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### An examination of the relationship between the acceptability and reported use of accommodations for students with disabilities by general education teachers and teachers' sense of efficacy

Bonnie Smith Boulton

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AN EXAMINATION OF THE RELATIONSHIP BETWEEN THE ACCEPTABILITY  
AND REPORTED USE OF ACCOMMODATIONS FOR STUDENTS WITH  
DISABILITIES BY GENERAL EDUCATION TEACHERS AND TEACHERS' SENSE  
OF EFFICACY

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
Doctor of Philosophy

in

The Department of Curriculum and Instruction

by  
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May, 2003

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## **DEDICATION**

To my parents, Kenneth and Gerry Smith, who taught me the value of education and encouraged me to continuously seek answers to my questions. Without your love and support, this endeavor would not have been possible. Also, to my wonderful husband, Ross, who provided much more love, support and encouragement than I ever thought one person could.

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS .....	iv
LIST OF TABLES .....	viii
ABSTRACT .....	ix
CHAPTER	
1 INTRODUCTION .....	1
Statement of the Problem .....	3
Purpose for the Study .....	6
Significance of the Study .....	6
Research Questions .....	7
2 REVIEW OF SELECTED LITERATURE .....	9
Social Validity .....	9
Early Studies on Acceptability .....	11
Later Studies on Acceptability of Behavioral Interventions .....	14
Modifications for Students with Disabilities .....	23
Acceptability of Academic Interventions .....	28
Teacher Efficacy .....	33
Measuring Teacher Efficacy .....	36
Selected Research Addressing Teacher Efficacy .....	37
3 METHODS .....	47
Participants .....	47
Instrumentation .....	47
Procedures .....	50
Sampling .....	50
Administration .....	50
Data Analysis .....	52
4 SUMMARY OF RESULTS .....	58
Response Rate to the Study .....	58
Descriptive Statistics for the Sample .....	60
Descriptive Statistics for Survey Instruments .....	63
Ratings of Acceptability and Use .....	63
Data Analysis for Research Questions .....	65
Research Question 1 .....	65
Research Question 2 .....	73
Research Question 3 .....	76
Research Question 4 .....	77
Research Question 5 .....	79

5	DISCUSSION.....	81
	Limitations of the Study.....	81
	Significant Findings of the Study.....	82
	Findings Related to the Research Questions.....	85
	Research Question 1.....	85
	Research Question 2.....	87
	Research Question 3.....	88
	Research Question 4.....	89
	Research Question 5.....	90
	Conclusions.....	91
	REFERENCES.....	94
	APPENDIX	
	A SURVEY INSTRUMENTS.....	104
	B SURVEY COVER LETTERS.....	111
	C FREQUENCY DATA FOR THE TEACHER ACCEPTABILITY AND USE SCALE.....	115
	D FACTOR ANALYSIS DATA FOR THE ACCEPTABILITY SUBSCALE OF THE TEACHER ACCEPTABILITY AND USE SCALE.....	121
	E FACTOR ANALYSIS DATA FOR THE USE SUBSCALE OF THE TEACHER ACCEPTABILITY AND USE SCALE.....	123
	F FACTOR ANALYSIS DATA FOR THE TEACHER SENSE OF EFFICACY SCALE.....	125
	VITA.....	127



## LIST OF TABLES

1. Comparison of Early and Late Respondents on Demographic Data . . . . .	59
2. Demographic Information of Sample . . . . .	60
3. Accommodations Acceptable for All or Most Students . . . . .	63
4. Accommodations Acceptable for Students with Disabilities . . . . .	64
5. Accommodations Used on a Daily or Near Daily Basis . . . . .	65
6. Factor Structure for the Acceptability Subscale of the Teacher Acceptability and Use Scale . . . . .	67
7. Factor Structure for the Use Subscale of the Teacher Acceptability and Use Scale . . . . .	69
8. Factor Structure for the Teacher Sense of Efficacy Scale . . . . .	71
9. Results of Canonical Correlation Analysis of Factored Subscales of the Teacher Acceptability and Use Scale . . . . .	75
10. Results of Canonical Correlation Analysis Between Factored Acceptability Subscales of the Teacher Acceptability and Use Scale and the Teacher Sense of Efficacy Scale . . . . .	77
11. Results of Canonical Correlation Analysis Between Factored Use Subscales of the Teacher Acceptability and Use Scale and the Teacher Sense of Efficacy Scale . . . . .	78
12. Results of Canonical Correlation Analysis of Factored Subscales of the Teacher Acceptability and Use Scale and the Teacher Sense of Efficacy Scale . . . . .	79
13. Bivariate Correlations Between Demographic Variables and Teacher Efficacy Subscales . . . . .	80

## **ABSTRACT**

Since the passage of the Individuals with Disabilities Education Act (IDEA), originally passed as the Education for All Handicapped Students Act in 1975, a growing number of students with disabilities are receiving their education in general education classrooms. This movement has placed the responsibility of educating students with disabilities on general education teachers with support from special education teachers. One of the responsibilities that general educators now have is the provision of accommodations in their classrooms. Teacher efficacy, the belief in one's ability to affect student learning, has been shown to be related to several classroom behaviors.

This study was conducted to examine the relationship between the acceptability and use of accommodations and teacher efficacy. An instrument, the Teacher Acceptability and Use Scale (TAUS) was developed to examine a teacher's judgement of the acceptability of common classroom modifications designed to support students with disabilities within their classes. In addition, the instrument required teachers to report their current use of each modification. An additional scale, the Teacher Sense of Efficacy Scale was administered to measure the teacher's belief in their ability to affect student learning.

Survey data were obtained from 187 teachers of grades 1 – 5 in the state of Louisiana. A principal component analysis of the TAUS revealed a 6-factor structure for the acceptability subscale and a 4-factor structure for the reported use subscale. Data indicated a high correlation between the acceptability and reported use of instructional accommodations. These results appear to support previous research on acceptability of behavioral interventions as well as prior research on instructional accommodations.

Additionally, the data support a moderate correlation between teachers' sense of efficacy and the acceptability and use of accommodations.

# CHAPTER 1

## INTRODUCTION

In 1975, President Jimmy Carter signed the Education for All Handicapped Children's Act (P. L. 94-142), forever changing education for students with disabilities. Though P. L. 94-142 has undergone four sets of amendments and is now known as the Individuals with Disabilities Education Act (IDEA), one principle remains controversial. The education for students with disabilities in the least restrictive environment has been the most debated principle of IDEA.

The term "least restrictive environment" first appeared in the text of the law in the 1977 amendments (Crockett & Kauffman, 1999). According to Yell (1998), the least restrictive environment "refers to IDEA's mandate that students with disabilities should be educated to the maximum extent possible with peers without disabilities" (p. 244). While the IDEA recognizes that students with disabilities have the right to be educated alongside their non-disabled peers, it does also provide for a continuum of educational placements (Deno, 1970). This continuum ranges from the least restrictive placement (the general education classroom) to the most restrictive (hospital or homebound services). The restrictiveness of the placement reflects the amount of time a student with disabilities spends being educated with his non-disabled peers.

Turnbull and Turnbull (2000) point out that the focus of IDEA has changed somewhat since its initial passage as P.L. 94-142. The latest amendments focus on the provision of those "accommodations and adjustments" (Turnbull & Turnbull, 2000, p. 247) necessary for students with disabilities to be in general education classrooms. In fact, alternative placements along the continuum of special education services are to be considered "only

when the nature or severity of the disability is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily” (IDEA, 20 U.S.C. §1412 [a] [5]). It is this legal preference for providing education for students with disabilities in the least restrictive environment that began, and continues, the debate on inclusion.

According to the U. S. Department of Education (2000), during the 1998-99 school year, 47.4% of students with disabilities were educated in general education classrooms for 80% of the school day or longer. This represents a 1% increase from the previous school year and a steady increase over the previous ten years, when during the 1988-89 school year, approximately 31% of students with disabilities were educated in general education classes for 80% or more of the school day. It is expected that this increase will continue, as the U. S. Department of Education has made the increase of students with disabilities served in general education classes part of the 2002 Annual Plan (U. S. Department of Education, 2002). While the most current data available are for the 1998-99 school year, the goal for the 2002-03 school year is for 48.8% of students with disabilities to be educated in the general education classroom for 80% or more of the school day. With the increasing numbers of students with disabilities in general education classes comes the need for general education teachers who are prepared to provide accommodations in curriculum, instruction, and assessment (U. S. Department of Education, 2000).

Special education professionals agree that students must receive accommodations in general education classes in order to be successful (Gajria & Salend, 1996; Polloway, Bursuck, Gayanthi, Epstein, & Nelson, 1996; Will, 1986; Stainback, Stainback, & Ayres,

1999; Fuchs, Fuchs, Hamlett, Phillips, & Karns, 1995). It is logical that students identified as disabled by low academic performance in general education environments will not benefit from an unaltered environment. However, previous research has shown that teachers find some accommodations or alterations more acceptable than others. Those found to be most acceptable are those that are easiest and require the least amount of time to implement (Witt & Martens, 1983; Witt, Elliot, & Martens, 1983; Elliot, Witt, Galvin, & Peterson, 1984; Witt, Martens, & Elliot, 1984; Martens, Witt, Elliot, & Darveaux, 1985; Schumm & Vaughn, 1991). These accommodations, however, may not be sufficient for the student with a disability to be successful in inclusive settings. Despite the previously conducted studies in the area of teacher acceptability, some important questions remain to be answered; among these are which academic accommodations teachers find acceptable and how frequently are these accommodations used?

### **Statement of the Problem**

Many in the field of special education stress the importance of providing accommodations for students with disabilities to be successful in general education classes (e.g., Gajria & Salend, 1996; Polloway, et al., 1996; Will, 1986; Stainback, et al., 1999). The United States Department of Education (2000) reports that 47.4% of students aged 6-21 served under IDEA received their education in a general education classroom for up to 80% of their school day. An additional 29% of students were in general education classes for 21-60% of their day. These numbers represent a steady increase of students with disabilities being served in general education classes over the last ten years (U. S. Department of Education, 2000). As the numbers of students with disabilities who

are being served by general education continues to rise, so does the importance of providing appropriate accommodations for these students.

Federal regulations require that accommodations be documented in students' Individual Education Plans (IEPs). However, it remains largely unknown the extent to which accommodations are being used (Schumm & Vaughn, 1991). While research indicates there are numerous factors that affect teachers' use of accommodations (e.g., previous training, administrative support, etc), the acceptability of these accommodations may be a prime determinant of whether the accommodations are implemented (Johnson & Pugach, 1990; Polloway, et al., 1996; Schumm & Vaughn, 1991; Whinnery Fuchs, & Fuchs, 1991; Lambert, Christensen, & Fishbaugh, 1996; Witt & Elliot, 1985; Gunter & Denny, 1996; Storey & Horner, 1991; Reimers, Wacker, & Koepl, 1987).

According to Polloway et al. (1996), "a key component that very likely will affect the success of inclusion is the treatment acceptability of specific interventions that may be used to accommodate the needs of students with disabilities in the general education classroom." (p. 133) Gajria and Salend (1996) echo this sentiment, opining that "a critical factor that may influence the extent to which teachers implement instructional adaptations is treatment acceptability." (p. 92)

The notion of acceptability grew out of the previous work on social validity. In defending the usefulness of subjective research in the applied behavior analysis arena, Wolf (1978) declared "something of social importance (that) would have to be judged as having value to society." (p. 203) Kazdin (1980a) defined acceptability as the "judgements about the treatment procedures by nonprofessionals, lay persons, clients, and other potential consumers of treatment." (p. 329) Polloway et al. (1996) expanded

on the earlier definition of treatment acceptability. They use the term treatment acceptability “to refer to the likelihood that certain specific classroom interventions—particularly those that involve adaptations or modifications—will be accepted by the general education teacher.” (pp. 133-134) Since the acceptability of accommodations appears to impact their use in general education classrooms, it is important to determine which accommodations are currently being used. A second factor worthy of consideration is the reported frequency with which these accommodations are implemented.

The complexity of teaching behavior requires that researchers consider intrapersonal as well as interpersonal factors. One common intrapersonal variable is the belief in one’s ability to accomplish a task or meet a demand. Self efficacy refers to how well an individual believes he or she can handle a situation or execute a course of action (Salomon, 1983). In addition, the relationship between teacher efficacy (i.e., a teacher’s ability to affect student learning) and the acceptability and use of accommodations in general education classes are factors to be considered. Bandura (1977) maintains that self-efficacy is a major determinant of behavior. Teacher efficacy has been found to correlate with such teacher behaviors as higher levels of persistence (Gibson & Dembo, 1984), likelihood of trying new innovations (Smylie, 1988; Gusky, 1988), implementation of new curriculum (Poole & Okefor, 1989), and successful behavior management (Saklofske, Michayluk, & Randhawa, 1988). Examination of the relationship between teacher efficacy and the acceptability and use of accommodations is a means of extending current research in the areas of both acceptability and teacher efficacy.



Within the context of inclusive education, the demands on teachers' abilities are being dramatically increased. General educators are being required to implement many procedures that were previously reserved for alternative placements and specially trained teachers. If we are to be successful in the pursuit of appropriate education in the least restrictive environment, research must address our current state of practice and identify teacher variables related to changing current instructional practices.

### **Purpose for the Study**

The current study will extend the literature by examining the acceptability of academic accommodations by general education teachers. In addition, we examined variables associated with the hypothesized differences in the acceptability of academic interventions in general education.

### **Significance of the Study**

With the enactment of P. L. 94-142 in 1975 came America's first push to include students with disabilities in general education programs. IDEA mandates that students with disabilities be educated in the least restrictive environment appropriate for the student, and that appropriate accommodations be made for the student. Though it is arguably these accommodations that aid the student's success in inclusive settings, the extent to which these accommodations are being made remains unclear (Schumm & Vaughn, 1991).

While many studies have examined the notion of teacher acceptability of behavioral interventions (e.g., Elliot, 1988; Elliot, Turco, & Gresham, 1987; Elliot, et. al, 1984; Epstein, Matson, Repp, & Helsel, 1986; Kazdin, 1980a, 1980b; Kazdin, 1981; Kutsick, Gutkin, & Witt, 1991; Martens & Meller, 1989; Martens, Peterson, Witt, & Cirone, 1986;

Martens et. al, 1985; Reimers et al., 1987; Von Brock & Elliot, 1987; Witt, 1986; Witt & Elliot, 1985; Witt et. al, 1983; Witt & Martens, 1983; Witt et al., 1984; Witt & Robbins, 1985), few studies have considered the relationship between teacher acceptability of accommodations and their use. Martens et al. (1986) examined the link between acceptability and use of behavioral interventions; Johnson and Pugach (1990) considered the link between acceptability and academic accommodations. Both of these studies indicated a tendency by teachers to use those accommodations they found to be acceptable. Implications for the acceptability and use of accommodations become apparent when paired with findings of previous studies showing that the most acceptable accommodations were those that were easiest to implement and required the smallest time commitments (Witt & Martens, 1983; Witt, et al., 1983; Witt, et al., 1984; Elliot et al., 1984; Martens et al., 1985; Schumm & Vaughn, 1991).

The large focus on behavioral intervention of past research and the growing numbers of students with disabilities being educated in regular education classes point to a need to extend the research to include academic accommodations. Prior research may fail to replicate given changes in the educational context, changes in teacher education, and the myriad of current reform efforts. Additionally, the lack of research examining the relationship between teacher efficacy and the acceptability and reported use of accommodations in general education classes indicates a need for research in this area.

### **Research Questions**

The proposed study will be conducted to answer the following questions:

- 1) What are the estimates of reliability for data from the Teacher Acceptability and Use Scale (TAUS)?

- 2) What is the relationship between acceptability and reported use of accommodations for students with disabilities by general education teachers?
- 3) What is the relationship between teacher efficacy and teacher acceptability of accommodations in general education classrooms?
- 4) What is the relationship between teacher efficacy and the reported use of accommodations in general education classrooms?
- 5) What demographic variables are related to teacher efficacy?

## **CHAPTER 2**

### **REVIEW OF SELECTED LITERATURE**

This section will review the literature supporting the construct of acceptability as a critical intervention variable. The review of the literature will trace the development of acceptability in relation to interventions involving students/persons with disabilities.

The review of the literature also will briefly describe social validity. An examination of the early work involving one aspect of social validity (i.e., treatment acceptability) will be presented. Following an examination of early clinical work, a description of later studies that investigated the acceptability of classroom behavioral interventions will be presented. In addition, those studies that examined teachers' acceptability of academic interventions will be detailed.

An examination of the construct of self efficacy will also be presented. Included will be measurement of the construct as well as studies that examine teacher efficacy as it relates to teacher behaviors. Finally, a discussion of accommodations and modifications currently found in the literature will be presented.

#### **Social Validity**

Kazdin (1977) proposed two procedures for evaluating whether a treatment was socially valid. The first procedure he described was social comparison. In this procedure, the target individual was compared to his peer to establish the severity of the behavior and what treatment would be necessary. Kazdin described the second procedure, subjective evaluation, as "a means of validating the effects of treatment consisting of judgments about the qualitative aspects of behavior." (pp. 434-435) He

further noted that those closest to the individual were in a good place to judge whether the treatment had been effective (Kazdin, 1977).

In making his case for the use of subjective research in the area of applied behavior analysis, Wolf (1978) described three dimensions that are encompassed in the concept of social validity. The first was the social significance of the behavioral goal. The second was the social appropriateness of the behavior procedures used; and the third the social importance of the expected and unexpected results (Wolf, 1978). The evaluation of these dimensions would lead one to decide if the behavior changes that occurred as a result of treatment were socially important (Kazdin, 1977).

Though its importance and usefulness were just becoming recognized, Kazdin (1977) and Wolf (1978) acknowledged that subjective evaluation had been previously used in applied behavior analysis research. In noting an earlier study by Berleman, Seaberg, and Steinburn (as cited in Wolf, 1978) Wolf acknowledged that subjective data may not always bear resemblance to the objective data and posited three possible reasons for this discrepancy. The first reason is that the situation may be distorted by the respondent. Secondly, the respondent may be describing behaviors other than those targeted for treatment. Finally, the possibility exists that subjective evaluation is impossible because of the inaccuracy of individuals to judge and report a situation (Wolf, 1978).

