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Understanding the Relationship between Gender and Self-Efficacy in Northeast Texas Public Schools

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TEACHER SELF-EFFICACY

Understanding the Relationship between Teachers'

Gender and Self-Efficacy in Northeast Texas Public Schools

Using a sample of 147 K-12 teachers in Northeast Texas, the authors examine the importance of gender for teachers, and if gender impacts his or her own feelings of self-efficacy, while controlling for demographic variables. Findings enhance scholars' understanding of how men and women view themselves and their perceptions of their own self-efficacy in education. This research also merges the literature in education and sociology, providing an example of how interdisciplinary research can improve our understandings of social problems found within educational institutions.

Keywords: Teacher, Self-Efficacy, Education and Gender

Understanding the Relationship between Teachers' Gender and Self-Efficacy in Northeast Texas Public Schools

Research in the field of education suggests positive correlations between teachers' self-efficacy and openness to new ideas, teaching methods, strategies, and impact on student learning (Bandura, 1997; Pfitzner-Eden, 2016; Synder & Fisk, 2016). In the field of sociology, researchers (Budig & Hodges, 2010; Charles, 2011; Correll, 2001; Ridgeway, 2011) reveal the ways in which gender impacts workplace outcomes and an individual's feelings of competency in his or her occupation. Sociological research considers the impact of gender on workforce outcomes, while educational researchers historically highlight the link between teacher self-efficacy and performance. However, there is limited empirical and/or conceptual discussion of the two topics in consideration of each other. The objective of this study is to address this gap in the literature regarding gender and perceptions of self-efficacy in educational settings, by examining the ways in which gender impacts (or fails to impact) feelings of self-efficacy of teachers.

Review of the Literature

Self-Efficacy

Self-efficacy "is concerned with judgements of personal capability" (Bandura, 1997, p. 11). It is important to distinguish this construct of self-efficacy from that of self-esteem. Self-efficacy specifically addresses an individual's self-perception of the ability to effectively perform a specific set of tasks and is significantly related to individual choices regarding career, family, and professional risk-taking. Bandura (1993) writes extensively about self-efficacy, arguing that: "those who have a high sense of efficacy visualize success scenarios that provide

positive guides and supports for performance” (p. 118). Positive performances ascribed to Bandura’s theory translate to desirable performance outcomes in teachers. Teachers who possess a great sense of self-efficacy demonstrate better quality instruction, tenacity, and a greater potential to remain in the profession (Pfitzner-Eden, 2016).

In the field of education, aspects of teacher self-efficacy have been, examined in empirical research connected with social cognitive theory (Bandura, 1993). According to educational psychologists, teacher self-efficacy “can be understood as the beliefs that in-service and preservice teachers hold about their capabilities to organize and execute...instruction, classroom management, and student engagement” (Pfitzner-Eden, 2016, p. 1487). Instruction, classroom management, and student engagement comprise the three areas of study regarding teacher self-efficacy.

Pfitzner-Eden (2016) examined changes that might arise regarding preservice teachers’ self-efficacy during the field experience component of their education, based upon Bandura’s sources. The study identified gaps in educator preparation programs and recommended more emotional and reflective practice incorporated into preservice teacher programs in order to build greater self-efficacy in preservice teachers.

Further research into teacher self-efficacy includes the work of Synder and Fisk (2016) in which they conducted a national survey of teaching artists to analyze the association of Bandura’s foundations of self-efficacy with varying levels of teaching efficacy. This project focused on classroom teachers, identifying teaching artists, with and without certification, as “those artists who actively engage in providing instruction for students and adults in a variety of settings” (Synder & Fisk, 2016, p. 38). Findings indicated that Bandura’s experience of mastery was the most significant variable when building teacher self-efficacy. Velthuis, Fisser, & Pieters

(2014) were proponents of these results, arguing that teachers' and student teachers' self-efficacy increased with more extensive engagement in mastery experiences, purported to provide concrete examples of others or themselves successfully engaging in an activity. It was concluded that the tangible experience of teachers' and student teachers' success, or witnesses to the success of peers increases self-assurance that positive outcomes will ensue with future effort.

