# First generation preservice teachers' self-efficacy regarding the teaching of diverse students and the incorporation of diverse topics into classroom content

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## Abstract

The purpose for this study was to examine whether there is a difference in self-efficacy between first generation and non-first generation preservice teachers to address the teaching of diverse PK-12 students. Bandura's (1997) concept of self-efficacy was employed as a framework to understand the results of the study. A cross-sectional design was used to analyze a self-efficacy survey that was administered to first generation and non-first generation preservice teachers. A total of 55 preservice teachers nearing completion of their teacher preparation at one university participated. The data demonstrates statistically significant differences of unequal self-efficacy development between first generation and non-first generation preservice teachers despite being trained in the same program. The findings may shed light on how educator preparation programs can better prepare first generation preservice teachers to serve diverse students and the incorporation of diverse topics into classroom content.

## Keywords

## Author Bio

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## Introduction

In the PK-12 teacher context, teachers are expected to accommodate diverse student populations that sometimes differ significantly from themselves (U.S. Department of Education, 2020). The term *diverse students* is used in the current study as a shorthand that represents the spirit of multicultural education and describes any PK-12 student exposed to unequal educational experiences by virtue of having different gender, sexual orientation, social class, and ethnic, racial, or cultural characteristics from other students (Banks & Banks, 2019). The interest of teacher educators is to prepare preservice teachers - students pursuing training to become licensed teachers - to meet the needs of the diverse student populations in their classes once they are the teachers of record. In the education literature of preservice teachers teaching diverse students, there is limited research that takes into consideration the social identity of the preservice teacher and that identity's influence in the dynamics of teaching. This is especially evident when researching the social identities of preservice teachers who are first-generation college graduates in their family. The term *first-generation* college graduate is defined by the U.S. Department of Education as "students who enrolled in postsecondary education and whose parents do not have any postsecondary education experience" (Redford & Hoyer, 2017, p. 3).

Given the need to prepare preservice teachers for diverse students, key questions emerge: Have teachers who teach in diverse classrooms learned and acquired the necessary knowledge, skills, and dispositions to effectively teach their students? How many of these teachers are first generation in their family to graduate from college, and does that make a difference? What was their experience as preservice teachers during their own teacher training program? The focus of the current study is to delve into these questions, in order to

understand the intersectionality of first-generation status, preservice teacher training, self-efficacy, and preparedness to address the needs of diverse students.

The literature on first-generation college students clearly leads researchers to understand that *first generation* is a category of people with unique behaviors and outcomes. One third of the student body population in colleges and universities identify as first-generation, yet only 56% earn a bachelor's degree within six years, while 74% of non-first-generation students graduate within that same period (Forrest Cataldi et al., 2018). The research on first-generation college students is broad and includes topics such as understanding students' personal challenges as well as systemic factors in higher education that impact first-generation students' success (Chen, 2005; The Pell Institute, 2016). It is clear: first-generation status has real effects on students' experience through college.

Despite the increasing need for effective educators in diverse-population schools, research shows preservice teachers encounter various barriers to developing effective competencies (Bauml et al., 2016; Benton-Borghi & Chang, 2012; Brooks & Houston, 2015; Castro, 2010; He, 2013; Siwatu, 2011a; Sobel, Gutierrez, & Blanchett, 2011; Wright et al., 2018; Wyatt et al., 2008; Young, 2010). In most of these studies, *preservice teacher* is analyzed as an aggregated category and preservice teachers' social identities were not considered in the research inquiries. Even more concerning, there is minimal research exploring the particular experiences of preservice teachers who are first-generation college students and teach diverse PK-12 students. The research available combines first generation participants with White students from working classes (Van Galen, 2010), but does not explore *first generation* itself as a distinct category as part of the research into the inquiry of preservice teachers' preparedness to teach diverse students. The current study attempts to

address this gap in the literature.

## Theoretical Framework

To understand the data results of the current study, Bandura's concept of self-efficacy was employed, specifically its use in teacher self-efficacy. Bandura (1997) defines self-efficacy as the "belief in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 3). Given the paucity of research in this area, a look at historic sources is helpful to understand the concept of teacher self-efficacy. For example, Berman et al. (1977) found a positive correlation between teachers' self-efficacy and goals achieved, teacher change, and student performance. More studies demonstrated a correlation between teacher self-efficacy and student achievement (Ashton & Webb, 1982). Further studies demonstrated how high self-efficacy teachers and low self-efficacy teachers behaved differently with students in terms of classroom organization, instruction, teacher feedback to students, academic standards expectations, and "withitness" (Ashton et al., 1983; Gibson & Dembo, 1984; Brouwers & Tomic; 2000; Khani & Mirzaee, 2015; Skaalvik & Skaalvik, 2007; Tschannen-Moran & Hoy, 2001). Cooper et al. (1982) found that low teacher self-efficacy was correlated with more rigid classroom management styles and a development of low expectations toward some students. These studies revealed the value in addressing self-efficacy in teacher education. Tucker et al. (2005) captures why educational researchers began to consider self-efficacy as an important concept to investigate:

> Teachers' sense of efficacy is one of the few teacher characteristics consistently related to student achievement….[T]eachers who believe that student learning can be influenced by effective teaching despite home and peer influence and who have confidence in their ability to teach persist longer in their teaching efforts, provide

greater academic focus in the classroom, give different types of feedback, and ultimately improve student performance. (pp.29-30)

The current study employs self-efficacy with preservice teachers to determine its role in developing first-generation teachers to work with diverse populations.

## Literature Review

Research on the self-efficacy of first-generation preservice teachers to work with diverse PK-12 students is in its infancy. Therefore, the current review of the literature includes related research to capture what is available that may inform the current study.

### First Generation and Self-Efficacy

A look at the broad research on first-generation college student status and self-efficacy is helpful before narrowing into the overlap of these two categories. According to Atherton (2014), there was no difference between first-year, first-generation status college students and first-year, non-first-generation status college students in subjective self-ratings of overall academic, writing, or mathematical abilities. However, when considering self-efficacy, Zajacova et al. (2005) found different results. These researchers wanted to understand the relationship between academic self-efficacy and first-year college students' academic success. They found that self-efficacy was "the single strongest predictor of GPA [grade point average]" in all their models. Equally insightful were the findings that self-efficacy did not have a significant effect on students' persistence in their second year. They concluded that "...students may drop out [of college] for reasons unrelated to their beliefs about being able to handle academic demands" (p. 696). Other researchers have also found that self-efficacy is a strong predictor of college GPA (Gore, 2006; Khan & Nauta, 2001). Would results be the same if these researchers had considered their participants' first-generation status? Exploring

further, Vuong et al. (2010) researched self-efficacy and the academic success of college sophomore first-generation students compared to non-first generation sophomore students. They surveyed 1,291 participants from a large public institution where 34% were first generation and 57% were non-first generation. They found that GPA was a variable correlating to self-efficacy. They also found that first-generation students have lower overall GPAs in comparison to non-first generation students. Interestingly, first-generation students did not have different perceptions of their self-efficacy as compared to non-first generation students. In another study, Elliott (2014) studied 2,358 college freshmen at 25 private, four-year institutions. She found that high school GPA was significantly positively associated with college GPA and students with higher academic self-efficacy beliefs earned higher GPAs. Ultimately, she found that, although first-generation students had high self-efficacy and high GPAs, they had lower GPAs when compared to non-first generation college students.

