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International Journal of Contemporary Education
Vol. 7 No. 1; April 2024
ISSN 2575-3177 E-ISSN 2575-3185
Published by Redfame Publishing
URL: http://ijce.redfame.com

Early Career Teachers' Motivation, Preparation, and Self-Efficacy

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Received: January 28, 2024 Accepted: March 3, 2024 Online Published: March 6, 2024

doi:10.11114/ijce.v7i1.6784 URL: https://doi.org/10.11114/ijce.v7i1.6784

Abstract

Drawing on data from 355 early career teachers in the Teaching and Learning International Survey 2018, linear regression analyses were conducted to examine the relationship between Initial Teacher Preparation (ITP), motivations to become a teacher, and teacher self-efficacy (TSE). Results indicated that ITP and motivations statistically significant predicted overall TSE and each TSE component. The descriptive results showed that the ITP item, "teaching in a multicultural or multilingual setting" was ranked lowest; the means for the social utility value were ranked higher than that of the personal utility value; and multicultural classrooms component was ranked lower than instruction, management, engagement.

Keywords: teacher preparedness, initial teacher preparation, motivations to become a teacher, teacher self-efficacy, early career teachers

1. Introduction

U.S. teacher preparation programs are inundated with criticism as policy trends have changed in the last few decades (Zeichner, 2014). The criticism is centered around quality in preparing effective teachers (Jensen et al., 2012), as teacher quality is a key issue of educational reform and school improvement (Borman & Dowling, 2008). Recent studies have addressed the issues of motivations to become a teacher (teacher motivation) (McLean et al., 2019; Parr et al., 2021), initial teacher preparation (ITP) content and related feeling of preparedness (Darling-Hammond et al., 2002), and teacher self-efficacy (TSE) (Durksen, et al., 2017; McLennan et al., 2017; Perera & John, 2020). Studies have explored how teachers are motivated for the teaching profession (Watt et al., 2012) and how self-efficacy matters to teacher quality (Ainley & Carstens, 2018; Klassen et al., 2011). In the literature, TSE as a promising teacher factor that has been linked to a variety of teacher outcomes such as teachers' professional commitment (Lee et al., 2011; Ware & Kitsantas, 2007), teachers' instructional behaviors (Klassen & Chiu, 2011; Skaalvik & Skaalvik, 2007; Tschannen-Moran & Hoy, 2001), and job satisfaction (Klassen & Chiu, 2011; Skaalvik & Skaalvik, 2017).

In this study, we selected the Teaching and Learning International Survey (TALIS) 2018, sponsored by the Organization for Economic Cooperation and Development (OECD), because it allows us to examine the issues of new teachers methodologically and theoretically. TALIS 2018 included questions pertaining to motivations to become a teacher, career choice, ITP content, feeling of preparedness, and TSE, which previous studies had not reported altogether. More importantly, TALIS 2018 added several important new components such as multicultural education and the use of ICT in the examination of ITP content and TSE. Methodologically, TALIS 2018 had a representative national sample, large sample size, and vetted methodology. Because no U.S. elementary teachers participated in TALIS 2018, only early career secondary teachers were reported in our study.

The purpose of the study is to examine U.S. new teachers' motivations to become a teacher, ITP, teacher preparedness, and self-efficacy. Four research questions guiding this inquiry are: 1. what elements of preparation did new teachers report included in their formal training?; 2. to what degree did new teachers feel prepared in teaching a variety of content areas?; 3. what were new teachers' motivations to become a teacher?; and 4. what were new teachers' perceived self-efficacy and how was it associated with their preparation and motivations to become a teacher?

Theoretical Framework and Literature Review

Teacher Self-Efficacy (TSE)

Built on social cognitive theory, Bandura (1986) defined self-efficacy as "people's judgments of their capabilities to

organize and execute courses of action required to attain designated types of performance" (p. 391). The social cognitive theory asserts that individuals' beliefs in their abilities strongly affect their behavior, motivation, and success or failure. Similarly, Tschannen-Moran and Hoy (2001) defined TSE as "the teacher's belief in his or her capability to organize and execute courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 223). They proposed a multidimensional framework of TSE in teaching and the framework that has guided TSE studies, specifically focused on TSE in classroom management, instruction, and student engagement.

Self-efficacy has been an area of research for developing effective teachers and has been linked to higher levels of job satisfaction, greater retention, and better student performance, and pedagogical quality, among others (Ainley & Carstens, 2018). Teacher self-efficacy beliefs have been shown to be important predictors of many teacher-level outcomes including engagement (Durksen, et al., 2017), career optimism (McLennan et al., 2017), instructional quality and student support (Holzberger et al., 2013), job satisfaction (Klassen & Chiu, 2010), and occupational commitment (Klassen & Chiu, 2011). Teacher self-efficacy has also been linked to a variety of important student outcomes including students' self-efficacy beliefs (Ross, et al., 2001), and achievement (Caprara et al., 2006; Perera & John, 2020; Zee & Koomen, 2016).

In order to enhance 21st-century education, OECD has recognized the influencing factors of the increasing diversity of classrooms due to waves of immigrants, the advancement of technology and its application in education, and cross-curricular skills in the 21st century such as creativity and critical thinking. Therefore, TALIS 2018 included a subscale of "self-related efficacy in multicultural classrooms." This addition provides a more diverse perspective on TSE and its relationship with diversity in the classroom and culturally responsive teaching as a whole (Ainley & Carstens, 2018), and enables us to investigate teacher self-efficacy in multicultural classrooms and its relationship with motivations and teacher preparedness.