Research into the development of self-efficacy in teachers is somewhat extensive (Bandura, 1993, 1997; Knoblauch & Chase, 2015; Pfitzner-Eden, 2016; Synder & Fisk, 2016; Velthuis et al., 2014). However, a significant gap in the research includes the consideration of teacher self-efficacy and the potential relationship with gender.

Gender

The literature in the field of sociology devotes a large body of research documenting gender differences in society and in the workplace. Although scholars agree gender inequalities exist, explanations for why they exist and persist throughout time vary. Charles (2011) argues that individual factors help explain gendered outcomes in modern social institutions. Additionally, she suggests people view gender segregation as a result of "natural" differences, meaning men and women make different personal workplace and employment choices that are accompanied with different labor force outcomes. Correll (2001) also finds that women's poor self-perceptions of their math skills may keep them from pursuing STEM occupations, which is supported by a number of empirical studies that find that men are more likely to change occupation once it becomes female-dominant (England, 2010; England Allison, Li, Mark, Thompson, Budig, & Sun 2007). Charles (2011) strongly recommends researchers to examine areas of gender discrimination in the workforce-despite progress toward equity in pay and educational achievement to enhance our understanding of the reasons gender differences persist.

Although research indicates individual choices may allow gender to impact work outcomes, women may also experience employer discrimination and systemic gender disadvantages in the work place, as the image of the “ideal” worker aligns more closely with the “ideal” man rather than the “ideal” woman. Larger structural and cultural constructs of gender possibly create gendered outcomes, despite the individual’s personal choices or feelings (Ridgeway, 2011). According to the literature, as workplace becomes more diverse, in terms of gender, women are typically placed into less-valued roles within the workplace. As an occupation decreases in value, employers struggle to remain competitive and shift to more likely hire women (Reskin, 2001). Finally, employers consider employee preferences when making hiring decisions, meaning gender may hinder women during the hiring process (England 2010).

Benard and Correll (2010) add a motherhood component to their research, finding that parenthood negatively impacts even the most successful working women due to harmful stereotypes. Mothers, in their study, were more likely to be viewed as less feminine and unfriendly, meaning cultural attitudes about mothers continue to conflict with ideas about what it means to be successful in the workplace, which disadvantage female applicants with children in formal and informal ways.

Gender research also examines the possibility that men in majority-female jobs may benefit more in comparison to female colleagues because of their exceptionalism. Kanter’s theory of tokenism (1993) purports that if the majority of people in an occupation are men, then women within that occupation may be treated as tokens by their administrators and peers and vice versa. Tokens may be subject to either of the extremes: lower wages and fewer benefits or higher wages and greater number of benefits. Empirical study of the theory has not noted substantial evidence for support. Williams (1992) suggests that the status of being a token and

the direction of the experience (positive versus negative) deepen the gendered outcomes of the individual perceived as the token. According to this theory, men are awarded privileges and distinctions in female-dominated professions, which contribute to men riding in a “glass escalator” in professions in which they are novelties (Budog 2002). In contrast, women do not experience the same advantage in work settings with the same scenario. Budig (2002) also found that men in all occupations benefit compared to women, regardless of the gender ratio or tokenism in the workplace. Despite mixed findings in the literature regarding tokenism, one general conclusion presented in this section is that men have more advantages than women in the work place. Personal choices and decisions do impact gendered outcomes, but there also seems to be a larger sociocultural explanation for these outcomes.

Research on gender inequality in the field of education is also extensive. White and White (2006) conducted a study in which they examined occupational gender stereotypes among accountants, engineers, and elementary teachers. The results indicate significant biases reported toward all three careers – male engineers and female elementary teachers were identified with the most explicit biases, while accountants, reported as the most gender neutral career, still recounted significant implicit gender bias. Verdugo & Schneider (1994) argue the difference in earnings among male and female teachers based upon the study of the Schools and Staffing Survey from the U.S. Department of Education. Despite the dominance of women in teaching positions, a gender wage gap still exists.