This literature offers insight into the relationship between self-efficacy, first-generation status, and college academic success. However, no studies offer insight into self-efficacy on what they have learned, being that GPA merely represents a general understanding that they *did* learn. Clearly, this is a gap in the literature. This literature is also not about preservice teachers specifically which is the interest of the current study.

**Preservice Teachers and Self-Efficacy**

The research on preservice teachers, diverse PK-12 students, and self-efficacy is limited and focuses predominantly on preservice teachers working with racially and culturally diverse students, as well as preservice teachers working with students in special education. For example, in research on preservice teachers working with culturally and racially diverse students and evaluating self-efficacy, findings show that preservice teachers are more

efficacious in suburban rather than urban contexts (Siwatu, 2011b). In addition, preservice teachers reported feeling more efficacious at making diverse students feel like important members of the classroom and building positive relationships, but not at attempting to use native language words and phrases to support English language learners (Siwatu, 2007). In subsequent work by Siwatu in 2016, preservice teachers reported low self-efficacy on implementing culturally responsive pedagogy, citing the lack of exposure to culturally responsive topics and models, coupled with not being taught how to teach a broader range of culturally diverse students. Additional observations showed preservice teachers reported evaluating culturally responsive teaching topics as minimally relevant; realized the difficulty associated with implementing culturally responsive practices; experienced unexpected consequences after engaging in culturally responsive behaviors; and had an ineffective field experience (Siwatu et al., 2016). Along with research on self-efficacy of preservice teachers working with culturally and racially diverse students, there is extensive research on self-efficacy and preservice teachers working with special education PK-12 students.

It wasn't until 2017 and 2018 that an instrument was created to specifically assess self-efficacy, preservice teachers, and teaching students with special needs (Lombardo-Graves, 2017; Zhang et al., 2018). However, there was both qualitative and quantitative research undertaken before 2018 that attempted to capture and investigate preservice teachers' experiences with students with disabilities and their self-efficacy. Findings showed that it is not enough that preservice teachers are merely exposed to students with disabilities; it is necessary that they have meaningful and frequent experiences motivating students to learn in order for their self-efficacy to develop (Shillingford & Karlin, 2014). Meaningful experiences were captured in research on the effects of co-teaching between classroom teachers and

student teachers when working in classrooms with students with disabilities. According to Strieker et al. (2013), co-teaching can be a successful approach to address the questions and needs of preservice teachers from an experienced teacher. This can ultimately lead to student teachers (preservice teachers in their last field experience before graduating) improving their self-efficacy and positively impacting the performance of students with disabilities. The specific results of preservice teachers' positive experiences with students with disabilities included: likely to express high expectations for their students with exceptionalities, empower students, and hold their students accountable for learning (Shillingford & Karlin, 2014). Other research included comparing skill self-ratings of student teachers in general education and special education programs. Student teachers majoring in special education generally self-rated their skills higher than students teachers in general education programs (King-Sears et al., 2012).

The available research is important, but limited. Ideally, preservice teachers will need preparation to teach every form of diversity in the classroom. Yet where is the research on preservice teachers, self-efficacy, and working with students who are LGBT, first-generation, homeless, or other social identities that research shows struggle in the school system?

**Inservice Teachers, Self-Efficacy, and Working with Diverse Populations**

As research in this area is emerging, referencing the literature of inservice teachers (meaning being a licensed teacher of record in their own PK-12 classroom) on self-efficacy is helpful to better understand the implications of self-efficacy in relation to teachers' impact on the PK-12 classroom. Regarding teacher self-efficacy and working with diverse populations, self-efficacy varies by topic and diverse population. Teachers are more efficacious with some culturally different populations but not other culturally diverse populations (Atiles et al.,

2017). Additionally, teachers can increase self-efficacy in working with diverse populations

after further training in specific ways to work with that population (Tucker et al., 2005).

Finally, teacher self-efficacy is related to an increase in special education referrals and family

involvement in school, indicating a direct impact in students' educational experiences

(Berman et al., 1977; Garcia, 2004; Podell & Sooodak; 1993).

**Research question**

Throughout the literature review, the focus of the investigation was indirectly related

to learning and self-efficacy. What about self-efficacy and the content of what preservice

teachers learned? The operating assumption of teacher preparation is that preservice teachers

are qualified to teach PK-12 students in their respective authorizations upon completion of the

program. The current investigation's specific research question was: Is there a difference in

self-efficacy between first generation and non-first generation preservice teachers to address

the teaching of diverse PK-12 students?

## Methodology

This study employed a quantitative, cross sectional design to investigate the research

question. A survey was developed and received Institutional Review Board (IRB) approval

for implementation. The survey tool was reviewed face to face and subsequently delivered

electronically after the preservice teachers' orientation to student teaching and was collected

anonymously within the next two weeks. According to Ruane (2016), cross sectional research

"addresses our need to document facts or collect data at a single moment in time…". Its many

uses include "pursuing correlational analysis…[and] answering questions about associations

between variables" (p. 79). SPSS was used to cross-tabulate the variables. The survey design

of a 2x4 matrix called for using the Likelihood Ratio (LR) instead of Chi-Square ($X^2$) to

account for a low expected count in some of the cells, and the level of statistical significance was set at 0.05. An LR value of 2-5 is a small increase, 5-10 is a moderate increase, and 10 and greater is a persuasive increase in the likelihood of the outcome of interest. Cramer's V (V) was used to identify the strength of the variable associations. A value of more than 0.3 reflects a strong relationship between variables. For the purpose of this investigation, the independent variable was preservice teachers' first generation status with two response options: *non-first generation* and *first generation*. The dependent variables were the questions on a survey that inquired about preservice teachers' perspectives toward diversity; their perceived preparedness level to address diversity in the classroom; their confidence to include diversity topics in their teaching; and their confidence to include diversity issues in their teaching that they had developed throughout their educational preparation program (EPP).

**Instrument Reliability and Validity**

The scale for the current study was previously employed in a self-efficacy study with preservice teachers in an urban context and was demonstrated to be reliable and valid (Vega et al., 2018). Cronbach's Alpha was used to determine internal consistency. This test of coefficient of reliability was appropriate because there are more than 10 items on the scale (Pallant, 2007). Cronbach's Alpha was classified as excellent after results indicated a coefficient range between .909 and .958 (George & Mallery, 2003). After Principal Axis Factoring with Varimax Rotation was performed for each survey section, results showed the variability for each section ranged from 56.76% to 72.24%, demonstrating correspondence of items with the measured constructs. Finally, Factor Analysis was conducted. The results fulfilled the Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity.

**Setting**

This study was conducted in a public urban university in the western United States with nearly 20,000 students. The School of Education offers a variety of license areas including Early Childhood Education, Elementary Education, Special Education and several secondary and K-12 content areas. The instrument was administered to all preservice teachers upon completion of their teacher preparation course sequence and immediately preceding the beginning of their student teaching placement. Student teaching spans 15 consecutive weeks with a supervising teacher in a PK-12 classroom corresponding to their specific training program, with placement in a diverse setting prioritized whenever possible.

**Participants**

A total of 55 out of 102 preservice teachers responded to the survey. The demographics of the participants included 29 women, 16 men, one gender nonconforming, and nine participants that chose not to identify. The age range was 19 to 45 with a median age of 24. Since the study was focused on *first generation* as the primary category, there was not an attempt to identify further race and ethnic demographic data.