Teachers Self-Efficacy and Preparedness

Increasing the quality of teachers prior to their entering the classroom as full-time teachers can potentially increase teacher confidence and self-efficacy (Darling-Hammond et al., 2002) and prolong teacher careers (National Commission on Teaching and America's Future, 2003). In a study that included 3000 new teachers in New York City, researchers studied the relationship between teacher preparation and teachers' feeling of preparedness and self-efficacy (Darling-Hammond et al., 2002). Teachers reported their perceived preparedness is related to their sense of teaching efficacy and their motivations for continuing the teaching profession and consequently they stay in teaching longer. We expected that teacher preparation is associated with teacher self-efficacy that includes the construct of teaching in multicultural/multilingual classrooms.

Research has linked the quality of teacher preparation with student outcomes in K-12 classrooms (Boyd et al., 2007; Constantine et al., 2009; Gansle et al., 2012). However, this line of research remains inconclusive about the relative quality of different teacher education programs. Researchers investigated the results of entering the profession well-prepared. There is some evidence that the perceived quality of a teacher's ITP does predict their self-efficacy later in their career (Zhang et al., 2021) as well as their instructional practices (Wang et al., 2021). With the construct of teaching in multicultural/multilingual classrooms added to self-efficacy measurement, TALIS 2018 allowed us to examine the relationship between teacher preparedness and TSE. This new construct allowed researchers to develop a more comprehensive view of teacher preparedness and further examine how teacher preparedness influences TSE.

Motivations to Become a Teacher

Influenced by the expectancy-value theory (Eccles et al., 1983; Wigfield & Eccles, 2000), three interrelated motivations to become a teacher were identified: intrinsic, extrinsic, and altruistic motivations. In their framework, Watt and Richardson (2007; 2008) included the constructs of social utility value and personal utility value as the primary constructs for why the individual pursues a career in teaching. Social utility value is similar to altruism whereby individuals pursue teaching for the greater good of society (Watt & Richardson, 2007). Meanwhile, personal utility value includes the concept that teaching is beneficial to the individual in ways such as fitting an individual's schedule or job security (Watt & Richardson, 2007). High personal utility value as a motivation to teach has been associated with greater teacher burnout and less career optimism (McLean et al., 2019). On the other hand, social utility values have been linked to better instructional and emotional outcomes (Parr et al., 2021).

Career choice motivation is usually examined within the context of understanding motivation and its changes over the course of a teacher's career, with consideration of the impacts on self-efficacy and other teacher characteristics (Ponnock et al., 2018; Watt & Richardson, 2007). Researchers found teacher motivations change over the course of a teacher's career, which relate to ITP, self-efficacy, and other teacher characteristics (Ponnock et al., 2018; Watt & Richardson, 2007). They also found that TSE is negatively associated with teachers' intention to leave the teacher profession (Skaalvik & Skaalvik, 2017). We expected that new teachers' self-efficacy (classroom management, instruction, student engagement, and teaching in multicultural/multilingual classrooms) is positively associated with their motivation to become a teacher (social utility value and personal utility value).

2. Methods

Data Source and Participants

TALIS 2018 survey examined teachers' backgrounds, work environments, professional development, beliefs about teaching, and instructional practice from forty-eight countries and economies (OECD, 2019). Data for this study were drawn from TALIS 2018 U.S. lower secondary teachers. The focus of this study was on "new" teachers. Based on previous research indicating the substantial increase in teachers' effectiveness over the first three years of their career (Atteberry et al., 2015; Harris & Sass, 2011; Papay & Kraft, 2011) as well as the fact that early career teachers are more susceptible to attrition (Clandinin et al., 2015; Gallant & Riley, 2014), we defined new teachers as those with three or fewer years of working experience as a teacher (OECD, 2014).

A total of 2,560 U.S. teachers from 165 schools who taught the 7th, 8th, or 9th grades at the time of data collection participated in the survey. Of these participants, 355 new teachers reported having three or less years of working experience and were included in this study. One drawback of the TALIS dataset is the lack of more specific information about the participants. Of these lower-grade secondary new teachers, 244 (68.7%) are female and 111 (31.3%) are male (TALIS only provides for a binary response to gender). About two-thirds of these new teachers earned a bachelor's degree or higher and 58% of new teachers were under 30 years old.

Measures

The TALIS 2018 teacher questionnaire was used as the measure, which evaluated teachers' background and qualifications, current work, professional development, feedback, teaching in general, teaching in the target class, teaching in diverse environments, school climate and job satisfaction, and teacher mobility. The variables for this study involved teachers' years of working, elements included in formal education or training, feeling of preparedness, motivations to become a teacher, and self-efficacy. Year(s) of working was measured by one question, which asked teachers "how many years of work experiences do you have as a teacher in total?" Teachers' responses were recoded from a continuous variable to a categorical variable with two-levels, those who have taught for less than three years are defined as new teachers.

Initial Teacher Preparation (ITP). The question about ITP elements included in formal education or training asked, "Were the following elements included in your formal education or training program?" (OECD, 2018, p. 5). Ten elements included; contents and pedagogy of some or all subject(s), general pedagogy, classroom practices, teaching in a mixed ability setting, teaching in a multicultural or multilingual setting, use of ICT for teaching, student behavior and classroom management, monitoring students' development and learning, and facilitating students' transitions from elementary to secondary schools. Participants responded on a four-point scale where 1 = "not at all", 2 = "somewhat", 3 = "well", 4 = "very well". In addition to the 10 original items, an overall variable was created by calculating the mean score of the 10 individual items (α = .899). Specific items can be seen in Table 1.

Motivation to Become a Teacher. TALIS questions regarding motivation to teach draw primarily from the work of Watt and Richardson (2008). The TALIS 2018 includes seven questions from the original work of Watt and Richardson with the question stem, "How important were the following for you to become a teacher?" (OECD, 2018, p. 6). Participants responded on a four-point scale including: 1 = "Not important at all", 2 = "Of low importance", 3 = "Of moderate importance", and 4 = "Of high importance". These seven questions were composited into two constructs, personal utility value (4 items, α = .847) and social utility value (3 items, α = .745). Specific items can be seen in Table 3.

