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**Identification of valid, reliable, discriminating criteria for use in  
developing evaluation instruments for special education teachers**

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**Iowa State University, 1992**

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Identification of valid, reliable, discriminating criteria for use in developing evaluation  
instruments for special education teachers

by

Glenn R. Holzman

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## CHAPTER I. INTRODUCTION

Personnel, teachers in particular, are perceived to be fundamental to both the problem and the solution for generating meaningful improvement in student achievement. In the 23rd Annual Gallup Poll of the Public's Attitudes Toward the Public Schools (Elam, Rose, & Gallup, 1991) eighty-five percent of those polled indicated that when choosing a school, they would look first at the quality of the teaching staff. This correlates with the clamor by the public for increased accountability in our public schools during the past ten years. The basic premise is: if students are not learning, then teachers are not teaching, and administrators are not leading (Robinson, 1986). Teacher accountability in special education is particularly vital due to the explicit parent involvement in the design and evaluation of their children's education provided for by statute and the nature of the student served.

There are numerous ways to improve the effectiveness of teachers. One of the most important is by improving the way teachers are evaluated and the way teachers are supervised based upon evaluative data. These changes can result in improvement only if they are based on accurate information regarding differences in the abilities between more effective and less-effective teachers (Medley, 1979). The issue of identifying, measuring, and validating this information is particularly challenging in special education.

Special education instructional personnel must demonstrate a broad scope of abilities and competencies needed to manage diversified capacities and learner behaviors (Zadnik, 1985). Relatively few studies have been conducted with special education which identify these specific characteristics, competencies, or other teaching variables which have a positive affect on student learning (Bender, 1987; Breton & Donaldson, 1991; Brown, 1976; Frudden & Manatt, 1986; Reynolds, 1990; Zadnik, 1985).

Statistical summaries from the annual reports to Congress concerning the implementation of the Individuals with Disabilities Education Act (IDEA) explicitly document the contention regarding the critical role of special education. The most recent annual report revealed that approximately 4.4 million students, 9.9 percent of the total student population, are classified as disabled and served in special education programs (Thirteenth Annual Report to Congress, 1991). These special education programs command a considerable financial allotment, requiring an average of 2.3 times the per student expenditures of regular education. Special education serves nearly one of every ten school children, however over 20 percent of all educational funding is designated for special education programs.

According to the 1991 annual report, there were approximately 556,000 professional personnel whose services were devoted almost entirely to the education of students with disabilities. Of these professionals 300,503 were special education teachers providing direct services to students. This large segment of the American education system has been frequently overlooked in school reform endeavors in spite of the significant proportion of instructional services it grants to the nation's students.

### Statement of the Problem

Personnel evaluation and supervision are critical to ensuring high quality educational programs for students, particularly those that are disabled. Unfortunately, the problems in supervision and personnel evaluation common to regular education are perceived to be exacerbated by the unique characteristics of special education (Brown, 1976; Katims & Henderson, 1990; Reschly, 1990). The problem addressed by this study was to identify a pool of discriminating, reliable, and valid criteria, upon which evaluation

instruments can be established for special education personnel, and that can be utilized by supervisory personnel regardless of their background and training.

The typical building principal has little, if any, training or background in special education (Abernathy & Stiles, 1983; Reschly, 1990; Warger & Aldinger, 1987; Winborne, 1981; Zadnik, 1985). Principals may feel that they do not have the expertise to make judgments about special education teacher performance, while special education teachers may feel that principals are incapable of making valid and reliable judgments about their performance in the classroom (Breton & Donaldson, 1991; Hilton, Faught, & Hagen, 1984; Moya & Gay, 1982). The supervision provided fails to approximate standards and expectations established by special education professionals (Zins, et al 1989). Due to the quality of such supervision and evaluation there is likely to be little influence on teacher performance or critical personnel decisions.

The real and perceived differences between the duties, responsibilities, and skills of special education teachers and their counterparts in the regular classroom bring into question the accepted criteria used to evaluate special education classroom teachers. Most often the instruments and criteria have been developed for, with participation by, the regular classroom teacher with little, if any, input from or consideration made for the specialist teaching in other environments, thus casting further doubt upon the performance evaluation process for special education personnel.

In addition, when performance criteria have been identified little regard has been given for determining the validity, reliability, or discrimination power of the items. Yet evaluation systems are in place that are used to make judgments about special education personnel and are most often identical to those used in regular education (Moya & Gay, 1982). Not operating from any established research base may contribute to supervisors utilizing fundamentally unsound criteria for special education performance evaluation.

### Purposes of the Study

The primary purpose of this study was to identify a pool of discriminating, reliable, and valid items, to be used in developing evaluation instruments for use with special education teachers. A preliminary pool of items was generated as a result of a review of the literature, which can be observed and rated by an assortment of raters with knowledge about the teacher's performance. The study attempted to determine whether a difference existed between the discriminating items for regular education and special education teachers. The investigation also attempted to ascertain whether a difference existed between appraiser's ability to rate a special education teacher based on the rater's job assignment. In particular, it tried to verify the ability of typical building principals to make performance evaluation judgments about special education teachers.

### Objectives of the Study

1. To develop a list of special education teacher performance criteria based on a review of the literature.
2. To validate and delimit the initial list of criteria using an expert jury of practitioners and researchers.
3. To develop a survey instrument to be administered to both regular and special education teachers, teacher's aides, related services personnel, special services consultants, administrators/supervisors, and knowledgeable others to enable them to rate individual special education teachers' performance using the list of teaching criteria described above.
4. To analyze the results of the survey to establish a list of discriminating criteria.
5. To develop conclusions based upon the findings of the study regarding the evaluation of special education teachers.

To realize the objective of this study, a questionnaire was used to collect data from teachers, administrators, teacher aides, related services personnel, consultants, and others regarding the performance of special education teachers. On the questionnaire, subjects used a five-point Likert-type scale to rate the performance of designated special education teachers in selected school districts. Criteria which discriminate at the .05 and .01 level of significance were identified using the Menne and Tolsma (1971) method to determine item discrimination power.

The practicality of using the multiple rater procedure was demonstrated by Menne and Tolsma (1971). Use of multiple raters helps reduce individual bias and increase reliability. Statistically and practically significant results can be obtained, resulting in identification of criteria that target the characteristics of effective performers. In a series of studies by the School Improvement Model Projects at Iowa State University criteria for teachers (Hidlebaugh, 1973), substitute teachers (Green, 1990), counselors (Uhl, 1988), principals (Look, 1983), assistant principals (Edwards, 1989), superintendents (Lueders, 1987), and curriculum coordinators (Ruebling, 1991) have been identified in this manner.

### The Hypotheses

This investigation sought to identify discriminating, reliable, and valid criteria which can be used by schools to create evaluation instruments for special education teachers. Specific null hypotheses tested were:

1. There will be no significant difference in the discriminating power of the items on the special education teacher evaluation questionnaire.
2. There will be no significant difference in special education teacher appraisal ratings based on rater position of principal/supervisor, teacher, teachers aide, related services personnel, or knowledgeable others.

3. There will be no significant difference between criteria which discriminate for regular education teachers and special education teachers.
4. There will be no significant difference between the ratings by regular educators and those of special educators utilizing discriminating performance criteria.

#### Basic Assumptions

1. That special education teacher performance can be described in terms of competencies and behaviors.
2. That valid, reliable, and discriminating criteria for special education teachers will improve their effectiveness.
3. That identified criteria will describe effective teacher behavior that is observable.
4. That special education teacher performance criteria can be described adequately enough to permit raters to make valid judgments.
5. That raters will provide an honest assessment of teacher performance.
6. That criteria that are readily observable and measurable can be evaluated by any administrator regardless of their job assignment.
7. That the study will seek those raters most knowledgeable about the appraisee's teaching performance.
8. That the teachers volunteering to take part in the study will represent the various skill and knowledge levels found in the population.

#### Definition of Terms

1. Appraiser or rater: A person who after receiving proper instructions, can estimate or determine a rating of specific listed behaviors on an instrument designed for the purpose of identifying criteria to use in development of evaluation instruments for special education teachers.

2. Criteria: Descriptors of effective teacher behaviors based on research studies.
3. Discriminating criteria: Those items which elicit both similar responses from members of the group rating a particular teacher, and maximum differences among teachers being rated. Such items will consistently indicate differences among teachers rated (Look, 1982).
4. Evaluation: Making judgments regarding the value of certain events, behaviors, and/or results of behavior based on certain criteria.
5. Knowledgeable rater: A rater who has been determined capable of making a decision on the quality of a given performance, based on observation of the individual rated.
6. Rating: Assigning a performance ranking to specific, identifiable tasks or behaviors exhibited by a special education teacher.
7. Reliable criteria: Criteria that exhibits consistency across multiple raters.
8. Valid criteria: Criteria that is truthful and legitimate for the purpose it is intended.

#### Delimitations of the Study

There are a number of delimitations that need to be dealt with in this investigation. Efforts to insure that this study was rigorous and made a valuable contribution to the scientific knowledge base on effective teaching research, required careful examination of the following delimitations:

1. This study did not attempt to determine special education teacher effectiveness as determined by learner outcomes. The questionnaire contained items found in literature reviews, teacher job descriptions, school policy books, research of effective teaching, current evaluation instruments, and research relative to effective training for special education teachers.



2. Special education teachers currently working with children with mild disabilities comprised the sample. Teachers of students with mild disabilities were chosen because they represent the largest number of special education teachers serving disabled children.
3. Due to the sensitive nature of teacher performance evaluation, it was impractical to utilize a random sample of special education teachers because of the likelihood of a large number of those randomly selected declining to participate. Special education teachers for this study were selected from a wide variety of school districts from across the country. This ensured securing enough practicing special education teachers who meet the necessary minimum requirements of this study. It was hoped that this desperate selection of participating districts would ensure a broad representation of special education teacher abilities.
4. Persons selected as raters for this research will have had exposure to the special education teachers being rated. This study did not attempt to determine if the raters had authority to evaluate, only that they were knowledgeable concerning the special education teacher.
5. The Iowa State University Committee on the Use of Human Subjects in Research insists that researchers make sure that the rights and welfare of the human subjects are adequately protected, that risks are outweighed by the potential benefits and expected value of the knowledge sought, that confidentiality of data is assured, and that informed consent be obtained by appropriate procedures. These procedures were approved by the Committee and closely followed in this study. Consent to participate in the project in the form of modified consent, was assumed by those voluntarily completing and returning the questionnaire.

## CHAPTER II. REVIEW OF THE LITERATURE

### Introduction

The review of the literature for this study focuses on teacher performance appraisal in general and performance evaluation of special education teachers in particular. Teachers control or influence many of the factors which are generally known to affect student behavior and achievement. This review was based on the premise that there exists a body of information concerning the behaviors of teachers that can be utilized for differentiating between more or less effective teachers. This review on teacher effectiveness will identify teacher competencies that can be utilized by educational personnel to assist in the design of criterion and standards for supervising special education instructional personnel. The review of the literature will focus on two primary sources: effective teaching research and research on effective practices for teacher performance evaluation. The review will investigate the similarities and differences between special education and regular education in both areas.

The review includes an historical examination of the evolution of educational services to children with disabilities and provides the context for special education programs in the nation's schools. This historical, legal, and legislative context within which special education operates greatly influences the day-to-day instructional practices of most special education teachers and administrators, therefore, will influence teacher performance evaluation in special education.

### Background

Although special education has evolved to include a multitude of physical and mental disabilities, the history of special education for students with disabilities focuses on the treatment of children with mental retardation. Gearheart and Litton (1975) employed

five periods and associated eras to describe the history of education for persons with mental retardation:

- |                                      |  |
|--------------------------------------|--|
| I. <i>Early History:</i>             | The era of superstition  |
| II. <i>Nineteenth Century:</i>       | The era of institutions  |
| III. <i>Early Twentieth Century:</i> | The era of public school classes                                 |
| IV. <i>The 1950s and 1960s:</i>      | The era of legislation and national support                      |
| V. <i>The 1970s:</i>                 | The era of normalization, child advocacy, and litigation (p. 1). |

In his book on the history of the care and education of the mentally retarded, Kanner (1964) traced initial educational efforts for children with mental retardation back to nineteenth century France where a young boy was discovered foraging for acorns and roots to eat. The boy, who would be named Victor, would also become known as the "Wild Boy of Aveyron". After capture, the boy was turned over to Dr. Jean Marc Gaspard Itard, chief medical officer at the National Institute for the Deaf and Dumb. Itard believed the boy was an idiot (the term used to identify the mentally disabled until the beginning of the twentieth century) because of social and educational neglect and that Victor could be reinstated to normalcy by intensive training. Itard labored with Victor for nearly five years before giving in to the diagnosis of incurable idiocy. Despite his self-proclaimed failure with Victor, Itard was recognized by the French Academy of Science for his positive contribution to educational science. Itard's efforts brought first light to society's responsibility for the education and care of the disabled.

Itard's work with Victor influenced others including a student of his, Edouard O. Seguin who's landmark book *Idiocy and Its Treatment by the Physiological Method*, published in 1866, would influence the treatment and education of children with mental retardation into the next century. Seguin believed that education and training suited to their individual aptitudes would make them effective citizens. He was influenced by the

changing educational practices of the day that suggested active study, observation, and experience by the student as being important to the foundation of academic instruction.

Sequin would go on to lead the first attempts in Europe and the United States at a rational approach to the education of the mentally retarded through the establishment of institutions with corresponding public support. Contrary to the negative perception of institutions today, Sequin's institutions were a marked advancement in the treatment of people with disabilities during this time period.

Special classes for the disabled were first established in Germany in the late 1800s for the purpose of returning these pupils to regular classes (Baumeister & Butterfield, 1970). Davies (1959) reported the cities of New York and Cleveland pioneered classes for "problem children" in the mid-1870s and the school district in Providence, Rhode Island, setup a special school for problem children in 1894. However, it was not until 1896 that the first special class was formed in a United States public school system to meet the specialized needs of the mentally retarded. With the movement toward compulsory education for all children, it quickly become apparent that a significant population of students existed who were unable to make adequate progress in the regular classroom setting. This realization led to the establishment and evolution of classes with modified curricula, teachers with specialized training, and the use of different teaching materials (Gearheart & Litton, 1975).

### Litigation

As late as 1958, a local court (with or without parental permission) could place a child with mild mental retardation in a residential institution when the court felt that lower intelligence rendered the child unlikely to profit from public school classes. This appeared to run in direct opposition to the 1954 landmark *Brown v. Board of Education* case in

which the U.S. Supreme Court ruled that under the Fourteenth Amendment it was unlawful to discriminate against a class of persons for an arbitrary or unjustifiable reason.

In the ruling, Chief Justice Earl Warren wrote:

In these days it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right which must be made available to all on equal terms.

Though the specific ruling applied to black Americans, its application to children who are disabled is unmistakable. Based upon the Brown ruling, two cases in 1971 made their way to the Supreme Court that would direct the course of education for the disabled far into the future. In *PARC, Bowman, et al. v. Commonwealth of Pennsylvania*, (1971) the court found that mentally retarded children are entitled to free public programs of education and training commensurate with the children's abilities. The court went on to stipulate that placements shall be in regular public school classes when possible instead of in self-contained special education classes or schools. A class action suit in the District of Columbia (*Mills v. Board of Education*, 1972) expanded the PARC ruling further by recognizing the right to an education for all disabled children, not just the mentally retarded. This provision for placement in a regular public school class has had a far-reaching effect for teachers, administrators, and for teacher-preparation programs offered by colleges of education.

### Legislation and Education

The equal rights movement for the disabled gained momentum with the passage of broad legislation which made grants available, trained personnel, and expanded existing programs. In 1974, PL 93-380, Education of the Handicapped Amendments, constituted the rights of disabled children as described here by Bonham (1975, p.7):

In recent years the federal and state courts, state legislators and state executives have been increasingly upholding the principle that these children are legally and morally entitled to a free appropriate public education. It is to this end that this Amendment is addressed. For it establishes for the first time in federal policy that handicapped children are entitled to an appropriate free public education.