## Results

The preservice teachers were asked 12 questions, with nine of those questions featuring six to sixteen subitems. Table 1 illustrates the eight subitems that were found to be statistically significant.

**Table 1**

*Statistically Significant Questions*

Q1. Indicate the level of competency that you have to work with students who are homeless.

Q2. Indicate the level of competency that you have to work with students who have learning disabilities.

Q3. Indicate your competency level to include topics and issues related to Special Education in the teaching process: Working with parent(s) or guardian(s).

Q4.  Indicate your competency level to include topics and issues related to Special Education in the teaching process: Label or categorize special education students.

Q5. Indicate your competency level to include topics and issues related to gender in the teaching process: Single-gender education (all girls schools, all boys schools).

Q6. Indicate your competency level to include topics and issues related to gender in the teaching process: Sexism-Free Education.

Q7.  Indicate your competency level to include topics and issues related to gender in the teaching process: Feminist Movements.

Q8.  Indicate your competency level to include topics and issues related to gender in the teaching process: Homophobia.

The preservice teachers had a choice of four responses for each question. Table 2 illustrates

the four response prompts to the survey questions shown in Table 1.

**Table 2**

*Response Prompt*

| **Column Advanced (CA)**: I have advanced theoretical knowledge and the necessary practical skills to address this topic in school. | **Column Intermediate (CI)**: I have sufficient theoretical knowledge and some practical skills to address this topic in school. | **Column Basic (CB)**: I have some theoretical knowledge, but I do not have the practical skills to address this topic in school. | **Column Pre Basic (CPB)**: I do not have the theoretical knowledge nor the practical skills necessary to approach this topic in school. |
|---|---|---|---|

Table 3 illustrates the data of all respondents.

**Table 3**

*Cross Tabulation of Percentage Within the Level of Competency Between Non-First Generation and First Generation Preservice Teachers for the Statistically Significant Questions*

| Response Prompt | First Generation Status | Column Advanced %(n) | Column Intermediate %(n) | Column Basic %(n) | Column Pre Basic %(n) | Total % (n) | $X^2$ | df | p | V | LR | df | p |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Non-First Gen | 33.30(2) | 77.80(7) | 93.30(14) | 69.20(9) | 74.40(32) | | | | | | | |
| | First Gen | 66.70(4) | 22.20(2) | 6.70(1) | 30.80(4) | 25.60(11) | 8.38 | 3 | 0.04 | 0.44 | 8.33 | 3 | 0.04 |
| Q1 | Total | 100(6) | 100(9) | 100(15) | 100(13) | 100(43) | | | | | | | |
| | Non-First Gen | 66.70(6) | 93.30(14) | 70.60(12) | 0(0) | 74.40(32) | | | | | | | |
| | First Gen | 33.30(3) | 6.70(1) | 29.40(5) | 100(2) | 25.60(11) | 9.05 | 3 | 0.03 | 0.46 | 9.5 | 3 | 0.02 |
| Q2 | Total | 100(9) | 100(15) | 100(17) | 100(2) | 100(43) | | | | | | | |
| | Non-First Gen | 71.40(5) | 100(13) | 57.10(8) | 50.00(2) | 73.70(28) | | | | | | | |
| | First Gen | 28.60(2) | 0(0) | 42.90(6) | 50.00(2) | 26.30(10) | 7.8 | 3 | 0.05 | 0.45 | 10.76 | 3 | 0.01 |
| Q3 | Total | 100(7) | 100(13) | 100(14) | 100(4) | 100(38) | | | | | | | |
| | Non-First Gen | 85.70(6) | 77.80(7) | 92.30(12) | 33.30(3) | 73.70(28) | | | | | | | |
| | First Gen | 14.30(1) | 22.20(2) | 7.70(1) | 66.70(6) | 26.30(10) | 10.48 | 3 | 0.02 | 0.53 | 10.02 | 3 | 0.02 |
| Q4 | Total | 100(7) | 100(9) | 100(13) | 100(9) | 100(38) | | | | | | | |
| | Non-First Gen | 0(0) | 91.70(11) | 72.20(13) | 83.30(5) | 74.40(29) | | | | | | | |
| | First Gen | 100(3) | 8.30(1) | 27.80(5) | 16.70(1) | 25.60(10) | 10.88 | 3 | 0.01 | 0.53 | 10.84 | 3 | 0.01 |
| Q5 | Total | 100(3) | 100(12) | 100(18) | 100(6) | 100(39) | | | | | | | |
| | Non-First Gen | 33.30(2) | 83.30(10) | 88.90(16) | 33.30(1) | 74.40(29) | | | | | | | |
| | First Gen | 66.70(4) | 16.70(2) | 11.10(2) | 66.70(2) | 25.60(10) | 10.45 | 3 | 0.02 | 0.52 | 9.57 | 3 | 0.02 |
| Q6 | Total | 100(6) | 100(12) | 100(18) | 100(3) | 100(39) | | | | | | | |
| Q7 | Non-First Gen | 33.30(2) | 90.00(18) | 75.00(9) | 0(0) | 74.40(29) | 10.77 | 3 | 0.01 | 0.53 | 10.27 | 3 | 0.02 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| First Gen | 66.70(4) | 10.00(2) | 25.00(3) | 100(1) | 25.60(10) | | | | | | | |
| Total | 100(6) | 100(20) | 100(12) | 100(1) | 100(39) | | | | | | | |
| Non-First Gen | 40.00(2) | 81.00(17) | 90.90(10) | 0(0) | 74.40(29) | 10.96 | 3 | 0.01 | 0.53 | 10.52 | 3 | 0.02 |
| First Gen | 60.00(3) | 19.00(4) | 9.10(1) | 100(2) | 25.60(10) | | | | | | | |
| Q8  Total | 100(5) | 100(21) | 100(11) | 100(2) | 100(39) | | | | | | | |

## Analysis

As shown in Table 3, Q1 asked preservice teachers if they felt competent to work with children that are homeless and revealed statistically significant differences between first generation and non-first generation participants (LR = 8.33, df=3, p=0.04, V=0.44). Similar significance was found in Q2, which asked preservice teachers if they felt competent to work with students with disabilities (LR= 9.5, df=3, p=0.02, V=0.46). On Q3 and Q4, which asked preservice teachers to gauge their competency on including topics or issues related to special education, the differences were statistically significant for working with parent(s) or guardian(s) (LR=10.76, df=3, p=0.01, V=0.45), as well as labeling or categorizing special education students (LR=10.02, df=3, p=0.02, V=0.53). Statistically significant differences were noted on all questions related to gender: Q5, regarding single-gender education (LR=10.84, df=3, p=0.01, V=0.53); Q6, regarding sexism-free education (LR=9.57, df=3, p=0.02, V=0.52); Q7, regarding feminist movements (LR=10.27, df=3, p=0.02, V=0.53); and Q8, regarding homophobia (LR=10.52, df=3, p=0.02, V=0.53). The following analysis is categorized by the results of the survey and shown in Figures 1-4 to offer a visual aid of the analysis for better understanding.

Overall results of the survey questions are shown in Columns Advanced and

Intermediate for participant self-efficacy responses, and in Columns Basic and Pre Basic for

participant low self-efficacy responses. Columns Advanced and Intermediate in the survey

capture how many preservice teachers felt they had sufficient knowledge and skills to teach

once they become inservice teachers. Columns Basic and Pre Basic are responses showing

that preservice teachers lack the knowledge and/or skills to teach once they become inservice

teachers.