Teacher Self-Efficacy (TSE). TSE was measured by a question stem, which asked teachers "in your teaching, to what extent can you do the following" (OECD, 2018, p. 19). The TALIS survey used 12 items from the original TSE scale developed by Tschannen Moran and Hoy (2001). From these original 12 items, three constructs were created based on the original authors' guidelines (Tschannen Moran & Hoy, 2001): instruction (4 items, α = .749), classroom management (4 items, α = .855), and engagement (4 items, α = .825). In addition, TALIS 2018 included questions pertaining to the self-related efficacy of teaching in multicultural/multilingual classrooms (5 items, α = .861). A TSE overall variable was also created by calculating the mean of all 17 self-efficacy items (α = .889). Each item has four response options, 1 = "not at all", 2 = "to some extent", 3 = "quite a lot", and 4 = "a lot".

Analysis

Data analysis was conducted in order to answer the research questions. First, we wanted to examine the feelings of preparedness of early career teachers in the United States. Therefore, we conducted descriptive analysis of the 10 ITP items as well as the ITP Overall composite variable. We also conducted correlation analysis among these 11 items to better understand the nature of the data.

Next, we wanted to understand the nature of early careers motivations to become a teacher. First, we calculated descriptive statistics on the seven original motivation items as well as the two composite variables (personal utility value and social utility value). We also conducted a correlation analysis with the motivation variables to understand the nature of the data.

The next step was to examine the TSE of early career teachers. To accomplish this, we calculated descriptive statistics of the four components of TSE included in TALIS: instruction, management, engagement, and multicultural. Following the calculation of descriptive statistics, we then conducted correlation analysis among the TSE components in order to understand how they are related to each other.

Our final research question sought to understand if ITP and motivation were predictive of TSE. To understand this relationship, we used linear regression analysis (Pedhazur, 1997) to estimate the associations between the different constructs. We first entered the demographic data into the analysis including gender and years of teaching experience. We were interested in the relationship between specific elements of ITP and TSE, so we entered the 10 original ITP items. Finally, the motivation composites (social utility value and personal utility value) were entered into the equation as predictor variables. Five different regression equations were calculated with the same predictor variables and each of the four components of TSE, plus general TSE, as the dependent variables.

Additionally, we were interested if ITP experiences and motivation to become a teacher interacted to predict TSE. This allowed us to understand if social utility value moderated the relationship between ITP and TSE. To estimate this relationship, we first created centered variables of ITP overall and social utility value. Then we created an interaction variable by multiplying ITP overall and social utility value. Finally, we conducted a regression analysis using gender, teaching experience, ITP overall centered, social utility value centered, and then the ITP/social utility value interaction variable. All analyses were conducted using SPSS version 26.

3. Limitations

As pointed out by the OECD (2019), the results of this study are exclusively based on a self-reported survey, which represents teachers' subjective perceptions and opinions of their working environments, teaching practices, and professional activities. Because TALIS 2018 did not differentiate teachers who graduated from traditional or alternative route programs, this research reported the results from teachers of both traditional and alternative route programs. Therefore, we cannot explain how the varied programs influenced new teachers' reports of their feeling of preparedness, motivation for teaching, teacher choice, and self-efficacy.

4. Results

Teacher's Feeling of Preparedness

Descriptive statistics were calculated to understand how well-prepared early career teachers in the US felt by their ITP. Table 1 showed the items of teacher preparedness teachers felt for elements of teaching. One item was ranked higher than others: "content of some or all subject(s) I teach" (M = 3.26, SD = .792). Two items that were ranked lowest were "teaching in a multicultural or multilingual setting" (M = 2.51, SD = .950), and "student behavior and management"(M = 2.58, SD = .902). Correlation analysis showed that all ITP items were significantly correlated with each other with a range of r = .812 to r = .215. Full correlation results can be found in Table 2.

Table 1. Early Career Teachers Feelings about Their Preparation

Element of ITP	*M*	*SD*
Content of some or all subject(s) I teach	3.26	.792
Pedagogy of some or all subject(s) I teach	2.94	.835
General pedagogy	2.96	.796
Classroom practice in some or all subject(s) I teach	2.93	.844
Teaching in a mixed ability setting	2.65	.922
Teaching in a multicultural or multilingual setting	2.51	.950
Teaching cross-curricular skills	2.79	.839
Use of ICT for teaching	2.64	.889
Student behavior and classroom management	2.58	.902
Monitoring students' development and learning	2.70	.881
ITP Overall	2.78	.628

Table 2. Correlations among ITE Variables

ITE Element	1	2	3	4	5	6	7	8	9	10	11
1. Content of some or all subject(s) I teach	1										
2. Pedagogy of some or all subject(s) I teach	.571*	1									
3. General pedagogy	.448*	.813*	1								
4. Classroom practice in some or all subject(s) I teach	.384*	.592*	.611*	1							
5. Teaching in a mixed ability setting	.240*	.460*	.499*	.617*	1						
6. Teaching in a multicultural or multilingual setting	.259*	.367*	.393*	.477*	.666*	1					
7. Teaching cross-curricular skills	.395*	.504*	.498*	.505*	.603*	.554*	1				
8. Use of ICT for teaching	.305*	.383*	.341*	.377*	.398*	.390*	.504*	1			
9. Student behavior and classroom management	.215*	.343*	.372*	.522*	.534*	.419*	.454*	.355*	1		
10. Monitoring students' development and learning	.336*	.479*	.517*	.608*	.599*	.523*	.575*	.413*	.646*	1	
11. ITP Overall	.569*	.753*	.750*	.789*	.788*	.711*	.776*	.623*	.678*	.792*	1

* $p < .05$

Motivations to Become a Teacher

Descriptive results for motivations to be a teacher are shown in Table 3. Teacher reported a mean of personal utility value of $M = 3.09$ and social utility value of $M = 3.71$. The highest mean of the individual items was, "Teaching allowed me to influence the development of children and young people" ($M = 3.83$) and the lowest item was, "Teaching provided a reliable income" ($M = 3.04$). Meanwhile, correlations among the items for motivations to become a teacher can be seen in Table 4. Items within each construct (personal utility and social utility) were moderately to strongly correlated with each other. However, personal utility and social utility were not significantly correlated with each other ($r = .099$, $p > .05$).

