The influence of pre-service teacher identity and personality traits on teacher self-efficacy

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Abstract

The present study investigates the predicting effects of pre-service teacher identity and five personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) on teacher self-efficacy among pre-service teachers of English as a foreign language. It was conducted at a state university in Turkey at the spring term of 2015-2016 academic year. A total of 155 students (sophomore N = 77; junior N = 78) participated in the study. In order to measure early teacher identity level of participants, Early Teacher Identity Measure (Friesen & Besley, 2013) was employed. Personality traits were measured by Quick Big Five Inventory (Vermulst & Gerris, 2005) while Teachers' Sense of Self-efficacy scale (Tschannen-Moran & Woolfolk-Hoy, 2001) was used to find out participants' self- efficacy in terms of their student engagement, instructional strategies, and classroom management strategies. Pearson correlation coefficients revealed that each variable has positive correlations with each other. Standard multiple regression analysis indicated that early teacher identity was the best predictor for teacher self-efficacy (β = .486, t = 6.856, p < .001) which was followed by openness to experience (β = .288, t = 4.296, p < .001). As the various individual differences were seen to have interrelations in the development of teaching skills, the study concludes that individual differences may help pre-service teachers to acquire one of the most important components of being a teacher: teacher-self-efficacy.

Keywords: *Teacher self-efficacy, Early teacher identity, Personality traits*

1. Introduction

Teacher self-efficacy is one of the important issues in teacher development as it is a teacher's personal belief to cope with teaching tasks. If they have question marks about their beliefs, their professional development process may be interrupted. Therefore, studies on teacher self-efficacy can be used to explain patterns of teacher beliefs and the ways in which those beliefs influence teaching and student achievement (Tshannen-Moran, Woolfolk-Hoy & Hoy, 1998; Roberts & Henson, 2000). Consistent with the general formulation of self-efficacy, Tschannen-Moran and Woolfolk-Hoy (2001) defined teacher efficacy as "teacher's judgment of his or her capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 783).

As the various individual differences were seen to have interrelations in the development of teaching skills, it was thought that investigating individual differences may help pre-service teachers to acquire one of the most important components of being a teacher: teacher-self-efficacy. With this idea, the present study aims to contribute to the existing literature by investigating on the contexts of teacher self-efficacy, pre-service teacher identity, and personality traits.

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1.1. Pre-service teacher identity

Since adolescence is a critical period for all adolescents to develop an identity, prospective teachers should not be unsure of their identity and future plans. Britzman (1991) states that becoming a teacher is a type of "identity transformation." Prospective teacher form their future teacher identities throughout their college education, so it is crucial to address identity more efficiently as a component of teacher education (Arpacı & Bardakçı, 2016). According to Kelchtermans (2005), the dynamic sense of identity can be termed as pre-service teachers' self-understanding involving questions like "who am I as a teacher at this moment and who do I want to become as a teacher" (p. 996).

As a consequence, student teachers are "active players in the process of their own professional development" (Schepens et al., 2009, p. 362). Freire (1998) reminds us that "the key is not to transfer knowledge but to create possibilities for the production or construction of knowledge" (p. 22). Then, the pedagogy of teacher education must help prospective teachers "become" good teachers in personal and professional development instead of focusing on teaching them to "know" about teaching (Korthagen, 2004, p. 79). Bullough (1997) highlights the importance of teacher education in identity formation of beginning teachers by saying:

Teacher identity – what beginning teachers believe about teaching and learning and self as-a-teacher – is of vital concern to teacher education; it is the basis for meaning making and decision making. Teacher education must begin, then, by exploring the teaching self (p. 21).