**Columns Advanced and Intermediate**

A deeper examination of the self-efficacy response columns compares the level of

competency that non-first generation and first generation participants reported in the

Advanced and Intermediate columns of the survey.

***Column Advanced (CA): I have advanced theoretical knowledge and the necessary***

***practical skills to address this topic in school.*** Figure 1 shows the analysis of Column

Advanced on the survey. On Q2 which asked preservice teachers if they felt competent to

work with students who have learning disabilities, non-first generation preservice teachers

scored 66.70%, higher than first generation preservice teachers who scored 33.30%.

Similarly, on questions that asked preservice teachers to identify their competency on

including topics or issues related to special education, non-first generation preservice teachers

scored higher than first generation preservice teachers: Non-first generation scored 71.40%

(Q3, working with parent(s) or guardian(s)) and 85.70% (Q4, label or categorize special

education students), compared to first generation individuals who scored 28.60% (Q3,

working with parent(s) or guardian(s)) and 14.30% (Q4, label or categorize special education

students).

On Q1, which asked preservice teachers if they felt competent to work with students

who are homeless, non-first generation preservice teachers scored 33.30%, lower than first

generation preservice teachers who scored 66.70%.

**Figure 1**

*Column Advanced (CA):I Have Advanced Theoretical Knowledge and the Necessary*

*Practical Skills to Address This Topic in School %(n)*
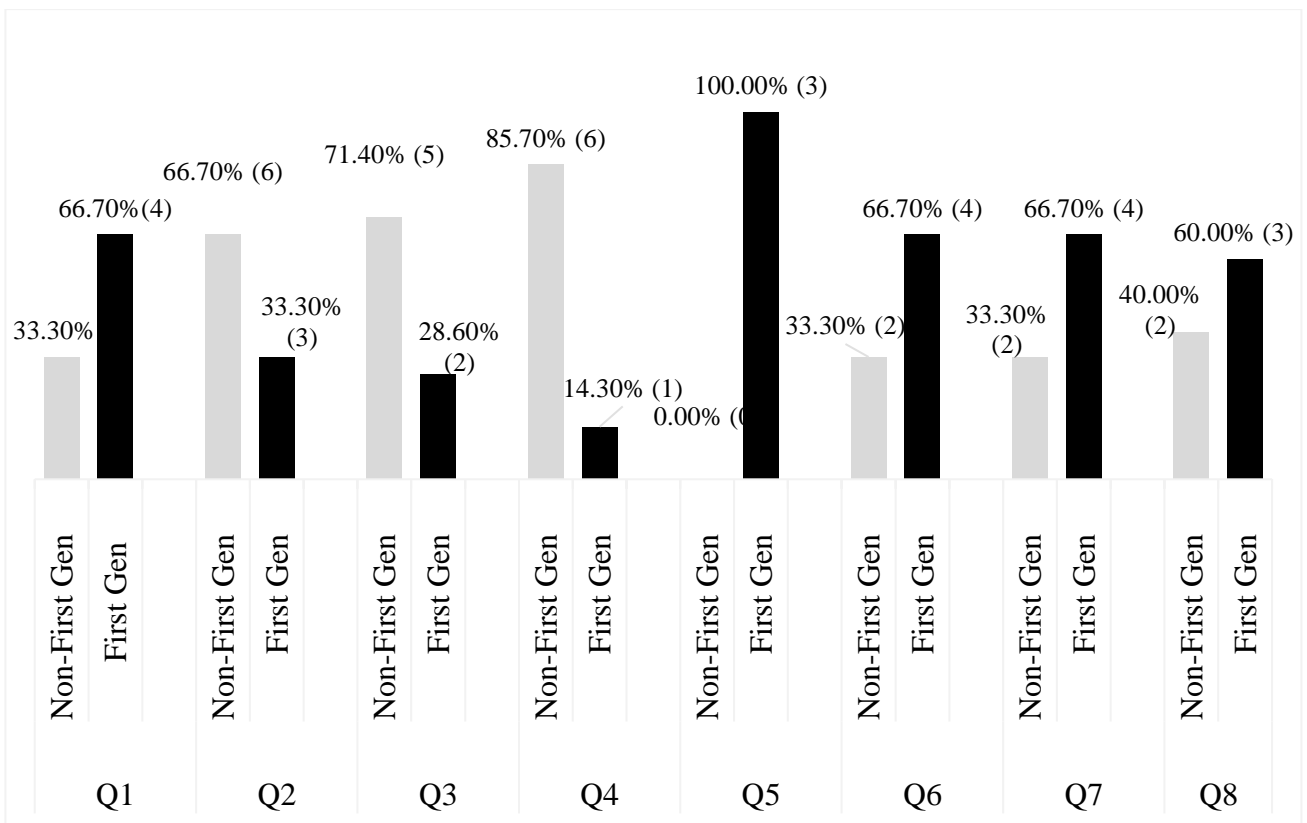


On questions that asked preservice teachers to identify their competency on including

topics or issues related to gender, non-first generation preservice teachers scored lower than

first generation preservice teachers. Non-first generation scored 0.00% (Q5, single-gender

education), 33.30% (Q6, sexism-free education), 33.30% (Q7, feminist movements), and

40.0% (Q8, homophobia) as compared to first generation preservice teachers who scored

100% (Q5, single-gender education), 66.70% (Q6, sexism-free education), 66.70% (Q7, feminist movements), and 60.00% (Q8, homophobia).

   *Column Intermediate (CI): I have sufficient theoretical knowledge and some practical skills to address this topic in school.* As illustrated in Figure 2, non-first generation preservice teachers scored significantly higher than the first generation preservice teachers on every survey question in the intermediate column. On Q1, which asked preservice teachers if they felt competent to work with students who are homeless, non-first generation preservice teachers scored 77.80%, higher than first generation preservice teachers who scored 22.20%. On questions that asked preservice teachers to identify their competency on including topics or issues related to special education, non-first generation preservice teachers scored 93.30% (Q2, disabilities), 100% (Q3, working with parents or guardians), and 77.80% (Q4, label or categorize special education students), in contrast to first generation preservice teachers who scored 6.70% (Q2, disabilities), 0% (Q3, working with parents or guardians), and 22.20% (Q4, label or categorize special education students). Finally, on questions that asked preservice teachers to identify their competency on including topics or issues related to gender, non-first generation scored 91.70% (Q5, single-gender education), 83.30% (Q6, sexism-free education), 90.00% (Q7, feminist movements), and 81.00% (Q8, homophobia), compared to first generation preservice teachers who scored 8.30% (single-gender education), 16.70% (Q6, sexism-free education), 10.00% (Q7, feminist movements), and 19.00% (Q8, homophobia).