Considering the extensive research that demonstrates self-efficacy and gender inequality are important to teacher outcomes, our study provides new information regarding the two in consideration of each other. The purpose of this study is to more closely examine the impact of gender on self-perceptions of effectiveness among teachers within a K-12 setting. This

information will add to the literature addressing the impact of gender in training and will provide critical information about the need to consider gender and such points of diversity in teacher education programs and mentorship. Findings may reveal important gendered thoughts and behaviors that significantly impact a teacher's perceptions of his/her work performance and that of colleagues. Findings may also help administrators and teachers directly address gender differences in pre-teacher training, as well as ongoing professional development activities.

Method

Although administrators, coaches, literacy specialists, and diagnosticians all make significant contributions to student learning outcomes, the research question specifically asks whether or not gender has any impact in feelings of self-efficacy for classroom teachers, regardless of grade level. A similar, yet different question is whether or not men and women respond differently to questions that specifically address the relationship between gender and work performance.

Research Instrument & Design

A brief, online survey (using Survey Monkey software) of 24 questions was used to collect a large amount of data related to the search questions. The survey instrument is included in appendix A. The first nine questions on the survey collected participants' demographic information, such as participant age, gender, ethnicity, school size, years of teaching experience, and school setting. The questions allowed participants to point and click on a button to represent the category most closely related to their information. Age, gender, years of experience, school size, and school location were divided into categories for participants to select. For example, participants could select a range of teaching experience from 6-11 years. The remaining 15

questions asked participants to respond, using the Likert Scale, to address feelings of self-efficacy related to their ability to complete expected teaching responsibilities. The categories available for selection: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree. Participants were asked to select a category on the Likert Scale, which reflected their feelings regarding their abilities in lesson planning, managing student behavior, communicating with parents, collaborative work with peers, and assessing student learning. The last five survey questions asked participants to select a category on the Likert Scale related specifically to stereotypical gendered roles. High scores on the Likert Scale indicated that the participants strongly disagreed with the statement before them, while low scores specified strong agreement with the statement.

Data Collection

Once the Institutional Review Board (IRB) approved the survey, data were collected from schools in a region known as North-East Texas and surrounding Texas schools. As a regional university, it was important to the researchers to collect and analyze data in a manner to benefit the local community and be generalizable to similar school system settings beyond the region. In addition, the location of the university includes rural and suburban settings. The thirty-two schools surveyed were selected from among the schools served by the institution with which the researchers were affiliated. E-mail addresses for K-12 teachers at each of these schools were obtained via telephone, e-mail, and/or school webpages. Participation in this study was voluntary and participants were not compensated for participation. An e-mail was sent to each teacher that included a link to the survey, an explanation of the project, and an informed consent form. Once participants electronically gave consent, they were directed to the survey to answer 24 questions

based upon review of the literature, which addressed the specific research questions. Responses to the surveys were collected during the spring semester of the academic year.

Data Analysis

Quantitative analyses provide descriptive statistics for a general overview of the sample, as well more complex examinations of the impact of gender on participants' responses to survey questions. The Mann-Whitney U test is a non-parametric test which assumes the null hypothesis that two independent samples (in our case, men and women) report similar responses, and that response categories are ordinal, which is appropriate for the Likert Scale research questions. Statistically significant results mean the null hypothesis is rejected and men and women have different responses to questions, making gender an important predictor of answers to survey questions. Similarly, ordinal regression is helpful for gender analyses because the dependent variables (i.e. responses to Likert Scale questions) are ranked. Ordinal regression allows the researchers to control for other important predictor variables (i.e. demographic and school-specific information) while assessing the relationship between gender and survey answers. Therefore, a significant relationship between gender and survey questions while controlling for other predictor variables makes for an even stronger argument that gender impacts feelings of self-efficacy than the Mann-Whitney U test.

Results

The survey was sent to 836 respondents and received a response rate of 17.3% (n =147). The survey instrument was completed by K-12 public school teachers in Northeast Texas: 81% females (n =117); 19% males (n =28). Seven surveys were partially completed and these results were not included in the analyses. Descriptive data can be found in the Table 1. However, due to

multi-collinearity of some of the predictor variables (i.e. age and years of experience were highly correlated), some of the predictor variables were removed from the analysis. Findings reveal important patterns and trends regarding gender and feelings of self-efficacy.

