The Predictive Power of the Pre-Service Teachers' Self-Efficacy Beliefs upon Their Preparedness to Teach

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Abstract

The aim of this study is to reveal the relationship between pre-service teachers' self-efficacy beliefs and preparedness to teach. In this context, the model of the research is the relational screening model. The sample of the study consisted of 407 fourth grade pre-service teachers who were studying in a state university. Data were collected using three types of data collection tools. These, personal information form, self-efficacy belief scale and being ready for teaching. In the analysis of the data, correlation analysis, descriptive and multiple linear regression analysis were used. As a result of the research, it was determined that the pre-service teachers' readiness and self-efficacy beliefs were high. In the study, it was found that there was a moderately significant and predictive relationship between the pre-service teachers' self-efficacy belief and preparedness to teach. Various suggestions have been made based on the results of the research.

Keywords: self-efficacy belief, teaching, preparedness to teach

1. Introduction

Education is the key element in the transfer of knowledge to the individuals who are raised to keep pace with the era. Likewise, individuals are prepared for life and their higher-order thinking skills are developed, and value judgments of society are transferred to the individuals through education. Teachers play a significant role in the realization of all considerations. The more efficient, high-qualified, and productive the teachers are, the more successful the students will be, and the intended level of education will go a step further. Teachers hold determining and guiding characteristics in order to achieve the objectives of the education system, to apply the curriculum in a qualified way and to organize the teaching-learning process and so on (Demirtaş, Cömert, & Özer, 2011). Thus, it is of utmost importance for teachers to receive qualified pre-service education before further upon the significance of reflective practice in the learning process.

Pre-service teaching training is paramount in terms of providing teachers with opportunities to gain both theoretical knowledge and practical before starting the profession (Ozoglu, Gur, & Altunoglu, 2013). Pre-service teachers, no matter the country they come from, are expected to hold the required competences for effective teaching and facilitating their students' learning (Rajić, Hosgorur, & Drvodelić, 2015). This is closely related to the prospective teachers' preparedness to teach. Their preparedness to teach is likely to be affected by their professional competences and field knowledge regarding the teaching profession. Ure (2010) has noted that the prospective teachers should possess the following characteristics:

1) Developing a holistic theoretical and practical framework for learning and teaching,

2) Being knowledgeable about the students and their development and learning process,

3) Connecting and developing caring relationships with students to create an efficient learning environment in the classroom,

4) Making long and short term plans to manage learning and teaching content,

5) Using evidence to demonstrate how the learning and teaching process affects student learning and motivation,

6) Developing a vision of learning and teaching and,

7) Developing a sense of professional identity.

The researches conducted in Turkey revealed the insufficiency of teachers' training programs on the basis of preparedness to teach (Çelik & Arıkan, 2012; Gündoğdu, Altın, Üstündağ, & Altay, 2018). Gökmenoğlu (2013) has clarified that teacher training programs provide theoretical knowledge for pre-service teachers, but failing in putting theoretical knowledge into practice. In this regard, it is remarkable to organize various activities within the context of teacher training programs in order to increase pre-service teachers' preparedness to teach, which may also affect their self-efficacy beliefs.

Stajkovic and Luthans (2002) have defined the self-efficacy belief as an individual's confidence about his/her capabilities to execute a specific task within a given context. Self-efficacy beliefs have a significant impact on individuals' mobilization. If people judge themselves as inefficacious in achieving the desired results, they are unwilling to take action despite the presence of other factors (Bandura, 1986). Because self-efficacy influences the tasks individuals choose to learn, the goals they set for themselves and their efforts when learning difficult tasks (Lunenburg, 2011). Pre-service teachers' readiness for teaching or their level of readiness is crucial to how well they will cope with the problems they will face in their profession and to what extent they will be successful in their teaching career (Brown, Lee & Collins, 2015). Likewise, pre-service teachers with high level of self-efficacy beliefs can be said to achieve success and cope with the problems they encounter when they start teaching (Bandura, 1993). This paves the way for a relationship between the pre-service teachers' preparedness to teach and their self-efficacy beliefs.

Today, science and technology are changing at a rapid pace. The training of the intellectual individuals with respect to the requirements of the information society has become a vital issue in this age when rapid changes and developments in science and technology have emerged. Teachers are the core figures in raising intellectual individuals, increasing the quality of education and training individuals who have twenty-first century skills.