*Figure 2*

*Column Intermediate (CI): I Have Sufficient Theoretical Knowledge and Some Practical*

*Skills to Address This Topic in School %(n)*
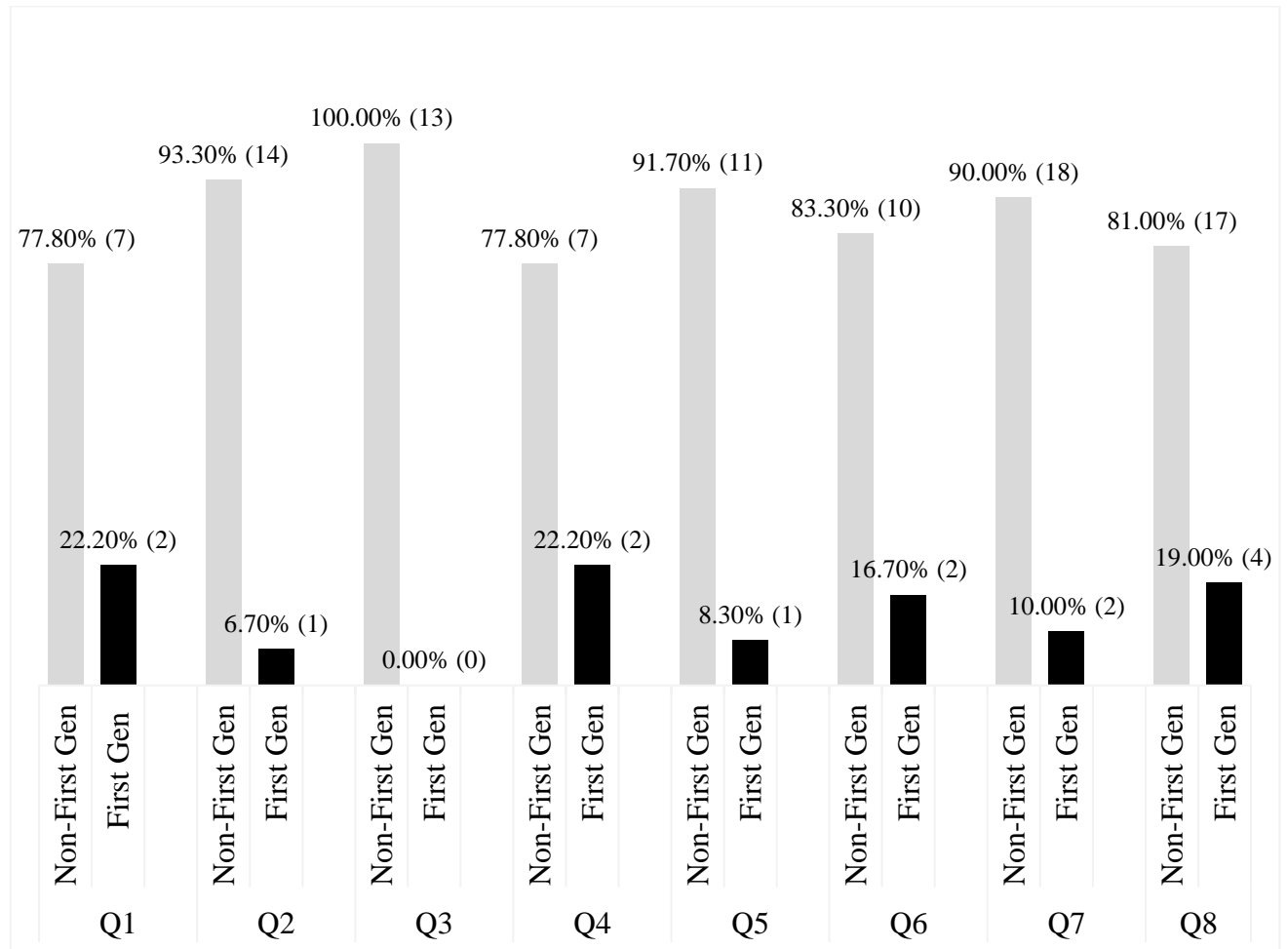


**Columns Basic and Pre Basic**

A deeper look at each low self-efficacy answer category follows, comparing the level of competency that non-first generation and first generation participants scored.
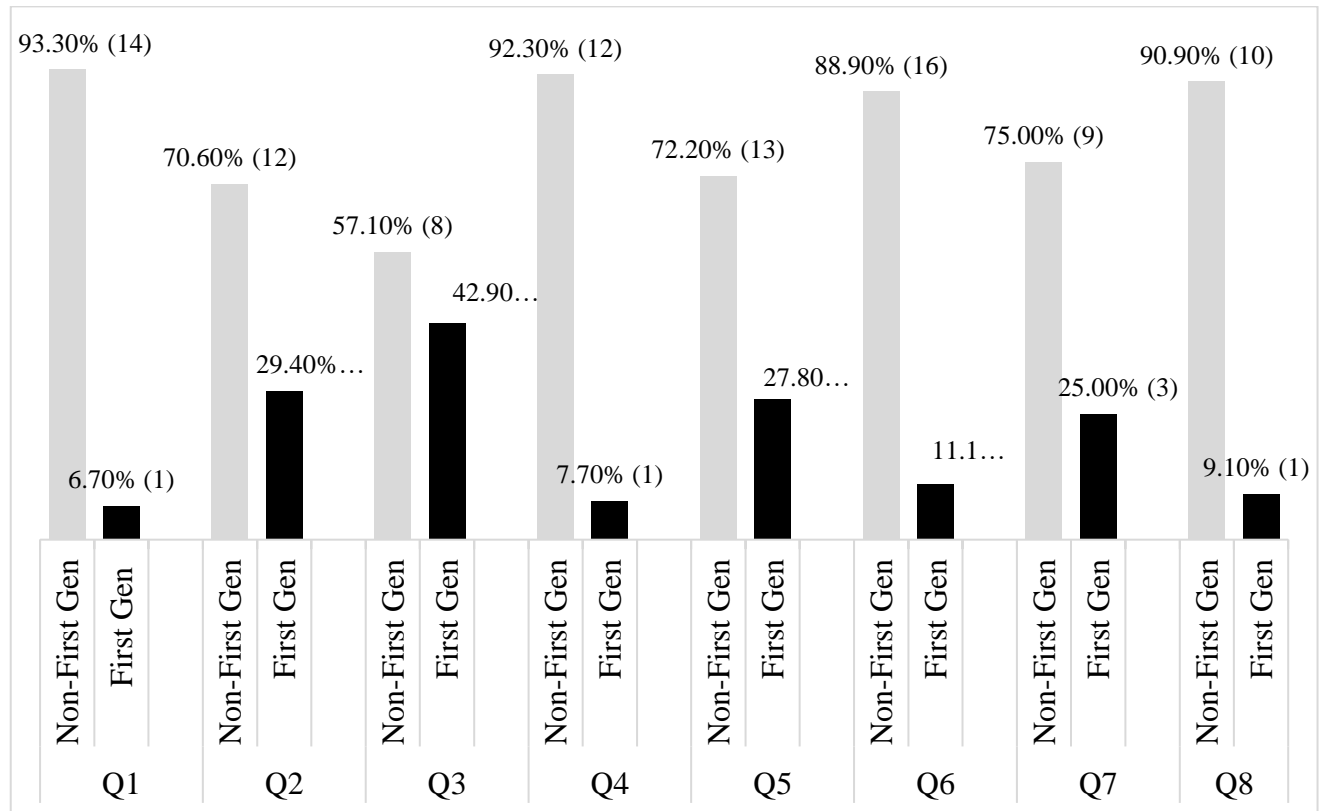
*Column Basic (CB): I have some theoretical knowledge, but I do not have the practical skills to address this topic in school.* Figure 3 illustrates a significant difference in scores between non-first generation preservice teachers and first generation preservice

