Examining Factors Contributing to the Effectiveness of General Education Teachers of Inclusion Students

by

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Abstract

EXAMINING FACTORS CONTIBUTING TO THE EFFECTIVENESS OF GENERAL EDUCATION TEACHERS OF INCLUSION STUDENTS

By

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This study used student evaluation data as a way to measure teacher effectiveness in inclusive settings. Student evaluations of teacher effectiveness have traditionally been used at the college-level. This study used student input regarding teacher effectiveness at the high school level. The sample included 58 special education students with mild educational disabilities and 31 general education teachers from a medium-sized public high school in rural New Hampshire. Students filled out a survey of teacher effectiveness as measured by organization, learning, enthusiasm, and instructional strategies. Teachers filled out a survey that contains items relating to their attitude, efficacy, school climate, and instructional practices. Statistical analyses were used to find relationships between the data collected from the student survey and teacher survey. This study supported the use of student evaluations of teacher effectiveness at the high school level. It was found that teacher effectiveness must be used as a multi-dimensional construct. Teacher gender as well as years of graduate studies, both contribute to enhancing overall teacher effectiveness.

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The focus of this research is to examine the contributing factors of effective general education teachers of inclusion students. There are two types of issues that accompany this type of research. First, the utility of student evaluations as a measure of teacher effectiveness in inclusive high school settings was examined. Second, the relationship between these student evaluations and specific teacher characteristics and practices was also examined.

Including children with mild disabilities in regular education classrooms is a pervasive theme in contemporary educational reform. Inclusive Education has emerged as a concept for special education during the 1990s, with this passage from the Individuals with Disabilities Education Act (IDEA):

> That to the maximum extent appropriate, children with disabilities, including children in public and private institution or other care facilities, are educated with children who are non-disabled: and that special classes, separate schooling or other removal of children with disabilities from the regular educational environment occurs only if 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).

Although federal regulations do not actually define the word inclusion, the intent of IDEA is that students with disabilities will be educated to the maximum extent possible with children who are non-disabled (Bateman, 1992).

However, the implementation of IDEA varies greatly amongst different states, school districts, schools and individual classrooms. Accordingly, criteria for evaluating the

effectiveness of inclusion can also vary greatly amongst different states, school districts, schools and individual classrooms.

The dramatic shift in special education programming, from pull-out programs to push-in programs warrants further investigation. In pull-out programs, a student receives the specialized instruction outside of the general educational setting in an alternative setting. Conversely, a push-in program is where the student receives the specialized instruction within the general educational setting (Tilton, 2000). It has been suggested that in many schools, general education teachers involved in the inclusion model are not receiving the additional support and proper training that is required to teach inclusion children effectively (Schumm & Vaughn, 1995; Vaughn, Hughes, Schumm, & Klinger, 1997). Additional research needs to be conducted in order to better understand the factors that contribute to the success of inclusion at the classroom level. The goal of this type of inclusion research is to ensure that children who are classified as special education can maximally benefit from the context of the general education classroom. Three major factors that emerge from the literature as important to this goal are instructional practices, school climate and teacher factors.

Instructional practices refer to the methodologies the teacher uses in teaching included children. Some common and effective instructional practices that are used are prompting students, scaffolding (teacher models desired learning task, then gradually shifts responsibility to student), peer tutoring (students tutor peers), and small group work (Bateman, 1996). Results of a study by Baker and Zigmond (1990) indicated that the majority of the time, instruction in general education elementary classrooms is given to the whole class as opposed to small groups. There was little or no evidence of grouping for instruction, and no differentiated pacing of assignments. Similarly, Johnson & Johnson

(1986) have suggested that cooperative learning is a critical instructional practice that is a key element for teachers to use in inclusion classrooms.

While it is important for teachers to implement such strategies, they must also have the knowledge as well as the instructional support to engage in such instruction. A proper school climate can facilitate better teaching. School climate refers to the support and attitudes of administrators, time allocated for planning, number of students per class, school size and the opportunity for professional development and/or consultation with other staff members. Stanovic (1996) examined the relationships among teacher and school variables and student outcomes in inclusion classrooms. It was found that the strongest predictor of effective teaching behavior was school norms as operationalized by principals' attitudes and beliefs about mainstreaming and inclusive education. It is often the principal who sets the tone of the school and thus, the stage for inclusion.

While it is important for teachers in inclusion settings to make use of certain instructional practices and to feel school support, it is equally important for teachers to have certain characteristics. Teacher factors include measures of the teacher's beliefs about his/her own teaching capabilities and attitudes toward inclusion as well as teaching experience. Such factors as experience, attitudes, self-efficacy, and perceptions will also impact the kinds of instructional practices used (Landrum & Kauffman, 1992; Pajares, 1992; Schunk, 2000). Moeller and Ishii-Jordan (1996) contend that a teacher factor such as teacher efficacy can originate with a school climate variable such as teacher development programs. Moreover, research suggests that it is not the most experienced teacher who makes for a more effective teacher of included children (Soodak, Pokell, & Lehman, 1998). A more important variable to investigate is a teacher's experience in working with children who have disabilities.

The field study for this dissertation research involved testing out items that investigated various teacher factors. Faculty members who were a part of an effective inclusion program were asked to report their years of experience, years of training and attitudes toward their inclusion program. Additionally, faculty members and administrators were asked for their own interpretation of inclusion as well as how they deem inclusion effective. It was found that in this particular school district, faculty members were consistent in the way they interpreted inclusion. There were more similarities than differences in the way faculty deem the inclusion model effective. With unanimous agreement amongst participants, inclusion is successful (students are making gains they are expected to make) in the school district sampled. Many items were tested out on faculty members from preexisting rating scales. While some of the items produced results that were useful in studying inclusion, many items needed to be either modified or discarded. Although the purpose of the pilot study was to take a broader look at how inclusion is deemed effective in one school district, the purpose of this research is to look at inclusion effectiveness at the classroom level.

This research sought to clarify the effects of instructional practices, school climate, and teacher factors on overall teacher effectiveness as measured by student evaluations. General education teachers who have classrooms with children with mild disabilities were surveyed. The survey contained items that measure all three previously discussed factors as well as items pertaining to years of experience teaching, experience in teaching inclusion classes, and training experience in special education.

Student evaluations were used as a measure of teacher effectiveness. Multiple regression analyses were used to determine if the predictors measured by the teacher survey, instructional practices, school climate and teacher factors account for the variance in the student ratings of teacher effectiveness.

It is hoped that as a result of this research, administrators who program general education teachers for inclusion would be able to improve the support given to those teachers. Instructional practices, school climate, and teacher factors are all key components that need thorough investigation for the future selection and training of general education teachers of inclusion. These factors can either support or thwart the success of a general education teacher. These factors are all amenable to manipulation as well, making them useful to investigate. Inclusion is a rapidly advancing service for children classified for special education. Using student evaluations as a measure of teacher effectiveness and using these evaluations in relationship to teacher responses may prove to be a valuable tool impacting the future of inclusive education.

Literature Review

The following chapter describes the evolution of the term, “inclusion”. It continues to describe the various independent variables: instructional practices, school climate, and various teacher factors. The dependent variable in this research is teacher effectiveness. This chapter ends with sections on ways that researchers have measured teacher effectiveness in the past and how student evaluations can be used as a contemporary measure of teacher effectiveness.

Evolution of Inclusion

Theory and practice regarding the educational needs of children with mild disabilities has undergone significant change over the past twenty years. Prior to the 1980s general education and special education were regarded as two separate entities within the educational system. General educators were responsible for educating the general education population of students, while special education teachers were responsible for educating children with special needs. The training of general education teachers consisted primarily of learning how to teach the general population, and still does.

In the United States, the Regular Education Initiative (REI) in 1986 called for a merger between regular and special education, such that schools would see the education of children with disabilities as part of their natural role . Proponents of the REI have questioned the effectiveness of pull-out programs such as resource rooms in the education of students with mild handicaps. These programs involve pulling out children from their regular education class to work with a special educator in a smaller setting for some part of the school day. The beginnings of the REI evolved from the speeches and papers of members of the Office of Special Education and Rehabilitation Services in the mid-1980s (Coates, 1989). The argument for this initiative was that pull-out programs often stigmatized students placed in such programs, resulting in lowered expectations and a focus on failure rather than

prevention. While few individuals in the field of special education would deny the existence of many problems pointed out by proponents of the REI, some are questioning the rapid and widespread rush to embrace the REI with little critical analysis.

Shortcomings of the REI implementation may be attributed to reliance on general education teachers to implement their knowledge and beliefs about the REI (Braaten & Braaten, 1988). One of the criticisms of the REI is that regular classroom teachers' views regarding many of the beliefs or assumptions of the REI are unknown. These views need clarification. Coates (1989) asked 94 regular classroom teachers in northwest Iowa whether they agreed or disagreed with a series of statements on the REI position. Results suggested that overall, general education teachers do not share the concerns or beliefs regarding the basic tenets of the REI. Regular classroom teachers were of the opinion that resource rooms are effective. Teachers are also skeptical about the idea that learners with mild handicaps can be educated entirely within the regular class even if they are given a set of "effective" techniques, additional training and support, or additional consultant assistance.

The REI is a movement that proposed the merger of regular education and special education to serve students with mild disabilities in a more efficient manner (Braaten & Braaten, 1988). Taylor, Richards, Goldstein, and Schilit (1997) presented a survey of 96 graduate and undergraduate students in both special education and general education on their opinions about the Regular Education Initiative (REI). The graduate students were mostly teachers while the undergraduate students were teachers-in-training. An analysis of variance was computed and analyzed based on a 14-item Likert scale rating their level of agreement or disagreement with the REI.

There were several trends in the overall results. Both general and special educators agreed in principle with the philosophical assumptions of the REI. However, they also agreed that changes would need to be made regarding the curricula and instructional

methodology that will be used for the education of special education students in the general education classroom. The survey showed considerable disagreement between "experienced" teachers (graduate students) and teachers-in-training (undergraduate students). The authors (Taylor et al., 1991) hypothesized that the reality base of experienced teachers made them somewhat more skeptical about certain changes associated with the REI. The majority of experienced general educators disagreed with the placement of students with mental disabilities and behavioral or emotional disabilities in the general classroom. Results indicated that if reform efforts such as the REI are to be successful, training in the application of its philosophy must begin at the undergraduate level.

Despite criticisms of the elimination of resource room, including children with mild disabilities seems to be a pervasive trend in contemporary educational reform (Bateman, 1992). Inclusive Education has emerged as a concept for special education during the 1990s as a reformulation and extension of the ideas of the Regular Education Initiative. Federal regulations do not actually use the word inclusion except to talk about a completely unrelated issue. What the law does say is open to a lot of interpretations.

The presumption of the law is that students with disabilities will be educated to the maximum extent possible with children who are non-disabled. Specifically:

> That to the maximum extent appropriate, children with disabilities, including children in public and private institution or other care facilities, are educated with children who are non-disabled: and that special classes, separate schooling or other removal of children with disabilities from the regular educational environment occurs only if 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).

Statements such as these tell us that not every child with a disability needs to be placed inside a regular classroom. It tells us that a continuum of services exists to accommodate children who have disabilities (Bateman, 1992). However, it is to be noted that the actual term "inclusion" is not even mentioned in IDEA nor IDEIA.

As important as it is to conceptualize the definition of inclusion, it is equally important to consider the ultimate goals for successful inclusion. Who benefits from inclusion? What are the benefits as well as the challenges? Both children and teachers will receive unique benefits. The possible benefits of inclusion between collaborating teachers are mutual support, combined efforts, more ideas, learning new skills, more time to assist other students, shared responsibility and workload. Additionally, some of the benefits of collaboration for teachers cited most often are acceptance of all children, provision of role models for students with special needs, increased self-confidence with special needs, allowance of more time with peers, placement of less emphasis on labels, and provision of academic and social gains for students with special needs (Tilton, 2000).

Some obstacles to effective collaboration between general education teachers and special education teachers are resistance to change, "turfism", loss of flexibility, communication issues, and personality and teaching style differences. Challenges for students cited often by teachers are noise levels, difficulty meeting individual needs, disturbances and interruptions, and difficulties in modifying material to reach all students. There is also cause for concern when students must be excluded from classroom activities due to the nature of their disability but are still physically "included" in the classroom (Tilton, 2000).

Schumm and Vaughn (1995) summarized a series of investigations that addressed teacher and student perceptions of instructional adaptations for students with diverse learning needs. The rationale was that a better understanding of student and teacher perceptions could

provide guidelines for inservice and preservice teacher education as well as research and development of effective practices. Data was collected from over 1,000 teachers and over 3,000 students representing elementary, middle school, and high school grade levels. Schumm and Vaughn summarized the basic components of twelve studies of teacher perceptions. They suggest that in order for inclusion to be successful, there are a number of issues that must be addressed.

The first issue is that classroom teachers report that they lack the knowledge, skills, and confidence they need to plan and make instructional adaptations for students with disabilities. A second issue is the lack of availability of human resources such as special education teachers, reading resource specialists, and fellow teachers. A third issue is the frequency of implementation of instructional adaptations, which is closely linked to the feasibility of adaptations, rather than their desirability. If an instructional adaptation is feasible to implement, a teacher may use the adaptation more often, thus increasing its frequency (Schumm & Vaughn, 1995).

Schumm and Vaughn (1995) concluded that the stage is not set for effective inclusion of students with learning disabilities because of inadequate support and training for teachers. Professional development opportunities must be structured to teach fluency in addressing individual differences if inclusion of students with high incidence disabilities in general education settings are to be successful.

Other studies (Vaughn, Hughes, Schumm, & Klinger, 1997) have begun to look at the type of instruction that exists in mainstream classrooms. Vaughn, Hughes, Schumm, and Klinger (1997) found that instruction in mainstream classes often was not differentiated to meet the needs of students with disabilities, and few adaptations were provided. Students with learning disabilities participated at a lower rate in teacher-directed activities; and overall, they interacted with both the teacher and other students at a lower rate. As inclusion

evolves, the need for teacher development and also teacher buy-in becomes a vital component for inclusion success.

Instructional practices

Research has identified several areas that can either support or thwart the success of a general education teacher teaching children with disabilities. These areas can be divided into three parts: instructional practices, school climate, and teacher factors. The first area discussed more closely is instructional practice.

Specific strategies

In order for children with any kind of disability to have success in the general education classroom, fundamental changes in instruction are necessary. Baker and Zigmond (1990) looked at how adequately regular education classes can accommodate students with learning disabilities. The authors (Baker & Zigmond, 1990) examined a school during the planning year of a mainstreaming project to see the extent to which the school was prepared to accommodate students with learning disabilities full-time in the general education setting. Their case study design targeted a K-5 elementary school in an urban district. Data from observations, interviews, surveys, and school records were integrated to provide a rich description of the school's instructional program. Results indicated that the majority of the time, instruction is given to the whole class. In K-2 classrooms, lessons were taught to the whole class; there was no grouping for instruction, and no differentiated pacing or assignments. The majority of the time in grades 1^{st} –5^{th} during reading class was spent handling management issues (such as bathroom breaks, distributing materials, and transitions) or reading.

