SELF-EFFICACY BELIEFS OF PROSPECTIVE TEACHERS*

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ABSTRACT
The purpose of the study is to examine the prospective teachers' self-efficacy beliefs about teaching. Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran and Hoy, 2001) with demographic part was administered to prospective teachers at the first and last years at a state university in Turkey. TSES was adapted to Turkish language by Çapa, Çakıroğlu&Sarıkaya (2005). Their study confirmed that three sub-scales of TSES is valid for Turkish prospective teachers. The sub-scales of the TSES: efficacy of instructional strategies and efficacy of classroom management strategies and efficacy of student engagement.In the present study, 213 freshman and 240 senior prospective elementary teachers' data was analyzed by independent sample t-tests. Means of efficacy sub-scales of freshmen are $M_{instructional}$= 6.80, $M_{management}$= 6.84 and $M_{engagement}$=6.72. Means of efficacy sub-scales of seniors are $M_{instructional}$= 6.73, $M_{management}$= 6.73 and $M_{engagement}$=6.59. Based on means, Turkish prospective teachers' efficacy beliefs were high. There was no significant mean difference between freshman and senior prospective teachers with respect to their efficacy beliefs in student engagement (t (485) =1.37. p= .169), instructional strategies (t (471.497) =0.726. p= .486), and classroom management (t (472.451) = 1.119. p= .264).Implications for further research were given.
Key words: self-efficacy, prospective teachers

INTRODUCTION

The contribution of individual's self-perception to the academic success has been being object of interest of several research. A growing body of that research focused on the 'self-efficacy' component which is defined by Bandura (1997) as beliefs in terms of existing ability to accomplish a task. Self-efficacy was reported as a significant factor that shapes thinking and behavior and influences individuals' course of action towards a specific task (Bandura, 1993; Bandura &Schunk, 1981; Bong, 2004; Chemers, Hu & Garcia, 2001; Smith, Sinclair & Chapman, 2001). Thus, considering the self-efficacy of a teacher towards teaching was appeared to be important for the quality of education. In the scope of Bandura's theory, teacher self-efficacy is defined as a teacher's own "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" (Tschannen-Moran & Woolfolk Hoy, 2001, p.783). Briefly, teacher self-efficacy is their perception on their own teaching.

Teachers' efficacy beliefs has been shown to be a significant construct with respect to teaching behaviors and student outcomes (Ashton & Webb, 1986; Tschannen-Moran et al. 1998) such as achievement (Ross, 1992) and self-regulation (Stuart, 2006). Moreover, teacher with high level of efficacy are more open to use student centered methods in the class (Czerniak&Schriver, 1994), to create a positive atmosphere (Ashton & Webb, 1986; Goddard et al., 2004), to reveal more enthusiasm and put more effort on teaching (Allinder, 1994), in turn, which shapes progressive student outcomes (Dorman, 2001; Fraser & Walberg, 1991; Haertel et al. 1981).

Richardson (1996) proposes that prospective teachers develop self-efficacy beliefs towards their potential previously entering teaching profession. Considering them as the future teachers, investigating prospective teachers' efficacy beliefs towards their own capability may reflect their upcoming performance in the field. The research conducted with prospective teachers reported that the participants reflected high teaching self-efficacy (Gencer&Çakıroglu, 2005) while this may change during their practicing years (Kim & Cho, 2014).

The literature review in the following paragraphs will highlight the theoretical framework on self-efficacy and research focusing on teacher self-efficacy and prospective teachers.

Literature Review
Self-efficacy

Bandura describes self-efficacy as "People's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391). More generally, it refers to individuals' own confidence to attain within a specific task. This component is highly related with behavior since stronger efficacy beliefs promote the effort and persistence towards the task (Pintrich&Shunk, 2002; Linnenbirnk&Pintrich; 2003). Development of strong efficacy beliefs depends on various constructs. Bandura (1986) identifies four sources of efficacy as mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states. That is, individuals build efficacy beliefs through their own successful

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experiences on the task as well as the successful experiences observed from social models who seen as in similar position. Additionally, efficacy beliefs can be developed by receiving feedbacks from others about their capability on mastering the task and the individual's physiological and emotional response on the task (Bandura, 1977). It is evident from research that people with a high sense of self-efficacy tend to take more challenging tasks (Bandura, 1993; Bandura &Schunk, 1981), to be more persistent on obstacles (Bandura &Schunk, 1981; Schunk, 1982, 1983), to set higher goal challenges (Walker & Greene, 2009; Bandura, Barbaranelli, Caprara&Pastorelli, 2001), to develop deeper interest, higher engagement and motivation on the task. (Bong, 2004; Chemers, Hu & Garcia, 2001; Smith, Sinclair & Chapman, 2001).

Teacher Self-efficacy

Drawing on the work of Bandura, Tschannen Moran et al. (1998, p.233) explains teacher's sense of efficacy beliefs as "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." Three types of teaching efficacy identified as efficacy for instructional strategies, efficacy for classroom management, and efficacy for student engagement (Tschannen-Moran & Woolfolk Hoy, 2001). Efficacy for instructional strategies refers to teachers' beliefs in their capability to use several instructional strategies and efficient teaching activities. Efficacy for classroom management focuses on teacher's judgments on ability and skills that required to maintain the classroom order. Efficacy for student engagement means the level of confidence on effectively engaging students and providing engagement in the class.

