview held in early December:

I'm finding that more and more I'm looking at teaching Libby and Lora ways to participate in class. I'm looking for routines and trying to teach them some general ways to work in class so I don't have to plan as much. I've found that things go better if they are doing something like the other kids are doing, otherwise they disrupt more. So I'm learning to plan more on the spot and come up with things for them to do--activities and such--while I'm teaching or working with the class. It's working better for me this way.

Acquisitional adaptations appeared most frequently at the beginning of units of study or at the earliest sections of individual lessons. Fewer acquisitional adaptations were viewed in subsequent lessons in the unit of study. When asked about this phenomenon, Jill stated: "It's easier to

just get them [the mainstreamed students] involved in what we're doing each day once we get rolling into 'heavier' skills rather than always breaking it into pieces."

When mainstreamed students did not seem interested in or engaged with concepts being presented, teachers would use direct instruction or another student to explain the concept, skill, or method. When confusion or lack of understanding with acquisitions was evidenced by mainstreamed students, the teachers would begin the next lesson with a review or another strategy (perhaps a picture, explanation, or example) that was specifically designed to help the mainstreamed student(s) acquire the skill or concept.

The amount of visual stimuli (e.g., charts, diagrams, pictures, photos, use of overhead projector) presented by the teacher to all students and the dialog between teachers and their students changed during the year. Analysis of classroom observations during the study revealed increasing use of visual and verbal techniques in lessons and in student-teacher verbal interactions, particularly during acquisitional activities. The overhead projector, chalkboard, charts, and posters were heavily utilized in showing mainstreamed students the key concepts, skills, or relationships involved in the lesson.

Changes in the opening or preparatory phase of certain types of lessons were noted. Before students were to perform independent reading assignments in language arts, social studies, and science lessons, teachers would involve the class in example-rich discussions. An increase in visual and verbal methods and materials specifically focusing on the mainstreamed students were also noted.

Both teachers agreed with this finding. Kerri explained: "I am using more visual and verbal methods. Lora seems particularly interested in learning the things we're studying. But what's neat is it's having a good effect on everyone." Jill also stated: "I had planned to use more visuals in my teaching anyhow. I'm finding that these things all add to a good learning environment for everyone--but Mark and Timmy seem more interested, too."

Although most of the acquisitional adaptations were the same for both the students with mild and the students with moderate mental retardation in each room, teachers spent more time observing students with moderate mental retardation and noting those students' responses with processing skills or concepts. Teachers described feelings of inadequacy and guilt because they did not differentiate acquisitional activities more between those that the students with mild mental retardation performed and those

that students with moderate mental retardation performed.

Kerri expressed these sentiments in this way:

I really believe in the good things that are happening with this program, but I find it hard to always plan for things to do with Libby [the student with moderate mental retardation]. And I've also found that if I plan too many things that separate her from the group, she becomes a real management problem. I feel torn about it, really.

Teachers expressed that lack of planning time was the major factor for not differentiating more the types of acquisitional activities with mainstreamed students. Jill stated: "If only I had more time to meet with the resource teachers and if I only knew how to plan better, I guess I would be able to have more activities. It's really tough sometimes to do it all."

Independently, both teachers discussed their initial "struggle" with the suggestion from a special education teacher that they "allow" classroom students to help with acquisitional adaptations. Jill, the fifth grade teacher remarked:

I don't know why I'm having such a problem with this, but I am finding it hard to let the students do this [come up with some activities]. Yet, I

know that kids do come up with better examples and things for other kids. It only makes sense but it doesn't make my thoughts about it feel any easier.

However, once students interacted with the students with moderate mental retardation during acquisitional adaptations, teachers noted more "ease of teaching" for themselves and more "success" for the mainstreamed students. The fourth grade teacher remarked: "I found that the kids did a much better job involving Libby than I did. So, I watched closely--but I just sort of 'let go.' And it all seemed to work better." Consequently, interactions were more frequently encouraged during acquisitional activities in later observations.

As the year progressed, teachers were also very pleased with the increased development of acquisitional adaptations by the general education students. Giving these students some "control" over the planning of and the outcome for the lesson caused a dilemma for the teachers. The fifth grade teacher stated:

I feel terribly guilty about leaving it up to the kids to help Mark [the student with moderate mental retardation] sometimes, but I have to feel good that the kids are more resourceful than I am in teaching them. I've found that they have a knack for getting right to the problem.

Kerri, the fourth grade teacher, expressed her "anxiety" with this at first, also; she thought that she should be more "creative and resourceful" and "make it work." When she found that the other students were able to do this for her, usually through peer tutoring, some anxiety was lessened. "Relief," however, was never accepted as a term describing her feelings when reflecting on non-disabled student-initiated or student-constructed acquisitional adaptations, however.

Sometimes the ease with which acquisitional adaptations emerged surprised the teachers. The fourth grade teacher gave an example of one such "surprise" with acquisitional activities included in a unit on geography. During the study of Virginia's basic geographic features, both mainstreamed students successfully drew a basic outline of the state (including two major rivers), located the area of the state in which they lived, and divided the state into its four major regions. Peers helped the students with these activities in only limited ways.

The teacher expressed surprise when both of her mainstreamed students easily drew the shape of the state and accomplished some other tasks and skills. While the student with mild mental retardation could match some locations with their names and then place a label with the town, county, river, or region in the proper location, the student with

moderate mental retardation accurately pointed to two locations when asked. A peer tutor then labelled the map for her. Later, the teacher further adapted activities by giving her labels to paste in the proper locations. The peer tutor then checked to be sure the label was properly placed on the map.

Fifth graders were highly involved with the mainstreamed students during acquisitional activities. This teacher used cooperative learning processes for much of the instruction in mathematics and the content areas. The cooperative learning activities were structured closely to the format suggested by Johnson and Johnson (1991). This teacher felt that the more she involved the elementary students in developing acquisitional activities for mainstreamed students, the more dramatically she increased mainstreamed students' skill mastery.

The fifth grade student with moderate mental retardation made infrequent yet significant progress with concepts in the content areas due to the use of acquisitional adaptations. Other students developed acquisitional adaptations that helped each mainstreamed student to recognize and explain several common procedures for first aid contained in a health safety unit; name several explorers, point to their home country, and trace a path across the ocean; play some student-constructed games

about explorers in the same unit; identify basic parts and a general functioning of the ear; name parts of a plant, describe how plants grow, and paste labels on appropriate parts of a plant.

Verbal answers given by this student were generally short and specific, sometimes with statements consisting of no more than one to three words. However, the descriptors used in the answers were often correct and appropriate. "The precision of his answers is amazing," remarked the fifth grade teacher.

A general decrease in the number of adaptations occurred in mid-March through mid-April. According to both teachers, the "push" of administering the Iowa Tests of Basic Skills and still "covering" important aspects of grade-level curriculum created adaptation planning and implementing problems. The fourth grade teacher expressed concerns about this at least weekly and the fifth grade teacher said she was "about to give up" on making adaptatons by the end of March. The fifth grade teacher stated "I'm in a panic to get the students ready for middle school and with field trips, assemblies, and visits by middle school people to our school, I can't even think about it." During this period of time, students were mainstreamed for limited portions of the school day and never mainstreamed for testing periods.

Parallel Adaptations. Parallel adaptations were constructed by resource teachers for mainstreamed students as independent practice activities related to the classroom teachers' instructional objective for that lesson. Each parallel adaptation was in the same subject area and was similar in format (such as worksheet and independent practice, writing/composition, drawing, computer task) to the activities performed by nondisabled peers. However, parallel adaptations contained a lower degree of difficulty and a lower level of complexity compared to the activities given to nondisabled peers.

It should be noted that some writers refer to "parallel learning activities" or "parallel programming" for mainstreamed students (Hamre-Nietupski, McDonald, & Nietupski, 1992; p. 7). According to these and other writers, programming through parallel learning activities is usually not related to the objective taught to nondisabled students at that time. These parallel learning activities relate to life-skills such as grooming, money-handling, and other functional skills. Consequently, these activities are not adaptations of the objective, but instead are designed simply to physically integrate mainstreamed students into the general education classroom. In this study, parallel learning activities are instead categorized as "accommodations."

Classroom teachers utilized parallel adaptations for mainstreamed students during classroom periods when non-disabled students were engaged in independent practice, quiet reading, test-taking, or drill completion. Mainstreamed students were "expected" to maintain the quiet learning environment for elementary students.

These adaptations were characterized by ease of completion by mainstreamed students, routinized directions and instructions, the physical separation of mainstreamed students within the classroom, and the use of peer tutors and/or special education staff during activities. Parallel adaptations were activities usually constructed by the special education teacher or her assistant. These activities were kept in plastic boxes in a quiet corner of the classroom. Activity boxes were marked with the student's name and labelled with the subject area. Inside the boxes were activities "paralleling" current classroom studies.

Mainstreamed students sometimes performed the activities at their seats but most often performed the activities at a carpeted area apart from the class. Activities were designed to be performed independently, but the classroom teachers determined that pairing mainstreamed students with a peer tutor created a "better" learning situation (for example, disruptions were kept to a minimum).

The planning process for developing parallel adaptations differed significantly from that used for acquisitional adaptations. Classroom teachers did not view themselves as responsible for constructing parallel adaptations. Consequently, special education teachers and classroom teachers held a short, informal after-school planning meeting to discuss upcoming lessons and skills. The special education staff then constructed activities mirroring those completed by the classroom students.

Activities varied according to subject area. During spelling tests, the students with mild mental retardation might match word cards to basic sight words laminated to a lapboard or to a pocket chart. After the students took their test, a peer tutor would check the mainstreamed student's work. Later in the school year, mainstreamed students with mild mental retardation would perform activities in which they would manipulate the letters to form words, or would use letter cards to spell the words. All words used were from preprimer lists or were words from their environment (boys, girls, restroom, exit, stop).

Mainstreamed students with moderate mental retardation would match letters (For example, "r" to an "r" or "R" to "r") during spelling tests. At other times they would match color cards to color blocks. Neither child with moderate mental retardation could recognize words other than their

own name during most of the school year. Consequently, non-word activities were used predominately. Near the end of the school year the fourth grade student could match several words; the fifth grade student could not do this and continued to engage in independent activities involving matching letter to letter or picture to letter.

Sustaining a quiet, orderly seatwork period was the classroom teacher's prime concern during these lessons or lesson phases. These teachers viewed quiet seatwork periods as "critical" to non-disabled students' learning and to the teachers' need to assess mastery. Classroom teachers did not want "interruptions" for the regular students. However, the teachers were willing to keep mainstreamed students in the classroom, as long as they did not disrupt at these times.

In order to provide help to the classroom teacher, to monitor the learning environment, and to ensure continued success with the mainstreaming program, the special education teachers and their assistants had developed an intricate and involved scheduling system to enable them to monitor mainstreamed students in their receiving classrooms. This schedule gave the classroom teachers' daily schedule and specified which staff member would monitor the classroom at various times. Priority was given to those times when parallel adaptations were occurring in the classroom. Staff

members would travel around the building at those times to check on mainstreamed students.

The need for occasional quiet seatwork periods during the day and the dilemma of "What do I do with the mainstreamed students during seatwork periods?" created concerns and some conflict between the classroom teachers and the special education staff. Jill expressed her feelings about these expectations and the dilemma it caused for her:

I'm all for having these [mainstreamed] students in my class but I can't tolerate them or anyone else interrupting my quiet periods. But then I feel guilty about keeping them off in a corner, too. I don't know what else to do, though, sometimes. As long as they are quiet they're welcome to stay.

During planning meetings, the special education teachers attempted to enlist the classroom teachers in using behavior management strategies with the mainstreamed students during parallel adaptations. They taught the classroom teachers discreet and specific arm motions and hand signals to use in cueing mainstreamed students to keep quiet or to reduce their noise. Although classroom teachers described some success with these techniques, throughout the school year mainstreamed students with moderate mental retardation continued to be returned to the resource room

more often than were the students with mild mental retardation. Classroom teachers' appeared to be reluctant to be assertive in implementing behavior management strategies for students with moderate mental retardation.

By the middle of the school year some changes with mainstreamed students' self-control were apparent. As the school year drew to a close, mainstreamed students with moderate mental retardation showed much improvement with cues, staying on task and remaining in classrooms during parallel activities for longer periods of time.

A phenomenon occurred during the course of the school year that was quite significant: Both teachers significantly decreased the use of quiet seatwork periods during lessons. When they did use them, the periods were shorter and more intensive than those observed earlier in the school year.

According to Kerri, one reason for minimizing quiet seatwork periods was the increasing use of cooperative learning activities and groupwork. The special education resource teachers also helped teachers devise cooperative learning methods for assessing all students and for giving students alternative "practice" strategies in place of the traditional quiet seatwork periods. Consequently, alternative types of "quiet periods" became more prevalent. In late February, Kerri remarked:

Actually, at this point [late February], they both [both mainstreamed students] seem "settled." Libby loves her colored markers and draws with them when she's finished [with a parallel activity]. I'm finding that I'm reducing these seatwork periods and I'm also finding that by using more cooperative learning groups I'm gaining some things: More involvement by everyone, less hassle about what do they [mainstreamed students] do, and "easier" times when the students work together.

The form of parallel adaptations changed during the year. In the first months of the school year parallel adaptations were guided by teacher "issues" of providing time for general education student practice for mastery or for assessment of their skill acquisition, maintaining an orderly quiet period, providing the mainstreamed student with appropriate practice or assessment activities of their own, and supporting the learning of both the mainstreamed and the other students. Later in the school year, the teachers used a few parallel adaptations as opportunities for the mainstreamed students to return to unfinished practice tasks, retracings or elaborations of previous tasks (some of which were built upon previously successful learnings for the student), and "routinizing" of certain learning functions (such as how to use a calculator to do a

simple math problem). However, in both classrooms, teachers generally left mainstreamed students to perform parallel activities as originally designed by the resource staff and rarely initiated new parallel adaptations.