Public Law 94-142, or the Education for All Handicapped Children Act of 1975, represented the culmination of litigation, legislation, and parent activism that officially recognized the more than 8 million disabled American children that had special education needs that were not being fully met. The right of disabled children to a free, appropriate education was finally guaranteed, along with strong financial backing. The law placed the responsibility for meeting the educational needs of these children in the hands of the state and the local agencies. Adequate resources, advanced teacher training, and improved diagnostic and instructional procedures were seen as the primary strategies needed to provide an appropriate education for each child. It also provided for sweeping protection of disabled children's rights, as well as those of their parents.

Since 1975, continuing court cases and legislative mandates have defined and established the principles, rules, and regulations for implementing the education of disabled children. According to Shore (1986) special education has evolved into a process with the following characteristics:

- comprehensive evaluation of the student's learning and behavioral characteristics;
- intensive instruction precisely matched to the student's education needs;
- use of specialized materials and equipment, if necessary;
- teachers trained in the education of the students who have special needs;
- ongoing monitoring of student's progress as well as the appropriateness of the program and revision, if necessary (p. 10).

In response to P.L. 94-142 the resource room became the most frequently used programmatic response for serving students with mild and moderate disabilities.

According to the Thirteenth Annual Report to Congress 31.3 percent (1,406,246 in 1988-

89) of all students with disabilities received a majority of their education in a regular class, while receiving special education and related services for less than 21 percent of the school day usually through a resource room teacher. In that same year, 37.3 percent (1,675,189) of the disabled students were educated for 21 to 60 percent of the school day in a resource room setting. The objective of resource placement is to remediate the academic, behavioral, and social problems that prevent disabled students from successfully participating in the regular classroom (Brown & Hammill, 1978; Glomb & Morgan, 1991).

#### Regular Education Initiative

During the 1980's there were four broad areas of special education that were undergoing significant changes: classification, placement, programming and funding. None of these areas is independent of the others and changes in one will affect each of the others to some degree. While classification and placement may be the areas undergoing the greatest change, the others are affected too. As early as 1975, Hobbs pointed out that the approaches used to classify and place students in special education programs were a major barrier to efficient and effective programming for children with disabilities. Rather than radically changing, these two areas remained unsettled as they have since the inception of P.L. 94-142 in the same year that Hobbs wrote.

In 1986, Madeline Will, then Under Secretary for the Office of Special Education and Rehabilitative Services in Washington, D.C., came out with a position paper that would bring to the attention of the public the issue of segregated services for students with disabilities in the nation's school systems. Known as the Regular Education Initiative (REI) it put special education reform in the forefront of educational restructuring. Most important it hinted at the federal governments possible willingness to look at new and

innovative approaches to special education that would be more flexible than past practices had allowed. In her paper Will pointed out that special education had developed into a dual system where special education was viewed and treated as a system separate from the regular education programs. Separate administrative arrangements had evolved that cultivated lack of coordination, raised questions about leadership, clouded areas of responsibility, and obscured lines of accountability. No one was taking ownership for the problem or any possible solutions.

Will drew attention to the proliferation of categorical programs that had led to a fragmented approach to serving underachieving students. In 1986, Wang, Reynolds, and Walberg showed that the overlap between special programs and other categorical programs, such as Chapter I, had created a tangle of administrative personnel with the accompanying paperwork even though the students in these programs generally were more alike than different, having low academic performance in common. In addition, Wang and his associates concluded that the common pull-out approach was driven by the fallacy that poor school adjustment and performance are attributable solely to the characteristics of the student rather than the quality of the education program. This led to further fragmentation and interruption of instruction for teachers and students, and loss of control by school district leadership over these specialized programs.

Finally, Will brought up the problem of classification of students with special needs and the stigmatizing affect of labels and the accompanying battleground that had developed among parents, teachers, and administrators over the appropriate placement of special education students. These problems of classification, programming, and administration led to lack of effectiveness of many special education programs. Dropout rates and unemployment among students identified as disabled were considerably higher than non-disabled students. Once identified as disabled, it was often a terminal placement



with little hope of remediating learning problems and returning to the regular program environment.

A study by Jenkins, Pious, and Peterson (1988) of categorical programs found that differences in students across these programs did not support the need for segregated programs. The only reason they could find for separate systems was for organizational convenience. The educational problem posed by the differences in students related more to those differences between high-achievers and low-achievers than among low-achieving students. They concluded, "current educational policy conflicts with principles of effective instruction" (p. 156).

According to Sargent (1988) the usual intervention for a disabling condition was placement in a special education classroom where the instruction was found to be no more effective than in the regular classroom. In some cases he found that such placement even had a disabling affect. He concluded there seemed to be little benefit to being identified as needing services from a special education program. He added, that since the classification procedures had little instructional value, the expense of the system could not be justified. Reschly (1988) wrote that benefits do not exceed the risks (being labeled as disabled) and the costs. In addition, the debilitating effect of the stigma of a label, lack of reliability across states, lack of validity for programming purposes and the inability to find subtle differences between border line cases all call for revision of the current classification system. Too often factors other than the child's needs determined placement options and services, e.g., space and staffing available along with federal, state, and local rules and regulations (not necessarily related to P.L. 94-142).

The latest stage of development for special education programming is characterized by a model termed full inclusion. In this model all students are educated in the same schools and the same classes regardless of their abilities or disabilities. Those advocating

for the reform of special education and the adoption of inclusive approaches are motivated by same concerns that brought about P.L. 94-142. Both groups were concerned by segregated practices that denied students with disabilities equal educational opportunities. The full inclusion model is not without controversy as to its value. Never the less, school districts throughout North America are educating all students regardless of the type or severity of disability in regular education classes.

### Effective Practices

The ostensibly never-ending search for effective teachers emanates from the belief that teachers are one of the fundamental variables to the major outcome of education, namely student learning. A review of the early literature in teacher effectiveness reports that responsibility for ensuring that teachers were effective was vested in committees of layman with the power to visit and inspect schools (Bellon & Bellon, 1982; Lucio & McNeil, 1969). It was common in the 1800's for inspection committees not only to observe the methods of instruction but also to assess teacher effectiveness by giving examinations to determine the status of student learning. There was little concern with remediating poor instruction. The primary remedy for poor instruction was to replace the teacher. Standards of performance were established by the lay committees. It was not until later in the nineteenth century that the powers and duties of the inspection committees were assigned to professional educators. Upgrading the skills of teachers became a recognized function of these positions. This first stage of the evolution of teacher supervision has been called the period of administrative inspection and was predominant until about 1900 (Bellon & Bellon, 1982).

Good and Mulryan (1990) characterize the first part of the twentieth century as a time of increased interest in teacher effectiveness with the development of numerous

approaches to the assessment of instruction, and by the creation of a variety of evaluation instruments. The focus during this period was primarily on identifying teacher traits or characteristics considered exemplary in the view of administrators and supervisors.

Medley (1982) proposes the work of Kratz (1896), Charters and Waples (1929), Hart (1936), Boyce (1915), Barr (1935) and Barr and Emans (1930) as being representative.

In their 1930 study, Barr and Emans collected and examined 209 teacher rating scales being used across the country in cities with populations greater than 25,000. From these scales, 6,939 items were grouped in 200 categories. These categories were synthesized into seven broad classifications that included: (1) classroom management; (2) instructional skill; (3) personal fitness for teaching; (4) scholarship and professional preparation; (5) effort toward improvement; (6) interest in work: and (7) ability to cooperate with others.

Later, Barr and his associates (1961) examined and synthesized the numerous lists of exemplary characteristics of teachers contained in teacher rating instruments during this period and grouped them into fifteen categories: buoyancy, consideration, cooperativeness, dependability, emotional stability, ethical behavior, expressiveness, flexibility, forcefulness, judgment, mental alertness, objectivity, personal magnetism, physical drive, and scholarship.

The problems with rating scales of effective teaching characteristics are numerous (Howsam, 1960; Lucio & McNeil, 1969; Morsh & Wilder, 1954). For the most part the items were not easily defined and any agreement as to their meaning was limited to designers of the rating scales. The items were derived subjectively, frequently tailored to the needs of the administration (Cruickshank, 1990). Thus different raters with somewhat different conceptions of the meaning of an item would produce a different rating, contributing to low reliability of the instrument. After reviewing research on teaching

effectiveness between 1900 and 1952, Morsh and Wilder (1954, p. 4) conclude "no single, specific, observable teacher act has yet been found whose frequency or percent of occurrence is invariable and significantly correlated with student achievement."

The second stage of the research on teacher effectiveness, which began in the 1950's, centered on the methodology of teaching. During this time period researchers attempted to identify instructional techniques that could be correlated to increased learning by students. As in the earlier stage, direct observation of teachers in their classrooms was not part of this inquiry. Good and Mulryan (1990) report that much of this research was poorly considered. This is reflected in a comment by the Committee on Criteria of Teacher Effectiveness of the American Educational Research Association (1953):

The simple fact of the matter is that, after 40 years of research on teacher effectiveness during which a vast number of studies have been carried out, one can point to few outcomes that a superintendent of schools can sagely employ in certifying teachers, or that a teacher education faculty can employ in improving teacher education programs (p. 651).

In stage three of the research, the focus on teacher effectiveness was on a systematic observation of teachers in their classrooms teaching. Rather than looking for teacher behaviors or traits that were assumed to be characteristic of effective teachers, researchers attempted to identify teacher behaviors that were in evidence when students were succeeding in the classroom (Cruickshank, 1986). This phase began during the 1960's through the 1970's with Flander's (1970) work on interaction analyses. Flanders states:

In the past decade, however, research has begun to relate certain teacher behavior to specific consequences in the climate of the classroom and in the academic achievement of pupils. The shift has been from subjective evaluations to more objective counting of teacher-pupil interaction, using more sophisticated observation

systems, and handling the larger quantities of data by taking full advantage of computer capabilities (p. 1423).

These and other circumstances would ultimately lead to research which is commonly referred to as "process-product" studies. This methodology entailed researchers observing the teaching process in the classroom and determining its connection to student learning.

### Process-Product Research

As early as 1963, Carroll's research focused on the match between the time needed for learning and the time that was actually spent learning. He equated student learning to five factors: (1) aptitude, which is the amount of time a student would need to learn a concept; (2) the ability to understand the teacher's instruction; (3) perseverance, which is the amount of time a student is willing to devote to learning; (4) opportunity to learn, which is later referred to in the literature as allocated time; and (5) quality of instruction, e.g., the relationship of the teaching style of the instructor to the students' learning style. This research by Carroll served as an antecedent to subsequent research of student time on task. Consequently, the effectiveness research was formulated with the relationships between the teacher's instructional behavior pattern (process) and the levels of student learning outcomes (product).

Process-product research concentrated on identifying observable variables that pinpointed distinctive teaching behaviors of more effective teachers without consideration of subject level, grade, or student abilities. In their study Rosenshine and Furst (1971) provided a framework for succeeding research. Their review of fifty studies on process-product research gave rise to ten aspects or variables of teaching style or classroom climate that were found to relate to pupil learning. The variables which yielded the most consistent results were (1) clarity of teacher presentation, (2) enthusiasm of the teacher,

(3) variety of activities during the lesson, (4) task oriented and business like behaviors in the classroom, (5) content covered by the class, (6) the teacher's acknowledgment and encouragement of student's ideas during discussion, (7) use of a variety of types of questions, (8) criticism of the student, (9) use of structuring comments at the start of and during a lesson and (10) probing of students' responses by the teacher. The researchers observed further that the first five of these variables had the strongest support at that time.

A comprehensive review of effective teaching research was conducted by Manatt and Stow in 1984. The authors and their research associates at Iowa State University spent five years reading the original research reports, studying general reviews and conducting their own large-scale, process-product experiment. Through the involvement of practicing teachers, administrators, students and parents, the researchers sought performance criteria firmly rooted in empirical research that was representative of what was actually going on in typical classrooms, and had broad utility across all subjects and grade levels. The identified criteria were utilized by practitioners and "stakeholders" in districts across North America to develop teacher evaluation/supervision instruments. Repeated selections by a variety of study teams created a consistent list of performance criteria with face or "common sense" validity that is embedded in the effective teacher research.

In a subsequent study using the criteria developed by Manatt and Stow, Daniels (1989) tried to determine the specific teacher performance criteria that are related to higher student achievement in mathematics and reading for grade four and mathematics for grade eight. The results of the study showed that supervisor ratings on 21 of the 25 teacher performance criteria were related to improved student outcomes on criterion-referenced measures. Utilizing these criteria, and with appropriate training, principals were able to accurately discriminate more effective teachers from less effective teachers. (Manatt & Daniels, 1990). These criteria are grouped in four broad areas: (1) productive

teaching techniques, (2) organized class management, (3) positive interpersonal relationships, and (4) professional responsibilities. Allen (1985) synthesized the literature on effective teaching strategies and also noted four general categories, viz., (1) planning, (2) management, (3) climate, and (4) instruction. Berliner (1984) summarized the literature on effective teaching strategies by using four categories of behaviors, those being (1) pre-instructional factors, (2) during-instruction factors, (3) climate factors, and (4) post-instructional factors.

In his publication, *Research That Informs Teachers and Teacher Educators* (1990), Cruickshank examined ten reviews of research on teacher effectiveness compiled in the Seventies and Eighties including the 1971 study by Rosenshine and Furst. Each of the reviews aggregated and reviewed studies that attempted to identify teacher behaviors that had positive effects on student learning. Based on these ten reviews Cruickshank organized effective teacher behaviors into seven clusters: (1) teacher character traits, (2) what the teacher knows, (3) what the teacher teaches, (4) how the teacher teaches, (5) what the teacher expects, (6) how the teacher reacts to pupils, and (7) how the teacher manages the classroom. In addition, under these seven clusters he broke out 85 specific teacher effectiveness variables that effective teachers seem to demonstrate.

Cruickshank points out two major limitations to the research on teacher effectiveness. First, is the lack of agreement on the outcome variable to determine effectiveness. Second, the population sample has been made up mostly of low SES students at the elementary level, and the teacher populations have most often consisted of volunteers. In some studies the samples of pupils and students have been quite small. Nevertheless, these findings seem to find their way into the literature and eventually influence practice, thus they cannot be ignored.

In the 1990 update of *Effective Schooling Practices: A Research Synthesis* first published in 1984, Northwest Regional Educational Laboratory (NWREL) offers a series of assertions about classroom, school, and district practices that research has shown to foster positive student achievement and affective outcomes. These assertions are supported by more than 800 research studies and summaries. This research base identifies educational practices and characteristics associated with measurable improvements in student achievement and attitudes and excellence in student behavior. NWREL cautions however, against using the findings as a "checklist" for evaluating the performance of individual teachers. Nevertheless, the report does say "the consistency of the findings across a great many studies using a variety of methodologies is strong and indicates that the research base in fact reveals key elements of effective schooling" (p. 2). In its summary of the findings for effective classroom characteristics and practices the report states:

Learning is an individual process that is shaped in the classroom. On a daily basis, teachers and students work together to extend and refine each learner's set of concepts and skills. Thoroughly planned lessons, focused instruction, regular assessment, and positive classroom management increase the probability of success (p.7).

The synthesis identifies the following as characteristics and practices of effective instruction found in the NWREL review of the literature:

1. Instruction is guided by a preplanned curriculum;
2. Instructional groups formed in the classroom fit students' academic and affective needs;
3. Classroom learning time is used efficiently;
4. There are smooth, efficient classroom routines;
5. Standards for classroom behaviors are explicit and are consistently and equitably applied;
6. Students are carefully oriented to lessons;
7. Instruction is clear and focused;
8. Effective questioning techniques are used to build basic and higher-level skills;



9. Students routinely receive feedback and reinforcement regarding their learning progress;
10. Review and reteaching are carried out as necessary to help all students master learning material;
11. There are high expectations for student learning;
12. Incentives and rewards for students are used to promote excellence;
13. Personal interactions between teachers and students are positive;
14. Learning progress is monitored closely;
15. Students at risk of school failure are given extra time and help they need to succeed.

By observing classroom learning situations, researchers were able to identify instructional and learning conditions that have maximal effect on student achievement, interest, and attitudes. These findings provide evidence that helps to identify and formulate behaviors of effective instruction in the current research. Research supports the belief that the teacher makes a difference in student achievement, particularly as an effective classroom manager, instructional organizer and active instructor. (Ysseldyke, 1987). At least, the current research suggests that we now have "answers that are much more useful" for selecting criteria to evaluate teacher performance (Manatt and Stow, 1984).