Table 3. Early Career Teachers' Motivations to Become a Teacher

Motivation Element	*M*	*SD*
Teaching offered a steady career path	3.12	.885
Teaching provided a reliable income	3.04	.885
Teaching was a secure job	3.14	.840
The teaching schedule fit with responsibilities in my personal life	3.08	.929
Personal Utility Value-Mean	**3.09**	**.734**
Teaching allowed me to influence development of children and young people	3.83	.420
Teaching allowed me to benefit the socially disadvantaged	3.52	.731
Teaching allowed me to provide a contribution to society	3.77	.489
Social Utility Value-Mean	**3.71**	**.458**

Table 4. Correlations among Motivations to Become a Teacher

Motivations	1	2	3	4	5	6	7	8	9
1. Teaching offered a steady career path	1								
2. Teaching provided a reliable income	.638*	1							
3. Teaching was a secure job	.692*	.774*	1						
4. The teaching schedule fit w responsibilities in my personal life	.443*	.472*	.504*	1					
5. Personal Utility Value-Mean	.833*	.865*	.888*	.737*	1				
6. Teaching allowed me to influence development of children and young people	.103	-.006	.068	.063	.069	1			
7. Teaching allowed me to benefit the socially disadvantaged	.163*	.146*	.174*	.050	.158*	.466*	1		
8. Teaching allowed me to provide a contribution to society	.046	-.059	-.005	-.036	-.016	.551*	.594*	1	
9. Social Utility Value-Mean	.135*	.055	.111*	.033	.099	.750*	.886*	.841*	1

* $p < .05$

Self-Efficacy

The descriptive results for TSE are displayed in Table 5. Teachers reported the highest levels of TSE in instruction (M = 3.17), followed by management (M = 3.06), engagement (M = 2.98) and finally, multicultural classrooms (M = 2.87). Correlations were medium to high among all aspects of TSE ranging from r = .238 to r = .516 with all relationships being statistically significant. Full correlation data can be found in Table 6.

Table 5. Early Career Teachers' Self-Efficacy

Self-Efficacy Domain	*M*	*SD*
TSE Instruction	3.17	.526
TSE Management	3.06	.617
TSE Engagement	2.98	.613
TSE Multicultural	2.87	.677
TSE Overall	3.03	.460

Table 6. Correlations among Teacher Self-Efficacy Variables

TSE Construct	1	2	3	3	4
1. TSE Instruction	1				
2. TSE Management	.469*	1			
3. TSE Engagement	.516*	.506*	1		
4. TSE Multicultural	.359*	.238*	.423*	1	
5. TSE Overall	.756*	.751*	.820*	.698*	1

* $p < .05$

Finally, regression analyses examined the association of ITP, motivation to teach, and TSE. First, we examined the relationship between the 10 elements of ITP as well as the constructs of motivation and TSE. Results of this analysis can be seen in Table 7. In each case, the regression equation was statistically significant indicating that ITP and motivation to teach, when taken together, do predict TSE in general and the TSE components individually. Final adjusted R^2 for the models varied from R^2 = .080 for multicultural classrooms to R^2 = .209 for classroom management. Among the elements of ITP, there were different significant predictors in the different models. Preparation in pedagogy, teaching multicultural/multilingual settings, and student behavior/management were all significant in at least one model. On the other hand, social utility value was a significant predictor of TSE in every model except behavior management. Table 8 shows the results of the regression analysis examining interaction effects on TSE. While the ITP overall variable and the social utility value variable were both significant predictors of TSE in each model, the interaction effect was not significant

in any model. This indicates that both preparation and motivation are important to TSE, however, these are predictors that function independently of each other.

Table 7. Regression Analysis: Training and Motivation as Predictors of Teacher Self-Efficacy

	TSE Overall		TSE Instruction		TSE Management		TSE Engagement		TSE Multicultural	
Predictors	ß	Std. Error	ß	Std. Error	ß	Std. Error	ß	Std. Error	ß	Std. Error
Gender (male)	-.022	.052	-.076	.062	-.064	.069	-.043	.072	.005	.091
Teaching Experience	.037	.025	.043	.030	.090*	.033	.025	.035	.002	.044
Content of some or all subject(s) I teach	-.014	.038	.031	.046	-.076	.051	-.001	.053	-.013	.067
Pedagogy of some or all subject(s) I teach	.084	.055	.022	.065	.124	.073	.156*	.076	.020	.098
General pedagogy	.012	.055	.094	.066	-.020	.073	-.044	.076	.013	.100
Classroom practice in some or all subject(s) I teach	-.022	.044	-.010	.052	.042	.058	-.073	.061	-.037	.079
Teaching in a mixed ability setting	.012	.043	.061	.051	-.011	.058	.001	.060	-.005	.076
Teaching in a multicultural or multilingual setting	.064+	.036	-.010	.043	.054	.049	.069	.051	.186*	.065
Teaching cross-curricular skills	.066	.041	.053	.049	.044	.055	.051	.057	.129+	.074
Use of ICT for teaching	-.053	.032	-.020	.039	-.129	.043	-.054	.045	-.004	.057
Student behavior and classroom management	.112*	.036	.065	.043	.293	.049	.087+	.050	-.035	.064
Monitoring students' development and learning	-.016	.044	-.011	.052	-.076	.058	.036	.061	-.038	.076
Motivation: Social Utility Value	.191*	.054	.187*	.064	.026	.071	.303*	.074	.221*	.095
Motivation: Personal Utility Value	.033	.034	.027	.040	.029	.045	.036	.047	.043	.058
Final R	.487*		.426*		.495*		.400*		.365*	
Final Adjusted R^2	.200*		.141		.209		.119*		.080*	
Standard Error	.414		.494		.553		.575		.652	