Although these activities for mainstreamed students "paralleled" those of the other students, parallel adaptations differed in several important respects from the activities performed by nondisabled students. Parallel adaptations for mainstreamed students differed in the complexity and intensity of practice and skill development compared to the activities in which the nondisabled students were engaged. Students with mild mental retardation might complete two or three highly simplified math problems as compared to fifteen to twenty more complex problems for the other students. Mainstreamed students were required to write fewer words or they were supplied with other devices (such as a computer or a calculator) to do their work compared to other students. General education students would work with pencil and paper and would be expected to complete a greater amount of work in much less time than mainstreamed students.

Parallel adaptations for mainstreamed students differed greatly from that which nondisabled students performed. Mainstreamed students were involved most often in highly routinized and rote-style "practice" activities varying little during the school year, whereas other students would

be given a variety of seatwork exercises, not always dealing with practice. More "creative" types of practice were used with the other students as compared to that completed by mainstreamed students. General education students might be involved in magic squares, crossword puzzles, or other higher interest practice.

When questioned about the routinized practice activities mainstreamed students performed during parallel adaptations, Jill replied: "I know that he keeps doing just about the same thing at spelling time, but he knows exactly what to do, he feels comfortable about it and he likes it." Asked her opinion about seeming disparities between those performed by mainstreamed students and those performed by other students she stated: "I really don't think it's unfair or anything to keep him doing the same things each time we have spelling. These things work and that's important right now." She expressed pleasure and satisfaction that "At least he can stay now for these times (when students are involved in quiet activities) when before he sometimes had to leave."

General education students were given many more opportunities to "elaborate" on previous skills or learnings during these periods compared to those given to mainstreamed students. General education students applied concepts to different kinds of problems or analyzed situations and solved problems based on previous learnings. Mainstreamed

students received fewer opportunities to extend or to elaborate previously learned concepts than did the other students.

Elaborations were not restricted to reading and math. When planning social studies and science seatwork, the teachers often involved general education students in activities that broadened their conceptual knowledge and forced some application and analysis of situations. Fifth grade students wrote a description about a political cartoon based on facts they had learned about the Civil War. As parallel adaptations, Timmy placed several cartoon strips in order (the cartoons showed actions and no words). When he finished, he motioned for his peer tutor to check his work. Mark (the student with moderate mental retardation) listened to a tape of someone reading the captions while he looked at cartoon strips and pointed to the pictures.

Classroom teachers considered parallel adaptations "effective" if mainstreamed students remained on-task and did not disturb the group and if mainstreamed students appeared interested in their task or activity. Teachers viewed parallel adaptations "ineffective" if mainstreamed students needed to be continually refocused on the task or activity; if mainstreamed students were not interested in the activity or did not complete it; or, if the classroom

teacher sent the mainstreamed students back to the resource room due to the students' disruptive behaviors.

Parallel adaptations were the most "segregated" of all activities observed in the classroom. At these times, teachers spoke of "the class" in ways that excluded mainstreamed students. Teachers directed complete attention to the other students during these periods. Mainstreamed students were also physically separated from the class during these periods. The work area and the activities for mainstreamed students were in another part of the classroom, though rarely outside the classroom.

Teacher's vocabulary, descriptions, directions, and demands typically excluded mainstreamed students during these periods. Vocabulary used in explanations and descriptions were characterized by longer sentences, stronger intensity of verbal expressions, and higher "demands" of students than during instruction in which mainstreamed students were included. Seatwork periods included some testing sessions which could account for some of the "switch" in vocabulary. However, even when not testing, teacher's verbal expressions evidenced higher demands and richer descriptions.

At times during seatwork periods, mainstreamed students finished activities and tasks and moved into an "accommodation" mode in which he or she was "passively

integrated." In accommodation activities, mainstreamed students were given work to do or activities to complete that were unlike those given to the other students. The goals for accommodation activities were to continue integration of the mainstreamed student and to keep the mainstreamed student engaged in a quiet activity. These types of activities will be discussed in a later section.

Enabling adaptations. Enabling adaptations were those changes or additions to classroom routines and instructional sequences that supported and enhanced mainstreamed students' classroom participation. These adaptations were categorized as "helping" strategies: Nondisabled students helping mainstreamed students through partner or group activities. Additionally, teachers and/or nondisabled students were observed helping mainstreamed students participate in instructional activities through adaptations of media and materials (such as crayons instead of pencils, modifications to pencils or rulers to permit easier use of these materials by mainstreamed students) or increased monitoring of mainstreamed students' attention to tasks and activities.

Consequently, two types of enabling adaptations were identified in classrooms: (a) enabling-social adaptations and (b) enabling-academic adaptations. Enabling-social adaptations were activities designed by classroom teachers and incorporated into classroom structures to develop

specific social behaviors facilitating mainstreamed students' participation in cooperative learning activities, peer tutoring or helping, group projects, and other socially-centered learning experiences.

Enabling-academic adaptations were those activities incorporated into classroom structures that facilitated mainstreamed students' performance of academic tasks such as finding a page number or a heading on a page (even if he could not actually read the heading), locating a chapter in a book, circling an answer in the proper area of a worksheet, or correctly using several keys on a computer or other technologies (tape recorder, filmstrip projector, etc.). Enabling adaptations appeared to have the effect of facilitating mainstreamed students' participation in acquisitional, parallel, and other adaptations.

The types of enabling adaptations discussed in this study differ from "functional skills" found in the literature. Some writers refer to functional skills as goals and objectives that are embedded in the learning activity such as communication and motor skills (Ford, Schnorr, Meyer, Black, & Dempsy, 1989). This study did not deal with functional or life-skills. The understanding made with the receiving classroom teachers was that the special education teachers would be responsible for life-skills and other similar goals such as community-based instruction. In this

study, enabling adaptations were activities or structures added to the classroom environment that facilitated mainstreamed students' participation in various instructional activities.

Enabling-social adaptations were found to be related to the following types of social behaviors: (a) partner-based social behaviors, (b) group-based social behaviors, and (c) task-oriented social behaviors. Adaptations ranged from those including partner-based behaviors (the primary level of required social processing and participation behaviors) to those activities requiring task-oriented social behaviors (the most complex of the social behaviors).

Examples of partner-based social behaviors were: listening, following simple directions, performing gentle interactions and communications with the partner, and participating with the partner in the activity with appropriate attention and task intensity. Students with mild and moderate mental retardation participated in various activities requiring these behaviors.

Group-based social behaviors were similar to those given in the partner-based social behaviors, but also extended these behaviors to include a higher number and slightly higher level of interactions with group members. Mainstreamed students were encouraged to develop skills requiring listening and following directions. Group members

strove to include mainstreamed students in group projects when these behaviors were present. Group members encouraged social interactions with mainstreamed students.

Social/task-oriented behaviors were characterized by behaviors similar to those in the group-based behaviors listed above. Again, each behavior was at a slightly more complex and refined level. Additionally, the mainstreamed student was expected to perform some task, either independently or with a partner, for the group to function effectively. An example of this would be teaching a student with moderate mental retardation to press a specially colored button on a tape recorder to record the project and later to press another button to play the tape. Other group members could rewind or fast-forward the tape.

When interviewed, neither classroom teacher delineated the types of behaviors she planned to have mainstreamed students develop through these adaptations. During several preactive process interviews, the teachers primarily determined what each student "could do" with a partner or group and to what extent each student could participate with the partner or group. Consequently, the delineations and groupings of behaviors listed above were merely determined from numerous observations of partner and group functioning within classrooms.

Although similarities existed between acquisitional and enabling-academic adaptations, enabling-academic adaptations were differentiated from acquisitional adaptations in several important ways. Whereas acquisitional adaptations were constructed to allow mainstreamed students an opportunity to develop a certain level of understanding and mastery of the regular objective, enabling-academic adaptations were behavior-centered or media- and materials-centered rather than skill-centered. In other words, enabling-academic adaptations emphasized the development of generalized learning behaviors for mainstreamed students or were adaptations of media and/or materials that would facilitate increased mainstreamed students' participation in instructional activities. Academic skills were not stressed in these adaptations.

Enabling-academic adaptations were categorized as (a) media/material adaptations and (b) academic engagement adaptations. The effect of these adaptations was to involve the mainstreamed students, particularly the mainstreamed students with mild mental retardation, more fully in classroom studies and activities.

Media/material adaptations were those adaptations involving mainstreamed students in the appropriate use of pencil, crayon, paper(s), rulers, manipulatives, calculators, or other materials, technologies, and media in

order to participate more fully in classroom activities. Teachers sometimes included background information, and visuals in order to make the concepts and skills more meaningful for mainstreamed students. Teachers also included maps, overhead projection transparencies, and filmstrips when studying content areas and when reading basal stories.

Academic engagement adaptations included teacher or peer "prompts" during lessons or group work. Teacher or peer prompts were attempts to increase mainstreamed students' attention to the concepts in a lesson or their involvement with activities. Various prompts were observed: These were as simple as commands, refocusers, and demands along with more intricate prompts such as "returns" and "advancers." Each prompt served a specific purpose in increasing the mainstreamed students academic engagement with the activity or lesson.

General education students imitated the teacher's use of prompts. Peer tutors or partners talked in a quiet, yet firm voice when making a command ("Pick up your pencil.") or a demand ("You know how to use that crayon nicely. Let's do it now."). Refocusers ("Look at this picture again. Point to the colt."), returns ("Remember when we did this earlier today?"), and advancers ("What do we do next?") were used variously by tutors during short, intense periods of primarily independent instruction.

Teachers integrated these two kinds of adaptations in increasing amounts in lessons during the course of the study. In discussing the incorporation of more visual stimuli and background information during content area and basal reader selections, the fourth grade teacher stated "I've found that all the students benefit from the added information I give them (the mainstreamed students)." She added, "In fact, sometimes I think my students get more from a few minutes of these visuals or whatever than the mainstreamed students did."

These opinions were also shared by the fifth grade teacher. When asked her reasons for including other materials when making presentations to her class she stated, "It seems to help my two mainstreamed students when I use a map or show pictures or charts. But I have to say that it also seems to keep the other kids really interested, too."

Both teachers found many benefits for the other students, too, when including these materials. The fifth grade teacher stated, "I guess I always knew I should include more of these things (added visual materials), but sometimes you get busy and all and I didn't. This sort of forced me to do something to keep them (mainstreamed students) interested."

The results of using additional materials, media, and other techniques were two-fold: (a) general education

students maintained or even increased interest in topics of study and (b) mainstreamed students acquired additional background about topics of study. Both outcomes appeared to be beneficial to mainstreamed students, according to both classroom teachers, regardless of the mainstreamed students' levels of ability. Analysis of observations showed students with mild mental retardation participated more in lessons when given this background as compared to their participation in lessons that did not include this background. Additionally, successful enabling-academic adaptations led to greater success with acquisitional adaptations in further developing skills and concepts for all mainstreamed students. Acquisitional adaptations were sometimes included later in that same lesson or in one or more of the subsequent lessons in the unit to allow further development of skills or concepts.

Structural Adaptations. Structural adaptations were designed by teachers to facilitate mainstreamed students' social and academic participation in classroom instructional activities. Structural adaptations existed in each classroom at several levels: (a) adaptations within classroom routines, (b) embellishments to classroom routines for including mainstreamed students, and (c) adaptations of lesson formats to include more participation of

mainstreamed students. Within each level, types and degrees of adaptations appeared.

Routines were very much in evidence in both classrooms. Students in each classroom were trained to line up properly, to take attendance, to construct a lunch count, to prepare for recess, music, PE, library, and art, to ask permission to be excused to go to the bathroom, to prepare for dismissal, and to distribute and collect papers. These routines established a "structure" for the management of classroom activities.

Both teachers realized early in the school year that some classroom routines and management procedures required adaptations for mainstreamed students. Because students with moderate mental retardation did not respond well to certain routines, they required more teacher and peer assistance and instruction. The students with mild mental retardation learned some of the routines, but occasionally benefited from teacher and peer assistance.

Certain classroom routines appeared to create opportunities for mainstreamed students to cause severe disruptions to the classroom environment. Consequently, adaptations were designed as a way to manage mainstreamed students' behaviors and to maintain order in the classroom. For example, in the fifth grade classroom, the students with moderate mental retardation required adaptations for

entering and departing the classroom. Jill recounted her exploration of adaptations to these problems:

I couldn't believe at first that such simple routines could create such havoc. I was exasperated during the first week or so. I consulted with his [special education] teacher and tried several alternatives. Finally, we decided that when he lined up first and then pointed to table groups to dismiss them, he lined up better.

Adaptations for mainstreamed students to enter the classroom without disruptions were devised, also. Although both students with mild mental retardation were mainstreamed in their respective classrooms for most of the school day, they did receive some basic reading and math instruction in the resource room. When re-entering the classroom both students would interrupt classroom activities. They would say "Hi!" or begin talking--no matter what the class was doing at the time. Both teachers made successful efforts at changing these behaviors, but these efforts required training the other students to ignore the distraction created by the entrance of the mainstreamed students. Most entrances made after the first month of school were quiet and not disruptive.

Mainstreamed students with moderate mental retardation often had problems remaining in line during the first

semester when traveling to art, music, PE, library, or to recess. The fifth grade student responded quickly to efforts to get him to remain in line. The teacher paired him with several sympathetic, but "determined" boys who gently moved him back into line when he would move out of line.

Libby (the fourth grade student with moderate mental retardation) responded less well to similar efforts. The teacher walked with her during much of the first semester when traveling in the building. Efforts to pair her with either girls or boys resulted in disruptive events in the hallways. Finally, during the last nine weeks, this student traveled with the class with no adaptations.

We discussed this during one of the final interviews. I asked Kerri what she thought made this "connect" for the child. Kerri responded:

I think that Libby can walk in the building like the others now because she finally feels a true part of the classroom. In a sense, I think there's a certain "peace" she has now--know what I mean? It's hard to say. But I think she has just really felt totally part of the class now.

