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FACTORS RELATED TO THE USE OF INSTRUCTIONAL STRATEGIES
THAT FACILITATE INCLUSION OF STUDENTS WITH MODERATE
AND SEVERE IMPAIRMENTS IN GENERAL EDUCATION CLASSES

presented by

Myongye Bang

has been accepted towards fulfillment
of the requirements for

Doctoral degree in Special Education



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FACTORS RELATED TO THE USE OF INSTRUCTIONAL STRATEGIES
THAT FACILITATE INCLUSION OF STUDENTS WITH MODERATE
AND SEVERE IMPAIRMENTS IN GENERAL EDUCATION CLASSES

By

Myong-Ye Bang

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ABSTRACT

FACTORS RELATED TO THE USE OF INSTRUCTIONAL STRATEGIES THAT FACILITATE INCLUSION OF STUDENTS WITH MODERATE AND SEVERE IMPAIRMENTS IN GENERAL EDUCATION CLASSES

By

Myong-Ye Bang

The researcher had two primary purposes in conducting this study. The first was to investigate whether the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument developed by the researcher is statistically significant. The second was to investigate the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

One hundred ten general education teachers who were teaching students with moderate and severe impairments responded to the questionnaire. The subjects were from 72 school buildings in 47 local school districts in Michigan. To obtain evidence of criterion-related validity of the ISU instrument, the researcher and a trained observer who is a teacher consultant with a master's degree in special education observed a subsample of 15 teachers in their classroom. These teachers were from 10 school buildings in 10 local school districts.

The research findings were as follows:

1. The criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument was statistically significant.

2. Years of teaching experience of general education teachers was significantly negatively related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

3. General education teachers' training in the field of special education was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

4. General education teachers' collaboration with special education teachers, including a building principal's support, was significantly positively related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

5. Self-perceived efficacy of general education teachers was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

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CHAPTER I

INTRODUCTION

The Problem

Building on court decisions in early special education and institutional cases, the Education for All Handicapped Children Act (PL 94-142) was passed in 1975. Public Law 94-142 affirmed the right of all students in the United States to receive a free and appropriate public education until age 21 in the least restrictive environment (LRE). The premise of PL 94-142 is that all persons have a right to be educated in as normal an environment as possible, and that students with impairments will benefit more in an integrated education setting than in a segregated one (Fendrick & Petersen, 1984).

Following the implementation of PL 94-142, more than 650,000 previously unserved students were provided with a public education (U.S. Department of Education, 1988). In the 1987-88 school year, 4.5 million students with impairments received specialized educational services (U.S. Department of Education, 1989). Other achievements brought about by special education legislation include (a) the individualization of instruction for students with impairments, (b) expanded participation of parents in the special education process, and (c) improved services for students with impairments (Will, 1986).

Despite such advances, however, it is increasingly acknowledged that some problems continue to exist within current special educational services. For example, in the report entitled Educating Students with Learning Problems: A Shared Responsibility, Madeline Will (1986a), the Assistant Secretary of Special Education and Rehabilitative Services, identified problems within current educational services. These problems included (a) a fragmented approach to service delivery that focused on categorical labels, (b) a dual system of segregated services, (c) the stigmatization of students labeled as impaired, and (d) disagreement between parents desiring services for their children and schools with specific eligibility criteria.

Moreover, an estimated 15,000 students across the United States are referred each week for special assessment, usually because of behavioral problems or poor progress in attaining basic literacy skills (Wang, 1988). General education teachers tend to refer students whose behaviors in the classroom annoy them (Algozzine, Ysseldyke, & Christenson, 1983). Before referring a student for evaluation, teachers typically do not make the necessary changes in instructional procedures that would enable the student to remain and succeed in the general education classroom (Ysseldyke & Thurlow, 1984). Results of a national survey of special education directors indicated that 92% of the referred students were evaluated, and 73% of

the evaluated students were placed in special education. The return rate of students to general education programs from special education programs was disappointingly low (Algozzine, Christenson, & Ysseldyke, 1982).

Some problems in current classification procedures continue to exist. The eligibility of students for special programs often is determined through procedures that lack technical adequacy. Thurlow and Ysseldyke (1979) pointed out that only 25% of assessment procedures and devices used to collect data about students are technically adequate in terms of reliability, validity, and standardization sample. For example, Ysseldyke (1987) asserted that more than 80% of the nation's school children could be categorized as having a learning disability by one or more of the definitions and assessment methods that are presently in use. In addition, Carlberg and Kavale (1980) performed a meta-analysis on 50 studies and concluded that "special class placement is an inferior alternative to regular class placement in benefitting children removed from the educational mainstream" (p. 304).

In an attempt to solve these problems, Will (1986a) suggested that building-level administrators must be empowered to assemble the appropriate human and material resources for delivering effective educational services to all students on the basis of individual educational needs as opposed to eligibility for special education programs. Will

(1986b) also suggested that the federal government support state and local experimental trials in which students with impairments are integrated into general education classes.

An additional problem is the fact that the physical integration of students with impairments into general education settings does not guarantee the quality of educational practices for them. To address this problem, a number of researchers recently have emphasized the need to evaluate integrated general education programs, arguing that students with impairments in integrated educational settings should not be victimized by ineffective educational practices (Bender, 1986).

Evaluations of integrated general education programs can be classified into three types. The first type of evaluation of integrated programs focuses on student outcomes, such as self-concept, academic achievement, and/or social skills (Gresham, 1982; Salend, 1984; Wang & Birch, 1984, 1985). The second type of evaluation of integrated programs focuses on teacher attitudes or perceptions regarding integration of students with impairments into general education settings (Aloia & Aloia, 1983; Hudson, Graham, & Warner, 1979). The last type of evaluation of integrated programs focuses on the instructional practices used in integrated general education classes (Bender, 1986; 1988; Bender & Ukeje, 1989).

Evaluations of student outcomes and teacher attitudes are limited in their ability to determine instructional effectiveness. They are, at best, only indirect indicators of effective instructional practices (Bender, 1988). There may be no direct causal relationship between instructional practices and student outcomes because such variables are influenced by other environmental and cognitive factors, such as family characteristics, the student's lack of neurological organization, test anxiety, and language ability (Bender, 1986). A teacher's favorable attitude toward the integration of students with impairments does not guarantee that the teacher will provide effective instructional practices for those students. In other words, teachers' overt behaviors cannot necessarily be predicted by their attitudes (Bem, 1970; Fishbein & Azjen, 1975). As Bender (1986) also indicated, if the goal of evaluation is to permit formative discussion of instructional practices, then evaluation should focus on instructional practices and the characteristics of the educational setting as opposed to student outcomes and teacher attitudes.

To address the above-mentioned problems, a number of researchers have recommended assessing the instructional strategies used by general education teachers in integrated general education classes (Bender, 1986, 1988; Bender, Smith, & Frank, 1988; Bender & Ukeje, 1989; McKinney & Hocutt, 1988; Teacher Education Division of the Council for

Exceptional Children [TED], 1987; Ysseldyke & Christenson, 1987a). These researchers have argued that effective instructional practices for most students with impairments are similar to those for nonimpaired students (Bickel & Bickel, 1986). In support of this argument, there is very little evidence to suggest that qualitatively different forms of instruction are needed for students who differ in aptitude, achievement level, socioeconomic status, ethnicity, or learning style (Brophy, 1987). Ferguson and Jeanchild (1992) also proposed that "the instructional components that are critical to teaching are the same for all students, although they may be used in various ways to accommodate different learning needs and styles" (p. 171).

Instructional strategies that have been shown to be effective include precision teaching (Jenkins, Deno, & Mirkin, 1979; Jones & Krouse, 1986; White, 1986), cognitive strategy training (Clark, Deshler, Schumaker, Alley, & Warner, 1984; Ritter & Idol-Maestas, 1986; Rose & Sherry, 1984), cooperative learning (Anderson, 1985; Johnson & Johnson, 1986; Slavin, 1987a, 1987b, 1988; Slavin, Madden, & Leavey, 1984), monitoring of children's on-task behavior (Bailey, Bender, Stuck, & Wyne, 1984), appropriate pacing of instruction (Brophy, 1979; Wyne & Stuck, 1982), adaptive instruction (Wang, 1989), and peer tutoring (Donder & Nietupski, 1981; Fendrick & McDonnell, 1980; Fendrick & Petersen, 1984; Mahr, 1986; Scuruggs & Osguthorpe, 1986).

Certain problems are associated with examining the relationship between a particular instructional strategy and student outcomes. Roberts and Smith (1982) cautioned that "research related to the quality of instruction is difficult to synthesize since studies focus on various student populations and the findings collectively look like laundry lists of instructional factors" (p. 20). Goodlad (1979) pointed out that a particular instructional strategy rarely accounts for more than 5% of the variance in student outcomes. Thus, it is desirable to evaluate instructional practices in integrated general education classes on the basis of varied instructional strategies, rather than on the basis of a particular instructional strategy.

A number of researchers have investigated the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in their general education classes. Those factors include self-perceived efficacy of teachers (Bender & Ukeje, 1989; Gibson & Dembo, 1984), their educational background and teaching experience (Neihaus, 1988), class size (Bender & Ukeje, 1989), and collaboration between general education and special education teachers (York, Giangreco, Vandercook, & MacDonald, 1992). To design effective and meaningful support systems for general education teachers who teach students with moderate and severe impairments, further information concerning the

factors related to teachers' instructional strategy usage with students is required.

Purpose of the Study

The researcher had two primary purposes in conducting this study. The first was to investigate whether the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument developed by the researcher is statistically significant. The second was to investigate the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Specifically, four such factors were investigated: (a) general education teachers' years of teaching experience; (b) general education teachers' training in the field of special education; (c) general education teachers' collaboration with special education teachers, including a building principal's support; and (d) self-perceived efficacy of general education teachers.

Research Questions

To investigate the factors related to the instructional strategy usage of general education teachers, the following research questions were posed:

1. Is the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument statistically significant?

2. Is the amount of teaching experience of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

3. Is general education teachers' training in the field of special education, as measured by the number of special education courses they have taken and the number of days they have attended inservice training workshops on the education of students with impairments, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

4. Is general education teachers' collaboration with special education teachers, including a building principal's support, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

5. Is the self-perceived efficacy of general education teachers related to their use of instructional strategies that facilitate inclusion of students with

moderate and severe impairments in general education classes?

Importance of the Study

This study was thought to be important in two respects. First, it may contribute valuable information regarding the evidence of the criterion-related validity of the Instructional Strategy Usage (ISU) instrument, a self-evaluation of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Second, this study may contribute valuable information regarding factors that are related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Identification of such factors could facilitate the supportive actions taken to improve the instructional practices of general education teachers. For example, if collaboration between general education and special education teachers, including a building principal's support, is found to be significant factor, a building principal may need to ensure that general education teachers receive the necessary resource, moral, technical, and evaluation support they need to educate students with moderate and severe impairments in general education classes. Thus, information obtained from this

study may influence the planning of future efforts to integrate students with moderate and severe impairments into general education classes.

Definition of Terms

The following terms are defined in the context in which they are used in this study.

Autistic impairment--A lifelong developmental impairment that is typically manifested before 30 months of age and is characterized by disturbances in the rates and sequences of cognitive, affective, psychomotor, language, and speech development. All of the following characteristics are used to determine whether a person is autistic: (a) disturbance in the capacity to relate appropriately to people, events, and objects; (b) absence, disorder, or delay of language, speech, or meaningful communication; (c) insistence on sameness, as shown by stereotyped play patterns, repetitive movements, abnormal preoccupation, or resistance to change; and (d) unusual or inconsistent response to sensory stimuli in one or more of the following: sight, hearing, touch, pain, balance, smell, taste, and the way a child holds his or her body. To be eligible for the category of autistic impairment under this rule, there shall be an absence of the characteristics associated with schizophrenia, such as delusions,

hallucinations, loosening of associations, and incoherence (Michigan State Board of Education, 1987, R 340.1715).

Children with learning problems--Children who may vary from the norm in terms of (a) mild specific learning disability; (b) mild mental impairment; (c) mild behavior disorder or emotional disturbance; (d) mild speech and language impairment; (e) sensory impairment; (f) physical impairment; (g) disadvantaged or migrant socioeconomic status; (h) limited English proficiency; (i) need for remediation in one or more subject or skill areas; (j) sociocultural consequences, such as family disruption, substance abuse, teenage pregnancy; and (k) pre-diagnostic variance suggesting risk of functioning within the lower half of the performance curve, risk of academic failure, risk of failure to develop adaptive behaviors, or risk of dropping out of school (Heller & Schilit, 1987).

Disability--Any restriction or lack of ability to perform an activity within the range considered normal for a human being. Disabilities result from an impairment and represent disturbances at the level of the person (World Health Organization [WHO], 1980).

General/regular education--The typical education that goes on in grades K-12.

Handicap--A disadvantage for a given individual, resulting from an impairment or a disability. Handicaps limit or prevent the fulfillment of a role that is normal

for that individual. Handicaps reflect the individual's interaction with and adaptation to his or her environments (WHO, 1980).

Impairment--Any abnormality or loss of psychological, physiological, or anatomical structure or function. Impairments represent disturbances at the organ level (WHO, 1980).

Instructional Strategy Usage (ISU) instrument--An instrument developed by the researcher for evaluating general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Severe mental impairment--Determined through manifestation of all of the following behavioral characteristics: (a) development at a rate approximately 4.5 or more standard deviations below the mean as determined through intellectual assessment, (b) lack of development primarily in the cognitive domain, and (c) impairment of adaptive behaviors (Michigan State Board of Education, 1987, R 340.1703).

Severe multiple impairments--Determined through the manifestation of either of the following developmental characteristics:

1. Development at a rate of 2 to 3 standard deviations below the mean and two or more of the following conditions:
(a) a hearing impairment so severe that the auditory channel

is not the primary means of developing speech and language skills, (b) a visual impairment so severe that the visual channel is not sufficient to guide independent mobility, (c) a physical impairment so severe that activities of daily living cannot be achieved without assistance, and (d) a health impairment so severe that the individual is medically at risk (Michigan State Board of Education, 1987, R 340.1714).

2. Development at a rate of 3 or more standard deviations below the mean or such that evaluation instruments do not provide a valid measure of cognitive ability and one or more of the following conditions: (a) a hearing impairment so severe that the auditory channel is not the primary means of developing speech and language skills, (b) a visual impairment so severe that the visual channel is not sufficient to guide independent mobility, (c) a physical impairment so severe that activities of daily living cannot be achieved without assistance, and (d) a health impairment so severe that the individual is medically at risk (Michigan State Board of Education, 1987, R 340.1714).

Special education--Education services for individuals who have mental, physical, and behavioral characteristics that differentiate those individuals from their normal peer group (Hardman, Drew, Egan, & Wolf, 1990).

Students with moderate and severe impairments--

Children with trainable mental impairment, severe mental impairment, severe multiple impairments, or autistic impairment.

Trainable mental impairment--Determined through manifestation of all of the following behavioral characteristics: (a) development at a rate approximately 3 to 4.5 standard deviations below the mean as determined through intellectual assessment, (b) lack of development primarily in the cognitive domain, and (c) impairment of adaptive behaviors (Michigan State Board of Education, 1987, R 340.1704).

Organization of the Dissertation

Chapter II contains a review of the literature as background for the study, and leading to the questions that provide a framework for this study. The research design, the subjects involved in the study, and the methods employed in the research are described in Chapter III. The results of the pilot study and the procedures used to collect the data also are reported in Chapter III. The results of the investigation and findings related to the research questions are presented in Chapter IV. Chapter V contains a summary of the study, a discussion of the findings, limitations of the study, conclusions, and recommendations for future research.

CHAPTER II

REVIEW OF THE LITERATURE

The literature review is organized into three sections: (a) integration of students with impairments, (b) evaluation of integrated general education programs, and (c) factors related to instructional practices. The first two sections are presented for background information. In the first section, the following topics are discussed: (a) the principle of least restrictive environment, (b) the Regular Education Initiative, and (c) the inclusive education movement. The second section includes a discussion of the following topics related to the evaluation of integrated general education programs: (a) evaluation of student outcomes, (b) evaluation of teacher attitudes, and (c) evaluation of instructional practices. With regard to evaluation of the effectiveness of instructional practices, five indicators of instructional practices and measurement of instructional practices are discussed. The third section includes a review of literature on the following factors related to instructional practices: (a) teaching experience, (b) training in the field of special education, (c) teacher collaboration and support, and (d) teacher efficacy.

Integration of Students with Impairments

Progressive inclusion has been a steady trend in the history of education for students with impairments (Reynolds & Birch, 1982). The number of previously excluded students with impairments who are being integrated into regular public schools is growing (Berrigan, 1989; Forest & Lusthaus, 1990; Giangreco & Meyer, 1988; Giangreco & Putnam, 1991; Sapon-Shevin, 1990, 1992; Stainback & Stainback, 1992; York et al., 1992; York & Vandercook, 1990). Increasingly, students with moderate and even severe impairments are receiving educational and related services within general education classrooms. Various terms such as least restrictive environment (LRE), mainstreaming, regular education initiative (REI), and inclusive education have been used to describe the integration of students with impairments into regular public schools. The differences among LRE, mainstreaming, REI, and inclusion are depicted in Table 1 (Statewide Communication and Dissemination System [SCADS], 1990).

Included in this section is a discussion of the principle of Least Restrictive Environment, the Regular Education Initiative, and the inclusive education movement.