+$p < .10$

*$p < .05$

Table 8. Interaction (Moderation) Effects of Social Utility Value and ITE on Teacher Self-Efficacy

	TSE Overall		TSE Instruction		TSE Management		TSE Engagement		TSE Multicultural	
Predictors	ß	Std. Error	ß	Std. Error	ß	Std. Error	ß	Std. Error	ß	Std. Error
Gender (male)	.039	.051	.093	.059	.071	.071	-.024	.070	.037	.088
Teaching Experience	.038	.023	.041	.027	.097*	.033	.034	.032	-.010	.041
ITP Overall Centered	.246	.038*	.261*	.044	.266*	.052	.221*	.052	.208*	.066
Social Utility Value (SUV) Centered	.199	.051*	.182*	.060	.067	.072	.290*	.071	.235*	.091
ITP x SUV Interaction Variable	-.054	.072	-.038	.083	-.027	.100	-.131	.099	-.086	.122

* $p < .05$

5. Discussion and Implications

This study examined new teachers' ITPs, feeling of preparedness, motivations to become a teacher, and TSE. Based on the findings, we focused our discussion on two aspects. The first aspect is the explanation of descriptive analysis of motivations to become a teacher, feeling of preparedness, and self-efficacy with close attention to the newly added subscale of self-efficacy in multicultural classroom settings. The second aspect is to discuss the results of the relationships between these variables.

Preparedness, Teacher Motivation, and Teacher Self-Efficacy

Traditional teacher education programs have attended to content and pedagogical knowledge and field experience in K-12 schools (Darling-Hammond et al., 2002; Darling-Hammond & Bransford, 2005). In the findings from the teacher preparation elements new teachers reported a lower level of feeling of preparedness. The use of ICT and teaching in a multicultural or multilingual setting were rated to be the lowest. Although teacher preparation has begun to emphasize teaching in a multi-cultural or multilingual setting (Téllez & Varghese, 2013), the results showed the importance of teaching in a multi-cultural or multilingual setting in ITP and new teachers' professional development or induction.

Regarding new teachers' report of their motivations to become a teacher, the results of this study confirm the previous research that teachers consider social utility values as the most important motivational factor of becoming a teacher (Thomson & Palermo, 2014; Shaukat et al. 2023; Wang et al., 2021; Zhang et al., 2021). The findings of two subscales of motivation and their specific items show that the level of their social values is higher than the level of the personal value. Of the social values, teachers consider the "development of children and young people" as their roles of educating students. Consistent with the study on preservice teachers, in-service teachers also value working with children and enhancing social equity (Watt & Richardson, 2007). Preservice teachers value personal utility values such as salary and job security (Lieu et al., 2010) that may be resulted from socio-cultural contexts of different countries (Watt et al., 2012), but this is less important than social values to US early career teachers. The results show that preservice teachers' motivations to become a teacher may continue to influence new teachers' career choice and commitment to the public service and social value of the profession. New teachers may even continue to engage the profession in a virtuous spiral of positive change and enhanced professionalism even when they do not get desirable support and attention to ensure effectiveness and well-being.

Regarding TSE, results indicated that new teachers still have not yet developed their self-efficacy in a multi-cultural classroom as the means of this component ranked lowest in comparison with the traditional components: instruction, classroom management, and student engagement. Theoretically, this finding contributes to TSE research by providing a new theoretical lens. Using the multicultural lens may push teachers to address the needs of students with racially and ethnically diverse backgrounds (Nieto & Bode, 2018). The concept can be further explored and developed based on Siwatu's (2007) conceptualization of teacher multicultural self-efficacy as "teachers' belief in their ability to execute specific teaching practices and tasks that are associated with students who are racially diverse" (p. 1090).

Preparedness in Teaching and Teacher Self-efficacy

Regression analyses showed new teachers' preparedness is associated with teacher self-efficacy. This result confirms the study that there is a positive relationship between teachers' feeling of preparedness and self-efficacy (Darling-Hammond et al., 2002; Shaukat et al., 2023; Wang et al., 2021; Zhang et al., 2021). In this study data indicate that feelings of preparedness predict TSE in all domains. This can be seen in the results of the regression showing overall ITP predicts each component of TSE. Further analysis examined the relationship of individual components of ITP and their relationship to TSE. Some of these relationships were as one might expect. Training in pedagogy was related to TSE in engagement. Likewise, training in teaching in a multicultural or multilingual setting was associated with TSE in multicultural classrooms. Training in classroom management did seem to be important, but it was not significantly associated with TSE in classroom management. The data does show that effective ITP is associated with increased TSE. However, data in this study do not provide any directional analysis. It is impossible to know if teachers who have low TSE might think that their struggles in the classroom are because of ITP. Further research needs to be conducted to examine if the relationships discovered in this study are causal and to further evaluate K-12 student outcomes (Boyd et al., 2007; Gansle et al., 2012; Constantine et al., 2009).

Social Utility Value and Teacher Self-Efficacy

Among early career teachers in the US, motivation to teach was associated with teachers' self-efficacy. However, only social utility value was predictive of self-efficacy in three of the four domains including instruction, engagement, and multicultural classrooms. Personal utility value had no relationship to TSE. Previous research indicates that social utility value is predictive of positive educational outcomes (McLean et al., 2019, Parr et al., 2021), so it is not surprising that these motivations to teach are also related to TSE. Teachers who hold social utility values are more likely to be successful

in the classroom and therefore build their TSE.