Some structural adaptations were made in the classroom to further encourage participation with mainstreamed students. These were coded "embellishments" because such adaptations were specifically and thoughtfully added to

classroom routines and structures to further enhance mainstreamed students' participation. When viewed as "successful" by the classroom teacher, these structural adaptations had the effect of further including and "valuing" the mainstreamed student through classroom routines. The inclusion of these adaptations reflected the teacher's desire to change the "culture" of her classroom.

Some embellishments included restructuring the "pacing" of transitions between activities and subjects being studied during the school day. Transitions were sometimes lengthened if either or both of the mainstreamed students seemed to be having a "bad day." Other embellishments included the addition of more partner and small group activities and the inclusion of unique teaching methods such as puppetry, multi-dimensional class projects, student-constructed game boards, and "living timelines."

A common routine in both classrooms was the self-correcting and/or checking of problems in mathematics while the teacher gave answers and students corrected their work. A structural adaptation and enabling-social adaptation evolved as an "embellishment" in both classrooms during these periods. The use of cooperative learning groups (structural adaptation) and the use of stamps and stickers (enabling-social adaptation) were two ways in which teachers involved the mainstreamed students with moderate mental

retardation. At other times, accommodations and parallel adaptations were evident, especially when the mainstreamed student did not wish to cooperate in classroom activities.

At times, the teachers used cooperative learning groups in completing such work and at other times the whole class was involved in direct instruction and independent practice with certain math problems. Each teacher was resourceful in developing new routines to handle possible disruptions from mainstreamed students with moderate mental retardation in some lessons viewed.

In the fourth grade classroom, whenever students participated in mathematics cooperative learning activities, mainstreamed students were essentially involved in some way with the groups. Sometimes these students gathered materials for the group, took the group's finished product to the teacher for checking, or worked a calculator with the help of a partner to check the problem. When the group member's work was determined to be correct, a mainstreamed student would take a "smiley face" stamp and stamp the group member's paper to indicate the work was correct.

Whole-class direct instruction and independent practice lessons were handled by the fourth grade teacher by involving mainstreamed students in some parallel activities for the class period. However, during the checking of work, mainstreamed students again traveled throughout the room

"stamping" papers. Their classmates never seemed to tire of this. At times during the school year, particularly at special seasons or holidays, stickers were passed out to students by mainstreamed students.

There were periods when either one or both of the two mainstreamed students in each class did not want to "correct papers" or pass out stickers. The teacher and her students tried to encourage this participation briefly, but if no interest was evidenced by the mainstreamed student(s), parallel adaptations continued or an "accommodation" was made (such as coloring a paper, listening to a cassette in a tape recorder, or some other quiet, non-disruptive activity). These situations occurred occasionally but no pattern was determined for non-participation when analyzing data.

Instructional formats were intentionally changed by both classroom teachers. Kerri made more extensive use of cooperative learning activities, partner learning situations, manipulatives, puppetry, and center-type activities as the school year progressed. Some of these techniques were explored as part of a course in "creative play" she was taking as part of her master's degree program in early childhood. Other techniques were included after "trial runs" in the classroom.

During the winter, Kerri involved all of her fourth graders in creating a Jamestown settlement on a large table in the back of the room. This multi-dimensional project permitted mainstreamed students to visualize the settlement and to manipulate the setting during the unit of study.

She also involved puppetry in several aspects of the curriculum. Each student created several puppets during the school year. Students made puppets specifically for a social studies unit: During the Jamestown settlement unit, students were to create a puppet of a Jamestown settler.

Other puppets were created by students for other functions: a colonial person, a "math guide," and a "special friend." The colonial person was constructed as part of the Colonial Virginia unit. This puppet was to reflect the clothes, hairstyle, and occupation of a colonial person. The "math guide" was a puppet whose name and clothes reflected a math "theme." Students used this puppet in cooperative learning groups and partner learning situations to explain math concepts and processes. Students constructed their "special friend" puppet for just that purpose: It was a special friend to them when they needed "support."

Kerri explained her use of puppets:

The kids love the puppets! I'm so glad we're using them. It's interesting to see how the students interact with them. I think the 'tone' of the room

seems warmer when we use them. I couldn't be more pleased.

The puppetry had an effect on the "culture" of the classroom; when the puppets were used, the "tone" of classroom verbalizations and the "character" of inter-student engagements changed markedly. Students exhibited more warmth with peers, as evidenced through smiles, nods, and physical and verbal "invitations" to participate in partner or group activities when puppets were part of the instructional activity. According to Kerri, "The mainstreamed students participate more freely and comfortably whenever the puppets are involved."

On one occasion when the Jamestown puppets were being used by students in a class dramatizing aspects of life in a settlement, Lora (the student with mild retardation) used her puppet called "Pocahontas" in dramatizing the wedding between John Smith and Pocahontas. Lora spoke the ceremony verbatim ("Dearly beloved, we are gathered here...") astounding the teacher and her group-mates with the intensity and clarity of her speech and her knowledge of the ceremony. Up until this time she had been a reticent student, often quietly participating in classroom activities, or, when upset, would sometimes whine, whimper, or cry.

In discussions held with the teachers after the completion of classroom observations to discuss structural changes they instituted during the year, both teachers remarked they used cooperative learning and partner-peer learning techniques to a greater extent due to the mainstreaming program. Jill termed the use of these techniques "essential" for managing the mainstreamed students. She stated: "Traditional classroom settings would not work--I found that out! We had to have all the kids do more during the day."

Kerri responded similarly in an interview: "I found that I was always looking for ways to make things active in the lessons. How could I teach this in a cooperative group? How could they make something during social studies? How would I keep things moving?" She felt that classroom activities became more interesting for all students because of the structural changes. The main benefit, though, was the increased involvement of the mainstreamed students when the structure was partner or cooperative group oriented.

The use of partner and cooperative group structures varied in "intensity." In some lessons, students listened to a teacher or student presentation for the main part of the lesson. The cooperative group activity or partner activity was held during the last part of the lesson. These were judged to have "low intensity" of structural adaptation.

Those lessons may have included a parallel adaptation or an accommodation for the mainstreamed students before the cooperative learning or partner learning activity began.

Other cooperative learning or partner learning activities were designed by the teacher to be the major parts of the observed lesson. Mainstreamed students were highly involved in the group or partner activity through either defined roles or group involvement. These were coded "high intensity" structural adaptations because of the duration of the structural adaptation and the increased involvement of the mainstreamed student(s) in the activity.

Structural adaptations were more consistently visible in both classrooms after late-November as compared to earlier in the school year. Jill remarked: "It took me awhile to settle the class down and to teach them my routines. Then I determined that the best way to involve the [mainstreamed] kids was to shake up the lesson a little bit with [cooperative] group activities." She stated in several post-observation interviews that she had taken the cooperative learning course last year and found mainstreaming "forced" her to use the principles she studied in that class.

As the year progressed, her opinions and feelings about using cooperative learning methods, primarily those of Johnson and Johnson (1985; 1986; 1991), were very positive.

She stated that these techniques "Truly made a difference in my room. All I can say is that I'm so glad we had the course last year so I was at least exposed to the format and given some sources [for more information]."

Her impression of the learning environment in her room was positive; she felt that students were more friendly towards one another and more helpful while studying and learning because of her inclusion of these methods. She was excited about how the mainstreamed students enjoyed participating when group or partner learning activities were present.

As the year progressed, both teachers restructured lessons to include more visual and aural stimuli. Most of these stimuli occurred at the opening or earliest sections of the lesson. Presentations of the subject, skill, or concept being studied in the lesson were often reviewed or reinforced through these stimuli. Subsequent portions of the lesson generally used less visual or aural stimuli directly related to mainstreamed student's needs, other than text or related discussions.

Other structural adaptations observed in the classrooms included changing the pacing of activities in the lesson. In some instances, when mainstreamed students were involved in the lesson, their attention to the presentation, activity, or discussion wavered and potential disruptions could occur.

At those points, the teachers sometimes changed the activity, had students stand and stretch, or "prompted" the mainstreamed student to remain on task. At other times, she might ask the mainstreamed student a question or she might have the student come to the board (or some other area of the classroom) to hold a visual or point to a map as it related to the lesson.

In those instances, the guiding purpose of the teacher were to (a) keep the mainstreamed student on-task and interested, (b) keep the mainstreamed student in the classroom, and (c) involve the mainstreamed student physically in the lesson (e.g., through having this students pass out papers or working with a peer). Each teacher recognized that mainstreamed students might not completely master the subject, skills, or concepts presented in lessons, but through structural and enabling adaptations, there was an opportunity for the student to grasp a level of understanding with presented skills or concepts that might not otherwise occur.

The teachers related instances in which they were surprised at the lasting impressions some lessons and activities had on the mainstreamed students. The teachers credited structural adaptations for these "strong learnings." In some cases, students with mild mental retardation remembered facts and activities for a longer

period of time than did the general education students. Each teacher gave several examples to illustrate the depth of concept understanding mainstreamed students exhibited at times--especially if the subject interested them.

Furthermore, mainstreamed students with moderate mental retardation likewise exhibited good retention of certain facts and showed recognition of items, objects, and pictures related to areas of study. Each teacher related examples of particular "surprises" with the moderately retarded. Sometimes these students responded to teacher questions by saying the appropriate one or two word answer, by pointing to a picture, by locating something on a map, or by demonstrating understanding in some concrete manner. The teachers credited structural adaptations, particularly cooperative group and peer-learning structures, for the success of these learnings.

Accommodations. Each teacher found there were times during the school day when they merely "accommodated" the mainstreamed student because they had neither the "time" nor the "resourcefulness" to plan an adaptation of the lesson. Accommodations were characterized by physically integrating mainstreamed students into the classroom, but not academically or socially involving them with the lesson.

Jill expressed her use of this approach:

Sometimes things get so complicated in my room that I just have to put him [Mark] under earphones or something. I know that sounds terrible, but either I'm too busy doing other things or the kids are too busy doing their work, and none of us can do much with him sometimes during lessons.

Teachers cited several other reasons for accommodating mainstreamed students rather than providing adaptations. They spoke of time constraints within the school day and within the lesson period. The lesson format (i.e., the lesson "model" used by the teacher, such as a "lecture and discussion" model) was also cited as a reason for choosing to accommodate rather than adapt. Certain lesson formats, particularly the whole group lecture/discussion format used at times, created attentional problems for mainstreamed students.

In certain situations, each teacher made a conscious decision not to include the mainstreamed student in the lesson due to the (a) complexity of the learnings (concepts or skills) contained in the lesson compared to mainstreamed student's ability to comprehend, (b) potential for disruptions to the learning environment if the mainstreamed student were not accommodated, and (c) lack of interest exhibited by mainstreamed student(s) for the subject, lesson, activity, or concepts. Although the teachers

expressed "guilt" in post-observation conferences concerning accommodations present in the observation, they held firmly to their views that the decision was "right" for that lesson.

Kerri expressed her thoughts:

I have to get over these feelings. Honestly, I know that Lora and Libby couldn't work with the math skills today. There was no way we could put Libby in a [cooperative] group because the kids had to practice this stuff by themselves and Libby couldn't do that either. But I had to do it this way--there really was no other way.

Teachers characterized accommodations as "necessary" because of their perceived mandate to "cover material" with the other students. They felt the school district expected them to cover the grade level objectives and the fifth grade teachers might complain about the students' lack of facility with skills if they did not cover the material.

The most common concern was that of "pacing." Teachers expressed fears that they were "falling behind" in the pacing of instruction for the year. Jill stated these fears in February:

I'm really feeling pressured now. Twice in the last week we had two-hour delayed openings. Now we're behind where I think we ought to be and the

projects are incredibly behind. I've got to move on these things! So, when you saw that Mark and Timmy were on their own, it just had to be. I feel badly sometimes, but it just has to be.

Accommodations differed from parallel adaptations in several ways. Whereas parallel adaptations stressed some academic concept or skill and were related to what the other students were studying at the time, accommodations rarely involved academic, social, or other skills. Rather, mainstreamed students were accommodated through primarily "pleasurable" and "placid" types of activities. Mainstreamed students were "passively" integrated through activities such as sorting beads, coloring papers or figures, and listening to a tape unrelated to current areas of study (such as a tape of primary-age songs).

Accommodations kept mainstreamed student(s) physically integrated in the classroom. Rather than sending the student back to the resource room, the teacher determined an accommodation was the best method to use at that time. This decision was usually made due to the complexity of the skills for the mainstreamed student. In addition, the time constraints for the length of the lesson kept the teacher from utilizing a functional or parallel adaptation for the mainstreamed student. Some lessons had a short duration and teachers found that including adaptations sometimes

lengthened the lesson. Teachers also recognized that the mainstreamed student was able to stay in class because his or her behaviors were "appropriate."

Students with mild mental retardation generally were integrated through enabling adaptations or parallel adaptations. They needed fewer accommodations compared to students with moderate mental retardation. This permitted continued integration of these students into the classroom.

Teachers were willing to have either of the mainstreamed students remain in class as long as these students remained "on-task" and were "non-disruptive." Teachers considered an accommodation activity a "failure" if it did not capture the student's interest and keep him or her "productively occupied." However, if an accommodation "failed" with the mainstreamed student, the student was returned to the resource room. Interestingly, this rarely occurred during the last nine weeks of the school year. The teachers explained that this phenomenon was due to the cumulative effect the continued training, practice, and "modeling" of appropriate integration behaviors had on the mainstreamed students.

Accommodations for mainstreamed students with moderate mental retardation were used heavily during two significant periods of the school year: During the first five weeks of the school year (when integration efforts were "new" for

both teacher and mainstreamed students) and during the "testing period" (mid-March through early April when the state and school district assessments were administered) even when students were mainstreamed for highly reduced periods of time. It was at these times that receiving teachers described "heavy" time constraints and a "general lack" of planning time, stamina, and resourcefulness for constructing adaptations.