### Effective Special Education Practices

Significant as these findings are, they may have limited use for special education teachers because most findings must be qualified by grade level, type of objective, type of student, and other contextual factors (Brophy, 1986a, p. 1074; Wise & Darling-Hammond, 1985). The few investigations comparing teaching behaviors in mainstream and special education classes suggest that elementary general and special educators provide similar instructional assignments (Kaufman, Agard, & Semmel, 1985; Ysseldyke, Christenson, Thurlow, & Bakewell, 1989) and allot similar amounts of time to various classroom activities (Ysseldyke, Thurlow, Christenson, & Weiss, 1987). Although, a greater percentage of time is spent in academic instruction in special education classes

(Ysseldyke et al., 1987), and the proportion of academic responding is greater in special education than in regular education settings (Kaufman et al., 1985; Ysseldyke, Thurlow, Christenson, & McVicar, 1988).

To enhance understanding of effective teaching by special education teachers, Nowacek, McKinney, and Hallahan (1990) studied 117 elementary and intermediate/secondary general and special educators who were more and less effective in maintaining class participation of their students. Using 22 variables associated with positive student outcomes from the process-product literature, they found that effective teachers maintained higher levels of participation provided effective transitions, made assignments, and approved students' verbal responses more often than less effective teachers. Effective teachers acknowledged learner-initiated interactions and employed strategies for managing student inattention and disruption less frequently than teachers who were less effective in maintaining active student involvement. Differences in teacher behavior were found between elementary and secondary teachers and general and special educators. Teaching behaviors of special education teachers appear to resemble those of their general elementary peers more than their secondary peers. The investigators hypothesize this might be due to the focus on direct instruction of basic skills in special education at both elementary and secondary levels, while the regular secondary curriculum is less teacher and more student directed.

The use of more teacher directed instructional activities by effective special education teachers appears to be supported by a second study conducted by Sindelar, Espin, Smith, and Harriman (1990). Twenty-four school teachers were designated as more effective or less effective based on students' mean achievement gain scores on a nationally standardized achievement test. Personal variables were gathered through information sheets completed by teachers. Teacher behaviors were observed using a standardized

teacher activity instrument. Effective teachers of mildly retarded and learning disabled students could not be identified on the basis of personal or educational variables, but could be differentiated on teacher behaviors in the classroom. Effective special education teachers conducted activities in the classroom; made frequent use of teacher questioning; limited independent seatwork, especially silent reading, and allowed time for a certain amount of social interaction with students. In addition, Englert (1984) found that more effective special education teacher trainees maintained a brisker lesson pace, had higher student accuracy, and prompted rather than told correct answers following student errors. Results are consistent with previous process-product research investigating teacher effectiveness in the regular classroom (Englert, 1984; Sindelar, et al, 1990).

After an extensive review of the literature Christenson, Ysseldyke, and Thurlow (1989) formulated several conclusions about instructional effectiveness for students with mild disabilities. First, there is not one type of instruction that works best in special education, although there are certain instructional factors, such as corrective feedback, that must be present and appropriate for individual students' needs regardless of setting. Second, that the literature provides an extensive knowledge base from which to describe effective instruction. However, unless these factors are organized so they can be implemented by the instructor, their impact may be limited. Third, student achievement is a result of mutually influencing factors, specifically student, teacher, classroom, instruction, school district, and home characteristics. From their review, Christenson, Ysseldyke, and Thurlow synthesized ten instructional factors essential for students with mild disabilities to achieve success. The degree to which:

- classroom management is effective and efficient;
- there is a sense of "positiveness" in the school environment;
- there is appropriate instructional match;

- teaching goals and teacher expectations for student performance and success are stated clearly and are understood by the student;
- lessons are presented clearly and follow specific instructional procedures;
- instructional support is provided for the individual student;
- sufficient time is allocated to academics and instructional time is use efficiently;
- the student's opportunity to respond is high;
- the teacher actively monitors student progress and understanding;
- student performance is evaluated appropriately and frequently. (p. 22)

In their own series of investigations of the quantity and quality of instructional time for non-disabled and mildly disabled students, Christenson, Ysseldyke, and Thurlow (1989) sought to identify key elements for promoting academic responding and engaged times for students with special learning needs. To do so, they examined the qualitative nature of instruction in mainstream classrooms and special education classes for mildly disabled students. The qualitative nature of instruction in the special education setting was rated significantly higher than instruction in the mainstreamed setting. The items for which the special education instruction was rated higher are listed below:

- there is a good match between the student's instructional needs and instruction delivered;
- instruction is characterized by a high frequency of teacher questions and active student participation;
- the goals of the instruction are clear and specific;
- the student is expected to be an active and involved learner;
- when the student is given practice, the first items of the task are checked by the teacher;
- the student is asked to explain his or her answer or the process being used;
- special motivational techniques are implemented to foster student achievement;
- seatwork is actively monitored by the teacher;
- the student clearly understands why the assigned work is important;
- during lesson presentation, the student's attention is gained and maintained;
- during seatwork, the teacher ensures that the student's attention is maintained;
- the student works hard, spending little time waiting for help, getting organized, or talking about personal matters to other students or the teacher;
- feedback is explicit regarding the accuracy or inaccuracy of the student's responses;
- feedback is characterized by task-specific praise or encouragement;

- student performance data are used to make subsequent instructional decisions;
- the student is informed of progress toward mastery of the instructional objectives (p.27).

As argued previously, such lists should not be viewed as another laundry list of separate factors that promote academic responding for mildly disabled students. The investigators recommend that these factors be organized into a meaningful instructional cycle to maintain student attention to task and promote learning.

There appears to be very little evidence of a need for extraordinarily different forms of instruction for exceptional students (Brophy, 1986c; Frudden & Manatt, 1986; Larrivee, 1986). According to Brophy (1986b) effective instruction involves teacher mastery and orchestration of a large number of teaching skills and careful selection of the teaching strategy to fit a particular situation rather than continued use of a few generic "effective teaching behaviors" in all situations. The importance of teacher flexibility emerges as a major competency in all the instructional factors for special education. It appears important for special education teachers to continuously monitor the learner and the learning environment to determine the most effective instructional interventions (Haight, 1985; Hudson, Morsink, Branscum, & Boone, 1987; Ramsey & Algozzine, 1991). Reynolds (1990) concludes that special education students require, "not a different kind of instruction, ..., but only more time, more intensive forms of teacher involvement, closer monitoring, more deliberate efforts at strategic approaches to learning and generalization" (p. 426).

### Evaluation Instruments

In a 1985 study by Zadnik for the Council of Administrators of Special Education (CASE), forty-six school districts responded to a request for samples of instructional personnel evaluation instruments in use for evaluating special education teachers. Of the forty-six instruments reviewed, thirty-seven contained rating scales while the remaining

nine were open-ended. The first analysis focused on identifying the characteristics of the instruments currently in use. An initial scanning of the instruments revealed that the items were more heavily weighted toward assessing teachers in terms of their multiple roles rather than the aspects of classroom management and instruction.

The thirty-seven rating instruments contained 1085 items. The researcher used their category scheme to analyze the characteristics of the sample instruments. The categories were:

1. Personal characteristics—such as flexibility, enthusiasm, responsibility, patience, etc.;
2. Instructional Role—preparation of lesson plans, student-teacher rapport, evaluating student progress;
3. Administrator/Manager Role—such as classroom management, IEP management, record keeping;
4. Professional Role—professional growth and development;
5. Social Role—interpersonal relations with staff and community;
6. Organization membership role—conformity to organization rules and expectations.

Below is the distribution of the items among these six categories:

• Personal Characteristics	12 percent
• Instructional Role	42 percent
• Administrator/Manager Role	27 percent
• Professional Role	5 percent
• Social Role	8 percent
• Organizational Role	6 percent

The second analysis of the evaluation instruments was conducted to determine the presence of teacher effectiveness competencies and to what extent they are present. The analysis revealed that teacher effectiveness variables appeared on fifty-six percent of the instruments. Where these variables were present in the instruments, over sixty percent were ranked by the researcher as weak or very weak with the remaining thirty-nine percent rated as strong or very strong. Only eight percent of the variables present in the instruments were considered to be "very robust or strong." The variables which were

identified the least as criteria for monitoring teacher performance were "engaged time" and "allocated time." Both variables appear frequently in the effectiveness teacher literature as major variables of student learning.

### Supervisory Processes

Determining valid criteria on which to measure professional teaching performance is but one aspect of the total spectrum of instructional supervisory practices. The process by which an individual is supervised is equally important. The literature on supervisory processes contends that the primary function of supervisors is to assist teachers in achieving their potential through direct observation and conferral with the ultimate goal of improved instruction and increased student achievement. In a 1988 survey by Educational Research Service the vast majority of responding school districts (94.8 percent) cite improving teacher performance as being a major emphasis of their evaluation systems.

In his groundbreaking work on teacher evaluation, Cogan (1973) records his development of supervising methods that actually improve teaching that he termed clinical supervision. He assumes that teacher supervision is an interactive activity that allows teachers to assume as many of the supervisory tasks as possible. The supervisor is a contributor to the process rather than a principal character. It focuses on the principles of integrity and individuality in teachers. The supervisor's role is to encourage, explore, and collaborate rather than coerce and demand.

Cogan proposes a cycle of supervision in eight phases: (1) establishing the teacher-supervisor relationship, (2) planning lessons or units, (3) planning the strategy of observation, (4) observing classroom instruction, (5) analyzing the events of the observed, (6) planning for supervisor-teacher conference, (7) holding the conference, and (8) planning for changes in and future observation of the teacher's instruction.

After an analysis drawn from an extensive literature review, Darling-Hammond (1983) identified a number of factors that should be considered when engaging in teacher evaluation. Methods appropriate for formative (teaching improvement) evaluations may be inappropriate for summative (personnel decisions) evaluations, and visa-versa. Evaluation methods should take into consideration the perceived needs of students, teachers, administrators, and the community. And they must take into consideration collective bargaining agreements and state laws. Having identified these and other important factors, the researcher poses four minimal conditions for the successful operation of a teacher evaluation system: (1) all interested parties must share an "understanding of the criteria and processes" involved; (2) there must be a "shared sense" that those criteria "capture the most important aspects of teaching"; (3) teachers must perceive that the procedure helps them in their teaching, while principals must perceive that it helps them provide instructional leadership; and (4) the teachers and principal must perceive that the "procedures achieves a balance between control and autonomy" for everyone involved.

According to Stiggins and Duke (1988), teachers contend that the factors evaluated often have little relationship to instruction and that results are not useful in improving performance. Duke and Stiggins (1986) identify five keys to successful teacher evaluation that correspond to factors in the evaluation process: the teachers being evaluated, the evaluators, the nature of performance data, the sort of feedback provided and the context of the evaluation.

Besides differing in instructional competence, teachers also differ in their personal expectations for their teaching and in their degree of receptiveness to evaluation—their openness to feedback and orientation to change. Likewise, they vary in the extent of their knowledge about their disciplines and in their past success with students and previous



evaluation. In case studies conducted by Stiggins and Duke, they identified nine teacher characteristics that appeared to be linked to positive professional development (1988):

- Strong professional expectations
- A positive orientation to risk taking
- Openness to change
- Willingness to experiment in class
- Openness to criticism
- Strong knowledge of technical aspects of teaching
- Strong knowledge of subject matter
- Some positive prior experience with teacher evaluation

Johnston (1985) conducted a study of 936 teachers in fifteen elementary schools to investigate the relationship between teacher's attitudes toward evaluation and school climate. Using an organizational climate instrument he and his colleagues found that teachers feel more positive about an evaluation process when school morale is high and the staff gets along well, when the principals behaves in a personal and informal manner, and when the school staff is sincerely committed to teaching and learning. Climate that facilitates the characteristics described by Stiggins and Duke would lend itself to teacher evaluation.

Natriello (1983) reviewed six studies of teachers' perceptions of evaluation procedures. He found that teachers' acceptance of evaluations increases markedly when evaluations are more frequent and when teachers have some influence over the evaluation process. This is true only up to a certain point, however. Both evaluation frequency and degree of teacher's influence must be moderate or the evaluation system will lose credibility in teachers' eyes. In addition, the more teachers perceive evaluations of their performance to be credible, consistent, and just the more effort they will devote to changing their behaviors based upon the evaluations they receive (Natriello & Dornbusch, 1984).

It appears improvement of the individual teacher relies on the development of two important conditions: the knowledge that a course of action is the correct one and a sense of empowerment or efficacy, that is, a perception that they are contributing to student growth and development (Wise et al, 1984; Wise & Darling-Hammond, 1985). Berman and McLaughlin (1977) found that teacher efficacy was among the most significant predictors of change in teachers' classroom practice, proportions of innovation, project goals achieved, and continued use of innovative methods and materials. Duke and Stiggins (1986) indicated that teachers who demand a lot of themselves and are flexible are likely to react favorably to making changes in their teaching behaviors. Noriega (1987) found that "high gain" teachers are likely to have a strong belief that they, rather than other environmental factors, have the main influence over a student's success or failure. Guskey (1987) conducted a study of 130 elementary and secondary teachers and found that teachers who were most receptive to the implementation of new instructional strategies expressed a high level of professional efficacy. They liked teaching and felt confident about their influence on student learning. Teacher efficacy is enhanced by information regarding performance and practice provided through systematic evaluation practices (Smylie, 1990).

Through their case studies Stiggins and Duke (1988) identified attributes of supervisory personnel who were perceived to have facilitated teacher professional development. The primary characteristics of these facilitators of professional growth included:

- Credibility as a source of information regarding performance and practice
- Having a helper relationship with the teacher
- Trustworthiness
- A non threatening interpersonal manner
- Patience
- Flexibility

- Ability to provide useful suggestions
- Capacity to model suggestions
- Familiarity with teacher's classroom and students
- Teaching experience
- Strong knowledge of the technical aspects of teaching
- Persuasiveness of rationale for improvement

These characteristics seem to suggest that teacher development through performance evaluation is dependent on the perceived skills, integrity and caring of those doing the evaluation.

### Special Education Supervision

In a 1986 survey of all Maine teachers conducted by the Maine State Department of Educational and Cultural services, special education teachers had the highest turn-over rate of all categories of teachers (Rydell, Gage, & Colnes, 1986). The primary sources of dissatisfaction reported by Maine special education teachers who left the profession were lack of administrative support and lack of supervision. Little empirically derived information about the supervision of special education teacher exists; and, where it does exist, information has generally been from the prospective of the administrator (Crabill, 1976). Although supervision has proven to be successful in assisting regular classroom teachers' self-perceptions and performance (Berman & McLaughlin, 1977; Glickman, 1985; Guskey, 1987; Johnston, 1985; Lucio & McNeil, 1969) educational research has not established which, if any, supervisory practices and roles are successful in motivating and supporting special education teachers (Moya & Glenda, 1982).

A study of 580 special education teachers in Maine (Breton & Donaldson, 1991) attempted to identify their perceptions regarding the frequency, utility, and style of supervision they receive. The survey showed that many special education teachers in 1986 received infrequent or no supervision. When supervision was provided the building principal and special education directors most frequently provided consultation on non-

teaching issues. Interestingly, this form of supervision was reported to be the most useful by the teachers. Teachers and administrators interact less frequently over instructional matters than over organizational, legal, or procedural matters. Moreover, teachers indicated that informal consultation occurred substantially more frequently than formal observations. Despite the low frequency of contact on teaching and classroom issues, such interaction was viewed as useful. Breton and Donaldson conclude that although this process was perceived to be useful by the special education teacher, "such activities in all probability have little direct benefit in assisting teachers in the instruction of students with handicaps" (p. 123).

Similar findings were found in a recent study by Twedt (1991) regarding factors influencing the perceived quality of evaluation of special education teachers and differences between the quality of supervision for special and regular education teachers. The majority of the 246 special education teachers from Iowa reported their supervision was of relatively high quality. However, the teachers did not feel that the suggestions they got were particularly useful for instructional purposes nor did supervisors provide very persuasive rationale to help teachers change. The special education teachers indicated that the focus of the supervisory feedback was likely to be related to activities outside of the classroom. There was no difference in the level of perceived quality for regular education and special education supervision. Twedt concludes that procedures and criteria for evaluation should be the same for special education teachers as for their peers in the regular classroom.