Although the findings confirmed the previous theoretical constructs of motivations to become a teacher (career choice) (Watt & Richardson, 2007; 2008), teachers may still encounter instructional and emotional issues (Parr et al., 2021) and factors such as workload that may lead to attrition (Barmby, 2006). As previous research asserted, teachers' motivations to become a teacher may change over the course of a teacher's career, which may be influenced by ITP, self-efficacy, and other teacher characteristics (Ponnock et al., 2018; Watt & Richardson, 2007). For early career teachers, the school climate and peer support may change or challenge their commitment to teaching no matter how high their social utility value may be.

Independence of ITP and Motivation

In previous sections, we have discussed the relationship between ITP and TSE, and the relationship between motivation and TSE separately. Analysis in this study also allowed us to understand if there was an interaction effect between ITP and motivation. In other words, we sought to examine if motivation may moderate the effects of ITP on TSE. Among early career teachers in the US, there was no significant moderating effect. This indicates that ITP and teacher motivations are separate predictors of TSE. However, further research is required to understand whether this finding is true in other populations as both ITP (Darling-Hammond et al., 2018) and motivation (Fray & Gore, 2018) have been found to vary by nationality.

Implications for Policy and Future Research in Multicultural Education

Throughout the results and discussion, one overarching component focuses on multi-cultural. Thus we discuss several relevant important implications for practice and future research. In the regression analyses, new teachers' preparedness is associated with teacher self-efficacy. However, both the item teaching in a multi-cultural or multilingual setting in ITP and the self-efficacy in a multi-cultural classroom in TSE are the lowest. This finding is not unsurprising. Although multicultural education has been advanced for decades, the US schools are becoming more diverse and this may account for the finding. Moreover, including one multicultural course in the programs is not enough. Instead, these aspects should be integrated into all the other teacher education courses, particularly related to classroom teaching practice in field experience. In effective teacher preparation programs, a set of guiding values and beliefs and clear goals enhance the coherence of the program implementation (Feiman-Nemser, 2001). Rather than heavily depending on the multicultural education course, programs should more effectively connect coursework to the complexities of students, classrooms, curriculum, and the schools (Zeichner & Pena-Sandoval, 2015) with an emphasis on the multicultural issues. For example, in math education, math teachers will be limited to teaching math if they do not comprehend cultural differences and approaches to mathematical problems that are associated with students' knowledge and experiences (de Abreu, 2006). Thus, teacher educators should ensure that preservice teachers develop the knowledge and skills in connecting math learning with students' knowledge and experiences. In the future it is necessary to see the differences in TSE between teachers in states where there are more White population and those in states where there are more minority population. This line of research will help better prepare teachers with their knowledge and skills in teaching in a multicultural and multi-lingual classroom.

Another implication for the future research is the theoretical construct of TSE. TALIS added teacher self-efficacy in multicultural classrooms to the measurement. This addition definitely provides opportunities for researchers to re-evaluate TSE and its relationships with other important parts of teacher preparation and professional development. However, the future research needs to further validate the subscales to ensure the validity and reliability as an independent scale and as part of the TSE measurement.

6. Conclusion

Given the demonstrated importance of TSE to many outcomes that we care about in education (Zee & Koomen, 2016), it was important for us to examine the relationship of ITP and motivation to become a teacher in relation to TSE. Data presented in this study demonstrates the importance of both initial teacher preparation and teachers' motivations to become teachers to their TSE. While data presented in this study do not differentiate the types of ITP that teachers engaged in prior to teaching, it does show the need for quality in ITP. Likewise, teachers that enter the profession for less altruistic reasons may be less successful. It is important that teacher learning and professional development are supported throughout their career beginning with their initial teacher preparation and then in their early career and beyond.

Acknowledgments

We greatly appreciate the significant contributions of Dr. Qingmin Shi for her expertise and support at the early stage of the research.

Authors contributions

Sample: Dr. Shaoan Zhang and Dr. Peter Wiens were responsible for study design and revising. Dr. Wiens was responsible for the data analysis. All authors read and approved the final manuscript.

Funding

Not applicable.

Competing interests

We declare that we have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Not applicable.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

References

Ainley, J., & Carstens, R. (2018). *Teaching and learning international survey (TALIS) 2018 conceptual framework.* Paris, France: Organization for Economic Co-operation and Development [OECD]. https://doi.org/10.1787/799337c2-en

Allinder, R. M. (1994). The relationship between efficacy and the instructional practices of special education teachers and consultants. *Teacher Education and Special Education*, *17*(2), 86-95. https://doi.org/10.1177/088840649401700203

Atteberry, A., Loeb, S., & Wyckoff, J. (2015). Do first impressions matter? Predicting early career teacher effectiveness. *AERA Open, 1*(4), 1-23. https://doi.org/10.1177%2F2332858415607834

Bandura, A. (1986). *Social foundations of thought and action*. Englewood Cliffs, NJ: Prentice-Hall.

Barmby, P. (2006). Improving teacher recruitment and retention: The importance of workload and pupil behavior. *Educational Research*, *48*(3), 247-265. https://doi.org/10.1080/00131880600732314

Borman, G. D., & Dowling, N. M. (2008). Teacher attrition and retention: A meta-analytic and narrative review of the research. *Review of educational research*, *78*(3), 367-409.

Boyd, D., Goldhaber, D., Lankford, H., & Wyckoff, J. (2007). The effect of certification and preparation on teacher quality. *The Future of Children*, *17*, 45-68.

Caprara, G. V., Barbaranelli, C., Steca, P., & Malone, P. S. (2006). Teachers' self-efficacy beliefs as determinants of job satisfaction and students' academic achievement: A study at the school level. *Teaching and Teacher Education, 44*(6), 473-490. https://doi.org/10.1016/j.jsp.2006.09.001

Clandinin, D. J., Long, J., Schaefer, L., Downey, C. A., Steeves, P., Pinnegar, E., McKenzie Robblee, S., & Wnuk, S. (2015). Early career teacher attrition: Intentions of teachers beginning. *Teaching Education, 26*(1), 1-16. https://doi.org/10.1080/10476210.2014.996746

Constantine, J., Player, D., Silva, T., Hallgren, K., Grider, M., & Deke, J. (2009). *An evaluation of teachers trained*

through different routes to certification (NCEE 20094043). U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance. https://ies.ed.gov/ncee/pubs/20094043/pdf/20094044.pdf

Darling-Hammond, L., & Bransford, J. (Eds.) (2005). *Preparing teachers for a changing world:What teachers should learn and be able to do*. San Francisco, CA: Jossey-Bass.