Classroom teachers expected help from the resource teachers in developing accommodations. Few accommodations were constructed by receiving teachers. Unlike their approach to developing acquisitional, functional, and structural adaptations, these teachers clearly stated they did not wish to spend planning time in locating listening tapes, finding coloring materials, or acquiring any materials for construction of the accommodations.

Both teachers approached accommodations in a similar manner to their approach when making parallel activities: Mainstreamed students were welcome in the classroom if they behaved, but the student's accommodation was required to maintain (a) productive classroom climate, (b) quiet and "order" for other students' concentration or extended independent work periods, and/or (c) teacher "focus" on general education students' mastery of presented material.

Although each teacher expressed a "need" for accommodations at various times of the day when mainstreamed students were present in the classroom, each also described the accommodation as a method to develop student "independence." When asked if this independent activity caused a separation or even a segregation of the mainstreamed student (usually the student with moderate disabilities) from the class, each teacher strongly defended it--not as a form of segregation--but as an instructional and social practice that all students needed to grasp. Neither teacher viewed it as "segregation" within the classroom.

Compared to parallel adaptations, accommodations were observed to contain more interactions between students and mainstreamed students. Teachers stressed "separateness" and "independence" more with mainstreamed students while those students were engaged in parallel adaptations compared to times when mainstreamed students were performing accommodations. This appeared to be due to the types of activities involved with accommodations as compared to parallel adaptations. Accommodations were more "fluid" or "play-like" in character compared to other adaptations or activities performed by mainstreamed students; parallel adaptations, in contrast, were highly academically-oriented.

If a general education student's work was completed, he or she was permitted to work with a mainstreamed student during accommodation activities. For example, a student could work with a mainstreamed student creating sand sculptures if the other student completed his or her independent work. Conversely, students seldom interacted with mainstreamed students performing parallel adaptations because the teacher insisted on mainstreamed student independent practice or task completion.

Adaptations Within Lessons. Lessons varied in the number and types of adaptations observed. Teachers sometimes included a number of adaptations within the same lesson, and at other times included only one or two. The number of adaptations contained in a lesson depended on several factors: (a) lesson format or model (e.g., lecture & discussion; inquiry; cooperative group structures), (b) student interactions desired (e.g., independent practice; group problem-solving), (c) amount of time available for teacher planning, and (d) mainstreamed students' level of skill mastery and interest in subject.

Adaptations varied both in degree and in level of integration (see Figure 4.3). "Degree of integration" indicates the "depth" of the integration experience, noting mainstreamed students' involvement with classroom instructional or social processes on a scale from "slightly

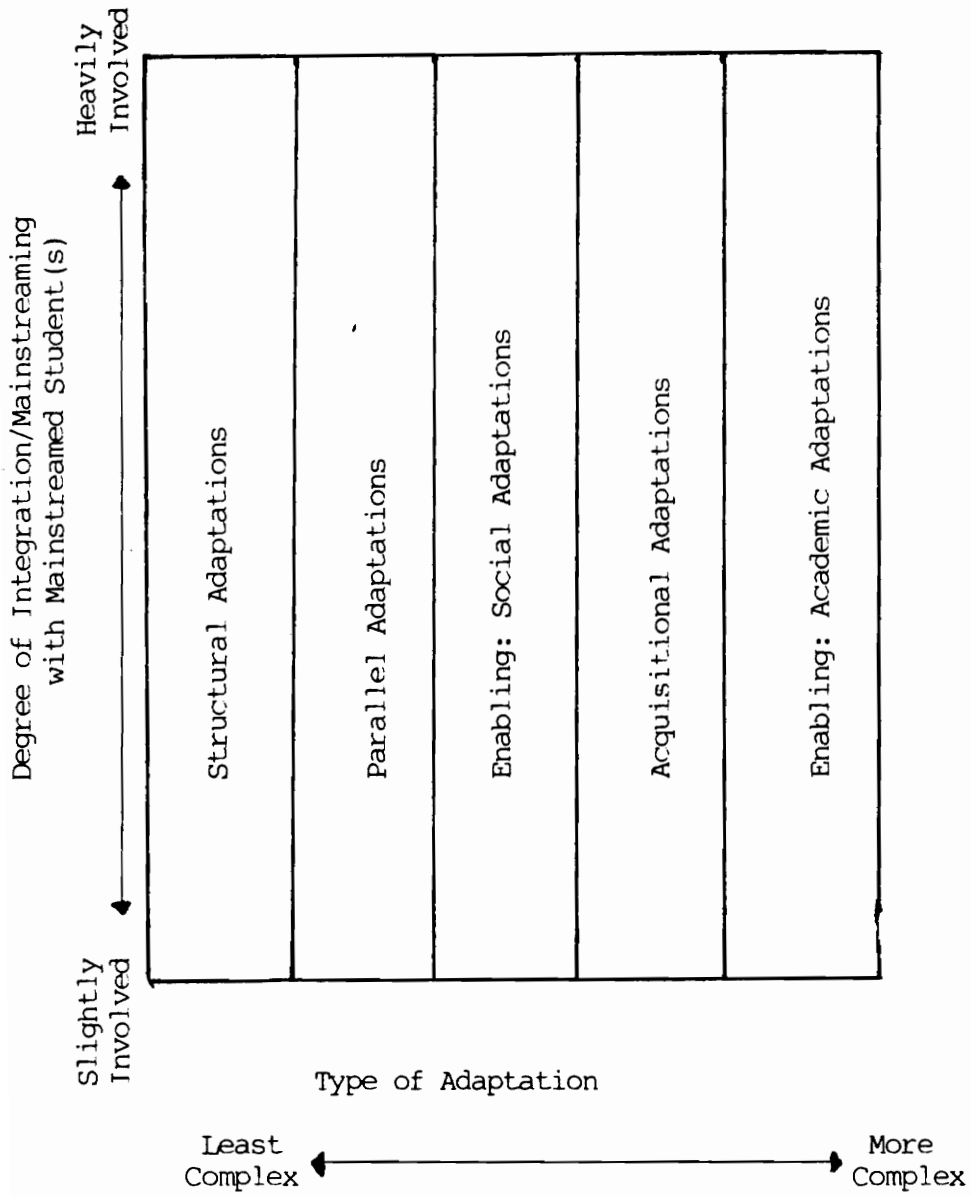


Figure 4.3
Adaptations Listed by Degree of Integration and Complexity As Reported by Classroom Teachers

involved" to "highly involved." "Level of integration" indicates the actual types of adaptations in which mainstreamed students are involved. Levels of integration ranged from those adaptations of least complexity (such as structural and parallel adaptations) to those of more complexity (such as acquisitional and enabling adaptations).

Structural adaptations were present in many of the observed lessons, but they varied according to "degree." For example, the teacher may have determined that a mainstreamed student with moderate mental retardation could be involved with collecting papers and stamping them "Corrected in Class." Yet, the student with mild mental retardation might be collecting papers, stamping them, and filing them into appropriate folders. Therefore, the student with moderate mental retardation was "slightly involved" with the lesson, whereas the student with mild mental retardation was "more heavily" involved. Consequently, mainstreamed students could differ in the degree of integration within the same level of adaptation.

Lessons often contained several types of adaptations for mainstreamed students. The teacher had one or more structural adaptations present as the lesson proceeded through acquisitional adaptation(s), and an enabling-social adaptation (such as giving mainstreamed and other students helpful hints about working together in a group). The

teacher then concluded the lesson with a parallel activity for the mainstreamed student(s) while other students were engaged with independent seatwork (see Figure 4.4.)

Both classroom teachers discussed their decisions concerning the number of adaptations they included in a lesson. Factors described earlier were mainstreamed students' (a) interest and readiness for the skills or concepts, (b) potential for disruption in the classroom, and (c) instructional needs of classroom students. Other aspects of teacher decision-making are discussed in the next section (see Preactive Decisions).

Teachers related the "context" of instruction the major determinant of the number and types of adaptations included in lessons. They described this context as the global and specific objectives, skills, and concepts inherent in the lesson; the instructional format for delivery of these skills and concepts (via lecture, demonstrations, inquiry, and others); the classroom learning climate (the attitudes of mainstreamed and other students towards the subject, skills, or concepts); the difficulty of the materials; and, the general behavior of the mainstreamed student. Both teachers also included their "patience," their degree of planning, and their general preparation for the lesson as part of the climate.

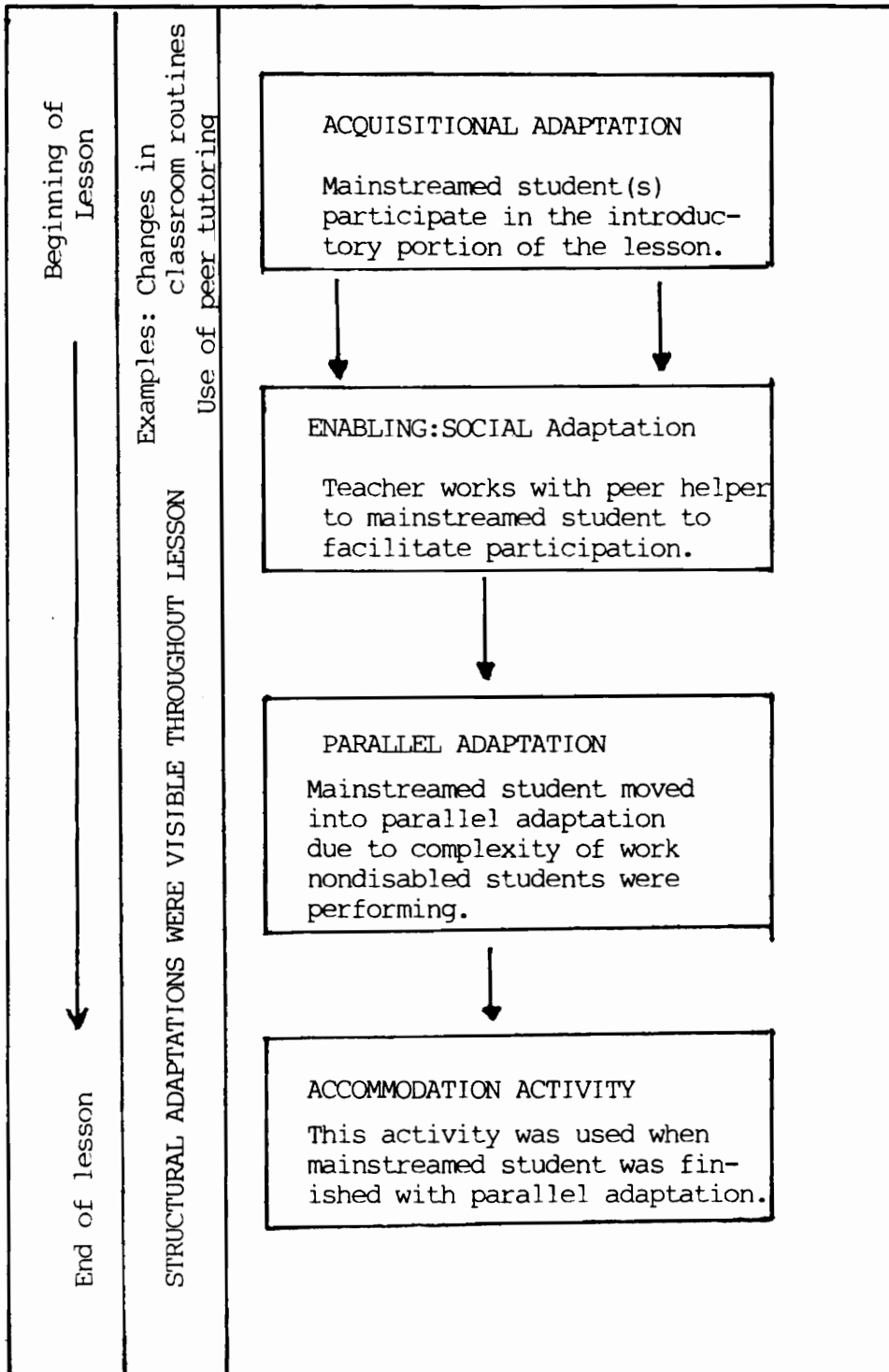


Figure 4.4
Adaptations Observed in a Sample Lesson

Structural adaptations predominated in classrooms. Teachers included structural adaptations as the most prominent of the adaptations observed in classrooms. According to the classroom teachers, one reason was that structural adaptations were primarily "non-academic" and, overall, required little teacher planning. Classroom teachers viewed structural adaptations (such as cooperative learning, peer tutoring, and general groupwork methods) as "vehicles" for instruction, compared to the "more academically-oriented" acquisitional or parallel adaptations.

Both classroom teachers considered structural adaptations "powerful." They felt the classroom learning environment was "transformed" during the course of the mainstreaming program due to structural adaptations. Jill described these adaptations as having the effect of creating a "valuing" of both mainstreamed students by other students. Kerri related the "pride" exhibited by both mainstreamed students through their participation in structural adaptations.

Many of the structural adaptations became part of the normal routines of the classroom. Several of the structural adaptations, such as lining up students and the correcting and collecting of papers, quickly became management routines for both classrooms. Other structural adaptations, such as

changing the lesson format to include more teacher-student prompts, became an important part of the teacher's manner of delivering instruction.

Parallel adaptations required more teacher planning and coordination because the special education teacher or her assistant created the activities. Consequently, classroom teachers had to coordinate planning with special education staff in order to have parallel adaptations organized for use. These adaptations sometimes also required peer tutoring as a structural adaptation.

Both classroom teachers described a heavy reliance on parallel adaptations during the first half of the school year. Each teacher described feelings of uncertainty with mainstreaming students at that point of the school year. Because of those feelings, parallel and structural adaptations were the two primary ways they could effectively integrate.

During the second half of the school year, they related a sense of "security" with these adaptations. They also noted that mainstreamed students, particularly the students with moderate mental retardation, exhibited longer attention spans than earlier, seemed more familiar with the nondisabled students and their own surroundings in the classroom, and appeared more comfortable with instructional activities.