Table 1. Major Terms Pertaining to Integration of Students with Impairments

Term	Definition
LRE	Refers to educating children with impairments with nonimpaired children to the maximum extent appropriate, considering several factors. LRE is defined under both federal and state special education laws and regulations.
Mainstreaming	Refers to the integration of students with mild impairments into general education classes for all or part of the school day.
REI	Refers to the philosophy/policy of integrating students with learning problems into general education classes.
Inclusion	Refers to the philosophy/policy of integrating all students with impairments, particularly those with more severe impairments, into age-appropriate general education classes for a substantial portion of the student's school day.

The Principle of Least Restrictive Environment

The United States Congress passed the Education for All Handicapped Children Act (PL 94-142) in 1975. Public Law 94-142 requires states to provide a free appropriate education to all children with impairments who are between the ages of 3 and 21. Six key principles of PL 94-142 are (a) zero reject, (b) nondiscriminatory evaluation, (c) individualized education programs, (d) least restrictive

environment (LRE), (e) due process, and (f) parental participation (Kirk & Gallagher, 1986). That is, PL 94-142 requires that children with impairments be educated in an educational environment that does not inhibit their interaction with nonimpaired peers. The LRE principle has been defined operationally in terms of a continuum of services ranging from home-bound instruction and residential schools as the most restrictive alternative, to full-time general education class placement as the least restrictive alternative (Deno, 1970; Federal Register, 1977; Hitzing, 1980; Zettel & Ballard, 1982).

In a broader sense, the principle of LRE for residential, educational, vocational, and other services has been defined as follows:

Service for people with developmental disabilities should be designed according to a range of program options varying in terms of restrictiveness, normalization, independence, and integration, with a presumption in favor of environments that are least restrictive and most normalized, independent, and integrated. (Taylor, 1988, p. 45)

LRE is a legal term, which is defined in both federal and state special education laws and regulations (SCADS, 1990). Although PL 94-142 mandates that unnecessary and possibly detrimental segregation of students with impairments be eliminated, it has encouraged state legislation and regulations that maintain separation of students with impairments from nonimpaired students through such practices as funding and advocacy groups (Lipsky & Gartner, 1989).

The term "mainstreaming" has come to be interpreted as synonymous with LRE in the public schools. Kaufman, Gottlieb, Agard, and Kukic (1975) offered the following definition of mainstreaming:

Mainstreaming refers to 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. 41)

Mainstreaming is not a legal term. In essence, it refers to the integration of mildly impaired students into general education classes for all or part of the school day, with the expectation that the students can function at or near grade level with little or no particular support (SCADS, 1990).

In a critical analysis of the LRE principle, Taylor (1988) identified seven serious conceptual and philosophical flaws in that principle. First, the LRE principle legitimates segregated educational settings by allowing that "removal from general education classes occurs only when the nature and severity of the impairment is such that education in the general education classes with the use of supplementary aids can not be achieved satisfactorily" (PL 94-142, Sec. 612 [5] [B]). Once students with impairments are segregated, they are doomed to live a lonely life, without friends and without jobs (Pearpoint & Forest, 1992).

In most cases, it is those individuals with severe impairments who end up in restrictive environments such as special schools and residential institutions (Payne & Patton, 1981).

Second, the LRE principle equates segregation with the most intensive services, whereas integration is considered to be the least intensive services. When the principle is viewed from this perspective, students with severe impairments would require the most restrictive and segregated educational settings. However, as Brown et al. (1983) indicated, any meaningful skill, attitude, or experience that can be developed in a segregated educational setting can also be developed in a chronologically age-appropriate general educational setting. In fact, some of the most segregated settings have provided the least effective services (Center on Human Policy, 1979).

Third, the LRE principle is based on a readiness model, which assumes that people with impairments must be prepared to move from the most restrictive segregated settings to the least restrictive integrated settings (Taylor, 1988). The practice of placing students with moderate and severe impairments in segregated, self-contained classrooms in which the curriculum is focused on basic skills instruction is based on the premise that these students need to learn basic skills in segregated, self-contained classrooms before they can be allowed to enter general education classrooms

(Kunc, 1992). However, residential institutions and segregated schools do not prepare people for community living, competitive work, or integrated schooling (Bellamy, Rhodes, Bourbeau, & Mank, 1986; Brown et al., 1983; Wilcox, 1987).

Fourth, the LRE principle is invariably framed in terms of professional judgments regarding the child's individualized needs (Taylor, 1988). However, there is tremendous variability in professional judgments concerning the beneficial effects of community placement for students with severe and profound impairments (Wyatt v. Ireland, 1979).

Fifth, the LRE principle sanctions infringements on the basic rights of students with impairments to freedom and community participation; thus, the LRE principle becomes a tool to legitimate unnecessary segregation (Taylor, 1988). What people with impairments should have is the opportunity to live, work, and go to school in nonrestrictive integrated settings (Taylor, Racino, Knoll, & Lutfiyya, 1987).

Sixth, the LRE principle implies that people with impairments must move toward increasingly less restrictive environments as they develop and change (Taylor, 1988). As a result, a series of stops between transitional placements may disrupt those people's personal relationships with roommates, neighbors, and friends (Taylor, 1988).

Finally, the LRE principle places an emphasis on physical settings rather than on the services and supports that enable people with impairments to participate in integrated settings (Taylor, 1988). In a major review of the effects of educational settings on low-achieving students, Leinhardt and Palley (1982) concluded that the physical setting does "not operate directly on student academic and social growth, but rather indirectly through instructional and affective processes" (p. 559).

The Regular Education Initiative

A growing number of researchers and educators are beginning to advocate the elimination of the special and general education dichotomy. Instead, efforts would be aimed at increasing the capability of general education programs to meet the unique needs of students with impairments (see Davis, 1989, 1990; Lilly, 1989; Lipsky & Gartner, 1989; Stainback, Stainback, & Forest, 1989; Strully & Strully, 1989; Wang & Walberg, 1988). In an effort to improve instruction for students with learning problems within general education classrooms, the federal government proposed the Regular Education Initiative (Will, 1986a, 1986b).

Regular Education Initiative is not a legal term. Therefore, it has been defined in different ways, but generally it is the philosophy and policy of integrating

students with learning problems into general education classes (SCADS, 1990). The intention of the REI is to serve as many students with learning problems as possible within general education classrooms by (a) empowering building-level administrators to assemble professional and related resources; (b) providing a support system for teachers, including building-based support teams, team teaching, and inservice training; (c) using new instructional strategies such as curriculum-based assessment, cooperative learning, and personalized curricula; and (d) increasing instructional time (Will, 1986a, 1986b).

In a position statement on the REI, the Council for Children with Behavioral Disorders (1989) contended that Will (1986a) did not suggest a blueprint for action but offered only general impressions about the direction of reform. The Council also argued that neither logical analyses nor empirical data have suggested that general education teachers can be effective with heterogeneous groups of students, and that academic accommodation in general education is not sufficient to meet the needs of most behaviorally disordered students. Similarly, Kauffman, Braaten, Nelson, Polsgrove, and Braaten (1990) asserted that "integration is not always appropriate for all students Integration is particularly difficult for students with behavioral disorders" (p. 558).

In addition, McKinney and Hocutt (1988) maintained that the blurred distinction between special and general education may cause the loss of financial support and rights, and that there is a need for policy analysis of the implications of REI. Similarly, Kauffman, Gerber, and Semmel (1988) argued that general education is not equipped to deal with all students, including those with impairments, by providing increased instructional options. In general, opponents of the REI asserted that the current dual system should not be abandoned until adequate empirical data are available to prove that all students with impairments who are currently in special education programs would receive better services under the REI (Byrnes, 1990; Hallahan, Keller, McKinney, Lloyd, & Bryan, 1988; Keogh, 1988).

In contrast, advocates of the REI believe that "teachers can effectively teach every different kind of student and enjoy doing it" (Ferguson & Jeanchild, 1992, p. 160). Supporters have cited the advantages of the REI over the current dual system. Specifically, comprehensive programs based on the REI may yield more positive prospects for local control, professional autonomy, and student achievement (Wang & Walberg, 1988). Also, school personnel may initiate programs suited to the students' needs and local circumstances (Wang, 1988).

In addition, with the REI, educators may concentrate their energies more on instruction and less on psychometric

diagnosis and classification (Wang & Walberg, 1988). Educators and researchers are increasingly acknowledging that the assessment practices used in special education, including the referral process, eligibility/classification, intervention, and evaluation, are often inadequate and inappropriate (Ysseldyke & Thurlow, 1984). Stainback, Stainback, and Jackson (1992) asserted that "valuable resources and time are spent on classifying, labeling, and making placement decisions" (p. 7). Moreover, there is currently no defensible psychometric methodology for reliably classifying students into categories (Ysseldyke, 1987). For example, one study of the psychometric characteristics of school-identified learning disabled students and low-achieving students who had not been referred for evaluation revealed that there were no differences of practical significance between these students on more than 40 measures of ability, achievement, perceptual-motor functioning, self-concept, and behavioral problems (Ysseldyke, Algozzine, Shinn, & McGue, 1982).

According to Ysseldyke and Thurlow (1984), placement of students in special education does not ensure that they will receive instruction based on the specific information about them, or that these students will necessarily receive instruction different from that received by general education students. In addition, the current, categorical service system results in misclassification of students,

monetary incentives to place students in special education programs, minimal communication between general and special education programs, and limited responsibility in general education for students with learning problems (Will, 1986a).

A number of educators and researchers have suggested that students with impairments achieve greater cognitive and social development as a result of having access to nonimpaired students who can serve as models and tutors. York, Vandercook, Caughey, and Heise-Neff (1990) pointed out important learning opportunities that are provided to students with impairments in general education settings. These include (a) learning to interact with nonimpaired peers; (b) learning to participate in typical general education classroom routines; (c) learning lifelong skills that are environmentally referenced to domestic, leisure, vocational, and community pursuits; and (d) learning about subject areas not typically provided for in special education programs. In addition, students with impairments have been found to exhibit lower rates of inappropriate behaviors and higher rates of appropriate social behaviors with peers in integrated general education settings than in segregated settings (Brinker, 1985; Guralnick, 1981). Students with impairments in integrated general education settings also demonstrated greater achievement of individualized educational goals than did students with

impairments in segregated education settings (Brinker & Thorpe, 1984).

Nonimpaired students also may benefit from integrated education. Integrated school experiences have been found to have positive effects on students' moral and ethical development, the acceptance of human differences, and the social skills nonimpaired students need in order to interact with people with impairments (Thousand & Villa, 1989; Vandercook, York, & Forest, 1989). Similarly, Peck, Donaldson, and Pezzoli (1990) cited six benefits that nonimpaired students experience as a result of developing relationships with peers who have impairments. These benefits include (a) improved self-concept, (b) growth in social cognition, (c) increased tolerance of other people, (d) reduced fear of human differences, (e) development of personal principles, and (f) interpersonal acceptance and friendship. Therefore, both students with impairments and nonimpaired students can learn to understand, interact, communicate, and work together through integrated educational experiences.

Although numerous benefits of the REI have been cited, it has been criticized for not addressing the need to include students with severe and profound impairments in general education programs (Lipsky & Gartner, 1989; Stainback, Stainback, & Forest, 1989). These critics have asserted that the integration of students with impairments

is not an issue of mainstreaming, but an issue of inclusion. In addition, whereas the REI primarily encourages collaboration between special and general education as distinct groups, it is desirable to unify special and general education programs into a single, coordinated education system focused on the same goal (Stainback & Stainback, 1987a, 1987b; Stainback et al., 1989). According to these researchers, special education must be defined primarily as a support service for general education classroom teachers, rather than as a parallel system (Bender, 1988; Teacher Education Division, 1987).

The Inclusive Education Movement

In recent years, considerable emphasis has been placed on how to include all students in the mainstream of school and community life. The term "inclusion" refers to the philosophy and policy of including all students in the educational and social life of their neighborhood schools and classrooms (Stainback, Stainback, & Jackson, 1992). All students means any students who live within the neighborhood of the school, regardless of the types and the degrees of their impairments (Ferguson & Jeanchild, 1992).

American schools are increasingly having problems with drop-outs, drug abuse, suicide, underachievement, and gangs (Coleman & Hoffer, 1987; Maeroff, 1990). In most cases, school reform movements "are engaged in a fruitless search

for magic-bullet solutions to educational problems, even when all the evidence shows that no magic-bullets exist" (Pauly, 1991, p. 197). Inclusive education, which emphasizes effective instruction, a learning culture, and outcome-based education, can play an important role in solving these problems. A student should not be expected to achieve a predefined, standard classroom curriculum (Stainback, Stainback, & Jackson, 1992). Instead, education must be child centered (Pearpoint & Forest, 1992), and a student's characteristics, needs, and interests should be considered in developing an educational program for that student (Stainback & Stainback, 1992).

The goal of inclusive education is to ensure that all students are included as equal members of the school community and provided with the appropriate educational program that is required for them to learn successfully (Stainback & Stainback, 1992). In inclusive schools, the basic unit of focus is the classroom, which is organized heterogeneously and designed to foster natural supportive relationships among students and between students and teachers through cooperative learning, peer tutoring, professional collaboration, teacher and student assistance teams, and other cooperative arrangements (Stainback, Stainback, & Jackson, 1992).

In inclusive schools, all students should work on the same broad educational outcomes, which include (a) cognitive

skills; (b) personal development; (c) preparation for future citizenship and roles; and (d) preparation for community participation, career possibilities, domestic responsibilities, and constructive use of free time (Ford, Davern, & Schnorr, 1992). Although all students pursue the same basic educational outcomes in the same class activities, the specific curricular learning objectives may be individualized to fit the students' unique needs, abilities, and interests (Villa & Thousand, 1988).

Stainback, Stainback, and Jackson (1992) identified some advantages of inclusive schools. First, everyone benefits from the inclusive school's focus on developing a supportive and caring school community for all students. Second, all of the resources and efforts of school personnel can be spent on assessing instructional needs, adapting instruction, and providing necessary support to students. Thus, an inclusive school may be able to provide social and instructional support for all students.

In summary, progressive inclusion has been a steady trend in the history of education for students with impairments. Public Law 94-142, which was passed in 1975, requires states to provide a free appropriate education to all children between the ages of 3 and 21 who have impairments. But the principle of LRE legitimates segregated educational settings by allowing school personnel to remove students with impairments from general education

classes when education in those classes with the use of supplementary aids cannot be achieved satisfactorily. The federal government proposed the Regular Education Initiative (REI) for improving instruction for students with learning problems within general education classrooms. However, the REI has been criticized for not addressing the need to include students with severe and profound impairments in general education programs. In recent years, considerable emphasis has been placed on how to include all students in the mainstream of school and community life. The goal of inclusive education is to ensure that all students are included as equal members of the school community and provided with the appropriate educational program required for them to learn successfully.

Evaluation of Integrated General Education Programs

A number of researchers have concentrated their efforts on the evaluation of integrated general education programs for data-based educational decisions (Bender, 1985, 1986, 1988, 1989; Bender et al., 1988; Ysseldyke & Christenson, 1987a). For successful and effective integration of students with impairments into general education classes, integrated general education programs should be evaluated.

Included in this section is a review of literature on the evaluation of student outcomes, evaluation of teacher attitudes, and evaluation of instructional practices. Five

indicators of the effectiveness of instructional practices and measurement of instructional practices also are discussed.

Evaluation of Student Outcomes

The type of evaluation of integrated general education programs that has been most widely used focuses on student outcomes such as self-concept, academic achievement, and social skills (Aloia & Aloia, 1983; Gresham, 1982; Salend, 1984; Wang & Birch, 1984, 1985). Various classroom intervention strategies such as cooperative learning have been found to be somewhat successful in improving self-concept, increasing social integration, and increasing academic achievement of students with impairments (Brinker, 1985; Johnson & Johnson, 1986; Slavin, 1987a, 1987b, 1988; Slavin et al., 1984; Wang & Birch, 1984).

However, student outcomes are influenced not only by instructional practices, but also by other factors. The factors influencing student outcomes include (a) student characteristics such as cognitive and affective characteristics, achievement motivation, and learning styles; (b) environmental factors such as school district conditions, within-school conditions, and general family characteristics; and (c) instructional factors such as management procedures, teaching procedures, and monitoring and evaluation procedures (Ysseldyke & Christenson, 1987a).

Providing effective environmental and instructional conditions does not guarantee the improvement of student outcomes, because of student characteristics that are not directly controlled by the teacher (Bender, 1986).

Evaluation of Teacher Attitudes

Other types of evaluations of integrated general education programs focus on teacher attitudes or perceptions relative to the potential success of students with impairments (Aloia & Aloia, 1983; Hudson et al., 1979). Early studies in special education indicated that general education teachers were philosophically and practically opposed to integration of students with impairments into their classes (Bender, 1985; Stephens & Braun, 1980). For successful instructional and social integration of students with impairments, general education teachers need to accept those students as equal members of the class and to serve as role models for the students by including every child in social interactions and classroom activities (Stainback, Stainback, & Jackson, 1992).

Meaningful inservice programs and interventions have been successful in improving teacher attitudes toward the integration of students with impairments into general education classes (Bender, 1985; Frith & Edwards, 1982). However, evaluations of teacher attitudes are only indirect assessments of effective instructional practices (Bender et

al., 1988). Inclusion should not be delayed until classroom teachers and students develop appropriate attitudes, because realistic attitudes and expectations can evolve only through daily instructional and social experience (Stainback, Stainback, & Jackson, 1992). Therefore, it is apparent that evaluations of effective integrated general education programs should include an evaluation of instructional practices in general education classes.