1.2. Personality traits

Studies conducted on personality have always dealt with deciding on general personality types because it seems that personality is related with nearly all aspects of human life. One of the most valid and reliable inventories is Quick Big Five Inventory (Vermulst & Gerris, 2005) which is used to assess five different personality traits: *agreeableness* (the inclination towards interpersonal trust and consideration of others), *extraversion* (the disposition towards positive emotions, sociability and high activity), *conscientiousness* (the tendency towards persistence, industriousness and organization), *neuroticism* (the susceptibility to psychological distress, inability to control urges, proneness to unrealistic ideas and inability to cope with stress), and *openness to experience* (the tendency towards variety, intellectual curiosity and aesthetic sensitivity). These personality traits should not be considered as categories with clear boundaries. Therefore, QBFI does not provide score ranges to determine the personality type, but rather a dispersion model of personality.

1.3. Teacher self-efficacy

Based on Bandura's (1997) theory of self-efficacy, patterns of teacher beliefs and the ways in which those beliefs influence teaching and student achievement are the components of teacher self-efficacy (Tshannen-Moran, Woolfolk-Hoy & Hoy, 1998; Roberts & Henson, 2000). It is a construct related to positive teaching behaviour and student outcomes (Ashton & Webb, 1986; Gibson & Dembo, 1984). Teachers' efficacy judgments are also highly correlated with teaching performance (Enochs & Riggs, 1990), teachers' enjoyment of teaching (Watters & Ginns, 1995), student achievement (Midgley, Feldlaufer, & Eccles, 1989) and risk taking (Ashton & Webb, 1986). Additionally, efficacious teachers plan more (Allinder, 1994), persist longer with students who struggle (Gibson & Dembo, 1984), and are less critical of student errors (Ashton & Webb,

1986) and more willing to experiment with new methods to better meet the needs of their students (Guskey, 1988).

Given the current profile of the literature, it was thought that investigating why some pre-service teachers attain sense of teacher self-efficacy at the early years of their teacher education can be enlightening to understand the reasons behind the actions. Accordingly, development of sense of teacher self-efficacy may be related to some constructs like pre-service teacher identity and personality traits. Based on these ideas, the present study aimed to find out the predictors of teacher self-efficacy by also examining the relationship between pre-service teacher identity, personality traits, and teacher self-efficacy.

With these aims, the current study tries to find answers to the following questions:

1. How well do the measures of early teacher identity and personality traits predict teacher self-efficacy? How much variance in teacher self-efficacy can be explained by scores on these scales?

2. Which is the best predictor of teacher self-efficacy: pre-service teacher identity or personality traits?

2. Methodology

2. 1. Setting, participants, and instruments

The present study was conducted at a state university in Turkey at the spring term of 2015-2016 academic year. A total of 155 students (sophomore N = 77; junior N = 78) at the department of English language teaching participated in the study. In the current study, a questionnaire consisting of four parts (demographic variables, pre-service teacher identity, personality traits, and teacher self-efficacy scales) was employed to collect data. All of the instruments were administered in Turkish to prevent misinterpretations.

2.1.1. Early Teacher Identity Measure (ETIM)

The ETIM was developed by Friesen and Besley (2013). They benefited from self-categorization theory while conceptualizing teacher identity, and they defined professional teacher identity as a developmental and social psychological process. The scale consists of 17 items (e.g. "*I often doubt if I am the right person to become a teacher", "I have confidence in my ability to one day be a good teacher*") and is based on a 5-point Likert scale anchored from 1 (Disagree) to 5 (Agree). This scale was developed to measure the participants' perceptions of their early development of a teacher identity, and it was adapted into Turkish by Arpacı and Bardakçı (2015) with a reliability coefficient of .90.

2.1.2. Quick Big Five Inventory (QBFI)

Vermulst and Gerris (2005) developed Quick Big Five Inventory to measure an individual on the Big Five Factors (dimensions) of personality: *extraversion, agreeableness, conscientiousness, neuroticism*, and *openness to experience*. They rearranged the measurement tool developed by Goldberg (1992) by reducing the number of items from 100 to 30. Participants are required to score 100 statements in the survey within a range of disagree strongly – agree strongly. There are no score ranges to use to put an individual in one of the personality categories. Therefore, the participant gets scores from each category with relatively high scores from some of them and relatively low scores from the others. This test is highly employed in recent studies since it is

time-saving and reliable. The scale was adapted into Turkish by Morsünbül (2014) with reliability coefficients ranging between .71 and .81 for each scale.