teachers. In every question, non-first generation preservice teachers scored higher compared to first generation preservice teachers. On Q1, which asked preservice teachers if they felt competent to work with students who are homeless, non-first generation preservice teachers scored 93.30%, significantly higher than first generation preservice students who scored 6.70%. Similarly, on Q2 that asked preservice teachers if they felt competent to work with students who have learning disabilities, non-first generation preservice teachers scored 70.60%, compared to first generation preservice teachers who scored 29.40%. On questions that asked preservice teachers to identify their competency on including topics or issues related to special education, non-first generation preservice teachers scored higher than first generation preservice teachers: 57.10% (Q3, working with parent(s) or guardian(s)), and 92.30% (Q4, label or categorize special education students), compared to 42.90% (Q3, working with parent(s) or guardian(s)), 7.70% (Q4, label or categorize special education students). Finally, on questions that asked preservice teachers to identify their competency on including topics or issues related to gender, non-first generation preservice teachers scored higher than first generation preservice teachers: 72.20% (Q5, single-gender education), 88.9% (Q6, sexism-free education), 75.00% (Q7, feminist movements), and 90.90% (Q8, homophobia), compared to 27.80% (Q5, single-gender education), 11.10% (Q6, sexism-free education), 25.00% (Q7, feminist movements), and 9.10% (Q8, homophobia).

*Figure 3*

*Column Basic (CB):I Have Some Theoretical Knowledge, but I Do Not Have the Practical Skills to Address This Topic in School %(n)*



***Column Pre Basic (CPB): I do not have the theoretical knowledge nor the practical skills necessary to approach this topic in school***. Figure 4 illustrates how non-first generation and first generation preservice teachers scored in this column. Non-first generation preservice teachers scored higher on two questions: On Q1, which asked preservice teachers if they felt competent to work with students who are homeless, non-first generation preservice teachers scored 69.20%, higher than first generation preservice students who scored 30.80%. On Q5, which asked preservice teachers to identify their competency on including topics or issues related to gender, non-first generation preservice

teachers scored 88.30% on single-gender education, a higher score than first generation preservice teachers who scored 16.70%. On Q3, which asked preservice teachers to identify their competency on including topics or issues related to special education, both non-first generation and first generation preservice teachers scored 50.00% in working with parent(s) or guardian(s).

On the remaining questions, non-first generation preservice teachers scored lower than first generation respondents. On Q2, which asked preservice teachers if they felt competent to work with students who have learning disabilities, non-first generation preservice teachers scored 0%, a score lower than first generation preservice teachers who scored 100%. On Q4, which asked preservice teachers to identify their competency on including topics or issues related to special education, non-first generation preservice teachers scored 33.30% on labeling or categorizing special education students, a lower score than first generation preservice teachers who scored 66.70%. On the questions that asked preservice teachers to identify their competency on including topics or issues related to gender, non-first generation preservice teachers scored 33.30% (Q6, sexism-free education), 0.00% (Q7, feminist movements), and 0.00% (Q8, homophobia) as compared to first generation preservice teachers who scored 66.7% (Q6, sexism-free education), 100% (Q7, feminist movements), and 100% (Q8, homophobia).

**Figure 4**

*Column Pre Basic (CPB):I Do Not Have the Theoretical Knowledge Nor the Practical Skills*

*Necessary to Approach This Topic in School %(n)*
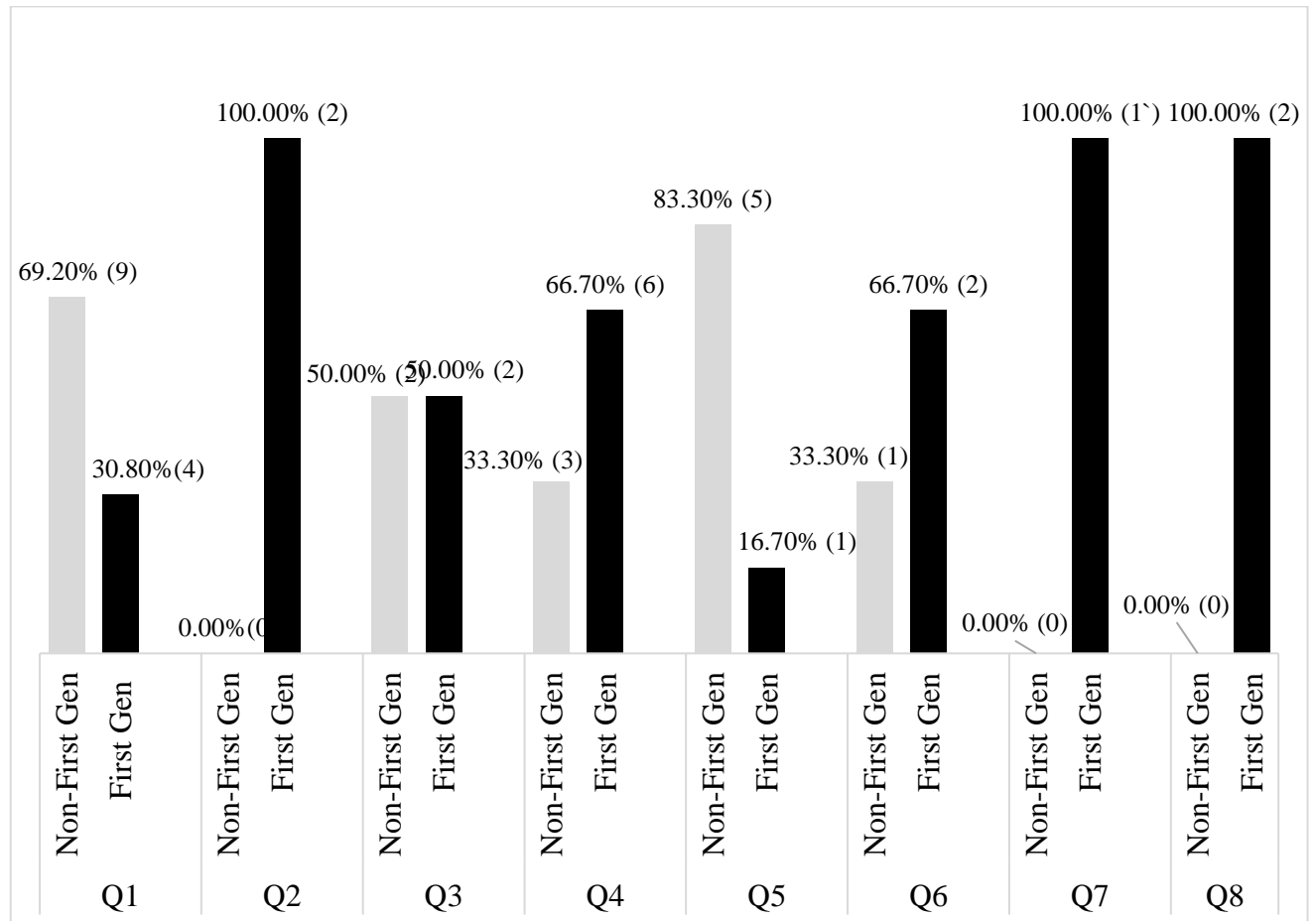


**Limitations**

There are limitations to this study that should be addressed. Although the researchers

intentionally avoided identifying preservice teachers' racial demographics to highlight the

singular category of first-generation status, including this information could have yielded

further insight on the data. Another limitation is that the correlational nature of cross-

sectional studies prevents researchers to demonstrate causality. Since the survey collected

self-reported data, response bias is also a possible limitation: some preservice teachers may feel pressure to respond as having more self-efficacy in order to be viewed as more socially desirable. Because limited sample sizes can produce inflated statistical significance, the implications of the study should be taken with caution. Until a larger sample size is completed through future research, these findings should be viewed as preliminary.