Tschannen-Moran, et al. (1998) propose a cyclic nature of teacher efficacy that higher efficacy shapes better performance and persistence which in turn brings higher efficacy while the lower efficacy decreases the teaching outcomes ending up with forming low efficacy beliefs. The critical point is that, the teaching self-efficacy beliefs refers to teacher's perception of ability regarding teaching instead of his or her substantial ability. It is the perception of competence instead of actual level of competence. People may misjudge their capability as overvalue and undervalue the potential which may influence extend of effort they put forth and determination they express on struggles.

Research have consistently revealed the contribution of teacher efficacy on their courses of action in teaching process. In the review study conducted by Ross (1994, 1998) six teacher behaviors revealing teacher efficacy was emerged as: "(1) learn and use new approaches and strategies for teaching, (2) use management techniques that enhance student autonomy and diminish student control, (3) provide special assistance to low achieving students, (4) build students' self-perceptions of their academic skills, (5) set attainable goals, and (6) persist in the face of student failure" (as cited in Woolfolk Hoy &Spero, 2005, p.345). Besides, the empirical studies supported the relation between teaching efficacy and these behaviors. Firstly, it is reported that the teacher efficacy beliefs effects their job satisfaction (Caprara et al., 2010; Goddard et al., 2004), enjoyment for teaching (Allinder, 1994; Watters &Ginns, 1995) and constancy to the profession (Coladerci, 1992). Furthermore, teacher with a high sense of efficacy was found to be more persistent with obstacles (Gibson &Dembo, 1984), to reveal more enthusiasm and put more effort on teaching (Allinder, 1994; Milnet& Woolfolk, 2003). In terms of classroom atmosphere, high self-efficacious teachers tend to be more open to innovations (Haney, Czerniak&Lumpe, 1996; Tschannen-Moran, et al., 1998), to use student-centered methods (Czerniak&Schriver, 1994), to be more confident in planning and organizing activities (Milnet& Woolfolk, 2003) to create a humanistic environment (Goddard et al., 2004; Henson, 2001), and to use effective classroom management strategies (Emmer & Hickman, 1991; Henson, 2001; Tsouloupas et al., 2010). These favorable teaching behaviors may lead better student outcomes (Dorman, 2001; Fraser & Walberg, 1991; Caprara et al. 2006).

Prospective Teachers' Self-efficacy

In the perspective of prospective teachers, identification and development of strong efficacy beliefs towards teaching is highly significant considering their future role in the teaching profession. Prospective teachers' own judgements about their capabilities on teaching may express an idea about the courses of action that they will possess when they enter the field since the beliefs are persistent to change (Yalcin, 2011; Bandura, 1997). It is reasonable to expect commitment to the profession of teachers when they develop greater beliefs about their perceived capability in their early experiences such as preservice years (Pendergast, Garvis, Keogh, 2011). On the other hand, teacher efficacy beliefs may change from pre-service to in-service periods since the possible difference between estimation of the abilities and the experience in the reality (Hoy &Spero, 2005). Pre-service teachers may overestimate their competence while this sense decreases when they enter the profession and realize the hardness of teaching or experience negative practices (Weinstein, 1988; Kim & Cho, 2014). Actually, national research on the prospective teachers' teaching self-efficacy generally reveals positive and strong beliefs towards teaching (Tekkaya, Cakiroglu, &Ozkan, 2004; Gencer&Cakiroglu, 2005; Kahraman et al., 2014; Yılmaz &Cavas, 2008) while the studies investigating the change over time had shown mixed results. For example, Hoy

and Spero (2005) reported an increase in pre-service years while they explained a decrease in first year of profession. On the other hand, some of the studies conducted in Turkey reported no significant mean difference in pre-service teachers' self-efficacy in terms of the grade level (Kahraman, Yılmaz, Bayrak, Güneş, 2014; Gencer&Çakıroğlu, 2005). As it is elaborated, to study pre-service teachers' teaching self-efficacy is important to have an idea about their preparations for teaching in the future.

METHODOLOGY
Sample
Teachers' Sense of Efficacy Scale (TSES) (Tschannen-Moran and Hoy, 2001) with demographic part was administered to freshman and senior prospective teachers at a state university in Kayseri, Turkey (N=487, n= 253 freshman, n=234 senior). Convenience sampling was used in sampling procedure since researchers were faculty members at the same university. The university is a big university settled down 3 campuses with 18 faculties and 3 instituteslocated at the Central Anatolia. Prospective elementary teachers are educated through four-year undergraduate programs. These programs at the elementary education department as mathematics teaching, science teaching, social science teaching and foreign language teaching, elementary teaching, and literature teaching.