2.1.3. Teacher's Sense of Efficacy Scale (TSES)

TSES was developed by Tschannen-Moran and Woolfolk-Hoy (2001) to determine the level of teachers' sense of self-efficacy. There are 24 items describing the types of tasks representative of frequent teaching activities with 9-point Likert-type scales, ranging from "Nothing" to "A Great Deal". By using in-service and pre-service teachers as samples, the test was revealed with three factors: *efficacy for student engagement*, *efficacy for instructional strategies*, and *efficacy for classroom management*. Sample items include statements like *To what extent can you use a variety of assessment strategies?, How much can you do to control disruptive behaviour in the classroom?,* and *How much can you do to get students to believe they can do well in schoolwork*? Further analyses indicated that TSES could be accepted as a reliable and valid instrument for assessing teacher efficacy construct (Çapa, Çakıroğlu, & Sarıkaya, 2005). In several studies, the reliability of TSES was reported as between .87 and .91, and in the present study, Turkish version of the TSES, which was adapted by Çapa, Çakıroğlu, and Sarıkaya (2005), was used with a reliability of .91.

2.2. Data analysis

Data collected through the instruments were analysed by using the inferential statistics to answer the research questions stated above. A standard multiple regression analysis was conducted to find out how well the independent variables predict teacher self-efficacy and which is the best predictor.

3. Findings

There are some assumptions to test before running a regression analysis. The first thing to check is the sample size, which must be at least 15 participants per predictor as recommended by Stevens (1996). However, Tabachnick and Fidell (2007) provided a formula for calculating sample size: $N > 50 + 8m$ (m = number of independent variables). As the present study had two predictors, one with 5 sub-dimensions, early teacher identity and big five personality traits, 155 participants were enough to meet the sample size requirements.

The next assumption to test is multicollinearity and singularity, which are about the relationship among the independent variables. If the predictors are highly correlated ($r=.9$ and above), multicollinearity exists. After performing a Pearson correlation, it was found that the correlations among the independent variables did not exceed the limits of multicollinearity as demonstrated in Table 1. Furthermore, in order to avoid singularity, the sub-dimensions in personality traits questionnaire were analysed separately.

Other preliminary analyses were conducted to ensure no violation of the assumptions of outliers, normality, linearity, and homoscedasticity, and it was found that variables in the present study did not violate the normality with a straight diagonal line in Normal P-P Plot and proper Tolerance and VIF values. However, Mahal. Distance surpassed the accepted value of 22.46 because of four outliers, case numbers 20, 26, 55, 114. After excluding these cases from the data, this criterion met the assumptions with a value of 17.8.

Before conducting further analyses, we attempted to explore the relationships among the independent variables (early teacher identity and five personality traits) and dependent variable

(teacher self-effic   acy) as shown in Table 1. Pearson correlation coefficients revealed that the independent variables correlated with the dependent variable mostly at a statistically significant level. Among these six independent variables (pre-service teacher identity & five personality traits), the strongest correlation with teacher self-efficacy belonged to early teacher identity ($r =$ .575, $p < .01$), having a large size correlation. The other correlation coefficients were summarized in Table 1 below:

Table 1. Relationship between the dependent and independent variables

	1	2	3	4	5	6	7
1. Teacher self-efficacy	1						
2. Early teacher identity	.575**	1					
3. Agreeableness	.356**	.410**	1				
4. Extraversion	.181**	.275**	.225**	1			
5. Conscientiousness	.340**	.322**	.396**	.082	1		
6. Neuroticism	.210**	.184*	.349**	.372**	.160*	1	
7. Openness to experience	.411**	.304**	.321**	.182*	.129	.304**	1