Authors suggested that teachers need to increase the percentage of time they devote to teaching and to use a wider range of techniques for teaching reading. Teaching activities will need to include more interactive tasks that involve students in the learning process and

increase the time they spend reading. Teachers must be encouraged to vary the size and composition of instructional groups, perhaps having pairs of students work together to increase opportunities for more students to be actively engaged in instructional activities.

Similarly, Johnson and Johnson (1986) have suggested that cooperative learning is a critical instructional practice that is a key element for teachers to use in inclusion classrooms. When cooperative learning is implemented effectively, positive relationships between disabled and non-disabled students result. Far more positive interactions between disabled and non-disabled students within instructional situations and during free-time, as well as increased friendships, result from cooperative learning experiences. Cooperative learning is comprised of four basic elements: positive interdependence, individual accountability, collaborative skills and group processing. Each element contributes to effective use of cooperative learning in special education and mainstream classrooms.

In addition to changing the size and composition of instructional groups, there is encouraging evidence that certain instructional strategies help support the development and achievement of almost all students. Bateman (1996) has provided a sketch of these strategies in a review of sound inclusive practices. Some of these strategies and programs include:

1. Circle of Friends – This technique helps students develop friendships with their classmates. Classmates volunteer to be part of a student's circle, and the circle meets as a team on a regular basis. The teacher coordinates the circle and helps the group solve problems or concerns that arise. Students in the circle provide friendship and support so that no student is isolated or alone in the class.
2. Class Wide Peer Tutoring Program – This involves whole classrooms of students in tutoring activities that improve achievement and student engagement, particularly for at-risk, low-income students.

3. Peer buddy system – In this system, classmates serve as peer buddies (friends, guides, or counselors) to students who are experiencing problems. Variations are to pair an older student with a younger one who is experiencing a problem and to pair two students who are experiencing similar problems.
4. Reading Recovery – This early intervention program provides 30 minutes of daily tutoring for up to 20 weeks to first graders who are having trouble learning to read.
5. Reciprocal teaching – In this instructional procedure, students learn to improve their reading comprehension by questioning, summarizing, clarifying, and predicting what is in the text. The best results are generally obtained when students receive direct instruction in the four cognitive strategies before they begin taking turns leading discussions about the text.
6. Success for All – This program is built around the idea that every child, including those in high-poverty areas, can and must succeed in the early grades and that learning problems can be prevented or corrected through early intervention, improved curriculum and instruction, individual attention, and support to families

Lederer (2000) examined the effectiveness of reciprocal teaching mentioned above, during social studies instruction with several students with learning disabilities in fourth-, fifth-, and sixth-grade inclusive classrooms. A sample of 128 students was used with 63 students in the experimental group and 65 students in the control group. The experimental group was told to pretend they were the teacher, by developing questions about the social studies text. They were then taught by the investigator how to ask questions, make summaries, clarify and make predictions. After the treatment phase, comprehension assessment was administered as well as a 30-day maintenance assessment.

All students in the experimental group improved their performance on comprehension measures compared with students in the control group. Students with learning disabilities

significantly improved their ability to compose summaries compared to the control students. In addition to significant changes in the experimental group's ability to answer questions, they were also better able to generate questions. All results were significant at the .05 level.

In addition to implementing specific programs and strategies, teachers may adapt a single curriculum to meet the individual needs of students. Adapting the curriculum is the basic tenet of special education. Many good teachers individualize their instruction to students. Typical adaptations include using organization aids such as graphic organizers, highlighting, section summaries; reducing reading levels or otherwise changing vocabulary; and changing the medium through which information is conveyed (for example using computer and visual aids). Other common instructional modifications may include reducing assignment length, reducing the amount of text on a page, giving students choices or an answer bank when answering questions, reading questions aloud, having students restate question or information, using positive reinforcement, and/or extending time allotted for assignments.

Many of the modifications mentioned above pertain to modifications in the classroom curriculum as well as testing modifications. Many children who have Individualized Educational Programs (IEP) under (Individuals with Disabilities Education ACT) IDEA receive testing modifications. These modifications must include both standardized tests as well as teacher-made tests. Teachers are more likely to accept using test modifications if they do not disrupt classroom routine. Therefore, acceptability of specific instructional practices may impact the frequency of its use.

Teacher acceptability

Teacher acceptability refers to the extent to which teachers view a strategy as easy to use, effective, reasonable, fair, consistent with their teaching style and philosophy, and appropriate for their setting (Kazdin, 1980). Gajria, Salend, and Hemrick (1994)

administered a questionnaire consisting of 32 test design modifications to 64 secondary general education teachers in two suburban school districts in New York.

Results (Gajria et al., 1994) indicated that teachers were reluctant to modify the reading level of a test, develop alternative scoring criteria, provide a model of correct response, present opportunities for practice of a sample test, and provide an answer check sheet that lists the components expected on essay questions. Teachers were likely to use modifications that they perceive maintain academic integrity; are effective; and require little individualization in terms of planning, resources, and extra time.

A general education teacher has many choices in what instructional practices and modifications he or she can use. Many of these choices may require additional training from experts within the school. One can conclude that teachers are more apt to implement those instructional practices that are easy to implement and effective. One way in which these instructional practices become easy and effective is by having support from the school in terms of planning, resources, and extra time.

School climate

In addition to the individual instructional practices an inclusionist uses, the teacher must have the support of the school to ensure proper implementation of any effective inclusion program. School climate includes professional development opportunities of general education teachers, principal support for inclusion, size of school, and additional time for planning (Wade, Welch, and Jensen, 1994).

One of the largest and most overcrowded school districts in New York City has been thoroughly examined while it refines its inclusion programs. The goals of this particular school district since 1994 have been to create model classrooms in every grade on every floor in each building. Although the goals have not yet been reached, systematic change continues to take place in every school (Weiner, 2003).

This particular district uses “District Inclusion Facilitators” who are hired specialists who speak at staff meetings, arrange visits to neighboring schools who are more effective, and commit time to address the predictable and natural resistance inherent in this process (Weiner, 2003). In turn, the facilitator and the teacher develop a support plan that addresses attitudes, beliefs, and expectations. The district also requires informal pre-and post-assessments of every student in reading, writing, and math, and assists teachers in developing instructional modification profiles including specific strategies to provide effective learning opportunities. The district believes that concrete results yield feelings of pride that lead to greater job satisfaction.

As a result of the school district’s allocating more time and energy to inclusion, standardized reading and math scores rose. Grades 3-8 showed a significant mean gains from 2000-2001. Special education students in inclusion classes were compared to special education students in non-inclusion classes and to general education students in non-inclusion classes. Overall, a higher percentage of students in inclusion classes improved at least one performance level when compared to students in non-inclusion classes.

As a result of examining this particular district, Weiner (2003) has developed some suggestions for inclusive schools and to promote a climate more conducive to inclusion:

1. In schools whose teachers are willing to try inclusion, teams might analyze achievement test results to suggest specific skills or strategies that many students have not learned or learned poorly.
2. Members of school teams could identify how the targeted strategies have been taught and new lesson plans could be developed, refined, and shared.
3. Teachers might then present new lessons for staff to observe and discuss.

Overall, major changes in the culture of the school would result in a common focus and shared responsibility for student learning outcomes. Although these suggestions appear

to be viable plans for any school, questions arise in the sample selection. As with any study of performance between inclusion and non-inclusion students, it is difficult to make comparisons between the two groups. Although comparisons were made between included children and non-included children, the study does not discuss the criteria for selection of these groups. Were children in non-inclusion classes not recommended for inclusion due to the specifics of their disability? If so, it is unfair to compare these children with children selected for inclusion who might have had less severe disabilities. In order to make meaningful comparisons, children in both the included group and non-included group should be eligible for inclusion services. However, this placement would be unethical. For, if children were eligible for inclusion services and were placed in self-contained special education classes, they would not be receiving services that best met their needs.

Wade, Welch, and Jensen (1994) made an attempt to see if level of interest and attitudes/concerns are related to school climate characteristics. They examined school size, years of teaching experience, years teaching at the same school, training as a regular educator versus training as a specialist, prior experience with collaborative projects, and enrollment in and perceived value of workshops and college courses on reading in the content areas or teaching learning strategies. Twelve schools in Utah were used. They were divided into two types of schools: collaborative and non-collaborative.

Wade et al. (1994) defined collaborative schools as schools in which regular educators and specialists were actively collaborating to include students receiving special education or remedial services. Non-collaborative schools were defined as schools not participating in any kind of collaborative effort. A questionnaire was developed to measure critical variables that seemed most likely to affect successful implementation of inclusion and collaboration. Part of the questionnaire was dedicated to school characteristics that were hypothesized to affect teachers' level of interest.

A chi-square test for independence revealed that faculty in schools that were already engaged in collaborative relationships were more interested in collaboration than those who were in non-collaborative schools. This implies that once collaboration is familiar to faculty, it also becomes a project that is of interest to faculty. Exposure to a collaborative environment appears to affect actual collaborative efforts.

Results also revealed that those who were the least willing to participate have had longer tenure and have remained longer at the same school than the other respondents. In contrast, those most willing to participate were relatively new teachers who had not been at the same school for a very long period of time. The finding suggested implied that teachers newer to a school are more willing to participate in collaboration with other teachers. Teachers with 10 or more years of teaching experience as well as a long history in the same school appeared to be less interested in collaboration than those with less experience and less tenure in one school.

Teachers who had a higher interest level in collaboration found workshops and coursework more valuable than those with lower interest levels. School size seemed to be another important characteristic affecting collaboration. Faculty members from larger schools (student body exceeded 1,000) were less interested in assuming a collaborative role than faculty from smaller schools.

Wade et al. (1994) found that in most schools there was a core group of strong advocates of collaboration. Thus, most schools would not have to rely solely on an outside change facilitator or the building administrator to initiate collaborative efforts. Results suggested that administrators and change agents can probably count on a small number of teachers and specialists to take a leadership role, which may make the change effort legitimate and can provide ongoing support during the implementation stage. When it is not possible to utilize faculty who are interested in collaborative efforts, many districts will refer

to some outside consultant. An implication of this study is that school climate is a result of the enthusiasm or lack of enthusiasm from the faculty itself.

School climate is an important area of interest, especially when changes are brought to school systems. Part of a study conducted by Soodak, Podell, and Lehman (1998) involved surveying 188 general education teachers using the School Climate Survey. It was intended to identify the aspects of the school that contribute to teacher attitudes toward inclusion. Results indicated that the greater number of students in the class, the more anxious teachers were about including a student with disabilities. Although this study did not find a relationship between teachers' responses to inclusion and teachers' perceptions of administrative support, feedback, school standards, and parent involvement, the authors hypothesized that there is indeed a relationship. They believed that the failure to detect a relation among teachers' responses and school climate variables was due a lack of sensitivity in the School Climate Survey.

A review of the literature by Fish and Dane (2000) indicated that the two most common ways to measure the classroom environment and what exists within the classroom context are through observations and self-report measures. This study relied on self-report measures of instructional practices as well as other constructs.

In summary, some of the school climate factors that are found to facilitate inclusion are small school size, small class size, and schools that allow for collaboration between general educators and special educators (Soodak et al., 1998; Wade et al.,1994). An additional implication is that a school with a younger and less experienced staff may also have teachers who are more accepting of inclusion.

Professional Development

Outcomes of this case study by Peters (2001) indicated that the success of

inclusive education involves using inclusion as a canon behind everything that happens in schools. It is something that is a part of all work done within a school rather than just some add-on service for children with special education. Another outcome was the principle that inquiry and collaboration drove changes in teaching styles in classrooms but also led to a new respect for children with special needs abilities. The school process of change consisted of a comprehensive approach to reform that involved all aspects of school organization, teaching, and learning. A final outcome was that this particular professional development school was able to increase its capacity to meet the social, academic, and physical needs of children classified as special education. This research demonstrated the importance of viewing inclusion as an on-going professional development process. Additionally, inclusion teachers have an integral role in accessing and supporting professional development opportunities in their school.

Despite the growth of professional development schools, few reports have examined how special educators can serve as consultants to regular education teachers who have children with disabilities. Voltz (2001) examined how special education teachers can better assist teachers to meet the needs of students with disabilities. How are special education teachers serving as expert consultants to other teachers who work with children who have disabilities? Although this type of consultation can occur in any school with a special education teacher and a regular education teacher an actual "professional development school" is conceptualized differently. Professional development schools are conceptualized as learning communities that involve school personnel (i.e., teachers, principals), university faculty, teacher interns, and K-12 students. In this study, 24 special education teachers were interviewed for 30 minutes.

Results indicated that the vast majority of the special education teachers participating in this study reported being actively involved, or expressed a willingness to be involved, in

the experiences of preservice general education teachers, despite the lack of formal mechanisms to support such involvement. The majority of those interviewed indicated that they had some professional contact with Master of Arts in Teaching (MAT) students at their school sites, with almost half reporting working with MAT students in consultative roles. Suggestions were offered on how they could change the lesson to meet the needs of all the students. One implication of this study is that it is important for special educators to contribute to the design and implementation of professional development. Preparation of preservice general educators will contribute to the success of any inclusion program.

Stanovich and Jordan (2002) found similar implications in their research project involving over 100 classrooms. They targeted variables that are essential for successful inclusion, one of which was school characteristics. It was suggested that emphasis should be placed on schools' viewing inclusion as professional development. Once again, there is empirical support for schools' building in a mechanism for continued professional development of general education teachers.

Similar to the way Voltz (2001) defined professional development schools, yet slightly different, Peters (2001) discussed a greater emphasis on the idea that these schools are involved in a partnership with universities. Together, this partnership agreed upon four general goals. The goals consist of:

1. Provide clinical setting for pre-service teachers
2. Engage in continuous professional development of practicing teachers
3. Promote and conduct inquiry to advance knowledge
4. Provide exemplary education to K-12 students

Principal attitudes

Research demonstrates that school variables, especially principals' attitudes, influence teacher performance. Stanovic (1996) examined the relationships among teacher

and school variables and student outcomes in regular education classrooms that included exceptional and at-risk pupils. The sample included 33 teachers, 818 pupils, and twelve principals from Toronto. A structured set of hierarchical regression analyses indicated that the strongest predictor of effective teaching behavior was school norms as operationalized by principals' attitudes and beliefs about mainstreaming and inclusive education. Principals' beliefs had a direct effect on the classroom observation measure of effective teaching (i.e., the effect of principal's beliefs on teaching behavior was not mediated by teacher attitudes).

A few years later, Stanovic and Jordan (1998) attempted to predict the performance of teacher behaviors associated with effective teaching in heterogeneous classrooms from a set of variables already identified in the literature as important contributors to effective classroom practice. Identified variables included teacher beliefs and attitudes, principal beliefs and school norms, and teacher efficacy. Participants in this study comprised of thirty-three general education teachers of grades two to grades eight in a large metropolitan area in Canada. Data was collected by using teacher interviews, an attitudes toward mainstreaming scale for principals and teachers, teacher and principal surveys, a teacher efficacy scale, and finally, principals completed a questionnaire addressing the general practices of teachers at the school. Additionally, teacher effectiveness was determined by classroom observations. Results indicated that the strongest predictor of effective teaching behavior was the principal's attitudes and beliefs about heterogeneous classrooms. The second most important predictor of effective teaching behaviors was teacher attitudes and behaviors as indicated by teacher interviews. Stanovic was able to support and extend upon his original findings that school variables such as principal attitudes predict teaching behavior.