Refuting the argument that individuals are unable to judge their own situation, Levi and Anderson (1975) maintain

We believe that each individual can be assumed to be the best judge of his own situation and state of well-being. The alternative is some type of 'big brother' who makes the evaluation for groups and nations. World history provides many

examples of such ‘expert’ or ‘elitist’ opinions being at variance with what was expected by the man in the street (as cited in Kazdin, 1977). (p. 213)

Storey and Horner (1991) furthered the argument for using subjective research by stating the importance of social validation was its ability to tie the results of research to its social context. Herein may lie its strongest support for use in educational research. Storey and Horner described the function of social validation as to “obtain subjective information on the value of objectives, outcomes, and processes of education and support.” (p. 353) Storey and Horner further theorized that the usefulness of social validity would be in its predictive capabilities of treatment acceptability. It is this ability to determine the acceptability of treatments that led to research first in clinical and later in educational settings.

### **Early Studies on Acceptability**

Kazdin (1980a, 1980b, 1981) considered the acceptability of various treatments for children with behavior problems. While acknowledging that the most effective techniques may not be the ones that were the most acceptable, Kazdin theorized that acceptability was an important determinant of whether the treatment would be implemented, and if implemented, done so with fidelity (Kazdin, 1980a). Kazdin used undergraduate psychology students to examine the acceptability of four treatments (reinforcement, time out from reinforcement, drug treatment, and electric shock) on students with behavior problems. Participants were given a description of a child with behavior problems. Then they listened to a tape of one of the four treatments and were asked to rate their acceptance of the treatment using the Treatment Evaluation Inventory. This instrument, developed for the study, contained 16 items that were rated using a 7-

point Likert-type scale. After results of this pilot study indicated that 15 of the 16 items loaded on a single factor, the non-loading item was deleted.

In the two separate experiments, the methodology was similar. In the second experiment, respondents were presented with a description of one of four students (2 boys and 2 girls) who displayed behavior problems. The behavior problems were classified as either moderate (e.g., disruptive, uncooperative) or severe (e.g., self-injurious behavior, fighting, throwing and breaking objects). Respondents listened to the description of the four treatments (reinforcement of incompatible behavior, time out from reinforcement, drug therapy, and electric shock) and rated their acceptability of the treatment using the Treatment Evaluation Inventory.

The results of the two experiments in this study were similar. The subjects did not differentiate in their acceptability of the interventions; the results showed that respondents indicated a preference for positive reinforcement over negative reinforcement.

Kazdin (1980b) sought to extend the findings by partially replicating his previous study. While the methodology (i.e., description of behavior problems, description of treatments, and use of the Treatment Evaluation Inventory) remained the same, Kazdin examined the acceptability of different treatments in this study. Using four different treatments (isolation, contingent observation, withdrawal of attention, and reinforcement of incompatible behavior), he investigated the acceptability of various types of time out interventions. Results of this experiment indicated an overall acceptability of these forms of time out (Kazdin, 1980b). In a second experiment, the acceptability of four different treatments (reinforcement, isolation, withdrawal of attention backed by

isolation, and isolation with contractual agreement) was examined. Findings from this study indicated that less exclusionary forms of time out were more acceptable than more exclusionary forms. Positive reinforcement, however, was deemed by respondents to be more acceptable than any forms of time out (Kazdin, 1980b).

In a subsequent set of studies, Kazdin (1981) explored the relationship between the effectiveness of a treatment and its acceptability. Again using undergraduate psychology students as subjects, Kazdin examined the acceptability of four treatment interventions: reinforcement, positive practice, time out from reinforcement, and medication. In order to examine whether the effectiveness of a treatment affected its acceptability, the efficacy of each treatment accompanied its description. Continuing to use a description of the students for whom the treatment was used as well as a description of each of the treatments, a partial replication of previous studies was conducted. The Treatment Evaluation Inventory was once again used to rate the acceptability of the treatments.

The results of this study indicated that efficacy did not affect the treatment acceptability of the interventions. A second study included the same variables as the previously mentioned study, but added the side effects of treatment to the treatment descriptions. Unlike effectiveness of the treatment, side effects did have an effect on the acceptability of the intervention (Kazdin, 1981).

In summary, results of research conducted by Kazdin (1980a, 1980b, 1981) produced several findings. The first finding was that there was a difference in the acceptability of various treatments for children with behavior concerns. Results of the studies indicated a preference for positive treatments (e.g., positive reinforcement) over negative treatments (e.g., medication, shock treatment) (Kazdin, 1980a). With respect to time out,



respondents rated less exclusionary forms of time out as more acceptable than more exclusionary forms (Kazdin, 1980b). Finally, while the effectiveness of a treatment did not affect its acceptability, the side effects of treatment did have an effect on the acceptability of the treatment (Kazdin, 1981).

It should be noted that the generalizability of the results should be considered with caution. In each of the studies, undergraduate psychology students were used as subjects. An argument could be made for the lack of knowledge and experience that these students possess in implementing the interventions. The instrument used in the experiment, however, appear to be sound. The Treatment Evaluation Inventory (TEI) used a 7-point Likert-type scale to evaluate 15 items. It was reported to be a single-factor instrument that produced similar results across various treatments (Kazdin, 1980a).

### **Later Studies on Acceptability of Behavioral Interventions**

In an effort to extend and increase the generalizability of results found in the studies by Kazdin (1980a, 1980b, 1981), Witt and his associates began a series of studies that were conducted over an eight-year period. The first of these studies (Witt & Martens, 1983) moved the focus of the study from the psychology arena to the education arena. In order to measure acceptability of interventions, the authors used the Intervention Rating Profile (IRP). Developed for this study, the Intervention Rating Profile contained 20 statements of acceptability that were used to rate interventions on a 6-point Likert-type scale. The authors report a .91 reliability coefficient for the instrument.

Using pre-service and student teachers as subjects, the researchers found that classroom interventions that were seen as appropriate for and helpful to the child were rated as acceptable (Witt & Martens, 1983). Other factors that affected the acceptability

ratings were: possible risks of the interventions to other children in the classroom, the amount of teacher time involved in implementing the intervention, the effects of the intervention on other children in the classroom, and the level of teacher skill necessary to implement the intervention (Witt & Martens, 1983).

As with Kazdin's earlier studies, the selection of undergraduate students as determiners of the acceptability of classroom interventions limits the generalizability of the findings of the study. Like Kazdin, however, the instrument used appeared to be reliable.

In a follow-up study, Martens et al. (1986) examined elementary teachers' perceptions of classroom interventions for students with behavior problems. Martens et al. used a 65-item questionnaire, the Classroom Intervention Profile that "assessed the effectiveness, ease of use, and frequency of use of various interventions applicable to classroom behavior problems" (p. 215). As results of previous research (Kazdin, 1980a, 1980b, 1981; Witt & Martens, 1983) have shown, teachers distinguished between treatments, preferring positive interventions rather than reductive treatments. Teachers in this study rated those interventions that were the easiest to implement as most acceptable (e.g., verbal redirection of the student, reinforcement with material rewards); they also reported using these more. The results also showed a teacher preference for interventions that could be carried out in the classroom over those that involved removing the student from the classroom.

While the methods used in this study appear to be sound, there is no reliability information reported for the instrument used in the study. This information would prove

useful in interpreting the results, particularly in generalizing the results to other groups. Without adequate reliability, the results and generalizability may be considered suspect.

Following this early research came numerous studies that examined factors related to the acceptability of classroom interventions for students with behavior problems (Witt et al., 1983; Witt & Martens, 1983; Elliot et al., 1984; Witt et al., 1984; Martens et al., 1985; Witt & Robbins, 1985; Epstein et al., 1986; Martens et al., 1986; Von Brock & Elliot, 1987; Elliot et al., 1987; Martens & Meller, 1989; Kutsick et al., 1991). These factors are described in the following discussion of related studies.

Witt et al. (1983) extended the earlier research conducted by Witt and Martens (1983) by attempting to analyze the variables that made various interventions acceptable to classroom teachers. The researchers examined two types of interventions (negative and positive) and the amount of teacher time required to implement the intervention (low, medium, high). Interventions that required less than 30 minutes per day to implement were considered to be a low time-consuming intervention; those requiring 30 minutes per day to maintain were considered a medium time-consuming intervention; and those requiring over one hour per day to implement were considered high time-consuming interventions. The Intervention Rating Profile was used to assess teachers' acceptability of classroom interventions. As previously noted, this instrument was developed for use in the earlier study by Witt and Martens (1983). The results of this study suggest that rather than a single factor affecting teachers' acceptability of an intervention, the level of acceptability was affected by a host of factors, including the risk that the intervention posed to the child, the amount of time required to implement the intervention, the effect that the intervention would have on other children in the classroom, and the level of

teacher skill needed to implement the intervention. It was noted that while positive interventions were rated higher than negative interventions, those interventions requiring higher amounts of teacher time were viewed as less acceptable (Witt et al., 1983).

In a similar study, Witt et al. (1984) examined the impact of teacher time, intervention type, and the severity of the student's behavior problem on teachers' acceptability of classroom interventions. For this study, practicing teachers were used as subjects rather than the undergraduate students previously used. The IRP (Witt & Martens, 1983) was again used to determine the acceptability of interventions. Findings of this study indicated that the amount of time required of the teacher for implementation of the intervention was a primary factor in its acceptability. Interventions that required greater amounts of time were rated as less acceptable than interventions requiring lesser time commitments. The severity of the behavior problem and type of intervention did not affect the teachers' acceptability of the intervention.

A later study by Martens et al. (1985) found that the severity of the behavior problem did impact the teachers' acceptability of an intervention. In addition to severity of the behavior problem, the person responsible for implementing the intervention and the modality in which the cases were presented (i.e., written or visual) were examined. While the mode of presentation did not affect the teachers' acceptability, the person responsible for implementing the intervention did have an effect on their acceptability rating (Martens et al., 1985). Additional findings contradictory to previous research were noted as well. In the present study, interventions requiring moderate amounts of time were seen as more acceptable than interventions requiring less time. Collaboration was also a factor in teacher acceptability of the accommodations in this study. That is, the

teachers involved in this study preferred interventions that they carried out themselves, even if those interventions required more time to implement (Martens et al., 1985).

Expanding on the previous research, Kutsick et al. (1991) examined the effect of the process of developing a treatment, the type of intervention implemented, and the severity of the child's behavior problem on acceptability. As in previous studies, the results of this study showed the teachers' preference for reinforcement over reductive forms of treatment. The findings of this study also revealed no difference in the acceptability of a treatment in relation to the severity of the child's behavior problem (i.e. mild or severe, as determined by the frequency and intensity of the behavior).

In a partial replication of the earlier work by Kazdin (1981), Von Brock and Elliot (1987) examined the effect of treatment effectiveness, the type of intervention and the severity of the child's behavior problem on the acceptability of classroom interventions. The researchers reported a high ( $r=.79$ ) correlation between the acceptability of the treatment and its reported effectiveness (Von Brock & Elliot, 1987). These results support the findings of Witt and Elliot (1985); however, they contradict those of Kazdin (1981). Results further suggested that the severity of the problem affected the acceptability when the problem was considered a mild one. Additionally, the results of this study indicated that when teachers viewed treatment as less acceptable, they also rated it as less effective (Von Brock & Elliot, 1987).

Martens and Meller (1989) examined the impact of child and classroom characteristics on the acceptability of classroom interventions. For this study, subjects were presented with a vignette describing a child who engaged in problem behaviors. The subjects were asked to rate one of two treatments (response cost or home-based reinforcement) using

the IRP-15. This instrument is a revised version of the previously used IRP. Twelve items from the original instrument were retained and 3 items from another instrument were added. The IRP-15 used a 6-point Likert-type scale to measure acceptability of the treatment. The authors reported that the reliability coefficient, the Cronbach's alpha, was .88 for this study.

The findings of this study reproduced previous results that positive forms of treatment were viewed as more acceptable than negative forms of treatment (Kazdin, 1980a, 1980b, 1981; Witt & Elliot, 1985). Additional findings suggested that the characteristics of a child on whom the intervention was used (e.g., intelligence of the child) affected the acceptability of the intervention; the classroom characteristics (e.g., class size, type of class), however, did not have an effect on the acceptability of classroom interventions.

Elliot et al. (1987) examined a combination of teacher variables and student variables and acceptability. Using, students, teachers, and school psychologists as subjects, they investigated the acceptability of group contingencies (e.g., dependent, independent, and interdependent group contingencies). Dependent group contingencies were defined as those where the reinforcement was delivered contingent upon a small group of students. Independent group contingencies, on the other hand, were delivered based on criterion set for the entire group, but delivered based on individual student's behavior. Interdependent contingencies were defined as those delivered based on criterion set for the entire group, and delivered to the group as a whole. Other variables examined included the sex of the rater and the severity of the hypothetical classroom behavioral problem (Elliot et al., 1987).

Subjects in this study were presented with a vignette describing a classroom behavior problem. A possible solution for the behavior problem followed each scenario. The fifth grade students participating in the study completed the Children's Intervention Rating Profile (CIRP) (Witt & Elliot, 1985). This is a 6-item instrument in which each item is rated on a 6-point Likert-type scale. The authors of the CIRP report a high reliability coefficient ( $\alpha=.89$ ). The teachers and psychologists in this study completed the Intervention Rating Profile (Witt & Martens, 1983).

Results indicated that all groups rated group contingencies as an acceptable treatment for classroom behavior problems (Elliot et al., 1987). Neither the gender of the rater nor the severity of the behavioral problem impacted the acceptability ratings.

Also combining teacher variables and child characteristics in their research, Epstein et al. (1986) investigated teacher training (regular vs. special education), the child's exceptionality (mental retardation vs. learning disability), and their effects on the acceptability of treatments. Subjects in this study were given a description of a child who exhibited characteristics consistent with Attention Deficit Hyperactivity Disorder. Based on this description of the child, subjects were asked to rate five different treatments, descriptions of which were provided to subjects, using the Treatment Evaluation Inventory (Kazdin, 1980a).

The first phase of the study showed that while teachers distinguished between treatments (i.e., there were differences in ratings of acceptability of different interventions), there was no difference in the acceptability of treatments between regular and special educators. Similarly, the student's disability did not affect the teachers' acceptability of classroom interventions (Epstein, et al., 1986).

Witt and Robbins (1985) and Elliot et al. (1984) studied the acceptability of positive and reductive interventions for students with behavior problems. In both of these studies, practicing teachers were given case studies that included a description of a child exhibiting behavior problems as well as a description of possible interventions to address the behavior problems. The teachers were asked to rate the acceptability of the intervention using the IRP (Witt & Martens, 1983). Researchers in these studies used similar methodology, differing only in the interventions presented to respondents.

Witt and Robbins (1985) found that all of the treatments included in the study (time-out, differential reinforcement of low rates of behavior, staying after school, reprimands, differential rates of other behaviors, and corporal punishment) were viewed as more acceptable by teachers with fewer years of experience than by more experienced teachers. Elliot et al. (1984) examined positive and reductive interventions to determine if differences between the acceptability of the two existed. Consistent with earlier studies, their findings revealed that teachers viewed positive interventions as more acceptable than reductive interventions. Ease of implementation and time involvement were also found to affect the acceptability of classroom interventions for students with behavior problems. It should be noted that while a relatively small sample size ( $n=71$ ) and the use of analog research limits the generalizability of these results, the use of experienced teachers represents an improvement in the methodology over previous acceptability research.

When examining the research on acceptability of behavioral interventions, several recurring findings appear in the results. One of the findings relates to the usefulness of the intervention. Some of the factors related to usefulness that have been shown to



correlate with acceptability include the appropriateness of the intervention and the perceived helpfulness of the intervention for the child's problem. Related to the usefulness was the concern for children's safety. Those interventions that were seen as less intrusive and posed little or no threat to the student involved in the intervention, as well as the other students in the classroom were viewed as more acceptable than those that posed a threat to students. Teacher variables that affected acceptability included level of skill and time required to implement the intervention. Those interventions requiring more time and skill were seen as less acceptable than those requiring less time and skill to implement. Teachers also expressed a preference for interventions that could be carried out in the classroom as opposed to those requiring removal of the student from the classroom to implement. The trends also showed variables that did not impact the acceptability of behavior interventions. Some of these included the severity of the behavior problem, classroom characteristics (e.g., size, type of class), gender of the respondent, and specialty area of the teacher (general or special education).

While the conclusions drawn from this research shed light on the acceptability of behavioral interventions, the results may not be generalized to academic accommodations. A potential question that arises in generalizing the results to academic accommodations is whether teachers are more willing to accommodate behavior difficulties or academic difficulties. While some of the same factors may affect teacher acceptability of academic accommodations in the general education classroom (e.g., amount of time needed to implement, skill level needed to implement, perceived effectiveness of the accommodation), there remains a need to systematically extend this research to address academics. With the increasing numbers of students with disabilities

receiving educational services in general education classrooms (U.S. Department of Education, 2000), teachers are also called upon to implement academic interventions for students with disabilities. Few studies have addressed the acceptability of academic interventions in general education classrooms. The focus of this review of the literature now turns to an examination of the literature on accommodations for students with disabilities, followed by a review of previously conducted research in this area.

### **Modifications for Students with Disabilities**

Researchers conducting studies in the area of accommodations and modifications for students with disabilities have used various definitions of adaptations in their studies (Scott, Vitale, & Masten, 1998). Gunter, Denny, and Venn (2000) define modifications and adaptations to the curriculum as “changes that result in enhancement of instructional stimuli to allow students to more readily attain the same results from instruction as students without disabilities” (p. 116). According to Cole, Horvath, Chapman, Deschens, Ebling, and Sprague (2000), adaptations maximize the participation of students with disabilities in typical curriculum and instruction as well as maximizing the student’s involvement in his/her peer group. Scott et al. (1998) contend that “instructional adaptations require teachers to implement alternative teaching actions such as modifying materials, assignments, testing procedures, and grading criteria or varying presentation styles, group sizes, and feedback techniques in order to enhance the success of students with disabilities in general education settings” (p. 106). For the purpose of this study, the terms accommodations, adaptations, and modifications will be used interchangeably to mean any changes made to the curriculum, instruction, and/or assessment in order to increase the likelihood of student success.

There are numerous approaches to developing academic accommodations for students with disabilities. One such structure, developed by Cole et al., classifies accommodations according to whether they are adaptations in curriculum, instruction, or assessment. Cole et al. (2000) define the three areas of accommodations: what the students will be taught (curriculum); the process by which the students will learn and understand what is taught (instruction); and how the students will demonstrate what they have learned (assessment).