Evaluation of Instructional Strategies

In recent years, there has been considerable emphasis on how to include all students in the social life of an inclusive school, but significantly less attention has been focused on how to involve all students in active learning in inclusive classrooms (Stainback & Stainback, 1990; Stainback, Stainback, & Moravec, 1992). The lack of an emphasis on learning is based on the misconception that less able students do not have the ability to do quality work (Wiggins, 1992). To evaluate how to involve all students in active learning in inclusive classrooms, evaluation of integrated general education practices is timely and necessary (Bender, 1986). Too often, educators focus on attempting to fit students into existing structures rather than on accommodating individual differences by changing the instructional environment (Graden & Bauer, 1992). However, integration is effective only when a classroom teacher

adapts instruction for individual students in the class (Wang, 1992). In order for general education teachers to use instructional strategies appropriate for students whose learning and behavior patterns vary from the general education norm, those teachers need to have repertoires of teaching styles and instructional approaches to match a variety of learning styles, learning rates, learning readiness, learning impediments, behavioral patterns, motivational differences, cultural and linguistic differences, and individual strengths and weaknesses (Heller & Schilit, 1987).

A student's learning and performance in school are functions of the interaction between the student and the instructional environment, which comprises many more factors or variables than just the curriculum and the instructional materials (Ysseldyke & Christenson, 1987a). The medical model of impairment in special education historically has placed an emphasis on diagnostic/prescriptive teaching and has focused predominantly on the psycho-educational characteristics of an individual (Ysseldyke, 1973). However, according to the reciprocal determinism model described by Bandura (1978), behavior is determined by a continuous, reciprocal interaction among behavioral, cognitive, and environmental influences. More recently, ecological theorists have focused on the interaction between a student and an instructional environment and have required

Careful evaluation of instructional practices within classrooms (Bender, 1988; Cotterell, 1982; Shriner, Ysseldyke, & Christenson, 1989). Although individual student characteristics cannot be controlled, factors within instructional environments can be controlled (Graden & Bauer, 1992). Thus, classroom teachers need to focus on adjusting and improving instructional environments rather than just focusing on student characteristics such as impairments (York et al., 1992).

One of the challenges that classroom teachers face in inclusive classrooms is determining meaningful curricular adaptations and instructional modifications that enable students with impairments to be active learners within the daily classroom routine (Villa & Thousand, 1992). Evaluation of integrated general education programs not only encourages the development and use of effective instructional strategies, but also helps general education classroom teachers understand their strengths and weaknesses with regard to instructional practices (Bender, 1986, 1988).

Effective Instructional Strategies

According to the effective schools literature, a number of instructional strategies (e.g., direct instruction, peer tutoring, cooperative learning, and metacognitive strategies) are effective for all students, including those with impairments (National Council on Impairment, 1989).

The instructional strategies that have been found to be effective for students with moderate and severe impairments in an integrated general education classrooms can be categorized under five types of effectiveness indicators (Table 2). These effectiveness indicators are discussed in the following pages.

Table 2. Effectiveness Indicators

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1. Classroom management procedures
 2. Teaching procedures
 3. Instructional feedback procedures
 4. Monitoring & evaluation procedures
 5. Instructional grouping procedures
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Classroom management procedures. The first type of effectiveness indicator within integrated general education programs for students with moderate and severe impairments is classroom management procedures, which has two components. The first component of classroom management procedures is behavior management. Hofmeister and Lubke (1990) said that defining classroom management procedures involves (a) setting and implementing classroom rules, (b) monitoring and intervening in student behavior, (c) increasing appropriate behavior, and (d) reducing reprimands and punishments. Teachers must clearly communicate expectations of student behavior. The more explicit the rules and the more clearly they are communicated, the more

likely it is that the teacher will not tolerate inappropriate behaviors (Doyle, 1986).

Many students with autistic impairment, trainable mental impairment, severe mental impairment, or severe multiple mental impairment exhibit excessive behaviors such as self-stimulatory behaviors, self-injurious behaviors, and disruptive behaviors (Schreibman, 1988). These individuals also exhibit behavioral deficits in language, play, attention, social behaviors, and motivation (Schreibman, 1988). To manage these students' behavior problems, teachers should pay attention to the antecedents of behaviors, including settings, events, and actions that typically precede occurrences of the undesirable behavior and its consequences, such as peers' reactions (Durand & Crimmins, 1988). If a student's excessive behaviors serve communicative functions, teachers must focus on helping the student learn to communicate in equally effective and adaptive ways (Hitzing, 1992).

The second component of classroom management procedures is increasing positive student interactions. Historically, students with impairments have been excluded not only from instructional but also from nonacademic aspects of school life (Villa & Thousand, 1992). Positive and supportive interactions are important for effective instructional practices (Ysseldyke & Christenson, 1987a). Students learn not only from teacher-student interactions, but also from

student-student interactions (Stainback, Stainback, & Moravec, 1992). Teachers can create classroom activities that provide opportunities for students to (a) develop interdependent relationships, (b) work in cooperation with each other, and (c) learn to assist peers and to receive assistance from them (Ford et al., 1992). That is, teachers can help all students in an integrated classroom learn about mutual respect, caring, and support through peer support networks, circles of friends, buddy systems, and other friendship-facilitation activities (Stainback, Stainback, & Moravec, 1992). For example, volunteer peer buddies and a student with impairments can have recess together, eat lunch together, and get on and off the school bus together (Villa & Thousand, 1992).

Teaching procedures. The second type of effectiveness indicator within integrated general education programs is teaching procedures. Researchers have found that students are more successful educationally and socially when teachers maintain high expectations for them (Jones & Jones, 1986). Although an adaptation of instruction is needed to meet the unique needs of each student, high teacher expectations based on a student's unique capabilities and needs and clear communication of instructional objectives are very important in providing all students with a quality education (Stainback, Stainback, & Moravec, 1992). Expectation refers to teachers' perceptions of the extent to which the students

are capable of learning the instructional material that is presented to them (Newmann, Rutter, & Smith, 1989).

Teachers who were successful in producing student learning gains in a Texas teacher effectiveness study tended to have high expectations for their students and viewed difficulties as obstacles to be overcome by using appropriate instructional strategies, not as indications that the students could not learn (Brophy & Evertson, 1977).

Other teaching procedures include visual/auditory instructional presentations, meta-cognitive strategies, and adaptation of instructional materials. General education teachers should have greater varieties and levels of instructional materials in order to meet the needs of students whose learning and behavioral patterns vary from the general education norm (Heller & Schilit, 1987).

Hunkins (1987) mentioned that explaining teaching strategies to students allows them to have greater control over their own learning.

Instructional feedback procedures. The third type of effectiveness indicator within integrated general education programs is instructional feedback, including verbal, written, tangible, and physical feedback. The term "instructional feedback" refers to those techniques a teacher uses to provide students with information on the accuracy of their oral, written, and/or behavioral responses to instructional stimuli (Hofmeister & Lubke, 1990). Filby

and Cahen (1985) noted that instructional feedback is strongly and consistently related to student performance. Brophy and Good (1986) reported that effective teachers asked three times as many questions as less effective teachers. Brophy (1981) recommended that effective verbal feedback be delivered contingently and that it specify the particulars of the accomplishment. If a student's response indicates that he or she lacks the knowledge and skills necessary to arrive at the correct response, the teacher should either provide the student with prompts leading to the correct response or reteach the material to the student (Rosenshine & Stevens, 1986).

Monitoring and evaluating procedures. The fourth type of effectiveness indicator within integrated general education programs is monitoring and evaluation procedures. Effective teachers demonstrate "with-it-ness" by monitoring the entire class while they are teaching, and by moving around the classroom during seatwork time (Brophy & Good, 1986). If reteaching occurs until students reach an acceptable level of mastery before being introduced to new content material, the teacher may need to revise his or her instructional strategies (Hofmeister & Lubke, 1990). In monitoring and evaluation, Ysseldyke and Christenson (1987a) included high success rates on daily and unit performance, direct measurement of student progress in the curriculum, and curriculum alignment. Experiencing success is important

because a student who fails repeatedly learns to stop trying (Seligman, 1975).

Students should be evaluated on the basis of individualized learning objectives and criteria, not on the basis of classroom norms (Ford et al., 1992). For example, a student with a moderate or severe impairment might receive an "A" in English if he or she gave an appropriate number of yes-no responses, as long as this was the student's learning objective.

Instructional grouping procedures. The last type of effectiveness indicator within integrated general education programs is instructional grouping procedures. Johnson and Johnson (1980) found that, because more than 80% of general education classroom instruction consists of lecture and individualistic work, students with impairments in integrated general education classes work on their own, with a minimum amount of interaction with their nonimpaired peers. In addition, when grouping is used in most general education classrooms, homogeneous ability grouping for instruction is virtually universal (Hallinan & Sorensen, 1983). In such situations, even if students with impairments are physically integrated into general education classrooms, it is difficult for them to be integrated instructionally and socially.

Recently, heterogeneous-group instruction, or cooperative learning, has been advocated as an alternative

technique that improves the performance of students with impairments and promotes positive social relationships between students with impairments and their nonimpaired peers (Ford et al., 1992; Johnson & Johnson, 1984; National Council on Disability, 1989; Slavin et al., 1984). In inclusive classrooms, teachers increasingly are working to promote heterogeneous-group learning among students rather than lecturing. These teachers are basing their instruction on individual needs rather than arbitrary standards and are facilitating students' learning through purposeful, real-life activities instead of lecturing (Stainback, Stainback, & Moravec, 1992). In addition, cooperative learning is characterized by small-group structures, face-to-face interaction, assigned roles, emphasis on pro-social skills, and individual accountability (Johnson, Johnson, Holubec, & Roy, 1984).

Through heterogeneous-group instruction, students can develop social skills such as cooperation, build reciprocal peer relationships, and appreciate human diversity (Ferguson & Jeanchild, 1992). When students have to organize their thoughts and ideas in order to communicate them to peers, they engage in cognitive elaboration that enhances their own understanding (Slavin, 1987b). The cognitive processing helps students transfer information from short-term to long-term memory (Brandt, 1987a). In addition, students often are able to translate a teacher's language into "kid"

language for one another (Slavin, 1987b). Johnson and Johnson (1986) found that students achieved more in cooperative learning than in competitive or individualistic learning situations and that "this finding held for all age groups, ability levels, subject areas, and learning tasks" (p. 556).

Ferguson and Jeanchild (1992) asserted that heterogeneous-group instruction is effective for teaching basic concepts, problem solving, conceptual applications, and information embedded within real activities. In heterogeneous-group instruction, students are responsible not only for their own learning, but also for the learning of peers within their group (Villa & Thousand, 1992). When a classroom teacher structures heterogeneous-group instruction, students should be purposefully mixed according to a range of characteristics, including gender, ethnicity, task-performance abilities, and communication and social-interaction abilities (Ferguson & Jeanchild, 1992). Villa and Thousand (1992) pointed out that a major responsibility for classrooms teachers in structuring heterogeneous-group instruction is to adapt task requirements for individual students and to assign individualized success criteria for success.

Structured peer tutoring is another type of instructional grouping procedure that has been receiving increased attention (Ehly & Larsen, 1980; Strain, 1981).

Peer tutoring has been found to (a) increase the amount of high-quality instructional time provided for students with impairments (Fendrick & McDonnell, 1980), (b) substantially increase the percentage of appropriate behaviors of students with impairments and the amount of contact between students with impairments and nonimpaired students (Donder & Nietupski, 1981), and (c) improve the attitudes of nonimpaired students toward those with moderate and severe impairments (Fendrick & Petersen, 1984). The effectiveness of peer tutoring can be attributed to the peers' use of more age-appropriate language, their awareness of their fellow students' potential frustration with the content, and their tendency to be more directive than adults (Good & Brophy, 1987).

Well-organized strategies for recruiting, training, and supervising peer tutors and for evaluating the effectiveness of peer tutoring are essential for effective peer tutoring arrangements (Villa & Thousand, 1992). Through peer tutoring programs, students with impairments receive more individual attention, greater closeness and contact with nonimpaired peers, more immediate and frequent feedback on performance, and peer models to emulate (Ehly & Larsen, 1980). The benefits to tutors include (a) enhanced self-esteem (Gartner, Kohler, & Rissman, 1971), (b) in-depth understanding of the curricular content being taught

(Johnson et al., 1984), and (c) enhanced communication skills (Pierce, Stahlbrand, & Armstrong, 1989).

Evaluating Instructional Strategies

Two different formats can be used to evaluate instructional strategies. These formats include self-evaluation by teachers and observation of the instructional strategies employed in the educational environment (Bender, 1986; Shriner et al., 1989; Ysseldyke & Christenson, 1987a, 1987b). Both self-ratings and observation provide useful information regarding instructional strategies.

Self-evaluation of teachers' instructional strategy usage could provide them with an opportunity to realize their weaknesses and strengths in instructional strategy usage and thus to participate in formative self-evaluation for professional-improvement purposes (Bender, 1988). In a review of the literature on teacher evaluation, Darling-Hammond, Wise, and Pease (1983) emphasized that self-evaluation is consistent with trends toward self-evaluation mechanisms for teacher evaluation nationally, and that self-ratings can increase the active involvement of teachers in the evaluation process. Self-ratings also help teachers identify weaknesses and strengths in their own instruction (Gibson & Dembo, 1984; Smith, 1983). However, problems arise when self-ratings are used alone (Bender, 1988). For example, if a teacher did not recognize specialized

strategies (e.g., cooperative learning, peer tutoring, timeout) in a set of statements, a self-rating would not indicate use of such instructional strategies. Thus, the specialized terms used in referring to instructional strategies should be described in detail in order for teachers to understand those terms.

Direct behavioral observation techniques and assessment procedures are useful for evaluating instructional strategies of teachers (Bender, 1986; Darling-Hammond et al., 1983; Graden & Bauer, 1992; Shapiro, 1989). Because an evaluation by observation is a routine type of teacher evaluation, teachers may feel less threatened by it than by other methods (Bender, 1988). However, in evaluating general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes, an observation checklist including relevant instructional strategies must be developed.

The combination of self-rating and observation of the use of instructional strategies provides a wealth of information that could facilitate the modification of instruction and integration of students with impairments into general education classes (Bender, 1988). To obtain information about instructional strategies, Ysseldyke and Christenson (1987b) recommended teacher interviews coupled with observation and interviews with the student. This is

an example of the use of multiple strategies for obtaining information about the instructional environment. In addition, correlations between observed instructional strategies and teachers' ratings of effective instructional strategies can be used to provide evidence of the criterion-related validity of a self-rating instrument (Bender et al., 1988).

In summary, a number of researchers recently have concentrated their efforts on the evaluation of integrated general education programs for data-based educational decisions. There are three types of evaluation of integrated general education programs: (a) evaluation of student outcomes, (b) evaluation of teacher attitudes, and (c) evaluation of instructional strategies. To evaluate how to involve students with moderate and severe impairments in active learning in general education classes, evaluation of instructional practices for those students in general education classes is essential. Indicators of the effectiveness of instructional practices include (a) classroom management procedures, (b) teaching procedures, (c) instructional feedback procedures, (d) monitoring and evaluation procedures, and (e) instructional grouping procedures. To evaluate instructional practices, both self-ratings by teachers and observation by administrators or researchers typically are used in educational settings.

Factors Related to the Use of Effective Instructional Strategies

Identifying the factors related to the use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes is important for improving general education teachers' use of instructional strategies for those students. For example, if inservice training workshops on integration are a major determinant of the selection of effective instructional strategies, then such workshops should be emphasized in order to improve general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Possible factors related to effective instructional strategy usage are presented in Table 3.

Bender and Ukeje (1989) found that both teachers' perceptions of their personal teaching effectiveness and class size were consistently related to the teachers' selection of instructional strategies in integrated general education classes. Neihaus (1988) also found that teachers' educational background and teaching experience were related to the types of educational strategies they used. In addition, teachers' attitudes toward integration of students with impairments into general education classrooms, collaborative relationships between special and general

education personnel, and inservice training workshops on integration are possible factors related to the use of effective instructional strategies (Bender & Ukeje, 1989).

Table 3. Possible Factors Related to Effective Instructional Strategy Usage

*	Class size
*	Number of students with impairments in an integrated classroom
*	Teaching experience
*	Teacher's experience teaching students with impairments
*	Educational level attained by teacher
*	Number of special education courses taken by teacher
*	Number of days teacher has attended in-service training workshops regarding the education of students with impairments
*	Self-perceived efficacy of general education teachers
*	Collaboration between general education and special education teachers, including a building principal's support
*	District and school philosophy toward integration of students with impairments
*	Teacher's attitude toward the integration of students with impairments into general education classes

The philosophy of a school district or a specific school is another important factor related to the use of instructional strategies. The philosophy provides a standard for the development, implementation, and evaluation

of all aspects of educational program delivery (National Regional Resource Center, 1986). The philosophy of a school district or a specific school should address the needs and interests of students with impairments and support the appropriate integration of special and general education programs (National Regional Resource Center, 1986).

Among possible factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes, the researcher selected four factors on the basis of the results of a pilot study she conducted. These factors are teaching experience, training in the field of special education, teacher collaboration, and self-perceived efficacy of general education teachers. Literature pertaining to these factors is discussed in the following pages.

Teaching Experience

Bender and Ukeje (1989) found a negative relationship between years of teaching experience and the effective instructional strategy usage of general education teachers who were teaching students with impairments. That is, more experienced teachers used effective instructional strategies less frequently than did less experienced teachers. Similarly, Berman and McLaughlin (1978) found that teachers' age and experience were related negatively to their implementation of instructional innovations.