The sample was 90% white (n =131). Consequently, due to the low representation of diversity in race and ethnicity within the sample, responses that indicated other than white were compiled into a category as non-white (n =14; 10%). Responses to a separate survey question asking respondents whether or not they were of Hispanic origin revealed that two of the respondents were reported Hispanic origin; therefore, this variable was omitted from the ordinal regression. Years of teaching experience varied (n=145): 21% (n =31) reported 0-5 years; 16% (n=23) having, 6-10 years, 20% (n=29) having, 11-15 years, 21% (n=30) having, 16-20 years and, and, 22 % (n =32) having, 21-40 years. Additionally, 45% (n =65) teach at high schools, 32% (n =46) teach at elementary schools, and 23% (n =34) work in middle schools. As expected, the majority of respondents (73%, n=105) reported working in a rural school setting, followed by suburban (21%) (n =30); and urban (6%) (n =9).

School sizes were based upon the University Interscholastic League (UIL) classification and district assignment system). A small portion of the sample (1%; n =2) reported working in a 1A (0-104 students) schools; 8% (n =12) in 2A (105-220 students) schools; 59% (n =84) in 3A (221-479 students) schools; 28% (n =40) in 4A (480-1099 students) schools; and 4% (n =5) in 5A (1100-2149 students) schools (n=143) (Table 1).

Table 1. Descriptive Statistics (N=147)

Variable	Categories	Percentages
Gender	Male	19%
	Female	81%
Age	18 to 24	2%
	25 to 34	23%
	35 to 44	32%
	45 to 54	31%
	55 to 64	10%
	65 to 74	1%
Teaching Experience	0 to 5	21%
	6 to 10	16%
	11 to 15	20%
	16 to 20	21%
	21-25	13%
	26 to 30	6%
	31 to 35	1%
	36 to 40	1%
Race	White	90%
	Non-white	10%
School Size	1A (0 – 104)	1%
	2A (105-220)	8%
	3A (221-479)	59%
	4A (480-1099)	28%
	5A (1100-2149)	4%
School Location	Rural	73%
	Suburban	21%
	Urban	6%
School Type	Elementary	32%
	Middle School	23%
	High School	45%

Most of the respondents were confident in their ability to manage the classroom effectively, plan and teach lessons, integrate technology into lessons, establish positive relationships with students, colleagues, and parents (Table 2). There were notable differences when the survey addressed gender specifically. These questions show the most variability in responses, and respondents were less likely to agree. To summarize, teachers reported confidence in their abilities for the most part, but their responses to gender-specific questions regarding leadership, classroom management, and other abilities varied (Table 2). However,

descriptive statistics cannot determine whether or not men and women are reporting differently, and if so, whether or not that difference is statistically significant.

Table 2. Descriptive Statistics of Dependent Variables

Variable	Categories	Likert %s	Variable	Categories	Likert %s
Lesson Planning	Strongly Agree	60%	Male STEM	Strongly Agree	1%
	Agree	38%		Agree	2%
	Neutral	1%		Neutral	21%
	Disagree	1%		Disagree	37%
	Strongly Disagree	0%		Strongly Disagree	39%
Teach Lessons	Strongly Agree	69%	Female Liberal Arts	Strongly Agree	0%
	Agree	30%		Agree	3%
	Neutral	1%		Neutral	21%
	Disagree	0%		Disagree	41%
	Strongly Disagree	0%		Strongly Disagree	34%
Integrate Technology	Strongly Agree	33%	Male Less Discipline Issues	Strongly Agree	1%
	Agree	51%		Agree	21%
	Neutral	12%		Neutral	21%
	Disagree	4%		Disagree	38%
	Strongly Disagree	0%		Strongly Disagree	19%
Manage Classroom	Strongly Agree	55%	Female Care Takers	Strongly Agree	5%
	Agree	39%		Agree	36%
	Neutral	4%		Neutral	29%
	Disagree	2%		Disagree	23%
	Strongly Disagree	0%		Strongly Disagree	7%
Positive Relationships	Strongly Agree	74%	Male Better Leaders	Strongly Agree	1%
	Agree	26%		Agree	7%
	Neutral	1%		Neutral	26%
	Disagree	0%		Disagree	35%
	Strongly Disagree	0%		Strongly Disagree	31%
Gender Positively Affects Performance	Strongly Agree	19%			
	Agree	23%			
	Neutral	46%			
	Disagree	6%			
	Strongly Disagree	6%			