The first area, adaptations to the curriculum involve changes to the material presented to the student. For example, teachers may choose to focus on fewer objectives (Salend, 1998). Fagan, Graves, Healy, & Tessier-Switlick (1986) have suggested reducing the level of difficulty of material presented (e.g., reading the same novel at a lower reading level). In the case of students with more significant disabilities, modified goals or substitute curriculum may need to be considered. Modified goals are the expectations that have been altered, or adapted, to meet the needs of the student with disabilities. Substitute curriculum refers to the instruction and materials that have been significantly altered (Cole et al., 2000).

Modifications to the instruction of students with disabilities provide students with adaptations in the presentation of material to be learned. For example, research has shown that the use of direct instruction enhances the academic achievement of students with disabilities (White, 1988; O'Connor, Jenkins, Cole, & Mills, 1993; Serwer, Shapiro, & Shapiro, 1973; Marston, Deno, Kim, Diment, & Rogers, 1995). The use of technology as a teaching tool has also been shown to be effective (Torgesen & Barker, 1995; Wissick, 1996). Teaching students cognitive strategies that empower them in their learning has been shown to be effective as well (Pressley & Woloshyn, 1995; Reid &

Stone, 1991; Dixon & Rossi, 1995). The use of curriculum-based assessment (CBA) (Mercer & Mercer, 1998; Deno, 1987) can be used to allow students to demonstrate current mastery of skills as well as to observe ongoing mastery. Previous studies have also shown that the use of CBA, along with appropriately modified instruction, may increase student achievement (Fuchs, Fuchs, Hamlett, & Stecker, 1991).

The adaptations made to assignments, a second area identified by Cole et al. (2000), can help to meet the needs of students with disabilities. Teachers may choose to modify student output by allowing assignments to be ready orally and having students dictate their answers. This adaptation may be made to tests as well (Friend & Bursuck, 2002; Fagen et al., 1986; Meese, 2001). Students with disabilities may also be allowed to do an alternative assignment or project (Fagen et al., 1986; Smith, Finn, & Dowdy, 1993; Lewis & Doorlag, 1999; Meese, 2001). Lewis and Doorlag (1999) also suggest substituting an easier or prerequisite task for the assignment given (e.g., instead of completing a writing assignment explaining the steps involved in a science experiment, the student may be allowed to draw the steps).

In addition to the content, length of assignments may also be altered. For example, the student with disabilities may have fewer problems on a math worksheet (Cheney, 1989; Struyk, Epstein, Bursuck, Polloway, McConeghy, & Cole, 1995). The teacher may also choose to develop alternative worksheets, or she may choose to divide the worksheet that other students are completing by either cutting or folding the page (Fagen et al., 1986). In addition, the teacher may choose to break down a task into smaller subtasks (i.e., task analysis) (Lewis & Doorlag, 1999).

The time needed for students with disabilities to master a skill varies greatly; thus, modifications are often needed in this area. Modifications to the time needed for students with disabilities to master a skill can take different forms. One adaptation is to vary the rate of instruction, as students with disabilities may have difficulty with new material that is introduced at a pace that is too rapid (Lewis & Doorlag, 1999). According to Friend and Bursuck (2002), “New skills should be introduced in small steps and at a rate slow enough to ensure mastery prior to the introduction of more new skills” (p. 314).

Additionally, students may be given extended time to complete assignments or tests (Friend & Bursuck, 2002; Mercer & Mercer, 1998). Students may also be given assignments that have been broken down into smaller parts (Lewis & Doorlg, 1999).

Difficulty of the material being presented is another area in which adaptations may be made. Adaptations to the difficulty of material include having students use pictures or diagrams as part of written assignments (Fagen et al., 1986). Smith et al. (1993) have suggested using different levels of questioning for students with disabilities; that is, asking more concrete or recall questions. Munk and Bursuck (1998) have suggested three modifications to grading for students with disabilities:

- 1) changes to letter and number grades (e.g., providing a grade plus additional comments, or supporting the grade with other assessment sources, such as a portfolio or performance assessment)
- 2) changing the grading criteria for students with disabilities
- 3) using alternatives to traditional number and letter grades (e.g., using checklists or a pass/fail option).

Adaptations in the form of supports may be provided for students during instruction or completion of assignments. One example of a frequently used support is scaffolding, which provides “temporary and adjustable” support as the student learns and develops new skills (Bos & Vaughn, 1998). Other students may also provide support to students with disabilities through the use of peer tutoring (Mercer & Mercer, 1998; Henley, Ramsey, & Algozzine, 1999; Bender, 1996; Meese, 2001) or cooperative learning (Kagan, 1992; Henley et al., 1999; Bender, 1996; O’Connor & Jenkins, 1996; Johnson, Johnson, & Maruyama, 1983; Slavin, Madden, & Levy, 1984). As a support for organizing information, graphic organizers, such as story maps (Bos & Vaughn, 1998) provide students with a visual means for the organization of information (Deschler, Warner, Shumaker, & Alley, 1983; Mercer & Mercer, 1998; Henley et al., 1999; Bender, 1996). In order to make the previously discussed adaptations more effective, teachers may choose to alter the classroom environments so that distracters are minimized (Cheney, 1989; Mercer & Mercer, 1998).

The third area in which students with disabilities may require adaptations is assessment, or how the student will demonstrate what has been learned. Many of the adaptations made in instruction can also be used for assessment. For example, tests may be read orally and/or student responses may be dictated (Friend & Bursuck, 2002; Fagen et al., 1986). A student with disabilities may also be given less material to study; the student is then required to answer only the questions that the teacher has chosen (i.e., those that correspond to the material the student has studied) (Friend & Bursuck, 2002; Fagen et al., 1986). Students may also be given extended time (Zuriff, 2000; Thurlow, Ysseldyke, & Silverstein, 1995), or have the test broken down into smaller parts,

allowing a break between completion of the sections (Lewis & Doorlag, 1999). Students may also have tests read orally to them, or they may read them orally themselves (Johnson, 2000).

The adaptations described above represent a sampling of those found in the literature. The literature, however, contains limited empirical studies, focusing rather on professional opinion, anecdotal articles, and in many cases, common sense, when suggesting adaptations for students with disabilities.

### **Acceptability of Academic Interventions**

While many studies have examined the acceptability of behavioral interventions, considerably fewer examine teachers' acceptability of instructional accommodations. The next portion of this literature review focuses on the acceptability of instructional accommodations for students with mild disabilities in regular education classrooms.

Ysseldyke, Thurlow, Wotruba, and Nania (1990) opine "it is generally agreed that participation in regular education settings is important for students with handicaps" (p. 4). It has further been noted that in order for students with disabilities to be successful in regular education settings, teachers must be able to make accommodations to meet the students' needs (Lambert et al., 1996; Bacon & Schulz, 1991). However, according to Ysseldyke et al. (1990), not enough is known about which accommodations regular classroom teachers use. In fact, observational research findings suggest that little is done to accommodate the student with disabilities in regular education classrooms (Zigmond, Levin, & Laurie, 1985; Whinnery et al., 1991; Ysseldyke et al., 1990).

One factor affecting whether accommodations are implemented may be the acceptability of the accommodation (Johnson & Pugach, 1990; Polloway et al., 1996;

Schumm & Vaughn, 1991; Whinnery et al., 1991; Lambert et al., 1996; Witt & Elliot, 1985; Gunter & Denny, 1996; Storey & Horner, 1991; Reimers et al., 1987). A discussion of selected research related to the acceptability of academic accommodations will now be presented.

Johnson and Pugach (1990) investigated the reasonableness and frequency of use of classroom interventions. Examining both behavioral and academic interventions, they surveyed a group of midwestern teachers (n=232) using the Teacher Intervention Questionnaire, an instrument developed for this study. The 57-item instrument uses a 4-point Likert-type scale for rating the acceptability of interventions. Follow-up telephone interviews were conducted with a group of these teachers (n=87) to elaborate on answers they provided on the survey. Review of the data revealed that despite their opinions that some accommodations were reasonable (e.g., compiling data about behavior problems, demonstration of difficult tasks to the student), teachers did not use these strategies (Johnson & Pugach, 1990). Teachers also showed little interest in factors unrelated to the student's classroom problem, suggesting that the teachers in this study were not concerned with matters over which they have no control. Additionally, while teachers recognized other teachers and parents as sources of information about the student, they chose not to use their input when developing classroom interventions. Consistent with previous research (Martens et al., 1985), findings of this study showed that teachers preferred interventions for which they were responsible for implementing (e.g., collecting data from other teachers, consulting with other teachers or parents). Results of the interviews indicated that most teachers did not implement the interventions because they



were seen to either break some rule or to be ineffective (i.e., to make the child's problem worse).

In their attempt to extend the research on acceptability of interventions for behavior and learning problems, Whinnery et al. (1991) surveyed teachers to determine their rating of various interventions. The instrument developed for this study consisted of 19 strategies that could be used in an inclusive classroom. These items were rated on a 5-point Likert-type scale. Teachers rated the amount and quality of assistance for their mainstreaming efforts. In addition, general educators were asked how competent they felt to teach students with disabilities and how willing they were to do so. Similarly, the special education and remedial education teachers were asked how competent and willing they were to assist general education teachers in the mainstreaming of students with disabilities in general education classes. Results of the study indicated no difference in the amount and quality of assistance received by general education, special education, and remedial education teachers. Findings also suggested that while special education and remedial education teachers felt competent and were willing to assist regular education in their mainstreaming efforts, regular education teachers neither felt competent nor were willing to teaching students with disabilities (Whinnery et al., 1991).

While extending previous work on acceptability of classroom interventions (Witt, 1986; Martens et al., 1986), results of this study should be viewed with caution. While reporting 114 participants in the study, only 55 teachers were actually included (114 questionnaires were sent out to potential participants). The small number of participants could limit the generalizability of the study. It should also be noted that no reliability

information for the instrument was provided; further, it is unclear whether reliability of the instrument was established prior to its use in the current study.

Hypothesizing that easier, less time-consuming accommodations would be more feasible and desirable than more difficult to implement accommodations, Schumm and Vaughn (1991) examined the willingness of general education teachers to make accommodations for students with disabilities in their classrooms. They also sought to determine if a difference existed in the responses of teachers from various grade levels (i.e., elementary, middle, and high school). Using the Adaptation Evaluation Instrument (AEI), the researchers surveyed 93 teachers in the southeastern portion of the United States. Developed for use in this study, the AEI consists of 30 items (adaptations that could be used for students with disabilities) that were rated on a 7-point Likert-type scale. The items were rated according to desirability and feasibility. Desirability was defined as “how much the teacher would like to implement the adaptation in the classroom” and feasibility was defined as “how practical it would be to actually implement the adaptation” (Schumm & Vaughn, 1991, p. 20).

Results showed no difference in the willingness of teachers across grade levels to make accommodations for students with disabilities in general education classrooms. Findings also indicated that while teachers are willing to make superficial accommodations (e.g., provide reinforcement and encouragement, establish a personal relationship with the student, involve the student in whole class activities), they do not think it desirable or feasible to provide substantive accommodations such as adapting regular materials, using alternative materials, and providing individualized instruction. According to Schumm and Vaughn (1991)

This information is particularly relevant in light of the emphasis on educating special education students in the general education classroom. The assumption is that classroom teachers are willing to make instructional, curricular, and planning adaptations. The results of his survey suggest that teachers do not perceive these types of adaptations as highly desirable or feasible. (p. 22-23)

In an examination of rural teachers' willingness to provide accommodations to high school students, Lambert et al. (1996) studied teachers' past and future willingness to provide accommodations for students with disabilities. The researchers report using an unnamed instrument that had previously been used in acceptability research. The instrument used in this study consisted of 20 items that were rated on a 5-point Likert-type scale. The authors reported the reliability, Cronbach's alpha, was .87.

Results of the survey showed that, contrary to previous research findings, teachers involved in this study used a majority of the accommodations included in the survey; 16 of the 20 accommodations had been used by a majority of the respondents (Lambert et al., 1996). Results also suggested that while teachers had provided some accommodations in the past (e.g., allowing extra credit work, adjusting grading criteria), they were uncertain about providing these accommodations in the future. Similar to previous findings, teachers in this study showed a preference for those accommodations requiring less time and effort to implement (Lambert et al., 1996). The authors suggested that this finding may stem from a lack of time for implementing the accommodation; insufficient knowledge of how to implement the accommodation was also considered as a possible explanation.

The relatively small sample size (n=121) and its single geographic location (15 school districts in central Montana) limit the generalizability of this study. Extending the sample selection beyond the one portion of the state of Montana would have increased the study's external validity.

The review of the literature indicates that a number of studies have been done examining the acceptability of classroom behavior interventions. In contrast, few studies have been conducted that examine the acceptability and use of academic accommodations in general education classrooms. This incomplete body of research suggests a need for continued inquiry into the acceptability of academic accommodations for students with disabilities in inclusive classrooms. The current study aims to investigate the missing link in the acceptability research by examining the relationship between teachers' acceptability of academic accommodations and the use of those accommodations.

### **Teacher Efficacy**

Self-efficacy has been defined in a myriad of ways. Salomon (1983) has defined it in a general sense, stating that self-efficacy refers to how well an individual believes he can handle a situation or execute a course of action. In their study published by the RAND corporation, Berman, McLaughlin, Bass, Pauly, and Zellman (1977) focused their definition on teachers and described teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (p. 137). Based on the definitions of Gibson and Dembo (1984) and Ashton and Webb (1986), Soodak and Podell (1993) define teacher efficacy as "the conviction that one can successfully bring about the desired outcomes in one's students" (p.67). Brownwell and Pajares (1999) note

that “teacher efficacy beliefs are contextual judgements of their capability to succeed in particular instructional endeavors” (p. 154). As one can see, the definition of teacher efficacy has evolved into a more precise definition; researchers have recently begun to suggest a contextual aspect to the construct as well. Tschannen-Moran, Woolfolk Hoy and Hoy (1998) reflect this shift in conceptual orientation and definition in their description: “teacher efficacy is the teachers’ belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context” (p. 233).

Conceptually, teacher efficacy has its roots in two different theoretical origins. The first studies of teacher efficacy were based on Rotter’s social learning theory. Rotter (1966) explained that people believe that the reinforcement they receive comes from some force outside of their control such as luck or fate, referred to as external control, or that some event is dependent upon his own behavior or some other permanent personality characteristic, known as internal control. This came to be known as locus of control and was the basis for the measuring of teacher efficacy in the RAND studies (Tschannen-Moran et al., 1998). In the RAND studies (Berman et al., 1977; Armor, Conroy-Oseguera, Cox, King, McDonel, Pascal, Pauly, & Zellman, 1976), two questions that were part of a more extensive instrument were used to assess teacher efficacy. Examining teacher characteristics and student learning, researchers asked respondents to rate their agreement of the following two statements:

1. When it comes right down to it, a teacher really can’t do much because most of a student’s motivation and performance depend on his or her home environment.

2. If I try really hard, I can get through to even the most difficult or unmotivated students.

A second conceptualization of teacher efficacy grew out of Bandura's (1977) social cognitive theory. Bandura identified a two outcome expectancy model: (a) a general outcome expectancy and a more specific (b) sense of self-efficacy making the distinction between the two thusly:

An outcome expectancy is defined as a person's estimate that a given behavior will lead to certain outcomes. An efficacy expectation is the conviction that one can successfully execute the behavior required to produce the outcomes. Outcome and efficacy expectations are differentiated, because individuals can believe that a particular course of action will produce certain outcomes, but if they entertain serious doubts about whether they can perform the necessary activities such information does not influence their behavior (p. 193)

While the theoretical origin of teacher efficacy can be traced to both Rotter's social learning theory and Bandura's social cognitive theory, Bandura (1977) provides a distinction between the two. He argues that locus of control is "primarily concerned with causal beliefs about action-outcome contingencies rather than with personal efficacy" (p. 204). That is, locus of control is related to contingencies, while outcomes are determined by one's own actions. Bandura further asserts that while self-efficacy is a strong predictor of behavior, locus of control has been shown to be a weak predictor of behavior.

## Measuring Teacher Efficacy

The earlier studies examining teacher efficacy used the two previously mentioned RAND studies items as their measurement instrument (e.g., Ashton & Webb, 1986; Safran, 1985; Meijer & Foster, 1988). Although these studies produced significant results (these studies are examined later in this review of literature), the generalizability of the results could be viewed as problematic because of the small number of items. Guskey and Passaro (1994) asserted that “early measures of teacher efficacy tended to be rather crude and simplistic” (p. 628). One could question if this simplicity was related to the more global, and perhaps simplistic, earlier definitions.

Gibson and Dembo (1984) expanded the previously used two-item survey by developing a thirty-item instrument, the Teacher Efficacy Scale (TES), that measured two factors related to teachers’ sense of efficacy. These two items are general teaching efficacy (GTE) and personal teaching efficacy (PTE). Gibson and Dembo defined general teaching efficacy as “a belief that any teacher’s ability to bring about change is significantly limited by factors external to the teacher, such as home environment, family background, and parental influences” (p. 574). Conversely, personal teaching efficacy was defined as the “belief that one has the skills and abilities to bring about student learning” (p. 573). Since its original development, the Teacher Efficacy Scale has undergone revisions to enhance its psychometric properties as well as to make the instrument specific to the participant group of various studies. For example, wording of the statements was changed to measure teacher efficacy beliefs about a particular subject. The wording was also changed to measure teacher efficacy beliefs of special education resource teachers (Tschannen-Moran et al., 1998). In addition, the use of vignettes has

been reported in studies on teacher efficacy and referrals to special education and preferences for special education placement (Soodak & Podell, 1993, 1994). A revised version of the TES, the Teacher Sense of Efficacy Scale, was used in the current study.

### **Selected Research Addressing Teacher Efficacy**

In the twenty-five years since Bandura (1977) determined self-efficacy to be a major predictor of behavior, much research has examined the relationship between teacher efficacy and various classroom behaviors. A review of the studies relevant to the current study will be examined.

Summing up the findings of a quarter century of teacher efficacy research, D. Kagan (1992) asserted that research has found that “a teacher’s beliefs usually reflect the actual nature of the instruction the teacher provides to students” (p. 73). Teachers’ efficacy has been found to correlate with such teacher behaviors as higher levels of persistence (Gibson & Dembo, 1984), likelihood of trying new innovations (Smylie, 1988; Guskey, 1988), lesson presentation, questioning behavior, and successful behavior management (Saklofske et al., 1988), and implementation of new curriculum (Poole & Okeafor, 1989). Ashton and Webb (1986), Armor et al. (1976), and Berman et al. (1977) found positive correlations between teacher efficacy and student achievement. DeForest and Hughes (1992) found that teachers with higher personal teaching efficacy found consultation services more effective and were more accepting of the interventions suggested by the consultant. Findings from studies suggest that teachers with higher teacher efficacy prefer collaborative relationships (Morrison, Walker, Wakefield, & Solberg, 1994). Research on the relationship between teacher efficacy and classroom behaviors indicates that higher efficacy teachers are less likely to refer students for special education



services, and are more likely to prefer general education as a placement option (Brownwell & Pajares, 1999; Soodak & Podell, 1993, 1994; Meijir & Foster, 1998).

