TEACHER EFFICACY, TOLERANCE, GENDER, AND YEARS OF EXPERIENCE AND SPECIAL EDUCATION REFERRALS

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Teacher efficacy and teacher tolerance, along with teacher gender, were examined for their relationship with the number of students teachers referred to special education. In a sample of 167 elementary school teachers from an urban school district in the State of Texas, no statistically significant relationships were yielded between teacher tolerance and referrals made to special education; between teacher efficacy and referrals made to special education; and, between teacher years of experience and referrals made to special education. In addition, no differences were found in teacher tolerance and teacher efficacy as a function of gender. Results were not supportive of previous research studies. Implications of these findings are discussed.

Teacher efficacy has been defined as the conviction that one can successfully bring about the desired outcome in one's students (Gibson & Dembo, 1984). In a study designed to develop an instrument to measure teacher efficacy, Gibson and Dembo determined that teaching could affect specific outcomes in students (teaching efficacy) and beliefs about one's own ability to bring about student improvement (personal efficacy). They found that efficacy in teachers contributed to methodology and classroom management. Teachers with differing levels of efficacy used different classroom practices such as whole class versus small group instruction and persistence levels in situations where student encounter difficulty in answering questions. Teachers with low efficacy allowed for almost twice as much time for small group instruction than teachers with high efficacy. Further, teachers with low efficacy appeared to reach a point of being flustered easier and more rapidly than their counterparts if their routine was disturbed or ignored. The number of students off-task appeared to be greater within a low-efficacy teacher's classroom than within a high efficacy teacher. In contrast, teachers with high efficacy were more effective in using cognitive and open-ended questioning strategies to probe and lead student to correct responses and reflections than teachers with low efficacy who tended to move on to another student or another question when a student showed signs of difficulty.

In one of the first studies, conducted in Europe, to examine the relationship between teacher efficacy and referral to special education, Meijer and Foster (1988) found that teachers who had high personal efficacy were less likely to refer students to special education than were teachers with low personal efficacy. The findings of this study were not explored in the United States until 1993 when Podell and Soodak (1993) gave case studies of hypothetical regular education students of varying SES with reading difficulties to regular education teachers and asked them to rate the appropriateness of the students' current placement as well as how likely they would be to refer such a student to special education. The teachers then completed Gibson and Dembo's (1984) Teacher Efficacy Scale. In their study, Podell and Soodak (1993) found a relationship between teacher efficacy and student socioeconomic status. Teachers with higher degrees of teacher efficacy were found to refer fewer students to special education than were teachers with lower degrees of teacher efficacy. Referral to special education was not simply related to personal efficacy, but to teaching efficacy as well. The authors concluded, *teachers must feel both confident in their own teaching and confident in the effects of teaching in general to agree to retain students with problems in general education* (p. 78).

Concomitant with teacher efficacy as a potential factor in teacher referral of students for special education is the variable of teacher tolerance. Shinn, Tindal, and Spira (1987, p. 43) suggested that, *the decision to refer a student to special education is an operationalization of a teachers' tolerance and a statement about the likelihood of the student profiting instructionally from that teacher* (p. 43). In other words, teachers' level of tolerance may be related to the number of students teachers refer to special education. Moreover, the regularity of the referrals may also be related to the level of teacher tolerance.

Researchers studying the issue of teacher tolerance have shown that certain behaviors are generally more tolerable in the classroom than others (Algozzine, 1977; Algozzine, Ysseldyke, & Christenson, 1982). Algozzine et al. (1983) gave elementary school teachers case studies to examine, half of which described a student as having immature behaviors and the other half described a student as having unmanageable behaviors. Their sample of teachers was then asked to indicate the extent to which the student had a behavior problem, a learning problem, or both, and to predict future class placement. The teachers were also given a tolerance scale on which they were classified as either highly tolerant or lowly tolerant. Though no differences were found in classifying the students' disability, these groups differed in their predictions for the future classroom placement of the case study student. Highly tolerant teachers were less likely to predict that the student would be placed into special education than were the less tolerant teachers.