Acquisitional adaptations were observed in classrooms throughout the study, but were less evident at certain times than at other times of the school year. Teachers expressed particular difficulty using acquisitional adaptations during the state assessment period (mid-March through mid-April when standardized testing batteries were administered to students) and during the last nine weeks. Teachers characterized these times as "hectic" and "super-stressful." They also stated that opportunities were "scarce" to plan for acquisitional adaptations during these periods. Yet each teacher viewed acquisitional adaptations as the "least strenuous" for which to plan.

Acquisitional adaptations were characterized by modifying the lesson objective through changes in materials, directions, and presentations of skills or concepts for mainstreamed students. The mainstreamed student did not work with these skills or concepts in the same intensity or duration, level of engagement, or level of mastery as other students.

Acquisitional adaptations were viewed primarily in some language arts, math, and content area lessons. These adaptations usually appeared at the beginning of lessons and then the student either moved into parallel adaptations for the remainder of the lesson or later participated in the lesson through structural adaptations (such as cooperative

learning activities) involving additional enabling-academic and/or enabling-social adaptations.

Acquisitional adaptations were used for both sets of mainstreamed students (those with mild and those with moderate mental retardation). Both teachers described uses for acquisitional adaptations as "reviews" or as "reinforcements" for other students. The fourth grade teacher related several experiences about which she felt several of her other students increased skill and concept mastery because of the incorporation of acquisitional adaptations.

In a few instances, acquisitional adaptations emerged as variations of parallel adaptations and then were included in both classroom teacher's instructional routines. Moreover, due to mainstreamed students' success with parallel adaptations, classroom teachers explored other forms of acquisitional adaptations.

Of the two enabling adaptations, enabling-social adaptations were the more visible in classrooms. It was found that each teacher incorporated changes in classroom social structures and included activities such as cooperative learning, peer tutoring, and other socializing academic activities. Though enabling-social adaptations related to structural adaptations, each teacher taught nondisabled students how to interact with mainstreamed

students, particularly the students with moderate mental retardation. Likewise, the teacher worked with mainstreamed students to develop productive group or partner learning behaviors.

As these attempts succeeded, teachers used fewer independent seatwork periods overall and utilized more group or partner learning strategies. According to one of the teachers, "There was [now] more emphasis on helping one another in my room [because of mainstreaming]." This changed the learning environment in the classroom and was listed by the teachers as a "productive result" of integration and mainstreaming.

Of the five major adaptations noted in this study, the least visible were those incorporating the enabling-academic. Teachers stated that they felt somewhat insecure teaching mainstreamed students enabling-academic skills. As the study progressed, the fourth grade teacher explained that she felt "slightly more at ease" teaching mainstreamed students through increased use of media/visual materials and through specific interventions designed to increase mainstreamed student's engagement with text, tasks, and assignments.

Preactive Teaching Processes. The study of the classroom teachers' preactive teaching processes was primarily exploratory and was divided into two major emphases: (a) the

study of planning processes for some lessons that included mainstreamed students and (b) observing collaborative and consultative strategies and processes used in some meetings with special education and general education teachers.

The focus of this part of the study was to explore classroom teachers' short-term (or daily) planning of instructional adaptations for mainstreamed students. The results were grounded on two data bases: The first was data collected from observations of teachers in planning situations and the second was through data collected from interviews held with classroom teachers after instructional observations.

Observations of teachers' planning processes revealed much about the decisions those teachers use in planning for mainstreamed and other students. The planning process could be described at two levels, each level containing guiding decisions and goals, information and criteria used, and the form of the adaptation constructed, if deemed necessary. As classroom teachers became more fluent with planning processes for instructional experiences including mainstreamed students, less time was spent in actual planning processes and more adaptations were made during the interactive (actual instruction) phase.

The investigation of collaborative and consultative strategies as preactive teaching processes between the

classroom teacher and the special education teacher revealed several phenomena: (a) Sessions were characterized by brief and intensive problem-solving discussions; (b) Special education teachers predominated in the discussions held earlier in the school year and classroom teachers predominated in later sessions; (c) Classroom teachers increasingly became concerned about the "appropriateness" of the skills and concepts presented to mainstreamed students in the classroom; (d) Sessions were heavily consultative at the beginning of the school year and more collaborative by the end of the school year; and, (e) The number of these sessions held daily and/or weekly differed greatly at various points of the school year.

Two other phenomena emerged while analyzing interactions during consultation and collaborative processes: (a) differences between special education and classroom teachers in planning routines and planning styles, and (b) classroom teacher frustration with the consultative/collaborative planning mode due to lack of definition of special education teachers' and classroom teachers' roles and responsibilities in collaborative sessions.

It became apparent early in the study that special education teachers approached planning processes much more differently than did classroom teachers. Special education

teachers spent more time in detailed task analysis processes and classroom teachers planned much more globally than did special education teachers.

This created some frustrations for both sets of teachers. Kerri explained her feelings of frustration:

Please don't think me unkind, but sometimes I find these sessions excruciating. They [the special education teachers] seem to pick apart little details--like how she sits, how she uses crayons, and then they talk about it for some time. I just can't take that kind of time to plan! I just make sure she has the materials and, really, they just do the rest.

Jill was very direct in stating her concerns with her perceived lack of role definitions and responsibilities between specialists and herself:

I wish their [the special education teachers'] role had been better explained at the beginning of the year. I'm not always sure what I should do and what they are doing when we get together. Sometimes I feel like we aren't really getting down to the [planning] issues. Other times I'm not sure what they're expecting of me.

Overall, classroom teachers and special education teachers rated collaborative and consultative strategies as

"extremely important" and "essential" to the success of the mainstreaming program. Despite the challenges inherent in the differing planning styles of special education and classroom teachers, each described collaborative and consultative strategies as important to developing "operationalizing components," support structures for the classroom teacher, and systems for problem-analysis and problem-solving.

Whenever the classroom teacher considered mainstreamed students while planning, she determined (a) the focus of the lesson (usually the objective), (b) the format of the lesson (demonstrations, lecture, audio-visual aids), (c) the expectation of mastery or non-mastery of skills by nondisabled students, and (d) the behaviors of mainstreamed students.

Of all factors considered by the classroom teacher in planning for mainstreamed students, the behavior of those students was the first priority. Classroom teachers did not want to create situations that would overly stimulate mainstreamed students, thus causing disruptive behaviors. Yet, each classroom teacher wanted to include the mainstreamed students as much as possible.

Planning for daily lessons proceeded on two levels: (a) planning for nondisabled students and (b) planning for mainstreamed students. Each level included certain

characteristics and distinguishing features. The teacher's planning for nondisabled students revealed a concentration on "what came next" in the unit or textbook. Lessons were developed to "cover" information in an efficient manner, so the next step was for the teacher to determine the "input" method (e.g., lecture, video, filmstrip, charts, text, chalkboard, or other method). These students' interests and learning characteristics were briefly considered and then the teacher determined what "work" students would complete.

Generally, guiding decisions for the classroom teachers when working at this level were: (a) What material comes next? (b) What skills, concepts, or topics should this lesson include? and (c) How can I have students exhibit some level of mastery with the skills, concepts, or topics? Teachers seldom varied from these decisions when planning at this level.

Results analyzed from the Coding Matrix of Teacher Planning Activities showed certain considerations: Teachers concentrated on student learning tasks, content, and broader planning goals and also considered student ability when planning for instruction. Embedded in the student learning tasks were teacher goals for content, activities, and outcomes. Structuring the learning experience appeared to be only slightly emphasized in planning processes.

The second level of planning observed was for mainstreamed students. Teachers reflected that this aspect of planning was "laborious" at first. In later sessions, teachers discussed this aspect of planning as being much easier, particularly for students with mild mental retardation. Planning for the students with moderate mental retardation continued to be "challenging throughout" according to the fourth grade teacher. The fifth grade teacher stated similar feelings in comparing planning processes for students with mild mental retardation as compared to students with moderate mental retardation.

This level was comprised of several features and guiding decisions. Impacting teachers' planning were considerations about the behavioral and learning characteristics of the mainstreamed student; the instructional format choices for the skills, concepts, or topics of the lesson; and, the time, location, and materials of the lesson impacted each teacher's planning. Guiding decisions were: (a) Do I plan to "actively include," "passively include," or "not include" the mainstreamed student(s) in this lesson? (b) How can I design the lesson so the mainstreamed student is not disruptive? (c) How can I meet student's needs and interests while still including mainstreamed students? and (d) What changes do I need to

make in the lesson to include mainstreamed students more fully?

In analyzing both the Coding Matrix for Teacher Planning Activities (see Appendix B) and the post-observation conferences, it was found that classroom teachers' decisions related to the complexity of subject matter, the time of day and of the school year, and the level of functioning exhibited by the mainstreamed student. In follow-up discussions with the teachers, it was also found that they considered their most important decision to be "how to handle the lesson" so the mainstreamed student would not be disruptive. The second most important decision for both teachers was how to include mainstreamed students in the lesson without denying nondisabled students a full, relevant, and quality lesson.

Teachers expressed initial concerns about the quality of the experience for both mainstreamed students and the other students. In the course of the study, however, both teachers remarked that both sets of students were gaining many important skills through the integration of students into the classroom. Teachers were still concerned about the appropriateness of instruction for the students with moderate mental retardation, but overall they felt these students were making gains in many important areas.

During the preactive teaching phase, neither teacher labelled adaptations using the terms found in this study. They planned according to the time, materials, complexity of the skills, possibility of disruptiveness, and interest of mainstreamed and other students. They made adaptations in materials, structure, routines, or skills depending on time available for planning and the "appropriateness" of the complexity of the learning. Initially, if teachers felt the concepts were too involved or complex for mainstreamed students, they planned primarily for accommodations or parallel adaptations. As the study progressed, teachers made other adaptations, particularly for mainstreamed students with mild retardation. If they did not make adaptations, they would attempt to keep the student in the room through accommodation activities.

Planning seemed to have changed dramatically by the last nine weeks of the study. Both teachers did much less planning at the second level (i.e., planning for mainstreamed students). Both sets of mainstreamed students were integrated into the classrooms for most of the school day and exhibited appropriate learning behaviors. Consequently, teachers made more adaptation-making decisions during interactive teaching processes.

Kerri described this change in planning systems: "I think it's knowing where the mainstreamed students were

functioning and what they could do." She felt much more comfortable making these adaptations "on the fly" (i.e., during interactive teaching phase). Her only concern was to think ahead to what extra materials she might need at that time. Planning processes, therefore, became more unilevel or global rather than the dual level approach exhibited earlier in the study.

Jill also noted the ease with which she was making plans for her fifth grade mainstreamed students at this point in the school year. She expressed it this way:

It seemed like before I spent hours figuring out what I should be doing for each of the kids [mainstreamed students]. Now it seems so much more effortless! Well, not always, but it is much easier. I know that seems strange, but I think I know more about what they can do and that has made all the difference. I guess, too, that my students know them well and that's made a difference.

She elaborated on her planning processes:

I used to plan separately for each of the mainstreamed students and that about drove me crazy. I finally figured out that the other kids [the nondisabled students] could really help with this and they have. By getting them involved with

these kids, learning has been a lot better in my room.

When interviewed and asked their major concerns with planning for mainstreamed students, each teacher described two major concerns: (a) How does the classroom teacher plan in a way that manages mainstreamed student's potentially disruptive behavior? and (b) How does the classroom teacher determine whether to actively include, passively include, or not include mainstreamed students into classroom learning routines and activities? Teachers stated they felt more secure with these decisions at the end of the school year than they did initially. However, as they looked towards the next school year and "new" mainstreamed students, they anticipated problems with these same decisions.

Summary

In this chapter, an analysis of the data collected for the study was presented. The purpose of the study was to examine the amount and types of instructional adaptations made by classroom teachers for mainstreamed students with mild to moderate mental retardation. Classroom teachers' preactive teaching processes, including collaborative and consultative planning activities between special education and classroom teachers, and their perceptions toward mainstreamed students and the mainstreaming program were examined. A summary of the major findings follows:

1). Five primary forms of adaptations were observed in classrooms: acquisitional, structural, enabling-academic, enabling-social, and parallel. Two other structures were observed: Accommodation of the mainstreamed student(s) during instructional sequences and returning the student(s) to the resource room during academic periods.

2). Adaptations occurred throughout lessons. Observations revealed that several types of adaptations were often present in the same lesson and that adaptations differed in degree and in complexity.

3). Teachers reported acquisitional adaptations were the "least strenuous" of the adaptations for which to plan. Parallel adaptations required more planning, but were considered by the teachers to be rather easily accomplished.

4). Structural adaptations were considered "powerful" by classroom teachers. This was due to the changes in the classroom climate and in the context of instruction these adaptations created.

5). Collaborative and consultative strategies were considered "essential" to the success of the program by both special education and classroom teachers. This was true despite problems with roles and responsibilities and with differences in planning styles and problem-finding and problem-solving strategies between the two sets of teachers.

6). Preactive teaching processes occurred on two levels: (a) planning for nondisabled students and (b) planning for mainstreamed students. At certain times, these two levels merged during teaching planning.

7). Some planning processes were moved into interactive teaching phases during the course of the study. Teachers described being more comfortable making certain adaptations within the context of the learning environment as mainstreamed student's general behavior, participation in classroom routines, and attention to learning tasks improved.

8.) Classroom teachers described two major concerns they had with mainstreaming as (a) How to manage mainstreamed student's potentially disruptive behavior and (b) How to determine when to actively include, passively

include, or not include mainstreamed students in classroom learning activities.

Chapter Five

Discussion

Background

The purpose of this study was to examine the types and amount of instructional adaptations made by elementary classroom teachers receiving mainstreamed students with mild to moderate mental retardation. In addition, preactive processes and classroom teachers' perceptions about mainstreaming practices were examined to determine relationships to the adaptations observed.

To obtain the data necessary for this descriptive case study, two elementary classroom teachers were selected. One teacher taught fourth grade; the other taught fifth grade. Each class received one student with mild mental retardation and one student with moderate mental retardation. Both were experienced teachers, but this was their first year participating in the mainstreaming program. These two teachers expressed strong interest in participating in the mainstreaming program.