While this study (Stanovic & Jordan, 1998) examined teacher self-report data regarding the use of appropriate instructional strategies and school climate, it also examined teachers' characteristics. Instructional strategies, school climate and teacher factors do not

operate independently of one another. School climate will impact what instructional strategies are used. It is hypothesized that teachers will be more likely to make adaptations in their instructional practices if they have more support from administrators, professional development, and time to plan out their ideas. Conversely, if there is little support from the school, a teacher may be limited in the range of instructional strategies used. Thus, school variables impact instructional practices that in turn, have an interdependent relationship with teacher factors.

Teacher Factors

This section explores how teachers' characteristics influence what they are doing in their classroom and what is being done in their school to promote inclusion. For the purposes of this paper, teacher factors include teacher efficacy, teacher attributes including experience, and teacher attitudes.

As discussed above, inclusion of students with special needs in regular education classrooms has become a major focus of current educational reform. This movement towards inclusive rather than segregated education has resulted from considerable world-wide importance placed on the rights of a child, regardless of a disability, to receive an appropriate education along with his/her non-disabled peers. Regular education classroom teachers play a significant role in the educational experiences of the included students. Teacher factors were divided into teacher efficacy, teacher attributes including experience, and teacher attitudes.

Teacher efficacy

Since a relationship exists between attitudes and behavior, the attitudes of teachers toward inclusion-related issues play a significant role in their interactions with included students. Therefore, teacher attitudes, perceptions, and efficacy will affect the quality of

these students' experiences. Such teacher factors have been and will continue to be scrutinized as the implementation of inclusion grows.

According to Bandura (1977), perceptions drive beliefs and attitudes. Teacher beliefs are powerful determinants of teacher practice (Pajares, 1992). Teacher attitudes about education – schooling, teaching, learning, and students – have generally been referred to as teachers' beliefs.

Self-efficacy refers to personal beliefs about one's capabilities to learn or perform actions at designated levels (Bandura, 1977). Self-efficacy is a belief about what one is capable of doing; it is not the same as knowing what to do. Teacher efficacy is a type of self-efficacy as it relates to the teaching profession. *Teacher efficacy* refers to personal beliefs about one's capabilities to help students learn. Teachers with low efficacy may avoid planning activities they believe exceed their capabilities, not persist with students having difficulties, expend little effort to find materials, and not reteach in ways students might understand better. Teachers with higher efficacy are more apt to develop challenging activities, help students succeed, and persevere with students who have problems (Schunk, 2000).

Landrum and Kauffman (1992) surveyed 186 teachers from eight elementary schools concerning their standards and tolerance for several variables such as: classroom behavior, sense of responsibility for behavior that goes beyond their tolerance, resistance to working with handicapped students, sense of self-efficacy, and perceptions of colleagues' effectiveness in working with students who have academic or behavioral problems. In addition to self-ratings, teachers were also rated by their peers. Teachers who rated themselves high in self-efficacy were likely to be in the high effectiveness group as determined by peers. Teachers who rated themselves low in self-efficacy were also rated low in effectiveness by peers. Essentially, teachers saw themselves as other teachers see them.

Reflecting on the findings of their study, Landrum and Kauffman (1992) were concerned with characteristics of teachers perceived as effective by their peers. An important implication of the identification of effective teachers of difficult students is to understand how teachers act upon such perceptions. These authors supported Pajares's (1992) conception that teacher beliefs are powerful determinants of teacher practice.

As the research evolves on inclusion, more questions arise. Such questions are: How does one gain teacher efficacy? Does it require experience? Is it something you can be taught during pre-service training and/or teacher development programs? The following study looked at teacher efficacy as it relates to pre-service and in-service teacher development programs.

Moeller and Ishii-Jordan (1996) contended that achieving teaching efficacy for teachers in inclusive classroom settings requires paradigm shifts in pre-service and in-service teacher development programs to emphasize the precepts that all students can learn and that teachers can assist them. The authors, a regular education teacher and a special education teacher, respectively, explored the challenges of having students with varying levels of ability and behavioral responses in their classrooms. They contended that change in teaching efficacy begins with teacher development programs.

An important feature to inclusion is that there are adequate supports and services as intended in the Individuals with Disabilities Education Act. The law intended that students with special needs would be placed in general classrooms to be educated with peers and that there would be support for the classroom teacher. If there is a lack of support for the classroom teacher, inclusion will not be as effective (Moeller & Ishii-Jordan, 1996).

Once again, researchers can see how the aforementioned variables- instructional practices, school climate, and teacher factors - impact one another. Moeller and Ishii-Jordan (1996) contended that a teacher factor such as teacher efficacy starts with a school variable

such as teacher development programs. In order to measure how teachers perceive school variables and instructional practices, self-reports may be used. Instructional practices such as modifications or programs can be easily defined. School variables such as time to plan and availability of human resources also are readily defined. Since these two factors are more easily observed, assessment of these factors is fairly straightforward. In order to measure teacher factors such as teacher efficacy, however, a clear conception of the construct must be established.

Measuring teacher efficacy

Teacher efficacy has been identified as a variable accounting for individual differences in teaching effectiveness. Gibson and Dembo (1984) developed an instrument to measure teacher efficacy with a 30-item Likert format scale. Results from a factor analysis indicated that two resulting dimensions clearly conform to Bandura's conceptualization of self-efficacy (Bandura, 1977). These dimensions are Teaching Efficacy and Personal Teaching Efficacy. Teaching Efficacy reflects the extent to which teachers believe that students can be taught regardless of such factors as family background, IQ, and school conditions. Teachers' evaluations of their own abilities to bring about positive student change are represented by the factor Personal Teaching Efficacy.

A multitrait-method analysis supported the convergent and discriminant validity from teachers on three traits: teacher efficacy, verbal ability, and flexibility. Measurement methods consisted of both an open-ended and closed-ended format. Finally, classroom observation data related to academic focus and teacher feedback behaviors indicated differences between high- and low-efficacy teachers in time spent in whole class versus small group instruction, teacher use of criticism, and teacher lack of persistence in failure situations. Based on their validation study, Gibson and Dembo (1984) concluded that the Teacher Efficacy Scale can be used to study teacher efficacy and its impact in the classroom.

Teacher attributes and attitudes

In this next section, teacher characteristics such as attitudes toward inclusion and other teacher attributes will be investigated. Soodak, Podell, and Lehman (1998) surveyed 188 general education teachers in the New York metropolitan area who had an average of nine years teaching experience regarding their responses to including students with disabilities in their classroom. Researchers investigated several questions in this study such as: (a) What are the nature and dimensions of teachers' affective responses to including a child with disabilities in their general education classroom? (b) How do teacher attributes and beliefs, student characteristics, and school climate relate to teachers' responses to inclusion? and (c) How well do these factors predict teachers' responses to inclusion?

Results of interviews and surveys indicated that teacher attributes and beliefs, student characteristics, and school climate relate to the dimensions of hostility/receptivity and anxiety/calmness. Receptivity toward inclusion was associated with higher teacher efficacy, inclusion of students with physical rather than cognitive or behavior disorders, use of differentiated teaching practices, and teacher collaboration. In addition, results suggested that with general education teaching experience, teachers become more hostile toward inclusion. These results confirm results found by Wade et al. (1994) in that teacher interest in inclusion had an inverse relationship with years of teaching experience.

Olson, Chalmers, and Hoover (1997) looked at attributes as well as attitudes often general education teachers identified as effective inclusionists by principals and special education teachers. Seven themes emerged from in-depth semi-structured interviews. The themes were as follows: tolerant, reflective, and flexible personalities of teachers; feeling a personal responsibility for all students in their classrooms; having a positive attitude toward special education; teachers who adjust their expectations; teachers who demonstrate

interpersonal warmth and acceptance; and concerns about administrative arrangements such as insufficient time available for collaboration. Nine out of ten of these effective inclusionist teachers felt that inclusion was not always appropriate. Although important characteristics of successful inclusionists emerged from this study, there was no comparison group. Another important study might survey other successful inclusionists in comparison to inclusionists who are not deemed as effective. Identifying any personality characteristics, teacher attitudes and efficacy that distinguish successful inclusionists from less successful inclusionists would provide some useful information.

Both studies described above imply that the attributes of the general education teacher are an important dimension affecting the success of included children. Results of both studies suggest that meeting the needs of all students in an integrated setting often elicits great concern and challenge general education teachers. The two studies each used local metropolitan areas to gather samples. Olson et al. (1997) suggested that replication of the study would be worthwhile using a larger sample of "successful inclusionists."

A similar study (Van Reusen, Shoho, & Barker, 2001) focused on high school teacher attitudes toward the inclusion of students with disabilities in general education classrooms. Several variables were investigated to see the extent to which they affect high school teacher attitudes. Such variables include classroom experience level, gender, amount of special education training, and content or subject area taught. The sample included 125 teachers from a large suburban high school in San Antonio, Texas. Teachers completed a twenty-item, four-point Likert scale Inclusion Survey. The Inclusion Survey looked at four domains: Teacher Training, Academic Climate, Academic Content/Teacher Effectiveness, and Social Adjustment (students). An analysis of variance revealed a significant difference between the amount of training or experience the teachers had in teaching students with disabilities and the presence of positive or negative attitudes toward inclusion. In other words, teachers who

reported higher level of special education training or experience in teaching students with disabilities were found to hold more positive attitudes toward inclusion.

Hill (2001) investigated the relationship between teacher beliefs about inclusion, teacher efficacy, teacher's age, years of experience, and years of experience teaching students with disabilities and the perceived level of supports needed to accommodate students with mild to moderate disabilities. One hundred seventy middle and high school teachers were surveyed using several different instruments. Multiple regression analyses were conducted by category of classroom practice: Instruction, Curricular Modifications and Classroom Organization and Management. Teaching efficacy was negatively correlated with the perceived level of support needed to make curricular modifications. Years of experience was negatively correlated with the perceived level of support needed for instruction. Teachers with more experience found that they have less support, while teachers who have less experience found they have more support. This finding may support Sookdak, Podell, and Lehman's (1998) report that with experience, teachers become more hostile toward inclusion. Implications suggest the need to enhance the skills of teachers with regard to delivering instruction and making curriculum modifications for students with mild or moderate disabilities.

It is important to note that research seems to indicate that type of teaching experience is what impacted teacher efficacy and attitude. Van Reusen et al.(2001) found that those teachers who had special education training or experience in teaching students with disabilities held more positive attitudes toward inclusion. On the other hand, Hill (2001) found that with experience, teachers became more hostile toward inclusion. The discrepancy in their findings appears related to the differentiation between years of overall general teaching experience and years teaching students with disabilities. Teaching experience and

years of teaching students with disabilities, highlights the importance of having experience in teaching students with disabilities.

Treder (1999) compared the attitudes of effective and typical teachers toward inclusion related issues. Compared to the typical group, more effective teachers indicated significantly fewer adaptive and appropriate student behaviors deemed to be critical to a successful adjustment in their classroom. More effective teachers also indicated fewer inappropriate and maladaptive student behaviors that were deemed to be unacceptable in their classroom. Overall, effective teachers accepted a broader range of behaviors than typical teachers. This is in sharp contrast with a study by Gersten, Walker and Darsh (1988). A study by Gersten, Walker and Darsh (1988) indicated that more effective teachers were less tolerant of the behaviors often exhibited by students with special needs and more resistant to the placement of these students into their classroom.

Additional results found by Treder (1999) indicated that more effective teachers indicated greater interaction with special needs students. More effective teachers also indicated higher levels of the promotion of inclusive practices at their school. Treder (1999) and Gersten, Walker and Darsh (1988) found contradicting results regarding effective teachers' tolerance and acceptance of inappropriate behaviors. Data was collected through the use of self-reports. Although Treder (1999) was able to compare attitudes of effective and typical teachers, he did not measure teacher efficacy, as did Gersten et al. (1988). While results were conflicting, some of the important variables identified in this research are years of experience in inclusion as well as the evaluation of experienced teachers' acceptance of certain classroom behaviors.

As mentioned above, researchers are beginning to identify some variables that may lead to greater teacher effectiveness. It appears that some of the teacher factors that may

affect inclusion practices are teacher experience, teacher's prior training in special education, as well as other attributes such as specific personality factors.

Measuring Teacher Effectiveness

There are distinctions to be made amongst the different aspects of teacher quality. Teacher quality (Medley & Shannon, 1994) is comprised of teacher effectiveness, teacher competence, and teacher performance. Teacher competence is the extent to which the teacher possesses the knowledge and skills defined as necessary to teach while teacher performance is the way in which a teacher behaves in the process of teaching. The dimension of teacher quality this study will focus on is teacher effectiveness. According to Medley and Shannon (1994), teacher effectiveness can be defined as the degree to which a teacher achieves desired effects upon students.

Medley (1979) identified five successive conceptions of the effective teacher: (a) possessor of desirable personal traits, (b) user of effective methods (c) creator of a good classroom atmosphere, (d) master of a repertoire of competencies, and (e) professional decision maker who has not only mastered needed competencies, but learned when to apply them and how to orchestrate them. Several of these concepts are embedded in the Successful Inclusion Survey created and utilized for the present study.

The main approach for assessing teachers' effectiveness involves collecting data about the teacher's influence on student progress toward a defined educational goal, most likely through achievement tests (Dunkin, 1997). Traditionally, teacher effectiveness has been assessed through student outcome scores on standardized tests of achievement (Matsumura, Garnier, Pascal & Valdes, 2002). Unfortunately, a valid student achievement measure is not necessarily a valid measure of teacher effectiveness. Similarly, test validity refers to the degree that the test actually measures what it claims to (Glass & Hopkins, 1996).

In one study that measured instructional quality, student reading and language achievement were used as outcome measures. Matsumara et al. (2002) examined Stanford-9-scaled scores for reading and language achievement for two consecutive years. A two-level hierarchical analysis model was run separately on reading and language achievement. Two student-level (Level 1) models and one teacher-level model (Level 2) were estimated using maximum likelihood procedures. At the student level, a random-effects model was analyzed to provide information on how much variation existed between and within students on reading and language achievement outcomes. The second student-level method adjusted reading and language achievement outcomes for individual student background. Student-level covariates were specified as predictors of reading and language achievement: reading scale scores from the previous year and dummy variables for students' participation in a free lunch program, language status, and gender.

As a result of the study by Matsmura et al. (2002), a mixed picture was presented with regard to the stability of the ratings at the different levels of schooling and the number of assignments needed to yield a consistent estimate of quality. Secondary students who received higher quality assignments produced higher quality written work and scored higher as a group on the reading and language portions of the Stanford Achievement Test, 9th edition (Stanford 9) adjusted for student background and prior achievement.

Although many of the studies (Goldhaber & Anthony, 2003; Matsumura, Garnier Pascal, & Valdes, 2002; Weiner 2003) utilizing student change of test scores do not address regression effects, regression effects contribute to measurement error. According to Glass and Hopkins (1996), all predictions of Y from X regress toward the mean. Hansen (2000) minimized regression effects by using multiple level of achievement measures rather than a single-level assessment for each grade level. Achievement Level Tests can help overcome regression effect challenges by increasing the accuracy of the obtained achievement estimate.