In another study in this area, Algozzine and Curran (1978) had teachers rate a hypothetical child's likelihood to be successful in a regular classroom. Their sample of teachers was given a tolerance measure and were found to have varying tolerance levels for different types of student behavior. These varying levels of tolerance were reflected in their predictions of success for hypothetical students in the regular education classroom with tolerance level and prediction of success positively correlated. Their rationale for these findings was Swap's (1974) goodness of fit theory that certain teachers can be matched with certain students whose behavior will be readily tolerated in their classroom.

Safran and Safran (1984), in developing a new tolerance scale, reported similar results. In a follow up study using the same measure, they found that special education teachers were generally more tolerant of behavior problems than were regular education teachers. These results were replicated five years later (Ritter & Lamprecht, 1989).

Gersten, Walker, and Darch (1988) evaluated the relationship of teacher tolerance and teacher effectiveness. They stated that teachers with the lowest tolerance for student behavior problems were also most likely to resist students with disabilities in their classroom thereby increasing the number of students they referred to special education. Further, results from the self-report instrument that was utilized in the study, suggested that the same teachers with low tolerance, were also the most effective in working with their students.

Another variable that may influence teacher referral of students for special education, along with the variables previously discussed of teacher efficacy and teacher tolerance, is that of teacher gender. Gender differences have been noted in many areas of study, such as socialization, stereotyping, parenting, free-play, and peer relations (Maccoby, 1988,1991). Most educational research, however, relating to gender and teacher expectancy has focused on the gender of the student, but has paid relatively little attention to the gender of the teacher (Dweck, Davidson, Nelson, & Enna, 1978; Fagot, 1978; Witek, 1997). Differential treatment and expectations have been demonstrated for students based on their gender, as male students received positive feedback for academic abilities and negative feedback for nonacademic issues such as conduct, whereas females were regarded as motivated and diligent, but only received positive feedback for nonintellectual aspects of work, like neatness. Fagot (1978) found that inexperienced teachers, significantly more so than experienced teachers, interacted more with female students engaged in typically feminine activities than male students engaged in typically masculine activities, and reinforced the female students for taking part in feminine activities. Additional researchers have also suggested to the contrary, that student gender is not significantly correlated with teacher referral to special education (Cousineau & Luke, 1990; Dusek & Joseph, 1983). Witek (1997) did not demonstrate a main effect for student gender on teacher referral, but teacher expectations within the study were found to be significantly influenced by student gender.

Researchers have suggested, *a more viable target for study would consist of the specific characteristics of the perceiver* (Witek, 1997, p.14), who specifically suggested studying the influence of teacher gender. Though some researchers have investigated the influence of teacher gender, most researchers have focused on areas such as perceptions about school safety, the quality of classroom interactions, job satisfaction, and beliefs about student aggression (Dickinson, 2000). The research has not been related to teacher referral.

The extent of research on teacher gender has demonstrated that, generally, female teachers hold more positive beliefs and attitudes toward disabled students than do male teachers. In addition, females are more willing than males to interact with people with disabilities in general (Conine, 1968; Tringo,

1970). Female teachers have also been shown to be more willing to interact with disabled students, and female physical education teachers, in particular, were more likely to integrate these students into class activities (Aloia, Knutsen, Minner, & Von Seggen, 1980).

This researcher located one study in which both teacher gender and teacher referral were involved, however, both of these factors were used as independent variables. Page and Rosenthal (1990) investigated teacher gender as one of the possible influences on student performance. Teachers were instructed to teach proposed academic tasks analysis of variance was conducted. In general, students with male teachers performed significantly better than those students with female teachers. Upon examination, male and female teachers were found to teach differentially depending on the student's race and gender, thus explaining the difference in student performance scores. Male and female teachers treated students differently, resulting in varying referrals and levels of student performance.

Purpose of the Study

One component that contributes to the representation of students in special education deals with the factors that influence teachers' decisions to refer students to special education. The literature clearly indicates that the education system lacks uniformity and consistency dealing with the process of teacher referrals and the factors that influence the referrals and the decision-making process that results in students being placed in special education (Garcia & Ortiz, 1988). In this study, this author investigated several variables to determine the extent to which they influenced teachers' decisions to refer students for special education. Specifically then, the purpose of the study was to examine the relationships among factors of teacher tolerance, teacher efficacy, teacher gender, years of teaching experience, and number of referrals to special education.