In a survey of Maine principals, Davis and McCaul (1987) found that seventy percent of the principals responding to their survey were not exposed to special education issues in their administration preparation and suggested that principals might be ill-prepared to supervise and support special education teachers. This lack of special

education background apparently makes little difference to special education teachers' perception of helpfulness between building principals and directors of special education (Breton & Donaldson, 1991; Twedt, 1991).

### Summary

It is widely accepted that what the teacher does behind the closed doors of the classroom has a major influence on the overall goal of our schools, expressly student achievement. This holds true whether a student has been identified as educationally disabled or not. Early attempts by researchers to identify specific teaching behaviors that related to student achievement were viewed as flawed, however the more recent process-product research appears to have provided performance criteria more firmly established in empirical research. By direct observations of classroom learning situations, researchers have been able to identify instructional and learning conditions that maximize student learning. Thorough planning, focused instruction, regular assessment, and a positive learning environment appear to be general characteristics of classrooms where students are learning to the best of their abilities. Within these general characteristics specific teacher practices and procedures have been winnowed out that when observed appear to provide evidence of effective teaching.

While the vast majority of the effective teacher research has been in the regular education arena, a growing body of research is establishing similar findings for special education teachers. Although relatively few in number, those studies that do exist seem to suggest that those characteristics that prove to facilitate learning in the regular classroom do the same for students receiving special education services. The characteristics of effective special education teachers can generally be found in the research on effective regular education instruction. When effective special education teacher behaviors are not

noted in regular education research, it appears that these characteristics are simply missing from the regular education repertoire and could prove to be highly effective with all students. Thus there appears to be very little evidence of a need for extraordinarily different forms of teaching among students whether disabled or not.

Likewise, there does not appear to be significant differences in the processes utilized for teacher performance appraisal of special or regular education teachers. Current practices are very much alike. Taking into consideration the needs of teachers and the characteristics of evaluators, again the two groups, special education and regular education, are much more analogous than they are different. From the view point of the special education teacher, the certification of the evaluator has much less to do with the perceived utility of the evaluation than do personal characteristics that are not dependent upon training or professional background.

There is not one type of instruction that works best in special education, although there are certain instructional factors, such as corrective feedback, that must be present and appropriate for individual students' needs regardless of setting. Thorough planning, focused instruction, regular assessment, and a positive caring learning environment appear to be general characteristics of classrooms where all students may reach their full potential.

### CHAPTER III. METHODS

This study identified a pool of discriminating, reliable, and valid items, to be used in developing evaluation instruments for use with special education teachers. The study attempted to determine whether a difference exists between the discriminating items for regular education and special education teachers. In addition, the investigation endeavored to determine if appraisers' ability to rate a teacher varied according to job assignment. In particular, it tried to establish the ability of typical building principals to discriminate high performing from low performing special education teachers.

A questionnaire was developed and administered to special education teachers, regular education teachers, administrators, supervisors, related services personnel and other knowledgeable persons to test the criteria based on item discrimination power. The development of the questionnaire, the identification of the subjects participating, procedures for data collection, and the statistical analysis used are discussed in this chapter.

#### Questionnaire Construction

Items selected for the questionnaire were developed primarily from two sources. First, a review of evaluation instruments, job descriptions, teachers' skills, performance criteria listings, and literature describing desirable special education teacher behaviors was performed. This process yielded numerous duplications and many similar items. While creating the criteria pool, hundreds of possible performance behaviors were identified. An initial pool of 105 special education criteria was winnowed utilizing an expert jury of researchers and practitioners in the field. A final pool of 26 special education criteria were

identified for use in the questionnaire based upon opinions of the experts, along with the importance and frequency of appearance in the review of literature.

Second, one of the questions that this study addressed was: is there a difference between the criteria for regular education and special education teachers? This necessitated using validated criteria for regular education teachers which have been well established through research. The source for these 23 items was long-term research by the School Improvement Model (SIM) project at Iowa State University, Ames, Iowa (Manatt & Stow, 1984). These criteria have been utilized extensively over a number of years to develop teacher performance evaluation instruments across North America and overseas, primarily for the evaluation of regular education teachers. A total of forty-nine items (26 special education, 23 regular education) made up the final questionnaire. The questionnaire is included in Appendix A.

Regular education teachers, the immediate supervisor of the special education teacher being rated, related services personnel, other knowledgeable staff, and special education teachers completing a self-evaluation, all responded to exactly the same survey. The design and layout of the questionnaire was based upon instruments used in similar studies to identify performance criteria for various educational personnel (Edwards, 1989; Green, 1990; Hidlebaugh, 1973; Look, 1983; Lueders, 1987; Ruebling, 1991; Uhl, 1988).

The instructions for completing the questionnaire asked a minimum of fifteen raters to evaluate the performance of the designated special education teacher on each item utilizing a five-point scale: never or strongly disagree, seldom or disagree, sometimes or neither agree nor disagree, often or agree, and always or strongly agree. Unable to observe, no response, or no mark were entered as a six into the data base by the researcher for scoring purposes (Hidlebaugh, 1973, p. 69). Directions and examples were



supplied on every questionnaire. Raters were asked to fill in the proper circle on the answer sheet.

### Methodology and Procedures

In this study, a multiple appraiser approach using a minimum of fifteen raters per appraisee was utilized. The efficacy of using the multiple rater procedure was first demonstrated by Menne and Tolsma (1971). The use of multiple raters is a practical approach because of the number of ratees involved (a minimum of thirty). If a minimum of fifteen raters per ratee reach the same conclusion concerning an item, chances of being in error are extremely remote. It is, however, essential that the criterion items describe behavior that is observable by the raters (Hidlebaugh, 1973). Information that is based on behaviors that are not readily observable loses usefulness and credibility.

In a series of studies by the School Improvement Model Projects at Iowa State University criteria for teachers, substitute teachers, counselors, principals, assistant principals, and superintendents have been identified in this manner. The multiple rater procedure has been used to identify 94 teacher evaluation criteria that discriminate among high, medium, and low performing teachers (Hidlebaugh, 1973, p.89). A total of 139 (out of 360) items were identified as being appropriate for using in rating a teacher's performance (Hidlebaugh, 1973, p.92). This method was used to find 49 of 50 criteria that discriminate or measured significant differences between substitute teachers (Green 1990, p. 61). Applying the same strategy to counselors resulted in identification of 73 of 74 valid criteria which produced significant discriminating characteristics among the performance levels of a sample of 58 counselors (Uhl, 1988, p.33). Using fifteen raters, 49 of 50 items for principal evaluation significantly discriminated between the performance of principals (Look, 1983, p.72). Utilizing fifteen raters, 50 of 50 items

were identified as appropriate for use in evaluation of assistant principals (Edwards, 1989, p. 47). Additionally, 71 of 87 items designed to discriminate the performance of superintendents were found to be significantly discriminating (Lueders, 1987, p. 136).

Special education teachers come under close scrutiny by a variety of raters who would be capable of providing valid judgments. The availability of fifteen raters who are knowledgeable about the special education teacher's work included both regular and special education teachers, related services personnel, consultants, teacher assistants, building administrators, special education administrators, and knowledgeable others.

### Sample Selection and Collection of Data

The sample of special education teachers was drawn from school districts in Arizona, Arkansas, Iowa, Montana, New York and Nevada. The districts ranged from large urban cities to small rural farming communities. Because of the broad differences in the school districts, various procedures were needed to garner cooperation for the study. Initial contacts were made by telephone with a follow-up letter to the contact person, which most often was the Director of Special Education, explaining in detail the study. This letter included a sample of the questionnaire and a letter that would be utilized to recruit special education teachers to take part in the study. In some cases approval by the director was all that was necessary, while other districts had a sophisticated approval process that included a review by a committee. Of fourteen districts contacted, seven agreed to participate in the study.

Once verification was received that a district would participate, recruitment letters were provided to the district's study coordinator for distribution to special education teachers. These letters explained in detail the study and the process that would need to be followed.

When the district identified the number of special education teachers that would participate, the questionnaire packets were prepared. The seven school districts identified 68 special education teachers willing to take part in the research. A bundle of questionnaires was prepared for each teacher. Each bundle contained 18 envelopes which contained a survey instrument and a computer scored answer sheet. One envelope was marked specifically for the designated special education teacher and contained a form which was used to request the individual's ratings and the means from the whole study for comparison. In order to maintain confidentiality for the designated special education teacher and the raters, no other markings were on the envelope. The district contact person was responsible for distribution, collection, and returning the completed questionnaires to Iowa State University.

The questionnaires were shipped to the participating districts in late April. The first returns arrived at Iowa State in mid-May and the last were received June 10, 1991. Two of the larger sample sites ran into distribution problems when the teachers' union expressed concern about the study in one district, and when an over zealous custodian burned a shipment of 270 questionnaires by accident in the other. The union concerns could not be overcome and a second shipment was made to the other district.

Of the 68 special education teachers who agreed to participate in the study, data were received for 38 and 33 had the minimum 15 raters necessary for inclusion in the statistical treatment to determine discrimination significance. Those returns not having the minimum fifteen raters were discarded.

The Iowa State University Committee on the Use of Human Subjects in Research reviewed this project and concluded that the rights and welfare of the human subjects were adequately protected, that risks were outweighed by the potential benefits and expected

value of the knowledge sought, that confidentiality of data were assured, and that informed consent was obtained by appropriate procedures.

#### Treatment of Data

Employment of the Menne and Tolsma (1971) methodology for determining item discrimination power utilized by Edwards (1989), Green (1990), Hidlebaugh (1973), Judkins, (1987), Look (1983), Lueders (1987), Ruebling (1991), and Uhl (1988) was used in this study to analyze the 49 criteria on the Special Education Teacher Performance Item Discrimination Questionnaire.

The pattern of between-group and within-group variances was used to determine which items discriminated (Menne & Tolsma, 1971). A certain percentage of the total sum of squares must be due to between-group variance in order for an item to discriminate. Hidlebaugh (1973) asserted that:

Since the ratio of between to within-group mean squares, under the usual analysis of variance assumptions, varies as the F statistic and is also influenced by the size sample, it is more pragmatic to use the percentage of total sum of squares due to between-groups as an appropriate discrimination index (pp. 41-42).

A between-group minimum percentage of the total sums of squares sufficient to discriminate at the .05 level of significance is 13 percent. Table 1 displays the sources of data analyzed in determining item discrimination. An 18 rater minimum was used to provide for a cushion of three extra raters since there was no way to control those who might return the questionnaire blank. At least 15 raters were necessary to meet the requirements of the Menne-Tolsma (1971) test. The 13 percent was computed algebraically as follows:

Source	DP	SS	MS	F
Between groups	$2-1 = 1$	$x$	$x/[(100-x)/28]$	$4.20/1$
Within groups	$2(15-1) = 28$	$100-x$		
Total	29	100		

Therefore:

$$x/[(100-x)/28] = 4.20$$

$$x = 4.20[(100-x)/28]$$

$$28x = (4.20)(100-x)$$

$$28x = 420 - 4.20x$$

$$(28 + 4.20)x = 420$$

$$32.2x = 420$$

$$x = 13.04$$

$$100 - x = 86.96$$

This minimum situation assumes the item is to distinguish between two groups with a minimum number of at least 15 raters per group.

Table 1. Analysis of variance for two groups with 15 subjects per group

Source	DP	SS	MS	
Between groups	$2-1 = 1$	13%	13	$13/(87/28) = 4.20^*$
Within groups	$2(15-1) = 28$	87%	87/28	
Total	29	100%		

\*The critical F value with 1 and 28 degrees of freedom at the .05 level is 4.20.

Table 1 is an illustration of the minimum number of subjects (30) needed in order to establish a critical F value of 4.20 at the .05 level of significance. The between-group minimum percentage of the total sums of squares sufficient to discriminate at the .05 level of significance is 13 percent. A between-group minimum percentage of the total sums of squares sufficient to discriminate, at the .01 level of significance, is 22 percent. Both minimum percentages assume the item is to distinguish between two ratees being rated by at least 15 raters each. The Menne and Tolsma (1971) formula reasons that:

If an item is a discriminating one in a situation involving a few small groups, then it will also be capable of discriminating among more numerous and/or larger groups. The reverse, of course is not true (Menne & Tolsma, 1971, p. 6).

A Cronbach Alpha reliability coefficient was computed for all criteria established as discriminating at the .05 level of significance to provide an estimate for internal consistency. This procedure assesses the inter-item consistency or homogeneity of the items and is used for measures which have multiple-scored scales.

An analysis of variance (ANOVA) was used to test the statistical significance of differing group means for each item by rater job assignment. Additionally, an analysis of variance was utilized to test the null hypothesis that there would be no significant difference between criteria which discriminate for regular education teachers and special education teachers.

ANOVA is the method for testing the null hypothesis that there would be no significant difference among the means. "Using one-way ANOVA, the equality of all population means can be tested simultaneously while maintaining the pre-established Type I error rate" (Hinkle, Wiersma & Jurs, 1988, p. 357). The Scheffé multiple range test was calculated for each item that discriminated to determine which group means differed significantly. The Scheffé post hoc test is used in research settings in which a researcher is interested in testing complex hypotheses to determine where the significant differences between groups occur (Hinkle, Wiersma & Jurs, 1988).

A t-test was used to determine the level of statistical significance of the observed difference between the sample means of two groups of raters coded by type of certification, special education or regular education. A t-test is a statistical test that allows you to compare two means to determine the probability that the difference between the means is a real difference rather than a chance difference (Tuckman, 1978, p. 257).

## CHAPTER IV. FINDINGS

### Introduction

This study's major focus was the identification of criteria, based on item discrimination power, that could be used in the development of an evaluation instrument for special education teachers. Data were collected by using a 49-item questionnaire which was developed utilizing both a thorough review of the literature on special education teachers and effective teaching practices pertinent to this study. Item reliability and validity measures were also carefully analyzed for this study.

In April, 1991 questionnaires for this study were sent to 68 special education teachers in seven school districts in Arizona, Arkansas, Iowa, Montana, New York, and Nevada. Requests were made to rate each special education teacher by a minimum of fifteen raters who were knowledgeable about the special education teacher's work. These included both regular and special education teachers, related services personnel, consultants, teacher assistants, building administrators, special education administrators, and knowledgeable others. There was a potential of 1224 total responses. A detailed analysis of each hypothesis appears immediately following the descriptive analysis of all returns.

### Descriptive Analysis of All Returns

By June 10, 1991, the cutoff date for computer analysis, optically scanned answered sheets were returned by 570 raters rating 38 of the 68 special education teachers. This provided a total rater response of 46.4 percent. A large school district in New York that had promised full cooperation of fifteen teachers (22.1 percent of the sample) did not return any questionnaires. Of the 38 special education teachers rated, five did not have the minimum fifteen raters necessary for inclusion in the study. A minimum of fifteen ratings

was obtained on 33 of the subjects, meeting the requirements of the Menne and Tolsma (1971) test for determining item discrimination power. Eighteen computer scored answer sheets were provided for each of the special education teachers to be rated. There was a total of 534 raters for the 33 subjects representing 43.6 percent of the minimum number of possible responses. These were used to calculate the item discrimination analysis. The mean of rater return per special education teacher, including those not meeting the fifteen rater minimum was 15.0. The mean return of those returning at least fifteen completed forms was 16.18 (Table 2).

Table 2. Number of raters who rated each special education teacher<sup>a</sup>

	Number of special education teachers	Number of raters per special education teacher	Total number of raters
	7	18	126
	6	17	102
	6	16	96
	14	15	210
	<u>5</u>	<u>&lt; 15</u>	<u>36</u>
Totals	38 <sup>b</sup>		570
	33 <sup>c</sup>		534
	53 <sup>d</sup>		1224

<sup>a</sup>Mean number of raters per special education teacher: total raters = 15.0; 33 special education teachers with a minimum of 15 raters = 16.18.

<sup>b</sup>Total returns including those with less than 15 raters.