Issues relating to teachers of students with disabilities have also been explored, including instructional practices (Allinder, 1994; Bender & Ukeje, 1989) and instructional supervision (Coladarci & Breton, 1997).

In their multi-stage study, Gibson and Dembo (1984) established construct validity for their measure of teacher efficacy, the Teacher Efficacy Scale (TES). The first phase of their study, a factor analysis, supported Bandura's (1977) theory of two factors comprising teacher efficacy. In a follow-up phase, high efficacy and low efficacy teachers were observed in their classrooms. These observations indicated that teachers with higher efficacy spent more time in whole group instruction, spent more time monitoring independent practice, and criticized students for incorrect answers less than did low efficacy teachers. High efficacy teachers were also found to persist with students who had answered incorrectly longer than low efficacy teachers.

While the sample size for the validation stage was adequate ( $n=208$ ), the number of participants in the follow-up stage was small ( $n=8$ ). The authors cautioned that the small sample size could affect the generalizability of the results; the study, however, began a long string of research studies examining various correlates of teacher efficacy. One area that garnered much attention was the correlation between teacher efficacy and teacher behaviors. A review of the studies that examined these relationships will now be presented.

The relationship between various factors and changes in teacher practice as a result of staff development was examined by Smylie (1988). Factors included principal's goal

emphasis, principal's facilitation of teacher interaction, staff cooperation, certainty of practice, and personal teaching efficacy. Data were collected from elementary and secondary teachers who participated in the Effective Use of Time Staff Development (EUOT) through observations, teacher surveys and interviews, and a classroom information questionnaire. According to the author, a path analysis "was employed to test the relative importance of the organizational and psychological variables on change in teacher practice" (p. 19). Results of the path analysis indicated that teacher efficacy was the highest correlate with the use of strategies used in the staff development program. The only other factor that was a statistically significant correlate was class size. These findings led the author to contend

The direct relationship between personal teaching efficacy and change suggests that teachers are more likely to change their behavior in directions that may improve their classroom effectiveness if they believe that they themselves are instrumental to the learning of their students (p. 23).

Another area of research in teacher efficacy has been its relationship to the implementation of instructional strategies (Guskey, 1988; Poole & Okeafor, 1989; Allinder, 1994). In Guskey's (1988) study, teachers participated in a staff development that focused on instructional strategies for mastery learning. Following the staff development, teachers were asked to complete a questionnaire that included the two previously mentioned statements from the RAND studies. Respondents rated their agreement of the statements on a 5-point scale ranging from strongly agree to strongly disagree. Findings from the study suggested that teachers who were more efficacious

tended to be more receptive to the implementation of new teaching practices, in this case those strategies related to mastery teaching.

Similar results were produced in a study by Allinder (1994). This study, whose sample consisted of 200 special education teachers from 4 midwestern states, examined the relationship between teacher efficacy and instructional characteristics such as instructional experimentation, instructional routine, degree of demoralization, organization, and progressiveness or innovation. Since the TES was used, separate scores for general teaching efficacy and personal teaching efficacy were obtained, thus allowing for correlations of both to instructional characteristics to be calculated. Results showed a significant correlation between personal teaching efficacy and instructional experimentation, business-like approach, and assuredness. General teaching efficacy correlated only to assuredness. The relationship between personal teaching efficacy and its instructional characteristics led the researcher to conclude that teachers with higher personal teaching efficacy scores were more likely to try new teaching innovations, to be more business-like in their approach to teaching (by being organized and by being fair with students), and to be more confident in their teaching (Allinder, 1994).

Similar results were reported by Bender and Ukeje (1989). Their study included 50 teachers of mainstreamed students from 14 different school districts and explored the relationship between teacher efficacy and the instructional strategies used. Findings supported the authors' hypothesis that teachers' sense of personal efficacy was related to the instructional strategies (e.g., individualized instruction and cognitive learning strategies) the teachers chose to use in their mainstream classes. Those teachers with higher personal teaching efficacy scores reported using the above mentioned strategies

more than teachers with lower personal teaching efficacy scores. These findings led Bender and Ukeje (1989) to conclude that teaching efficacy may be a large determinant of instructional strategies that teachers use in their mainstream classes.

Contrary to the results from these studies, as well as those by Ashton and Webb (1986), Poole and Okefor (1989) found that teacher efficacy had no effect on the implementation of changes in curriculum. Their study focused on a district that was in the first year of implementation of a new curriculum. It should be noted that district-wide, only partial implementation of the new curriculum was occurring. Also noteworthy, and a possible explanation for the lack of support for their hypothesis, is that the sample pool consisted of teachers (K,1,2,3) from one district. In addition to the new curriculum, one could speculate that district-related factors may have affected the results of the study.

Research studies also examined teacher efficacy and teacher behaviors related to working with other professionals (DeForest & Hughes, 1992; Morrison et al., 1994; Minke, Bear, Demer, & Griffin, 1996). The study by DeForest and Hughes (1992) focused on participants' self-efficacy and their perceived effectiveness of a consultant. In addition, the relationship between teacher efficacy and acceptance of the interventions suggested by the consultant was examined. The participants in this study (30 teachers with high PTE and 30 teachers with low PTE as determined by scores on a modified version of the TES; that is, only the 9 items that loaded on the PTE factor) viewed a video and rated the effectiveness of the consultant using the Consultant Evaluation Form (CEF). The Intervention Rating Profile (IRP) was used to rate the acceptability of interventions suggested by the consultant in the video. Results from the study indicated

that teachers who scored higher on PTE rated the consultant more effective than teachers with low PTE scores. Teachers with a higher PTE score also rated the interventions as more acceptable (DeForest & Hughes, 1992).

Morrison et al. (1994) found significant relationships between teachers' work preferences (collaborative, consultative, or none) and personal teaching efficacy. The authors reported a significant relationship between personal teaching efficacy and a preference for collaborative relationships; that is, teachers with higher PTE scores preferred collaborative arrangements. These correlations were noted for both practicing teachers and preservice teachers involved in a fifth year teacher preparation program. These results also indicated lower preferences for collaborative arrangements and lower efficacy scores for high school teachers than for elementary teachers, both practicing and preservice. This finding may be attributed to the "subject-matter orientation of secondary school structure and curriculum" (Morrison et al., 1994, p. 229).

Also focusing on teachers' work arrangements, Minke et al. (1996) examined the relationship between self-efficacy and teachers' attitudes toward inclusion. Additional variables included perception of teacher competencies, and the desirability and feasibility of instructional adaptations. Included in the study were general education teachers in traditional classes, general education inclusion teachers, and special education inclusion teachers. Results indicated that both general education and special education teachers in the inclusion classes scored higher on teacher efficacy measures than general education teachers in traditional classes. Teachers involved in teaching students with disabilities also reported higher self-ratings of confidence, greater acceptance of inclusion and instructional accommodations used in the inclusive classroom. Although the

accommodations included in the instrument represented more substantial modifications than in earlier acceptability studies (e.g., Schumm & Vaughn, 1991; Ysseldyke et al., 1990), there were only a few of them included on the instrument. It seems questionable that the assessment of only six modifications is generalizable to other modifications.

Several researchers have explored the relationship between teacher efficacy and the number of referrals made to special education (Meijer & Foster, 1988; Soodak & Podell, 1993, 1994). In their study conducted in the Netherlands, Meijer and Foster (1988), presented participants with written vignettes that described a second-grade student (second grade was targeted because that was the grade that statistically had the highest number of referrals to special education). Respondents rated the problem according to how severe they thought the problem was. These scores were significantly, albeit weakly, correlated with the teachers' self-efficacy scores as measured by the Dutch Teacher Self-Efficacy Scales. Those teachers who scored highest on the teacher efficacy measures rated the problem as less severe and indicated that they would be less likely to refer the child for special education services. The authors recognized the small effect, but added "it seems that the self-efficacy effect is of potential practical importance and deserves additional attention" (Meijer & Foster, 1988, p. 383).

In two separate studies, Soodak and Podell (1993, 1994) examined teachers' behavior related to "difficult to teach" students. In their first study, Soodak and Podell (1993) examined the referral chances of general education and special education teachers. Using case studies, the teachers were asked to rate the chances they would refer the student for special education services. In addition, they were asked about whether they felt that the student's current general education placement was appropriate. When these ratings were

correlated with scores on Gibson and Dembo's (1984) Teacher Efficacy Scale, the results showed that teachers' sense of efficacy had a significant impact on their decision to refer a student for special education services, as well as their judgement of the appropriateness of general education placement (Soodak & Podell, 1993). Both general and special education teachers with higher efficacy scores were less likely to refer the student for special education services and more likely to agree that general education was the appropriate placement for the student.

The follow-up study by Soodak and Podell (1994) looked at how teachers deal with difficult to teach students. The participants again responded to a case study, this time having to develop their own intervention strategies and rating their perceived effectiveness. Participants' responses were coded and were compared to their scores on the Teacher Efficacy Scale. Both measures were administered at the same time. Results indicated that teachers who had higher personal efficacy scores suggested more teacher-based interventions. General efficacy scores, however, did not correlate with the suggested interventions. The researchers concluded that teachers' confidence in their own effectiveness does, in fact, affect their decisions in the instruction of difficult to teach students. In order to be effective Soodak and Podell asserted "teachers must not only believe that the intervention they are suggesting can be effective, but they must also have confidence in their ability to implement the intervention effectively" (p. 50).

While the majority of studies of teacher efficacy have involved general education teachers as respondents, a few studies involved special education teachers. McDaniel and DiBella-McCarthy (1989) contend that this focus on special education teachers' sense of

efficacy is important because of the nature of the students whom they teach. According to McDaniel and DiBella-McCarthy (1989)

Lack of perceived success is an obvious source of stress in special education because the students often learn at a slower rate and are in need of specialized instructional techniques and materials. The potential for failure is high if teachers have unrealistic expectations for the instructional programs they implement. When students do not meet their expectations, teachers can have a diminished sense of efficacy (pp. 35-36).

In their study, Coladarci and Breton (1997) examined the correlates of teacher efficacy using resource teachers as participants in the study. In particular, they examined resource room teachers' perceived utility of the supervision they received. Respondents were asked to rate the utility of the supervision; in addition, they completed a revised version of the Teacher Efficacy Scale for resource teachers. The two sets of scores were analyzed and found to correlate with the utility of supervision. That is, those teachers who felt that their supervision was useful to them scored higher on the teacher efficacy measure.

In his search for correlates of teacher efficacy of special education teachers, Safran (1985) found that while general efficacy did not correlate with any of the factors examined, personal teaching efficacy correlated significantly with several. The factors that correlated with personal efficacy included number of years employed, school level (elementary, middle, or high school), class size, class structure (open vs. traditional), teacher role, and principal's support of discipline.



Brownwell and Pajares (1999) examined the relationship between teacher efficacy in instructing students with learning and behavior problems and various factors (e.g., socioeconomic status of their students, support they receive from their building principal, and the success of teaching students who had been mainstreamed into their class). Using an instrument designed for the study, the *Working with Diverse Student: The General Educator's Perspective*, the researchers had respondents rate the agreement or disagreement of statements related to the variable on a 6-point scale. The results indicated that teachers' efficacy scores were significantly correlated with their perceived success in instructing students with disabilities in a general education setting. A positive correlation was also found between perceived preservice preparation and teachers' sense of efficacy (Brownwell & Pajares, 1999). These two findings present implications for both preservice and practicing teachers.

In addition, these findings provide the basis for further exploring the relationship of teacher efficacy and instructing students with disabilities. In particular, the current study was conducted to examine the relationship between teacher efficacy and the acceptability and reported use of accommodations in general education classrooms.

## **CHAPTER 3**

### **METHODS**

The following chapter presents a description of the procedures and analysis of data for the study. In the following sections descriptions of sampling, instrument development, and data management will be presented.

#### **Participants**

The participants were randomly selected from the population of elementary teachers of grades 1 – 5 in the state of Louisiana. The sample of 500 was drawn from the 23,085 teachers in the population. A data file containing information about members of the population was provided by officials at the Louisiana Department of Education. The random sample was selected using the Statistical Package for the Social Sciences (SPSS) and represents approximately 2% of the population.

In order to describe the participant group, as well as to explore differences in subgroups, the following demographic data were collected: gender, highest degree earned, teaching experience, grade level taught, and experience with students with various types of disabilities. In addition, respondents were asked to indicate the number of special education courses they had taken and whether those courses specifically addressed strategies for providing accommodations and modifications to students with disabilities.

#### **Instrumentation**

Two instruments were utilized in this study. The instrument measuring acceptability and use of accommodations, the Teacher Acceptability and Use Scale, was developed for use in this study. The TAUS is included in Appendix A. The second instrument, the

Teacher Sense of Efficacy Scale, measured teacher efficacy and was developed by Tschannen-Moran and Woolfolk Hoy (2001) at the Ohio State University. The TSES has been used in several previous investigations (Tschannen-Moran and Woolfolk Hoy, 2001; Roberts & Henson, 2001). A copy of the TSES is included in Appendix A.

The Teacher Acceptability and Use Scale (TAUS) was developed following a review of the literature on accommodations for students with disabilities. It was intended to provide a sampling of response items representing the most common adaptations of curriculum and instruction materials evidenced in the literature. The instrument consists of twenty-eight accommodations. Respondents were asked to rate each of the accommodations along two dimensions: acceptability of the accommodation and current or recent use (within the last two years).

Acceptability was defined on the instrument as “the degree to which the accommodation is in line with your teaching philosophy”. Using a Likert-type scale, respondents were asked to rate their acceptability of each of the accommodations according to the following metric:

- 1= unacceptable
- 2= acceptable under rare conditions
- 3= acceptable for students with disabilities
- 4= acceptable for most students
- 5= acceptable for all students

In addition, respondents were asked to indicate the frequency with which they have used the accommodation, within the last two years, according to this metric:

- 1= never used

2= used less than once a month

3= used when appropriate in instructional sequence (e.g. beginning or end of a unit or chapter)

4= used once a week

5= used on a daily, or nearly daily, basis

The instrument yielded six subscale scores for acceptability and four subscale scores for reported use of the modifications.

The Teacher Sense of Efficacy Scale, a one-page survey, consists of twenty-four items. Respondents were asked to rate their feeling “How much can you do...” given various teaching situations, using a 9-point Likert-type scale. Metrics given along the scale include nothing, very little, some influence, quite a bit, and a great deal.

In prior studies, the authors found that the responses loaded on three factors, efficacy for student engagement, efficacy for instructional practices, and efficacy for classroom management although they note some variations of the loadings. Estimates of reliability (Cronbach’s alpha) ranged from .90 to .94 for the study sample (Tschannen-Moran & Woolfolk Hoy, 2001). However, in subsequent studies, a two-factor structure was reported (Roberts & Henson, 2001). In the later study, the two factors identified were efficacy in student engagement and efficacy in instructional practices.

In order to score the instrument, the score on each item on the two subscales were added to yield a score for each of the subscales. The items are equally weighted.

In the final portion of the survey, respondents were asked to provide the following demographic data: gender, highest degree earned, years of teaching experience, grade level taught, and experience with various disabilities. Additionally, respondents were

asked to report the number of special education courses previously taken, and whether the courses taken addressed strategies for providing accommodations and modifications to students with disabilities.

The instruments were printed on white letter size paper and were three pages long. A cover letter was also part of the packet. It was estimated that it would take respondents about 15-20 minutes to complete the entire packet.

## **Procedures**

### Sampling

The number of participants in the sample was derived from Cohen's (1992) formula. This formula is based on the alpha level, the desired power, and the effect size for correlations (Cohen, 1992). For this study, an alpha level of .05 was chosen. The power is the probability of obtaining results that are statistically significant (Tuckman, 1999; Cohen, 1992). In this study, the power was set at .90. The effect size, or magnitude of the findings, can be useful in evaluating the practical importance of the findings (Tuckman, 1999). For this study, the desired effect size is .3, indicating a small to medium effect. Given these desired results, the sample size should be approximately 200. In order to insure an adequate number of cases, 500 randomly selected teachers were sent a packet of survey materials.

### Administration

An envelope containing a 4-page packet of survey materials (3 pages of survey instruments and a cover letter) was mailed to each of the randomly selected teachers. A self-addressed stamped envelope was included in the packet for the convenient return of materials. A cover letter explaining the research project accompanied the surveys. The

cover letter also explained that participation was voluntary and that the teachers could choose to decline participation without reprisal. In addition, participants were assured of anonymity. Respondents were offered a copy of the results of the study. Finally, contact information for the researcher and her major professor were provided. A copy the cover letter is included in Appendix B.

In an effort to increase the response rate, a raffle ticket was included in each packet. Respondents were asked to return this ticket with the completed survey. They were asked to choose the store from which they would like to receive the gift certificate; choices included: Dillard's, Barnes and Noble, Home Depot, or Wal Mart. Two \$25 gift certificates were awarded upon completion of collection of the data; winners were sent the gift certificates at that time. The raffle ticket also served as receipt of the survey.

In order to provide anonymity for respondents, the raffle ticket with the respondent's name was separated from the survey upon receipt by the researcher. The ticket was used to determine to whom a second mailing was sent (i.e., non-respondents) as well as to determine the winner of the prize. Since no identifying information, such as name or parish where the respondent was employed was asked for on the survey, it would be highly unlikely that the respondent could be identified from his or her survey.

Respondents were given 10 days to return the survey. After this time period, a second mailing was sent to approximately 400 (80%) non-respondents. A second cover letter was included, as well as another packet of survey materials and a second raffle ticket. The cover letter is included in Appendix B. A self-addressed stamped envelope was also included for return of the surveys. The second mailing produced an additional 63 surveys (13%).

Because the response rate was below 75%, a non-response sampling was conducted (Ary, Jacobs, & Razavieh, 1985). For sampling of non-respondents, approximately 12 days after the second mailing was received by participants, a final mailing was sent to 100 respondents (approximately 20% of the initial sample). These teachers received a third cover letter (included in Appendix B) explaining the importance of the study and urging their participation. Another copy of the survey instruments, raffle ticket, and return envelope was again included in the packet. Respondents to this final mailing were compared on demographic information to teachers who replied to earlier requests; no significant difference was found between the two groups. Approximately three weeks later, data collection was considered complete when no more returns were received during a 5-day period.