Research Questions

The study was guided by five research questions:

1. Is there a statistically significant difference in teacher efficacy between teachers with zero, one to two, and three or more special education referrals?
2. Is there a statistically significant difference in teacher tolerance between teachers with zero, one to two, and three or more special education referrals?
3. Is there a statistically significant difference between teacher years of experience and number of special education referrals?
4. Is there a statistically significant difference in teacher efficacy between male and female teachers as related to special education?
5. Is there a statistically significant difference in teacher tolerance between male and female teachers as related to special education?

Method

Participants

A total of 676 surveys were sent to teachers via in-school mail within an urban school district in the State Of Texas. Grade levels taught by participants ranged from the first through the fifth grade. Out of the 676 surveys sent to teachers, 167 surveys were returned, for a response rate of 24%, deemed acceptable by Gall, Gall, and Borg (2003). As would be expected, given that this sample of teachers was taken from elementary schools, that 152 (91%) were females and 15 (9%) were males. Participant ethnicity was fairly equally split among Whites (n = 82, 48%) and Hispanics (n = 78, 47%), with 3 Black teachers, and 4 who selected Other for their ethnic membership. The percentage of Whites and Hispanics who completed the survey correspond to the percentage of White and Hispanic teachers in this urban school district. Ages and years of teaching experience are shown in Table 1.

Table 1

Demographic Characteristics of Participants

Characteristic	n	%
Age at time of survey (years)		
20-29	21	12
30-39	42	25
40-49	56	34
50-59	43	26
60-69	5	3
Teaching Experience		
1-9	69	41
9-19	48	29

Out of the respondents represented in grades first through fifth, the distributions were somewhat evenly distributed across grade levels (1st = 22.2%, 2nd =18.6%, 3rd = 22.8%, 4th = 23.4%, and 5th = 13.2%). Teachers were asked, in the survey, to report the number of students they had referred to special education in the current year. Table 2 indicates 61 or 36.5% reported that they did not refer any students, 75 or 44.9% reporting that had referred one to two students, 25 or 15% indicating that they had referred three to four students to the special education program on their campus.

Table 2

Number of Teacher Referrals to Special Education

Number of Referrals Made	Number of Teachers	Percentage
0	61	36.5
1-2	75	44.9
3-4	25	15%
5-6	4	3%
7-8	1	.6%
9-10	1	.6%

Instrumentation

The Likert scale measuring efficacy ranged from 1 (strongly disagree) to 5 (strongly agree) with a score of 3 indicating a neutral response. The Likert scale measuring tolerance ranged from 1 (extremely intolerable) to 5 (extremely tolerable) with a score of 3 indicating a neutral response.

A scale item was calculated for each teacher efficacy question from the 11 original Likert items. Following a reliability analysis, three items were removed, items 3, 9, and 11, due to their low corrected item total correlations. The resulting Alpha coefficient for the 8-item teacher efficacy scale was .77 and had a mean of 31.45 and a standard deviation of 4.18. The teacher efficacy scale items were: Personal Dedication; Personal Expertise; Re-Teaching Capacity; Technique Capacity; Assessment; Training; Personal Dedication; Teaching Approaches; Parental Support; Home Experiences; and, Extrinsic Factors.

A scale item was also calculated for Teacher Tolerance from the original 14 Likert-type items. A reliability analysis was conducted and one item was removed, item seven due to its low corrected item total correlation. The resulting coefficient for the 13-item Teacher Tolerance scale was .87. The Tolerance Scale had a mean of 31.70 and a standard deviation of 6.48. Items on the Teacher Tolerance Scale were: Self-Evaluation; Irrelevant Responses; Repeated Instruction; Irrelevant Responses; Off-Task-Behaviors; Frustration Level; Irrelevant Responses; Destructive Nature; Abusive Behavior; Collaborative Capacity; Responsibility Level; and, Off-Task Behaviors.

When scores are measured on an ordinal scale, a great number of researchers believe it is not appropriate to use the mean to describe central tendency (Gravetter & Wallnau, 2004). For an ordinal item, such as a Likert-type scale, scores are ordered categories and do not allow one to determine distance. In cases such as this, the median is invariably appropriate and is generally the accepted and preferred measure of central ten Table 3 includes descriptive statistics for the original Teacher Efficacy and Table 4 has the median response for the Teacher Tolerance survey items.dency (Gravetter & Wallnau, 2004).