<sup>c</sup>Returns with a minimum of 15 raters per special education.

<sup>d</sup>Potential returns.

The special education teachers were asked to distribute the rating instruments to raters that they deemed appropriate. The vast majority of the raters (67.6 percent) chosen were teaching colleagues (Table 3). Administrators, related services personnel, and



classified staff were equally represented. Knowledgeable others and parents represented the smallest two categories of raters.

Table 3. Position of raters who completed the special education teacher performance item discrimination questionnaire with a minimum of 15 raters present

Rater Position	Number	Percent of total
Teacher	361	67.6
Administrator	42	7.9
Related Services	46	8.6
Classified Staff	44	8.2
Knowledgeable Others	13	2.5
Parents	<u>28</u>	<u>5.2</u>
Totals	534	100.0

Raters were asked to indicate their professional certification in order to determine if differences existed between regular and special education personnel. It appears that this caused some confusion among parents and classified staff. Parents and classified staff made up 13.4 percent of the raters or 72 total. These groups are noncertified and should have indicated that certification did not apply to them. However, only 40 raters indicated that certification was not applicable to their position. This would indicate that some parents and classified staff indicated some sort of certification. Among teachers, administrators, and related services personnel, those certified as regular educators made up 63.7, while special education certified staff included 28.8 percent of those raters (Table 4). While these figures may be slightly skewed due to the previously mentioned problem with parents and classified staff, they would appear to be representative.

Table 4. Professional certification of raters completing the special education teacher performance item discrimination questionnaire where a minimum of 15 raters were present

Certification	Number	Percent of Total
Special Education	154	28.8
Regular Education	340	63.7
Not Applicable	40	7.6
Totals	534	100.0

#### Item Discrimination Questionnaire Analysis

A five-point scale was used to rate the special education teacher performance on the 49-item questionnaire. The directions stated that any item left blank would be treated as a "not observed" in the analysis. Points one through five on the scale were presented on the questionnaire in this fashion:

Rating Scale				
Never or strongly disagree	Seldom or disagree	Sometimes or neither agree or disagree	Often or agree	Always or strongly agree
1	2	3	4	5
(Unable to observe, no response, or not mark is entered = 6 for scoring purposes)				
Please fill in the appropriate circle on the answer sheet				

A frequency count was recorded for each of the responses counting a six for no mark. The "unable to observe or no response" rater response for the 49 items ranged from 1.3 percent to 14.2 percent. Appendix B illustrates the number and percent of raters for each performance criteria who indicated that special education teacher performance was not observable.

#### Research hypothesis 1

Research hypothesis 1 stated that there will no significant difference in the discriminating power of the items on the special education teacher performance criteria

questionnaire. The Menne and Tolsma (1971) methodology for determining item discrimination power for questionnaires using group responses was applied to the 49 items for 33 special education teachers. Each special education teacher used in this part of the statistical analysis had a minimum of fifteen ratings.

Analysis revealed that all of the 49 items discriminated or measured differences between special education teachers. The analysis indicated that each of the 49 items had a sum of squares between-group variance equal to or exceeding 13 percent of the variance for total sums of squares, the criterion established for discriminating at the .05 level of significance. Twenty-two of the items discriminated at the .01 level of significance. Item discrimination values ranged from a low of 16 percent, Item 46, "Assumes responsibilities outside the classroom as they relate to school", to a high of 30 percent, Item 33, "Consults with general education teachers", for each of the 49 criteria. The item discrimination values are displayed for all special education teachers in Appendix C, Table C.1 and in rank order in Table C.2.

The Cronbach Alpha reliability coefficient to determine internal consistency was .9867 for the 49 items with a discriminating value of 13 percent or greater. Ratings for special education teachers must be relatively free of error variance if they are to measure true differences in special education teacher performance. The high Cronbach Alpha reliability coefficient may indicate that all items are measuring the same thing. The high test results provide reasonable assurance that the ratings can be utilized in developing evaluation instruments.

### Research hypothesis 2

Research hypothesis 2 stated there will be no significant difference in special education appraisal ratings based on the rater position of teacher, administrator, related

services personnel, classified staff, knowledgeable other, or parent. An analysis of variance (ANOVA) and a Scheffé multiple comparison were utilized on the 49 items identified as having the power to discriminate. The 534 rater responses were divided into six position categories which included 361 teachers, 42 administrators, 46 related services personnel, 44 classified staff, 13 knowledgeable others, and 28 parents (Table 3).

This treatment of the data revealed no significance differences between the means of rater positions on the 49 questionnaire items (Appendix D). The 49 items in rank order from low to high by ANOVA F ratio for the combined raters positions are reported in Table D.1. Item 33, "Consults with general education teachers," had the lowest F ratio of .05. Item 5, "Paces instruction," had the highest F ratio of 2.22.

The Scheffé multiple range test was applied to each item that discriminated to determine which of the rater group means were significantly different at the .05 level. The multiple range indicated that there were no significant differences between the rater group means.

### Research hypothesis 3

Research hypothesis 3 stated that there will be no significant difference in criteria which discriminate for regular education teachers and special education teachers. Through a review of the literature along with input from a panel of experts, twenty-six performance criteria were identified specific to special education teachers. These criteria were matched with twenty-three criteria that had been validated and well established through long-term research for performance evaluation of regular education teachers. The 49 performance criteria were utilized to construct the questionnaire to test their discrimination power for special education teachers. The Menne and Tolsma (1971) methodology for determining

item discrimination power for questionnaires using group responses was applied to the 49 items for 33 special education teachers.

Analysis revealed that all 26 of the special education criteria and all 23 of the validated regular education criteria discriminated or measured differences between the performance of special education teachers. The analysis indicated that each of the 49 items had a sum of squares between-group variance equal to or exceeding 13 percent of the variance for total sums of squares, the criterion established for discriminating at the .05 level of significance. Twenty-two of the 49 criteria discriminated at the .01 level of significance. Thirteen of the 22 items discriminating at the .01 level were the special education specific items representing fifty percent of the 26 special education criteria identified for this study. Thirty-nine percent (9) of the regular education criteria discriminated at the .01 level of significance. The item discrimination values are displayed for performance criteria in Appendix C, Table C.1 and in rank order in Table C.2.

#### Research hypothesis 4

Research hypothesis 4 stated there will be no significant difference between the ratings by regular educators and those of special educators utilizing discriminating performance criteria. A comparison using the student's t-test was made to determine the significance of the difference between the mean ratings on each of the 49 performance criteria by raters certified special education and those certified regular education. Out of the total 534 raters, 154 raters indicating that they were certified in special education and the 340 raters indicating regular education certification. Forty raters indicating no certification were not included in this portion of the analysis.

Table 5 displays the results of the student's t-test for mean teacher appraisal scores by certification of the rater on each of the 49 criteria. There was not a significant

difference between the mean ratings of the special education raters and the regular education raters on any of the 49 teacher performance criteria.

Table 5. T-test analysis for significance of differences in mean teacher performance ratings on discriminating criteria for two groups of raters

Item	Special Education Raters			Regular Education Raters			t	Two-tail Prob.
	Mean	SD	N	Mean	SD	N		
1	4.64	.639	149	4.53	.706	316	1.65	.100
2	4.46	.778	153	4.44	.748	309	.19	.850
3	4.42	.745	149	4.50	.709	311	-1.24	.217
4	4.47	.712	149	4.45	.744	315	.30	.761
5	4.24	.886	147	4.12	.881	303	1.31	.192
6	4.33	.800	150	4.38	.808	328	-.64	.523
7	4.55	.739	149	4.45	.696	307	1.38	.169
8	4.54	.700	151	4.49	.771	332	.71	.480
9	4.41	.874	151	4.49	.791	321	-.97	.332
10	4.20	.802	147	4.23	.815	310	-.35	.729
11	4.46	.786	148	4.38	.813	306	1.04	.300
12	4.52	.734	154	4.47	.759	326	.68	.495
13	4.51	.796	153	4.44	.776	322	.94	.350
14	4.43	.757	148	4.37	.739	317	.93	.351
15	4.45	.721	149	4.42	.798	323	.33	.739
16	4.62	.709	151	4.56	.773	326	.82	.410
17	4.65	.743	150	4.55	.792	329	1.30	.194
18	4.40	.809	151	4.34	.821	313	.73	.469
19	4.40	.805	149	4.33	.802	314	.89	.371
20	4.34	.789	148	4.38	.799	320	-.50	.615
21	4.52	.842	154	4.46	.872	334	.66	.510
22	4.43	.797	150	4.40	.820	316	.31	.759
23	4.38	.876	152	4.36	.872	326	.26	.791
24	4.44	.872	153	4.41	.803	334	.38	.703
25	4.56	.708	151	4.46	.753	322	1.37	.172
26	4.58	.787	151	4.53	.720	328	.58	.559
27	4.04	1.101	137	3.92	1.058	287	1.08	.281
28	4.47	.793	149	4.38	.804	318	1.16	.245
29	4.40	.787	144	4.38	.812	317	.34	.735
30	4.44	.828	152	4.46	.840	337	-.05	.958
31	4.43	.775	148	4.40	.838	321	.41	.679
32	4.62	.701	151	4.56	.745	332	.77	.439
33	4.21	.960	147	4.28	.953	318	-.72	.469
34	4.66	.643	149	4.57	.763	333	1.27	.206
35	4.54	.754	145	4.53	.756	306	.25	.806
36	4.62	.674	149	4.53	.786	332	1.20	.230

Table 5. Continued

Item	<u>Special Education Raters</u>			<u>Regular Education Raters</u>			t	Two-tail Prob.
	Mean	SD	N	Mean	SD	N		
37	4.38	.875	145	4.39	.822	299	-.14	.888
38	4.52	.722	149	4.45	.749	328	.95	.345
39	4.34	.763	147	4.29	.817	301	.59	.553
40	4.61	.729	152	4.45	.854	329	1.94	.053
41	4.54	.746	145	301	.698	4.44	1.38	.169
42	4.50	.780	147	4.43	.775	323	.91	.366
43	4.59	.709	148	4.44	.891	330	1.95	.052
44	4.67	.662	150	4.54	.713	332	1.81	.070
45	4.54	.787	147	4.50	.780	309	.54	.587
46	4.40	.785	145	4.34	.842	320	.68	.496
47	4.73	.590	148	4.65	.619	324	1.35	.179
48	4.67	.650	150	4.55	.692	321	1.77	.078
49	4.48	.752	141	4.41	.792	292	.80	.422



## CHAPTER V. SUMMARY, CONCLUSIONS, LIMITATIONS, DISCUSSION, AND RECOMMENDATIONS

### Summary

This study identified a pool of items for use in evaluation instruments for special education teachers. There were 534 teachers, administrators, related service personnel, classified staff, parents, and knowledgeable others who rated 33 special education teachers from seven school districts in Arizona, Arkansas, Iowa, Montana, and Nevada. Data were collected through utilization of a 49-item questionnaire with a minimum of 15 raters for each special education teacher, using a five-point rating scale to complete each item.

The Menne and Tolsma (1971) methodology was applied to the participant's responses to determine item discrimination power. A sum of squares between-groups difference equal to or exceeding 13 percent of the variance for total sums of squares was the criterion established at the .05 level of significance. The Cronbach Alpha reliability coefficient was calculated on items with discriminating values of 13 percent or greater to determine the internal consistency of the special education teacher ratings.

A related purpose of this study was to examine differences between effective instructional behaviors of special education and regular education teachers. Using criteria identified specifically for each teaching area, a comparison was made regarding the items' adequacy for discriminating effective and less effective special education teachers. Finally, the ability of raters to utilize the performance criteria to evaluate special education teachers was examined based on rater position and certification. In essence, the study was designed to determine components of a valid and reliable evaluation system for special education teachers.

### Analysis of Data

1. Forty-nine of the 49 items on the questionnaire discriminated or measured significant differences between 33 special education teachers involved in the final data analysis.
2. Item by item, rater observability of special education teacher performance was variable. The "unable to observe" or blank rater response ranged from 1.3 to 14.2 percent of the total ratings for each of the 49 items.
3. "Consults with general education teachers, recommending specific strategies and/or materials to use with handicapped students in regular classrooms," was the item which received the highest discrimination value for all special education teachers.
4. "Maintains the integrity of confidential information relating to students and their families," was the item which received the lowest discrimination value for special education teachers.
5. Performance criteria found to be discriminating for regular education teachers were also able to discriminate for special education teachers.
6. Ratings by raters with little or no special education background were not significantly different from raters with certification in special education.

### Conclusions

The following conclusions are offered concerning the analysis of the data and compilation of information collected in the review of the literature.

1. The Menne and Tolsma (1971) methodology for determining the discrimination power of items on instruments using group rater responses can be used to identify discriminating items for the purpose of developing a pool of special education evaluation items based on groups of 15 raters.
2. A pool of 49 items was identified with each item having the quality to measure differences among special education teachers based on groups of 15 or more raters.

3. A Cronbach Alpha reliability coefficient for the pool of 49 items was calculated to be .9867. Cronbach Alpha coefficient interpretations take in a number of considerations including: (1) length of instrument, the longer the instrument the greater the reliability or more representative it should be of the true scores of the persons who take it; (2) ability of individuals, the ability of the individuals using the instrument to read and interpret the items; (3) minimum acceptable reliability, must be as good or better than the reliability of competing measures. Cronbach Alpha coefficients for pools of items on similar studies utilizing the same methodologies are meaningful for comparison: Edwards (1989) reported a coefficient of .992; Look (1983) a coefficient of .982; Lueders (1987) a coefficient of .992; Uhl (1988) a coefficient of .996; and Green (1990) a coefficient of .974. These high reliability coefficients strongly suggest the items contained in the pools were consistently measuring what they intended to measure. The same is true for the component of special education teacher performance in this study.
4. Effective teacher behaviors in the regular classroom appear to be effective behaviors for the special education teacher.
5. Effective behaviors of special education teachers appear to be readily observable by a variety of observers with various backgrounds and training.
6. Regular educators, particularly principals and supervisors, are capable of making valid observations of special education teacher performance.
7. Discrimination power of the items used in this study was variable.

### Limitations

A number of limitations were imposed by the design of this study. They were:

1. Participation in this study was voluntary on the part of special education teachers. This decision may have influenced the selection of special education teachers who were asked to participate.
2. Raters were selected by the special education teachers being rated. Participation of all raters was on a voluntary basis. The composition of the groups varied considerably, but was composed primarily of teachers. This may have influenced the results.
3. Raters were not selected based on their authority to evaluate, therefore may not have had the training or experience in rating teacher performance. This could have influenced the outcomes of this study.
4. The performance level of the special education teachers was not assessed independent of the questionnaire results. The study focused on the performance items, not the special education teacher as the unit of investigation. No attempt was made to deal with special education teacher effectiveness as measured by outcomes.
5. The investigation focused on special education teachers currently working with children with mild disabilities. Results may not be generalizable to other special education teachers and environments.
6. Special education teachers participating in the study were promised confidential reports on their means and the group means of the 15 or more raters who filled out the same questionnaire on their behalf. This knowledge could have affected their selection of raters and their own self ratings.
7. Each school district participating in this investigation did so on a voluntary basis. By agreeing to take part could be an indication that the district emphasized performance evaluation for special education teachers more than a district selected randomly.

8. The low rate of returns necessitated considerable effort on the part of district administrators to get the forms completed and returned. This could have had a negative affect on the ratings by individuals who may have reacted negatively to such pressure.
9. Some of the data were eliminated from the Menne and Tolsma (1971) treatment and the treatment of Hypothesis 1 because the sample size was lower than the minimum number of 15 raters per special education teacher necessary for correct results. Inclusion of these data, if it would have been appropriate, could have changed the results.
10. The Menne and Tolsma (1971) methodology only provides a means to determine how well an item measures differences in special education teacher behaviors.
11. The 49 items were found to be discriminating in Appendix C on data analyzing special education teachers rated by 15 or more raters. The same items may not be discriminating among special education teachers rated by fewer than 15 raters.
12. Small (N) cell size on some items may have affected the significance of differences between means of some groups. Larger (N) sizes may have changed some of the outcomes.