As the surveys were returned, the data were entered into a spreadsheet for import into the SPSS program for analysis. Prior to analysis, the data were subjected to a clean up process. The entries in the spreadsheet were checked for accuracy by an independent evaluator. Errors in data entry, primarily typographical errors, were corrected by replacing the incorrect item responses with the correct ones. The data were then analyzed as described in the following section.

### **Data Analysis**

The data collected in this study were analyzed using the Statistical Program for the Social Sciences, version 10.0 (SPSS) program. First, the descriptive statistics were computed. The demographic data, the mean and standard deviation items on the TSES and the number and percentage for each response choice for the TAIS were calculated. Since the purpose of the proposed study was to validate the TAUS instrument as well as

to examine the relationship between teacher efficacy and acceptability and use of accommodations, a series of statistical procedures were performed. Evidence of validity and estimates of reliability were examined and are described below followed by an explanation of each procedure in the analysis.

Validity refers to a judgement of the appropriateness of inferences made from scores of an instrument (Cunningham, 1986; Messick, 1981). Validation of measures is a process whereby one gathers evidence as to the appropriateness of score use, interpretation, and consequences. (Messick, 1981). Traditionally, 3 types of validity are examined: construct validity, content validity, and predictive validity (Nunnally & Bernstein, 1994). However, some researchers argue that there is, in actuality, only one form of validation, construct validity, since all forms of validity relate to the common attributes of a measure, that is, the construct (Cunningham, 1986; Messick, 1981). In this study, validity evidence was considered in the development, use and subsequent interpretation of the TAUS instrument.

The construct validity of an instrument is an assessment of how well the instrument measures what it purports to measure. Content validity refers to the extent to which the scores derived from an instrument adequately represent the content that the instrument purported to measure. Content validity is systematically determined by experts in the content purportedly being measured (Gall, Borg, & Gall, 1996). Predictive validity refers to the use of scores from an instrument to predict a later behavior that is external to the instrument itself (Gall, Borg, & Gall, 1996; Nunnally & Bernstein, 1994). Since the purpose of the study was to examine the relationship between variables, and not to



determine cause (including predictive behavior), this type of validity was not addressed in the development of the TAUS.

In order to establish content validity for the instrument, it was examined by university personnel with specializations in special education and educational research. This was done in order to obtain evaluation and feedback for the instrument. Once the instrument had been revised, a small sample of teachers (n=13) in central Texas completed the survey and provided additional input into the wording of items on the instrument and the ease of completion. Using this input, wording of some of the items on the instrument was changed; in addition, an explanation was provided for some of the items that were reportedly unclear to the teachers in the sample.

The responses of both of the completed surveys (the TAUS and the Teacher Sense of Efficacy Scale) were subjected to separate factor analyses in order to support construct validity. According to Kerlinger (1986), a factor analysis is used to measure underlying variables measured by scores from an instrument. Each factor consists of items that correlate more highly with each other than they do with items outside the particular factor (Nunnally & Bernstein, 1994). Hetzel (1996) asserts that the usefulness of factor analysis lies in its conceptual and organizational framework that can assist researchers in compiling a large number of variables into a smaller, logical set of constructs. Hetzel (1996) further notes the usefulness of factor analysis is the validation of educational and psychological measures. Nunnally and Bernstein (1994) concurred with this line of thought, noting the involvement of factor analysis in the validation process is “at the heart of the measurement of psychological constructs” (p. 111).

Exploratory factor analysis techniques were used on the two sections of the TAUS (i.e., acceptability and use). Since the directions were modified to reflect teachers' sense of efficacy related to students with disabilities, thereby possibly changing the factor structure found in previous studies, exploratory factor analysis techniques were used for the TSES as well. Principal component analysis with orthogonal rotation (Varimax) was used. A more commonly used method of factor analysis, principal component analysis uses the total variance of each variable in its analysis, thus accounting for the maximum amount of variance attributed to the factors (Comrey, 1988; Gorsuch, 1983). The varimax method of rotation was chosen in order to provide a clear and parsimonious solution. The number of factors was determined by examining the factors with eigenvalues  $>1$ , the relevant Scree plot, the internal consistency estimates, and the item content for theoretical consistency. Items were assigned to a factor based on the following retention criteria: correlation between the item and the factor in question was greater than 0.30 and there was at least a 10% difference in the proportion of variation shared by an item and factors with non-zero correlations.

A similar factor analysis procedure was performed on the results of the Teacher Sense of Efficacy Scale. As previously mentioned, the items have historically loaded on three factors: efficacy for student engagement, efficacy for instructional practices, and efficacy for classroom management.

In order to score the instruments, the score for each item on the subscales was added. Each item was weighted equally. For those respondents who did not answer each question, a mean score was substituted for the missing score. The missing score was

replaced with the mean score of the items that the respondent did answer on the particular factor subscale.

Following the factor analysis, the reliability of scores for the TAUS and TSES were calculated. The reliability of an instrument refers to the estimate of measurement error present in the scores of an instrument (Gall, Borg, & Gall, 1996). Internal consistency is a measure of how well the different items on a factor measure the same construct. Reliability estimates (e.g., Cronbach's Alpha) provide the researcher with a quantitative measure of the consistency of scores from items within a factor for a given sample (Litwin, 1995).

Cronbach's coefficient alpha was calculated to determine the internal consistency of the data for each factored subscale (Gall, Borg, & Gall, 1996). A widely used method for computing the internal reliability coefficient of non-dichotomous items, Cronbach's coefficient alpha measures the internal consistency reliability of responses from a group of items that form a single factor. The alpha coefficient reflects the homogeneity of the responses from the scale. Reliability scores of .70 and above are generally considered adequate (Sowell, 2001).

After the factor analyses and reliability estimates were completed, the data analysis turned to the second purpose of the study, the examination of the relationship between teacher efficacy and the acceptability and use of accommodations. Correlational procedures were used to examine the relationship between the variables explored in the study. Since the initial factor analysis of each of the instruments revealed multiple factors, the canonical correlation analysis (CCA) was used.

A canonical correlation is “applicable when the purpose of the study is to assess the strength of the overall association between a set of predictor variables and a set of criterion variables, and to determine which specific variables among both groups account for most of the relationship between the two sets” (Sowell, 2001, p. 353). CCA provides correlation coefficients ( $R_c$ ) that are interpreted similar to multiple R in regression analysis. Likewise, the square of  $R_c$  is analogous to  $R^2$ , the coefficient of determination, which is used to indicate the shared variation between variables.

This chapter presented the design of the current study, sampling and administration procedures, and analysis procedures used in the study. The following chapter, Chapter 4, presents the results of the study.

## CHAPTER 4

### SUMMARY OF RESULTS

A summary of the results of the current study is presented in the following chapter. Demographic information will be reported for the sample and population. Descriptive statistics will be reported for the results of each of the instruments. Additionally, results of the factor analysis procedures performed on the TAUS and TSES will be presented. Finally, results of the statistical analysis used to address each of the research questions are discussed.

#### **Response Rate to the Study**

Five hundred survey packets were mailed to randomly selected elementary teachers in Louisiana. Seventeen (3.4%) packets were returned because the teacher no longer worked at the school. One hundred nine teachers (22%) responded to the first mailing. Second and third mailings produced 63(13%) and 17(3%) respondents, respectively. The total number of respondents (n=191) was divided by the total number in the sample (n=500) to provide an overall return rate of 38%. It is useful to note that the minimal sample size was approximately 200 and that over sampling was employed.

Five of the surveys were removed from analysis because a significant portion of the survey packet was incomplete (>10% of possible responses) producing a total of 187 cases for analysis. Approximately 10% (n=15) of the respondents did not respond to the demographic data questions. In the examination of the relationship between the demographic variables and subscales of the survey instruments, these cases were omitted.

A check for non-respondent bias was conducted. The results are presented in Table 1. Results indicate that the non-respondent sample (i.e., those who responded to the final

mailing) appear to be similar to those teachers who responded to the first and second mailings in terms of demographics and instrument responses.

Table 1  
Comparison of Early and Late Respondents on Demographic Data

Demographic Variable	Early Respondents n=109	Late Respondents n=80
Gender		
Female	89.9%	97.3%
Male	1.9%	2.7%
Education		
Bachelors	60.2%	67.1%
Masters	29.6%	32.9%
Specialist	1.9%	0.0%
Teaching Experience	Mean=14.41 years SD=8.88	Mean=16.10 years SD=9.69
Grade Level		
1 <sup>st</sup>	22.2%	21.9%
2 <sup>nd</sup>	16.7%	13.7%
3 <sup>rd</sup>	25.0%	15.1%
4 <sup>th</sup>	18.5%	20.5%
5 <sup>th</sup>	9.3%	28.8%
% who have taught students with		
Mild mental disability	60.6	64.4
Emotional/behavior disorder	76.8	72.6
Other health impairment	49.5	49.3
Other (including learning disabilities)	30.3	32.9
Number of special education courses taken	Mean=2.33 SD=2.69	Mean=1.84 SD=1.97
Table 1 (Continued)		
% of special education courses including strategies for providing modifications	35.2	47.5

## Descriptive Statistics for the Sample

Descriptive statistics for the requested demographic data are presented in Table 2. It should once again be noted that the total number for each variable differs due to missing data. The majority of respondents in this survey (98%) were female (n=168). The 4 males in this study accounted for 2% of the sample. This small number of males precluded examining gender as a variable related to teacher efficacy. It should be noted that the percentage of males included in the sample is somewhat lower than the 10% males included in the population.

Table 2  
Demographic Information of Sample

Demographic Variable	Data Reported for Sample	
Gender	<u>Female</u> n = 168 98%	<u>Male</u> n = 4 2%
Teaching Experience	Mean = 15.03 SD = 9.23	
Education		
Bachelors	60%	
Masters	31%	
Specialist	1%	
Grade Level		
1 <sup>st</sup>	24%	
2 <sup>nd</sup>	16%	
3 <sup>rd</sup>	22%	
4 <sup>th</sup>	20%	
5 <sup>th</sup>	18%	
% who have taught students with		
mild mental disability	62%	
emotional/behavior disorder	74%	

(table continued)

Other health impairment	74%
other, including learning disability	31%
Special Education courses taken	Mean = 2.09 SD = 2.41
% reporting special education coursework addressed strategies for providing accommodations	46%

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The teachers in the sample reported a mean number of years of teaching experience of 15.17 years (SD=9.23); the median years experience was 14. The range in years of experience was from 1 to 32 years. By examining the total population data, the teachers in the population were noted to have a mean number of years of teaching experience of 13.6 (SD=10.31). The median experience was 11 years. The range in years of teaching experience in the population was from 0 to 38 years.

Respondents to the survey were asked to report the highest degree they had earned. The majority (60%; n=113) reported having earned a bachelors degree. Thirty-one percent (n=57) reported having earned a masters degree, and 1% (n=2) reported having earned a specialist certificate. There were no respondents who reported earning a doctorate degree. In the statewide population, 73%(n=16,847) of teachers earned bachelors degrees, 18% (n=4125) earned masters degrees, < 1% (0.7%; n=158) earned specialist certificates, and < .5% (0.2%; n=42) earned doctoral degrees.

While all of the respondents were elementary teachers, a breakdown of the teachers by grade level revealed that 22%(n=41) of the teachers in the study taught first grade, 15% (n=28) taught second grade, 20%(n=38) taught third grade, 18% (n=34) taught fourth



grade, and 17% (n=31) taught fifth grade. This breakdown shows a fairly even breakdown across grade levels.

Fifty-seven percent (n=107) of the teachers in the study reported teaching students with mild mental disabilities in the last two years. Sixty-eight percent (n=128) of the teachers reported teaching students with emotional and/or behavioral disabilities, and 46% (n=85) reported teaching students with other health impairments. Twenty-nine percent (n=54) of the teachers reported teaching students with other disabilities, including learning disabilities and Attention Deficit/Hyperactivity Disorder (ADHD). Because the percentage of students with learning disabilities (50.8%) is significantly higher than the number of students with emotional and behavioral disabilities (8.4%) (U.S. Department of Education, 2002), these numbers appear to be incorrect. One may conjecture that teachers reported any student who had behavioral concerns as a student with emotional or behavioral disorder. Teachers were instructed to check all disability categories that applied; thus percentages do not equal to 100.

Respondents were also asked how many special education classes (either undergraduate or graduate) they had taken. The mean number of classes taken was 2.09 (SD=2.41; median=2). The range of classes taken was 0 classes taken (22%) to 20 classes taken (< 1 %). Of those teachers who reported taking special education coursework, 46% (n=70) reported that the class(es) taken specifically addressed strategies for providing accommodations and modifications for students with disabilities; 54% (n=81) reported that classes they had taken did not address accommodations and modifications.

In summary, the sample appears to adequately reflect the general population in regard to demographics. They were overwhelmingly female and appear to be an experienced group of professionals.

### **Descriptive Statistics for Survey Instruments**

#### Ratings of Acceptability and Use

The frequency data for each item on the acceptability and use dimensions of the TAUS are included in Appendix C. The accommodations which teachers found acceptable for all students are presented in rank order in Table 3. These included: using graphic organizers, teaching problem solving strategies, using grading adaptations, using peer tutoring, breaking assignments down into smaller units, highlighting text, providing additional drill and practice, adjusting assignment length, providing organizational strategies, providing oral and written directions, using hand-on materials, allowing students to draw as part of written assignments, and focusing on mastery of fewer objectives.

Table 3  
Accommodations Acceptable for All or Most Students

Rank Order of Accommodation	Accommodation
1	Use hands-on materials
2	Adjust assignment length
3	Use graphic organizers
3	Teach problem solving strategies
5	Use peer tutoring
5	Provide oral and written directions
7	Allow students to draw as part of written assignments
8	Provide organizational strategies
9	Use grading adaptations
10	Focus on mastery of fewer objectives
11	Provide additional drill and practice
12	Break down assignments
13	Highlight text

Those accommodations that teachers found acceptable for students with disabilities are presented in rank order in Table 4. Teachers found the following accommodations acceptable for students with disabilities: use cooperative learning, allow extended time, administer tests orally, lessen environmental strategies, provide alternative assignments, assign fewer assignments, adjust assignment length, and allow students to dictate test answers.

Table 4  
Accommodations Acceptable for Students with Disabilities

Rank Order of Accommodation	Accommodation
1	Allow students to dictate test answers
2	Adjust assignment length
3	Assign fewer assignments
4	Administer tests orally
5	Lessen environmental distractions
6	Provide alternate assignments
7	Allow extended time
8	Use cooperative learning

The only accommodation that was somewhat unacceptable to the teachers in this sample was allowing students to use a word processor for written assignments. Several teachers in the sample noted that these were not available in sufficient supply to provide the accommodation.

Those accommodations that teachers reported using on a daily or nearly daily basis are presented in Table 5. Teachers in the sample reported using the following accommodations on a daily, or near daily basis: use cooperative learning, allow extended time for assignments and tests, use grading adaptations, vary levels of questioning, provide additional practice, provide organizational strategies, provide written and oral

directions, use hands-on materials, allow students to draw as part of written assignments, differentiate instruction, and focus on mastery of fewer objectives.

Table 5  
Accommodations Used on a Daily or Near Daily Basis

Rank Order of Accommodation	Accommodation
1	Provide oral and written directions
2	Use hands-on materials
3	Provide organizational strategies
4	Use grading adaptations
5	Allow extended time for assignments and assessments
5	Provide additional drill and practice
7	Allow students to draw as part of written assignments
8	Use cooperative learning
9	Differentiate instruction
10	Vary levels of questioning
11	Focus on mastery of fewer objectives

Conversely, teachers in the sample reported that they never or infrequently used these two accommodations: allow students to dictate test answers, and allow students to use a word processor.

### **Data Analysis of Research Questions**

This section presents the analyses related to each research question. Each question and analysis will be presented individually.

#### **Research Question 1**

What are the estimates of reliability for data from the Teacher Acceptability and Use Scale (TAUS)?

A principal component factor analysis was performed on each of the dimensions of the TAUS (i.e., acceptability and use) to explore the factor patterns of each dimension. The

items were subjected to orthogonal rotation using the Varimax procedure in order to provide the clearest and most parsimonious solution (Hetzl, 1996).

In order to identify factors, a multi-step process was used. Factors with eigenvalues greater than 1, along with the Scree plots, were examined in order to begin the process. Eigenvalues, which are calculated by adding the squared loadings for a specific factor, represent the amount of variance in the original data matrix that is accounted for by each of the variables (Hetzl, 1996; Polit, 1996). Scree plots provide a plot of the eigenvalues for factors in declining order (Polit, 1996).

Various solutions were considered in order to identify the most parsimonious solution. Items were assigned to a factor if the correlation between the item and the factor was greater than 0.30 and there was at least a 10% difference in the proportion of shared variation between the item and factors with non-zero correlations. In addition, estimates of internal consistency were examined to assist in decisions about item retention and factor structures.

Using this process, a six-factor solution, which accounted for 49% of the total variance in the data on this dimension, was identified for the data from the acceptability of accommodations scale. Factors were identified as ACCEPT1- adaptations to assignments, ACCEPT2 - adaptations to instruction, ACCEPT3- adaptations to enhance student focus, ACCEPT4- visual adaptations, ACCEPT5- peer learning, and ACCETP6- adaptations to assessment. Table 6 illustrates the items that loaded on each of the factors.

Table 6  
 Factor Structure for the Acceptability Subscale of the Teacher Acceptability and Use Scale

Factor	Items Loading on the Factor (Item # in Parentheses)
ACCEPT1 Adaptations to assignments	(9) Assign alternative assignments (10) Break down assignments into multiple parts (11) Assign fewer assignments (17) Adjust the lengths of assignments
Table 6 (Continued)	
ACCEPT2 Adaptations to instruction	(12) Vary levels of questioning (13) Vary rate of instruction (23) Use alternative forms of textbooks (24) Differentiate instruction (28) Focus on mastery of fewer objectives
ACCEPT3 Adaptations to increase student focus	(7) Lessen environmental distractions (16) Provide additional drill or practice (22) Break down tasks into smaller units
ACCEPT4 Visual adaptations	(3) Use graphic organizers (18) Provide organizational strategies and supports (19) Simplify text material (20) Provide written and oral directions
ACCEPT5 Peer learning	(1) Use cooperative learning (8) Use peer tutoring
ACCEPT6 Adaptations to assessment	(2) Allow extended time (4) Administer tests orally (6) Use grading adaptations
Items not loading on any factor	(5) Directly teach problem solving strategies (14) Highlight information in text (15) Adapt the format of tests (21) Allow students to dictate answers on tests (25) Use hands-on activities (26) Allow students to draw pictures as part of written assignments (27) Allow students to use word processor for written assignments

In order to obtain a subscale score for each factor, the items retained for each factor were summed. Item scores were equally weighted and ranged from 1 to 5. Therefore, possible subscale scores differ and are a function of the number of items on the subscale. The adaptation to assignments subscale ranged from 4 to 20; scores for the acceptance of adaptations to the adaptations to instruction subscale ranged from 5 to 25. Scores from the adaptations to enhance student focus subscale ranged from 3 to 15; and scores from the visual adaptations subscale ranged from 4 to 20. Scores on the peer learning subscale ranged from 2 to 10; and scores on the adaptations to assessment subscale ranged from 3 to 15. Subscale scores were calculated for use in subsequent statistical analyses (i.e., canonical correlation analysis). Higher scores on the various subscales indicate higher acceptability of the accommodations included in the particular subscale.