## Discussion, Implications, and Recommendations

The current study set out to answer the research question: Is there a difference in self-efficacy between first generation and non-first generation preservice teachers to address the teaching of diverse PK-12 students? The data demonstrated that the answer is yes. In this section, a discussion and implication of the differences is addressed.

Where research on first-generation college students show that non-first-generation college students had higher GPAs and self-efficacy as compared to first-generation college students (Elliott, 2014; Vuong et al., 2010; Zajacova et al., 2015), the current study sheds light on the specific concepts that each group of students learned. Educational preparation program (EPP) instructors would benefit to see beyond GPA as the preferred indicator of how well a preservice teacher has been prepared to address the needs of diverse students. While not directly related to this study, research from inservice teachers may present an intriguing look at possible interpretations of the current data. The current study demonstrates that self-efficacy development between first generation and non-first generation preservice teachers is not equal, and that the two groups develop self-efficacy at different rates. For example, first generation preservice teachers scored higher than non-first generation preservice teachers on Column Advanced of the survey for items having to do with homeless students and gender. Referring to existing self-efficacy research gathered from inservice teachers to shed possible

light on interpreting these findings, one may hypothesize that first generation preservice teachers would demonstrate persistence in serving their student population and delivering the content (Ashton et al., 1983; Brouwers & Tomic, 2000; Gibson & Dembo, 1984; Khani & Mirzaee, 2015; Skaalvik & Skaalvik, 2007; Tschannen-Moran & Hoy, 2001).

The findings may signal a potential threat to PK-12 students' learning who are under the care of teachers who have low self-efficacy (Cooper & Good, 1983). First generation preservice teachers scored significantly lower than non-first generation preservice teachers for survey items having to do with learning disabilities, special education, working with parents or guardians, and labeling or categorizing students in special education. As an intervention, EPPs would benefit by considering the research showing that offering more meaningful field experiences and implementing co-teaching models for first-generation college students positively impacts their self-efficacy (Shillingford & Karlin, 2014; Strieker et al., 2013). It is insightful to consider the research on inservice teachers as well. Such research shows that teachers with a low self-efficacy negatively impact students with disabilities (Podell & Sooodak, 1993) and are challenged to effectively partner with families' involvement in school (Garcia, 2004). The current study echoes similar results. What can be concluded is that this phenomenon of low self-efficacy is present in preservice teacher experiences and continues into inservice teacher practice.

Not all the results had a clear interpretation. First generation participants scored high on either extreme side of the low self-efficacy and self-efficacy columns for the items: *Include topics and issues related to gender in the teaching process: sexism-free education; feminist movement; homophobia*. Further research is needed to better understand this phenomenon.

The implications of the current study results are that EPPs are not meeting the needs of first generation preservice teachers. First generation and non-first generation students participate generally in the same curriculum requirements and the same field experiences for the same amount of time, yet statistically significant differences between these two groups are evident. The data raises a number of relevant questions that demand further research and application to existing EPP curricula. For instance: What other factors may influence self-efficacy, such as intercultural sensitivity, implicit bias, and prejudices existing before, during, and after EPP training? What causes or determines the differences between first-generation and non-first generation preservice teachers? What reasons may exist for first generation preservice teachers reporting low self-efficacy compared to non-first generation preservice teachers in working with students who have learning disabilities? What role does the participants' community play in their development of self-efficacy? These questions can benefit from qualitative studies to better understand first generation experiences and explore what level of self-efficacy is needed for preservice teachers to persist in reaching every student. Is first-generation status always associated with self-efficacy differences? Conducting a longitudinal study by administering the survey at different points throughout the EPP may provide insight to identify at what point in the program that self-efficacy differences surface.

## References

Ashton, P.T., & Webb, R. (1982). *Teachers' Sense of Efficacy: Toward an Ecological Model.* Annual Meeting of the American Educational Research Association.

Ashton, P., Webb, R. & Doda, C. (1983). *A study of teachers'sense of efficacy* (Final Report, Executive Summary). University of Florida.

Atherton, M.C. (2014). Academic preparedness of first generation college students: Different perspectives. *Journal of College Student Development, 55(8),* 824-829. https://doi.org/10.1353/csd.2014.0081

Atiles, J., Douglas, J., & Allexsaht-Snider, M. (2017). Early childhood teachers' efficacy in the US rural Midwest: Teaching culturally diverse learners. *Journal for Multicultural Education, 11*(2), 119-130.

Bandura, A. (1997). *Self-Efficacy: The exercise of control.* W.H. Freeman and Company.

Banks, J. A., & Banks, C. A. M. (Eds.). (2019). *Multicultural education: Issues and perspectives*. John Wiley & Sons.

Bauml, M., Castro, A.J., Field, S.L., & Morowski, D.L. (2016). Learning from preservice teachers' thoughts about teaching in urban schools: Implications for teacher educators. *Education and Urban Society, 48*(1), 4-29.

Benton-Borgi, B.H., & Chang, Y.M. (2012). Critical examination of candidates' diversity competence: Rigorous and systematic assessment of candidates' efficacy to teach diverse student populations. *The Teacher Educator*, *47*, 29-44.

Berman, P., McLaughlin, M., Bass, G., Pauly, E., & Zellman, G. (1977). *Federal programs*

*supporting educational change, vol. II: Factors affecting implementation and continuation* (Report No. R-1589/7-HEW). Rand Corporation.

Brooks, B.R., & Houston, S. (2015). Preservice teaches developing cultural competency: "We are more connected that we think". *Global Education Journal, 2015*(4), 114-138.

Brouwers, A. & Tomic, W. (2000). A longitudinal study of teacher burnout and perceived self-efficacy in classroom management. *Teaching and Teacher Education, 16(2),*239-253.  https://doi.org/10.1016/S0742-051X(99)00057-8

Castro, A.J. (2010). Themes in the research on preservices' views of cultural diversity: implications for researching millennials preservice teachers. *Educational Researcher, 39*(3), 198-210.

Chen, X. (2005). *First-generation students in postsecondary education: A look at their college transcripts* (NCES Publication No. 2005-171). U.S. Department of Education, National Center for Education Statistics. https://nces.gov/pubs2005/2005171.pdf

Cooper, H.M., Findley, M., & Good, T. (1982). Relations between student achievement and various indexes of teacher expectations. *Journal of Educational Psychology, 74(4), 577-579.  https://doi.org/10.1037/0022-0663.74.4.577*

Elliott, D.C. (2014). Trailblazing: Exploring first-generation college students' self-efficacy beliefs and academic adjustment. *Journal of the First-Year Experience & Students in Transition, 26(2)*, 20-49. https://eric.edu.gov/?id=EJ1047354

Forrest Cataldi, F., Bennett, C.T., & Chen, X. (2018). *First-generation students: College access, persistence, and postbachelor's outcomes.* (NCES Publication No. 2018-421).

U.S. Department of Education, National Center for Education Statistics.

https://nces.ed.gov/pubs2018/2018421.pdf

Garcia, D.C. (2004). Exploring connections between the construct of teacher efficacy and

family involvement practices. *Urban Education, 39*, 290-315.