Achievement Level Tests provide increased accuracy by providing a measure that centers the score distribution around the student's knowledge level and by providing more items that are at an appropriate level of difficulty for the student. Since there is a great degree of difficulty in locating schools that administer these types of tests, other measures of investigating teacher effectiveness were considered.

Student Evaluations

A review of the literature suggested that student evaluations, contrary to popular belief, can be valid sources of data about teaching performance. Savage and McCord (1986) sought to determine if the assessments of teacher competence differ when student evaluation data were added to supervisor evaluations. Fifty-one elementary, middle, junior high, and high school principals were asked to evaluate seven teachers. One-third of the principals were given only school district summative evaluation data. The other two-thirds were given summative evaluation data as well as student evaluations. Findings indicated that student evaluation data do not significantly alter the assessment of teacher competency.

Hanna (1983) searched for systematic extraneous influences upon high school student ratings of teacher effectiveness. Specifically, student motivation/preference and class size need to be adjusted for when evaluating the validity of student evaluation to make implications for classroom instruction (Gerald, 1983). Similarly, a study by Marsh, Hau, Chung, and Siu, (1997) found that teachers who were classified as "good" teachers tended to teach smaller sized classes. Future research will have to account for variation in class size when assessing teacher effectiveness.

Another extraneous variable that has been systematically investigated is the effect of student gender on student evaluations. High school students read and rated descriptions of teachers and teachers read and rated descriptions of students that varied across gender and gender-role behavior. Male students were less positive in their evaluations of teachers than

were females. Male teachers were rated more highly effective than female teachers (Bernard, 1981). Additionally, a later study suggested that students had a preference for male teachers and teachers with public school experience according to student evaluations (Minner, 1988). Although it appears that gender plays a role in student evaluations, there are inconsistencies in research findings.

In a review of the literature on obtaining student feedback, Richardson (2005) concluded that student feedback is useful and informative, but for a number of reasons many teachers and institutions do not take student feedback sufficiently seriously. While much of the literature on student evaluations of teacher effectiveness has been done at most levels of education, a widely used and researched tool, the Students' Evaluations of Educational Quality (SEEQ) has been used primarily in higher education.

A number of research reports and meta analyses on student evaluation of college teaching were reviewed by Marsh (1987) when designing the SEEQ. Coffey and Gibbs (2001) recommended the use of the 40-item SEEQ as a result of research that confirmed the factor structure of the SEEQ. Student ratings were found to be multidimensional, reliable, valid, and relatively unbiased. The SEEQ has an exceptionally high level of reliability (r=.88 to .97). It also has a reasonable level of validity in that it correlates with a wide range of measures of learning outcomes such as student marks on standardized examinations (Marsh et al., 1975).

Results were useful for feedback, course selection, and personnel decisions. Use of the instrument indicated that class-average student ratings were: (a) multidimensional; (b) reliable and stable; (c) primarily a function of the instructor rather than of course content; (d) relatively valid against a variety of indicators of effective teaching; (e) relatively unaffected by a variety of variables hypothesized as potential biases; and (f) perceived as useful feedback by faculty about their teaching, by students for use in course selections and by

administrators for use in personnel decisions. There were nine factors as revealed in a factor analysis: learning value, instructor enthusiasm, organization, individual rapport, group interactions, breadth of coverage, examinations and grading, assignments and readings, and workload difficulty. Each of the nine factors contains four items based on a five-point Likert scale.

Another study by Marsh (2000) was done to debunk popular myths that student evaluations of teaching are substantially biased by low workload and grading leniency. Some factors of student evaluations like Organization and Enthusiasm were unrelated to grades, and the highest relation was with Learning (.30), implying valid teacher effects rather than bias.

In a study that examined the Chinese version of the SEEQ, students thought that the most important scales were Learning, Enthusiasm, and Organization. The least frequently nominated scale was Workload/Difficulty. Additionally good teachers, compared with poor teachers, tended to teach slightly smaller classes, to be slightly younger, and were somewhat more likely to be female. These differences were very small. Students received higher grades from good teachers than from poor teachers, and this relation was larger than those based on other background variables considered here (Marsh, Hau, Chung, & Siu, 1997). This dissertation utilized the most important scales from Marsh's SEEQ: Learning, Enthusiasm, and Organization. Examples from these scales are provided. Students were asked if:

"They have learned something valuable."

"Teacher is enthusiastic about teaching."

"Teacher explanations are clear."

Although most of the research done on the SEEQ has involved college students, Brown (2005) investigated high school students' perceptions of teacher effectiveness using

the SEEQ. Two hundred six students were surveyed in eight required courses, four math and four Humanities. Results indicated that students described many teacher strengths that are similar to the literature on characteristics of effective teachers. They described teachers as knowledgeable, helpful, nice, organized, patient, having a sense of humor, and teaching for understanding. In a follow-up, teachers indicated that they welcomed the use of student feedback as a source of evidence to improve classroom behaviors and skills that maximize students' learning experience.

Sid and Shawver (1991) divided students into two comparison groups when investigating the effect of homework on students' perceptions of teacher effectiveness. They had one group with no homework and one group with daily homework. In a comparison of student evaluations of teacher effectiveness, grades were higher and student evaluations of teacher effectiveness were greater in classes with daily homework assignments.

The use of student evaluations in measuring teacher effectiveness has been widely studied but underutilized. This current study made use of student evaluations in measuring teacher effectiveness. Information in student evaluations for this study included items from the SEEQ that were deemed to be most important according to research done by Marsh et al. (1997). Items selected also align with the previously discussed Successful Inclusion Survey. Modifications were made to the original items of the SEEQ in order to improve readability for high school students with mild learning disabilities.

Conclusion

There are many areas in education that need to be considered when calling for such reform as inclusion. Inclusion is a growing practice in special education in which the general educator predominantly delivers the instruction rather than the special educator. As a result, the way in which general educators deliver instruction becomes of utmost importance for the student with an educational disability. The three general clusters discussed in this review are

school characteristics, instructional practices and teacher factors. These are factors that are all believed to predict teacher effectiveness.

School climate variables that seem to impact the success of inclusion are: the role of the special educator in supporting the general education teacher, administrative support, time for planning, and preservice training. School climate variables influence the variety and type of instructional practices being used. Teacher factors such as experience, attitudes, self-efficacy, and perceptions are additional factors believed to impact teacher effectiveness (Landrum & Kauffman, 1992; Pajares, 1992; Schunk, 2000).

One traditional and typical way to examine school climate, instructional practices, and teacher factors is to survey teachers. School climate variables refer to the characteristics that set the tone of a school. The support of the administrator is believed to be an important school climate variable (Stanovic, 1996). Instructional practices refer to such strategies as scaffolding, cooperative learning, and reciprocal teaching. All of these strategies have been shown to be effective methods for educating inclusion students (Bateman, 1996; Johnson & Johnson, 1986; Lederer, 2000). Such teacher factors as years of experience in teaching students with disabilities have been shown to be a critical teacher factor in predicting teacher effectiveness (Treder, 1999; Van Reusen et al., 2001).

A non-traditional way to evaluate teacher effectiveness is through the use of student evaluations. Together, using both teacher surveys and student evaluations of teacher effectiveness can offer an innovative way to evaluate inclusion effectiveness.

Rationale for Study

Attention to the beliefs of teachers should be a focus of educational research and can inform educational practice in ways that prevailing research agendas have not and cannot. The difficulty in studying teachers' beliefs has been caused by definitional problems, poor conceptualizations, and differing understandings of beliefs and belief structures. Pajares (1992) argued that teachers' beliefs can and should become an important focus of educational inquiry but that this will require clear conceptualizations, careful examinations of key assumptions, consistent understandings and adherence to precise meanings, and proper assessment and investigation of specific belief constructs.

This study looked at general education teachers' beliefs toward inclusion as related to teacher effectiveness. This study examined variables previously discussed by Olson, Chalmers, and Hoover (1997) by looking at attributes and attitudes of effective inclusionists, but extended what was done by also examining teacher efficacy. The study also looked at the influential variables of instructional practices and perceptions of school climate. Two different surveys were used to collect self-report data including a sample of special education high school students and their teachers.

The sample consisted of inclusion teachers who were rated on their effectiveness by the students in their classes. These effectiveness ratings were based on data collected from a modified version of the SEEQ. The Students' Evaluations of Educational Quality (SEEQ), a well-established, standardized feedback questionnaire written by Herbert W. Marsh (1982) has shown consistently good results. This 40-item form has proven to be especially useful for instructors who teach large classes as well as for new teachers who are often unclear about what questions to ask of students. The scale has also successfully been used with high school students.

If these general education teachers are having success as inclusionists, there is an opportunity to learn from them. What are their beliefs and attitudes toward inclusion? What support do they have? What practices do they use to differentiate instruction? How does their training and prior experience in working with children who have disabilities mediate these attitudes and beliefs? An adaptation of an instrument created by Gibson & Dembo (1984) was used to measure teacher efficacy. The original scale is comprised of a 30-item Likert format. The current scale has a 22-item Likert-format. Additionally, teachers filled out items relating to years of experience, years of experience in teaching children with disabilities, training in special education, time spent collaborating with other staff, attitudes toward inclusion, perceived level of support in the school, and some questions regarding instructional practices used.

Many teachers feel unprepared in their training, feel that they lack time and support, feel reluctant to share their class or are unaccepting of children with special needs (Murphy, 1996). It was hypothesized that the longer the teacher spends collaborating with school staff the higher rating he/she will have from the students. It was also hypothesized that teachers who use more differentiated instruction, will be viewed as teachers who are more effective in student learning. Teachers with more years of experience teaching in inclusive settings were hypothesized to be perceived as better teachers.

Outcome studies that examine teacher beliefs toward inclusion and teacher efficacy will illuminate directions for pre-service and in-service teacher education. It is hoped that once specific factors that make an effective inclusionist have been identified, administrators and teacher educators can better tailor their programs to meet the needs of current and future inclusion teachers.

Hypotheses

This study had dual purposes. The study sought to establish the utility of high school student evaluations as a measure of teacher effectiveness. It also examined factors affecting teacher effectiveness in inclusion high school teachers. The study addressed four sets of hypotheses.

Hypotheses regarding student survey structure

In a study that looked at the psychometric properties of the SEEQ (Marsh, 1982), Coffey and Gibbs (2001) found that student ratings were both a multidimensional and reliable method for measuring teacher effectiveness. Therefore,

H_0: Student ratings are multidimensional and reliable for measuring teacher effectiveness.

Coffey and Gibbs (2001) recommended the use of the 40-item SEEQ as a result of research that confirms the factor structure of the SEEQ. Student ratings were found to be multidimensional, reliable, valid, and relatively unbiased. The SEEQ has an exceptionally high level of reliability (r =.88 to .97). In a study that examined the Chinese version of the SEEQ, students felt that the most important scales were Learning, Enthusiasm, and Organization (Marsh, Hau, Chung, & Siu, 1997). Therefore,

H_1: Organization, Learning, and Enthusiasm are all valid and reliable measures of overall teacher effectiveness.

H_2: This modified version of the SEEQ will have a high level of reliability.

Hypotheses regarding student ratings of teacher effectiveness

A study by Marsh (2000) sought to debunk popular myths that student evaluations of teaching are substantially biased by low workload and grading leniency. Marsh found that student perceptions of teacher effectiveness measured as Organization and Enthusiasm were

unrelated to grades. The highest relation was with Learning (.30), implying valid teacher effects rather than bias. Therefore,

H_3: Student grades do not have an effect on ratings of Organization and Enthusiasm but may affect other ratings such as Learning and Instructional Practices.

Sid and Shawver (1991) divided students into two groups when investigating the effect of homework on students' perceptions of teacher effectiveness. They had one group with no homework and one group with daily homework. In a comparison of student evaluations of teacher effectiveness, grades were higher and student evaluations of teacher effectiveness were greater in classes with daily homework assignments. Therefore,

H_4: Students who think that they receive more hours of work outside of class will rate teachers as being more effective.

Hypotheses regarding teacher responses

According to Bernard (1981), male teachers were rated more highly effective than female teachers in a study that looked at the effects of gender in student evaluations of teachers. Additionally, a later study of student evaluations suggested that students had a preference for male teachers and teachers with public school experience (Minner, 1988). For this study it was hypothesized that:

H_5: Male teachers have higher teacher effectiveness ratings than female teachers.

A study by Marsh, Hau, Chung, and Siu (1997) found that teachers who were classified as "good" teachers tended to teach smaller sized classes. Similarly, Soodak, Podell, and Lehman (1998) concluded that the greater number of students in the class, the more anxious teachers were about including a student with disabilities. Therefore,

H_6: Teachers who are satisfied with the size of their classes tend to be rated as more effective by students than those who are not.

Hypotheses regarding relationship between student ratings and teacher responses

Teachers who feel that they were given more opportunities to collaborate with other staff such as special educators were likely to have a more positive impact on their students (Stanovich and Jordan, 2002; Voltz, 2001). One of the school climate factors that was found to facilitate inclusion was the extent to which schools foster collaboration between general educators and special educators (Soodak et al., 1998; Wade et al.,1994). Therefore,

H_7: The more time the teacher has to collaborate with school staff, the higher rating he/she will have from the students.

Cooperative learning, reciprocal teaching, and modification of materials given to special education students were all strategies that have been demonstrated in the literature to enhance student learning (Baker & Zigmond, 1990; Bateman, 1996; Johnson & Johnson, 1986; Lederer, 2000). Therefore,

H_8: Teachers who use more differentiated instruction, will be viewed as teachers who are more effective at student learning.

Research evidence suggested that it is not the most experienced teacher who makes for a more effective teacher of included children (Hill, 2001; Soodak, Pokell, & Lehman, 1998). A more important variable to investigate is a teacher's specific experience in working with children who have disabilities (Hill, 2001). Therefore,

H_9: Teachers with more years of experience teaching in inclusive settings are perceived as better teachers.

Methodology

This chapter includes a description of the research design, participants, measures, procedure, and data analysis.

Research Design

This study was correlational. There were four independent variables and one dependent variable. The four independent variables were teacher efficacy, teacher attitude, school climate, and instructional practices. The dependent variable is teacher effectiveness as measured by student evaluations.

One methodology that is key to understanding the contribution of teacher and classroom factors to student achievement is obtaining direct input from students. Student evaluations of teacher effectiveness have traditionally been used at the college-level (Marsh, 1982). This study attempted to use student input regarding teacher effectiveness at the high school level. A multivariate was used to see what variables had an effect on teacher effectiveness. A factor analysis and test for reliability were done to further examine the structure of the student survey.

Participants

The sample included students who were coded special education and attended a medium-sized public high school in rural New Hampshire. Of the approximately 900 students who attended the high school, 120 students were coded with an educational disability. Of the 120 students, approximately 100 of them were in the mainstreamed environment in classes taught by general education teachers. Students in the sample were in grades nine through twelve. After consent forms were mailed home, there was a final sample size of 58 special education students. Of the 58 special education students there were: 34 with a Specific Learning Disability, 13 with Other Health Impairment, 8 with an Emotional

Disability, two with a Speech and Language Impairment, and one with Autism. There were 40 male students and eighteen female students. 22 were seniors, eleven were juniors, nine were sophomores, and 16 were freshmen.