Training in the Field of Special Education

Inservice education is an organizational tool that is used to increase the effectiveness of education for all students (Burrello & Orbaugh, 1982). The average teacher receives about three days of inservice training each year (Brandt, 1987c). Miller, Harris, and Watanabe (1991) suggested two rationales for providing inservice training to teachers. First, preservice training is simply an introduction to the teaching profession, and most preservice preparation programs are limited in scope and availability (Idol & West, 1987). Learning is a lifelong process and state certification is only a minimal statement of acceptance of teaching ability (Burrello & Orbaugh, 1982). Second, it is necessary to update instructional strategies and curriculum. Burrello and Orbaugh (1982) asserted that inservice training is absolutely necessary if schools are to develop their most important resource--people.

Much inservice training effort has been dedicated to establishing "a common conceptual framework, language and set of technical skills in order to communicate about and implement practices which research and theory suggest will enable [teachers] to better respond to a diverse student body" (Villa, 1989, p. 173). Systematic and ongoing staff development is important to support effective program implementation for all students (Joyce, 1990; Wang, Haertel, & Walberg, 1990). One purpose of staff development in

inclusive schools is to give teachers and school staff an opportunity to develop the necessary knowledge, attitudes, and expertise to bring about the implementation of inclusive programs that ensure positive student performance (Wang, 1992).

Essential ingredients of inservice education include (a) providing direct and concrete experiences (Wood & Thompson, 1980), (b) conducting programs long enough and often enough (Little, 1986), (c) shifting from merely making up for shortcomings in preservice education to helping participants further their professional development (Burrello & Orbaugh, 1982), (d) considering teachers' philosophical receptivity to new practices (Sparks, 1988), (e) addressing the unique needs of teachers and administrators in their own school (Wood & Thompson, 1980), and (f) observing the instruction of other teachers and peer coaching (Wildman & Niles, 1987).

A meta-analysis of nearly 20 research studies indicated that almost all teachers can take useful information back to their classrooms when inservice training includes five elements: (a) presentation of theory or description of skills or strategies, (b) modeling or demonstration of the new strategy, (c) practice in simulated and classroom settings, (d) structured and open-ended feedback about their performance, and (e) coaching for application (Joyce & Showers, 1980; Showers, Joyce, & Bennett, 1987). Adults

learn best through concrete experiences in which they are able to apply what is being learned and in informal situations in which social interactions take place (Wood & Thompson, 1980).

Teacher Collaboration

When asked to identify their primary source of assistance, teachers usually mention other teachers (Johnson & Johnson, 1987b). Inclusive education is based on the belief that all educators are responsible for the success of all students, regardless of student characteristics such as gender, race, and impairment (Graden & Bauer, 1992). Whereas support has been part of a unidirectional hierarchy from higher up in the organization or from external resources in traditional school organizational models, the evolving interdependent models of support create opportunities for multidirectional support (York et al., 1992). That is, classroom teachers are not passive recipients of expert advice; rather, they are the key decision makers in shared problem solving to adapt instruction to individual students' needs (Graden & Bauer, 1992). Collaborative problem solving can enable classroom teachers to improve their skills, problem-solving ability, and confidence in dealing with individual diversity (Gutkin & Curtis, 1990).

Classroom teachers need support to provide effective instruction for all students in integrated general education classes. Four types of support for inclusive classrooms are (a) financial, informational, and human resource support for including all students in regular school life; (b) moral support to encourage fellow educators to express their ideas and feelings and to provide constructive feedback to each other; (c) technical support for designing curricular and instructional methods by offering concrete strategies, approaches, or ideas; and (d) evaluative support for monitoring student learning and instructional adjustment (York et al., 1992).

Various collaborative structures for facilitating the merger between general and special education include (a) teacher assistance teams (Chalfant & Pysh, 1989), (b) teaching teams (Thousand & Villa, 1990), (c) cooperative teaching (Bauwens, Hourcade, & Friend, 1989), (d) collaborative consultation (Idol, Paolucci-Whitcomb, Nevin, 1986), and (e) peer coaching (Sparks, 1986). The first collaborative structure is a teacher assistance team, which is a school-based problem-solving unit. The teacher assistance team is used to help classroom teachers analyze instructional or behavioral problems, set intervention goals, and create practical solutions (Chalfant & Pysh, 1989). After conducting five descriptive studies on 96 teacher assistance teams in seven states, Chalfant and Pysh

(1989) identified three major factors that contributed to team effectiveness. These are (a) support from the building principal, (b) the professional and interpersonal skills of team members, and (c) faculty support.

The second collaborative structure is a teaching team comprising two or more members of the school and the greater community. Team members distribute among themselves the planning, instructional, and evaluation responsibilities for all students, including those with severe impairments, on a regular basis for an extended period of time (Thousand & Villa, 1990). Five basic elements of effective teaching teams are (a) frequent face-to-face interactions among team members; (b) a positive "sink-or-swim-together" sense of interdependence; (c) interpersonal skills such as communication, trust building, and decision making; (d) periodic assessments and discussion of how well the group is functioning; and (e) clear individual accountability for agreed-upon responsibilities and commitments (Johnson & Johnson, 1987a; Thousand & Villa, 1992).

The third collaborative structure is cooperative teaching, in which both general and special education teachers jointly teach instructionally and behaviorally heterogeneous groups of students in integrated general education classrooms (Bauwens et al., 1989). Potentially significant benefits of cooperative teaching include increasing job satisfaction, reducing stress, and increasing

teaching and learning potential (Bauwens et al., 1989). Bauwens and his colleagues also pointed out three potential barriers to cooperative teaching. One barrier is the perception that such procedures may be more time consuming than are those in the present service delivery system. The second barrier is potential limitations in the ability and willingness of professionals to develop cooperative working relationships. The third barrier is the increased workload for both general and special education teachers.

The fourth collaborative structure is the collaborative consultative planning process, which is a process-oriented model that emphasizes team-based program development and problem solving before actual classroom instruction takes place (Idol et al., 1986). Collaborative consultation promotes team ownership and shared responsibility in the education of all students (Sileo, Rude, & Luckner, 1988). Johnson, Pugach, and Hammitte (1988) identified pragmatic and conceptual barriers to collaborative consultation. Pragmatic barriers include insufficient time and overwhelming caseloads. Conceptual barriers include the lack of credibility of special educators within general education classrooms, the mismatch between the thinking of special education and general education teachers, and the problem of the hierarchy of educational professionals. In addition, there is a critical lack of role definition at both the state and local levels (Haight, 1984).

The fifth collaborative structure is peer coaching, which Larry Barber, director of the Phi Delta Kappa Center on Evaluation, Development, and Research, defined as "the assistance that one teacher provides to another in the development of teaching skills, strategies, or techniques" (cited in Strother, 1989, p. 824). Spark (1986) indicated that the experience of observing and analyzing a colleague helped teachers analyze their own behaviors more accurately and enabled them to make more significant changes in their own teaching.

The important element common to these five collaborative structures is teacher-oriented, not student-oriented, collaborative problem solving (Stainback, Stainback, & Jackson, 1992). All school members may need to contribute to collaborative problem solving. They work together to plan lessons, develop the curriculum and instructional materials, manage behavior, and evaluate the program. Classroom teachers can share their expertise on large-group management skills and curriculum, and school psychologists can share their expertise on learning processes and individual differences (Graden & Bauer, 1992). Special education teachers can share their in-depth knowledge regarding the adaptation of instructional materials, the development of Individual Educational Programs, and behavior management procedures (Bauwens et al., 1989). A positive, trusting partnership among team

members is essential for effective collaboration (Graden & Bauer, 1992).

Self-Perceived Efficacy of Teachers

Bandura (1986) argued that efficacious performance depends not only upon the possession of knowledge and skills needed to perform an act, but also upon an individual's perceived self-efficacy, which mediates knowledge and skills and action. Bandura (1978b) proposed that one's behavior is determined by both a generalized expectancy about action-outcome contingencies and a more specific belief in one's own coping abilities, or self-efficacy. Bandura (1977, 1986) noted that self-efficacy is situation-specific and is not a global disposition.

Self-perceived efficacy of teachers has been described as multidimensional, consisting of two dimensions that correspond to Bandura's two-component model of self-efficacy (Dembo & Gibson, 1985). According to Gibson and Dembo (1984), a teacher's sense of teaching efficacy corresponds to Bandura's outcome-expectancy dimension, and a teacher's sense of personal teaching efficacy corresponds to Bandura's self-efficacy dimension. A teacher's sense of teaching efficacy reflects his or her belief that any teacher's ability to bring about change is significantly limited by factors external to the teacher, such as the student's family background. A teacher's sense of personal teaching

efficacy reflects the individual's sense of personal responsibility for students' learning and behavior.

Similarly, Fuller, Wood, Rapoport, and Dornbusch (1982) proposed that efficacy consists of two overlapping yet distinct concepts--organizational efficacy and performance efficacy. Organizational efficacy refers to an individual's perceived expectancy of obtaining valued outcomes by influencing another person at a different level of an organization. Performance efficacy refers to an individual's perceived efficacy in performing his or her own tasks, independent of social interaction with other members of an organization.

It is believed that teachers with a high sense of efficacy are more likely to invest considerable professional effort in teaching (Newmann et al., 1989). When individuals perceive that their actions will be successful in changing a situation, they are likely to attempt further modifications (Graden & Bauer, 1992).

Gibson and Dembo (1984) identified self-perceived efficacy of teachers as a variable that accounts for individual differences in teaching effectiveness. That is, teachers who rate themselves higher in teaching efficacy engage in more effective teaching behaviors than do teachers who rate themselves lower in teaching efficacy. Raudenbush, Rowan, and Cheong (1992) asserted that positive self-perceived efficacy of teachers is necessary but not

sufficient for effective instruction. When using a medical model focusing on internal child attributes, teachers reported a lower sense of efficacy in terms of their optimism about their educational interventions (Bergan, Byrnes, & Kratochwill, 1979; Graden & Bauer, 1992; Tombari & Bergan, 1978). That is, teachers with low-efficacy attributed student learning problems to students' lack of ability rather than to teachers' lack of ability and ineffective educational interventions. Gutkin and Hickman (1988) asserted that teachers' preferences for collaborative problem solving for students will be increased if teachers' sense of efficacy is increased.

Researchers have suggested the following ways to increase self-perceived efficacy of teachers: (a) structured small-group sharing and problem-solving sessions for teachers (Sparks, 1988), (b) incentives (Fuller et al., 1982), (c) communication with parents (Dembo & Gibson, 1985), and (d) technical support and collaboration with colleagues (Ashton & Webb, 1986). Similarly, Raudenbush et al. (1992) argued that teachers who exercise control over key working conditions and work in highly collaborative environments have higher self-perceived efficacy than teachers who do not exercise such control or who work in less collaborative environments.

In summary, identifying factors related to general education teachers' use of instructional strategies that

facilitate inclusion of students with moderate and severe impairments in general education classes is important for improving such teachers' use of instructional strategies for those students in general education classes. The review of literature indicated possible factors related to general education teachers' use of instructional strategies. Among those possible factors, the researcher selected four factors on the basis of the results of the pilot study she conducted. Those factors include teaching experience, training in the field of special education, teacher collaboration, and self-perceived efficacy of teachers.

CHAPTER III

METHODOLOGY

The researcher had two primary purposes in conducting this study. The first was to investigate whether the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument developed by the researcher is statistically significant. The second was to investigate the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

To investigate the factors related to the instructional strategy usage of general education teachers, the following research questions were posed:

1. Is the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument statistically significant?
2. Is the amount of teaching experience of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?
3. Is general education teachers' training in the field of special education, as measured by the number of

special education courses they have taken and the number of days they have attended inservice training workshops on the education of students with impairments, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

4. Is general education teachers' collaboration with special education teachers, including a building principal's support, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

5. Is the self-perceived efficacy of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

The methodology used in addressing the research questions is described in this chapter. Included are descriptions of the research design, the study sample, instrumentation, data-collection procedures, and data-analysis techniques.

Research Design

The design of this study can be characterized as correlational; a single group of subjects was measured on many variables (Campbell & Stanley, 1963). The predictive

power of four independent variables was tested in predicting general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. The predictor variables were (a) teachers' amount of teaching experience; (b) general education teachers' training in the field of special education; (c) collaboration between general education and special education teachers, including a building principal's support; and (d) self-perceived efficacy of teachers.

Sample

One hundred ten general education teachers who were teaching students with moderate and severe impairments were the subjects for this research. The full-time Equivalency (FTE) of those students in general education classes was greater than 50%. That is, the subjects were teaching students with moderate and severe impairments who were spending more than 50% of their school time in general education classes. The subjects were from 72 school buildings in 47 local school districts in Michigan. The method of obtaining subjects is described in the Procedure section in this chapter.

Of the 110 subjects, 25 (21.9%) were male and 85 (74.6%) were female. The proportion of male and female teachers in the study was representative of the proportion

of male and female teachers in the United States because 67% of all teachers in the United States are female (Levine, 1987). The subjects included both elementary-level teachers in self-contained classrooms ($n = 65$ for kindergarten through Grade 5) and middle school and high school teachers in departmentalized programs ($n = 45$ for Grades 6 through 12). Demographic information on the sample is presented in Table 4.

Table 4. Demographic Information on the Survey Sample

Variable	n (%)
<u>Gender</u>	
Male	25 (22.7%)
Female	85 (77.3%)
<u>School level assignment</u>	
Elementary (K-5)	65 (59.2%)
Middle (6-8)	39 (35.4%)
High (9-12)	6 (5.4%)

To obtain evidence of the criterion-related validity of the Instructional Strategy Usage (ISU) instrument, the researcher and a trained observer who is a teacher consultant with a master's degree in special education observed a subsample of the sample ($n = 15$). Of the 15 subjects observed, 3 (20.0%) were male and 12 (80.0%) were female. The subjects included both elementary-level teachers in self-contained classrooms ($n = 8$ for Grades 1

through 5) and middle school and secondary school teachers in departmentalized programs ($n = 7$ for Grades 6 through 9). Demographic information on the observation sample is presented in Table 5.

Table 5. Demographic Information on the Observation Sample

Variable	n (%)
<u>Gender</u>	
Male	3 (20.0%)
Female	12 (80.0%)
<u>School level assignment</u>	
Elementary (K-5)	8 (53.3%)
Middle (6-8)	6 (40.0%)
High (9-12)	1 (6.7%)

Instrumentation

The instruments used in the study were a questionnaire and a classroom observation checklist. The questionnaire given to 110 general education teachers was composed of four parts: (a) demographics, which included teaching experience and educational background; (b) the Instructional Strategy Usage (ISU) instrument; (c) the teacher collaboration scale; and (d) the scale of self-perceived efficacy of teachers. The classroom observation checklist was used in measuring general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

The researcher developed the ISU instrument, the classroom observation checklist, and the scale for measuring teacher collaboration between general education and special education teachers, including a building principal's support. In developing these instruments, the researcher followed the steps recommended by DeVellis (1991). The first step was to determine clearly the contents of the scales. A review of literature was a great aid to clarity. The second step was to generate a large pool of items that were possibilities for eventual inclusion in the scales. The content of each item primarily reflected the construct of interest. The third step was to determine the format for measurement. The fourth step was to have experts review the initial item pool. Eight people who were knowledgeable in the content area reviewed the item pool to maximize the content validity of the scale. Three of them had doctoral degrees in special education, and one had a doctorate in measurement. Four others were working as researchers at a special education research company. The reviewers evaluated the items for clarity and conciseness. The fifth step was to administer the items to seven general education teachers who were teaching students with moderate and severe impairments. The last step was to evaluate and revise the items. In the following pages, the items included in the questionnaire and the classroom observation checklist are discussed.

Demographic Items

The first part of the questionnaire administered to the sample included questions regarding (a) gender, (b) teaching experience, (c) experience teaching students with impairments, (d) courses taken by the teacher in special education, and (e) the number of inservice training workshop days (Appendix A, Part A). General teaching experience and experience teaching students with impairments were coded separately, in number of years. Courses taken by the teacher in special education and inservice training workshop days were combined to obtain one score for the teacher's training in the field of special education. The researcher assumed that one course taken by the teacher in special education was equivalent to five inservice training workshop days. The researcher obtained other information such as the grade levels of students with moderate and severe impairments and the FTE of those students in general education classes from local school districts.

Items Concerning Instructional Strategies

The second part of the questionnaire included questions regarding instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes (Appendix A, Part B). Questions in this part were concerned with the following five instructional procedures: (a) classroom management procedures (procedure

I), (b) teaching procedures (procedure II), (c) instructional feedback procedures (procedure III), (d) monitoring and evaluation procedures (procedure IV), and (e) instructional grouping procedures (procedure V).

The second part of the questionnaire consisted of seven questions. Question 1, which included seven items, was concerned with teaching and monitoring/evaluation procedures (procedure II and procedure IV). It was presented in the following format: A = Almost every lesson, B = 2-3 times per week, C = Once per week, D = 1-3 times per month, E = Less than once per month, and F = Never. The items were scaled from a score of 0, which indicated no use of a particular strategy, to a score of 5, which indicated frequent use of the strategy (Almost every lesson).

Question 2 was an open-ended question regarding classroom activities designed to facilitate interaction between the student with an impairment and nonimpaired students. This question was concerned with classroom management procedures (procedure I). One point was given to each activity, up to a maximum of five points.