Table 3

Median Responses for the Teacher Efficacy Survey Items

Variable	Median
Personal Dedication	4
Personal Expertise	4
Re-teaching Capacity	4
Technique Capacity	4
Assessment	4
Training	4
Personal Dedication	4
Teaching Approaches	4
Parental Support	4
Home Experiences	4
Extrinsic Factors	2

Table 4
Median Responses for the Teacher Tolerance Survey Items

Variable	Median
Self-Evaluation	3
Irrelevant Responses	3
Repeated Instruction	3
Off-Task Behaviors	3
Frustration Level	3
Irrelevant Responses	3
Destructive Nature	1
Abusive Behavior	1
Collaborative Capacity	2
Responsibility Level	2
Off-Task Behaviors	2

None of the items had a median score of five, representing a central response of *strongly agree*. Six of the items had a median score of four, representing a response of *agree*. Efficacy dealing directly with student behaviors had five while factors related directly to the teacher's ability to meet the students' individual needs, had one. The smallest sample median response was one indicating a median response of *disagree* for the efficacy question dealing with outside factors and contributors.

On the Teacher Tolerance measure, nine of the items had a median score of two, representing *Intolerable, causing problems*. None of the items had a median response of five or four, representing *Extremely Tolerable* and *Tolerable* respectively. However, three items reflected a median score of three, representing a response of *Somewhat disturbing, but not intolerable*. The remaining Tolerance Likert-type questions had the smallest sample median of 1, indicating a median response of *Extremely Intolerable*.

Of the computed measurement scale items dealing with teacher efficacy and number of referrals, two or more had the highest mean (M = 32.03, SD = 4.31), indicating that respondents with the highest efficacy score made two or more special education referrals per school year. Those teachers who referred no students to special education had the lowest mean (M = 32.01, SD = 3.96). Of the computed measurement scale items dealing with teacher tolerance, one number of referrals had the highest mean (M = 31.88, SD = 6.31), indicating that respondents with the highest Tolerance score made at least one special education referral per school year. Those teachers who referred two or more students to special education had the lowest mean (M = 31.13, SD = 8.62).

Results

All variables were initially screened for accuracy and normality through computing descriptive statistics for each test variable. Frequency distributions with histograms and descriptive statistics (mean or median, standard deviation) were used to identify any characteristics of shape or distribution that might affect the analysis. Because all variables were found to be within normal limits, parametric procedures were conducted for all statistical analyses.

Research Question One

Is there a statistically significant difference in teacher efficacy according to the Teacher Efficacy Scale used by Gibson and Dembo (1984) between teachers with zero, one to two, and three or more special education referrals?

The SPSS General Linear Model procedure Univariate Analysis of Variance (ANOVA) was utilized to test this hypothesis. Specifically, a one-way ANOVA was conducted to evaluate the relationship between teacher efficacy and the number of special education referrals made by teachers. The independent variable, the referral factor, included three levels: zero, one to two, and three or more number of referrals. The dependent variable was the efficacy score on the teacher efficacy scale item. The ANOVA was not statistically significant, F (2, 161) = 1.98, $p > .05$. Thus, the level of teacher efficacy did not differ according to the number of special education referrals made by the teacher.

Research Question Two

Is there a statistically significant difference in Teacher Tolerance between teachers with zero, one to two, and three or more special education referrals?

A one-way ANOVA was used to address the relationship between teacher tolerance and the number of special education referrals made by teachers. The independent variable was again the referral factor, with the dependent variable this time being the teacher tolerance score. Results on this ANOVA were not statistically significant, F (2, 159) = .145, $p > .05$. Thus, the level of teacher tolerance did not differ according to the number of special education referrals made by teachers.

Research Question Three
Is there a statistically significant difference in teacher years of experience and number of special education referrals?
Again, a one-way ANOVA was used to evaluate the relationship between teacher years of experience and the number of special education referrals made by teachers. The independent variable was again the referral factor, with the dependent variable being years of teaching experience. The ANOVA failed to yield a statistically significant finding, F (2, 164) = 1.87, $p > .05$. Thus, the level of teacher experience did not differ according to the number of special education referrals made by teachers.