Mainstreaming was implemented in this school through the "integration model." This model mainstreams students with disabilities into age-appropriate classrooms for

varying periods of time. With the integration model, students with disabilities do not need to exhibit the academic, behavioral, or social readiness factors usually required for classroom placement in the traditional mainstreaming model. Classroom teachers had received several inservice sessions about constructing instructional adaptations for mainstreamed students through modifications in materials, methods, content, classroom routines, and lesson format.

The study took place during the 1991-92 school year. During the course of that school year, data were collected through daily classroom observations, discussions and interviews with classroom teachers, and participation in some collaborative and consultative planning sessions with the general and special education teachers. Four mainstreamed students were observed in two classrooms; each classroom received one mildly and one moderately mentally retarded student. There were 26 fourth graders and 23 fifth graders observed in mainstreaming classrooms.

Summary

These findings contain some reduction in plausibility and several non-definitive interpretations due to certain limitations. Some findings may lack definitive interpretation because this researcher's role as principal

and researcher might have limited some of the responses made by the teachers.

This role as principal-researcher permitted access to many types of planning and teaching situations in gathering a large amount of data for interpretation. However, the role is constrained due to one of the principal's major functions as the supervisor and evaluator of teachers. Consequently, most teachers will respond differently when the principal is present than when a colleague is present.

However, it must be noted that change was a constant in this school. Teachers were generally "empowered" to make a number of significant instructional and other decisions in this school. This principal was highly visible, often visiting all classrooms at least once, and often several times, each day. Also, a majority of the faculty was hired during his tenure. Many of these teachers were specifically hired due to their willingness to be involved in instructional change.

Other findings may lack more definition due to the generally positive opinions the classroom teachers exhibited towards the mainstreaming program and towards the inservices given to classroom teachers concerning instructional modifications. Teachers volunteered to participate in the mainstreaming program. Because these teachers were interested in successfully mainstreaming students, they were

receptive to ideas and strategies for making instructional adaptations. In fact, they created and implemented a wide range of instructional adaptations during the school year for mainstreamed students.

Several inhibitors to mainstreaming were consistently expressed by the classroom teachers. Despite the limitations of the study cited above, these inhibitors should be generalizable across many teaching situations. Classroom teachers cited concerns with their (a) lack of background information about mental retardation, (b) lack of instruction in making adaptations in the general education classroom for mainstreamed students, (c) lack of time for planning instructional adaptations, (d) lack of ability to implement consultation and collaborative strategies consistently and effectively in their teaching situations, and (e) lack of flexibility in making modifications to the prescribed grade level curriculum. They stated strong concerns with "control issues" such as who was responsible (i.e., general education teacher or resource teacher) for the mainstreamed students' skill acquisition or for implementation of adaptations. Additionally, they stated their perceived inability to handle problems with mainstreamed students who lacked self-control and who had the potential for severely disrupting the learning environment.

Both teachers expressed positive opinions about the mainstreaming program. The fourth grade teacher felt her teaching was "revolutionized" through the experience. She listed changes in her approaches to planning, presentation of material to all students, improved ability to adapt instruction for all learners, and increased use of supplemental activities and strategies that promoted learning in her classroom. The fifth grade teacher described changes in her ability to meet the social, behavioral, and academic needs of students with mental retardation through making changes in classroom structures, routines, and lesson format.

Moreover, each teacher stated that all students gained much from the experience. Increased use of peer tutoring, cooperative learning, and other interactive approaches to learning resulted in better relations between students of all abilities in the classrooms. They also felt students with disabilities were more respected by their general education peers than they were earlier as a result of participating in the program.

The results of this study showed that neither teacher implemented any major curricular adaptations during the course of the school year. Neither teacher changed the content, the scope and sequence, or the goals and objectives of the grade-level curriculum to facilitate mainstreaming.

Each teacher worked within the curriculum to make instructional adaptations for mainstreamed students.

These and other results relating to the research questions are discussed in the following sections.

Discussion

What are the Perceptions of Mainstreaming Practices by The Classroom Teachers?

Although other researchers reported generally negative general education teacher opinions about mainstreaming programs, the results of this case study failed to show the degree of negativity that others have reported (Myles & Simpson, 1989). A survey of mainstreaming literature revealed proponents strongly in favor of integrating students with mild to profound disabilities (Lipsky & Gartner, 1987; Stainback & Stainback, 1984; Reynolds et al., 1987), but classroom teachers strongly resistant to having students with disabilities mainstreamed into their classroom (Coates, 1989; Jamieson, 1984; Semmel, Abernathy, Butera, & Lesar, 1991).

The classroom teachers participating in this study exhibited frustrations with mainstreamed student behaviors, but they felt mainstreaming increased general and mainstreamed students' understanding of and appreciation for each other. They felt this program increased some achievement levels for mainstreamed students. They also

viewed the mainstreaming program as promoting the development of "appropriate behaviors" in mainstreamed students. These findings were in direct contrast to results reported by some researchers (Semmel et al., 1991; Whinnery et al., 1991; and Schumm and Vaughn, 1991) but were supported by other researchers (Elliott, 1992; Hamre-Nietupski, McDonald, & Nietupski, 1992).

The two classroom teachers participating in the study were chosen primarily because of their positive attitudes about the mainstreaming program. These teachers' perceptions about the benefits for general and special education students remained fairly positive throughout the study, despite occasional frustrations and inner conflicts. Researchers have noted that classroom teachers' acceptance of mainstreaming is the critical factor for successful mainstreaming programs (Whinnery et al., 1991; Witt & Martens, 1983). This study supported those findings.

The classroom teachers listed benefits to both sets of students (mainstreamed and general education) due to the mainstreaming program. Teachers reported classroom climate became generally more supportive and more encouraging for all students, peer and cooperative learning structures became routinized in the classroom, and mainstreamed students' progress and contributions became increasingly valued and respected by the other students. Skrtic (1988),

Stainback and Stainback (1988; 1991; 1992) and others have suggested that results such as these would occur through successful integration efforts.

What were the Types and Amount of Instructional Adaptations Made by The Classroom Teachers?

This study determined that classroom teachers involved with mainstreaming programs were interested in providing quality instructional and social integration experiences and do make adaptations for mainstreamed students. In fact, a wide variety of instructional adaptations were observed during many instructional situations throughout the study.

Classroom teachers were observed implementing the following types of instructional adaptations for mainstreamed students with mild and moderate mental retardation:

1. Acquisitional Adaptations
2. Parallel Adaptations
3. Structural Adaptations
4. Enabling-academic Adaptations
5. Enabling-social Adaptations

Classroom teachers considered numbers one and two above to be "academic content" adaptations because these were adaptations to the regular objective for the lesson (See Figure 5.1). Numbers three, four, and five were considered

<u>Type of Adaptation</u>	<u>Definition</u>	<u>Findings</u>
Acquisitional	<p>Adaptation developed for mainstreamed student to acquire all or a portion of the learning objective. Mainstreamed student(s) participated in the learning activities with non-disabled students.</p>	<p>Used most frequently with students with mild mental retardation. Adaptations appeared most frequently at the beginnings of lessons or of units of study. Teachers considered these adaptations the "least strenuous" for which to plan.</p>
Parallel	<p>Adaptation is related to the learning objective for the non disabled students, however, the adaptation is dissimilar to non-disabled students' learning activities. The adaptation is academic, but is performed independently by the mainstreamed student.</p>	<p>These activities were planned by special education resource teachers and staff. These activities were performed either independently by the mainstreamed student or with a peer helper or tutor in another area of the classroom.</p>

Figure 5.1
Types and Features of Academic Content Adaptations

"non-academic" adaptations because these were changes in social and classroom routines, structures, and formats (see Figure 5.2). Additionally, classroom teachers were observed incorporating two additional alternative strategies for mainstreamed students: Accommodation and return to the resource room (see Figure 5.3).

Classroom teachers were never totally satisfied with the types and amount of adaptations included in their lessons. Often during our discussions and interviews the teachers reported dissatisfaction with the number and kind of adaptations they made. They listed their reasons for not including more adaptations: (a) They were not adequately "prepared" for the facets of mainstreaming by the special education staff and the school administration, (b) They felt they could not abandon any portion of the prescribed curriculum for their grade level, and (c) They were not given more strategies for creating instructional adaptations or for modifying mainstreamed students' behavior.

It was also noted that classroom teachers prepared their nondisabled students more for mainstreaming experiences than the special education teachers prepared the classroom teachers for mainstreaming. Some writers have described strategies for preparing classroom teachers and their students for positive mainstreaming experiences (Certo, Haring, & York, 1984; Gaylord-Ross, 1989; Hamre-

Type of Adaptation	Definition	Findings
Enabling: Social	Additions to teacher routines and classroom processes to instruct mainstreamed and non-disabled students in the development of "helping" behaviors in facilitating partner and group learning activities	Adaptations facilitated mainstreamed students' social behaviors and interactions with classmates. Three major sets of social behaviors were observed: 1. Partner-based 2. Group-based 3. Task-oriented
Enabling: Academic	Adaptations to classroom academic routines, media, and materials to facilitate mainstreamed students' attention to and completion of academic tasks	Two major categories of these adaptations were observed for mainstreamed students: 1. Media/materials 2. Academic Engagements
Structural	Adaptations to general classroom structural routines, lesson formats, and instructional activities to facilitate increased participation of mainstreamed student(s)	Adaptations of basic classroom routines, additions to classroom routines and processes, and the increased use of cooperative learning and peer helping and tutoring were observed.

Figure 5.2
Types and Features of Non-Academic Adaptations

<u>Alternative Strategies</u>	<u>Definitions</u>	<u>Findings</u>
<p>Accommodations</p>	<p>An activity performed by mainstreamed student(s) unrelated to non-disabled peers' activities. Classroom teachers planned accommodation activities such as listening to a tape, coloring and drawing, playing a simple game independently or with a peer helper.</p>	<p>Mainstreamed students' activities were dissimilar to those of non-disabled students; accommodations permitted mainstreamed students' continued presence in room but no engagement of these students with classroom activities was observed. Classroom teachers used accommodations when complexity of the objective or activities and the potential for mainstreamed students' misbehaviors were factors.</p>
<p>Return to Resource Room</p>	<p>Returning mainstreamed students to their special education resource room for instructional sequences.</p>	<p>Classroom teachers returned mainstreamed students when these students were highly disruptive, needed individual attention for various reasons, received specialized therapy sessions.</p>

Figure 5.3
Alternative Strategies

Hietupski et al., 1992). Other writers have described the lack of information regarding teachers' selection of mainstream instructional strategies (Bender & Ukeje, 1989).

Suggestions for teacher-constructed adaptations have been listed by Elliott (1992); Ford, Schnorr, Meyer, Davern, Black & Dempsey (1989); Stainback and Stainback (1991, 1992); and Wang (1986). Although the special education teachers at this school were familiar with some of the suggested adaptations found in the above sources and presented methods for making adaptations to classroom teachers through several inservices during the school year, classroom teachers generally devised their own adaptations. Classroom teachers employed adaptations throughout daily lessons in increasing amounts during most of the study. These findings were contrary to those reported by some researchers in which classroom teachers were shown to be generally disinclined to incorporate adaptations for mainstreamed students (Davis, 1989; Kauffman, Gerber, & Semmel, 1988).

Although suggestions have been given for classroom teachers to create instructional adaptations (Ford et al., 1989), no study could be found that documented actual adaptations to the degree this study accomplished. It was expected that classroom teachers would utilize some

adaptations; however, the relatively large amount and numerous types of adaptations observed were not expected.

It was anticipated that some adaptations would be perceived by classroom teachers as being necessary and desirable for mainstreamed students' participation and learning to result. However, this researcher did not expect to see any differences in teachers' willingness to plan more for certain adaptations than for others. Surprisingly, parallel adaptations (similar in content but less complex tasks or activities planned for students with disabilities to perform individually while general education peers performed more complex tasks or activities related to the same subject) were not planned by classroom teachers; special education teachers had primary responsibility for these.

Another unexpected finding was that classroom teachers segregated mainstreamed students during parallel adaptations. Classroom teachers considered parallel adaptations to be important "practice periods" for mainstreamed students while other students performed academic tasks. The teacher's approach to parallel activities did not appear to intentionally segregate; their approach seemed to be "Now it's your time to practice your skills while we practice ours."

Classroom teachers generally increased their use of instructional adaptations during the study. This was not unexpected. It was expected that classroom teachers would rely upon positive and successful experiences with previous adaptations in using new adaptations or variations on styles of adaptations for new adaptations in much the same way they implement other instructional strategies. After ten weeks or so into the study, it was noted that classroom teachers preferred to create some adaptations (primarily enabling-social adaptations, some acquisitional adaptations, and structural adaptations) during interactive (actual teaching) phases rather than to plan for them in advance.

Teachers' reliance on cooperative learning and peer tutoring strategies as structural adaptations to facilitate mainstreaming was not unexpected. Both teachers reported that mainstreamed students attended to tasks and participated more fully in classroom activities through cooperative learning structures. Teachers relied upon peer tutoring or "buddy" systems to help manage mainstreamed student behaviors, particularly those of students with moderate mental retardation.

Unexpected results included the finding that classroom teachers considered acquisitional adaptations the "least strenuous" of the adaptations, yet structural adaptations were considered the "most powerful." It was expected instead

that classroom teachers considered parallel adaptations to be the "least strenuous" adaptation for which to plan. Interestingly, teachers were most impressed by the transformational qualities (i.e., the ways in which these adaptations changed the general learning climate of their classrooms) of structural adaptations within the classroom environment. These findings were not anticipated, although some researchers have stated that adaptations requiring little individualization in terms of planning, instruction, and altering the environment are considered the most feasible by classroom teachers (Schumm & Vaughn, 1991; Whinnery et al., 1991).

What Were Classroom Teachers' Concerns with Mainstreamed Students' Behaviors?