Question 3, which included 10 behavior-management strategies, was presented in a use-nonuse format. This question was concerned with classroom management procedures (procedure I). Ten strategies in this question were classified into two items. Time-out procedure, lost privileges, extra work, overcorrection, and extinction were

considered negative approaches. Behavioral contracts for individual privileges, token economy system, class privileges as rewards for work, differential reinforcement of incompatible behaviors, and class recognition were considered positive approaches. One point was given for each strategy used by the teacher. Therefore, five points were the maximum possible for each item.

Question 4, which addressed four types of instructional feedback, was presented in the same format as Question 1. This question was concerned with instructional feedback procedures (procedure III). The items were scaled from a score of 0, which indicated no use of a particular type of feedback, to a score of 5, which indicated frequent use of a particular type of feedback (Almost every lesson).

Question 5 was an open-ended question regarding the success rate of students with moderate and severe impairments. This question was concerned with monitoring and evaluation procedures (procedure IV). Teachers were asked to report what percentage of all assigned school work the focus student completed successfully. The item was scaled as follows: A score of 0 indicated a 0% success rate, a score of 1 indicated a 1%-10% success rate, a score of 2 indicated a 11%-39% success rate, a score of 3 indicated a 40%-69% success rate, a score of 4 indicated a 70%-95% success rate, and a score of 5 indicated a 96%-100% rate.

Question 6, which included eight instructional formats, was presented in the following format: A = 96%-100%, B = 70%-95%, C = 40%-69%, D = 11%-39%, E = 1%-10%, and F = 0%. This question was concerned with instructional grouping procedures (procedure V). The item was scaled as follows: A score of 0 indicated 0% participation, a score of 1 indicated 1%-10% participation, a score of 2 indicated 11%-39% participation, a score of 3 indicated 40%-69% participation, a score of 4 indicated 70%-95% participation, and a score of 5 indicated 100% participation.

Question 7 included progress evaluating systems and was presented in a use-nonuse format. This question was concerned with monitoring and evaluation procedures (procedure IV). One point was given to each system, up to a maximum of five points.

Items Concerning Teacher Collaboration

The third part of the questionnaire included 13 questions regarding teachers' perceptions of the effectiveness of teacher collaboration, including a building principal's support (Appendix A, Part C). This part of the questionnaire consisted of 13 items presented in the following format: VE = Very Effective, E = Effective, CD = Can't Decide, I = Ineffective, VI = Very Ineffective, and NR = Not Received. The items were scaled from a score of 0,

which indicated "Not Received," to a score of 5, which indicated "Very Effective."

Items Concerning Self-Perceived Efficacy

The fourth part of the questionnaire included the Teacher Efficacy Scale developed by Gibson and Dembo (1984) (Appendix A, Part D). Most subjects who participated in the pilot study conducted by the researcher complained that being given an even number of options forced them to make at least a weak commitment in the direction of one or the other extreme, even when they could not decide. DeVellis (1991) recommended that the number of options be reduced to as few as five. Therefore, for purposes of this study, the researcher changed the response scale from a Likert-scale format with six choices (1 = strongly disagree, 6 = strongly agree) to a Likert-scale format with five choices (SD = Strongly Disagree, D = Disagree, CD = Can't Decide, A = Agree, SA = Strongly Agree). The items were phrased positively or negatively and were scaled from a score of 1, which indicated the most negative self-perceived efficacy of teachers, to a score of 5, which indicated the most positive self-perceived efficacy of teachers.

In this study, the measure of self-perceived efficacy of teachers was determined by the total score obtained from the Likert-scale items. Gibson and Dembo (1984) provided both reliability and validity information regarding the

scale. The coefficient alpha for the total 16 items was .79. Further analysis demonstrated that there was evidence of both divergent and convergent validity.

Items on the Classroom Observation Checklist

The researcher developed the classroom observation checklist to investigate instructional strategies used by general education teachers that facilitate inclusion of students with moderate and severe impairments in general education classes (Appendix B, Part A). The items in the checklist were similar to those in Part B of the questionnaire. Thirty-three items in the checklist pertained to classroom management procedures (behavior management strategies and classroom activities for facilitating student interactions), teaching procedures, instructional feedback procedures, monitoring and evaluation procedures, and instructional grouping procedures.

The researcher also developed semi-structured interview questions to be used as a supplement to the classroom observation checklist (Appendix B, Part B). Each of items was given a score of 0, which indicated "No evidence" of a particular strategy, or a score of 1, which indicated "Any evidence" of the strategy. The definitions of terms used in the classroom observation checklist and in the interview questions are presented in Appendix B (Part C). Even though the researcher and a trained observer did not observe a

teacher using a particular strategy for a student with a moderate or severe impairment, the researcher assigned a score of 1 for the strategy if, during an interview session, the teacher provided concrete evidence (e.g., modified instructional materials, record book) of the use of that strategy.

Procedures

This study was conducted in three phases. First, a pilot study was conducted. The primary purpose of the pilot study was to test the instruments used in the research with a sample of seven general education teachers (one male and six females) who were teaching students with moderate and severe impairments. Those seven teachers were from two local school districts. The subjects included both elementary-level teachers in self-contained classrooms ($n = 5$ for Grades 1 through 5) and middle school or high school teachers in departmentalized programs ($n = 2$ for Grades 6 through 12).

In the pilot study, the researcher included 11 possible independent variables in the questionnaire. The seven subjects responded to two different layouts of the questionnaire and were encouraged to give feedback and suggestions for improving the instruments. The major problem mentioned by the pilot study participants was the length of the questionnaire. The researcher worked with her

advisor to reduce the length of the questionnaire by eliminating and combining items. On the basis of data analysis results from the pilot study, the researcher was able to select four independent variables. In addition, information was gathered with regard to such aspects as item wording, response options, and layout. Subjects also provided feedback on the clarity and appropriateness of items. The researcher observed five of the seven pilot study subjects in their classrooms for 4 hours each and conducted a 1-hour interview with each one. Using information collected through observations and interviews, the researcher refined the classroom observation checklist.

During the second phase, data were collected using the teacher survey. One hundred ten general education teachers who were teaching students with moderate and severe impairments in integrated general education classrooms completed the survey during February and March 1992.

Before administering the survey, the researcher sent a cover letter and a response form to all 57 intermediate school districts and 528 local school districts in Michigan (see Appendix C). Of the 585 intermediate and local school districts that were contacted, 47 local school districts responded that they were willing to participate in this study. Next, the researcher sent a cover letter and a response form to those 47 local school districts, to obtain the names and addresses of general education teachers who

were teaching students with moderate and severe impairments (Appendix D). Those districts provided the names and addresses of 195 general education teachers who met that criterion. The researcher then sent a cover letter explaining the study (Appendix E) and a questionnaire (Appendix A) to those 195 general education teachers.

Of the 195 teachers who were contacted, 67 (34.4%) responded to the initial mailing. The researcher then sent a second mailing to the 128 teachers who had not responded. Of those teachers, 38 (29.7%) responded to the second mailing. A third mailing was sent to the 90 teachers who had not yet responded; five of them (5.6%) responded. In total, 110 general education teachers from 72 school buildings responded to the questionnaire. The response rate was 56.4%. The return rates from the three mailings are shown in Table 6.

Table 6. Return Rate of Questionnaires

Questionnaires Sent		Total Returned (%)
Initial mailing	195	67 (34.4%)
Second mailing	128	38 (29.7%)
Third mailing	90	5 (5.6%)
Total		110 (56.4%)

The third phase of data collection involved observing the instructional strategies of a subsample of teachers.

The researcher sent a cover letter and a response form to 110 teachers who responded to the questionnaire (see Appendix F). Fifteen teachers from 10 local school districts allowed the researcher to observe them in their classrooms. The researcher and a trained observer who is a teacher consultant with a master's degree in special education observed the 15 teachers for approximately 2 hours each and interviewed them for a half-hour during April and May 1992.

Before data collection began, the University Committee on Research Involving Human Subjects (UCRIHS) at Michigan State University reviewed the questionnaire and the classroom observation checklist to ensure the protection of human subjects and subsequently approved the study (Appendix G). The researcher maintained confidentiality throughout the study. Only the researcher and her adviser had access to the data. During the entire process, no complaints or procedural problems were encountered.

Data Analysis

The Statistical Package for the Social Sciences (SPSS-X) was used to analyze the data collected in this study. The analysis of data was divided into four phases. First, a coefficient alpha was calculated to assess the internal consistency of the scales for measuring general education teachers' use of instructional strategies that facilitate

inclusion of students with moderate and severe impairments in general education classes (the dependent variable). After eliminating the items with low corrected item-total correlations, coefficient alphas for the Instructional Strategy Usage (ISU) instrument and the classroom observation checklist were computed. According to Nunnally (1978), all newly developed measures should be assessed for their internal consistency. A high alpha coefficient indicates that items are homogeneous, suggesting internal consistency. A low alpha indicates that items are either heterogeneous or that the questionnaire is too brief (Nunnally, 1978). The results of these and other data analyses are presented in Chapter IV.

Next, to obtain evidence of the criterion-related validity, the researcher computed the correlation coefficient and the validity coefficient for true scores on the ISU instrument and the classroom observation checklist. Criterion-related validation procedures indicate the effectiveness of a scale in predicting an individual's behavior in specified situations (Anastasi, 1982). For this purpose, 15 teachers' scores on the ISU instrument were checked against those teachers' scores measured by observation (a criterion). The correlation coefficient was used in answering Research Question 1.

Third, coefficient alphas were calculated to assess the internal consistency of the measures of the independent

variables. After eliminating items with low corrected item-total correlations, coefficient alphas of the scale of teacher collaboration (Appendix A, Part C) and the scale of self-perceived efficacy of teachers (Appendix A, Part D) were computed. The other two independent variables were years of teaching experience and training in the field of special education. General education teachers' training in the field of special education was calculated by combining the number of special education courses they had taken and the number of days they had attended inservice training workshops on the education of students with impairments. The researcher assumed that one course was equivalent to five workshop days.

Fourth, the researcher employed multiple regression to investigate the relationship between the dependent variable and the four independent variables. The results of this analysis indicated the relative importance of each independent variable to the prediction of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Multiple regression was used in answering Research Questions 2 through 5.

Lewis-Beck (1980) pointed out two advantages of using multiple regression. The first advantage is that this technique offers a fuller explanation of the dependent variable than does bivariate regression, as few phenomena

result from a single cause. The second advantage is that it makes the effect of a particular independent variable more certain by removing the possibility that distorting influences from the other independent variables are present. Results of the data analyses are discussed in Chapter IV.

CHAPTER IV

RESEARCH FINDINGS

The researcher had two primary purposes in conducting this study. The first was to investigate whether the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument developed by the researcher is statistically significant. The second was to investigate the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

The results of the data analyses conducted to explore the research questions are presented in five main sections in this chapter: (a) reliability data on the dependent variable (instructional strategies), (b) validity data on the dependent variable (instructional strategies), (c) reliability data on the independent variables (teacher collaboration and teacher efficacy) and descriptive data on teaching experience and training in the field of special education, (d) multiple regression analysis for predicting general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes, and (e) supplementary multiple regression analyses.

Reliability Data on the Dependent Variable

The reliability coefficient of a test refers to the consistency of evaluation results and depends on factors such as the length of the test, the spread of scores in the group tested, the difficulty of the test, and the objectivity of the scoring (Gronlund & Linn, 1990).

Cronbach alpha coefficient indicates the degree to which the item responses correlate with the total score (Mehrens & Lehmann, 1984). Using the recommendation that "an item-test correlation of less than $+0.30$ is often regarded as indicative of items of dubious discriminating power--items which should be eliminated or revised" (Engelhart, 1965, p. 392), the researcher eliminated the items whose corrected item-total correlation was less than $+0.30$. The coefficient alpha would be increased by eliminating those items.

The Instructional Strategy Usage (ISU) Instrument

To assess the degree of reliability of the Instructional Strategy Usage (ISU) instrument (Appendix A, Part B), coefficient alpha was calculated. This instrument contained 24 items regarding instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. The researcher eliminated two items whose item-total correlation was less than $+0.30$. The coefficient alpha for 22 items was $.90$, whereas the coefficient alpha for 24 items was $.89$. Two

subjects who did not complete all items were excluded from the analysis ($N = 108$).

Descriptive information for the ISU instrument is presented in Table 7. As shown in the table, the scores ranged from 1 to 86 points. The average score was 50.10 out of 110 possible points, with a standard deviation of 20.47.

Table 7. Descriptive Data for the ISU Instrument

Mean	50.10	Std Dev	20.47
Minimum	1.00	Maximum	85.67
Variance	419.19	Std Err	1.97

The coefficient alpha obtained for the ISU instrument indicated a high degree of internal consistency. Coefficient alpha yields a measure of internal consistency based on the number of items and their average correlation (Nunnally, 1978). In general, a high coefficient alpha indicates that a scale has a good degree of homogeneity, and therefore that items are measuring the same construct. According to Nunnally (1978), an internal consistency of .80 indicates adequate reliability and warrants use of the measure for research purposes. Results of the reliability analysis of the ISU instrument are reported in Table 8.

Table 8. Results of Reliability Analysis of the ISU Instrument (N = 108)

Item	Mean	<u>SD</u>	Corrected Item-Total Correlation
1. Communicate expectations with the focus student	3.56	1.81	.61
2. Assign drill/practice to the focus student	2.81	1.90	.65
3. Correct the focus student's seatwork	2.49	2.20	.68
4. Use modified instructional materials for the focus student	3.27	1.86	.44
5. Provide the focus student problem-solving strategies	2.19	1.95	.65
6. Record the focus student's performance on school work	2.71	2.04	.67
7. Make adjustments to instruction on the pace of the focus student's learning rate	3.58	1.84	.55
8. Manage the focus student's behaviors using negative approach	1.19	1.06	.30
9. Manage the focus student's behaviors using positive approach	1.20	1.19	.48
10. Provide verbal feedback to the focus student	4.43	1.23	.51

Table 8 (Continued)

Item	Mean	<u>SD</u>	Corrected Item-Total Correlation
11. Provide written feedback to the focus student	2.20	1.85	.61
12. Provide socially appropriate physical feedback to the focus student	3.97	1.59	.39
13. Provide tangible rewards to the focus student	2.40	1.94	.45
14. Adapt instruction for the focus student's high success rate	2.37	1.84	.53
15. Have the focus student engage in whole group lecture	1.74	1.60	.34
16. Have the focus student engage in individual seatwork	1.50	1.44	.39
17. Have the focus student engage in whole-group discussion	1.65	1.59	.57
18. Have the focus student engage in peer tutoring	1.31	1.16	.45
19. Have the focus student engage in group learning with peers	1.48	1.36	.50
20. Provide small group instruction to the focus student	0.93	1.16	.49

Table 8 (Continued)

Item	Mean	<u>SD</u>	Corrected Item-Total Correlation
21. Provide one-to-one instruction to the focus student	1.19	1.23	.48
22. Evaluate the focus student's progress	1.93	1.41	.50

Note:

Alpha = .90 (22 items)

Corrected item-total correlation: Correlates the item being evaluated with all the scale items, excluding itself.

Scale for Items 1, 2, 3, 4, 5, 6, 7, 10, 11, 12, and 13

Almost every lesson	=5
2-3 times per week	=4
Once per week	=3
1-3 times per month	=2
Less than once per month	=1
Never	=0

Scale for Items 14, 15, 16, 17, 18, 19, 20, and 21

96%-100%	=5
70%-95%	=4
40%-69%	=3
11%-39%	=2
1%-10%	=1
0%	=0

Scale for Items 8, 9, and 22:

1 point for each strategy up to 5 points

The Classroom Observation Checklist

To assess the reliability of the classroom observation checklist of instructional strategies (Appendix B, Part A), coefficient alpha was calculated. This checklist included 33 items regarding instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. The researcher and a trained observer observed 15 general education teachers who were teaching students with moderate and severe impairments in integrated general education classes. Each item was given a score of 0 if there was "No evidence" of a particular strategy or a score of 1 if there was "Any evidence" of the strategy. Semi-structured interview questions were used as a supplement to the classroom observation checklist. That is, if a teacher provided concrete evidence during an interview session that he or she used the strategy, the researcher assigned a score of 1 for that strategy. The interrater reliability was .87. The score assigned by the researcher and the score assigned by the trained observer were combined to arrive at a score for each item. Therefore, a teacher could receive a maximum of 2 points for each item.

The researcher eliminated 19 items whose item-total correlations were less than +.30. Some items had zero variances. For example, all subjects obtained the maximum score of 2 for seating arrangement and tutoring from an

aide. Interestingly, the item-total correlation of "tutoring from an aide" was $-.7643$. That is, the greater total scores teachers had, the less they used the instructional format, "tutoring from an aide." After those 19 items were eliminated, the coefficient alpha of the remaining 14 items on the classroom observation checklist increased from $.78$ to $.89$.

Descriptive information for the classroom observation checklist is presented in Table 9. As shown in the table, the scores ranged from 0 to 20 points. The average score was 10 out of 28 possible points, with a standard deviation of 7.39.

Table 9. Descriptive Data for the Classroom Observation Checklist

Mean	10.00	Std Dev	7.39
Minimum	.00	Maximum	20.00
Variance	54.55	Std Err	2.10

The coefficient alpha obtained for the classroom observation checklist indicated a high degree of internal consistency. Results of the reliability analysis of the classroom observation checklist are presented in Table 10.