** Correlation is significant at the 0.01 level (2-tailed).

After controlling for the interaction between each predictor and dependent variable, a standard multiple regression analysis was conducted. It was aimed to find out how well the measures of early teacher identity and personality traits predict teacher self-efficacy, the amount of variance explained by these measures, and the best predictor of the dependent variable. With the entry of the ETIM and QBFI into the model, the total variance explained by this model as a whole in teacher self-efficacy was 46.9%, $F (6, 143) = 21.083$, p = .000. Of these six independent variables, only early teacher identity and openness to experience made a significant unique contribution to the prediction of teacher self-efficacy (early teacher identity, $\beta = .486$, $t = 6.856$, $p < .001$; openness to experience, $\beta = .288$, $t = 4.296$, $p < .001$). It was also found out that early teacher identity is a better predictor for teacher self-efficacy with a higher beta value.

Table 2. Predictors of teacher self-efficacy

Predictors	*Standardized coefficients β*	*t*	*p*	Correlations		
				Zero order	**Partial**	**Part**
Early Teacher Identity	.486	6.856	.000	.604	.497	.418
Agreeableness	-.004	-.055	.957	.344	-.005	-.003
Extraversion	-.073	-1.083	.281	.149	-.090	-.066
Conscientiousness	.119	1.753	.082	.318	.145	.107
Neuroticism	.075	1.070	.286	.237	.089	.065
Openness to experience	.288	4.296	.000	.460	.338	.262
Overall Model	*F*	*df*	*p*	*R^2*	*Adj. R^2*	
	21.083	143	.00	.469	.447	

p=.01

4. Discussion and conclusion

With the present study, it was mainly aimed to investigate the predicting effect of pre-service teacher identity and personality traits on teacher self-efficacy by also assessing the interrelationships between each variable. In line with the aims of the present study, levels of interrelations between pre-service teacher identity, personality traits, and teacher self-efficacy (see Table 1) indicate that the relationship that we hypothesized based on the theory is also supported statistically with these results. However, it is clearly seen that early teacher identity has a higher correlation with teacher self-efficacy than five personality traits.

The explanation for this situation may lay in the concept of pre-service teacher identity because it is pre-service teachers' self-understanding involving questions like "who am I as a teacher at this moment and who do I want to become as a teacher" (Kelchtermans, 2005, p. 996). As teacher self-efficacy is composed of the theory of self-efficacy, patterns of teacher beliefs and the ways in which those beliefs influence teaching and student achievement (Tshannen-Moran, Woolfolk-Hoy & Hoy, 1998; Roberts & Henson, 2000), questions asked to form early teacher identity may be called as a natural way leading to teacher self-efficacy.

Based on this idea, the results of the current study also revealed early teacher identity as the best predictor of teacher self-efficacy. Accordingly, the second best predictor in our model was the variable of openness to experience which is defined as the tendency towards variety, intellectual curiosity and aesthetic sensitivity. It can be said that openness to experience sounds like a natural way out for teacher self-efficacy which promote willingness to experiment with new methods to better meet the needs of the students (Guskey, 1988). By being open to experience, teachers can increase their efficacy in student engagement, instructional strategies, and classroom management. With these abilities, they can control disruptive behaviour in the classroom efficiently or increase learning opportunities effectively.

By looking at these results, as early teacher identity the best predictor of teacher self-efficacy, it can be easily said that supporting teacher identity formation may help prospective teachers to be self-efficient in their future professions. Students of teacher education programmes form their teacher identities throughout their college education, and they form their future teaching selves in this way. Therefore, there is a need to address identity more effectively as a component of teacher education (Arpacı & Bardakçı, 2016). Accordingly, if teacher education programmes take more responsibility, early teacher identity can be established at the beginning of teaching profession by leading students become teachers with higher levels of self-efficacy. With strong fundamentals on pre-service teacher identity and teacher self-efficacy, teachers of future can take accountability of their professional development, improve their teaching skills and field knowledge, anticipate change and promote innovation.

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