General education teachers who teach required academic content areas such as: mathematics, English, social studies, and science were asked to participate. The actual number of general education teachers used in the sample depended upon on course scheduling for sampled special education students. There were approximately ten teachers for each of the four required academic content areas for a total of 40 teachers. After consent forms were collected there was a final sample size of 33 general education teachers 31 of whom were used. All teachers taught at least one of the students surveyed. There were six social studies teachers, nine science teachers, eight mathematics teachers, and eight English teachers. The average number of years teaching was eleven years while the average number of years teaching in an inclusive setting was nine years. Teachers had an average of six special education credits.

Measures

The instrument used was the Successful Inclusion Survey (see Appendix B). This is an instrument that has been developed for this study and draws upon the literature review and pilot study (Zielinski, 2005) for this dissertation. The scale takes approximately ten minutes to administer. The survey has a 22-item Likert-format. The Successful Inclusion Survey covers several constructs that are all believed to affect teacher effectiveness: teacher efficacy, teacher attitudes, school climate, and instructional practices. Many of the constructs come from already established scales (see Table 1). The questionnaire items were grouped together to measure a particular construct. Items were organized and grouped according to the four predictor variables. Demographic information such as gender, experience, and training is also contained in the survey.

Previous research has demonstrated that teacher experience, teacher efficacy, teacher attitude, school climate, and instructional strategies all impact teacher effectiveness (Gibson and Dembo, 1984; Lederer, 2000; Olson et al., 1997;Van Reusen et al., 2001; Wade et al., 1994; Weiner, 2003). Teacher efficacy, teacher attitudes, and instructional practices were used as independent variables of teacher effectiveness. School climate items were analyzed individually to see how they predict teacher effectiveness. Additionally, years of experience in teaching children with disabilities were analyzed to see how it affected teacher effectiveness. The independent variables and derivations are as follows in Table 1:

Table 1

Derivation of constructs contained in Successful Inclusion Survey

Construct	Derivation	# of Items	Range of scores
Teacher Efficacy	Teacher efficacy Scale (Gibson & Dembo, 1984)	7	7-35
Teacher Attitude	Taylor's Survey on the Regular Education Initiative (Taylor, Richards, Goldstein, & Schilit, 1997)	2	2-10
School Climate	School Climate Survey (Soodak, Podell, & Lehman, 1998)	7	7-35
Instructional Practices	Literature review	6	6-30

Teacher efficacy

In the current 22-item survey, the first seven items represent the construct of teacher efficacy. Teacher efficacy has been identified as a variable accounting for individual differences in teaching effectiveness. Teacher efficacy refers to personal beliefs about one's capabilities to help students learn (Gibson & Dembo, 1984). The construct of teacher efficacy yields two substantial factors that correspond to Bandura's two-factor theoretical model of self-efficacy. These factors can be broken down into *personal teaching efficacy* and *teaching efficacy* (Denham & Michael, 1981). Items representing the entire construct of teacher efficacy are derived from of the Teacher Efficacy scale developed by Gibson and Dembo (1984). The original survey had a 30-item Likert-format.

Items chosen for the current survey had the highest loadings into the *teaching efficacy* and *personal teaching efficacy* factors of teacher efficacy (Gibson & Dembo, 1984). Items from the original survey that were discarded had lower factor loadings than retained items.

Items one, three, four, six, and seven represent a teacher's sense of *personal teaching efficacy*, or belief that one has the skills and abilities to bring about student learning. It reflects the teacher's sense of personal responsibility in student learning and/or behavior and corresponds to Bandura's self-efficacy dimension (Bandura, 1977). An example of an item representing personal teaching efficacy is: When I really try, I can get through to most difficult students. Item six was changed to address how a student masters a *concept* rather than specifically a *math concept*. Factor loadings of these items into the personal teacher efficacy factor range from .48 to .61 (Gibson & Dembo, 1984)

Items two and five from the Successful Inclusion Survey (e.g., "The amount that a student can learn is primarily related to family background" and "A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement") relate to and load highly into (.54 and .65 respectively) teaching efficacy

(Gibson & Dembo, 1984). This factor that represents a teacher's sense of *teaching efficacy*, or belief that any teacher's ability to bring about change can be impacted by factors external to the teacher, such as the home environment, family background, and parental influences, corresponds to Bandura's outcome expectancy dimension (Bandura, 1977). It reflects the teacher's beliefs about the relationship between teaching and learning.

Teacher Attitude

Items eight and nine represent the teacher attitude construct. Teacher attitude is defined as teachers' affective responses to including a child with disabilities in their general education classroom (Taylor et al., 1997). Teacher attitude items were derived from both the literature review and the pilot study for this dissertation.

Several items from Taylor's Survey on the Regular Education Initiative (1997) were tested in the pilot study for this dissertation. Results of the pilot study indicated that many of the items regarding the success of students with particular classifications in inclusion classrooms really depended upon the degree of the disability. Original items referred specifically to how inclusion students performed in class rather than general acceptance of inclusion. In the pilot study, it was difficult for teachers to say definitively whether inclusion children "stood out" socially or behaviorally. These items were consequently eliminated. Items from Taylor's Survey on the Regular Education Initiative (1997) were changed to focus more on the teacher's level of acceptance of inclusive practices. Current items focused on general attitudes toward inclusion (Taylor et al., 1997).

School Climate

Items ten through sixteen measure school climate. These items were to clarify what specific aspects of the school environment contribute to inclusion effectiveness. There is strong evidence in the literature that suggests several school environment factors contribute to the success of an inclusion program such as: professional development opportunities,

principal support for inclusion, size of school, class size, and additional time for planning (Wade, Welch, & Jensen, 1994; Weiner, 2003). As a result of teachers' spending more time and effort in professional development, reducing class size, and giving more opportunities for collaboration, inclusion students have shown greater gains than both special education and regular education students in non-inclusion classrooms (Weiner, 2003). In the present study, these factors were all considered as part of school climate.

In the current research literature, there were several surveys of school climate (Barnett, Easton & Israel, 2002; Kosciw & Cullen, 2002; Phelps, 1993; Soodak, Podell, & Lehman, 1998;). However, the School Climate Survey was designed to specifically investigate inclusive settings (Soodak, Podell, & Lehman, 1998).

Research suggested that the items from the School Climate Survey be modified for future use (Soodak, Podell, & Lehman, 1998). It was intended to identify the aspects of the school that contribute to teacher attitudes toward inclusion. In their original study using the School Climate Survey, the authors felt that the failure to detect significant findings was due a lack of sensitivity in the School Climate Survey. Therefore, items that measure school climate in the Successful Inclusion Survey, designed for this study, have been written more specifically to include the context of an inclusion teacher's work. For example, item 15 is modified at the end: Constructive feedback from school personnel helps me to improve my skills *as an inclusion teacher*.

Instructional Strategies

Items seventeen to twenty two represent instructional strategies and are derived from the literature review. The present survey investigated the instructional strategies or teaching methodologies that are used to enhance the instruction of children in inclusive settings. These items pertain to the specific strategies inclusion teachers use to instruct students in the classroom (e.g., Cooperative learning strategies in which general education students are in

groups or pairs with special education children to complete an assignment). All strategies mentioned in this section have been previously researched and used in inclusion classrooms (Baker & Zigmond, 1990; Bateman, 1996; Johnson & Johnson, 1986; Lederer, 2000)..

Cooperative learning, reciprocal teaching, and modification of materials given to special education students are all strategies that have been demonstrated in the literature to enhance student learning (Baker & Zigmond, 1990; Bateman, 1996; Johnson & Johnson, 1986; Lederer, 2000). Although these instructional strategies have been proven to be effective in teaching children with special learning needs, research has indicated that they are not used frequently.

Many of the studies that explore instructional strategies appropriate for inclusive settings are limited to reading and language arts subject areas. Previous findings have suggested that teachers need to use a wider range of techniques for teaching reading. Teachers must be encouraged to vary the size and composition of instructional groups, perhaps having pairs of students work together to increase opportunities for more active engagement in instructional activities (Baker & Zigmond, 1990).

Teacher Effectiveness

Teacher effectiveness can be defined as the degree to which a teacher achieves desired effects upon students (Medley and Shannon, 1994). The present study used teacher effectiveness as the dependent or criterion variable.

There are nine factors in the SEEQ: learning value, instructor enthusiasm, organization, individual rapport, group interactions, breadth of coverage, examinations and grading, assignments and readings, and workload difficulty. The present study selected factors from the SEEQ to be most important according to research done by Marsh et al. (1997). Students felt that the most important scales were Learning, Enthusiasm, and Organization. There were four items in each of these three factors. Vocabulary words in

items were slightly modified so that high school students should not have difficulty in understanding items. (The principal investigator was present when the survey was given to clarify any questions students had.) Items are based on a five-point Likert scale. Eight additional items were used from the SEEQ that address student and course characteristics such as: course difficulty, course workload, course pace, hours per week required outside of class, level of interest in the subject prior to course, expected grade in the course, gender and year in school. A final section of instructional practice items on the Successful Inclusion Survey was additionally used on the SEEQ-modified to correlate teacher responses to student responses. In total students answered 18-items based on a five-point Likert scale. At the end, there was an opportunity for students to give additional input regarding their perceptions of teacher effectiveness.

Other Demographic Information

Other demographic information was gathered including: gender, years of graduate studies, years teaching, years teaching in inclusive settings, and training in special education. Of these demographics, years in inclusive settings were analyzed to see how well it relates to teacher effectiveness. Years in inclusive settings emerged from the literature as an important influence of teacher effectiveness.

A study by Van Reusen, Soho, and Barker (2001) revealed a significant difference between the amount of training or experience the teachers had in teaching students with disabilities and the presence of positive or negative attitudes toward inclusion. In other words, teachers who reported higher level of special education training or experience in teaching students with disabilities were found to hold more positive attitudes toward inclusion. On the other hand, Hill (2001) found that with experience, teachers became more hostile toward inclusion. The discrepancy in their findings appeared related to the differentiation between years of general teaching experience and years teaching students with

disabilities. Therefore, an analysis of the research for the current study sought to find if indeed years of experience in working with special education is more important than years of overall experience in teaching in predicting teachers' acceptance of inclusion.

Procedure

This investigation drew upon self-report data from both teachers and students as well as a review of student records. The first set of data came from collecting teacher characteristics and beliefs on the Successful Inclusion Survey. The second set of data came from student input on the Students' Evaluations of Educational Quality -SEEQ – modified version (Marsh, 1982) (see Appendix E.) Student records were reviewed only to identify the nature of each student's disability and to confirm educational placement in a mainstream setting.

High school teachers who teach in any of the four required content areas: English, mathematics, social studies, and science were recruited for this study. Teachers were asked to volunteer to fill out the Successful Inclusion Survey at a faculty meeting in the winter of 2006. At this time, the study was briefly summarized. Faculty was notified that surveys were placed in faculty mailboxes following the meeting. If they agreed to fill out the survey, they were asked to read the information sheet and consent form (see Appendix A). They were to contact the principal investigator should they have any questions or concerns. Teachers were asked to fill out the survey honestly. It took approximately five to ten minutes to complete the survey.

Once the survey was complete, they returned the signed consent form along with the survey to the principal investigator's faculty mailbox. Twenty-seven surveys were returned within the first two weeks. The principal investigator sent out an e-mail reminder to both thank all of those who completed the survey and to remind those who did not that they could still complete their survey. After approximately four weeks, 33 surveys were returned.

The second set of data came from special education students who had those teachers who already had volunteered and completed the survey. The principal investigator reviewed records to obtain a list of the names of all special education students in the high school and their type of disability.

An active consent procedure was used before collecting data from students. All parents of special education students with mild educational disabilities were mailed home an information sheet and consent form (see Appendix C). One hundred nine forms were sent home. Sixty- one forms were signed and returned. As signed forms came back to the principal examiner, she began to contact students to gather their assent (see Appendix D). She contacted students through their case manager to see if they would like to participate. If they were willing to participate, a mutually convenient time was arranged during the student's break, lunch or study hall. Since the principal investigator had the opportunity to individually meet with students, she was available to explain the nature of the study and answer any questions they had as they filled out the survey. Students also had the opportunity to give additional information, if any, regarding the nature of the course and their perception of teacher effectiveness.

Surveys were based on student's academic teachers for the current semester or previous semester, if any of the courses were half-year courses. Therefore, depending upon student's academic load, each student answered the survey multiple times. Students rated anywhere from one teacher to six teachers in math, science, social studies or English. Students rated an approximate average of three teachers each. All together there was a total of 213 teacher ratings. Students stated which teacher they were referring to, facilitating the matching of student surveys with respective teacher surveys. No students' names were used on the actual survey but rather each student was assigned a number. The principal

investigator had a coding sheet to match student names with numbers. Teacher names were used for the purpose of matching surveys.

Data Analysis

Data analysis regarding student survey structure

The first three hypotheses consider the utility of student ratings of teacher effectiveness, and the validity and reliability of the SEEQ. An oblique rotation factor analysis was used to look at the factor structure and factor loadings of the SEEQ – modified to develop a better measurement of teacher effectiveness. The reliability of the SEEQ-modified was analyzed using the Cronbach Coefficient Alpha.

Data analysis regarding student ratings and teacher characteristics affecting teacher effectiveness

A Multivariate Model was used to address the remaining hypotheses. **H_3 and H_4** hypotheses concern the effect of student characteristics of teacher effectiveness. The student data follows a nested design in that students are nested within teachers in a combined model. The effect of the student ratings for measuring teacher effectiveness was addressed through the multivariate model that looked at various student characteristics. The six constructed factors were used as measures for teachers' effectiveness. They each served as the dependent or criterion variable.

H_5 and H_6 address the effects of gender and class size on teacher perceptions. In order to address **H_5 and H_6,** a Multivariate Model in SPSS was used to look at various teacher characteristics of teacher effectiveness. A factor analysis was considered but due to an insufficient sample size of teacher surveys, it was not used. **H_7 through H_9** continued to look at various variables of teacher effectiveness based on teacher characteristics from the teacher survey.