### Discussion

In spite of efforts to shift the teacher evaluation paradigm from one of "snoopervision" to instructional improvement, that is, "making good teachers better" through collegial cooperation, suspicion and anxiety still predominate. Such an environment makes collecting evaluative data on special education teachers an extremely challenging undertaking. In addition, time is a highly coveted resource among most teachers, thus any intrusion into their time is often resented, escalating the difficulty of research projects that even require minimal time. Much time and energy was spent

cajoling administrators and teachers into completing the questionnaire with the minimum 15 raters.

The process to identify discriminating, reliable, and valid criteria which can be utilized by schools to create evaluation instruments for special education teachers was successful with all 49 items discriminating at least at the .05 level of significance. These results support the findings of the Menne and Tolsma (1971) methodology employed by Edwards (1989), Hidlebaugh (1973), Judkins (1987), Look (1983), Lueders (1987), Uhl (1988), Green (1990), and Ruebling (1991). This study also reaffirms the long-term research by the School Improvement Model (SIM) project at Iowa State University that was a source of 23 of the validated criteria. Not only do these criteria discriminate for regular education teachers, they work equally well for special education teachers. This supports the contention that good teaching is good teaching (Fruden & Manatt, 1986) and dispels the concerns that special education is so different from regular education that the evaluation process needs to be significantly different (Brown, 1976; Katims & Henderson, 1990; Moya & Gay, 1982; Reschly, 1990).

The lack of expertise by evaluators, particularly typical building principals, brought into question their ability to make judgments about special education teacher performance and the credibility of those judgments for the special education teachers being rated. Twenty-six items were identified from the literature on effective special education practices that approximate standards and expectations established by special education professionals. These were all shown to discriminate between effective and less effective special education teachers. In a comparison between raters, raters certified only regular education were able to utilize the special education specific items as well as those raters certified special education. This strongly suggests that typical principals and supervisors are capable of making legitimate judgments about special education teacher performance

and that these judgments can be made with confidence and accepted with assurance that they are creditable. This supports Twedt's (1991) finding that there is little need for special training to prepare evaluators to evaluate special education teachers.

The findings of this investigation speak to a much deeper issue of educational services provided to children with disabilities. Regular educators have been inclined to shroud students with disabilities with mystery admitting to little working knowledge as to their needs and what entails appropriate education for them. They have deferred decisions to the expertise of the special education "experts". In many cases this perceived lack of expertise has provided an escape mechanism from responsibility and accountability for the regular educators to provide quality and equitable educational opportunities for disabled children.

The outcomes of this investigation suggest that most regular educators already know and are capable of recognizing quality instruction for students with disabilities. It would appear that many of the arguments for not accommodating disabled students by regular educators are based more on lack of will than lack of ability. Additionally, regular education teachers possess many of the skills necessary for accommodating the special needs of disabled students in their classrooms. These findings should help eliminate barriers to least restrictive programming for disabled students and provide encouragement to the growing number of regular educators currently trying to accommodate the needs of their special students in their buildings and classrooms.

Very little evidence has emerged that shows a need for extraordinarily different forms of instruction for exceptional students (Brophy, 1986c; Frudden & Manatt, 1986; Larrivee, 1986). According to Brophy (1986b) effective instruction involves teacher mastery and orchestration of a large repertoire of teaching skills and careful selection of the teaching strategy to fit a particular situation rather than continued use of a few generic

"effective teaching behaviors" in all situations. The importance of teacher flexibility comes forth as a major competency in all the instructional factors for special education. It seems important for special education teachers to continuously monitor the learner and the learning environment to determine the most effective instructional interventions (Haight, 1985; Hudson, Morsink, Branscum, & Boone, 1987; Ramsey & Algozzine, 1991). Reynolds (1990) concludes that special education students require, "not a different kind of instruction, ..., but only more time, more intensive forms of teacher involvement, closer monitoring, more deliberate efforts at strategic approaches to learning and generalization" (p. 426).

#### Recommendations for Practice

1. Appendix C lists 49 discriminating criteria recommended for inclusion in an evaluation instrument for special education teachers.
2. Discrimination value and item observability should be carefully considered in selecting special education teacher evaluation criteria. Selection from the forty-nine items is recommended but all items on the original questionnaire should be reviewed for compatibility with the districts' philosophy. Prior to item selection for use in special teacher evaluation instruments, districts should carefully consider the policies, procedures, and philosophies of the district.
3. Evaluation procedures need not be significantly different for special education teachers. It can be reasonably expected that most competent administrators can make discriminating judgments about the performance of special education teachers without special training.



4. Competent administrators and teachers with little or no special education background possess the skills to provide legitimate input and support to programming for disabled students. This can be a reasonable job performance target for them.
5. Staff development programming need not be segregated. Special education and regular education staff should benefit from similar programs.
6. Hiring practices for special education and regular education teachers can be similar except, of course, for certification requirements. A district should be looking for the similar characteristics and skills with each group.
7. Special education teachers should be observed and evaluated on a regular basis similar to other staff.

#### Recommendations for Further Research

1. A similar study should be conducted with the randomized selection of school districts, special education teachers, and raters. This could perhaps be facilitated through special education teachers' professional organizations such as the Council for Exceptional Children.
2. Due to the unique relationship of parents in special education programming, further study should be done with a larger sample to determine the ability of parents to provide feedback to teachers and in what areas.
3. Students in the regular education programs have proven to be a valuable source of feedback to teachers. Investigation into the disabled students abilities to provide similar feedback could provide a valuable resource for teacher improvement.
4. This study did not specify that the raters needed to directly observe the special education teacher being rated. A study requiring at least minimal observation of instruction may strengthen a similar study.

5. The results of a similar study could attempt to correlate teacher performance as measured by the 49 criteria with learner outcomes as measured by student performance.

Even though the children in special education have special needs and, in deed, it may take a special person to work within the context of special education programming, the notion that disabled children are so different and the teaching skills needed so unique, that accountability for teacher performance is significantly different from the rest of the profession, does not appear to be valid. We should not shroud special education with such awe or mystery that our expectations for teacher performance and student achievement are something less than we would expect for all teachers and all children.

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*I can do everything through Him who gives me strength. Philippians 4:13*

**APPENDIX A.**  
**SPECIAL EDUCATION TEACHER PERFORMANCE ITEM DISCRIMINATION**  
**QUESTIONNAIRE**

**Special Education Teacher Performance  
Item Discrimination Questionnaire**

Professor Dick Manatt heads a research team at Iowa State University that has spent the better part of the last twenty years researching various aspects of the performance evaluation of educators. One of the most profitable areas of research has been the identification of performance evaluation items (criteria) to be used in the development of evaluation instruments for teachers, principals, superintendents, and counselors. Currently other researchers are working on instruments for other educational professionals. The focus of this research effort is to develop reliable and discriminating items for use in developing evaluation instruments for special education teachers.

We have been fortunate to receive excellent cooperation from schools involved in this research. You, too, can play a prominent role in the development of an improved instrument for the evaluation of special education teachers through the completion of this questionnaire. Rest assured that your responses will be carefully analyzed and scrupulously protected. All responses will be treated confidentially and every effort will be made to protect the disclosure of individual ratings. This 49 item survey will take approximately 15 minutes of your time to complete. Those items that are identified as having the ability to discriminate among special education teachers will be used by countless professionals to improve performance of special education teachers. Potentially many items might be identified; however, this questionnaire is not intended to assess the relative value of each item. The main purpose of the study is to identify a pool of criteria and not to rate the performance of a teacher.

Each rater's responses will be aggregated with those of the other 15 raters ensuring the confidentiality of all raters. Each special education teacher who participates in this project will receive upon request, a confidential report of the means of his/her ratings and the means for the total group of special education teachers rated. Only the special education teacher will receive this information.

If you choose not to participate, please place the unmarked answer sheet in the envelope provided, seal it, and return it to the designated building person.

**Thank you very much for your help in this research effort.**

**Please read all the instructions carefully before beginning the questionnaire.**

**Instructions:**

1. The designated special education teacher will complete this questionnaire as a self-rating.

- 4. Please do not enter your name on the answer sheet.**

EXAMPLES		IMPORTANT DIRECTIONS FOR MARKING ANSWERS
1	<p>WRONG</p>	<ul style="list-style-type: none"> <li>• Use black lead pencil only (No. 2 or softer)</li> <li>• Do NOT use ink or ballpoint pens</li> <li>• Make heavy black marks that fill the circle completely</li> <li>• Erase cleanly any answer you wish to change</li> <li>• Make no stray marks on the answer sheet</li> </ul>
2	<p>WRONG</p>	
3	<p>WRONG</p>	
4	<p>RIGHT</p>	

- left hand corner You do not need to fill in the circles under the letters.

[illegible]

6. Please complete the box titled, "SEX."
7. You do not have to complete the grade, education (EDUC), birth date, identification number or special codes sections on the answer sheet.
8. Please read and respond to each questionnaire item individually, without discussion with anyone else.
9. When you complete the questionnaire, place only the answer sheet in the envelope provided, seal it, and return it to the designated school person who will collect all the envelopes and return them for processing to Professor Dick Manatt at Iowa State University. It is not necessary to return the questionnaire.
10. In order to ensure the rights of the designated special education teacher, please do not discuss or disclose your ratings with anyone. Your ratings will be aggregated with those of the other raters protecting your rights as well.



11. PLEASE DO NOT FOLD THE ANSWER SHEET. This makes it impossible to machine score the sheet.
12. Using the rating scale below, please pencil in the corresponding number on your answer sheet which best describes your judgement of special education teachers' performance on the item. Mark only one response per item. Use a No. 2 pencil.

Rating Scale

Never or strongly disagree	Seldom or disagree	Sometimes or neither agree or disagree	Often or agree	Always or strongly agree
1	2	3	4	5

(Unable to observe , no response, or no mark is entered=6 for scoring purposes)

Please fill in the appropriate circle on the answer sheet.

**Example:**

1. Creates a positive classroom learning environment. 1 2 3 4 5

If the item above was the first item on the questionnaire, you would read the item, then fill in the appropriate circle on the answer sheet. For example, if you selected "Often or agree" (4), as your answer, number one on your answer sheet would look like this:

	A	B	C	D	E
1	①	②	③	●	⑤
	A	B	C	D	E
2	①	②	③	④	⑤
	A	B	C	D	E
3	①	②	③	④	⑤
	A	B	C	D	E
4	①	②	③	④	⑤

**QUESTIONNAIRE**

**REMINDER: PLACE RESPONSES ON THE ENCLOSED  
COMPUTER SCORED ANSWER SHEET.**

1. Presents the lesson or instructional activity using concepts and language understandable to the students. 1 2 3 4 5
2. Demonstrates effective planning skills. 1 2 3 4 5

## Rating Scale

Never or strongly disagree	Seldom or disagree	Sometimes or neither agree or disagree	Often or agree	Always or strongly agree
1	2	3	4	5

(Unable to observe, no response, or not mark is entered = 6 for scoring purposes)

Please fill in the appropriate circle on the answer sheet

- |     |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|
| 3.  | Provides relevant examples and demonstrations to illustrate concepts and skills.  | 1 | 2 | 3 | 4 | 5 |
| 4.  | Communicates specific and realistic instructional objectives.   | 1 | 2 | 3 | 4 | 5 |
| 5.  | Conducts instructional activity at a brisk pace, slowing presentations when necessary for student understanding.  | 1 | 2 | 3 | 4 | 5 |
| 6.  | Motivates students.   | 1 | 2 | 3 | 4 | 5 |
| 7.  | Provides feedback after an incorrect response or no response by probing, repeating the question, giving a clue, or allowing more time.                    | 1 | 2 | 3 | 4 | 5 |
| 8.  | Communicates effectively with students.   | 1 | 2 | 3 | 4 | 5 |
| 9.  | Uses diagnostic information obtained from tests and other assessment procedures to develop objectives.  | 1 | 2 | 3 | 4 | 5 |
| 10. | Provides students with specific evaluative feedback.  | 1 | 2 | 3 | 4 | 5 |
| 11. | Utilizes an instructional plan that matches/aligns objectives, learning strategies, assessments and student needs at the appropriate level of difficulty. | 1 | 2 | 3 | 4 | 5 |
| 12. | Displays a thorough knowledge of curriculum and subject matter.   | 1 | 2 | 3 | 4 | 5 |
| 13. | Displays a working knowledge of the characteristics, curriculum, and instructional techniques for student's exceptionality.                               | 1 | 2 | 3 | 4 | 5 |
| 14. | Selects learning content congruent with the prescribed curriculum.  | 1 | 2 | 3 | 4 | 5 |
| 15. | Utilizes behavior management and reinforcement techniques that are constructive and nonpunitive.  | 1 | 2 | 3 | 4 | 5 |
| 16. | Provides opportunities for all students to experience success.  | 1 | 2 | 3 | 4 | 5 |
| 17. | Provides an atmosphere of trust, understanding and encouragement in which the students feel wanted and are successful.                                    | 1 | 2 | 3 | 4 | 5 |
| 18. | Demonstrates efficient use of instructional time.   | 1 | 2 | 3 | 4 | 5 |

## Rating Scale

Never or strongly disagree	Seldom or disagree	Sometimes or neither agree or disagree	Often or agree	Always or strongly agree
1	2	3	4	5

(Unable to observe, no response, or not mark is entered = 6 for scoring purposes)

Please fill in the appropriate circle on the answer sheet

- |     |   |   |   |   |   |   |
|-----|---|---|---|---|---|---|
| 19. | Offers students the option of and encourages the use of adapted materials and/or assistive devices when needed.   | 1 | 2 | 3 | 4 | 5 |
| 20. | Sets high expectations for student achievement.   | 1 | 2 | 3 | 4 | 5 |
| 21. | Communicates and works cooperatively with administrators and general education staff in implementing mainstreaming requirements of the student's individual education plan. | 1 | 2 | 3 | 4 | 5 |
| 22. | Plans for and makes effective use of time, materials, and resources.  | 1 | 2 | 3 | 4 | 5 |
| 23. | Collaborates with other special service providers to facilitate an integrated instructional program.  | 1 | 2 | 3 | 4 | 5 |
| 24. | Displays evidence of personal organization.   | 1 | 2 | 3 | 4 | 5 |
| 25. | Utilizes materials and equipment which are age-appropriate and relevant to student needs.   | 1 | 2 | 3 | 4 | 5 |
| 26. | Establishes high standards for student behavior.  | 1 | 2 | 3 | 4 | 5 |
| 27. | Supervises teacher assistants, foster grandparents, and/or volunteers to focus their activities on contributing to the instructional program.                               | 1 | 2 | 3 | 4 | 5 |
| 28. | Organizes students for effective instruction.   | 1 | 2 | 3 | 4 | 5 |
| 29. | Demonstrates the ability to modify the instructional program through format and informal evaluation, observation, and data from parents and other service providers.        | 1 | 2 | 3 | 4 | 5 |
| 30. | Demonstrates effective interpersonal relationships with others.   | 1 | 2 | 3 | 4 | 5 |
| 31. | Establishes a collaborative relationship with parents to ensure ongoing communication and total program consistency.  | 1 | 2 | 3 | 4 | 5 |
| 32. | Demonstrates awareness of the needs of students.  | 1 | 2 | 3 | 4 | 5 |
| 33. | Consults with general education teachers, recommending specific strategies and/or materials to use with handicapped students in regular classrooms.                         | 1 | 2 | 3 | 4 | 5 |

**Rating Scale**

Never or strongly disagree	Seldom or disagree	Sometimes or neither agree or disagree	Often or agree	Always or strongly agree
1	2	3	4	5

(Unable to observe, no response, or not mark is entered = 6 for scoring purposes)