Equally unexpected was the emphasis that classroom teachers placed upon acceptable mainstreamed students' self-control, attitude, on-task behaviors, and general participation in classroom activities. Analysis of teacher interviews revealed a large amount of time in most interviews spent discussing classroom teacher concerns with mainstreamed students' development of productive and non-disruptive behaviors.

Cognizant of classroom teachers' perceived intolerance of disruptions by mainstreamed students, the special

education teachers gave considerable attention to reducing the potential for these disruptive behaviors. Interestingly, classroom teachers were not always willing to implement behavior intervention strategies, particularly during the first nine weeks. These teachers accepted mainstreaming as an effective strategy, but did not accept disruptions to their classroom environment by mainstreamed students. Initially, they also did not tolerate these disruptions. Later in the study, both teachers increased their tolerance for disruptions and attempted to change students' disruptive behaviors through cooperatively determined strategies.

Similar perceptions and resulting teacher feelings, opinion, and actions were supported by studies examining various behavior interventions and the factors that affect teacher acceptance of the interventions (Whinnery et al., 1991). According to some researchers, teachers are most accepting of behavior intervention strategies that are time efficient (Witt, Martens, & Elliot, 1984) and considered to be effective (Witt, 1986). They are least accepting of strategies that are considered negative or punitive (Elliott, Witt, Galvin, & Peterson, 1984).

Collaborative planning sessions provided classroom teachers with specific interventions to use when dealing with mainstreamed students' disruptive behaviors. That classroom teachers participated in these sessions and then

used the interventions to some degree in their classrooms was contrary to findings reported by Whinnery, Fuchs, and Fuchs (1991). Classroom teachers reported collaborative sessions "very helpful" in managing these behavioral interventions.

Each teacher differed in the amount of tolerance for misbehaviors and in her amount of interest in changing these behaviors. The fourth grade teacher assumed more overall responsibility for the mainstreamed students than did the fifth grade teacher. Although both teachers relied upon consultative and collaborative problem-solving strategies for extinguishing disruptive behaviors, the fifth grade teacher did not show the same responsibility towards the mainstreamed students or tolerance for changing the students' behaviors. Differences in teacher acceptance of responsibility towards behavioral interventions have been documented by some writers (Witt, 1986).

Results indicated that the classroom teacher's willingness to participate in mainstreaming efforts was related to the types and amount of adaptations observed during instruction. These classroom teachers were very willing to participate in mainstreaming efforts and to create instructional adaptations. However, between the two teachers, the fifth grade teacher made fewer instructional adaptations and showed somewhat less willingness to make

these adaptations compared to the fourth grade teacher. Even though there were differences between the two teachers, overall these results contrasted with previous research showing classroom teachers strongly opposed and generally unwilling to accept children with mild or other disabilities in their classrooms (Jameison, 1984; Myles & Simpson, 1989) or to make academic or social adaptations for these children (Munson, 1987).

At the end of the study the classroom teachers noted each mainstreamed student made social and instructional progress during the school year. However, as they reviewed the year, these teachers continued to describe doubts about their ability to assist and teach mainstreamed students during some stages of the school year. This feeling is consonant with reports given by several other researchers (Gersten & Woodward, 1990; Salvia & Munson, 1986; Slavin, 1990).

What Was Observed About Classroom Teachers' Preactive Teaching Processes?

Results of this study indicated that teacher preactive processes exhibited certain major differences from those of special education teachers. This was not unexpected given previous studies (Gelzheiser, 1987; Gersten & Woodward, 1990; Lloyd, Crowley, Kohler, & Strain, 1988).

These differences in planning and problem-solving strategies created conflicts during collaborative-consultation sessions. Whereas special education teachers planned with specific objectives and detailed task analyses in mind, classroom teachers planned through "integrated ends-means processes" (Eisner, 1967; MacDonald, 1965; Yinger, 1978; 1979). That is, teachers first focus on the type of learning activity and then develop objectives through the context of the activities. In other words, the "ends" for the learning activities integrate the "means" for the learning. Some movement toward a more "centrist" planning method (i.e., teacher planning that was balanced between more specific task analysis concerns and global instructional goals) was exhibited by the classroom teachers, but more movement was detected by the special education teachers. This occurred once they realized why planning sessions lacked a cohesive approach and created frustrations for both sets of teachers initially. They then refined the sessions to reflect specific problem-finding and problem-solving processes.

Further, it was found that role definition problems and role responsibility concerns also created occasional frustrations with classroom teachers' perceptions about the productivity of collaborative-consultation sessions. Classroom teachers thought they should be getting more

support in the classroom with the special education teacher or her assistant as an "aide." Interestingly, the special education teacher did not view her role in that manner and by stressing her consultant/collaborator roles, she forced the classroom teacher to problem-solve further.

The resistance that classroom teachers exhibited toward implementing potentially helpful strategies was surprising at times. Occasionally, each teacher suggested they needed something that would "work" consistently. Yet, in discussions with classroom teachers concerning the effectiveness of planning sessions held with special education personnel, one teacher stated that she "was left holding the ball" to solve some of her mainstreamed students' problems. Although it appeared during collaborative-consultation sessions that many good ideas and strategies were given to her, this classroom teacher still resisted implementation of the strategies until it became clear that the mainstreamed student would remain in her class despite occasional periods of removal as a result of severe discipline problems.

Concerns with roles and responsibilities were indicated by Lloyd (1988). Glatthorn (1990) suggested that several other sources of conflict between special and classroom teachers can lead to negative impacts on collaborative-consultation structures. Further, Glatthorn stated that

differences in each teacher's perceptions of the other's competence in working with students with disabilities could create hindrances to utilizing collaborative planning structures. It appeared that the both sets of teachers (classroom and special education teachers) respected each other and did not appear to have conflicts based on lack of respect for each other's competence.

Glatthorn also stated that restricting the relationship to solving mutually defined problems between teachers during collaborative-consultation sessions severely limits the interactions. The teachers in this study did concentrate most efforts on problem-finding and problem-solving, but they did not limit the sessions to only these topics. In fact, some "celebrations" of mainstreamed student successes were shared during several observed sessions. Moreover, each classroom teacher described the problem-finding and problem-solving aspects of these sessions as being "necessary," "very helpful," and "productive."

The study of preactive processes and collaborative-consultation sessions created some unnatural situations during initial phases of the study. Having the principal as researcher present during planning and consultation sessions promoted some superficial and artificial conversations during early observations. After several observations, classroom teachers were more willing to converse about

planning processes. Collaborative and consultative sessions became more naturally dynamic with the researcher as a participant-observer rather than as an observer. However, it was felt that the full essence of these sessions was ever captured with me present. Although outcomes of these sessions were primarily positive and were characterized as "productive" by participants, the depth of interactions and the intensity of discussions may not have been adequately displayed for a full depth of analysis.

Generally, classroom teachers' observed preactive processes supported the findings of Eisner (1967), MacDonald (1965), Shavelson and Stern (1983), and Yinger (1978). Classroom teachers did not use objectives to determine instructional activities for general or mainstreamed students. This finding was not expected; previously teachers had received extensive training in constructing objectives through outcome-based instruction processes (Hunter, 1984) and this researcher fully expected these teachers to utilize their training. Consequently, it was unexpected to find classroom teachers planning according to "what came next" in the text or curriculum manual at times (i.e., teachers followed the text's scope and sequence rather than making their own curricular decisions).

Teachers did, however, consider the abilities of both the mainstreamed and nondisabled students when planning for

activities. At first this was performed on two levels: Instructional decisions for nondisabled students were considered first, and then those for mainstreamed students. These results, supporting those of Shavelson and Stern (1983), elaborated on findings described in the preliminary study described in Chapter 1 and, therefore, were not unexpected. Later, however, classroom teachers made a major change in planning processes: They moved instructional adaptation-making decisions into the interactive phase rather than making these decisions during the preactive phase.

During the preactive phase, once teachers determined the general goals and the activities in which nondisabled students would participate, the teachers then determined whether or not instructional modifications were needed for mainstreamed students. It was interesting to note that teachers were anxious to move this phase to interactive processes. It appeared that classroom teachers did not want to extend the preactive phase. This may have been due to teachers' time constraints. Considering the effectiveness of some of the observed adaptations, it was surprising that teachers wanted to curtail this phase. However, some researchers have stated similar observations of teachers and their planning processes for mainstreamed students (Bender & Ukeje, 1989; Semmel et al., 1991).

Upon further analysis of planning processes, it became apparent that classroom teachers had not altogether abandoned this portion of the preactive phase. Rather, they had moved aspects of adaptation-making to an "automatic" level. "Guiding decisions" were internalized into teachers' planning technologies as adaptation-making processes became routinized. As these adaptations became more routinized in the classroom, so did the teachers' planning processes.

Certain structural adaptations (particularly those cooperative learning activities involving complex academic skills) and certain enabling-academic adaptations (those involving increased use of teacher prompts, returns, and advancers) required more extensive teacher planning than did most adaptations. Consequently, these adaptations were most affected by teacher perceptions of lack of time for planning and were not always implemented by teachers. In those cases, accommodations were used, requiring little teacher planning or classroom preparation.

Researcher's Commentary

This researcher is using this section to describe several important features of the study and to present some additional details not found in earlier sections that may be important to the reader. These descriptions are meant to give the reader some additional background information and to help the reader draw further conclusions.

It is important to note that classroom teachers did not give mainstreamed students instruction in "life-skills." Life-skills instruction, such as community-based instruction, money-handling skills, and functional skills (grooming, cooking, and others), was given to mainstreamed students by the special education resource teachers. Classroom teachers were also not responsible for certain Individualized Educational Plan (IEP) goals related to life-or functional-skills. Classroom teachers were responsible for instructing all students in the grade-level's prescribed curriculum. Consequently, this study examined adaptations made in the classroom for mainstreamed students within the parameters of the academic curriculum.

Because classroom teachers were not involved with life-or functional-skills objectives, curricular adaptation models such as The Syracuse Community-Referenced Guide for Students with Moderate and Severe Disabilities (Schnorr, Ford, Davern, Park-Lee, & Meyer; 1989) were not appropriate. This guide assumes the classroom teacher will adapt the classroom teachers' learning objectives to include community-referenced instructional objectives and goals and dwells little on academic goals except as they relate to daily life.

Serving in the dual role of principal and researcher was an interesting and fulfilling experience. As was stated

earlier in this study, the role of principal permits access to rich data about classrooms and teaching and learning functions. Even though rich data are available in a school setting, this researcher found it necessary to change roles at times from that of observer to that of participant-observer. The observations of collaborative-consultative processes between special education and classroom teachers became richer in data when the role changed from observer to participant-observer. When the researcher asked questions at times during these meetings, the roles of the participants changed somewhat and data-gathering increased.

There are potential problems with the dual role of researcher-principal, however. For data gathering purposes, the principal must examine and observe classroom teaching functions in a wide variety of contexts throughout the school in order for accurate data to be gathered. This principal included all teachers in the observations and used the additional observations to verify findings.

All classrooms involved in the mainstreaming program were observed to note if similar adaptations were occurring in other classrooms. Much similarity in adaptations was noted. Observations of the classrooms participating in this study were also made at times when no mainstreamed students were present. This was to note if there were significant changes in instructional formats or classroom routines or

structures when mainstreamed students were not present. No significant changes in these areas were noted when mainstreamed students were not present.

This researcher strongly urges other principals to become involved in research concerning instructional, curricular, and other issues. Principals, as instructional leaders, can learn many details, issues, and concerns about their school's programs through such research, keeping in mind that this study was not designed to relate mainstreaming practices to measures of educational effectiveness. However, the framework of this study may suggest to teachers and administrators categories for staff development and program implementation. Stronger and more lasting implementation of programs in their school may result.

Conclusions

The results of this study suggest that some classroom teachers are willing to make instructional adaptations for mainstreamed students with mild to moderate mental retardation. This may be particularly true if these teachers have positive perceptions about the mainstreaming program and its benefits for both mainstreamed and nondisabled students. However, the instructional adaptations appear to be restricted to certain types: Acquisitional, structural, enabling-social and enabling-academic. The teachers observed

in this study involved mainstreamed students in parallel adaptations, but relied upon special education teachers to develop these adaptations.

The classroom teachers adapted instructional formats, some methods and materials, and selected instructional routines in their classrooms to facilitate mainstreaming. Classroom teachers did not appear willing to make any major adaptations to the prescribed scope, sequence, and content of the grade level's curriculum. Although some embellishments to the curriculum were noted, no major deletions, adaptations, or additions to the curriculum due to the mainstreaming program emerged in this study.

There may be a need to provide classroom teachers with inservices and staff development opportunities to learn more about constructing instructional and curricular adaptations. Although these teachers did make application of the principles and examples of adaptations provided to them through several inservices, these teachers still appeared to construct adaptations within a limited planning framework.

The results of this study also support research suggesting that the collaborative and consultative planning sessions can have an effect on the development of instructional adaptations. Classroom teachers found the sessions to be helpful, once differences in planning styles between special education and classroom teachers were

resolved. These sessions provided classroom teachers with increased strategies for managing and maintaining productive mainstreamed student behaviors, for planning for structural changes in the classroom, and for incorporating adaptations in classroom instructional formats, methods, materials, and routines.

Perceptions of the classroom teachers toward the mainstreamed students and the mainstreaming program remained generally positive throughout the study. Although no significant differences were noted in the perceptions of the two classroom teachers, a pattern emerged suggesting that the fifth grade teacher had a slightly lower acceptance of the mainstreamed student with moderate mental retardation than did the fourth grade teacher. Each teacher expressed reservations about aspects of the mainstreaming program such as concerns about the appropriateness of the skill instruction provided to mainstreamed students. However, each teacher stated benefits for all students due to their involvement with the program.