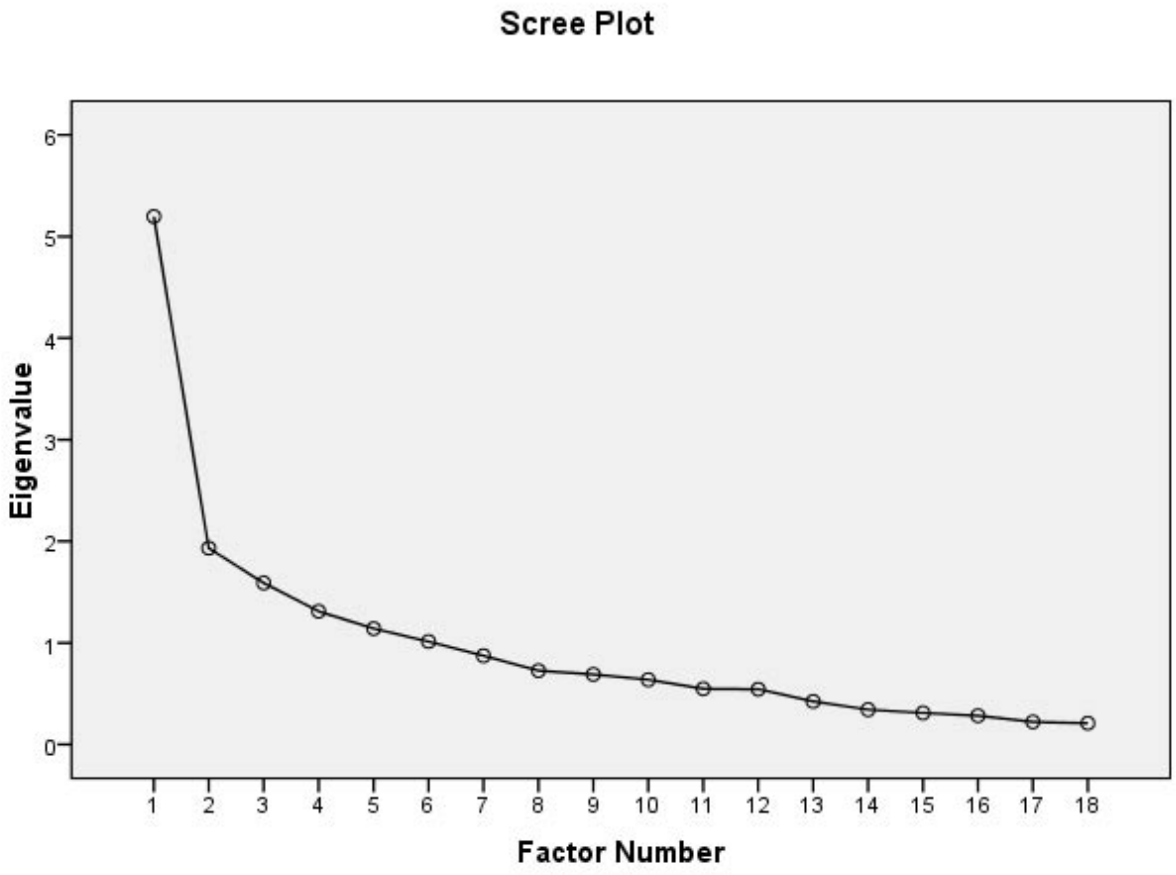
Results

Factor analysis of student survey structure

To break down the dependent variable of teacher effectiveness, the student scores on the SEEQ were analyzed using factor analysis. The goal of this analysis was to identify the factors that are the most meaningful measures of teacher effectiveness.

Oblique rotation exploratory factor analysis allows the extraction of six factors along the eighteen questions of the SEEQ. The scree plot criterion and the proportion of variance greater than one criterion yield six factors which load across the eighteen items. There are no cross-loadings due to the oblique oblimin rotation (see Figure 2).

Figure 2



The results supported findings from the literature that the SEEQ is considered to be a multi-dimensional survey with several separate factors (Coffey & Gibbs, 2001). Six factors were extracted by the exploratory factor analysis. The following six factors explained the variation in the SEEQ-modified (see Table 3).

Factor 1, named "Course Challenge" include item one with a factor loading of -.989. The item was:

1. You find the course challenging.

Factor 2, designated as "Teacher Presentation," include items seven and eight with factor loadings of .56 to .875, respectively. Items were:

7. Teacher enhances presentations with use of humor.

8. Teacher's style of presentation holds your interest during class.

Factor 3, also named "Enthusiasm," include items five and six with factor loadings from -.791 to -.784, respectively. Items five and six, in addition to items seven and eight all appear to be related to the original factor named enthusiasm. Items were:

5. Teacher is enthusiastic about teaching the course.

6. Teacher is dynamic and energetic in conducting the course.

Factor 4, named "Instructional Practices," include items fourteen and eighteen with factor loadings of .73 and .827, respectively. The communality for items thirteen, fifteen, sixteen, and seventeen were some of the lowest of the entire survey. Because these items lowered the overall reliability, they were dropped. Although all items in this factor describe instructional practices that teachers may use, one cannot assume that when one practice is used, other practices are also likely to be used. Certain instructional practices may be used exclusive of one another. While many of the items were dropped from this factor, the two items that were retained truly capture the concept of effective inclusion practices. Items were:

14. My teacher gives me learning materials that are different from what the rest of the students receive.

18. My teacher changes my tests so that they are different from everybody else's.

Factor 5, named "Organization," include items four, nine, ten, eleven, and twelve with factor loadings from .436 to .789. Items were:

4. You have learned and understood the subject materials in this course.

9. Teacher's explanations are clear.

10. Course materials are well prepared and carefully explained.

11. Class plans are the same as those actually taught so you know where the course is going.

12. Teacher gives lectures that help with taking notes.

Factor 6, named "Learning," include items two and three with factor loadings of .904 and .693, respectively. Items were:

2. You have learned something which you consider important.

4. Your interest in the subject has increased as a result of this course.

Table 3

Factor Loadings and Communality Estimate of SEEQ Items

	Factor1	Factor2	Factor3	Factor4	Factor 5	Factor 6	Communality
Q1	***-.989***	.018	-.034	-.031	-.142	-.015	.284
Q2	.071	-.007	-.001	-.141	-.021	***.904***	.553
Q3	-.010	.306	.047	-.123	-.007	***.693***	.637
Q4	.278	.108	-.106	.092	***.479***	.223	.563

Table 3 *(continued)*

	Factor1	Factor2	Factor3	Factor4	Factor 5	Factor 6	Communality
Q5	-.028	.047	***-.791***	-.055	.111	.111	.622
Q6	-.047	.109	***-.784***	-.096	.310	-.067	.677
Q7	-.133	***.560***	-.399	-.059	.015	-.026	.583
Q8	.052	***.875***	.077	.027	.061	.063	.593
Q9	.144	.143	.029	-.130	**.643**	.099	.548
Q10	-.040	-.010	-.108	-.083	**.789**	-.079	.474
Q11	.016	.062	-.032	.035	***.622***	-.006	.370
Q12	.078	.084	-.023	.088	**.436**	.088	.284
Q13	-.124	-.032	.022	.130	.135	.174	.121
Q14	.039	-.001	-.028	***.730***	.000	-.053	.370
Q15	-.029	.037	-.155	.100	-.013	.367	.256
Q16	-.065	.095	-.008	.217	.150	.186	.183
Q17	-.043	-.004	.188	-.081	.141	-.028	.106
Q18	-.015	-.021	.060	***.827***	-.067	-.080	.403

Note. Values less than 0.4 are not printed

The significance of the student ratings for measuring teacher's effectiveness was examined using a Multivariate Model in SPSS. The model follows a nested design where students are nested within teachers in a combined model. Each of the students rated his/her teachers only. Student A may or may not have had the same teachers as Student B. This

nested design assumed that individual student ratings were different for each teacher and that student ratings are correlated. Furthermore, the statistical assumption in doing this type of factor analysis was that there was little or no variation amongst student ratings for each teacher but rather greater variation within each student's ratings of different teachers. These results will be discussed in the following student data section of the results.

The six constructed measures (Course Challenge, Teacher Presentation, Organization, Learning, Enthusiasm and Instructional Practices) were used as separate measures of teacher effectiveness in subsequent analyses (criterion or dependent variable.) With the items identified with each new variable, scores were summed and averaged as a score for each new factor.

Factor 1 = Q1

Factor 2 = (Q7+Q8)/2

Factor 3 = (Q5 + Q6)/2

Factor 4 = (Q14 +Q18)/2

Factor 5 = (Q4+Q9+Q10+Q11+Q12)/5

Factor 6 = (Q2+Q3)/2

Reliability of student survey

The reliability (Cronbach Coefficient Alpha) of the each of the factors identified from the factor analysis as measures of teaching effectiveness is acceptable. Cronbach Coefficient Alphas ranged from .731 to .860. The first factor was not used since it only contained one item. This was a factor named, "Course Challenge." It contained an item from the factor named "Learning" on the original SEEQ. In general, the reliabilities are high and all above an acceptable level of .70 (see Table 4 below.)

Table 4

Reliability Test for Six Derived Factors

	Reliability Statistics		
	Cronbach's Alpha	N of Items	Items
Factor 1	-	1	1
Factor 2	.757	2	7- 8
Factor 3	.860	2	5-6
Factor 4	.731	2	14 and 18
Factor 5	.800	5	4, 9-12
Factor 6	.810	2	2-3

This supports the findings of the original reliability analysis of SEEQ (Marsh, 1987). Therefore, the first three hypotheses are supported by the factor analysis and the Cronbach Coefficient Alpha.

Therefore,

H_0: Student ratings are multidimensional and reliable for measuring teacher effectiveness.

H_1: Organization, Learning, and Enthusiasm are all valid and reliable measures of overall teacher effectiveness.

H_2: This modified version of the SEEQ will have a high level of reliability.

Student ratings of teacher effectiveness results

This analysis was used to look at how student characteristics influenced student ratings. A Multivariate Model was used to examine the effects of student characteristics. These characteristics included: students' disability, gender, course subject, school year, course difficulty, class workload, class pace, hours spent by students working outside of class, level of interest, and expected final grade on the rating from students for teachers. Students with a speech and language disability and with autism were not used due to the small samples of each. This analysis served as a t-test to investigate the significant effects of students' ratings on measures of teacher effectiveness. Based on the factor analysis results, the following six factors were defined as follows and used as measures of teaching effectiveness:

Factor 1 = Q1

Factor 2 = (Q7+Q8)/2

Factor 3 = (Q5 + Q6)/2

Factor 4 = (Q14 +Q18)/2

Factor 5 = (Q4+Q9+Q10+Q11+Q12)/5

Factor 6 = (Q2+Q3)/2

Factor 1 Course Challenge: Class workload and course subject had an effect on how challenging a student finds the course. For the measure of effectiveness as "Course Challenge," the variables of class workload (B =1.005) and course subject (B = -.743) have significant effects on the students' ratings for teachers at $\alpha = 0.05$ (See Table 5). Student ratings of their teacher's ability to offer a challenging course varied based on (a) the class

they were taking and (b) the amount of class workload. The heavier the class workload, the higher the ratings of teacher effectiveness.

Table 5

Multivariate Test of Teacher Effectiveness Measured as Course Challenge

					95% Confidence Interval	
Parameter	B	Std. Error	t	P -value	Lower Bound	Upper Bound
Intercept	-2.919	3.960	-.737	.465	-10.915	5.077
Gender	-.874	.649	-1.347	.185	-2.184	.436
Disability = ED	.138	1.169	.118	.907	-2.223	2.499
Disability =OHI	.881	1.072	.822	.416	-1.284	3.047
Disability = SLD	.067	1.054	.063	.950	-2.062	2.195
Organization	1.207	1.151	1.049	.300	-1.117	3.531
Learning	.659	.739	.892	.377	-.833	2.150
Enthusiasm	-1.521	.846	-1.797	.080	-3.230	.189
Instructional Practices	.630	.772	.816	.419	-.928	2.188
Course Difficulty	.399	.274	1.455	.153	-.155	.953
Class Workload	1.005	.493	2.039	.048	.010	1.999
Class Pace	.404	.311	1.298	.202	-.225	1.032
Hours Working	-.296	.439	-.676	.503	-1.182	.590

Table 5 *(continued)*

Parameter	B	Std. Error	t	P -value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Subject	-.743	.264	-2.810	.008	-1.277	-.209
Year	.145	.223	.651	.519	-.305	.594
Expected Grade	-.296	.333	-.889	.378	-9.60	.369

Factor 2: Teacher Presentation: For the measure of effectiveness as "Teacher Presentation," the variables of student gender (*B*= -1.681) and course difficulty (*B*=.793) had significant effects on the students' ratings for teachers at $\alpha = 0.05$ (See Table 6). Student ratings of teacher effectiveness in terms of "Teacher Presentation" were affected by the student's gender and how difficult they perceived the class. Male students rated teachers as lower in effectiveness when measured by teacher presentation. Conversely, female students rated teachers higher in effectiveness. Additionally, the more difficult a student perceived the course, the higher the ratings of effectiveness as measured by teacher presentation.

Table 6

Multivariate Test of Teacher Effectiveness Measured as Teacher Presentation

Parameter	B	Std. Error	t	P -value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Intercept	-2.198	3.836	-.573	.570	-9.945	5.549

Table 6 *(continued)*

Parameter	B	Std. Error	t	P -value	95% Confidence Interval	
					Lower Bound	Upper Bound
Gender	-1.681	.629	-2.674	.011	-2.950	-.411
Disability = ED	.095	1.133	.084	.933	-2.192	2.382
Disability =OHI	.600	1.039	.577	.567	-1.498	2.697
Disability =SLD	.491	1.021	.481	.633	-1.571	2.553
Organization	2.096	1.115	1.880	.067	-.155	4.347
Learning	-.406	.716	-.567	.573	-1.851	1.039
Enthusiasm	-.876	.820	-1.068	.292	-2.532	.780
Instructional Practices	-.787	.748	-1.053	.299	-2.297	.723
Course Difficulty	.793	.266	2.984	.005	.256	1.330
Class Workload	.309	.477	.648	.520	-.654	1.273
Class Pace	.257	.301	.851	.400	-.352	.865
Hours Working	-.410	.425	-.965	.340	-1.268	.448
Subject	-.455	.256	-1.775	.083	-.972	.063
Year	-.060	.216	-.279	.781	-.496	.375
Grade	-.038	.176	-.215	.830	-.390	.314

Factor 3 Enthusiasm: For the measure of effectiveness as "Enthusiasm," the variables of student gender (*B* = -2.034), organization (*B*= 2.956) and course difficulty (*B* =.781) had

significant effects on the students' ratings for teachers at $\alpha = 0.05$ (See Table 7). This indicates that the student ratings of teacher effectiveness in terms of "Enthusiasm" were affected by the student's gender, students' perceived degree of teacher organization, and how difficult students perceived the class. Male students rated teachers as lower in effectiveness when measured by enthusiasm. Conversely, female students rated teachers higher in effectiveness. The more a teacher is perceived as organized, the higher the effectiveness ratings. Additionally, the more difficult a student perceived the course to be, the higher the ratings of effectiveness as measured by teacher enthusiasm. Student ratings for teacher effectiveness in terms of "Enthusiasm" were unaffected by grades as mentioned in **H_3**. Therefore,

H_3 – Student grades do not have an effect on measures of Organization and Enthusiasm but may affect other measures such as Learning and Instructional Practices.