Please fill in the appropriate circle on the answer sheet

- |     |  |   |   |   |   |   |
|-----|--|---|---|---|---|---|
| 34. | Demonstrates respect for the dignity and integrity of students.  | 1 | 2 | 3 | 4 | 5 |
| 35. | Utilizes all pre-referral, referral, and assessment data to assist in formulating IEP goals and objectives.  | 1 | 2 | 3 | 4 | 5 |
| 36. | Demonstrates sensitivity in relating to students.  | 1 | 2 | 3 | 4 | 5 |
| 37. | Utilizes record and management systems which monitor progress made toward achieving specific objectives of the student's IEP.                              | 1 | 2 | 3 | 4 | 5 |
| 38. | Promotes self-discipline and responsibility.   | 1 | 2 | 3 | 4 | 5 |
| 39. | Analyzes student errors and provides immediate reteaching.   | 1 | 2 | 3 | 4 | 5 |
| 40. | Demonstrates employee responsibilities.  | 1 | 2 | 3 | 4 | 5 |
| 41. | Provides sufficient time for students to practice and master newly acquired skills.  | 1 | 2 | 3 | 4 | 5 |
| 42. | Demonstrates a willingness to keep curriculum and instructional practices current.   | 1 | 2 | 3 | 4 | 5 |
| 43. | Is punctual in meeting deadlines, attending meetings, following schedules, and reporting to work.  | 1 | 2 | 3 | 4 | 5 |
| 44. | Supports school regulations and policies.  | 1 | 2 | 3 | 4 | 5 |
| 45. | Maintains careful records and reports, and completes necessary paperwork promptly and accurately.  | 1 | 2 | 3 | 4 | 5 |
| 46. | Assumes responsibilities outside the classroom as they relate to school.   | 1 | 2 | 3 | 4 | 5 |
| 47. | Maintains the integrity of confidential information relating to students and their families.   | 1 | 2 | 3 | 4 | 5 |
| 48. | Demonstrates proficiency in written and oral language.   | 1 | 2 | 3 | 4 | 5 |
| 49. | Selects and administers appropriate cognitive, academic and behavioral assessment instruments individually tailored to the suspected needs of the student. | 1 | 2 | 3 | 4 | 5 |

**APPENDIX B.**

**LISTS OF NUMBER AND PERCENT OF TOTAL RATERS RESPONDING TO ITEMS  
ON THE SPECIAL EDUCATION PERFORMANCE QUESTIONNAIRE**

Table B.1. Number of total raters responding to items on the special education performance questionnaire

Performance Criteria	Rating Scale					
	1	2	3	4	5	6
1. Presents lesson plan	4	1	28	148	323	30
2. Demonstrates planning skills	5	5	35	173	282	34
3. Provides relevant examples	4	4	31	175	284	36
4. Communicates instructional objectives	2	7	41	169	284	31
5. Paces instruction	5	16	73	188	207	45
6. Motivates students	7	9	38	195	268	17
7. Provides feedback for incorrect response	4	1	36	164	289	40
8. Communicates effectively with students	4	7	35	151	325	12
9. Uses data to develop objectives	3	16	41	135	316	23
10. Provides specific evaluative feedback	4	10	65	208	209	38
11. Instructional plans match students' needs	5	7	44	163	274	41
12. Displays a thorough knowledge of curriculum	5	7	30	170	306	16
13. Knowledge of exceptional students' needs	4	8	45	149	308	20
14. Selects content from prescribed curriculum	3	5	48	193	254	31
15. Utilizes behavior management	5	12	26	185	283	23
16. Provides opportunities for success	7	5	23	126	354	19
17. Provides an atmosphere of trust	7	9	22	118	362	16
18. Demonstrates efficient use of time	4	13	43	176	267	31
19. Offers students options when needed	5	5	58	173	260	33
20. Sets high expectations for achievement	4	12	41	181	269	27
21. Works cooperatively for mainstreaming	9	12	36	128	342	7
22. Effective use of time, materials, resources	6	9	39	169	282	29
23. Collaborates to integrate instruction	7	17	46	159	285	20

Table B.1. Continued

Performance Criteria	Rating Scale					
	1	2	3	4	5	6
24. Personal organization	10	5	35	182	294	8
25. Utilizes age appropriate materials	4	7	30	164	307	22
26. High standards for student behavior	5	5	31	135	341	17
27. Supervises teacher assistants	14	27	106	129	182	76
28. Organizes students	7	7	36	180	276	28
29. Modifies the instructional program	4	9	50	163	273	35
30. Effective interpersonal relationships	8	9	42	147	321	7
31. Collaborates with parents	6	9	44	160	289	26
32. Awareness of student needs	5	7	25	130	355	12
33. Consults with general education teachers	10	23	57	151	263	30
34. Demonstrates respect for students	4	10	20	123	364	13
35. Formulates IEPs	3	9	33	126	318	45
36. Demonstrates sensitivity with students	5	10	19	139	348	13
37. Monitors progress on IEPs	5	11	45	151	270	52
38. Promotes self-discipline	5	4	33	170	303	19
39. Provides immediate reteaching	6	10	44	197	229	48
40. Demonstrates employee responsibilities	5	15	31	134	334	15
41. Provides time for practice and mastery	3	5	28	168	279	51
42. Keeps instructional practices current	6	3	43	157	299	26
43. Is punctual	9	6	45	128	329	17
44. Supports school policies	6	3	25	143	342	15
45. Maintains records	4	10	34	130	316	40
46. Responsibilities outside classroom	6	7	53	168	268	32
47. Maintains confidential information	3	2	15	123	367	24
48. Proficiency in written and oral language	3	5	22	137	341	26
49. Utilizes assessment instruments	4	5	44	143	273	65

Table B.2. Percent of total raters responding to items on the special education performance questionnaire

Performance Criteria	Rating Scale					
	1	2	3	4	5	6
1. Presents lesson plan	.7	.2	5.2	27.7	60.5	5.6
2. Demonstrates planning skills	.9	.9	6.6	32.4	52.8	6.4
3. Provides relevant examples	.7	.7	5.8	32.8	53.2	6.4
4. Communicates instructional objectives	.4	1.3	7.7	31.6	53.2	5.8
5. Paces instruction	.9	3.0	13.7	35.2	38.8	8.4
6. Motivates students	1.3	1.7	7.1	36.5	50.2	3.2
7. Provides feedback for incorrect response	.7	.2	6.7	30.7	45.1	7.5
8. Communicates effectively with students	.7	1.3	6.6	28.3	60.9	2.2
9. Uses data to develop objectives	.6	3.0	7.7	25.3	59.2	4.3
10. Provides specific evaluative feedback	.7	1.9	12.2	39.0	39.1	7.1
11. Instructional plans match students' needs	.9	1.3	8.2	30.5	51.3	7.7
12. Displays a thorough knowledge of curriculum	.9	1.3	5.6	31.8	57.3	3.0
13. Knowledge of exceptional students' needs	.7	1.5	8.4	27.9	57.7	3.0
14. Selects content from prescribed curriculum	.6	.9	9.0	36.1	47.6	5.8
15. Utilizes behavior management	.9	2.2	4.9	34.6	53.0	4.3
16. Provides opportunities for success	1.3	.9	4.3	23.6	66.3	3.6
17. Provides an atmosphere of trust	1.3	1.7	4.1	22.1	67.8	3.0
18. Demonstrates efficient use of time	.7	2.4	8.1	33.0	50.0	5.8
19. Offers students options when needed	.9	.9	10.9	32.4	48.7	6.2
20. Sets high expectations for achievement	.7	2.2	7.7	33.9	50.4	5.1
21. Works cooperatively for mainstreaming	1.7	2.2	6.7	24.0	64.0	1.3
22. Effective use of time, materials, resources	1.1	1.7	7.3	31.6	52.8	5.4
23. Collaborates to integrate instruction	1.3	3.2	8.6	29.8	53.4	3.7



Table B.2. Continued

Performance Criteria	Rating Scale					
	1	2	3	4	5	6
24. Personal organization	1.9	.9	6.6	34.1	55.1	1.5
25. Utilizes age appropriate materials	.7	1.3	5.6	30.7	57.5	4.1
26. High standards for student behavior	.9	.9	5.8	25.3	63.9	3.2
27. Supervises teacher assistants	2.6	5.1	19.9	24.2	34.1	14.2
28. Organizes students	1.3	1.3	6.7	33.7	51.7	5.2
29. Modifies the instructional program	.7	1.7	9.4	30.5	51.1	6.6
30. Effective interpersonal relationships	1.5	1.7	7.9	27.5	60.1	1.3
31. Collaborates with parents	1.1	1.7	8.2	30.0	54.1	4.9
32. Awareness of student needs	.9	1.3	4.7	24.3	66.5	2.2
33. Consults with general education teachers	1.9	4.3	10.7	28.3	49.3	5.6
34. Demonstrates respect for students	.7	1.9	3.7	23.0	68.2	2.4
35. Formulates IEPs	.6	1.7	6.2	23.6	59.6	8.4
36. Demonstrates sensitivity with students	.9	1.9	3.6	26.0	65.2	2.4
37. Monitors progress on IEPs	.9	2.1	8.4	28.3	50.6	9.7
38. Promotes self-discipline	.9	.7	6.2	31.8	56.7	3.6
39. Provides immediate reteaching	1.1	1.9	8.2	36.9	42.9	9.0
40. Demonstrates employee responsibilities	.9	2.8	5.8	25.1	62.5	2.8
41. Provides time for practice and mastery	.6	.9	5.2	31.5	52.2	9.6
42. Keeps instructional practices current	1.1	.6	8.1	29.4	56.0	4.9
43. Is punctual	1.7	1.1	8.4	24.0	61.6	3.2
44. Supports school policies	1.1	.6	4.7	26.8	64.0	2.8
45. Maintains records	.7	1.9	6.4	24.3	59.2	7.5
46. Responsibilities outside classroom	1.1	1.3	9.9	31.5	50.2	6.0
47. Maintains confidential information	.6	.4	2.8	23.0	68.7	4.5
48. Proficiency in written and oral language	.6	.9	4.1	25.7	63.9	4.9
49. Utilizes assessment instruments	.7	.9	8.2	26.8	51.1	12.2

APPENDIX C.

LISTS OF ITEM DISCRIMINATION VALUES FOR SPECIAL EDUCATION  
TEACHERS

Table C.1. Item discrimination values in percent for special education teachers (analysis based on 534 ratings for 33 special education teachers)

Item #	Performance criteria	Percent
<u>1.</u>	Presents the lesson or instructional activity using concepts and language understandable to the students.	18*
2.	Demonstrates effective planning skills.	23**
<u>3.</u>	Provides relevant examples and demonstrations to illustrate concepts and skills.	18*
4.	Communicates specific and realistic instructional objectives.	21*
<u>5.</u>	Conducts instructional activity at a brisk pace, slowing presentations when necessary for student understanding.	26**
6.	Motivates students.	25**
<u>7.</u>	Provides feedback after an incorrect response or no response by probing, repeating the question, giving a clue, or allowing more time.	20*
8.	Communicates effectively with students.	21*
<u>9.</u>	Uses diagnostic information obtained from tests and other assessment procedures to develop objectives.	24**
10.	Provides students with specific evaluative feedback.	18*
<u>11.</u>	Utilizes an instructional plan that matches/aligns objectives, learning strategies, assessments and student needs at the appropriate level of difficulty.	21*
12.	Displays a thorough knowledge of curriculum and subject matter.	18*
<u>13.</u>	Displays a working knowledge of the characteristics, curriculum, and instructional techniques for student's exceptionality.	21*
14.	Selects learning content congruent with the prescribed curriculum.	20*
<u>15.</u>	Utilizes behavior management and reinforcement techniques that are constructive and nonpunitive.	25**
16.	Provides opportunities for all students to experience success.	18*
<u>17.</u>	Provides an atmosphere of trust, understanding and encouragement in which the students feel wanted and are successful.	17*

\* 13% equals discrimination at the .05 level of significance

\*\* 22 % equals discrimination at the .01 level of significance

Underlined item numbers indicate special education specific criteria

Table C.1. Continued

Item #	Performance criteria	Percent
18.	Demonstrates efficient use of instructional time.	26**
<u>19.</u>	Offers students the option of and encourages the use of adapted materials and/or assistive devices when needed.	19*
20.	Sets high expectations for student achievement.	21*
<u>21.</u>	Communicates and works cooperatively with administrators and general education staff in implementing mainstreaming requirements of the student's individual education plan.	21*
22.	Plans for and makes effective use of time, materials, and resources.	25**
<u>23.</u>	Collaborates with other special service providers to facilitate an integrated instructional program.	22**
24.	Displays evidence of personal organization.	27**
<u>25.</u>	Utilizes materials and equipment which are age-appropriate and relevant to student needs.	18*
26.	Establishes high standards for student behavior.	23**
<u>27.</u>	Supervises teacher assistants, foster grandparents, and/or volunteers to focus their activities on contributing to the instructional program.	27**
28.	Organizes students for effective instruction.	22**
<u>29.</u>	Demonstrates the ability to modify the instructional program through format and informal evaluation, observation, and data from parents and other service providers.	24**
30.	Demonstrates effective interpersonal relationships with others.	27**
<u>31.</u>	Establishes a collaborative relationship with parents to ensure ongoing communication and total program consistency.	27**
32.	Demonstrates awareness of the needs of students.	21*
<u>33.</u>	Consults with general education teachers, recommending specific strategies and/or materials to use with handicapped students in regular classrooms.	30**
34.	Demonstrates respect for the dignity and integrity of students.	20*
<u>35.</u>	Utilizes all pre-referral, referral, and assessment data to assist in formulating IEP goals and objectives.	21*
36.	Demonstrates sensitivity in relating to students.	17*
<u>37.</u>	Utilizes record and management systems which monitor progress made toward achieving specific objectives of the student's IEP.	27**
38.	Promotes self-discipline and responsibility.	18*
<u>39.</u>	Analyzes student errors and provides immediate reteaching.	24**

Table C.1. Continued

Item #	Performance criteria	Percent
40.	Demonstrates employee responsibilities.	26**
<u>41.</u>	Provides sufficient time for students to practice and master newly acquired skills.	21*
42.	Demonstrates a willingness to keep curriculum and instructional practices current.	18*
<u>43.</u>	Is punctual in meeting deadlines, attending meetings, following schedules, and reporting to work.	29**
44.	Supports school regulations and policies.	17*
<u>45.</u>	Maintains careful records and reports, and completes necessary paperwork promptly and accurately.	27**
46.	Assumes responsibilities outside the classroom as they relate to school.	20*
<u>47.</u>	Maintains the integrity of confidential information relating to students and their families.	16*
<u>48.</u>	Demonstrates proficiency in written and oral language.	19*
<u>49.</u>	Selects and administers appropriate cognitive, academic and behavioral assessment instruments individually tailored to the suspected needs of the student.	24**

Table C.2. Item discrimination values in percent for special education teachers ranked high to low (analysis based on 534 ratings for 33 special education teachers)

Item #	Performance criteria	Percent
<u>33.</u>	Consults with general education teachers, recommending specific strategies and/or materials to use with handicapped students in regular classrooms.	30**
<u>43.</u>	Is punctual in meeting deadlines, attending meetings, following schedules, and reporting to work.	29**
24.	Displays evidence of personal organization.	27**
<u>27.</u>	Supervises teacher assistants, foster grandparents, and/or volunteers to focus their activities on contributing to the instructional program.	27**
30.	Demonstrates effective interpersonal relationships with others.	27**
<u>31.</u>	Establishes a collaborative relationship with parents to ensure ongoing communication and total program consistency.	27**
<u>37.</u>	Utilizes record and management systems which monitor progress made toward achieving specific objectives of the student's IEP.	27**
<u>45.</u>	Maintains careful records and reports, and completes necessary paperwork promptly and accurately.	27**
<u>5.</u>	Conducts instructional activity at a brisk pace, slowing presentations when necessary for student understanding.	26**
18.	Demonstrates efficient use of instructional time.	26**
40.	Demonstrates employee responsibilities.	26**
6.	Motivates students.	25**
<u>15.</u>	Utilizes behavior management and reinforcement techniques that are constructive and nonpunitive.	25**
22.	Plans for and makes effective use of time, materials, and resources.	25**
<u>9.</u>	Uses diagnostic information obtained from tests and other assessment procedures to develop objectives.	24**
<u>29.</u>	Demonstrates the ability to modify the instructional program through format and informal evaluation, observation, and data from parents and other service providers.	24**
<u>39.</u>	Analyzes student errors and provides immediate reteaching.	24**