George, D., & Mallery, P. (2003*). SPSS for windows step by step: A simple guide and

reference* (4th ed.). Allyn & Bacon.

Gibson, S., & Dembo, M.H. (1984). Teacher efficacy: A construct validation. *Journal of

Educational Psychology, 76*, 569-582.

Gore, Paul A. (2006). Academic Self-Efficacy as a Predictor of College Outcomes: Two

Incremental Validity Studies. *Journal of Career Assessment, 14*(1), 92-115.

He, Y. (2013). Developing teachers' cultural competence: Application of appreciative inquiry

in ESL teacher education. *Teacher Development*, *17*(1), 55-71.

https://doi.org/10.1080/13664530.2012.753944

Kah, J.H., & Nauta, M. M. (2001). Social-cognitive predictors of first-year college

persistence: The importance of proximal assessment. *Research in Higher Education,

42*, 633-652.

Khani, R., & Mizaee, A. (2015). How do self-efficacy, contextual variables and stressors

affect teacher burnout in an EFL context? *Educational Psychology, 35(1),*93-109.

https://doi.org/10.1080/01443410.2014.981510

King-Sears, M.E., Carran, D.T., Dammann, S.N., & Arter, P.S. (2012). Multi-site analyses of

special education and general education student teachers' skill ratings for working

with students with disabilities. *Teacher Education Quarterly*, *39(2),* 131–149.

Lombardo-Graves, M. M. (2017). Building resiliency: Introducing the pre-service Special Educator Efficacy Scale. *Issues in Educational Research*, *27*(4), 803–821.

Pallant, J. (2007). *SPSS survival manual a step-by-step guide to data analysis using spss version 15*. McGraw-Hill.

The Pell Institute. (2016). *Indicators of higher education equity in the United States: 2016 historical trend report.* University of Pennsylvania. http://www.pellinstitute.org/downloads/publications-Indicators_of_Higher_Education_Equity_in_the_US_2016_Historical_Trend_Report.pdfPodell, D.M. & Soodak, L.C. (1993). Teacher efficacy and bias in special education referrals. *Journal of Educational Research, 86*, 247-253.

Redford, J. & Hoyer, K. M. (September 2017), First-generation and continuing-generation college students: A comparison of high school and postsecondary experiences. *U.S. Department of Education. Institute of Education Science National Center for Education Statistics.* U.S. Department of Education. https://nces.ed.gov/pubs2018/2018009.pdf

Ruane, J.M. (2016*). Introducing social research methods: Essentials for getting the edge.* John Wiley & Sons, Ltd.

Shillingford, S., & Karlin, N. (2014). Preservice teachers' self efficacy and knowledge of emotional and behavioural disorders. *Emotional and Behavioural Difficulties*, *19*(2), 176–194. https://doi.org/10.1080/13632752.2013.840958

Siwatu, K.O. (2007). Preservice teachers' culturally responsive teaching self-efficacy and outcome expectancy beliefs. *Teaching and Teacher Education, 23,* 1086-1101.

Siwatu, K.O. (2011a). Preservice teachers' culturally responsive teaching self-efficacy-forming experiences: A mix methods study. *Journal of Education Research, 104*(5), 360-369.

Siwatu, K.O. (2011b). Preservice teachers' sense of preparedness and self-efficacy to teach in America's urban and suburban schools: Does context matter? *Teaching and Teacher Education, 27,* 357-365.

Siwatu, K.O., Chesnut, S.R., Alejandro, A.Y., & Young, H.A. (2016). Examining preservice teachers' culturally responsive teaching self-efficacy doubts. *The Teacher Educator*, *51*(4), 277-296. https://doi.org/10.1080/08878730.2016.1192709

Skaalvik, E., & Skaalvik, S. (2007). Dimensions of teacher self-efficacy and relations with strain factors, perceived collective teacher efficacy, and teacher burnout. *Journal of Educational Psychology, 99(3),* 611-625. https://doi.org/10.1037/0022-0663.99.3.611

Sobel, D. M., Gutierrez, C., Zion, S., & Blanchett, W. (2011), Deepening culturally responsive understandings within a teacher preparation program: It's a process. *Teacher Development, 15*(4), 435-452.

Strieker, T., Gillis, B., & Zong, G. (2013). Improving pre-service middle school teachers' confidence, competence, and commitment to co-teaching in inclusive classrooms. *Teacher Education Quarterly*, *40*(4), 159–180.

Tschannen-Moran, M., & Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct.

*Teaching and Teacher Education, 17(7),* 783-805. https://doi.org/10.1016/S0742-05X(01)00036-1

Tucker, C., Porter, T., Reinke, W., Herman, K., Ivery, P., Mack, C., & Jackson, E. (2005). Promoting Teacher Efficacy for Working With Culturally Diverse Students. *Preventing School Failure: Alternative Education for Children and Youth, 50*(1), 29-34.

U.S. Department of Education, Institute of Education Sciences. (2020). *Race and ethnicity of pubic school teachers and their students*. (NCES Publication No. 2020-103). National Center for Education Statistics at IES. https://nces.ed.gov/pubs2020/2020103.pdf

Van Galen, J.A. (2010). Class, identity, and teacher education. *The Urban Review, 42*(4), 253-270.

Vega, E., Bonill-Rodriquez, V., Alvarez, C., Lopez, A., Irizarry, E., Sanjurjo, C., Evenstad, J.P., & Vigil, P. (2018). Addressing classroom diversity competency: A survey of pre-service candidates' perceptions in Puerto Rico. *The International Journal of Diversity in Organizations, Communities, and Nations: Annual Review,18*(1), 1-18. https://doi.org/10.18848/14479532/CGP/v18i01/1-18.

Vuong, M., Brown-Welty, S., & Tracz, S. (2010). The effects of self-efficacy on academic success of first-generation college sophomore students. *Journal of College Student Development. 51(1),* 50-64. https://doi.org/10.1353/csd.0.0109

Wright, T., Nankin, I., Boonstra, K., & Blair, E. (2019). Changing through relationships and reflection: An exploratory investigation of pre-service teachers' perceptions of young children experiencing homelessness. *Early Childhood Education Journal*, *47*(3), 297–

308. https://doi-org.trmproxy.mnpals.net/10.1007/s10643-018-0921-y

Wyatt, T. J., Oswalt, S. B., White, C., & Peterson, F. L. (2008). Are tomorrow's teachers
     ready to deal with diverse students? Teacher candidates' attitudes toward gay men and
     lesbians. *Teacher Education Quarterly*, *35*(2), 171–185.

Young, E. (2010). Challenges to conceptualizing and actualizing culturally relevant
     pedagogy: How viable is the theory in classroom practice? *Journal of Teacher
     Education, 6*(3), 248-260.

Zajacova, A., Lynch, S.M., & Espenshade, T.J. (2005). Self-efficacy, stress, and academic
     success in college. *Research in Higher Education, 46(6),* 677-706.
     https://doi.org/10.1007/s11162-004-4139z

Zhang, D., Wang, Q., Stegall, J., Losinki, M., & Katsiyannis, A. (2018). The construction and
     initial validation of the student teachers' efficacy scale for teaching students with
     disabilities. *Remedial and Special Education, 39(1),* 39–52.
     https://doi.org/10.1177/0741932516686059