Therefore, they should be trained during pre-service education in such a way that they must have feeling of preparedness to teach and high self-efficacy levels. Pre-service teachers, in this way, may be said to design the teaching-learning process with adopting a student-centred approach, and that they will be well-qualified for the academic achievement of their students. Upon examining the relevant literature in Turkey, no such a study was directed at exploring the relationship between pre-service teachers' preparedness to teach and their self-efficacies. The lack of in-depth research was considered as a shortcoming by the researcher. This research was expected to be a feedback to the teacher training institutions and to make a great contribution to the related literature. Thus, this research aims to analyze whether or not pre-service teachers' self-efficacy beliefs predict their preparedness to teach. In service of this aim, answers to the following questions were sought:

1) What is the level of participation of pre-service teachers in the scale of self-efficacy belief and preparedness to teach?

2) Is there a significant relationship between the self-efficacy of pre-service teachers and preparedness to teach?

3) Does the teacher candidates' self-efficacy significantly predict preparedness to teach?

2. Method

2.1 Research Design

This research employed relational models. Karasar (2012) defined the relational screening model as "a model which aims to determine whether there is a change of more than one variable and the degree of this change". Relational survey model was used in the present study since it examined whether there was a predictive relationship between pre-service teachers' preparedness to teach and their self-efficacy beliefs.

2.2 Research Population and Sample

The research was carried out with pre-service teachers studying at a state university in the 2017-2018 academic year. The sample consisted of 407 fourth grade pre-service teachers in total. The entire population was included in the research. Among the participants, 281 were women and 126 were men.

2.3 Data Collection Tools

This research deployed two data collection tools. These are:

Preparedness to Teach Scale: The research employed the "Preparedness to Teach Scale", which was developed by Darling-Hammond, Chung and Frelow (2002). This scale, the Turkish adaptation of which was created by Yıldırım and Kalman (2017), was administered to 535 pre-service teachers with the goal of ensuring the validity and reliability. Exploratory and confirmatory factor analyses were used during the development of the scale. The

analysis results suggested that the total variance of the scale is 58.71%, consisting of four dimensions and 20 items (Yıldırım & Kalman, 2017). The first dimension of the scale "forming an effective learning atmosphere" consists of 6 items and explains 15.76% of the total variance; the second dimension "designing the instructional process" includes 6 items and explains 15.57% of the total variance; the third "techno-pedagogical competency" comprises 5 items and explains 14.89% of the total variance and the fourth "understanding the learner" consists of 3 items and explains 12.49% of the total variance (Yıldırım & Klaman, 2017). The factor loading regarding the tool's items varies across .50-.74. The Cronbach's alpha internal consistency coefficient was found to be 0.92 for the overall scale. As for the dimensions, the coefficients were determined as .82, .80, .83, .73, respectively (Yıldırım & Kalman, 2017). The scale was found to have acceptable fit indices values related to the model. The lowest score obtained from the scale is 20 and the highest score is 100. The scale is graded as 5-point Likert type.

Self-Efficacy Belief Scale: The research also employed the "Self-efficacy Belief Scale", which was developed by Çolak, Yorulmaz, and Altınkurt (2017). This scale was administered to 285 pre-service teachers in order to confirm the validity and reliability. Exploratory and confirmatory factor analyzes were used during the development of the scale. The analysis results indicated that the total variance of the scale is 56.93%, consisting of four dimensions and 27 items (Çolak, Yorulmaz, & Altınkurt, 2017). The first dimension of the scale "academic self-efficacy" consists of 5 items and explains 9.79% of the total variance; the second dimension "Professional self-efficacy" includes 7 items and explains 14.43% of the total variance; the third "social self-efficacy" comprises 8 items and explains 16.87% of the total variance and the fourth "intellectual self-efficacy" consists of 7 items and explains 15.83% of the total variance (Çolak, Yorulmaz, & Altınkurt, 2017). The factor loading regarding the tool's items varies across .47-.82. The Cronbach's alpha internal consistency coefficient was identified as 0.93 for the overall scale. As for the dimensions, the coefficients were determined to be .75, .86, .88, .87, respectively (Çolak, Yorulmaz, & Altınkurt, 2017). The scale has acceptable fit indices values related to the model. The lowest score obtained from the scale is 20 and the highest score is 100. The scale is graded as 5-point Likert type.

Since the self-efficacy belief scale was developed for teachers, exploratory factor analysis was re-performed in the present study. First, the views of the three faculty members, who are experts in the field, were evaluated as to whether the scale could be applied on pre-service teachers. Accordingly, the faculty members confirmed that the tool can be used for pre-service teachers. The exploratory factor analysis conducted within the scope of this research suggested that the items are gathered under four factors and the results are consistent with those of the scale development developed by Çolak, Yorulmaz, and Altınkurt (2017). As a result, this scale has been administered to the pre-service teachers.