Table 10. Results of Reliability Analysis of the Classroom Observation Checklist (N = 15)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
1. Manage the focus student's behaviors using class rules	0.33	0.65	.32
2. Have whole class participate in therapy activities for the focus student	0.08	0.29	.35
3. Communicate expectations with the focus student	1.17	1.03	.85
4. Correct the focus student's seatwork	0.83	0.94	.86
5. Use modified instructional materials for the focus student	1.00	1.04	.74
6. Use visual/audio instructional media	0.17	0.39	.33
7. Provide verbal feedback to the focus student	1.08	1.00	.51
8. Provide written feedback to the focus student	0.58	0.79	.67
9. Provide tangible rewards to the focus student	0.50	0.90	.61
10. Record the focus student's performance on school work	0.50	0.80	.35

Table 10 (Continued)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
11. Evaluate the focus student's progress	0.83	0.94	.75
12. Have the focus student engage in whole class lecture	1.67	0.65	.50
13. Have the focus student engage in peer group learning	0.75	0.97	.52
14. Provide one-to-one instruction to the focus student	0.50	0.67	.56

Note:

Alpha= .8903 (14 items)

Scale: 0 (No evidence)
1 (Any evidence)

Validity Analysis of the Dependent Variable

In this study, the researcher attempted to obtain evidence of criterion-related validity, defined as the relationship between the two measures obtained concurrently, instructional strategy usage measured by self-evaluation and instructional strategy usage measured by observation. Validity refers to the appropriateness of the

interpretations of the evaluation results for a given group of individuals (Gronlund & Linn, 1990).

Research Question 1

Is the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument statistically significant?

To answer Research Question 1, the researcher computed the correlation coefficient between the ISU instrument scores and the classroom observation checklist scores for instructional strategies ($N = 15$). The results of the validity analysis of the ISU instrument are reported in Table 11.

Table 11. Validity Analysis of the ISU Instrument
($N = 15$)

Correlation coefficient	=	.57
Coefficient alpha of the ISU instrument	=	.90
Coefficient alpha of the classroom observation checklist	=	.89
Validity Coefficient for true scores	=	.64

As shown in Table 11, the correlation coefficient between the ISU scores and the classroom observation checklist scores was .57. The value of r ($r = .57$) from a sample of 15 exceeded the critical value of a two-tailed test at the .05 level (.51). Therefore, the criterion-

related validity coefficient of the ISU instrument was statistically significant at the .05 level. The validity coefficient for true scores was .64.

Reliability Analysis of the Independent Variables

In this study, there were four independent variables: (a) amount of teaching experience, (b) training in the field of special education, (c) teacher collaboration, and (d) self-perceived efficacy of teachers. Subjects reported how many years they had been teaching. General education teachers' training in the field of special education was calculated by combining the number of special education courses they had taken and the number of days they had attended inservice training workshops on the education of students with impairments. The scale used to measure general education teachers' perceptions of the effectiveness of teacher collaboration was developed by the researcher. The scale of self-perceived efficacy of teachers was developed by Gibson and Dembo (1984).

Teacher Collaboration

To assess the reliability of the scale of teacher collaboration (Appendix A, Part C), coefficient alpha was calculated. This 13-item scale included questions regarding collaboration between special education and general education teachers, including a building principal's support. The researcher eliminated four items whose item-

total correlation was less than +.30. After eliminating these four items, the coefficient alpha of the remaining nine items of the scale increased from .87 to .90. Two subjects who did not complete all items on this scale were excluded from the analysis ($N = 108$).

Descriptive information for the scale of teacher collaboration is reported in Table 12. As shown in the table, the scores ranged from 0 to 45 points. The average score was 27.08 out of 45 possible points, with a standard deviation of 11.39.

Table 12. Descriptive Data for the Scale of Teacher Collaboration

Mean	27.08	Std Dev	11.39
Minimum	.00	Maximum	45.00
Variance	129.82	Std Err	1.09

The coefficient alpha obtained for the scale of teacher collaboration indicated a high degree of internal consistency (.90). Results of the reliability analysis of the scale of teacher collaboration are reported in Table 13.

Table 13. Results of Reliability Analysis of the Scale of Teacher Collaboration (N = 108)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
1. Support of/from the building principal	3.47	1.65	.33
2. Ongoing educational planning with special education staff for the focus student	3.03	1.66	.61
3. Working with special education staff to develop instructional materials for the focus student	2.68	1.86	.78
4. Co-teaching or team-teaching with special education staff for the focus student	1.68	1.98	.65
5. Working with special education staff to evaluate and test the performance of the focus student	2.13	2.00	.67
6. Support of/from special education staff to help implement behavioral strategies in working with the focus student	2.45	1.92	.76
7. Support of/from special education staff to help accommodate curriculum for the focus student	2.54	1.87	.72

Table 13 (Continued)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
8. Support of/from special education staff to help implement instructional formats/models that address the unique educational needs of the focus student	2.67	1.84	.78
9. Staff development activities designed to facilitate partnerships between general education and special education staff	1.93	1.78	.62

Alpha = .8965 (9 items)

Scale: Very Effective =5
 Effective =4
 Can't Decide =3
 Ineffective =2
 Very Ineffective =1
 Not Received =0

Self-Perceived Efficacy of Teachers

To assess the reliability of the scale of self-perceived efficacy of teachers (Appendix A, Part D), coefficient alpha was calculated. This scale included 16 items regarding self-perceived efficacy of teachers in teaching students. The researcher deleted three items whose item-total correlation was less than +.30. After these three items were eliminated, the coefficient alpha of the

remaining 13 items of self-perceived efficacy of teachers increased from .7714 to .7761. Three subjects who did not complete all items on this scale were excluded from the analysis ($N = 107$).

Descriptive information for the scale of self-perceived efficacy of teachers is reported in Table 14. As shown in the table, the scores ranged from 31 to 64 points. The average score was 47.08 out of 65 possible points, with a standard deviation of 6.10.

Table 14. Descriptive Data for the Scale of Self-Perceived Efficacy of Teachers

Mean	47.08	Std Dev	6.10
Minimum	31.00	Maximum	64.00
Variance	37.15	Std Err	.59

The coefficient alpha obtained for the scale of teacher efficacy (.78) was lower than .80, which indicates adequate reliability and warrants using of the measure for research purposes. Results of the reliability analysis of the scale of teacher efficacy are reported in Table 15.

Table 15. Results of Reliability Analysis of the Scale of Self-Perceived Efficacy of Teachers ($N = 107$)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
1. When the grades of my students improve it is usually because I found more effective teaching approaches.	3.81	0.81	.30
2. When I really try, I can get through to most difficult students.	3.76	0.96	.49
3. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	3.51	0.88	.45
4. When a student does better than usual, many times it is because I exerted a little extra effort.	3.34	0.88	.33
5. If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly.	4.23	0.75	.50
6. If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty.	4.07	0.70	.39

Table 15 (Continued)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
7. When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level.	4.14	0.69	.43
8. When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student.	3.36	0.87	.46
9. A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.	3.05	1.11	.38
10. If students are not disciplined at home, they aren't likely to accept any discipline.	3.51	1.04	.39
11. The hours in my class have little influence on students compared to the influence of their home environment.	3.73	0.86	.39
12. The influences of a student's home experiences can be overcome by good teaching.	3.48	0.88	.42

Table 15 (Continued)

	Mean	<u>SD</u>	Corrected Item-Total Correlation
13. Even a teacher with good teaching abilities may not reach many students.	3.09	1.13	.37

Note:

Alpha = .78 (13 items)

Scale of positive statements:

Strongly Disagree =1
Disagree =2
Can't Decide =3
Agree =4
Strongly Agree =5

Scale of negative statements:

Strongly Disagree =5
Disagree =4
Can't Decide =3
Agree =2
Strongly Agree =1

Teaching Experience

One of the independent variables in this study was teaching experience. Subjects reported how many years they had been teaching. Descriptive information on teaching experience is reported in Table 16. As shown in the table, the subjects had between 1 and 35 years of teaching experience. The average was 15.58 years, with a standard deviation of 8.64.

Table 16. Descriptive Data for Teaching Experience

Mean	15.58	Std Dev	8.64
Minimum	1.00	Maximum	35.00
Variance	74.59	Std Err	.82

Training in the Field of Special Education

One of the independent variables in this study was the teachers' training in the field of special education, which was calculated by combining the number of special education courses subjects had taken and the number of days they had attended inservice workshops on the education of students with impairments. The researcher assumed that one special education course was equivalent to five inservice workshop days. Descriptive information on teachers' training in the field of special education is reported in Table 17. As shown in the table, the scores ranged from 0 to 210, with a standard deviation of 37.29. The distribution of training scores was positively skewed. The training score of 27 out of 110 subjects was 0.

Table 17. Descriptive Data for Training in the Field of Special Education

Mean	17.58	Std Dev	37.29
Minimum	.00	Maximum	210.00
Variance	1390.24	Std Err	3.56

Multiple Regression Analysis

Before conducting the multiple regression analysis, the researcher computed correlation coefficients between the four independent variables and the dependent variable measured using the ISU instrument. The correlation coefficients are provided in Table 18. Four subjects who did not complete all items were excluded from the analyses ($N = 106$).

Table 18. Correlations Among Variables ($N = 106$)

	Instruct.	Teach.	Train.	Collab.	Effic.
Instruct.	1.00				
Teach.	-.31*	1.00			
Train.	.26*	.03	1.00		
Collab.	.53*	-.21*	.23*	1.00	
Effic.	.22*	.07	.28*	.25*	1.00

* Significant at the .05 level.

Instruct. = Instructional strategy usage
(the dependent variable)

Teach. = Teaching experience

Train. = Training in the field of special education

Collab. = Teacher collaboration

Effic. = Self-perceived efficacy of teachers

Statistically significant correlations were found between the dependent variable and the independent variables. There was a positive relationship at the .05 level between instructional strategy usage and the effectiveness of teacher collaboration ($r = .53$). There

were also positive relationships at the .05 level between instructional strategy usage and teachers' training in the field of special education ($r = .26$) and between instructional strategy usage and self-perceived efficacy of teachers ($r = .22$). There was a negative relationship at the .05 level between instructional strategy usage and years of teaching experience ($r = -.31$).

Statistically significant correlations also were found among the independent variables. There were positive relationships at the .05 level between the effectiveness of teacher collaboration and self-perceived efficacy of teachers ($r = .25$), between the effectiveness of teacher collaboration and teachers' training in the field of special education ($r = .23$), and between self-perceived efficacy of teachers and teachers' training in the field of special education ($r = .28$). There was a negative relationship at the .05 level between the effectiveness of teacher collaboration and years of teaching experience ($r = -.21$).

A series of regression analyses was run to investigate the best predictors of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. The total score on the Instructional Strategy Usage (ISU) instrument was used as the dependent variable, and the four independent variables were used as predictors. The results of four-variable regression

analysis for prediction of instructional strategy usage are presented in Table 19.

Table 19. Results of Four-Variable Regression Analysis

Multiple R	.60		
R Square	.36	R Square Change	.36
Adjusted R Square	.34	F Change	14.19
Standard Error	16.54	Signif F Change	.00

Analysis of Variance

	<u>df</u>	Sum of Squares	Mean Square
Regression	4	15518.46	3879.61
Residual	101	27616.92	273.43

F = 14.19 Signif. F = .00

As shown in Table 19, the four-variable regression model was statistically significant, [$F(4,101) = 14.19$; $p < .05$], and 35.98% of the total variance in instructional strategy usage was explained by the four variables included in the model. The researcher computed the partial regression coefficients for those four predictors to investigate which predictors had statistically significant relationships with the dependent variable.

The t -test results of the partial regression coefficients of the four independent variables are presented in Table 20. The partial slope is the average change in the dependent variable associated with a unit of change in an independent variable, when the other independent variables

are held constant (Lewis-Beck, 1980). The researcher tested whether an interaction effect existed among the independent variables. An interaction effect exists when the effect of one independent variable depends on the value of another independent variable (Lewis-Beck, 1980). However, there was no interaction effect among the independent variables.

Table 20. The t-test Results of Four Predictors

Variable	<u>B</u>	<u>SE B</u>	Beta	<u>T</u>	Sig. <u>T</u>
Experience	-.55	.19	-.23	-2.85	.01
Training	.08	.05	.15	1.76	.08
Collaboration	.76	.15	.43	4.98	.00
Efficacy	.31	.29	.09	1.09	.28
(Constant)				1.63	.11

As shown in Table 20, both years of teaching experience and teacher collaboration were statistically significant predictors at the .05 level. However, training in the field of special education and self-perceived efficacy of teachers were not statistically significant predictors at the .05 level.

The two-variable regression model including statistically significant predictors was statistically significant [$F(2,105) = 26.13$; $p < .05$], and 33.23% of the total variance in instructional strategy usage was explained by years of teaching experience and teacher collaboration.

by years of teaching experience and teacher collaboration.

The raw-score regression equation is

$$\text{ISU} = 33.83 - .51 (\text{teaching}) + .89 (\text{collaboration})$$

(6.04) (-2.65) (6.12)

$$R \text{ Square} = .33 \qquad \text{Standard Error} = 16.89$$

where the values in parentheses are the t ratios, and R square = coefficient of multiple determination.

Research Question 2

Is the amount of teaching experience of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

To answer Research Question 2, the researcher used a t -test of the partial regression coefficient of teaching experience ($t = -2.84$; $p < .05$). The test results indicated that years of teaching experience was a significant predictor of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. However, the amount of teaching experience was significantly negatively related to the use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. That is, general education teachers with more years of teaching experience used fewer instructional strategies that facilitate inclusion of students with

moderate and severe impairments in general education classes.

Research Question 3

Is general education teachers' training in the field of special education, as measured by the number of special education courses they have taken and the number of days they have attended inservice training workshops on the education of students with impairments, related to their use of instructional strategies that facilitate inclusion of students with moderate or severe impairments in general education classes?

To answer Research Question 3, the researcher used a t -test of the partial regression coefficient of teachers' training in the field of special education ($t = 1.76$; $p > .10$). The test results indicated that general education teachers' training in the field of special education was not a significant predictor of their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Research Question 4

Is general education teachers' collaboration with special education teachers, including a building principal's support, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

To answer Research Question 4, the researcher used a t -test of the partial regression coefficient of the effectiveness of teacher collaboration ($t = 4.98$; $p < .05$). The test results indicated that effective collaboration

between general education and special education teachers, including a building principal's support, was a significant predictor of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Research Question 5

Is self-perceived efficacy of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

To answer Research Question 5, the researcher used a t -test of the partial regression coefficient of self-perceived efficacy of general education teachers ($t = 1.09$; $p > .05$). The test results indicated that self-perceived efficacy of general education teachers was not a significant predictor of general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Supplementary Multiple Regression Analyses

A series of multiple regression analyses was run to investigate the best predictors of five procedures of the ISU instrument and to investigate the effects of the number

of special education courses and the number of inservice days on the ISU instrument separately.

Multiple Regression Analyses on the Five Procedures

Before conducting the multiple regression analyses, the researcher computed correlation coefficients between the ISU instrument and the five procedures of the ISU instrument. The correlation coefficients are provided in Table 21.

Table 21. Correlations Among the Five Procedures of the ISU Instrument (N = 108)

	Total	Pro1	Pro2	Pro3	Pro4	Pro5
Total	1.00					
Pro1	.52*	1.00				
Pro2	.89*	.41*	1.00			
Pro3	.79*	.41*	.67*	1.00		
Pro4	.78*	.37*	.66*	.52*	1.00	
Pro5	.71*	.24*	.42*	.40*	.41*	1.00

* Significant at the .05 level.

Total: Total scores of the ISU instrument
 Pro1: Classroom management procedures
 Pro2: Teaching procedures
 Pro3: Instructional feedback procedures
 Pro4: Monitoring/evaluating procedures
 Pro5: Instructional grouping procedures

The ISU instrument was composed of classroom management procedures (procedure 1), teaching procedures (procedure 2), instructional feedback procedures (procedure 3), monitoring/evaluating procedures (procedure 4), and

instructional grouping procedures (procedure 5). As shown in the table, statistically significant correlations were found between the ISU instrument and each procedure, and among the five procedures.

Results of the multiple regression analyses indicated that teacher collaboration had statistically significant positive relationships with procedure 1 ($t = 2.59$; $p < .05$), procedure 2 ($t = 4.63$; $p < .05$), procedure 3 ($t = 3.54$; $p < .05$), procedure 4 ($t = 3.16$; $p < .05$), and procedure 5 ($t = 2.78$; $p < .05$). These results also indicated that teaching experience had statistically significant negative relationships with subscale 3 ($t = -2.14$; $p < .05$), subscale 4 ($t = -2.35$; $p < .05$), and subscale 5 ($t = -2.21$; $p < .05$).

Training in the Field of Special Education

Teachers' training in the field of special education was measured by the number of special education courses they had taken and the number of days they had attended inservice training workshops on the education of students with impairments. Statistically significant correlations were found at the .05 level between instructional strategy usage and the number of courses taken ($r = .24$), between instructional strategy usage and the number of inservice days ($r = .21$), and between the number of special education courses and the number of inservice days ($r = .20$). The researcher conducted multiple regression analysis using the

number of special education courses and the number of inservice days as separate independent variables. However, the number of special education courses and the number of inservice days were not statistically significant predictors of instructional strategy usage.

Summary of the Research Findings

The findings for the five research questions are as follows:

1. The criterion-related validity coefficient of the ISU instrument was statistically significant.

2. The amount of teaching experience of general education teachers was significantly negatively related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

3. General education teachers' training in the field of special education was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

4. Collaboration between general education and special education teachers, including a building principal's support, was significantly positively related to general education teachers' use of instructional strategies that

facilitate inclusion of students with moderate and severe impairments in general education classes.