Research Question Four
Is there a statistically significant difference in teacher efficacy between male and female teachers as related to special education?
A one-way ANOVA was conducted to evaluate the relationship between teacher efficacy and teacher gender, with the independent variable being teacher gender and the dependent variable being the teacher efficacy score. This ANOVA was not statistically significant, F (1, 160) = .341, $p > .05$. Thus, the level of teacher efficacy did not differ according to teacher gender.

Research Question Five
Is there a statistically significant difference in teacher tolerance between male and female teachers as related to special education?
Again, a one-way ANOVA was conducted to evaluate the relationship between teacher tolerance and teacher gender, with the independent variable being teacher gender and the dependent variable being the teacher tolerance score. Results on the ANOVA were not statistically significant, F (1, 158) = 1.22, $p > .05$. Thus, the level of teacher tolerance did not differ according to teacher gender.

The results supported the conclusion that the level of teacher efficacy and the level of teacher tolerance, respectively, were not directly related to the number of students who are referred to special education in this urban area school district in the State of Texas. Moreover, the results indicated the teachers with a lower degree of teacher efficacy as well as the teachers with a lower degree of teacher tolerance did not significantly differ in the number of special education referrals than their counterparts with a greater degree of teacher efficacy and a greater degree of teacher tolerance. The related ANOVA tests of statistical significance collectively support the inability to reject the null hypotheses set forth in the first five quantitative research hypotheses that stated there was not a significant difference between teacher efficacy, teacher tolerance, teacher ethnicity, teacher experience and teacher gender and the number of special education referrals.

Discussion
The purpose of the study was to examine the extent to which teacher factors such as teacher tolerance, teacher efficacy, gender, years of teaching experience, and number of referrals to special education were related. In doing so, this researcher discussed the referrals of students to special education and investigated the factors associated with teacher tolerance and teacher efficacy with relation to special education referrals.

Analyses of the teacher efficacy score did not support the research findings of Gibson and Dembo (1995) in which teacher efficacy and number of referrals to special education were found to be strongly related. In this study, no such relationship was present. However, much of the literature indicates teacher efficacy is defined as the conviction that one can successfully bring about the desired outcome in one's students. Furthermore, the literature supports that public school teachers with differing levels of efficacy differ in classroom practices such as whole class versus small group instruction, persistence levels in situations where students encounter difficulty in academia, which may result to an alternative such as Special Education Placement.

Findings from this study were also not supportive of the research findings of Safran and Safran (1985) who reported that teacher tolerance and number of referrals to special education were strongly related.

Wig and Semmel (1984), defined tolerance as, *the summarization of the interaction of teacher, target student, and peer characteristics in such a way as to define (a) modal range within which students are perceived as 'teachable' and (b) a preference for some observable distribution of learning outcomes*. Shinn et al. (1997) suggested that *the decision to refer a student to special education is an operationalization of a teachers' tolerance and a statement about the likelihood of the student profiting instructionally from that teacher*. Furthermore, the literature supports that public school educators are the most able to be empowered to change or impact the special education referral system as we have known it.

Respondents, on average, were neutral about the role that Teacher Efficacy and Teacher Tolerance played in their decision to refer a student. Moreover, present in the data was that each Teacher Efficacy indicator measured from 2 to 4, with 2 being *Disagree* and 4 being *Agree*. With regard to Teacher Tolerance, the indicators ranged from 1.8 to 3.1, with 2 being *Intolerable*. However, indicated in the teacher tolerance literature was that certain behaviors are generally more tolerable in the classroom than others depending on the level of tolerance of the teacher. Further, the decision to refer a student to special education has been demonstrated to rely heavily on the level of teacher tolerance a particular teacher possesses (Algozzine & Christenson, taken from Algozzine et al. (1982).

The analysis of quantitative data reveals that the indicators related to the factors behind special education referrals are complicated and are difficult to measure. An Efficacy Scale developed by Gibson and Dembo (1984) was utilized to measure the relation between degrees of efficacy and the number of special education referrals teachers make. In addition, a Tolerance Scale developed by Safran and Safran (1984) was incorporated in the survey to measure whether or not there was a significant relationship between teacher tolerance and the number of special education referrals teachers make. However, neither scale yielded results significantly linking them to the number of referrals teacher make.

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