Both scales were used in this study after the necessary permissions were obtained by the researchers. Cronbach Alpha internal consistency coefficient of both scales was analyzed and Cronbach Alpha coefficient of the scales was .91. Based on this result, it can be said that the scale is reliable (Fraenkel, Wallen & Hyun, 2014).

2.4 Data Collection

The research data were collected by the researchers in the spring term of the 2017-2018 academic year. The scales were distributed to the pre-service teachers and the purpose of the scales has been explained to them. Participants were ensured to participate in the study voluntarily. The data were collected between 20-27/November/2017. The completion of the scales lasted approximately 25 minutes.

2.5 Data Analysis

In order to make parametric analyses, it was firstly examined whether the normality assumption was met. Besides, the Kolomogrov Smirnov test assessed whether the data distributed normally. As a result of the analyses, preparedness to teach scale was identified to demonstrate normal distribution (K-S=.04, p>.05), while self-efficacy belief scale has not (K-S=.06, p<.05). Can (2015) recommend that the skewness and kurtosis coefficients be considered in order to determine whether the data demonstrates normal distribution, and these values should be between +1.96 and -1.96. The skewness coefficient of the self-efficacy belief scale was found to be .312, the standard deviation was .125 and the coefficient of kurtosis was -.086 and the standard deviation was .249. Based on this reference, the self-efficacy belief scale was determined to show normal distribution. Descriptive statistics, correlation and multiple linear regression analyzes were used during data analysis. Correlation analysis was performed since the normal distribution was ensured, the data pairs were selected by the random assignment in the universe and the variables forming the data pairs were independent from each other (Green & Salkind, 2013). Therefore, Pearson product moment correlation analysis was employed because normal distribution was achieved and independent continuous variables were used. In order to perform multiple linear regression analysis, there should be a sufficient number of samples, at least 40 participants for each predictive variable, not having too high linear correlations, ensuring normality and not having extreme values (Pallant, 2005; Seçer, 2015). As mentioned

above, all assumptions were met in the current study and the maximum values were excluded from the research considering Mahalahobis distance.

3. Findings

This section presents findings related to the participation levels of the pre-service teachers regarding preparedness to teach and their self-efficacy beliefs; the relationship between their preparedness to teach and self-efficacy beliefs and whether preparedness to teach predicts their self-efficacy beliefs.

Table 1 displays the participation levels of the pre-service teachers regarding preparedness to teach and self-efficacy belief scales.

Table 1. Pre-service teachers' participation levels regarding preparedness to teach and self-efficacy belief scales

Variables	N	$\overline{X}$	sd	Max	Min	Level
Preparedness to Teach	381	3.93	.02	5.00	2.65	High
Self-efficacy Belief	381	4.01	.02	5.00	3.00	High

Table 2 presents that pre-service teachers have a "high" level of participation preparedness to teach scale ($\overline{X}$ =3.93) and self-efficacy belief scale ($\overline{X}$ =4.01).

Table 2 displays the findings related to the relationship between pre-service teachers' preparedness to teach and their self-efficacy beliefs.

Table 2. Distribution of the relationship between pre-service teachers' preparedness to teach and their self-efficacy beliefs

Variables	Preparedness to Teach	Self-efficacy Belief
Preparedness to Teach	1	-
Self-efficacy Belief	.651*	1

N=381, *p<.01.

The Pearson correlation analysis conducted to determine whether there is a significant relationship between the pre-service teachers' preparedness to teach and their self-efficacy beliefs revealed a positive, medium (Tuna, 2016) and significant (r=.651, p<.01) relationship between preparedness to teach and self-efficacy beliefs (Tuna, 2016) (r=.651, p <.01). Thus, it is highly probable that pre-service teachers' self-efficacy belief scores will increase as their scores that correspond to the preparedness to teach increase.

This research explored whether the academic self-efficacy, professional self-efficacy, social self-efficacy and intellectual self-efficacy dimensions of the self-efficacy beliefs scale predicted their preparedness to teach and the results are presented in Table 3.

Table 3. The results of multiple linear regression analysis regarding whether the dimensions of self-efficacy beliefs scale predict preparedness to teach

Predicted Variable	Predicting Variables	B	Standard Error	β	t	p
Preparedness to Teach	Stable	.698	.159		4.38	.00
	Academic self-efficacy	.184	.033	.228	5.54	.00
	Professional self-efficacy	.543	.045	.546	12.15	.00
	Social self-efficacy	-.022	.034	-.029	-.65	.51
	Intellectual self-efficacy	.101	.035	.123	2.86	.00

R=.736; R2= .542; F(4-376)=111.05; p=.00.