5. Self-perceived efficacy of general education teachers was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS

LIMITATIONS, AND RECOMMENDATIONS

This chapter contains a summary of the study and a discussion of the findings related to the research questions. This chapter also contains conclusions drawn from the study findings, limitations of the study, and recommendations for future research.

Summary

The researcher had two primary purposes in conducting this study. The first was to investigate whether the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument developed by the researcher is statistically significant. The second was to investigate the factors related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

A correlational design was used in this study; a single group of subjects was measured on several variables (Campbell & Stanley, 1963). The predictive power of four independent variables was tested in predicting general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe

impairments in general education classes. The independent variables were (a) amount of teaching experience; (b) general education teachers' training in the field of special education; (c) general education teachers' collaboration with special education teachers, including a building principal's support; and (d) self-perceived efficacy of teachers.

One hundred ten general education teachers who were teaching students with moderate and severe impairments were the subjects in this study. The full-time equivalency (FTE) of those students in general education classes was greater than 50%. General education teachers from 72 school buildings in 47 local school districts in Michigan responded to the questionnaire. To obtain evidence of the criterion-related validity of the ISU instrument, the researcher and a trained observer who is a teacher consultant with a master's degree in special education observed a subsample of 15 teachers in their classrooms. These teachers were from 10 school buildings in 10 local school districts.

The analysis of data was divided into four phases. First, a coefficient alpha was calculated to assess the internal consistency of the measure of the dependent variable. After eliminating the items with low corrected item-total correlations, coefficient alphas for the Instructional Strategy Usage (ISU) instrument and the classroom observation checklist were computed. Next, the

researcher computed the correlation coefficient and the validity coefficient for true scores on the ISU instrument and the classroom observation checklist. The correlation coefficient between the two measures was used to answer Research Question 1. Third, coefficient alphas were calculated to assess the internal consistency of the measures of the independent variables. After eliminating items with low corrected item-total correlations, coefficient alphas of the scale of teacher collaboration and the scale of self-perceived efficacy of teachers were computed. The other two independent variables were years of teaching experience and training in the field of special education. General education teachers' training in the field of special education was calculated by combining the number of special education courses they had taken and the number of days they had attended inservice workshops on the education of students with impairments. Fourth, the researcher employed multiple regression to investigate the relationship between the dependent variable and the four independent variables. This analysis was used to answer for Research Questions 2 through 5. The findings regarding the research questions is presented in the following section.

Discussion of the Findings

The following discussion is organized around the following five main topics addressed in the research

questions: (a) evidence of the criterion-related validity of the Instructional Strategy Usage (ISU) instrument; (b) teaching experience; (c) training in the field of special education; (d) teacher collaboration, including a building principal's support; and (e) self-perceived efficacy of teachers.

Evidence of Criterion-Related Validity

Research Question 1:

Is the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument statistically significant?

The results indicated that the criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument was statistically significant for evaluating general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. General education teachers who were teaching students with moderate and severe impairments accurately rated their own instructional strategy usage for those students. This result was consistent with the results of observational studies conducted by Gibson and Dembo (1984) and Smith (1983). Evidence of the content-related validity of the ISU instrument also was obtained by having experts review the items to maximize the appropriateness of the ISU items.

Validation is a cumulative, ongoing process (DeVellis, 1991). Validity is viewed as a unitary concept based on various kinds of evidence, such as content-related, criterion-related, and construct-related evidence (American Psychological Association, 1985). Validity does not exist on an all-or-none basis and is best considered in terms of categories that specify degree, such as high validity, moderate validity, and low validity (Gronlund & Linn, 1990).

Teaching Experience

Research Question 2:

Is the amount of teaching experience of general education teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

The results indicated that the years of teaching experience of general education teachers was significantly negatively related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. That is, less experienced teachers used instructional strategies for students with moderate and severe impairments more frequently than did more experienced teachers.

This result was consistent with those of studies by Bender and Ukeje (1989) and Berman and McLaughlin (1978). Bender and Ukeje found that there was a negative relationship between years of teaching experience and

effective strategy usage by general education teachers who were teaching students with impairments. Similarly, Berman and McLaughlin found that teachers' age and experience were related negatively to their implementation of instructional innovations.

The results of the present study may reflect the fact that the use of effective instructional strategies that facilitate inclusion of students with impairments is a relatively recent area of focus in teacher preparation (Bender & Ukeje, 1989). Therefore, teachers who received their preservice training more than a decade ago may have had less exposure to various instructional strategies that facilitate inclusion of students with impairments.

Training in the Field of Special Education

Research Question 3:

Is general education teacher's training in the field of special education, as measured by the number of special education courses they have taken and the number of days they have attended inservice workshops on the education of students with impairments, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

The results indicated that general education teachers' training in the field of special education was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. However, considering that the significance level of the t value of teachers' training in

the field of special education was .08, this interpretation should be made with caution.

Traditional inservice training workshops are considered to be irrelevant and ineffective for transferring the knowledge acquired from those workshops to classroom practice (Showers et al., 1987; Valencia & Killion, 1988; Wood & Thompson, 1980). Fox (1989) reported that, within 3 weeks of training, retention of new knowledge and skills acquired from inservice training workshops decreased to 15%.

Wood and Thompson (1980) suggested several reasons for the current problems within staff-development programs. The first problem is that disjointed workshops and courses focus on disseminating information rather than on addressing day-to-day implementation needs. A second problem is that teachers have negative attitudes toward inservice education because (a) such education is poorly planned and organized, (b) there is little participant involvement in the planning and implementation of inservice education, (c) teachers' needs are inadequately assessed, (d) objectives of the inservice are unclear, and (e) there is a lack of follow-up by the administration. A third problem is that inservice education has had a districtwide focus and is therefore often distant from the needs of teachers and administrators in individual schools.

Teacher Collaboration

Research Question 4:

Is general education teachers' collaboration with special education teachers, including a building principal's support, related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

The results of this study indicated that the collaboration between general education and special education teachers, including a building principal's support, was significantly positively related to general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. That is, the more effective support general education teachers received from a building principal and the more effective collaboration they had with special education teachers concerning the education of students with moderate and severe impairments, the more frequently general education teachers used instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

Teaching students with moderate and severe impairments in integrated general education classrooms is a stressful task for general education teachers. However, the ability to cope with a difficult situation is determined not by the amount of stress a person experiences, but by the balance

between the stress and the support the person receives (Brandt, 1987a). Therefore, it is important that general education teachers engage in collaboration with special education teachers and receive support from their building principal. The motivation of general education teachers to meet the needs of students with moderate and severe impairments is enhanced by changes in school organization that promote collegiality, teacher collaboration and mutual support, meaningful professional development, reinforcement and recognition of instructional achievement, and participation in school and classroom decision making (Heller & Schilit, 1987)

Glaser (1992) asserted that quality schools should be places where the basic human needs of survival, power, freedom, belonging, and fun are met. On the basis of the control theory proposed by Glaser (1986), Thousand and Villa (1992) explained the benefits of teacher collaboration. These authors asserted that teacher collaboration enhances teachers' potential for survival and power in educating students with diverse needs by providing opportunities for exchanging needed resources, expertise, and technical assistance. In addition, collaboration team members experience a sense of belonging and freedom from isolation as a result of having others with whom to share the responsibility for accomplishing difficult tasks, such as accommodating curriculum and developing instructional

materials for students with moderate and severe impairments. Finally, it is fun to engage in stimulating adult dialogue and social interactions.

Self-Perceived Efficacy of Teachers

Research Question 5:

Is self-perceived efficacy of teachers related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes?

In this study it was found that self-perceived efficacy of general education teachers, as measured by the scale developed by Gibson and Dembo (1984), was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. These results are inconsistent with those of past researchers, who has found that high-efficacy teachers used more effective instructional strategies than did low-efficacy teachers (Dembo & Gibson, 1985; Gibson & Dembo, 1984; Sparks, 1988). Gibson and Dembo identified self-perceived efficacy of teachers as a variable accounting for individual differences in teaching effectiveness.

There are several possible explanations for why the results of this study were inconsistent with those of past research. One possible explanation is that, as Bandura (1977, 1986) noted, self-perceived efficacy is situation-specific and is not a global disposition. If self-perceived efficacy of teachers is a situation-specific disposition,

teachers might have a different level of teaching efficacy when they teach students with moderate and severe impairments. Teachers tend to feel most efficacious when they teach high-track students (Raudenbush et al., 1992). Another possible explanation is that the teacher efficacy scale developed by Gibson and Dembo (1984) was inappropriate for this study. Gibson and Dembo did not include any items related to a student's impairments as an external factor affecting student learning. Therefore, it is possible that high-efficacy teachers had low self-perceived efficacy when teaching students with moderate and severe impairments and used instructional strategies that facilitate inclusion of students with moderate and severe impairments less frequently with those students than with nonimpaired students.

Conclusions

The following conclusions were drawn from the study findings.

1. The criterion-related validity coefficient of the Instructional Strategy Usage (ISU) instrument is statistically significant. Therefore, the ISU instrument can be used for evaluating general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

2. The amount of teaching experience of general education teachers was significantly negatively related to these teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Therefore, it cannot be assumed that more experienced general education teachers will use more instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

3. General education teachers' training in the field of special education, as measured by the number of special education courses they have taken and the number of days of inservice training attendance, was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Therefore, it cannot be assumed that general education teachers who have taken more special education classes and participated in more inservice training workshops on the education of students with impairments will use more instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. However, considering that the significance level of the t value of teachers' training in the field of special education was .80, this conclusion should be made with caution.

4. General education teachers' collaboration with special education teachers, including a building principal's support, was significantly positively related to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Therefore, it can be assumed that general education teachers' collaboration with special education teachers, including a building principal's support, is important for improving general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes.

5. Self-perceived efficacy of general education teachers, as measured by the scale developed by Gibson and Dembo (1984), was unrelated to their use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. Therefore, it cannot be assumed that general education teachers with higher self-perceived efficacy will use more instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes than will teachers with lower self-perceived efficacy.

Limitations

There were several limitations to this study.

1. Only 15 general education teachers who were teaching students with moderate and severe impairments in integrated general education classes were observed to obtain evidence of the criterion-related validity of the ISU instrument.

2. Each of the 15 teachers was observed for approximately 2 hours, followed by a 30-minute interview. A 2-hour observation may not be long enough to evaluate a teacher's instruction strategy usage.

3. Given the correlational nature of the design, it was not possible to infer causality from the findings. That is, the findings concerning general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments based on correlational data did not yield information about causal relationships among variables.

4. One must be cautious about generalizing the results of this study because of the nature of the subjects -- a volunteer sample of general education teachers who were teaching students with moderate and severe impairments in Michigan.

5. The researcher did not provide a detailed description of each instructional strategy. Therefore, it is possible that, if teachers did not recognize those

specialized strategies, their self-evaluations would not accurately indicate the use of those strategies.

Recommendations for Future Research

Based on the results of this research, the following recommendations are made for future studies:

1. Further research regarding evidence of construct-related validity and refinement of an instrument for evaluating general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes is needed. Such a validation study should be conducted across different populations and settings.

2. Researchers who investigate instructional strategies that facilitate inclusion of students with impairments in general education classes need to include important predictors in their studies. This study was about "how to teach." However, "what to teach" may influence "how to teach." For example, how closely an Individualized Educational Plan (IEP) for a student with a moderate or severe impairment is to the general education curricular framework may be an important predictor of teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments in general education classes. When a student's IEP bears little resemblance to the general education curricular framework,

classroom teachers are likely to be apprehensive about their ability to meet the student's educational needs (Ford et al., 1992). Therefore, researchers may need to examine the content of instruction for students with moderate and severe impairments in integrated general education classes when they investigate general education teachers' use of instructional strategies that facilitate inclusion of such students.

3. Researchers should investigate possible causal relationships between general education teachers' use of instructional strategies that facilitate inclusion of students with moderate and severe impairments and their collaboration with special education teachers, including a building principal's support, so that intervention programs can be developed to improve general education teachers' use of instructional strategies that facilitate inclusion of such students in general education classes.

4. The quantity, quality, nature, and types of available supports that can realistically be provided to teachers should be examined by future researchers.

5. Researchers should investigate whether self-perceived efficacy of teachers is a situation-specific or a stable trait. In addition, a scale for measuring the self-perceived efficacy of general education teachers who are teaching students with moderate and severe impairments in integrated general education classes needs to be developed.

APPENDICES

Appendix A

GENERAL EDUCATION TEACHER SURVEY

ID # _____

This questionnaire has four parts: (a) Background Information, (b) Instructional Strategy Usage, (c) Teacher Collaboration and Support, and (d) Teacher Efficacy.

In this survey, the FOCUS STUDENT is the student with moderate or severe impairment (e.g., Trainable Mental Impairment, Autistic Impairment, Severe Mental Impairment, or Severe Multiple Impairment) you are teaching. If you teach more than one student with moderate or severe impairment, please select one of them to answer the questions in this survey.

Part A: This section contains a set of statements regarding your educational background and teaching experiences. Check or write your responses.

1. What is your gender? _____ Male _____ Female
2. How many years have you been teaching? _____ years
3. How many years have you been teaching students with impairments in inclusive education classrooms?
_____ years
4. How many courses have you taken in special education?
_____ courses
5. During the last 3 years, how many days have you attended inservice training workshops on the education of students with impairments?
_____ days

Part B: This section contains a set of statements regarding possible instructional strategies. With regard to the classroom into which the focus student is integrated, indicate the EXTENT to which YOU, not an aide, use each instructional strategy.

1. For each of the following types of in-class activities, please indicate the relative frequency of each activity.

Scale:	Almost every lesson	=A
	2-3 times per week	=B
	Once per week	=C
	1-3 times per month	=D
	Less than once per month	=E
	Never	=F

-
- | | | | | | | | |
|----|---|---|---|---|---|---|---|
| a. | Communicating expectations with the focus student | A | B | C | D | E | F |
| b. | Assigning drill/practice to the focus student | A | B | C | D | E | F |
| c. | Correcting the focus student's seatwork | A | B | C | D | E | F |
| d. | Using modified instructional materials for the focus student | A | B | C | D | E | F |
| e. | Providing the focus student problem-solving strategies for completing his or her school work | A | B | C | D | E | F |
| f. | Recording the focus student's performance on school work | A | B | C | D | E | F |
| g. | Making adjustments to instruction (e.g., adjusting difficulty of task) on the pace of the focus student's learning rate | A | B | C | D | E | F |
-

2. Have you structured your classroom activities which facilitate interaction between the focus student and nonimpaired students?

_____ No
 _____ Yes

If yes, please specify the classroom activities you use to facilitate interaction between the focus student and nonimpaired students.

- (a) _____
 (b) _____
 (c) _____
 (d) _____
 (e) _____

3. Do you use behavior management strategies to improve the focus student's behaviors?

_____ No
 _____ Yes

If yes, indicate which of the following you are using to improve the focus student's behavior (Check all that apply).

- _____ Time-out procedure
 _____ Lost privileges
 _____ Extra work
 _____ Overcorrection
 _____ Extinction
 _____ Contracts for individual privileges
 _____ Token economy system
 _____ Class privileges as rewards for work
 _____ Differential reinforcement of appropriate behaviors
 _____ Recognition in class
 _____ Other (Specify: _____)

4. For each of the following types of instructional feedback procedures, please indicate the frequency of the use of each type of feedback for the focus student's successful school work.

Scale: Almost every lesson =A
 2-3 times per week =B
 Once per week =C
 1-3 times per month =D
 Less than once per month =E
 Never =F

a.	Verbal praise	A	B	C	D	E	F
b.	Written feedback	A	B	C	D	E	F
c.	Socially appropriate physical touch (e.g., a pat on the back)	A	B	C	D	E	F
d.	Tangible rewards (e.g., stickers)	A	B	C	D	E	F

5. In a typical lesson, what percentage (0 - 100%) of assigned school work does the focus student accomplish successfully?

_____ %

Scale: 96% - 100% =A
 70% - 95% =B
 40% - 69% =C
 11% - 39% =D
 1% - 10% =E
 0% =F

- | | | | | | | | |
|----|---|---|---|---|---|---|---|
| a. | Whole-group lecture | A | B | C | D | E | F |
| b. | Tutoring from an aide | A | B | C | D | E | F |
| c. | Individual seatwork | A | B | C | D | E | F |
| d. | Whole-group discussion | A | B | C | D | E | F |
| e. | Peer tutoring | A | B | C | D | E | F |
| f. | Group learning with peers | A | B | C | D | E | F |
| g. | Small group instruction
provided by myself | A | B | C | D | E | F |
| h. | One-to-one instruction
provided by myself | A | B | C | D | E | F |
| i. | Other (Specify: _____) | A | B | C | D | E | F |

7. Do you have to report the focus student's progress?

 No
 Yes

If yes, what system(s) do you use to report the focus student's progress?

_____ Grades
_____ Chart
_____ Written report
_____ Oral report
_____ Graphs
_____ Other (Specify: _____)

Part C: This section contains a set of questions regarding support for the inclusive education classrooms. The term SUPPORT in this survey means resource support, moral support, technical support, or evaluation support. For each of the following types of support, please indicate your perception of the EFFECTIVENESS of each type of support received.