Table 7

Multivariate Test of Teacher Effectiveness Measured as Enthusiasm

					95% Confidence Interval	
Parameter	B	Std. Error	t	P -value	Lower Bound	Upper Bound
Intercept	-3.437	4.188	-.821	.417	-11.894	5.020
Gender	-2.034	.686	-2.965	.005	-3.420	-.649
Disability = ED	-.067	1.236	-.054	.957	-2.564	2.430
Disability = OHI	.529	1.134	.466	.644	-1.761	2.819

Table 7 (continued)

Parameter	B	Std. Error	t	P -value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Disability = SLD	.736	1.115	.660	.513	-1.515	2.987
Organization	2.956	1.217	2.429	.020	.499	5.414
Learning	-.576	.781	-.738	.465	-2.154	1.001
Enthusiasm	-1.059	.895	-1.184	.243	-2.867	.748
Instructional Practices	-.454	.816	-.556	.581	-2.102	1.194
Course Difficulty	.781	.290	2.690	.010	.195	1.367
Class Workload	.058	.521	.112	.912	-.994	1.110
Class Pace	.458	.329	1.393	.171	-.206	1.123
Hours Outside	-.150	.464	-.322	.749	-1.086	.787
Subject	-.535	.280	-1.914	.063	-1.100	.030
Year	-.239	.235	-1.014	.317	-.714	.237
Expected Grade	-.077	.112	-.692	.492	-.301	.146

Factor 4 Instructional Practices: For the measure of effectiveness as "Instructional Practices," no variables had significant effects on the students' ratings for teachers. Student ratings for teacher effectiveness in terms of "Instructional Practices" were unaffected by grades as mentioned in $\mathbf{H}_3$. Therefore,

H_3 – Student grades do not have an effect on measures of Organization and Enthusiasm but may affect other measures such as Learning and Instructional Practices.

Factor 5 Organization: For the measure of effectiveness as "Organization," the variables of student gender (B = -1.836), organization (B = 2.777) and course difficulty (B = .837) had significant effects on the students' ratings for teachers at $\alpha = 0.05$ (See Table 8). This indicates that the student ratings of teacher effectiveness in terms of "Organization" were affected by the student's gender, students' perceived degree of teacher organization, and how difficult students' perceived the class to be. Male students rated teachers as lower in effectiveness when measured by organization. Conversely, female students rated teachers higher in effectiveness. The more a teacher was perceived as organized, the higher the effectiveness ratings. Additionally, the more difficult a student perceived the course to be, the higher the ratings of effectiveness as measured by teacher organization. Student ratings for teacher effectiveness in terms of "Organization" were unaffected by grades as mentioned in **H_3**. Therefore,

H_3 – Student grades do not have an effect on measures of Organization and Enthusiasm but may affect other measures such as Learning and Instructional Practices.

Table 8

Multivariate Test of Teacher Effectiveness Measured as Organization

					95% Confidence Interval	
Parameter	B	Std. Error	t	P -value	Lower Bound	Upper Bound
Intercept	-2.388	3.693	-.647	.522	-9.845	5.070
Gender	-1.836	.605	-3.035	.004	-3.058	-.614
Disability = ED	.231	1.090	.212	.833	-1.971	2.433
Disability = OHI	.815	1.000	.815	.420	-1.205	2.834
Disability = SLD	.985	.983	1.002	.322	-1.000	2.970
Organization	2.777	1.073	2.587	.013	.609	4.944
Learning	-.403	.689	-.586	.561	-1.795	.988
Enthusiasm	-1.536	.789	-1.946	.059	-3.130	.058
Instructional Practices	-.342	.720	-.475	.637	-1.795	1.112
Course Difficulty	.837	.256	3.270	.002	.320	1.354
Class Workload	.212	.459	.461	.647	-.716	1.140
Class Pace	.207	.290	.715	.479	-.379	.794
Hours Outside	-.383	.409	-.936	.355	-1.209	.443
Subject	-.496	.247	-2.009	.051	-.994	.003
Year	-.103	.208	-.497	.622	-.523	.316

Factor 6 Learning: For the measure of effectiveness as “Learning,” the variables of student gender (*B* = -2.188) and organization (*B* = 2.537) had significant effects on the

students' ratings for teachers at $\alpha = 0.05$ (See Table 9). This indicates that the student ratings of teacher effectiveness in terms of "Learning" were affected by the student's gender and students' perception of teacher organization. Male students rated teachers as lower in effectiveness when measured by learning. Conversely, female students rated teachers higher in effectiveness. The more a teacher was perceived as organized, the higher the effectiveness ratings.

This multivariate model was not able to run data for the expected grade variable. SPSS could not produce any output for this factor. Therefore, it was determined that there was no relationship between expected grade and learning as the measure of teacher effectiveness. Student ratings for teacher effectiveness in terms of "Learning" were unaffected by grades as mentioned in **H $_3$**. Therefore,

H $_3$ – Student grades do not have an effect on measures of Organization and Enthusiasm but may affect other measures such as Learning and Instructional Practices.

Table 9

Multivariate Test of Teacher Effectiveness Measured as Learning

					95% Confidence Interval	
Parameter	B	Std. Error	t	P -value	Lower Bound	Upper Bound
Intercept	-1.744	3.785	-.461	.647	-9.388	5.899
Gender	-2.188	.620	-3.528	.001	-3.440	-.935
Disability = ED	.861	1.117	.771	.445	-1.396	3.118

Table 9 *(continued)*

Parameter	B	Std. Error	t	P -value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Disability = OHI	1.106	1.025	1.079	.287	-.964	3.175
Disability = SLD	.882	1.007	.876	.386	-1.152	2.916
Organization	2.537	1.100	2.307	.026	.316	4.758
Learning	-.316	.706	-.448	.656	-1.742	1.109
Enthusiasm	-1.099	.809	-1.358	.182	-2.733	.535
Instructional Practices	-.177	.737	-.240	.811	-1.667	1.312
Course Difficulty	.054	.262	.205	.839	-.476	.583
Class Workload	-.126	.471	-.268	.790	-1.077	.825
Class Pace	.066	.297	.222	.825	-.535	.667
Hours Outside	-.021	.419	-.050	.960	-.868	.826
Subject	-.318	.253	-1.259	.215	-.829	.192
Year	-.117	.213	-.551	.585	-.547	.313
Expected Grade	.115	.114	1.013	.315	-.112	.342

In summary, five of the six measures of teaching effectiveness constructed from the SEEQ items were affected by some of the characteristics of the students. The constructed

factor of "Instructional Practices" was not affected by any of the student characteristics. The following table identifies which of the student characteristics had an effect on each of the other five factors of teacher effectiveness. As mentioned above, the derived factor, "Instructional Practices" is not included. "Yes" indicates there was an effect in the measurement and "No" indicates no effect. The student variables that had an effect on student ratings were student gender, student's perception of teacher organization, course difficulty, class workload, and course subject.

Table 10

Summary of Effects of Student Ratings

Effect	Course Challenge	Teacher Presentation	Enthusiasm	Organization	Learning
Gender	No	Yes	Yes	Yes	Yes
Disability	No	No	No	No	No
Organization	No	No	Yes	Yes	Yes
Learning	No	No	No	No	No
Enthusiasm	No	No	No	No	No
Instructional Practices	No	No	No	No	No
Course Difficulty	No	Yes	Yes	Yes	No
Class Workload	Yes	No	No	No	No

Table 10 (*continued*)

Effect	Course Challenge	Teacher Presentation	Enthusiasm	Organization	Learning
Class Pace	No	No	No	No	No
Hours Outside	No	No	No	No	No
Subject	Yes	No	No	No	No
Year	No	No	No	No	No
Expected Grade	No	No	No	No	No

As stated partially in **H_3 (H_3 – Student grades do not have an effect on measures of Organization and Enthusiasm but may affect other measures such as Learning and Instructional Practices**), grades did not have an effect on student ratings for *any* of the measures of teacher effectiveness. The following hypothesis was not supported:

H_4: Students who feel that they receive more hours of work outside of class will rate teachers as being more effective.

Teacher characteristics results

Of the 40 English, Science, Social Studies, and Mathematics teachers who received the Successful Inclusion Survey, 33 completed and returned them. Two of the 33 surveys could not be used since those teachers were not rated by any of the 58 students, therefore, N = 31 teachers. Teacher characteristics from the teacher survey data attempted to predict each of the proposed six measures of teaching effectiveness: Course Challenge, Teacher Presentation, Enthusiasm, Instructional Practices, Organization, and Learning using a

multivariate model. Although individual items from the teacher survey did not significantly predict any of the proposed six measures of teaching effectiveness, other teacher characteristics did.

The characteristics that were found to have effects on teacher effectiveness were teacher gender and the approximate years of graduate studies. Teachers who had more years of graduate studies had higher teacher effectiveness ratings as measured by Learning. Additionally, male teachers had higher effectiveness ratings. The following is a summary of findings from the multivariate model. Characteristics predicting student ratings for each of the six effectiveness factors are discussed below.

Course challenge as the measure of teaching effectiveness:

No individual teacher characteristics had an effect on teacher effectiveness when Course Challenge was used as the measure.

Teacher presentation as the measure of teaching effectiveness:

Table 11

Multivariate Test of Teacher Effectiveness Measured as Teacher Presentation

	B	Standard Error	t-value	p -value	Lower Bound	Upper Bound
Intercept	-2.198	3.836	-.573	.570	-9.945	5.549
Gender	1.574	.765	2.059	.046	.030	3.119
Sped						
Credits	.063	.047	1.357	.182	-.031	.158

Table 11 *(continued)*

	B	Standard Error	t-value	p -value	Lower Bound	Upper Bound
Hours Collaborate	.022	.099	.221	.826	-.179	.222
Teaching Inclusion	.121	.109	1.106	.275	-.100	.341
Teaching Experience	-.049	.082	-.602	.550	-.215	.116
Graduate Studies	.310	.173	1.793	.080	-.039	.659

As seen in Table 11, teacher gender had an effect on ratings of teacher effectiveness. Male teachers ($B = 1.574, \alpha = 0.05$) had higher ratings of teacher effectiveness when measured by Teacher Presentation.

Enthusiasm as the measure of teaching effectiveness:

No individual teacher characteristics had an effect on teacher effectiveness when Enthusiasm was used as the measure.

Instructional practices as the measure of teaching effectiveness:

No individual teacher characteristics had an effect on teacher effectiveness when Instructional Practices were used as the measure.

Organization as the measure of teaching effectiveness:

Table 12

Multivariate Test of Teacher Effectiveness Measured as Organization

	B	Standard Error	t-value	p -value	Lower Bound	Upper Bound
Intercept	-2.388	3.693	-.647	.522	-9.845	5.070
Gender	1.738	.736	2.360	.023	.251	3.224
Sped	.056	.045	1.252	.218	-.035	.147
Credits Hours	-.014	.096	-.150	.882	-.207	.179
Collaborate Teaching	.124	.105	1.177	.246	-.088	.336
Inclusion Teaching	-.063	.079	-.790	.432	-.222	.097
Experience Graduate	.243	.166	1.493	.151	-.093	.579
Studies						

As seen in Table 12, teacher gender had an effect on ratings of teacher effectiveness. Male teachers ($B = 1.738, \alpha = 0.05$) had higher ratings of teacher effectiveness when measured by Organization.

Learning as the measure of teaching effectiveness:

Table 13

Multivariate Test of Teacher Effectiveness Measured as Learning

	B	Standard Error	t-value	p -value	Lower Bound	Upper Bound
Intercept	-1.744	3.785	-.461	.647	-9.388	5.899
Gender	.359	.755	.475	.637	-1.165	1.882
Sped Credits	.065	.046	1.412	.165	-.028	.158
Hours Collaborate	-.116	.098	-1.179	.245	-.313	.082
Teaching Inclusion	.095	.108	.880	.384	-.123	.312
Teaching Experience	-.049	.081	-.608	.546	-.213	.114
Graduate Studies	.527	.170	3.093	.004	.183	.872

As seen in Table 13, the approximate years of graduate studies (B =.527, $\alpha = 0.05$) had a significant effect on measures of teacher effectiveness when learning is used. The more years a teacher has of graduate studies, the higher the ratings of teacher effectiveness.

As seen in Tables 11 and 12, teacher gender had an effect on student ratings of teacher effectiveness when teacher presentation and organization were used as measures. Therefore, **H 5** was supported by this data.

H5: Male teachers have higher teacher effectiveness ratings than female teachers.

On the other hands, the following hypotheses were not supported:

H6: Teachers who are satisfied with the size of their classes tend to be rated as more effective by students than those who are not.

H7: The longer the teacher spends collaborating with school staff the higher rating he/she will have from the students.

H8: Teachers who use more differentiated instruction, will be viewed as teachers who are more effective at student learning.

H9: Teachers with more years of experience teaching in inclusive settings are perceived as better teachers.

Discussion

One of the two main objectives of this research was to investigate the reliability and validity of using high school students' ratings as a measure of teacher effectiveness in inclusive settings. The research questions that were addressed in this study were divided into four categories: the factor structure of the student survey, the reliability of the student survey, the effects of student characteristics on ratings of teacher effectiveness, and the effects of teacher characteristics on ratings of teacher effectiveness. Data analyses were done to test the factor structure as well as the reliability of the student survey. A multivariate model was used to look at various student characteristics as having potential effects on ratings of teacher effectiveness. Additionally, the multivariate model was used to look at the effects of various teacher characteristics on student ratings of teacher effectiveness.

The most salient finding was that the original criterion variable, "teacher effectiveness" must be broken down further into various factors. The factors that were used to further define "teacher effectiveness" were course challenge, teacher presentation, organization, learning, enthusiasm, and instructional practices. The reliability for these factors was considered to be high.

Student survey data

The questions addressed with the student survey were:

1. Are student ratings multidimensional and reliable measures of teacher effectiveness?
2. Are Organization, Learning, and Enthusiasm all valid and reliable measures of overall teacher effectiveness? , and
3. Does this version of the SEEQ have an acceptable level of reliability?

The reliability (Cronbach Coefficient Alpha) of the five out of six factors the SEEQ-Modified is acceptable (all Alphas >0.731). The reliability of the instructional practice factor was expected to be lower since the original SEEQ did not contain a factor that looked at instructional practices. This was a factor that was derived from items from the literature review Despite that this factor's derivation, it currently has a high reliability.

The findings from this test of reliability suggest the use of a five-factor model for measuring teacher effectiveness. All five factors had relatively high reliabilities. Results suggest that the derived factor 1 not be used since it only contains one item. All other factors such as Teacher Presentation, Organization, Enthusiasm, Instructional Practices and Learning all had strong reliability coefficients.

This study confirmed findings reported by Coffrey and Gibbs (2001) that teacher effectiveness must be viewed as a multi-dimensional construct. The dimensions of teacher effectiveness used in this study were: Course Challenge, Teacher Presentation, Organization, Enthusiasm, Learning, and Instructional Practices. Despite the fact that the Cronbach Alpha was not determined in the reliability test, the Course Challenge factor was still used in further analyses. This variable should be further explored to expand its statistical properties by including other items related to course challenge.

Student ratings of teacher effectiveness

A multivariate model was used to examine the various student characteristic variables that might have affected student ratings of teacher effectiveness. Those variables that were examined were: students' disability, gender, course subject, school year, course difficulty, class workload, class pace, hours spent by students working outside of class, level of interest, and expected final grade. There were five student variables that had a significant effect on measures of teacher effectiveness. The student variables that had an effect on

student ratings were student gender, student's perception of teacher organization, course difficulty, class workload, and subject.

Similar to previous research, the present study did find a gender differences in student ratings of teacher effectiveness. Bernard (1981) had high school students read and rate descriptions of teachers, and teachers read and rated descriptions of students who varied across sex and sex-role behavior. In both Bernard's (1981) work and the current study, male students were less positive in their evaluations of teachers than were females. This gender effect was of the most prevalent. It should be cautioned as a variable that appears to influence ratings of teacher effectiveness.