Darling-Hammond, L., Burns, D., Campbell, C., Goodwin, A. L., & Low, E. L. (2018). International lessons in teacher education. In M. Akiba & G. K. LeTendre (Ed.). *International handbook of teacher quality and policy* (pp. 336-349). Routledge.

Darling-Hammond, L., Chung, R., & Frelow, F. (2002). Variation in teacher preparation: How well do different pathways prepare teachers to teach?. *Journal of Teacher Education, 53*(4), 286-302. https://doi.org/10.1177/0022487102053004002

de Abreu, G. (2006). Cultural identities in the multiethnic mathematical classroom. In *Proceedings of the fourth congress of the European society for research in mathematics education. Barcelona, FUNDEMI IQS–Universitat Ramon Llull* (pp. 1131-1140).

Durksen, T. L., Klassen, R. M., & Daniels, L. M. (2017). Motivation and collaboration: The keys to a developmental framework for teachers' professional learning. *Teaching and Teacher Education, 67,* 53-66. https://doi.org/10.1016/j.tate.2017.05.011

Eccles, J., Adler, T. F., Futterman, R., Goff, S. B., Kaczala, C. M., Meece, J., & Midgley, C. (1983). Expectancies, values and academic behaviors. In Spence, J. T. (ed.). *Achievement and Achievement Motives*. San Francisco, CA: W. H. Freeman.

Feiman-Nemser, S. (2001). From preparation to practice: Designing a continuum to strengthen and sustain teaching. *Teachers College Record, 103*, 1013-1055. https://doi.org/10.1111/0161-4681.00141

Fray, L., & Gore, J. (2018). Why people choose teaching: A scoping review of empirical studies, 2007-2016. *Teaching and Teacher Education, 75,* 153-163. https://doi.org/10.1016/j.tate.2018.06.009

Gallant, A., & Riley, P. (2014). Early career teacher attrition: New thoughts on an intractable problem. *Teacher Development, 18*(4), 562-580. https://doi.org/10.1080/13664530.2014.945129

Gansle, K. A., Noell, G. H., & Burns, J. M. (2012). Do student achievement outcomes differ across teacher preparation programs? An analysis of teacher education in Louisiana. *Journal of Teacher Education*, *63*, 304-317. https://doi.org/10.1177/0022487112439894

Harris, D. N., & Sass, T. R. (2011). Teacher training, teacher quality and student achievement. *Journal of Public Economics, 95*(7), 798–812. https://doi.org/10.1016/j.jpubeco.2010.11.009

Holzberger, D., Philipp, A., & Kunter, M. (2013). How teachers' self-efficacy is related to instructional quality: A longitudinal analysis. *Journal of Educational Psychology, 105*(3), 774-786. https://doi.org/10.1037/a0032198

Hoy, W. K., & Woolfolk, A. E. (1990). Socialization of student teachers. *American Educational Research Journal*, *27*(2), 279-300. https://doi.org/10.2307/1163010

Jensen, B., Sandoval-Hernandez, A., Knoll, S., & Gonzalez, E. J. (2012). *The experience of new teachers: Results from TALIS 2008*. OECD, Paris.

Klassen, R. M., Tze, V. M. C., Betts, S. M., & Gordon, K. A. (2011). Teacher efficacy research 1998–2009: Signs of progress or unfulfilled promise? *Educational Psychology Review, 23*(1), 21-43. https://doi.org/10.1007/s10648-010-9141-8

Klassen, R., & Chiu, M. M. (2011). The occupational commitment and intention to quit practicing and pre-service teachers: Influence of self-efficacy, job stress, and teaching context. *Contemporary Educational Psychology, 36*(2), 114-129. http://dx.doi.org/10.1016/j.cedpsych.2011.01.002

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-756. https://doi.org/10.1037/a0019237

Lee, J. C. K., Zhang, Z., & Yin, H. (2011). A multilevel analysis of the impact of a professional learning community, faculty trust in colleagues and collective efficacy on teacher commitment to students. *Teaching and teacher education*, *27*(5), 820-830. https://doi.org/10.1016/j.tate.2011.01.006

Liou, P. Y., Desjardins, C. D., & Lawrenz, F. (2010). Influence of scholarships on STEM teachers: Cluster analysis and characteristics. *School Science and Mathematics, 110,* 128-143. http://doi.org/10.1111/j.1949-8594.2010.00016.x

McLean, L., Taylor, M., & Jimenez, M. (2019). Career choice motivations in teacher training as predictors of burnout and career optimism in the first year of teaching. *Teaching and Teacher Education, 85,* 204-214. https://doi.org/10.1016/j.tate.2019.06.020

McLennan, B., McIlveen, P., & Perera, H. N. (2017). Pre-service teachers' self-efficacy mediates the relationship between career adaptability and career optimism. *Teaching and Teacher Education, 63*, 176-185. https://doi.org/10.1016/j.tate.2016.12.022

Nieto, S., & Bode, P. (2018). *Affirming diversity: The sociopolitical context of multicultural education* (7th ed.). Hoboken, NJ: Pearson.

Organisation for Economic Co-operation and Development [OECD]. (2018). *Teacher and Learning International Survey (TALIS) 2018.* Paris, France: OECD Publishing.