Following the factor identification process, reliability estimates were calculated for each of the subscales. Alpha coefficients for the acceptability scale were calculated as .63 for ACCEPT1 (adaptations to assignments), .67 for ACCEPT2 (adaptations to instruction), .52 for ACCEPT3 (adaptations to increase student focus), .48 for ACCEPT4 (visual adaptations) .54 for ACCEPT5 (peer learning), and .44 for ACCEPT6 (adaptations to assessment). The Cronbach's alpha was calculated for each of the subscales as an estimate of subscale's internal consistency. The estimates of reliability indicate a reasonably reliable instrument for use in measuring acceptability of accommodations.

Using the same factor analysis procedures for the use dimension of the TAUS, a four-factor solution emerged, accounting for 47% of the total variance in the data. These factors were: USE1 (adaptations to assignments and assessment), USE2 (adaptations to

instruction), USE3 (peer and adaptive learning), and USE4 (visual learning adaptations).

Table 7 illustrates the items that loaded on each of the factors.

Table 7  
Factor Structure of Use Subscale of the Teacher Acceptability and Use Scale

Factor	Items Loading on Factor (Item # in parentheses)
USE1 Adaptations to assignments and assessment	(2) Allow students extended time (4) Administer tests orally (6) Use grading adaptations (9) Assign alternative assignments (10) Break down assignments into multiple parts (11) Assign fewer assignments (21) Provide both oral and written directions
USE2 Adaptations to instruction	(5) Teach students problem-solving strategies (14) Highlight information in text (17) Adjust the length of assignments (23) Break down skills into smaller units (24) Use alternative forms of text or trade books (28) Allow students to draw as part of written assignments
USE3 Peer and adaptive learning	(1) Use cooperative learning (8) Use peer tutoring (25) Differentiate instruction (26) Focus on the mastery of fewer objectives
USE4 Visual learning adaptations	(3) Use graphic organizers (18) Allow students to use word processors for written assignments (20) Simplify text material
Items not loading on any factor	(12) Vary levels of questioning (13) Vary rate of instruction (15) Adapt the format of tests (16) Provide additional drill (19) Provide organizational strategies (22) Allow students to dictate answers on tests (27) Use hands-on materials



As with the Acceptability scale, subscale scores were calculated and varied as a result of varying numbers of items within each factor. On the USE1- adaptations to assignments and assessment subscale, scores ranged from 7 to 35; scores on the USE2- adaptations to instruction subscale ranged from 6 to 30. On the USE3-peer and adaptive learning subscale, the scores ranged from 4 to 20, and scores on the USE4-visual learning adaptations subscale ranged from 3 to 15. As with the Acceptability scale, the scores of the Use scale were used in subsequent analyses. Higher scores on the Use scale indicate greater use of the accommodation.

Estimates of reliability were also calculated for the Use scale of the TAUS. Cronbach's alpha coefficients for the use dimension were .76 for USE1, .76 for USE2, .71 for USE3, and .66 for USE4. Scores on the USE subscales yielded slightly higher reliability scores than the Acceptability subscales. While several possibilities exist, one possibility is that teachers were more consistent when reporting the use of the accommodation that they were when reporting their acceptability.

Because the Teacher Sense of Efficacy Scale (TSES) was used for a different population of students than the one with which it was previously validated, the data from this scale were subjected to the same factor analysis procedures previously mentioned. Two factors identified from the data of this measure accounted for 51% of the total variance of the data. The two factors were: TE1- efficacy for instruction and student engagement and TE2- efficacy for classroom and behavior management. Table 8 provides the factor structures for the TSES.

As with the TAUS, subscale scores were calculated by adding the item scores for each of the subscales. On the TSES, item scores ranged from 1 to 9. Subscale scores on the

Table 8  
Factor Structure for the Teacher Sense of Efficacy Scale

Factor	Items Loading on the Factor (Item # in Parentheses)
TE1 Efficacy for instruction and fostering student engagement	<ul style="list-style-type: none"> <li>(1) How much can you do to get through to the most difficult students?</li> <li>(2) How much can you do to help your students think critically?</li> <li>(4) How much can you do to motivate students who show low interest in school work?</li> <li>(6) How much can you do to get students to believe they can do well in school work?</li> <li>(7) How well can you respond to difficult questions from your students?</li> <li>(9) How much can you do to help your students value learning?</li> <li>(10) How much can you gauge student comprehension of what you have taught?</li> <li>(11) To what extent can you craft good questions for your students?</li> <li>(12) How much can you do to foster student creativity?</li> <li>(14) How much can you do to improve the understanding of a student who is failing?</li> <li>(17) How much can you do to adjust your lessons to the proper level for individual students?</li> <li>(18) How much can you use a variety of assessment strategies?</li> <li>(20) To what extent can you provide an alternative explanation or example when students are confused?</li> <li>(22) How well can you assist families in helping their children do well in school?</li> <li>(23) How well can you implement alternative strategies in your classroom?</li> </ul>

(table continued)

TE2

Efficacy for classroom  
and behavior management

- (3) How much can you do to control disruptive behaviors in the classroom?
- (5) To what extent can you make your expectations clear about student behavior?
- (13) How much can you do to get children to follow classroom rules?
- (15) How much can you do to calm a student who is disruptive or noisy?
- (16) How well can you establish a classroom management system with each group of students?
- (19) How well can you keep a few problem students from ruining an entire lesson?
- (21) How well can you respond to defiant students?

Item not loading on any factor

- (8) How well can you establish routines to keep activities running smoothly?

2-factor TSES ranged from 15 to 135 on TE1- efficacy for instruction and student engagement and from 7 to 63 on TE2- efficacy for classroom and behavior management. These subscale scores were used in subsequent data analysis. Higher subscale scores indicate higher efficacy for the particular subscale.

Estimates of reliability were also calculated for the factors that emerged on the TSES. On this measure, alpha coefficients were .93 for TE1- efficacy for instruction and student engagement and .88 for TE2- classroom and behavior management.

### Research Question 2

What is the relationship between acceptability and use of accommodations for students with disabilities by general education teachers?

In order to address this question, a canonical correlation analysis (CCA) was performed. The results are provided in Table 9. In order to determine the structure of the functions, the Wilks'  $\lambda$  test was used in combination with the  $R_c^2$ , or effect size, measure. For example, the Wilks'  $\lambda$  may indicate that the canonical analysis was statistically significant, but a small  $R_c^2$  would indicate that the results were not meaningful, and therefore not interpreted (Thompson, 1991).

The first function resulted in a contrast between acceptability of assignments, instruction, and assessment adaptations and acceptability of visual adaptations. Additionally, a latent use variable indicated a contrast between use of assignment and assessment adaptations and visual adaptations. These latent variables are synthetic (i.e., created by the statistical program) and are used to optimize the correlation between variables (Thompson, 1991). That is, the latent variables are created from those variables

on the measure that represent the highest correlation. The next latent variable is created from the remaining variables, and so on.

A high correlation (Bartholomew, 2002) was found between the acceptability of assignment, instructional, and assessment adaptations and use of assignment and assessment adaptations. Similarly, acceptability of visual adaptations correlated highly to use of visual adaptations. The shared variation between the two latent constructs was 41.5%, resulting in a canonical correlation coefficient ( $R_c$ ) of .64. This correlation coefficient can be interpreted similar to a Pearson coefficient (Thompson, 1991).

The second function, which accounted for 30.8% of the shared variation between the two latent constructs, was defined primarily by acceptability of visual and instructional adaptations, and to a lesser extent adaptations to increase student focus and adaptations to assignments, was found to be correlated with the latent use variable. This variable was defined primarily by adaptations to instruction and to a lesser extent, visual adaptations. The canonical correlation coefficient for these two latent variables was .56.

The third function resulted in a latent variable for acceptability, which was defined by the peer learning factor, and a latent variable for use, which was defined primarily by use of peer and adaptive learning, and to a lesser extent by the use of assignment and assessment adaptations. These two variables were moderately correlated ( $R_c=.40$ ) and accounted for 16.2% of the variation between the constructs.

Table 9  
 Results of Canonical Correlation Analysis of Factored Subscales of the Teacher Acceptability and Use Scale

Factor	Function I				Function II				Function III				
	Func	$r_s$	$r_{cross}$	$r^2$	Func	$r_s$	$r_{cross}$	$r^2$	Func	$r_s$	$r_{cross}$	$r^2$	$h^2$
ACCEPT 1	.479	.563	.363	31.7%	.097	.465	.258	21.6%	-.394	-.189	-.076	3.6%	57.2%
ACCEPT 2	.343	.473	.305	22.4%	.513	.760	.422	57.8%	.192	.199	.080	4.0%	84.2%
ACCEPT 3	.048	.131	.085	1.7%	.262	.575	.319	33.1%	.328	.377	.152	14.2%	49.0%
ACCEPT 4	-.670	-.432	-.279	18.7%	.547	.732	.406	53.6%	-.058	-.011	-.004	0.0%	72.3%
ACCEPT 5	.169	.271	.174	7.3%	-.232	-.089	-.050	0.8%	.839	.823	.331	67.7%	75.8%
ACCEPT 6	.442	.541	.349	29.3%	-.061	.112	.062	1.3%	-.304	-.239	-.096	5.7%	36.3%
Adequacy				18.6%				28.0%				15.9%	
$R_c^2$				41.5%				30.8%				16.2%	
Adequacy				22.3%				31.0%				15.7%	
USE 1	.563	.581	.375	33.8%	-.326	.307	.170	9.4%	-.828	-.412	-.166	17.0%	60.2%
USE 2	.319	.438	.282	19.2%	1.08	.882	.490	77.8%	.190	.077	.031	0.6%	97.6%
USE 3	.256	.323	.208	10.4%	-.304	.199	.110	4.0%	.950	.669	.270	44.8%	59.2%
USE 4	-.885	-.509	-.328	25.9%	.363	.571	.317	32.6%	-.179	-.041	-.016	0.2%	58.7%

Note.  $r_s$ =bivariate correlation between the factor and its latent variable  
 $r_{cross}$ =bivariate correlation between the factor and the opposite latent variable

Results from the CCA that examined the relationship between acceptability and use of accommodations indicate a moderate correlation between acceptability and use. This is especially true for those factors related to adaptations of assignments, instruction, and assessment. That is, teachers who found those accommodations acceptable also tended to use them.

### Research Question 3

What is the relationship between teacher efficacy and teacher acceptability of accommodations in general education classrooms?

A canonical correlation analysis was used to address this research question. The results are provided in Table 10. In this analysis, one function was found to be interpretable. The acceptability latent variable was primarily composed of the acceptability of instructional adaptations factor, and to a lesser extent, acceptability of peer learning adaptations and adaptations of assessment. The acceptability latent variable was positively correlated with the teacher efficacy latent variable that was primarily defined by efficacy for student engagement and instruction. The shared variation between the two latent constructs was 11.6% indicating that the majority of the variance was not explained by the two synthetic constructs in the analysis. The canonical correlation coefficient was .34, which was indicative of a moderate correlation (Bartholomew, 2002).

The results from these analyses indicate a moderate correlation between teacher efficacy and acceptability of accommodations, suggesting that teachers who had higher efficacy scores also tended to have higher acceptability scores on the instruments used in the study.

Table 10

Results of Canonical Correlation Analysis Between Factored Acceptability Subscales of the Teacher Acceptability and Use Scale and the Teacher Sense of Efficacy Scale

Factor	Function Coefficient	$r_s$	$r_{\text{cross}}$	$r_s^2/h^2$
ACCEPT 1	-.112	.311	.106	9.7%
ACCEPT 2	.786	.818	.278	66.9%
Table 8 (Continued)				
ACCEPT 3	-.056	.307	.104	9.4%
ACCEPT 4	-.104	.118	.040	1.4%
ACCEPT 5	.448	.560	.190	31.4%
ACCEPT 6	.339	.502	.171	25.2%
Adequacy				24.0%
$R_c^2$				11.6%
Adequacy				48.3%
TE 1	1.305	.917	.312	84.1%
TE 2	-.555	.354	.120	12.5%

#### Research Question 4

What is the relationship between teacher efficacy and the reported use of accommodations in general education classrooms?

In order to address this research question, a canonical correlation analysis was used. The results of this analysis are provided in Table 11. In the analysis, a single function was found to be interpretable. The latent use variable, which was primarily defined by use of adaptations to assignments and assessment, adaptations to instruction, and peer and adaptive learning, and to a lesser extent, the use of visual adaptations, was moderately correlated ( $R_c=.40$ ) to the teacher efficacy latent variable (Bartholomew, 2002). This variable was defined primarily by efficacy for student engagement and instruction. The two variables shared 15.8% of the variation between constructs indicating that only a small portion of the variance was explained by the variables.



Table 11  
 Results of Canonical Correlation Analysis Between Factored Use Subscales of the Teacher Acceptability and Use Scale and the Teacher Sense of Efficacy Scale

Factor	Function Coefficient	$r_s$	$r_{cross}$	$r_s^2/h^2$
USE 1	.205	.702	.279	49.3%
USE 2	.488	.869	.346	75.5%
USE 3	.457	.803	.320	64.5%
USE 4	.124	.522	.208	27.2%
Adequacy $R_c^2$				54.1%
Adequacy				15.8%
TE 1	1.348	.873	.347	41.5%
TE 2	-.681	.258	.103	76.2%
				6.7%

Results of the analyses used to address this question indicate a moderate correlation between teacher efficacy and use of accommodations (Bartholomew, 2002). That is, teachers who had higher efficacy scores tended to report using accommodations in their classrooms more; this appears to be particularly true of those teachers who had higher scores on the efficacy for student engagement and instruction subscale.

Given the results of the two separate canonical correlation analyses, it was decided to examine the relationships between the acceptability and use factors, considered as one factor, and teacher efficacy. A canonical correlation analysis was performed to explore this relationship. Table 12 provides the results of this analysis. A single function was found to be interpretable. The latent variable acceptability and use and the latent variable teacher efficacy shared 21.4% of the variance of the constructs. In addition, the two variables were moderately correlated ( $R_c=.46$ ). The acceptability and use variable was primarily defined by use of adaptations to instruction and use of peer and adaptive learning, and was defined to a lesser extent by the use of adaptations to assignments and

assessment and the acceptability of adaptations to instruction. The latent teacher efficacy variable was primarily defined by efficacy for student engagement and instruction. These results suggest that teachers who scored higher on the efficacy for student engagement and instruction subscale tended to also have higher efficacy scores on those factors related to adaptations to instruction.

Table 12  
Results of Canonical Correlation Analysis of Factored Subscales of the Teacher Acceptability and Use Scale and Teacher Sense of Efficacy Scale

Factor	Function Coefficient	$r_s$	$r_{cross}$	$r_s^2$
ACCEPT 1	-.171	.232	.108	5.4%
ACCEPT 2	.459	.603	.280	36.4%
ACCEPT 3	-.072	.226	.105	5.1%
ACCEPT 4	-.278	.088	.041	0.8%
ACCEPT 5	.284	.409	.189	16.7%
ACCEPT 6	.208	.364	.169	13.2%
USE 1	.126	.599	.278	35.9%
USE 2	.291	.745	.345	55.5%
USE 3	.224	.668	.319	44.6%
USE 4	.373	.446	.207	19.9%
Adequacy				23.5%
$R_c^2$				21.4%
Adequacy				46.9%
TE 1	1.314	.909	.421	82.6%
TE 2	-.581	.335	.155	11.2%

### Research Question 5

What other demographic variables are related to teacher efficacy?

While previous studies examined demographic variables as they related to acceptability and use of accommodations (e.g., Martens & Meller, 1989; Schumm & Vaughn, 1991; Lambert et al., 1996), demographic variables and their relationship to teacher efficacy were not often addressed. For this reason, the relationship between teacher efficacy and demographic variables was explored.

Bivariate correlations for each of the variables were examined in order to answer this question. The Pearson product moment coefficient was calculated for each of the demographic variables (experience, education, and grade level) and each of the two teacher efficacy scales. Results of these correlations are presented in Table 13. As previously noted, gender was not included in these analyses due to the small number (n=2) of male participants in the study. The correlations between the variables were low, with the range of correlation coefficients between .02 and .12, and thus were not statistically significant. These results indicate no statistical or meaningful correlation between teacher efficacy and any of the demographic variables examined.

Table 13  
 Bivariate Correlations Between Demographic Variables and Teacher Efficacy Subscales

Variable	Experience	Education	Grade	TE 1	TE 2
Education	.26	1.00	.11	.17	.02
Grade	.02	.11	1.00	-.04	.07
TE 1	.07	.17	-.04	1.00	.70
TE 2	.02	.02	.07	.70	1.00
Variable					
Means	15.03	NA	NA	114.6	52.5
(SD)	(9.2)			(14.9)	(7.2)

This chapter presented the results of the current study. Included were demographic information for the sample and population, descriptive statistics for the instruments used in the study, and results of factor analysis procedures for the instruments. In addition, results of correlation procedures were described as they pertained to each of the research questions. The interpretation and discussion of these results are presented in Chapter 5.

## **CHAPTER 5**

### **DISCUSSION**

The significant findings of this study as they relate to existing literature are presented in this chapter. Also included are limitations of the study, implications of the findings, and recommendations for further research.

#### **Limitations of the Study**

One limitation to the current study is the use of self-report. Some researchers have noted that participants may respond differently when they know they are being evaluated, (e.g., Kazdin, 1982), thus leading one to limit the findings of a study to those conditions present in the study. Despite this criticism, self report measures are often used in educational research (Rumrill & Cook, 2001). An argument may be made that in some instances, self report measures may be the only appropriate measure. In the current study, for example, self report of acceptability and teacher efficacy were the most appropriate forms of measurement of those constructs. While self report was appropriate for acceptability and teacher efficacy, however, the use of accommodations should be verified through direct and systematic observation.