Conducted to identify how pre-service teachers' academic self-efficacy, professional self-efficacy, social self-efficacy and intellectual self-efficacy dimensions of the self-efficacy belief scale predict their preparedness to teach, multiple linear regression analysis suggested a significant relationship (R=.736; R^2= .542) between academic self-efficacy, professional self-efficacy, social self-efficacy, intellectual self-efficacy dimensions and

preparedness to teach ($F_{(4-376)}$=111.05; p<.05). These four variables explain approximately 54% of the preparedness to teach. According to the standardized regression coefficients, the importance of predictive variables on the preparedness to teach is as follows: professional self-efficacy (β=.543), academic self-efficacy (β=.184), intellectual self-efficacy (β=.101) and social self-efficacy (β=-.022). Considering the significance tests of the regression coefficients, academic, professional and intellectual self-efficacy variables were identified to be significant predictors of preparedness to teach.

4. Discussion, Result, and Recommendations

Research results suggested that pre-service teachers' preparedness to teach and their self-efficacy beliefs were at the "high" level, which is a remarkable finding of the research. The fact that the pre-service teachers feel they are prepared for the teaching profession and have a high level of self-efficacy is an indicator of becoming successful teachers in the future. This will contribute to raise well-educated individuals. Besides, it paves the way for the fact that the pre-service teachers can organize the teaching-learning environment effectively. That pre-service teachers see themselves efficient prior to starting the teaching profession will positively affect their professional careers and increase their performance in the teaching-learning process in the classroom (Gore & Thomas, 2003). In their study, Crosswell and Beutel (2012) found that pre-service teachers' preparedness to teach is positive. Similar results emerged in the study conducted by Croft (2018). Köse and Uzun (2018) and Ünlü, Kaşkaya, and Kızılkaya (2017) noted that pre-service teachers have high self-efficacy beliefs. All these results are in consistent with that of the present research.

A medium level significant relationship has been identified between pre-service teachers' preparedness to teach and self-efficacy beliefs. Accordingly, the pre-service teachers' self-efficacy belief scores are likely to increase as the scores of their preparedness to teach increase. This result clearly indicates the relationship between preparedness to teach and self-efficacy belief. Upon analyzing the relevant literature, there is no such a study specifically published on examining teachers' self-efficacy beliefs and their preparedness to teach; however, there has been found a relationship between pre-service teachers' self-efficacy beliefs and their attitudes towards teaching profession (Demirtaş, Cömert, & Özer, 2011; Tarkın & Uzuntiryaki, 2013), classroom management (Sak-Şahin, 2015) and their attitudes towards computer aided education (Yeşiltaş, 2016).

It was determined that there was a medium level significant relationship between teacher candidates' preparedness to teach and self-efficacy beliefs. According to this, it can be said that the self-efficacy belief scores will increase if pre-service teachers' scores of being preparedness to teach increase. This result clearly shows that there is a relationship between preparedness to teach and belief in self-efficacy. There is no study examining teachers' self-efficacy beliefs and their attitudes towards teaching profession (Demirtaş, Cömert, & Özer, 2011; Tarkın & Uzuntiryaki, 2013), classroom management (Sak-Şahin, 2015) and significant relationship was found between the attitudes towards computer aided education (Yeşiltaş, 2016).

Research findings have also shown a significant relationship between academic self-efficacy, professional self-efficacy, social self-efficacy, intellectual self-efficacy dimensions and preparedness to teach. Together, these three dimensions account for about 54% of the preparedness to teach. As a result of the research, the importance of predictive variables on preparedness to teach is occupational self-efficacy, academic self-efficacy, intellectual self-efficacy and social self-efficacy. As a result of the research, it was seen that academic, professional and intellectual self-efficacy was significant predictors of teacher candidates' readiness to be a teacher. Based on this result, it can be said that pre-service teachers' academic, professional and intellectual self-sufficiency status increases their preparedness to teach.

Based upon the research findings, various recommendations have been provided:

1) Research findings have revealed a relationship between the pre-service teachers' preparedness to teach and their self-efficacy beliefs. In this regard, the inclusion of the activities in teacher training programs, and the design of the teaching-learning environments by the academic staff for improving the pre-service teachers' self-efficacy beliefs may positively affect their preparedness to teach.

2) Researches conducted with larger samples and in the universities from different regions will contribute to the relevant literature.

3) Various studies may be conducted on preparedness to teach and self-efficacy belief through use of research models such as longitudinal, qualitative research and mixed research in order to make significant contributions to the literature.

Acknowledgments

Self-Efficacy Beliefs and Pre-Service Teachers' Preparedness to Teach" supported by the Cukurova University Scientific Research Coordination Unit.

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