The Mann-Whitney U test and ordinal regression analyses were used to test for gender differences. Use of the Mann-Whitney U test is based on the assumption of homogeneity of variance among selected variables. Using Levene's Test of Homogeneity of Variance, the assumption is met for each item at $p < 0.01$ level with the exception of one question that addressed the degree of participants' confidence in lesson planning ($p = 0.04$). Consequently, data from that question was removed. The Mann-Whitney U test results indicated no variability between males' and females' responses for gender-neutral questions (i.e. questions 9-18). However, when presented with gender-specific questions (i.e. 19-24), with the exception of one question (female teachers are more likely to be emotional caretakers), significant differences between men and women $p < 0.001$ level were found. Female teachers were less likely to agree with the statements compared to male teachers.

Results from ordinal regressions indicated no significant outcomes for gender-neutral questions. Table 3 presents findings from ordinal regressions on gender-specific questions only. The following predictor variables were included in the regressions: gender, years of experience, school grade level, school size, and race. Only statistically significant results from questions 19-24 are presented in Table 3.

Table 3. Statistically Significant Ordinal Regression Results

Gendered Questions	Variable	Significance
Gender Positively Affects Performance	Female	.001***
Male STEM teachers	Female	.000***
Female Liberal Arts	Female	.000***
Male Less Discipline Issues	Female	.000***
	0-5 yrs exp	.008***
	11-15 yrs exp	.035***
Female Care Takers	1A	.015*
	2A	.016*
	3A	.006*
	4A	.011*

Men Better Leaders	Female	.000***
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* $p < .05$. *** $p < .001$.

Five of the six questions report gender as a significant variable. The only question that did not find gender significant is the same question that the Mann-Whitney U test did not find significant (female teachers are more likely to be emotional caretakers). Next, the ordinal regressions reveal important differences in how men and women responded to gender-specific questions. Compared to men, women are less likely to strongly agree that gender affects performance in teaching different academic disciplines. Nor are women likely to strongly agree that males have fewer instances of behavior problems in the classroom, or that men are better school leaders. Gender is not a statistically significant variable for responses to the following statement: “Female teachers are more likely to be emotional caretakers.” School size and years of experience also significantly impact responses, so future research would benefit from investigating these variables more in-depth. To summarize, men were more likely to strongly agree with the statements which suggest males’ abilities to lead and manage classrooms is superior compared to females.

Discussion

Prior to writing this article, the authors could not find any previous research containing an interdisciplinary perspective in the study of teacher self-efficacy and gender. This study adds to the existing bodies of knowledge in sociology and education. Findings contribute practical information for incoming teachers and will assist the teacher preparation programs to better meet the needs of pre-service teachers. Participants did not report gendered-differences in their responses when presented with gender-neutral questions about self-efficacy. These results

suggest gendered outcomes in education may not be due to individual perceptions of self-efficacy and decisions made based on those perceptions. Evidence to support this finding exists in the larger body of research found within the larger cultural explanation of gender inequality (Ridgeway, 2011). Male respondents are more likely to strongly agree with statements which stereotype male and female teachers performances along gendered expectations, such as the notion male teachers have less discipline problems than female teachers. This impacts the ways in which teacher educators and administrators train and provide continuing education for teachers. Findings illuminate the need for further training in teacher training programs, as well as the necessity of training for K-12 educators to check their own biases regarding gender. As an additional consideration, the majority of K-12 teachers are women (Bureau of Labor and Statistics, 2012). Men may benefit in K-12 education from a minority status as a “token” because of the way students perceive the smaller number of male teachers encountered.

Cultural norms in the south may also influence the student-teacher dynamic and the way in which relationships are built. Sociological research finds that geographic location may influence attitudes and behaviors about gender (Charles, 2011; England et al., 2007). Southern cultures are more likely to display traditional ideas about gender. Men, on the other hand, may be more likely to show more aggressive and authoritative classroom management techniques. Students may also respond differently to their teachers depending on their gender, making effective classroom management an issue for some but not others. Although this is not definitive, the research does suggest that gender impacts our interactions substantively, indicating more research is needed to investigate the ways in which gender impacts classroom management.