In this study, course subject affected one of the six dimensions of teacher effectiveness. Course subject affected student ratings of course challenge but not any of the other factors. The course subject has a direct impact on a student's perception of how challenging they find the course. The fact that this study used a multi-dimensional model of teacher effectiveness may explain why the data revealed an effect of course subject in contrast to previous research by Marsh (1987) in which no effect was found, but which used a unidimensional construct. Marsh (1987) did not break down the construct of "teacher effectiveness" into further, more specific factors. The findings from this research indicates the importance of utilizing other measures of teacher effectiveness that are not specific to course content when using student ratings.

It was found that grades do not have an effect on student ratings for any of the measures of teacher effectiveness. In a more recent study, Marsh (2000) found that low workload and grading leniency influence student evaluations of teaching when teacher effectiveness is measured by Learning (.30), but not when it is measured as Organization or Enthusiasm. Marsh was able to demonstrate valid teacher effects rather than bias for these

latter two factors. This current study indicated that students' ratings of teacher effectiveness are not affected by the grade they expect in the course.

However, students are affected by their perceptions of how heavy the course workload is, in addition to course difficulty. This is a counterintuitive finding. In other words, it would be expected that teenagers would be more critical of their teacher's effectiveness if they find that both course workload and difficulty are high. In this study, students gave teachers higher effectiveness ratings when they felt that the course workload and difficulty were high. This finding may be the result of the extending challenge of a course that might result in additional learning. When additional learning takes place, it appears to influence students to rate teachers as more effective.

In summary, there were five out of thirteen student variables that affected student ratings of teacher effectiveness. Those variables were student gender, student's perception of teacher organization, course difficulty, class workload, and subject. Additionally, five of the six factors of teaching effectiveness constructed from the SEEQ items were affected by some of the various student characteristics. The constructed variable of "Instructional Practice" was not affected by any of the student characteristics.

Teacher characteristics

The effects of teacher characteristics from the teacher survey were investigated using each of the proposed six measures of teaching effectiveness: Course Challenge, Teacher Presentation, Enthusiasm, Instructional Practices, Organization, and Learning using a multivariate model. Although individual items from the teacher survey did not have an effect on any of the proposed six measures of teaching effectiveness, several teacher characteristics did have an effect.

The characteristics that were found to have effects on teacher effectiveness were teacher gender and the approximate years of graduate studies. Teachers who had more years

of graduate studies had higher teacher effectiveness ratings as measured by learning. The longer the teacher has been trained in his/her field at the graduate level, the more background knowledge the teacher has. Additionally, male teachers had higher effectiveness ratings. This appears to have a direct impact on ratings of teacher effectiveness.

These findings have direct implications for those responsible for the hiring of faculty as well as the promotion of continuing education. It would behoove administrators to thoroughly investigate a potential candidate's graduate school history. Additionally, it would be most beneficial for the school contracts to include tuition waivers to encourage teachers to continue their graduate education while teaching.

Finally, the effect of teacher gender on students' ratings of teacher effectiveness was investigated. Male teachers had higher ratings than female teachers when Teacher Presentation and Organization were used as the measures of teacher effectiveness. These findings supported previously mentioned literature that stated male teachers were rated as more effective than female teachers (Bernard, 1981). Additionally, an earlier study suggested that students had a preference for male teachers and teachers with public school experience according to student evaluations (Minner, 1988).

Educational Implications

This study is one of the first to use student evaluations as a measure of inclusive teacher effectiveness. While this research has some limitations that will be discussed in the next section, it also has educational implications. These educational implications have to do with the way we look at teacher effectiveness, and more specifically, the way we prepare general education teachers.

The first implication has to do with the way we use the term "teacher effectiveness." As concluded in this survey, it must be further defined and broken down into more specific components if it is to be used productively. While traditionally, student test scores have

been a measure of teacher effectiveness, student perceptions should be considered as another way to evaluate teacher effectiveness.

The second implication suggests the value of having graduate studies training as a predictor of being an effective inclusionist. Administrators staffing inclusion programs should consider a teacher's graduate studies history. This finding is very important to administrators who design faculty schedules as well as coordinate continuing graduate education efforts. Offering incentives for faculty to continue their education may be an important consideration having a direct impact on students. Additionally, male teachers have higher effectiveness ratings than females. Although schools are prohibited to hire candidates based on gender, it is important for educators to look more closely at this gender effect phenomenon. What are male teachers doing in the classroom that might be different from what female teachers are doing?

Ultimately, using student evaluations can serve as a catalyst for improving teacher behavior. In a study that looked at whether or not student evaluations in high school leads to more reflective teacher practice, Wesner (2007) found that teachers learned from and incorporated student suggestions into their practice.

Limitations

One of the most obvious limitations was the small sample size for students, and even smaller sample for teachers. In addition, because student standardized test scores were not collected, there was no external measure of teacher effectiveness (eg., measure of students' academic improvement) for comparison with student ratings in order to establish content validity.

Another limitation is that all students who rated teachers were treated equally. For example, a freshmen rater may not have as much experience in evaluating teacher effectiveness as a senior, yet input was weighted equally. Additionally, not all students are

equally critical in how they evaluate teacher effectiveness. Some students may be more or less aware of how teachers are running their classrooms. It was difficult to account for the substantive variability amongst student raters. Another statistical limitation is the variability in the number of ratings per teacher**.** SEEQ-modified averages for teachers with more student ratings were clearly more accurate than for teachers with fewer student ratings.

Finally, the reliance on teacher self-report data is an additional limitation. It is possible that teachers will portrayed themselves in the best manner and may not have honestly stated their attitudes and perceptions of inclusion and of the school in which they work.

Recommendations for Future Research

There were several recommendations for future research that resulted from this study. One way to reduce some of the unwanted effects in using teacher self-report data is to add in behavioral observations. The use of a direct behavioral observation of a teacher's classroom behavior may serve as a way to better ensure the validity of teachers' reports on the survey. Teachers may report using specific instructional strategies but may not use them with the frequency they actually report.

Another suggestion for future research is to have an equal number of students rate each teacher. This would be another way to reduce bias in student perception data. It would enhance the validity of the student evaluation data. Sample sizes would have to be much larger than this study in order to obtain equal numbers of student raters. Additionally, the study unfolded a need to compare student data with student performance. Student performance data could come from behavioral observations or test data.

Finally, it would be important for future researchers to take a closer look at the content and construct validity of the SEEQ-modified. On many of the derived factors, there

were few items contained in each factor. It would be meaningful to increase the number of items in each subscale in order to enhance validity.

My name is Tammy Zielinski. I am a doctoral student in Educational Psychology at the Graduate School and University Center of the City University of New York, and Principal Investigator of this project entitled, "Examining Contributing Factors of Effective General Education Teachers of Inclusion Students." I plan on surveying general education teachers who teach children with disabilities. I hope to better understand the factors that contribute to the success of general education teachers who have inclusion students. You have been identified as someone who might be interested in participating in this research. As part of the survey, I will ask you questions about your teaching experience and training, school climate, instructional strategies you use, and beliefs about your own teaching abilities. Your responses will be correlated to your students' responses on a different but similar survey.

I hope that by clearly defining how we determine an inclusion teacher's effectiveness, it will help us understand this part of the Individuals with Disabilities Education Act. I also hope to present and publish the results of this study, but the names of people, or any identifying characteristics, will not be used in any publications. All information will be kept strictly confidential, and will be stored in a locked file cabinet located in my advisor's office suite to which only my advisor and I will have access. All surveys will be destroyed and disposed of three years after the study is completed.

Your participation is completely voluntary. At any time you can stop taking part of this survey. If you decide to participate in this research you need not respond to all the questions unless you wish to do so. If you decline to participate, it will not adversely affect you in any way. The risks from participating in this study are no more than encountered in everyday life. There will be approximately 40 teachers and 100 students participating in this study. Completion of the survey should take five minutes.

Should you want a copy of the summary of results or have any questions or concerns about this survey, please contact me at t_zielinski@jsrhs.net or #603-529-5352. If you would like to speak with my advisor, contact Dr. Helen Johnson at #718-997-5312 or helen_johnson@qc.cuny.edu. For questions regarding the rights of participants in research, contact Kay Powell, Institutional Review Board administrator at # 212-817-7525 or kpowell@gc.cuny.edu.

Please remember that your responses are confidential and no one else will review your responses, so please answer each question honestly.

Thank you for your help in this important project. I will give you a copy of this form. I consent to take part in this Inclusion Study.

Participant's signature	Date	Investigator's signature	Date

Successful Inclusion Survey

Gender: __M __ F
Approximate years of graduate studies: _____
Total number of years teaching (including this year): _____
Number of years teaching in inclusive settings (including this year): _____
Number of completed credits in special education: _____
Approximate number of hours per week spent collaborating with school staff: _____

On a scale of 1 to 5, please rate your level of agreement with the following statements:
1 Strongly disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly agree

1. ___ When a student does better than usual, it is because I exerted a little extra effort.

2. ___ The amount that a student can learn is primarily related to family background.

3. ___ When the grades of my students improve it is because I found more effective teaching approaches.

4. ___ When I really try, I can get through to most difficult students.

5. ____ A teacher is very limited in what he/she can achieve because a student's home environment is a large influence on his/her achievement.

6. ___ If a student masters a new concept quickly, this might be because I know the necessary steps in teaching that concept.

7. ___ If one of my students could not do a class assignment, I am able to accurately assess whether the assignment was at the correct level of difficulty.

8. ___ Students classified as special education should be taught in general education classrooms by both general and special education personnel.

9. ___ Students with special needs who are placed in an inclusive classroom have made progress that they otherwise would not have made.

10. ___ School administration is highly supportive of me in my work.

11. ___ I am given opportunities to participate in decision making in my school.

12. ___ I am given sufficient planning time to develop lessons/assignments/tests for all of my students.

13. ___ I have sufficient opportunities to collaborate with other teachers and aides in order to most effectively plan for the special education students in my class.

14. ___ Parents support inclusion practices at my school.

15. ___ Constructive feedback from school personnel helps me to improve my skills as an inclusion teacher.

16. ___ My class size is small enough that I can effectively teach all students.

17. ___ Assignments are varied to meet students' individualized goals.

18. ___ Inclusion students are given learning materials that are different from what the rest of the students receive.

19. ___ Cooperative learning strategies are used where general education students are in groups or pairs with special education children to complete an assignment.

20. ___ Reciprocal teaching strategies are used where inclusive students pretend that they are the teacher and ask other students questions about course material.

21. ___ All students work independently at their desks.

22. ___ Classroom tests are modified for inclusion students.

Parent Consent Form

My name is Tammy Zielinski, the school psychologist at John Stark High School. I am completing a doctorate in Educational Psychology at the Graduate School and University Center of the City University of New York. As part of my studies, I am conducting a research project entitled, "Examining Contributing Factors of Effective General Education Teachers of Inclusion Students." I plan on surveying general education teachers who teach students with mild disabilities and their respective students. I would like to ask your teenager some questions regarding his/her academic teachers. Your teenager's responses will not be shared with any of his/her teachers.

I hope that by clearly defining how we determine an inclusion teacher's effectiveness, it will help us understand how to better educate students with alternative learning needs. I also hope to present and publish the results of this study, but the names of people, or any identifying characteristics, will not be used in any publications. All information will be kept strictly confidential, and will be stored in a locked file cabinet located in my advisor's office suite to which only my advisor and I will have access. All surveys will be destroyed and disposed of three years after the study is completed.

Your teenager's participation is completely voluntary. At any time he/she can stop taking part of this survey. If he/she decides to participate in this research he/she need not respond to all the questions unless he/she wishes to do so. If your teenager declines to participate, it will not adversely affect him/her in any way. The risks from participating in this study are no more than encountered in everyday life. Completion of the survey should take approximately five minutes. There will be approximately 40 teachers and 100 students participating in this study. Your child will not miss any class time.

Should you want a copy of the summary of results or have any questions or concerns about this survey, please contact me at t_zielinski@jsrhs.net or #603-529-5352. If you would like to speak with my advisor, contact Dr. Helen Johnson at #718-997-5312 or helen_johnson@qc.cuny.edu. For questions regarding the rights of participants in research, contact Kay Powell, Institutional Review Board administrator at # 212-817-7525 or kpowell@gc.cuny.edu.

Thank you for your help in this important project. I will give you a copy of this form. I give consent for my son/daughter _____to take part in this Inclusion Study.

_____	_____	_____	_____
Parent's signature	Date	Investigator's signature	Date

Student Assent Form:
My name is Mrs. Zielinski and I am the school psychologist. I am currently completing my degree and studying teenagers in this high school. You have been chosen as someone who might be interested in participating. I would like to ask you some questions about how you feel your teachers teach. Your responses will not be shared with any of your teachers. Your participation is completely voluntary. At any time you can stop taking part of this survey. If you decide to participate in this research you need not respond to all the questions unless you wish to do so. If you do not participate, it will not affect your grades in any way. There will be approximately 40 teachers and 100 students participating in this study. Completion of the survey should take five minutes.

Thank you for your help in this important project. I will give you a copy of this form.

_____	_____	_____	_____
Student's signature	Date	Investigator's signature	Date

Student Evaluation of Educational Quality - Modified

Gender: __M __ F Class:_____ Teacher:_____
Year in school: __Freshman __Sophomore __Junior __Senior
Class difficulty: __very easy __easy __medium difficulty __hard __very hard
Class workload: __very light __light __medium __heavy __very heavy
Class pace: __too slow __slow __about right __fast __too fast
Hours per week spent working outside of class: __<1 __1-2 __2-3 __3-4 __4 or more
Level of interest in subject before class __very low __low __medium __high __very high
Expected grade:__A__B__C__D__F

On a scale of 1 to 5, please rate your level of agreement with the following statements:
1 Strongly disagree
2 Disagree
3 Neutral
4 Agree
5 Strongly agree

1. ___ You find the course challenging.

2. ___ You have learned something which you consider important.

3. ___ Your interest in the subject has increased as a result of this course.

4. ___ You have learned and understood the subject materials in this course.

5. ____ Teacher is enthusiastic about teaching the course.

6. ___ Teacher is dynamic and energetic in conducting the course.

7. ___ Teacher enhances presentations with use of humor.

8. ___ Teacher's style of presentation holds your interest during class.

9. ___ Teacher's explanations are clear.

10. ___ Course materials are well prepared and carefully explained.

11. ___ Class plans are the same as those actually taught so you know where the course is going.

12. ___ Teacher gives lectures that help with taking notes.

Instructional Practices (Corresponds to #17-22 on Successful Inclusion Survey)

On a scale of 1 to 5, please rate your level of agreement with the following statements:

1 Strongly disagree

2 Disagree

3 Neutral

4 Agree

5 Strongly agree

13. ___ Assignments are varied i.e.: tests, essays, group work, presentations....

14. ___ My teacher gives me learning materials that are different from what the rest of the students receive.

15. ___ Teacher has us work in groups or pairs to complete assignments.

16. ___ My teacher asks me to pretend that I am the teacher by asking other students questions about things we have learned in class.

17. ___ My teacher has us work on our own at our desks.

18. ___My teacher changes my tests so that they are different from everybody else's.

Any other information regarding how your teacher helps you learn:

_____

_____

_____

_____

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