Organization for Economic Co-operation and Development [OECD]. (2014). *TALIS 2013 results: An international perspective on teaching and learning*. Paris, France: OECD Publishing. Retrieved from http://www.istruzione.it/allegati/2014/OCSE_TALIS_Rapporto_Internazionale_EN.pdf

Organization for Economic Co-operation and Development [OECD]. (2019). *TALIS 2018 technical report*. Paris, France: OECD Publishing. Retrieved from https://www.oecd.org/education/talis/TALIS_2018_Technical_Report.pdf

Papay, J. P., & Kraft, M. A. (2011*). Do teachers continue to improve with experience? Evidence of long-term career growth in the teacher labor market*. Working paper

Parr, A., Gladstone, J., Rosenzweig, E., & Wang, M. T. (2021). Why do I teach? A mixed-methods study of in-service teachers' motivations, autonomy-supportive instruction and emotions. *Teaching and Teacher Education, 98.* https://doi.org/10.1016/j.tate.2020.103228

Pedhazur, E. J. (1997). *Multiple regression in behavioral research* (3rd ed.). Harcourt Brace.

Perera, H. N., & John, J. E. (2020). Teachers' self-efficacy beliefs for teaching math: Relations with teacher and student outcomes. *Contemporary Educational Psychology, 61*, online. https://doi.org/10.1016/j.cedpsych.2020.101842

Perrone, F., Player, D., & Youngs, P. (2019). Administrative climate, early career teacher burnout, and turnover. *Journal of School Leadership, 29*(3), 191-209. https://doi.org/10.1177/1052684619836823

Ponnock, A. R., Torsney, B. M., & Lombardi, D. (2018). Motivational differences throughout teachers' preparation and career. *New Waves Education Research & Development, 21*(2), 26-45.

Ross, J. A., Hogaboam-Gray, A., & Hannay, L. (2001). Effects of teacher efficacy on computer skills and computer cognitions of Canadian students in grades K-3. *The Elementary School Journal, 102*(2), 141-156. https://doi.org/10.1086/499697

Shaukat, S., Zhang, S., Garza, T., & Lin, E. (2023). Pakistani pre-service teachers' initial motivation in teaching choice. *Teacher Development*, *27*(5), 580-596. https://doi.org/10.1080/13664530.2023.2196269

Siwatu, K. O. (2007). Preservice teachers' culturally responsive teaching self-efficacy and outcome expectancy beliefs. *Teaching and Teacher Education*, *23*(7), 1086-1101. https://doi.org/10.1016/j.tate.2006.07.011

Skaalvik, E. M., & 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. http://dx.doi.org/10.1037/0022-0663.99.3.611

Skaalvik, E. M., & Skaalvik, S. (2017). Motivated for teaching? Associations with school goal structure, teacher self-efficacy, job satisfaction and emotional exhaustion. *Teaching and Teacher Education, 67*, 152-160. http://dx.doi.org/10.1016/j.tate.2017.06

Téllez, K., & Varghese, M. (2013). Teachers as intellectuals and advocates: Professional development for bilingual education teachers. *Theory Into Practice*, *52*(2), 128-135. https://doi.org/10.1080/00405841.2013.770330

Thomson, M. M., & Palermo, C. (2014). Preservice teachers' understanding of their professional goals: Case studies from three different typologies. *Teaching and Teacher Education*, *44*, 56-68. https://doi.org/10.1016/j.tate.2014.08.002

Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education, 17*, 783-805. https://doi.org/10.1016/S0742-051X(01)00036-1

Wang, G., Strong, M., Zhang, S., & Liu, K. (2021). Preservice teacher professional commitment: A literature review and conceptual model. *Teaching and Teacher Education, 104.* https://doi.org/10.1016/j.tate.2021.103373

Ware, H., & Kitsantas, A. (2007). Teacher and collective efficacy beliefs as predictors of professional commitment. *The Journal of Educational Research*, *100*(5), 303-310. https://doi.org/10.3200/JOER.100.5.303-310

Watt, H. M., & Richardson, P. W. (2007). Motivational factors influencing teaching as a career choice: Development and validation of the FIT-Choice scale. *The Journal of Experimental Education, 75*(3), 167-202. https://doi.org/10.3200/JEXE.75.3.167-202

Watt, H. M., & Richardson, P. W. (2008). Motivations, perceptions, and aspirations concerning teaching as a career for different types of beginning teachers. *Learning and Instruction, 18*, 408-428. https://doi.org/10.1016/j.learninstruc.2008.06.002

Watt, H. M., Richardson, P. W., Klusmann, U., Kunter, M., Beyer, B., Trautwein, U., & Baumert, J. (2012). Motivations for choosing teaching as a career: An international comparison using the FIT-Choice scale. *Teaching and Teacher Education, 28*(6), 791-805. http://dx.doi.org/10.1016/j.tate.2012.03.003

Weldon, P. (2018). Early career teacher attrition in Australia: evidence, definition, classification and measurement. *Australian Journal of Education, 62*(1), 61-78. http://dx.doi.org/10.1177/0004944117752478

Wigfield, A., & Eccles, J. S. (2000). Expectancy–value theory of achievement motivation. *Contemporary Educational Psychology*, *25*(1), 68-81. https://doi.org/10.1006/ceps.1999.1015

Zee, M., & Koomen, H. M. (2016). Teacher self-efficacy and its effects on classroom processes, student academic adjustment, and teacher well-being: A synthesis of 40 years of research. *Review of Educational Research*, *86*(4), 981-1015. https://doi.org/10.3102/0034654315626801

Zeichner, K. M. (2014). *The struggle for the soul of teacher education*. Routledge.

Zeichner, K., & Pena-Sandoval, C. (2015). Venture philanthropy and teacher education policy in the US: The role of the New Schools Venture Fund. *Teachers College Record*, *117*(5), 1-44.

Zhang, S., Hightower, A., & Shi, Q. (2021). Teacher preparation, motivation, and self-efficacy: A comparative study of new teachers in Japan and the United States. *Indonesian Journal of Educational Research and Review, 4*(3), 368-379. https://doi:https://dx.doi.org/10.23887/ijerr.v4i3.39010