Scale:	Very Effective	=VE
	Effective	=E
	Can't Decide	=CD
	Ineffective	=I
	Very Ineffective	=VI
	Not Received	=NR

-
- | | | | | | | | |
|----|--|----|---|----|---|----|----|
| 1. | Support of/from the building principal | VE | E | CD | I | VI | NR |
| 2. | Support of/from the related service personnel (e.g., speech therapist, physical therapist) | VE | E | CD | I | VI | NR |
| 3. | Support of/from the focus student's parents | VE | E | CD | I | VI | NR |
| 4. | Support of/from the aide | VE | E | CD | I | VI | NR |
| 5. | Support of/from other general education teachers | VE | E | CD | I | VI | NR |
| 6. | Ongoing educational planning (e.g., selecting objectives) with special education staff for the focus student | VE | E | CD | I | VI | NR |
| 7. | Working with special education staff to develop instructional materials for the focus student | VE | E | CD | I | VI | NR |
| 8. | Co-teaching or team-teaching with special education staff for the focus student | VE | E | CD | I | VI | NR |

Part C (Continued)

9.	Working with special education staff to evaluate and test the performance of the focus student	VE	E	CD	I	VI	NR
10.	Support of/from special education staff to help implement behavioral management strategies in working with the focus student	VE	E	CD	I	VI	NR
11.	Support of/from special education staff to help accommodate curriculum for the focus student	VE	E	CD	I	VI	NR
12.	Support of/from special education staff to help implement instructional formats/models that address the unique educational needs of the focus student	VE	E	CD	I	VI	NR
13.	Staff development activities designed to facilitate partnerships between general education and special education staff	VE	E	CD	I	VI	NR

Part D: Using the scale provided, please indicate the extent to which you agree or disagree with each statement regarding your perception of teacher efficacy.

Scale:	Strongly Disagree	=SD
	Disagree	=D
	Can't Decide	=CD
	Agree	=A
	Strongly Agree	=SA

-
- | | | | | | | |
|----|--|----|---|----|---|----|
| 1. | If a student masters a new math concept quickly, this might be because I knew the necessary steps in teaching that concept. | SD | D | CD | A | SA |
| 2. | When the grades of my students improve it is usually because I found more effective teaching approaches. | SD | D | CD | A | SA |
| 3. | When I really try, I can get through to most difficult students. | SD | D | CD | A | SA |
| 4. | If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson. | SD | D | CD | A | SA |
| 5. | When a student does better than usual, many times it is because I exerted a little extra effort. | SD | D | CD | A | SA |
| 6. | If a student in my class becomes disruptive and noisy, I feel assured that I know some techniques to redirect him quickly. | SD | D | CD | A | SA |
| 7. | If one of my students could not do a class assignment, I would be able to accurately assess whether the assignment was at the correct level of difficulty. | SD | D | CD | A | SA |

Part D (Continued)

-
- | | | | | | | |
|-----|--|----|---|----|---|----|
| 8. | When a student is having difficulty with an assignment, I am usually able to adjust it to his/her level. | SD | D | CD | A | SA |
| 9. | When a student gets a better grade than he usually gets, it is usually because I found better ways of teaching that student. | SD | D | CD | A | SA |
| 10. | A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement. | SD | D | CD | A | SA |
| 11. | If students are not disciplined at home, they aren't likely to accept any discipline. | SD | D | CD | A | SA |
| 12. | The hours in my class have little influence on students compared to the influence of their home environment. | SD | D | CD | A | SA |
| 13. | The amount that a student can learn is primarily related to family background. | SD | D | CD | A | SA |
| 14. | The influences of a student's home experiences can be overcome by good teaching. | SD | D | CD | A | SA |
| 15. | If parents would do more with their children, I could do more. | SD | D | CD | A | SA |
| 16. | Even a teacher with good teaching abilities may not reach many students. | SD | D | CD | A | SA |
-

Appendix B

CLASSROOM OBSERVATION CHECKLIST (Part A)

ID # _____

Date: _____ Observer: _____

Grade: _____ Time: _____

Direction: On the basis of classroom observation and interviews, indicate the presence of evidence of each possible instructional strategy which the classroom teacher uses for the focus student.

Behavior Management

- _____ Time-out procedure
- _____ Lost privileges
- _____ Extra work
- _____ Behavioral contracts for individual privileges
- _____ Token economy system
- _____ Class privileges as rewards for work
- _____ Differential reinforcement of incompatible behaviors
- _____ Recognition in class
- _____ Other (Specify: _____)

Facilitating Student Interaction

- _____ Seating arrangement
- _____ Helping friend
- _____ Adaptive activities (e.g., game)
- _____ Alternative communication
- _____ Whole class participating in therapy activities for the focus student
- _____ Other (Specify: _____)

Teaching Procedures

- _____ Communicating expectations/objectives
- _____ Correcting the focus student's seatwork
- _____ Using modified instructional materials
- _____ Using visual/audio instructional materials
- _____ Assigning drill/practice to the focus student
- _____ Other (Specify: _____)

Instructional Feedback Procedures

- _____ Verbal praise
- _____ Written feedback
- _____ Physical feedback
- _____ Tangible rewards
- _____ Other (Specify: _____)

Monitoring/Evaluating Procedures

- _____ Recording the focus student's performance
- _____ Evaluating the focus student's progress
- _____ Success rate (_____ %)
- _____ Other (Specify: _____)

Instructional Grouping Procedures

- _____ Whole-group lecture
- _____ Tutoring from an aide
- _____ Individual seatwork
- _____ Whole-group discussion
- _____ Peer tutoring
- _____ Group learning with peers
- _____ Small group instruction provided by the teacher
- _____ One-to-one instruction provided by the teacher
- _____ Other (Specify: _____)

INTERVIEW QUESTIONS (Part B)

1. Does the focus student require a behavior management procedure?

YES NO

1-1. If yes, who develops/uses the procedure?

TEACHER OTHER

1-2. If yes, could you briefly describe the techniques?

2. Are adaptations to your classroom activities required to allow the focus student to be involved?

YES NO

2-1. If yes, who develops/implements the adaptations?

TEACHER OTHER

2-2. If yes, could you briefly describe the adaptations?

3. Is it necessary to modify instructional materials for the focus student?

YES NO

3-1. If yes, who develops/uses the modifications?

TEACHER OTHER

3-2. If yes, could you briefly describe the modifications?

4. Who provides direct instruction to the focus student?

TEACHER OTHER

- 4-1. Who communicates/explains what is expected to the focus student?

TEACHER OTHER

- 4-2. Who corrects the focus student's performance?

TEACHER OTHER

- 4-3. Is feedback given to the focus student?

TEACHER OTHER

- 4-3-a. If yes, could you describe the type of feedback?

- 4-4. What is your standard for evaluating the focus student's performance?

- 4-5. Is the focus student's performance recorded?

TEACHER OTHER.

- 4-5-a. If yes, who records the focus student's performance?

TEACHER OTHER

5. Of all the things you ask the focus student to do in this class, what percentage of these things does the child complete successfully?

_____ %

DEFINITIONS OF TERMS (Part C)

The definitions of terms used in the classroom observation checklist and the interview questions are presented in the following pages (Becker, Engelmann, & Thomas, 1975; Schreibman, 1988; Sulzer-Azaroff & Mayer, 1986).

Classroom Management Procedures

Time-out procedure--A procedure in which access to the sources of various forms of reinforcement is removed for a particular time period contingent on the emission of a response. The opportunity to receive reinforcement is contingently removed for a specified time. Either the behaving individual is contingently removed from the reinforcing environment, or the reinforcing environment is contingently removed for some stipulated duration. The physical place for time-out includes timeout room, timeout booth, timeout area, and quiet place.

Lost privileges/response cost--A reductive procedure in which a specified amount of available reinforcers are contingently withdrawn following the response. Usually these reinforcers are withdrawn from the student's reserve, as with loss of points or yardage or the imposition of fines. However, in a modification of this procedure, bonus response cost, the reinforcers are taken away from a pool of

potential bonus reinforcers that the student will receive if all are not withdrawn (e.g., loss of recess time).

Extra work--A procedure in which extra work is given contingently following the undesirable response.

Behavioral contracts for individual privileges--A procedure which includes the negotiated goals and procedures of a behavior analysis program, mutually agreed on by the student and other involved persons and modifiable by joint agreement (e.g., line leader).

Token economy system--A procedure in which tokens (e.g., check marks, stickers, or poker chips) are given as soon as possible following the emission of a target response. The tokens can be exchanged at a later time for a back-up reinforcer in the form of an item or activity.

Class privileges as rewards for work--A procedure in which positive consequences are delivered to some or all members of a group as a function of the performance of one, several, or all of its members.

Differential reinforcement of incompatible behavior--A procedure which involves selectively reinforcing appropriate/incompatible behaviors to decrease inappropriate behaviors that cannot be emitted simultaneously with those appropriate behaviors.

Recognition in class--A procedure which involves the recognition of appropriate/desirable behaviors in class (e.g., class newsletter).

Seating arrangement--A procedure which involves increasing student interaction by having the focus student sit around nonimpaired students.

Helping friend--A procedure which involves providing structured social interaction experiences between the focus student and nonimpaired students through the arrangements such as "a helper", "a buddy", "a special friend", "a circle of friends", and "a peer tutor."

Adapted activities--A procedure which involves adapting class activities or events (e.g., role play, games, dancing) so that the focus student is involved.

Teaching alternative communication system--A procedure which involves having nonimpaired students learn/use alternative communication systems (e.g., sign language, communication board, yes-no response card) to interact with the focus student.

Whole class participating in therapy activities--A procedure which involves integrating therapy activities (e.g., physical therapy, speech therapy, and occupational therapy) for the focus student into whole class activities.

Teaching Procedures

Communicating expectations/objectives--A procedure in which a classroom teacher communicates expectation or the objectives of lessons or activities with the focus student.

Correcting the focus student's performance--A procedure in which a classroom teacher corrects the focus student's performance to provide immediate feedback on the focus student's progress and problems.

Modified instructional materials--A procedure which involves adjusting the difficulty of task and modifying instructional materials for the focus student.

Using visual/audio instructional materials--A procedure which involves using visual/audio instructional materials (e.g., overheads, enlarged prints, typewriter, tape recorder, and map puzzle) for the focus student.

Assigning drill/practice to the focus student--A procedure in which a classroom teacher assigns drill/practice to the focus student.

Instructional Feedback Procedures

Verbal feedback--A procedure in which a classroom teacher provides the focus student verbal feedback on his/her oral, behavioral, or written responses using oral expressions such as "Very good", "Very nice", and "Much better."

Written feedback--A procedure in which a classroom teacher provides the focus student written feedback on his/her oral, behavioral, or written responses using written expressions such as "Good job", "Wow!", smile face, or star.

Physical feedback--A procedure in which a classroom teacher provides the focus student socially appropriate physical feedback on his/her oral, behavioral, or written responses using physical feedback such as a pat on the back, a pat on the head, or nice hug.

Tangible feedback--A procedure in which a classroom teacher provides the focus student tangible rewards on his/her oral, behavioral, or written responses using stickers or edible foods.

Monitoring/Evaluating Procedures

Recording the focus student's performance--A procedure in which a classroom teacher gathers data to decide the extent to which an instructional program is working for the focus student.

Evaluating the focus student's progress--A procedure in which a classroom teacher uses a specialized evaluating system to evaluate the focus student's performance and progress.

Success rate--A procedure in which a classroom teacher has the focus student experience recurring demonstrations of success by modifying/adjusting the task on the basis of the focus student's performance data.

Instructional Grouping Procedures

Whole-group lecture--A procedure in which a classroom teacher has the focus student participate in the teacher's whole class presentation.

Tutoring from an aide--A procedure in which a classroom teacher has the focus student work with a teacher-aide.

Individual seatwork--A procedure in which a classroom teacher has the focus student work by himself or herself during practice (e.g., reading silently or doing puzzle).

Whole-class discussion--A procedure in which a classroom teacher has the focus student participate in whole class discussion.

Peer tutoring--A procedure in which a classroom teacher has the focus student work with a peer tutor during practice.

Group learning with peers--A procedure in which a classroom teacher has the focus student work with a group of peers around learning activities.

Small group instruction provided by the teacher--A procedure in which a classroom teacher has the focus student work with him/her and 2 or more other students.

One-to-one instruction provided by the teacher--A procedure in which a classroom teacher has the focus student work with him/her for the individualized instruction.

Appendix C

Dear :

I am a special education doctoral student at Michigan State University. I am going to write a doctoral dissertation on the inclusive education programs.

General education teachers who are teaching students with moderate and severe impairments in integrated general education classes will respond to the questionnaire. The Full Time Equivalence (FTE) of those students in general education classes should be greater than 50%. Data will be collected in February and March 1992.

Information will be kept strictly confidential. Identification codes will be used only for follow-up purposes and to match responses to successive data. Results of the survey will appear in summary or statistical form only, so that neither individuals nor schools can be identified.

If your school district is interested in participating in this study, please complete and return the attached form. Your participation in this study will provide valuable information for integration of students with impairments into general education classes.

If you have any questions, you may reach me at 517-485-5599.

Thank you for your time and cooperation. Your prompt response will be greatly appreciated.

Sincerely,

Myong-Ye bang
Doctoral Candidate Michigan State University

ID# _____

The number of students with the following impairments whose Full-Time Equivalency (FTE) in general education classrooms is greater than 50%:

	Elementary	Middle	High
# of Students with TMI			
# of Students with AI			
# of Students with SMI			
# of Students with SXI			

The number of general education teachers who teach students with moderate and severe impairments (TMI, AI, SMI, and SXI) in general education classes:

	Elementary	Middle	High
# of General Education Teachers who teach students with TMI, AI, SMI, and SXI			

Appendix D

Dear :

This letter is regarding my doctoral dissertation on the inclusive education programs. Thank you for your response to my first letter.

I need the following information to send a questionnaire to general education teachers who are teaching students with moderate and severe impairments: (a) type of impairment, FTE, and grade of all TMI, AI, SMI, and SXI students whose FTE in general education classes is greater than 50%, (b) names of all general education teachers who are teaching TMI, AI, SMI, or SXI students, and (c) the names and addresses of schools. Please complete and return the attached form in the envelope provided.

Information will be kept strictly confidential. Identification codes will be used only for follow-up purposes and to match responses to successive data. Results of the study will appear in summary or statistical form only, so that neither individuals nor schools can be identified.

Your participation in the study will provide valuable information for integration of students with moderate and severe impairments into general education classrooms.

If you have any questions, you may reach me at 517-485-5599.

Thank you for your time and cooperation. Your prompt response will be greatly appreciated.

Sincerely,

Myong-Ye Bang
Doctoral Candidate Michigan State University

[illegible]

Appendix E

Dear :

I am a doctoral student in the special education department at Michigan State University. I am currently conducting research on inclusive education programs. This research will be used to complete my doctoral dissertation.

You have been selected to participate in this study. Please complete and return this questionnaire in the self-addressed, stamped envelope. Completing this questionnaire will take approximately 30 minutes of your time.

Information will be kept strictly confidential. Identification codes will be used only for follow-up purposes and to match responses to successive data. Results of the questionnaire will appear in summary or statistical form only, so that neither individuals nor schools can be identified.

Your participation in the study will provide valuable information for integration of students with moderate or severe impairments into general education classrooms.

If you have any questions, you may reach me at 517-485-5599.

Thank you for your time and cooperation. Your PROMPT RESPONSE will be greatly appreciated.

Sincerely,

Myong-Ye Bang
Doctoral Candidate Michigan State University

Appendix F

Dear :

Thank you for responding to my questionnaire on your involvement in inclusive education. Your responses have been very helpful.

A second phase of this study involves observation of inclusive education classrooms. I am asking for permission to include your classroom in this activity. I am primarily interested in observing the activities of an inclusive education classroom.

Information will be kept strictly confidential. Results of the study will appear in summary or statistical form only, so that neither individuals nor schools can be identified.

As the school year is rapidly drawing to a close, it would be helpful to arrange these observations during April or May. I hope that you will be willing to assist me by scheduling an observation time on the enclosed form.

If you have any questions, you may reach me at 517-485-5599.

Thank you for your time and assistance.

Sincerely,

Myong-Ye Bang
 Doctoral Candidate Michigan State University

I.D. Code: _____ Phone Number: _____

Please indicate the best time for me to observe your classroom by checking your 3 preferences. I will let you know when your classroom will be observed as soon as possible.

Date	a.m.	p.m.
April 1, 1992		
April 2, 1992		
April 3, 1992		
April 6, 1992		
April 10, 1992		
April 13, 1992		
April 14, 1992		
April 17, 1992		
April 20, 1992		
April 27, 1992		
April 30, 1992		
May 1, 1992		
May 4, 1992		
May 6, 1992		
May 12, 1992		
May 14, 1992		
May 18, 1992		

Teacher's signature

Date

Appendix G

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

September 11, 1991

Myong-Ye Bang
1570 I Spartan Village
East Lansing, MI 48823

RE: FACTORS RELATED TO INSTRUCTIONAL STRATEGIES EFFECTIVE FOR INTEGRATED
GENERAL EDUCATION CLASSES, IRB #91-391

Dear Myong-Ye Bang:

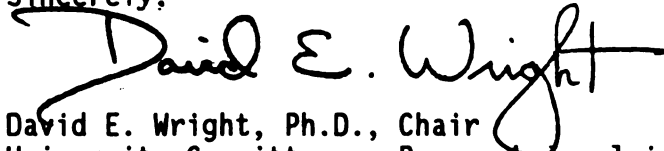
The above project is exempt from full UCRIHS review. The proposed research protocol has been reviewed by another committee member. The rights and welfare of human subjects appear to be protected and you have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to September 10, 1992.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to my attention. If I can be of any future help, please do not hesitate to let me know.

Sincerely,



David E. Wright, Ph.D., Chair
University Committee on Research Involving
Human Subjects (UCRIHS)

DEW/deo

cc: Dr. Don Burke

LIST OF REFERENCES

LIST OF REFERENCES

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