Limitations

Limitations are typical of those using the survey method approach. Less is known about what happens in the classroom. Researchers would learn much more about the complex, interpersonal relationships that largely impact classroom management if they observed classrooms in progress, either through direct observation, through video observation, and/or via teacher and student interviews. Additionally, the survey was not sent to administrators; research indicates administrators set the pace and the mood for K-12 institutions (Cohen et. al, 2009). Favoritism and other situational factors, such as budgetary needs, state of Texas laws and regulations, and social or political power may also significantly impact a teacher's self-efficacy and classroom management techniques. The survey instrument could also be a limitation to this study. Fine (2010) suggests demographic questions at the start of a survey can bias the responses of the participants to respond the survey questions in gendered roles. Potentially, the instrument could have been improved by leaving the demographic questions at the end of the survey. The authors also use the concept of gender loosely by referring to it as synonymous with sex. Future researchers should focus on the differences between sex and gender and be more intentional with their data collection tools. Similarly, findings could be skewed due to social desirability bias, with teachers reporting high rates of self-efficacy in order to appear more competent than they actually feel (Fisher, 1993). Finally, the sample could display a selection effect, meaning the teachers who decided to participate in the survey are unique and different from the majority of teachers in the region. It is possible these teachers may feel more strongly about the topic of the survey and are therefore more likely to participate.

Conclusion

Future studies related to gender and teacher self-efficacy would be useful to see if areas in Texas and the United States would also find significance in the impact of gender on teaching performance, teacher perceptions of competence in STEM subjects, female competence in Liberal Arts, and gendered significance in classroom management and behavior issues. These results are important to expand to include the ethnic and racial diversity in Texas and the United States which is a less-studied topic in our fields. Additionally, studies in which students were asked the same questions regarding teaching abilities among men and women will likely substantiate additional research which indicates students prefer male teachers over female teachers (MacNell, Driscoll, & Hunt, 2015). Finally, it would be helpful to investigate within-group gender differences. For example, researchers could examine the differences between men who are teachers only and men who are also coaches. Coaches may use similar coaching techniques within their classroom management that may affect student interaction and feelings of self-efficacy. Coach-status may also give them special privileges not available to non-coach teachers. These findings from this study suggest that the influence of gender roles attitudes in educational classroom warrants even greater attention.

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Appendix A. Survey Instrument

Descriptive Questions

- What is your gender? Male/Female
- What is your age?
- How many years of teaching experience do you have?
- What is your race? White; Black or African American; American Indian and Alaska Native; Asian; Native Hawaiian and Other Pacific Islander; two or more races {point and click with the option to write if respondent selects two or more races}
- Are you Hispanic? Yes/No
- How many students attend your school (K-12)?
- Which of the following best describes your school? {click option: rural, suburban, or urban}
- Which of the following best describe your school's grade levels? {click option: elementary, middle school, or high school}

The following are Likert Scale questions. Respondents point and click one of the following answers: Strongly Agree, Agree, Neutral, Disagree, Strongly Disagree

Curriculum Questions

- I feel confident in my ability to plan lessons on the curriculum.
- I feel confident in my ability to teach lessons on the curriculum.
- I feel confident in my ability to assess students' understanding of the curriculum.
- I feel confident in my ability to change lesson plans on the curriculum under pressure.
- I feel confident in my ability to integrate technology into lessons on the curriculum.

Interpersonal Skills Questions

- I feel confident in my ability to manage my classroom effectively.
- I feel confident in my ability to establish positive relationships with students.
- I feel confident in my ability to collaborate well with co-workers regarding work-related tasks.
- I feel confident in my ability to communicate effectively with parents or guardians.
- I feel confident in my ability to resolve conflicts or problems when they arise.

Gender Questions

- My gender positively affects my teaching performance.
- Men are more competent teachers in science, technology, engineering, and math (STEM) subjects.
- Women are more competent in Liberal Arts subjects.
- Male teachers have fewer instances of misbehavior in the classroom.
- Female teachers are more likely to be emotional caretakers.
- Men are better leaders in my school.