Another limitation of the study was the relatively small return rate. While the sample size was within the range suggested by Cohen (1992), the low return rate remains a limitation. It should be noted, however, that a non-respondent bias check was performed and there was no difference found between early and late responders. Also of note was the random sample used in this study, a sample procedure not often used in educational research.

A final limitation of the study is the generalization of the study. While the sample data may be generalized to the population of teachers in the state of Louisiana, results may not generalize beyond that population. However, certain aspects of the current study reproduced earlier findings. For example, as with earlier studies on the acceptability (Johnson & Pugach, 1990; Schumm & Vaughn, 1991), teachers in this study reported using those accommodations that they found acceptable. In addition, as with earlier studies on the acceptability of behavioral interventions (e.g., Witt et al., 1983; Martens et al., 1985), teachers in this study differentiated between accommodations they found acceptable and those they found unacceptable. While the reader should be cautioned not to overextend the generalizations, some can be made. Specifically, research findings suggest that teachers do in fact find some accommodations more acceptable than others; it also appears that teachers are more likely to use those accommodations that they find acceptable.

### **Significant Findings of the Study**

The primary purpose of this study was to examine the relationships between teacher acceptability and use of accommodations for students with disabilities and teacher efficacy. A secondary purpose was the development of a sound instrument to measure acceptability and use of accommodations. Specifically, 5 research questions were addressed.

Though earlier studies focused on behavioral interventions (e.g., Witt et al., 1983; Witt & Martens, 1983; Elliot et al., 1987; and Kutsick et al., 1991) and later studies examined superficial academic interventions (e.g., Johnson & Pugach, 1990; Schumm & Vaughn, 1991), the current study provides a contribution to the literature in its use of

substantive academic accommodations that are recognized in current literature. Additionally, the current study examined a third variable, teacher efficacy, and its relationship to acceptability and use. Following a discussion of the acceptability and reported use of accommodations for students with disabilities in general education classrooms, a discussion of the results as they relate to each of the research questions will be presented.

Teachers in the current study found many of the accommodations acceptable for all students. While a review of the literature suggests that many of the strategies are frequently used in elementary classrooms (e.g., cooperative learning, graphic organizers, teaching problem solving-strategies, differentiated instruction), it is surprising that other strategies (e.g., grading adaptations, smaller units of assignments, alternative forms of textbooks, and allowing students to draw as part of written assignments) were considered acceptable for all students. These accommodations are typically recommended for use with students with disabilities (Cole et al., 2000; Schumm & Vaughn, 1991; Smith et. Al, 1993; Polloway et al., 1996).

Those accommodations that teachers considered acceptable for students with disabilities included allowing extended time, administering tests orally, lessening environmental distractions, providing alternate assignments, assigning fewer assignments adjusting assignment length, and allowing students to dictate test answers. While various explanations may exist for this distinction between those accommodations that are acceptable for all students and those that are acceptable for students with disabilities, a seemingly logical explanation appears to be the appropriateness of the accommodations for students. That is, the accommodations seen as acceptable for students with

disabilities are in most cases not appropriate, and unnecessary for typical students.

Future research should extend the findings of the current study beyond this sample to examine which accommodations are acceptable for students in various geographical locations and at different grade levels.

Unlike earlier studies (e.g., Witt et al., 1984; Schumm & Vaughn, 1991), the results of the current study suggest that the amount of time required to implement an accommodation does not appear to affect the acceptability. For example, teachers in this study indicated such accommodations as using hands-on materials, using peer tutoring, and providing additional drill and practice were acceptable. These accommodations arguably require more time to implement than allowing students to use a word processor, the accommodation that teachers in the study found least acceptable. This finding is similar to those of Martens et al. (1985) who found no evidence that the time required to implement an accommodation affected the acceptability of the accommodation.

The only accommodation that teachers in this study considered unacceptable was allowing students to use word processors as part of written assignments. One possible explanation for this is that computers may not be readily available to all teachers. This explanation is supported by unsolicited written comments from some of the teachers reporting a lack of available computers. While it is unclear whether computers are readily available to all teachers, it appears that the perception among some of the teachers in the study is not there is not adequate access to computers to provide the accommodation.

Teachers in the study reported using many of the accommodations that they found to be acceptable. They reported using these accommodations on a daily, or near daily basis:

cooperative learning, extended time for assignments and tests, grading adaptations, various questioning techniques, providing additional practice, organizational strategies, oral and written directions, manipulatives, and allowing students to draw as part of written assignments. This list includes strategies that were considered appropriate for all students as well as those for students with disabilities. In addition, they represent accommodations requiring various levels of skill and time needed to implement the accommodation. Teachers reported that they never or infrequently used word processors; again, this may be seen as a result of not having them available.

### **Findings Related to Research Questions**

#### **Research Question 1**

The first research question examined the reliability of the Teacher Acceptability and Use Scale (TAUS). The TAUS is a 28-item scale that measures the acceptability and reported use of accommodations for students with disabilities. Respondents rated their acceptability (i.e., the degree to which the accommodation was in line with their teaching philosophy) and use (i.e., within the last two years) of the accommodations using a 5-point Likert-type scale. Factor analysis procedures were performed on each of the scales, acceptability and use.

The factor analysis procedures revealed a 6-factor acceptability scale. These factors included adaptations to assignments, adaptations to instruction, adaptations to assessment, visual adaptations, peer learning, and adaptations to enhance student focus. The coefficient of internal consistency (Cronbach's alpha) for these factors ranged from .67 to .44.



The factor analysis revealed a 4-factor structure for use. These factors were adaptations to assignments and assessment, adaptations to instruction, visual learning adaptations, and peer and adaptive learning. Cronbach's alpha coefficients for the use scale ranged from .76 to .66.

The factor analyses revealed different factor structures for acceptability and use. One possible explanation for this difference may be related to the difference in the constructs. The Cronbach's alpha coefficients for the use subscales are higher than those for the acceptability subscales, suggesting that teachers in this study were more consistent in reporting use of accommodations than they were in reporting acceptability. This may be a result of the use construct being more concrete, and thus possibly easier to report than the acceptability construct.

While some of the estimates of internal consistency are lower than the standard of .70 often used in social science research (Cohen, 1992), they are not necessarily indicative of poor reliability (Cunningham, 1986). While the coefficient alpha is dependent upon the intercorrelation of the items of each factor, it is also affected by the number of items included on the measure as well as the size of the sample (Nunnally & Bernstein, 1994; Cunningham, 1986). The number of items, along with the relatively small sample size (it should be noted, however, that the sample size was adequate for the study) may have affected estimates of reliability.

The results of the factor analyses and estimates of internal consistency suggest a reasonably reliable measure of acceptability and use of accommodations for students with disabilities. As such, the scores from the measure were appropriately used to draw conclusions about teachers in the state of Louisiana. However, no data were obtained

beyond this population. Generalizing the results beyond this population, thus, may be problematic and therefore is not recommended.

While the measure used in this study is a reasonably reliable measure of acceptability and use of accommodations, researchers should always strive for the most reliable measure possible. Thus, future research should concentrate on refinement of the instrument. Specifically, refinements in the wording of the items and the metrics should be considered. The wording of the items should be expanded to include examples that further explain the item. The addition of items may also be warranted. The measure should be subjected to another factor analysis, and possibly be given to a larger sample group. It is possible that the aforementioned refinements to the instrument may increase the estimates of reliability for the instrument.

#### Research Question 2

This research question examined the relationship between acceptability and use of accommodations for students with disabilities. Results of descriptives, along with the results of the CCA indicate that acceptability and use are strongly related for acceptability of adaptations to assignments, instruction, and assessment, and use of adaptations to assignments and assessment. Similarly, acceptability of visual adaptations was highly correlated to use of visual adaptations. These results suggest that teachers who found adaptations to assignments, instruction, and assessment acceptable reported the use of these adaptations. Likewise, teachers who found visual adaptations acceptable tended to report using those adaptations. These results are consistent with the findings of earlier studies that reported a correlation between acceptability and reported use (Martens et al., 1986; Schumm & Vaughn, 1991; Lambert et al., 1996).

These results, however, did not indicate any cross over in the acceptability and use pattern. That is, those teachers who found adaptations to instruction, assignments, and assessment acceptable did not also find visual adaptations acceptable, and thus were not apt to report using them.

The items that comprise the visual adaptations factors include such items as graphic organizers, simplifying text material, providing organizational strategies, and providing oral and written directions. These strategies represent a change in materials, as opposed to the adaptations to assessment, assignments, and instruction. These adaptations represent a change in the way materials are presented and the way that students demonstrate mastery of material. An argument could be made that the latter group of adaptations require higher levels of teacher skill and a larger time commitment to implement. These results are similar to previous findings (e.g., Martens et al., 1986) indicating a correlation between the acceptability and use of classroom interventions. However, the results contradict the findings of Johnson and Pugach (1990) who did not find a correlation between acceptability and use of accommodations.

### Research Question 3

This research question examined the relationship between teacher efficacy and the acceptability of accommodations for students with disabilities. Several studies have examined the relationship between teacher efficacy and various classroom behaviors including levels of persistence (Gibson & Dembo, 1984), the likelihood of trying new interventions (Smylie, 1988; Guskey, 1998), lesson presentation, questioning behavior, and successful behavior management (Saklofske et al., 1983), and implementation of new curriculum (Poole & Okeafor, 1989). However, the relationship between teacher efficacy

and acceptability and use of accommodations and modifications for students with disabilities was previously unexplored.

Results of the CCA for acceptability and teacher efficacy indicated a moderate correlation between teacher efficacy for student engagement and instruction, and acceptability of adaptations to instruction, adaptations to assessment, and peer learning adaptations. These results suggest that teachers who believe that they influence student engagement and are confident in their instructional skills are more accepting of adaptations to instruction and assessment. In addition, they are accepting of various peer instruction strategies such as cooperative learning and peer tutoring. A tentative conclusion that may be drawn from these results is that if teachers believe in their ability to impact student learning through their instructional techniques, they are also accepting of adaptations to instruction.

Future research related to this research question should focus on causation of the variables examined in the question (i.e., teacher efficacy and acceptability of accommodations). This knowledge is essential in determining which variable predicts the other. Once this determination is made, differential treatment that may affect change can be attempted.

#### Research Question 4

This research question explored the relationship between teacher efficacy and the reported use of accommodations. This relationship between teacher efficacy and the reported use of accommodations for students with disabilities is an area not previously explored. Results of the CCA to explore these variables indicated that teacher efficacy for student engagement and instruction was moderately correlated to the reported use of

adaptations to assignments and assessment, adaptations to instruction, and visual adaptations. Similar to the results of acceptability and teacher efficacy, one may tentatively assert that teachers who are confident of their ability to affect student learning as a result of their instructional skills are likely to use adaptations that may affect the learning of all students.

Certainly further research should examine the causal relationships between these two variables. As with the relationship between teacher efficacy and acceptability, the determination of the predictor variable is necessary in order to attempt manipulation of either variable. In addition, the use of systematic observation of the use of accommodations would extend the findings that were based on teachers' self-report.

While the variables examined in the current study have not previously been explored, their correlation to teacher efficacy supports previous studies examining various teacher behaviors (e.g., Gibson & Dembo, 1984; Guskey, 1988). Additionally, these results appear to support D. Kagan's (1992) contention that "a teacher's beliefs usually reflect the actual nature of the instruction the teacher provides to students" (p. 73). Results of this study suggest that this may be true of all students, including students with disabilities.

#### Research Question 5

The final research question examined the demographic variables related to teacher efficacy. Bivariate correlations for each of the demographic variables (education, experience, and grade level) revealed no correlation between any of the variables and efficacy for student engagement and instruction and efficacy for classroom and behavior

management. These results contradict those of Safran (1985) who found that personal teaching efficacy correlated with experience.

Additionally, some studies have found that school level (elementary, middle, high) correlated with teacher efficacy (Safran, 1985; Morrison et al., 1994). While the participants in the current study taught elementary grades, there were no differences found between grade levels. One possible explanation for this finding may be related to the structure of elementary classes (i.e., self contained as opposed to departmentalized situations often found in secondary schools). Additionally, one may speculate that elementary teachers are concerned with teaching children to learn, and thus may be more accommodating of children's learning differences.

Future research may be needed to expand these findings beyond elementary grades. For example, an examination of the various levels of school (elementary, middle school, and high school) would expand the results of the current study to secondary schools. Furthermore, extending the results of the study beyond the state of Louisiana would provide generalizability of the results.

### **Conclusions**

The major purpose of this study was to examine the relationship between acceptability and use of accommodations for students with disabilities and teacher efficacy. Secondarily, the study was conducted to explore the reliability and validity of a new instrument, the Teacher Acceptability and Use Scale.

Key findings of the study included support of earlier studies that suggest that teachers tend to use those accommodations that they find acceptable (Johnson & Pugach, 1990; Schumm & Vaughn, 1991). In the current study, however, the teachers did not appear to

find those accommodations requiring more time to implement less acceptable than those that require less time. Findings from this study also appear to indicate that teachers who believe that they can impact student learning through their teaching skills are more likely to find accommodations for students with disabilities acceptable, and to use those accommodations. Teacher efficacy was also found to be correlated with acceptability and considered together. This suggests that teachers with a high sense of teaching efficacy are more apt to modify their instructional techniques to reach all students.

The factor structures for acceptability and use of the TAUS, as well as the internal reliability coefficients, suggest that, although the instrument is reasonably reliable, revisions to the instrument may improve its psychometric properties. Estimates of reliability were higher for use than for acceptability; likewise, teachers' answers were more consistent for use than for their feelings of acceptability. As previously mentioned, this may be a result of the use construct being more concrete, and therefore seemingly easier to answer.

The findings of the current study provide additional information about acceptability and use; specifically, these findings support findings of earlier research that suggested the correlation between the two variables (Johnson & Pugach, 1990; Schumm & Vaughn, 1991). In addition, the addition of the findings of a correlation between acceptability and use and teacher efficacy extended prior research that examined the relationship between teacher efficacy and classroom behaviors. The study also provided an additional validation of an instrument with which to measure acceptability and use of accommodations for students with disabilities. It should be noted that while other instruments exist for the measurement of these two variables (e.g., Schumm & Vaughn,

1991; Whinnery et al., 1991; Johnson & Pugach, 1990), the current instrument reflects those accommodations that are both supported in the literature and of a substantive nature.



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**APPENDIX A**  
**SURVEY INSTRUMENTS**

## Teacher Acceptability and Use Scale

**Directions:** For each of the following modifications used for students, rate its **acceptability** (the degree to which the accommodation is in line with your teaching philosophy) and **use** (how often you have used it within the last two school years). Use the scale listed above each of the columns.

Modification	Acceptability					Use				
	<b>1</b> =unacceptable <b>2</b> =acceptable under rare conditions <b>3</b> =acceptable for students with disabilities <b>4</b> =acceptable for most students <b>5</b> =acceptable for all students					<b>1</b> =never used <b>2</b> =used less than once a month <b>3</b> =used when appropriate in instructional sequence (e.g., beginning or end of unit or chapter) <b>4</b> =used once a week <b>5</b> =used on a daily, or nearly daily, basis				
1. use cooperative learning (e.g., having students work in small groups or teams to help each other learn concepts or ideas)	1	2	3	4	5	1	2	3	4	5
2. allow students extended time for completing assignments or tests	1	2	3	4	5	1	2	3	4	5
3. use graphic organizers in lessons	1	2	3	4	5	1	2	3	4	5
4. administer tests orally to students	1	2	3	4	5	1	2	3	4	5
5. directly teach students strategies to problem solve (e.g., SQ3R, Mnemonics, etc.)	1	2	3	4	5	1	2	3	4	5
6. use grading adaptations for students	1	2	3	4	5	1	2	3	4	5
7. lessen environmental distractions (e.g., keep noise levels down, reduce the amount of visual stimuli in the classroom)	1	2	3	4	5	1	2	3	4	5

8. use peer tutoring (two students who are paired together and work to promote success in learning concepts or practicing skills )	1	2	3	4	5	1	2	3	4	5
9. assign alternative assignments or projects to students	1	2	3	4	5	1	2	3	4	5
10. break down assignments into multiple parts with feedback (e.g., independent work and homework assignments)	1	2	3	4	5	1	2	3	4	5
11. assign fewer assignments	1	2	3	4	5	1	2	3	4	5
12. use different levels of questions for students based on ability (e.g., lower level questions)	1	2	3	4	5	1	2	3	4	5
13. vary the rate of instruction for students	1	2	3	4	5	1	2	3	4	5
14. highlight key information or concepts in text	1	2	3	4	5	1	2	3	4	5
15. adapt the format of tests (e.g., making tests less subjective)	1	2	3	4	5	1	2	3	4	5
16. provide additional drill or practice based on student progress	1	2	3	4	5	1	2	3	4	5
17. adjust the length of assignments (e.g., reduce the number of items on a page or reduce the number of pages)	1	2	3	4	5	1	2	3	4	5
18. provide organizational strategies and supports (e.g., weekly calendars, color-coded notebooks, assignment checks)	1	2	3	4	5	1	2	3	4	5

19. simplify text material (e.g., reduce the complexity and length of units, provide graphic aids that summarize material, provide self-correcting materials)	1	2	3	4	5	1	2	3	4	5
20. provide both oral and written directions	1	2	3	4	5	1	2	3	4	5
21. allow students to dictate test answers	1	2	3	4	5	1	2	3	4	5
22. break tasks or concepts into smaller units of learning	1	2	3	4	5	1	2	3	4	5
23. use alternative forms of textbooks or trade books (e.g., high interest, low vocabulary books)	1	2	3	4	5	1	2	3	4	5
24. provide differentiated instruction based on individual student's needs	1	2	3	4	5	1	2	3	4	5
25. use hands-on activities or manipulatives	1	2	3	4	5	1	2	3	4	5
26. allow students to draw pictures/diagrams as part of written assignments	1	2	3	4	5	1	2	3	4	5
27. allow students to use word processors for written assignments	1	2	3	4	5	1	2	3	4	5
28. focus on the mastery of fewer objectives before addressing additional objectives	1	2	3	4	5	1	2	3	4	5

## Part II

**Directions:** Please answer the following questions about yourself. This information will be used for data analysis purposes only.