\* 13% equals discrimination at the .05 level of significance

\*\* 22% equals discrimination at the .01 level of significance

Underlined item numbers indicated special education specific criteria

Table C.2. Continued

Item #	Performance criteria	Percent
<u>49.</u>	Selects and administers appropriate cognitive, academic and behavioral assessment instruments individually tailored to the suspected needs of the student.	24**
2.	Demonstrates effective planning skills.	23**
26.	Establishes high standards for student behavior.	23**
<u>23.</u>	Collaborates with other special service providers to facilitate an integrated instructional program.	22**
28.	Organizes students for effective instruction.	22**
4.	Communicates specific and realistic instructional objectives.	21*
8.	Communicates effectively with students.	21*
<u>11.</u>	Utilizes an instructional plan that matches/aligns objectives, learning strategies, assessments and student needs at the appropriate level of difficulty.	21*
<u>13.</u>	Displays a working knowledge of the characteristics, curriculum, and instructional techniques for student's exceptionality.	21*
20.	Sets high expectations for student achievement.	21*
<u>21.</u>	Communicates and works cooperatively with administrators and general education staff in implementing mainstreaming requirements of the student's individual education plan.	21*
32.	Demonstrates awareness of the needs of students.	21*
<u>35.</u>	Utilizes all pre-referral, referral, and assessment data to assist in formulating IEP goals and objectives.	21*
<u>41.</u>	Provides sufficient time for students to practice and master newly acquired skills.	21*
<u>7.</u>	Provides feedback after an incorrect response or no response by probing, repeating the question, giving a clue, or allowing more time.	20*
14.	Selects learning content congruent with the prescribed curriculum.	20*
34.	Demonstrates respect for the dignity and integrity of students.	20*
46.	Assumes responsibilities outside the classroom as they relate to school.	20*
<u>19.</u>	Offers students the option of and encourages the use of adapted materials and/or assistive devices when needed.	19*
<u>48.</u>	Demonstrates proficiency in written and oral language.	19*
<u>1.</u>	Presents the lesson or instructional activity using concepts and language understandable to the students.	18*

Table C.2. Continued

Item #	Performance criteria	Percent
<u>3.</u>	Provides relevant examples and demonstrations to illustrate concepts and skills.	18*
10.	Provides students with specific evaluative feedback.	18*
12.	Displays a thorough knowledge of curriculum and subject matter.	18*
16.	Provides opportunities for all students to experience success.	18*
<u>25.</u>	Utilizes materials and equipment which are age-appropriate and relevant to student needs.	18*
38.	Promotes self-discipline and responsibility.	18*
42.	Demonstrates a willingness to keep curriculum and instructional practices current.	18*
<u>17.</u>	Provides an atmosphere of trust, understanding and encouragement in which the students feel wanted and are successful.	17*
36.	Demonstrates sensitivity in relating to students.	17*
44.	Supports school regulations and policies.	17*
<u>47.</u>	Maintains the integrity of confidential information relating to students and their families.	16*



APPENDIX D.

LIST OF DISCRIMINATING ITEMS BASED ON RESPONSES BY RATER  
POSITIONS IN RANK ORDER FROM LOW TO HIGH BY ANOVA F RATIO

Table D.1. List of discriminating items based on responses by rater positions in rank order from low to high by ANOVA F ratio

Item #	ANOVA F. ratio	Teacher			Administrator			Related services		
		Mean	(N)	SD	Mean	(N)	SD	Mean	(N)	SD
<u>33.</u>	.05	4.25	(340)	.9442	4.28	(40)	1.0124	4.24	(46)	1.0368
26.	.17	4.55	(348)	.7003	4.56	(41)	.8077	4.49	(45)	.8427
40.	.21	4.50	(349)	.8116	4.48	(42)	.6713	4.47	(45)	.9677
<u>7.</u>	.26	4.49	(327)	.6732	4.51	(41)	.7114	4.38	(45)	.8605
30.	.32	4.49	(357)	.8181	4.43	(42)	.8874	4.43	(46)	.9581
<u>47.</u>	.35	4.67	(344)	.6154	4.71	(41)	.4606	4.64	(45)	.7433
16.	.36	4.59	(347)	.7447	4.52	(42)	.8036	4.58	(45)	.7534
8.	.39	4.51	(353)	.7351	4.44	(41)	.8077	4.58	(45)	.7830
14.	.41	4.39	(339)	.7265	4.34	(41)	.6561	4.32	(44)	.8832
18.	.44	4.36	(336)	.7874	4.24	(41)	.8597	4.36	(45)	.8569
<u>45.</u>	.44	4.52	(330)	.7526	4.46	(41)	.8396	4.51	(43)	.8556
<u>41.</u>	.45	4.47	(322)	.7064	4.41	(41)	.6699	4.48	(42)	.7726
<u>15.</u>	.46	4.43	(344)	.7488	4.34	(41)	.9646	4.41	(44)	.7871
12.	.51	4.48	(350)	.7444	4.43	(42)	.7034	4.46	(46)	.7805
<u>1.</u>	.54	4.55	(337)	.6970	4.56	(41)	.5499	4.49	(45)	.7869
6.	.55	4.39	(349)	.7864	4.24	(41)	.6883	4.42	(45)	.7830
<u>39.</u>	.57	4.33	(320)	.7783	4.20	(41)	.8432	4.18	(44)	.8428
22.	.59	4.40	(339)	.8054	4.34	(41)	.7283	4.42	(45)	.8657
<u>31.</u>	.59	4.39	(344)	.8217	4.40	(42)	.8281	4.49	(43)	.7980
<u>37.</u>	.60	4.41	(321)	.7975	4.30	(40)	.8533	4.26	(43)	1.0711
<u>11.</u>	.63	4.40	(329)	.7707	4.27	(41)	.9493	4.42	(43)	.9059
<u>25.</u>	.64	4.49	(345)	.7157	4.49	(41)	.8100	4.44	(45)	.8134
<u>27.</u>	.66	3.94	(308)	1.0535	3.89	(38)	1.1099	3.95	(38)	1.2291

Underlined item numbers indicate special education specific criteria

Item #	<u>Classified staff</u>			Mean	<u>Others</u>		Mean	<u>Parent</u>		Mean	<u>Grand</u>		Scheffé
	Mean	(N)	SD		(N)	SD		(N)	SD		(N)	SD	
<u>33.</u>	4.32	(38)	.9330	4.20	(10)	.4216	4.21	(28)	1.2578	4.26	(502)	.9658	NS <sup>a</sup>
26.	4.59	(44)	.8975	4.45	(11)	.6876	4.62	(26)	.1367	4.55	(515)	.7374	NS
40.	4.52	(44)	.8757	4.27	(11)	.6467	4.54	(26)	.7606	4.50	(517)	.8132	NS
<u>7.</u>	4.50	(42)	.8337	4.45	(11)	.8202	4.54	(26)	.7060	4.49	(492)	.7120	NS
30.	4.42	(43)	.8233	4.27	(11)	.2727	4.62	(26)	.1476	4.45	(525)	.0364	NS
<u>47.</u>	4.68	(41)	.5674	4.45	(11)	.8202	4.62	(26)	.5711	4.67	(508)	.6140	NS
16.	4.57	(42)	.8007	4.36	(11)	.8090	4.69	(26)	.5491	4.58	(513)	.7457	NS
8.	4.49	(43)	.7980	4.27	(11)	.7862	4.56	(27)	.6980	4.50	(520)	.7475	NS
14.	4.40	(40)	.8412	4.09	(11)	.7006	4.35	(26)	.7971	4.37	(501)	.7466	NS
18.	4.44	(41)	.9759	4.36	(11)	.8090	4.52	(27)	.7000	4.37	(501)	.8105	NS
<u>45.</u>	4.51	(41)	.8978	4.18	(11)	.7508	4.46	(26)	.7606	4.50	(492)	.7803	NS
<u>41.</u>	4.53	(40)	.7841	4.40	(10)	.8433	4.65	(26)	.5616	4.48	(481)	.7101	NS
<u>15.</u>	4.55	(42)	.7715	4.45	(11)	.6876	4.30	(27)	.9121	4.42	(509)	.7791	NS
12.	4.61	(41)	.8330	4.36	(11)	.6742	4.35	(26)	.7971	4.48	(516)	.7513	NS
<u>1.</u>	4.68	(41)	.6099	4.36	(11)	.8090	4.56	(27)	.5774	4.56	(502)	.6833	NS
6.	4.24	(42)	.9055	4.27	(11)	.7862	4.37	(27)	.8389	4.37	(515)	.8057	NS
<u>39.</u>	4.33	(42)	.8742	4.10	(10)	.8756	4.33	(27)	1.0742	4.30	(484)	.8169	NS
22.	4.55	(40)	.9044	4.18	(11)	.7508	4.52	(27)	.7000	4.41	(503)	.8054	NS
<u>31.</u>	4.54	(39)	.8223	4.18	(11)	.7508	4.52	(27)	.8024	4.41	(506)	.8163	NS
<u>37.</u>	4.44	(39)	.8824	4.20	(10)	.7888	4.52	(27)	.7000	4.39	(480)	.8302	NS
<u>11.</u>	4.55	(40)	.8149	4.45	(11)	.5222	4.52	(27)	.7000	4.41	(491)	.7937	NS
<u>25.</u>	4.54	(41)	.8092	4.18	(11)	.7508	4.63	(27)	.6877	4.49	(510)	.7383	NS
<u>27.</u>	4.15	(39)	1.0397	3.60	(10)	1.0750	4.13	(23)	1.0137	3.95	(456)	1.0691	NS

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<sup>a</sup> NS stands for not significant

Table D.1. Continued

Item #	ANOVA		<u>Teacher</u>		<u>Administrator</u>			<u>Related services</u>		
	F. ratio	Mean	(N)	SD	Mean	(N)	SD	Mean	(N)	SD
24.	.68	4.45	(354)	.7631	4.29	(42)	.8348	4.28	(46)	1.1088
<u>49.</u>	.69	4.42	(312)	.7526	4.32	(41)	.8786	4.46	(41)	.8396
<u>29.</u>	.70	4.41	(338)	.7808	4.24	(41)	.9160	4.38	(42)	.8540
<u>17.</u>	.71	4.60	(349)	.7657	4.41	(41)	.8653	4.58	(45)	.7534
2.	.76	4.45	(331)	.7220	4.40	(42)	.7670	4.30	(46)	.8659
<u>21.</u>	.76	4.47	(357)	.8493	4.45	(42)	.8612	4.41	(46)	1.0236
<u>9.</u>	.77	4.50	(344)	.7787	4.43	(42)	.8595	4.36	(45)	.9572
20.	.77	4.39	(342)	.7691	4.39	(41)	.8330	4.32	(44)	.8565
4.	.79	4.44	(335)	.7267	4.48	(42)	.7404	4.45	(44)	.8199
<u>19.</u>	.79	4.37	(336)	.7541	4.14	(42)	1.0017	4.34	(44)	.9135
28.	.86	4.41	(340)	.7802	4.29	(41)	.8439	4.36	(45)	.8569
42.	.86	4.46	(344)	.7587	4.41	(41)	.7408	4.36	(44)	.8916
<u>48.</u>	.89	4.62	(340)	.6524	4.43	(42)	.6678	4.50	(46)	.8628
32.	.91	4.59	(352)	.6978	4.50	(42)	.9173	4.47	(45)	.7862
38.	.96	4.49	(348)	.7301	4.27	(41)	.7424	4.47	(45)	.7862
<u>23.</u>	1.00	4.36	(348)	.8752	4.31	(42)	.8692	4.39	(46)	.8814
<u>35.</u>	1.01	4.55	(328)	.7442	4.54	(41)	.7449	4.34	(44)	.8877
<u>3.</u>	1.19	4.48	(331)	.6977	4.51	(41)	.6753	4.36	(45)	.8569
34.	1.20	4.59	(352)	.7258	4.51	(41)	.8978	4.67	(45)	.7071
<u>13.</u>	1.28	4.47	(346)	.7655	4.43	(42)	.7373	4.40	(45)	.8893
36.	1.29	4.57	(351)	.7481	4.44	(41)	.8958	4.51	(45)	.7268
10.	1.42	4.22	(332)	.8254	4.27	(41)	.6717	4.23	(44)	.8590
<u>43.</u>	1.43	4.50	(350)	.8215	4.26	(42)	1.0136	4.57	(44)	.8183
46.	1.67	4.34	(341)	.8521	4.44	(41)	.5937	4.33	(42)	.8458
44.	1.73	4.56	(352)	.7056	4.61	(41)	.5894	4.62	(45)	.7474
<u>5.</u>	2.22	4.21	(325)	.8348	3.78	(40)	1.0497	4.14	(44)	.9045

Item #	Classified staff			Others			Parent		Grand			Scheffé	
	Mean	(N)	SD	Mean	(N)	SD	Mean	(N)	SD	Mean	(N)		SD
24.	4.41	(44)	.9479	4.27	(11)	.7862	4.48	(27)	.6427	4.42	(524)	.8149	NS
<u>49.</u>	4.58	(38)	.8263	4.60	(10)	.6992	4.56	(25)	.7681	4.44	(467)	.7767	NS
<u>29.</u>	4.36	(39)	.8425	4.10	(10)	.8756	4.52	(27)	.7530	4.39	(497)	.8030	NS
<u>17.</u>	4.58	(43)	.8233	4.36	(11)	.9244	4.70	(27)	.6086	4.58	(516)	.7730	NS
2.	4.60	(42)	.8851	4.30	(10)	.8233	4.44	(27)	.6980	4.44	(498)	.7545	NS
<u>21.</u>	4.71	(42)	.7741	4.45	(11)	.5222	4.56	(27)	.8473	4.48	(525)	.8551	NS
<u>9.</u>	4.30	(40)	.9392	4.27	(11)	.6467	4.52	(27)	.8490	4.46	(509)	.8163	NS
20.	4.23	(40)	.9195	4.18	(11)	.6030	4.56	(27)	.8916	4.38	(505)	.7978	NS
4.	4.57	(42)	.7034	4.09	(11)	.9439	4.41	(27)	.6939	4.44	(501)	.7371	NS
<u>19.</u>	4.43	(40)	.8439	4.18	(11)	.8739	4.38	(26)	.7524	4.35	(499)	.8011	NS
28.	4.55	(40)	.8756	4.09	(11)	.7006	4.48	(27)	.7530	4.40	(504)	.7969	NS
42.	4.55	(40)	.8458	4.10	(10)	.8756	4.59	(27)	.6360	4.45	(506)	.7726	NS
<u>48.</u>	4.64	(42)	.6922	4.45	(11)	.8202	4.60	(25)	.5774	4.59	(506)	.6785	NS
32.	4.63	(43)	.7567	4.27	(11)	.7862	4.70	(27)	.7240	4.58	(520)	.7331	NS
38.	4.57	(42)	.7696	4.36	(11)	.8090	4.58	(26)	.6433	4.48	(513)	.7369	NS
<u>23.</u>	4.46	(41)	.8688	3.80	(10)	1.0328	4.44	(25)	.9165	4.36	(512)	.8799	NS
<u>35.</u>	4.57	(37)	.6888	4.20	(10)	.9189	4.56	(27)	.6980	4.53	(487)	.7555	NS
<u>3.</u>	4.52	(42)	.8036	4.00	(10)	.8165	4.51	(27)	.6427	4.47	(496)	.7212	NS
34.	4.70	(43)	.5990	4.18	(11)	.7508	4.70	(27)	.6086	4.60	(519)	.7255	NS
<u>13.</u>	4.51	(41)	.8695	3.91	(11)	.8312	4.56	(27)	.6980	4.56	(512)	.7826	NS
36.	4.63	(43)	.6909	4.18	(11)	.6030	4.75	(28)	.5182	4.56	(519)	.7427	NS
10.	4.18	(39)	.7905	3.73	(11)	.9045	4.48	(27)	.7000	4.23	(494)	.8114	NS
<u>43.</u>	4.49	(41)	.8403	4.00	(11)	.8944	4.44	(27)	.7511	4.47	(515)	.8396	NS
46.	4.48	(40)	.7841	3.82	(11)	.8739	4.60	(25)	.5774	4.36	(500)	.8199	NS
44.	4.67	(43)	.7145	4.00	(11)	.8944	4.48	(25)	.9183	4.56	(517)	.7196	NS
<u>5.</u>	4.18	(40)	1.0099	4.27	(11)	.7862	4.41	(27)	.7473	4.18	(487)	.8758	NS