It can be assumed that increased attention will be given to special education integration and inclusive education practices in the near future. In the final stages of writing this dissertation, two important reports were disseminated nationally. In "A Report Card to the Nation on Inclusion in Education of Students with Mental Retardation"

(Davis, 1992), published by The Arc (formerly The Association for Retarded Citizens of the United States), each state's integration and inclusive education efforts were ranked and graded. Two states received a grade of "C," several states received a "D," and the majority of states received an "F" for their implementation efforts. However, this report did not address instructional adaptations or curricular modifications for these students.

Also appearing late in 1992 was "Winners All: A Call for Inclusive Schools" (October 1992), a report issued by the National Association of State Boards of Education in which they endorsed full inclusion of students with disabilities. The report recommended the creation of a new belief system and vision for education in their states that includes all students. The report also called for states to change teacher licensure and certification rules and for the support and creation of training programs to help special educators and general educators learn to collaborate in the classroom.

Because of the attention being given to special education integration and inclusive education efforts by the press, special and general education organizations, and other groups, the need exists to prepare general education teachers for increased mainstreaming of students with diverse disabilities. The need also exists for teaching

general education teachers how to design curricular and instructional adaptations for these students. The taxonomy of adaptations (and conditions under which they occur) described here may be helpful in such enterprises.

Recommendations for Staff Development and Inservice
Activities

Based on the results of this study and other observations, the following activities are suggested for preparing general education and special education teachers for the mainstreaming of students with mild to moderate mental retardation:

1. Involve general and special education teachers in inservice sessions and/or staff development courses that describe the constructs of mental retardation (or other disabilities), build general education teachers' sensitivity to mainstreamed students' needs and characteristics, and examine strategies to use in promoting disability awareness for nondisabled students and staff.

2. Involve general and special education teachers in inservice sessions and/or staff development courses designed to promote curricular modifications and instructional adaptations by classroom teachers for students with mental retardation (or other disabilities), giving classroom teachers an expanded framework or model in planning for mainstreamed students.

3. Involve general and special education teachers and staff in weekly or bi-weekly problem-finding and problem-solving sessions promoting integration of students with mental retardation. Processes for determining curricular

modifications and instructional adaptations for mainstreamed students in the classroom would also be discussed during these meetings.

Recommendations for Special Education Teachers

The following are recommendations for special education teachers working with general education teachers and students in mainstreaming programs based on the findings of this study. It is suggested that:

1. Special education teachers consider the receiving general education classroom for students with mental retardation. Certain classroom teachers are more receptive to such placements than are other teachers. Also, due to differences in the personalities of classroom teachers and their students, certain teachers and classrooms may work well for some mainstreamed students and not work as well for others.

2. Special education teachers prepare receiving general education teachers and nondisabled students for mainstreamed students. This preparation can involve disability awareness activities; discussions with teachers and nondisabled students about the needs, characteristics, learning patterns, and general behaviors of students with mental retardation; and, role-playing activities in which peer-tutoring or "buddy" learning systems are displayed.

3. Special education teachers and staff monitor mainstreamed students' involvement in the general education classroom by making frequent visits to the classroom each day. During early stages of mainstreaming, the special education teachers and staff should spend as much time as possible co-teaching in the general education classroom.

4. Special education teachers communicate Individualized Education Program (IEP) goals and objectives to the receiving teacher. However, special education teachers should be responsible for monitoring and assessing mainstreamed students' mastery of IEP goals and objectives. Also, the special education teacher should be responsible for the teaching of these objectives if classroom teachers do not include these skills in their instructional experiences.

5. Special education teachers model appropriate behavioral interventions and management strategies when co-teaching in the general education classroom. One of the classroom teachers' prime concerns is how to manage the behaviors of a potentially disruptive mainstreamed student.

Recommendations for Collaborative-Consultative Planning Sessions

The following are suggestions for planning sessions held between special education teachers and receiving classroom teachers based on the findings in this study. It is suggested that:

1. Special education teachers structure planning sessions to focus on the mainstreamed students' social and academic needs.

2. Special education teachers design a planning form to record notes, key points, additional curricular or instructional adaptations and modifications, and other comments made by participants during the planning session.

3. Special education teachers' should be aware of the differences in the planning styles and technologies of general education teachers. Special education teachers plan in a more specific manner than do general education teachers. Differences in planning styles can cause problems in these planning sessions.

4. Special education and general education teachers concentrate on problem-finding and problem-solving during these sessions. "Celebrations" of student successes should be included in sessions.

5. Special education teachers assist general education teachers in planning curricular modifications and

instructional adaptations. The scope and sequence along with the content of the grade level curriculum can often be modified to facilitate mainstreaming. Adaptations to lessons to promote integration of mainstreamed students can also be designed. However, classroom teachers may need specific guidance from special education teachers in making these changes.

6. Special education and general education teachers periodically assess the effectiveness of these planning sessions and determine changes to the planning structures as necessary.

Recommendations for Further Study

Based on the results of this study, the following recommendations are made for further studies:

1. An examination of the mainstreaming program and the use of instructional and curricular adaptations in a school utilizing more strongly site-based management principles (such as parent, teacher, and administration advisory committees directly involved with curricular decision-making).

2. A study of the mainstreaming program and the use of instructional and curricular adaptations made by general education teachers by a researcher who was not principal of the school in which the study was performed.

3. The use of these adaptations in the general education classroom should be examined further to determine the efficacy of adaptations with mainstreamed students. This study determined the types and amount of adaptations but did not determine efficacy.

4. The roles and responsibilities of special and general education teachers should be further clarified through other studies of the collaborative-consultative model and in noting effectiveness of this planning strategy.

5. Additional studies of general education teachers willingly engaging in integration and mainstreaming programs should be conducted to determine other types, features,

characteristics, and settings of instructional adaptations and curricular modifications.

FINAL SUMMARY

This study was designed to examine the types and amount of adaptations made by elementary classroom teachers for mainstreamed students with mental retardation. It was found that the teachers observed in this study engaged mainstreamed students in a number of instructional activities, some of which were adapted and some that were not. At other times, the students were merely accommodated or, for several reasons, were sent back to the resource room.

This study examined the perceptions of the classroom teacher towards the mainstreaming program and mainstreamed students. It was found that the teachers' reported perceptions of the program and of the mainstreamed students remained generally positive throughout the study. However, these teachers did have some strong concerns about their own preparation for mainstreaming activities, the impact of the prescribed curriculum for the grade level as a hindrance to making adaptations, and several other issues. These concerns tempered the generally positive perceptions at times.

This study also examined the teachers' planning processes. As part of that examination, collaborative and consultative sessions between special education teachers and

classroom teachers were observed. Conflicting planning styles of the special education and classroom teachers were noted, along with issues concerning perceived roles and responsibilities for the planning of classroom activities and adaptations for mainstreamed students. Both sets of teachers (special education resource teachers and general education classroom teachers) resolved planning issues by moving toward a more "centrist" form of planning.

These findings have the potential for transferability to other types of conditions (English as a Second Language, students with learning disabilities or other forms of disabilities). It is hoped that the richness of the observations and the findings of this study are of some help to other principals and teachers interested in developing instructional activities for mainstreamed students with mental retardation.

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APPENDICES

APPENDIX A
ENCODING AND DATA ANALYSIS PROCEDURES

In this study, data were collected from classroom observations held at least three times weekly for a minimum of one hour in length, interviews of classroom teachers, and observations of special education and classroom teachers in collaborative-consultative meetings. Initially, classroom data were collected by writing a script of teacher and student dialogue. Activities, instructional format, and transitions between activities and instructional sequences were also noted. After each observation, a narrative was written to describe the setting, the events, the features of the instruction, and the teacher and student interchanges observed during each observation.

Categories of concepts related to instructional activities, instructional adaptations, and student-teacher and student-student interactions emerged rather easily at first. However, it soon became apparent that some forms and matrices were needed to structure the gathering of data in developing properties and dimensional ranges of the categories.

Matrices were used to note teacher planning activities and to record classroom observations. These matrices were used later in constructing narratives of the teacher

planning interviews and of the classroom observations. As coding categories and their properties and dimensions emerged, comparisons of previous and new data were made to build subcategories and link these subcategories to other phenomena observed and categorized.

Axial coding (Straus & Corbin, 1990) was used to build the paradigm of instructional adaptations. The causal conditions, phenomenon, context, and action/interaction strategies and consequences of the observed instructional adaptations were examined in developing and linking categories of adaptations. Additionally, this coding revealed social, structural, and contextual properties and dimensions for the classroom teachers' vocabulary, preactive processes, opinions, feelings, and perceptions about mainstreaming. This coding also revealed categories, properties, and dimensions about the mainstreamed students and their interactions with non-disabled peers.

Relationships between teacher planning processes and observed instructional adaptations emerged through the interviews and observations. The relationships were analyzed and categories were created to note adaptations, features of the adaptations, teacher planning decisions, and teacher perceptions of the success or failure of the adaptations. Matrices were developed to display conditions and

actions/interactions of the adaptations related to the adaptation-making processes.

Appendix B

Coding Matrix: Teacher Planning Activities

Teacher decisions:

Week of _____

	REGULAR STUDENTS	MAINSTREAMED STUDENTS
General Goals		
Materials		
Activities		
Objectives		
Assessment of Student Mastery of Objective(s)		
OTHER NOTES:		

Appendix C

CLASSROOM OBSERVATION TEMPLATE

(Used to guide analysis of field notes and teacher-student
scripted notes)

The setting:

Classroom seating arrangements

Classroom environment

The Lesson:

Teacher preparations (background information,
visuals, etc.)

Lesson format (lecture/discussion; other
model of teaching incorporated)

Components of the lesson

The Students:

Student interactions

Student involvement: active/passive

Cooperative learning/peer tutoring

Other areas:

Pacing of the lesson

Teacher's vocabulary

Structural changes

Appendix D

Sample Recording Sheet

Adapted from:

Dobbert, Marion L. (1984) Ethnographic Research,
New York: Praeger Publishers.

Date:	Time:	Series:	Page in Series:
Describe Setting of Mainstreamed Student:			
Activities Observed:	Objects:	Surrounding persons:	

List the observable markers of the general atmosphere:

DESCRIPTIONS:		
Mainstreamed Learner:	Characteristics: Tutor	Characteristics: Group/Class
Action/ Interaction:	Action/ Interaction:	Action/ Interaction:

Appendix E

SAMPLE INTERVIEW QUESTIONS

EXPERIENCE/BEHAVIOR QUESTIONS:

If I was working in your class beside you today, what would I have seen you doing to [integrate; instruct; adapt; accommodate] mainstreamed students?

If I followed you through a typical day, what would I see you doing?

What experiences would I see you having with mainstreamed students?

OPINION/VALUE QUESTIONS

What do you believe about [integration; mainstreaming]?

What outcomes would you like to see with this program?

What is [is not] happening with this program?

What is your opinion of your instructional practices for integrated/mainstreamed students?

FEELING QUESTIONS:

To what extent do you feel happy [anxious, sad, intimidated, confident] about your experiences with this program?

KNOWLEDGE QUESTIONS:

What have you learned about instructional practices through this program?

What have you learned about making adaptations [accommodations] through participating in this program?

What have you learned about mainstreamed students' learning characteristics through participating in this program?

Appendix F

Letters to Participants

Dear Faculty Member:

I am currently working on my dissertation study involving the mainstreaming of students with mild and moderate mental retardation into classrooms. As part of that study, I am seeking your permission to use data that I have collected from your classroom as part of my normal supervisory duties during the school year. It would be helpful if I could also interview you concerning your experiences with the mainstreaming program.

I am performing a descriptive case study about classroom teachers, elementary students, and mainstreamed students with mental retardation placed in elementary classrooms. I am interested in the instructional processes and adaptations for the mainstreamed students, the social contexts and structures with regular and special education students in the classroom setting, and the collaborative interactions between regular and special education teachers involved with the mainstreaming program at this school.

The information that I gather for the study will not personally identify you or any of your students. No names will appear in the study; no one will know who has participated in the study. It is important for you to understand that any conclusions drawn or analyses made in the study will have no bearing on your employment or subsequent evaluations.

If you feel that you can allow me to use these observations and to analyze the data from the interviews and the observations, please sign the permission form attached. I will give you a signed copy for your files.

Thank you for your help with this study.

Sincerely,

Ronald E. Dyer

DATE: _____

I, _____, give my permission for Ronald Dyer, doctoral student at Virginia Polytechnic Institute and State University, to use data from observations made in my classroom and from any interviews pertaining to this study. I understand that this data will be used in a descriptive case study about the mainstreaming of students with mental retardation into elementary classrooms.

I understand that my name will not appear in the dissertation and that no one other than the researcher will know who participated in the study. My anonymity and that of my students will be respected.

I also understand that any conclusions drawn or any analyses made in or through this study will have no bearing or effect on subsequent performance evaluations and/or employment. None of these conclusions or analyses will appear in my personnel file at any time.

Signed: _____ Teacher

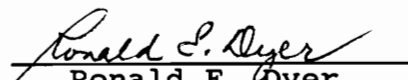
Signed: _____ Researcher

VITA

The writer of this dissertation, Ronald E. Dyer, was born April 17, 1953 in Pittsburgh, Pennsylvania to Elmer E. and Margaret B. Dyer. He completed his elementary and secondary education in the West Mifflin Area School District in West Mifflin, Pennsylvania. His Bachelor of Science Degree in Elementary Education was earned at Slippery Rock University of Pennsylvania in 1975.

Ron began his teaching career with a suburban school district in Northern Virginia in August, 1975. He taught second grade for nine years, later taking positions as a fourth grade teacher and as a teacher of the gifted. He continues to work in this school district, living in a suburban section of the county with his wife, Jeanne, and his two children, Scott and Laura Anne.

While teaching, Ron pursued his Master of Arts degree in Elementary Educational Administration at Virginia Polytechnic Institute and State University. Ron is currently principal of a large suburban elementary school, having served previously as an assistant principal of a large elementary school and earlier as principal of a small elementary school. In 1990, Ron entered the Graduate School of Virginia Polytechnic Institute and State University to pursue a Doctor of Education in Curriculum and Instruction.


Ronald E. Dyer