1. What is your gender?  
 Male  
 Female
  
2. What is the highest degree you have earned?  
 Bachelor  
 Master  
 Specialist  
 Doctorate
  
3. How many years of teaching experience that you have?  
\_\_\_\_\_ years
  
4. What grade level do you teach?  
 1<sup>st</sup>  
 2<sup>nd</sup>  
 3<sup>rd</sup>  
 4<sup>th</sup>  
 5<sup>th</sup>
  
6. Have you taught students with these disabilities in your class in the last 2 years?  
(Check all that apply).  
 mild mental disability  
 emotional/behavioral disability  
 other health impaired  
 other(please specify)\_\_\_\_\_
  
7. How many university special education courses have you taken (either undergraduate or graduate level)?  
\_\_\_\_\_ classes
  
8. Did the coursework that you took specifically address strategies for providing accommodations and modifications for students with disabilities?  
 Yes                       No

### Teachers' Sense of Efficacy Scale (long form)

### How Much can you do?

Directions: This questionnaire is designed to help us gain a better understanding of the kinds of things that create difficulties for teachers in teaching students with disabilities. Please indicate your opinion about each of the statements below. Your answers are confidential.	How Much can you do?								
	Nothing	Very Little			Some Influence		Quite A bit		A Great Deal
1. How much can you do to get through to the most difficult students?	1	2	3	4	5	6	7	8	9
2. How much can you do to help your students think critically?	1	2	3	4	5	6	7	8	9
3. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
4. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
5. To what extent can you make your expectations clear about student behavior?	1	2	3	4	5	6	7	8	9
6. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
7. How well can you respond to difficult questions from your students ?	1	2	3	4	5	6	7	8	9
8. How well can you establish routines to keep activities running smoothly?	1	2	3	4	5	6	7	8	9
9. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
10. How much can you gauge student comprehension of what you have taught?	1	2	3	4	5	6	7	8	9
11. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
12. How much can you do to foster student creativity?	1	2	3	4	5	6	7	8	9
13. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
14. How much can you do to improve the understanding of a student who is failing?	1	2	3	4	5	6	7	8	9
15. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
16. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
17. How much can you do to adjust your lessons to the proper level for individual students?	1	2	3	4	5	6	7	8	9
18. How much can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
19. How well can you keep a few problem students from ruining an entire lesson?	1	2	3	4	5	6	7	8	9
20. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
21. How well can you respond to defiant students?	1	2	3	4	5	6	7	8	9
22. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
23. How well can you implement alternative strategies in your classroom?	1	2	3	4	5	6	7	8	9
24. How well can you provide appropriate challenges for very capable students?	1	2	3	4	5	6	7	8	9





The College Of  
**WILLIAM & MARY**

School of Education  
Post Office Box 8795  
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Megan Tschannen-Moran, Ph.D.  
Assistant Professor  
e-mail: [motsch@wm.edu](mailto:motsch@wm.edu)  
(757) 221-2187

September 30, 2002

Bonnie Smith Boulton  
Special Education  
Eanes ISD  
601 Camp Craft Road  
Austin, TX 78746  
(512) 732-9000 Ext. 20418  
[bboulton@eanes.k12.tx.us](mailto:bboulton@eanes.k12.tx.us)

Dear Bonnie:

You have my permission to use the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) for your dissertation research. (Note that we are referring to it as the Ohio State Teacher Efficacy Scale because of legal concerns.)

I am enclosing a copy of a scannable version of the short form that I used in a recent study, along with a copy of the collective efficacy scale. (This will not be scannable when you make copies.) If you want to use the long form, you will need to re-type it from the sample available on-line.

Your study sounds like it will make a contribution to the literature. I would be interested in receiving a summary of your results!

Sincerely,

Megan Tschannen-Moran, Ph.D.  
Assistant Professor  
Educational Policy, Planning and Leadership

**APPENDIX B**  
**SURVEY COVER LETTERS**

Department of Curriculum and Instruction  
College of Education  
Peabody Hall  
Louisiana State University  
Baton Rouge, LA 70803

October 21, 2002

Dear Fellow Educator:

As you are probably aware, the education of students with disabilities in general education classrooms is becoming commonplace in today's schools. The success of these students is largely dependent upon modifications and accommodations made in general education classrooms. Another factor in the success of these students is may be the degree to which teachers feel they can impact students' learning.

The purpose of this study is to determine the acceptability and use of commonly used accommodations and to determine the relationship between acceptability and a teacher's sense of efficacy. The study is being done for my dissertation in order to complete my Doctor of Philosophy degree at Louisiana State University. The study is being directed by Dr. R. Kenton Denny, associate professor in the department of Curriculum and Instruction. Dr. Denny can be reached at 225-578-2299.

You were selected to participate in this study as one of the elementary teachers in Louisiana's public schools. Completion and return of the enclosed survey will indicate your agreement to participate. Your participation in this study will be greatly appreciated. All responses to the survey will be completely anonymous. You will not be personally identified in any stage of the data analysis; the only exception to this is to confirm receipt of your completed survey. Receipt of the surveys will be confirmed by the enclosed raffle ticket. As a token of appreciation for taking the time to complete the surveys, we will randomly select two winners of a \$25 gift certificate. As you will note on the raffle ticket, you may choose from one of the following stores: Barnes and Noble, Home Depot, Dillards, and Wal Mart.

The surveys should take approximately 15 minutes to complete. Once completed, please return the surveys and the raffle ticket to me in the self-addressed stamped envelope provided.

Thank you in advance for participating in this study to address this relevant issue. Since the surveys are being sent to a sample of teachers, the return of all of the surveys is important. Your opinion is important to the outcome of this study. Best wishes for an exciting and productive school year.

Sincerely,

Bonnie Smith Boulton  
[bsmith6@lsu.edu](mailto:bsmith6@lsu.edu)

R. Kenton Denny, Ph.D.  
[rdenny@lsu.edu](mailto:rdenny@lsu.edu)

Department of Curriculum and Instruction

College of Education  
Peabody Hall  
Louisiana State University  
Baton Rouge, LA 70803

November 15, 2002

Dear Fellow Educator,

Approximately two weeks ago, you received a set of surveys asking your opinion about the acceptability and use of accommodations for students with disabilities, and about your opinion of the part you play in the success of your students with disabilities. I would like to urge you to complete these surveys and return them to me.

The surveys are part of a study examining issues important to teachers in the state of Louisiana. Issues related to serving students with disabilities are important to **all** teachers. The information gathered from this survey can provide critical information to policymakers, administrators, teaching professionals, and teacher educators. We ask that you **please** respond and let your opinions and views be recognized! You were selected as part of this group, and your opinion is important to the success of this study. The study is being complete to complete the requirements for the Doctor of Philosophy degree at Louisiana State University and cannot be completed without the assistance of teachers like you.

I have enclosed another copy of the surveys and a self-addressed stamped enveloped in which to return the surveys. In addition, I have enclosed a raffle ticket. This ticket will let me know that you have returned the surveys, but will be separated from the surveys upon receipt. Two winners will be selected from the returned tickets and the winners will each receive a \$25 gift certificate from the store of their choice.

The surveys should take approximately 15 minutes to complete. I urge you to take the time to complete them and return them to me by **Friday, November 29, 2002**. Again, your opinion is important, as is the completion of the enclosed surveys. Should you have any questions, please feel free to contact me or my committee chair, Dr. R. Kenton Denny, at the email addresses listed below. Thank you for participating in the study and completing the surveys.

Sincerely,

Bonnie Smith Boulton  
[Bsmith6@lsu.edu](mailto:Bsmith6@lsu.edu)

R. Kenton Denny  
[rdenny@lsu.edu](mailto:rdenny@lsu.edu)

Department of Curriculum and Instruction

College of Education  
Peabody Hall  
Louisiana State University  
Baton Rouge, LA 70803

December 10, 2002

Dear Fellow Educator,

In the past two months, you have received two sets of surveys asking your opinion about the acceptability and use of accommodations for students with disabilities, and about your opinion of the part you play in the success of your students with disabilities. I would like to take this opportunity to urge you to complete the surveys and return them to me.

The surveys are part of a study examining issues important to **all** teachers in Louisiana. The information gathered from this survey can provide critical information to policymakers, administrators, teaching professionals, and teacher educators. In addition, the study is being conducted to complete the requirements for the Doctor of Philosophy degree at Louisiana State University and cannot be completed without the assistance of teachers like you. For these reasons, it is **critical** that you complete the surveys and let your voice be heard!

I have enclosed another copy of the surveys and a self-addressed stamped envelope in which to return the surveys. In addition, I have enclosed a raffle ticket. This ticket will let me know that you have returned the surveys, but will be separated from the surveys upon receipt. Two winners will be selected from the returned tickets and the winners will each receive a \$25 gift certificate from the store of their choice.

The surveys should take approximately 15 minutes to complete. I realize that this is a busy time for everyone; however, without the response of teachers like you, results of the survey will not be as valuable as they could be. I urge you to take the time to complete them and return them to me by **Monday, December 23, 2002**. Remember, **your opinion is important, as is the completion of the enclosed surveys**. Should you have any questions, please feel free to contact me or my committee chair, Dr. R. Kenton Denny, at the email addresses listed below. Thank you for participating in the study and completing the surveys.

Sincerely

Bonnie Smith Boulton  
[Bsmith6@lsu.edu](mailto:Bsmith6@lsu.edu)

R. Kenton Denny  
[rdenny@lsu.edu](mailto:rdenny@lsu.edu)

**APPENDIX C**

**FREQUENCY DATA FOR THE TEACHER ACCEPTABILITY AND USE  
SCALE**

Frequency Distribution for Items on the Acceptability and Use Scale

Item	Response Choice	Acceptability		Use	
		Responses	Percent	Responses	Percent
Use cooperative learning	1	0	1.1	0	0.0
	2	2	2.7	6	3.2
	3	5	35.3	56	29.9
	4	66	59.9	34	18.2
	5	112	1.1	89	47.6
Allow Extended time	1	0	0.0	0	0.0
	2	2	1.1	1	0.5
	3	67	35.8	46	24.6
	4	46	24.6	32	17.1
	5	72	38.5	107	57.2
Use graphic organizers	1	2	1.1	6	3.2
	2	3	1.6	5	2.7
	3	4	2.1	57	30.5
	4	40	21.4	56	29.9
	5	135	72.2	60	32.1
Administer tests orally	1	0	0.0	10	5.3
	2	31	16.6	32	17.1
	3	100	53.5	59	31.6
	4	20	10.7	58	31.0
	5	33	17.6	23	12.3
Teach problem solving strategies	1	1	0.5	7	3.7
	2	5	2.7	14	7.5
	3	3	1.6	48	25.7
	4	42	22.5	30	16.0
	5	133	71.1	84	44.9
Lessen environmental distractions	1	16	8.6	29	15.5
	2	38	20.3	33	17.6
	3	85	45.5	58	31.0
	4	20	10.7	32	17.1
	5	25	13.4	32	17.1

Use grading adaptations	1	5	2.7	5	2.7
	2	5	2.7	15	8.0
	3	21	11.2	26	13.9
	4	40	21.4	6	3.2
	5	116	62.0	135	72.2
Use peer tutoring	1	0	0.0	1	0.5
	2	2	1.1	9	4.8
	3	12	6.4	47	25.1
	4	54	28.9	42	22.5
	5	119	63.6	87	46.5
Provide alternate assignments	1	2	1.1	16	8.6
	2	23	12.3	31	16.6
	3	77	41.2	78	41.7
	4	31	16.6	28	15.0
	5	51	27.3	31	16.6
Break down assignments	1	2	1.1	4	2.1
	2	4	2.1	12	6.4
	3	44	23.5	48	25.7
	4	31	16.6	35	18.7
	5	104	55.6	86	46.0
Assign fewer assignments	1	5	2.7	15	8.0
	2	31	16.6	32	17.1
	3	109	58.3	67	35.8
	4	22	11.8	29	15.5
	5	20	10.7	41	21.9
Vary levels of questioning	1	7	3.7	16	8.6
	2	23	12.3	17	9.1
	3	43	23.0	33	17.6
	4	28	15.0	21	11.2
	5	85	45.5	98	52.4
Vary rate of instruction	1	6	3.2	8	4.3
	2	9	4.8	17	9.1
	3	45	24.1	48	25.7
	4	43	23.0	26	13.9
	5	82	43.9	86	46.0



Highlight text	1	6	3.2	15	8.0
	2	6	3.2	22	11.8
	3	37	19.8	42	22.5
	4	31	16.6	19	10.2
	5	103	55.1	83	44.4
Adapt test format	1	4	2.1	11	5.9
	2	14	7.5	23	12.3
	3	66	35.3	62	33.2
	4	43	23.0	45	24.1
	5	56	29.9	41	21.9
Provide additional drill	1	0	0.0	0	0.0
	2	1	0.5	7	3.7
	3	8	4.3	41	21.9
	4	33	17.6	44	23.5
	5	144	77.0	95	50.8
Adjust assignment length	1	2	1.1	7	3.7
	2	16	8.6	20	10.7
	3	111	59.4	62	33.2
	4	20	10.7	36	19.3
	5	38	20.3	59	31.6
Provide organizational strategies	1	1	0.5	5	2.7
	2	2	1.1	5	2.7
	3	23	12.3	24	12.8
	4	18	9.6	18	9.6
	5	141	75.4	134	71.7
Simplify text material	1	5	2.7	10	5.3
	2	7	3.7	14	7.5
	3	55	29.4	48	25.7
	4	29	15.5	34	18.2
	5	89	47.6	79	42.2
Provide oral and written directions	1	2	1.1	1	0.5
	2	1	0.5	1	0.5
	3	10	5.3	20	10.7
	4	14	7.5	8	4.3
	5	159	85.0	154	82.4

Allow students to dictate test answers	1	11	5.9	34	18.2
	2	29	15.5	45	24.1
	3	112	59.9	51	27.3
	4	12	6.4	30	16.0
	5	19	10.2	21	11.2
Break task into smaller units	1	0	0.0	4	2.1
	2	4	2.1	16	8.6
	3	52	27.8	51	27.3
	4	44	23.5	35	18.7
	5	82	43.9	74	39.6
Use alternative forms of textbooks	1	5	2.7	19	10.2
	2	12	6.4	19	10.2
	3	46	24.6	41	21.9
	4	25	13.4	31	16.6
	5	95	50.8	71	38.0
Differentiate instruction	1	0	0.0	3	1.6
	2	7	3.7	14	7.5
	3	40	21.4	43	23.0
	4	35	18.7	30	16.0
	5	102	54.5	91	48.7
Use hands-on materials	1	0	0.0	0	0.0
	2	1	0.5	5	2.7
	3	5	2.7	20	10.7
	4	18	9.6	34	18.2
	5	162	86.6	125	66.8
Allow students to draw as part of written assignments	1	1	0.5	4	2.1
	2	4	2.1	9	4.8
	3	18	9.6	35	18.7
	4	28	15.0	34	18.2
	5	133	71.1	102	54.5
Allow students to use a word processor	1	12	6.4	66	35.3
	2	23	12.3	30	16.0
	3	33	17.6	43	23.0
	4	31	16.6	15	8.0
	5	75	40.1	24	12.8

Focus on mastery of fewer objectives	1	0	0.0	8	4.3
	2	5	2.7	9	4.8
	3	37	19.8	53	28.3
	4	38	20.3	34	18.2
	5	105	56.1	79	42.2

**APPENDIX D**

**FACTOR ANALYSIS DATA FOR THE ACCEPTABILITY SUBSCALE OF THE  
TEACHER ACCEPTABILITY AND USE SCALE**

Factor Pattern/Structure Matrix for the Acceptability Subscale of the Teacher  
Acceptability and Use Scale

Item	Factor					
	I	II	III	IV	V	VI
A9	.642					
A10	.554					
A11	.532					
A17	.639					
A12		.572				
A13		.530				
A23		.566				
A24		.528				
A28		.667				
A7			.574			
A16			.767			
A22			.515			
A3				.663		
A18				.687		
A19				.558		
A20				.684		
A1					.640	
A8					.559	
A2						.692
A4						.523
A6						.529
Initial	5.43	2.18	1.83	1.49	1.40	1.37
Eigenvalues						
% Variance Explained	9.92%	8.90%	8.83%	8.38%	6.57%	6.38%

**APPENDIX E**  
**FACTOR ANALYSIS DATA FOR THE USE SUBSCALE OF THE TEACHER**  
**ACCEPTABILITY AND USE SCALE**

Factor Pattern/Structure Matrix for the Use Subscale of the Teacher Acceptability and Use Scale

Item	Factor			
	I	II	III	IV
U2	.558			
U4	.573			
U6	.626			
U9	.736			
U10	.578			
U11	.659			
U21	.475			
U5		.550		
U7		.512		
U14		.507		
U17		.553		
U23		.508		
U24		.583		
U28		.584		
U1			.750	
U8			.638	
U25			.658	
U26			.512	
U3				.587
U18				.775
U20				.632
Initial	8.01	1.84	1.69	1.55
Eigenvalues				
% Variance Explained	14.37%	13.72%	10.27%	8.38%

**APPENDIX F**

**FACTOR ANALYSIS DATA FOR THE TEACHER SENSE OF EFFICACY  
SCALE**



Factor Pattern/Structure Matrix for Teacher Sense of Efficacy Scale

Item	Factor	
	I	II
TE1	.558	
TE2	.660	
TE4	.526	
TE6	.622	
TE7	.546	
TE9	.635	
TE10	.659	
TE11	.646	
TE12	.727	
TE14	.528	
TE17	.626	
TE18	.727	
TE20	.594	
TE22	.614	
TE23	.687	
TE24	.666	
TE3		.770
TE5		.523
TE13		.801
TE15		.774
TE16		.658
TE19		.695
TE21		.724
Initial Eigenvalues	10.80	1.67
% Variance Explained	29.70%	22.26%

## VITA

Bonnie Smith Boulton was born the eldest of seven children to Kenneth and Geraldine Ledet Smith in Galliano, Louisiana. Following her graduation from South Lafourche High School, she enrolled in Nicholls State University. There she earned a Bachelor of Arts degree in elementary education and a Master of Education degree in curriculum and instruction.

She taught special education for eighteen years in various southeastern Louisiana parishes including Lafourche, Jefferson, and St. Charles Parishes. It was during these years that she decided to pursue a terminal degree. Following her teaching career, she was employed by the Louisiana Department of Education in the Division of Student Standards and Assessments. She is currently employed in central administration at the Eanes Independent School District in Austin, Texas.

She and her husband Ross currently reside in Leander, Texas. She will receive her Doctor of Philosophy degree from Louisiana State University on May 23, 2003.