Instrument
Teachers' Sense of Efficacy Scale (TSES) which was developed by Tschannen-Moran & Woolfolk Hoy (2001) was used to measure prospective teachers' self-efficacy beliefs. This questionnaire consists of 24 items. Each item has 9-point Likert scale as 1—Nothing, 3—Very Little, 5—Some Influence, 7—Quite a Bit, and 9—A Great Deal. The reliabilities for the full scale have ranged from .92 to .95, and for the subscales from .86 to .90 (Tschannen-Moran, Hoy, 2001).
The TSES was translated and adapted into Turkish by Çapa et al. (2005) and named as TTSES. As in the original scale, the Turkish version has three sub-dimensions which are efficacy in student engagement, efficacy in instructional strategies, and efficacy in classroom management.They reported that the coefficient alpha values of each subscale for the Turkish prospective teachers were .82, .86, and .84, respectively. For the whole scale, the reported reliability was .93.
Sub-scale scores were computed based on the items. Each sub-scale has eight items and distributions of items to sub-scales are as: items 1, 2, 4, 6, 9, 12, 14, 22 for efficacy in student engagement, items 7, 10, 11, 17, 18, 20, 23, 24 for efficacy in instructional strategies and items 3, 5, 8, 13, 15, 16, 19, 21 for efficacy in classroom management. Sample item for efficacy of instructional strategies is as: "To what extent can you provide an alternative explanation or example when students are confused?", for efficacy for classroom management is as: "How much can you do to control disruptive behavior in the classroom?" and for efficacy for Student Engagement is as: "How much can you do to motivate students who show low interest in schoolwork?". In the present study, the Cronbach's alpha for all items of TTSES is .92 while .84 for efficacy in student engagement, .77 for efficacy in instructional strategies, and .85 for efficacy in classroom management.

Analysis
The data collected from the TTSES are then analyzed using Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics is used to describe demographic information and involves the mean, median, mode and standard deviation, while independent samples t-test is used to determine the differences between the groups.

RESULTS
An independent samples *t*test was conducted to evaluate mean differences between efficacy for student engagement, efficacy for classroom management and efficacy for instructional strategies.
Descriptive results as seen atthe Table 1 show that the freshman prospective teachers' efficacy sub-scales levels are higher than the senior prospective teachers' efficacy sub-scales levels.

Table 1 Descriptives of the prospective teachers' efficacy sub-scales

	Class	N	Mean	Std. Deviation	Std. Error Mean
Efficacy for Student Engagement	1	253	6.72	1.09	.06
	4	234	6.59	1.02	.06
Efficacy for Instructional Strategies	1	247	6.80	1.18	.07
	4	234	6.73	.98	.06
Efficacy for Classroom Management	1	250	6.84	1.15	.07
	4	225	6.73	1.00	.06

The independent samples t-test results (Table 2) show that there is no significant mean difference between freshman and senior prospective elementary teachers in any sub-scales of efficacy levels. The independent sample t-test was conducted to evaluate the mean difference of efficacy for student engagement between freshman and senior prospective elementary teachers. The independent sample t-test was not significant, t (485) =1.378. p= .169. Freshman prospective elementary teachers' efficacy for student engagement (M = 6.72. SD = 1.09) is appeared to be higher than senior prospective elementary teachers' efficacy for student engagement (M = 6.59. SD = 1.02) but this difference is not meaningful. The 95% confidence interval for the difference in means was ranging from -.056 to 0.322 which is quite narrow. The eta square index, η^2, indicated that 0.3% of the variance of the efficacy of student engagement was accounted for whether a student was a freshman or a senior. Another the t-test was conducted to evaluate the mean difference of efficacy for instructional strategies between freshman and senior prospective elementary teachers. The analysis reflected no significant mean difference between groups, t(471.497) =0.726. p= .486. Freshman prospective elementary teachers' efficacy for instructional strategies (M = 6.80. SD = 1.18) is very close to senior prospective elementary teachers' efficacy for instructional strategies (M = 6.73. SD=.98). The 95% confidence interval for the difference in means was ranging from -.122 to 0.266 which is quite narrow. The eta square index, η^2, indicated that 0.1% of the variance of the efficacy of instructional strategies was accounted for whether a student was a freshman or a senior grade.

Similarly, a t-testwas conducted to evaluate the mean difference of efficacy for classroom management between freshman and senior prospective elementary teachers. The independent sample t-test result showed that there was no significant mean difference between groups, t (472.451) = 1.119. p= .264. Freshman prospective elementary teachers' efficacy for classroom management (M = 6.80. SD = 1.18) is a little bit higher than senior prospective elementary teachers' efficacy for classroom management (M = 6.84. SD=1.15). The 95% confidence interval for the difference in means was ranging from -.083 to .305. The eta square index, η2, indicated that 0.2% of the variance of the efficacy of instructional strategies was accounted for whether a student was a freshman or senior.

Table 2 Independent sample *t*-test analysis for prospective teachers' efficacy sub-scales

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Efficacy for Student engagement	Equal variances assumed	.954	.329	1.378	485	.169	.13	.09	-.056	.322
Efficacy for Instructional strategies	Equal variances not assumed	4.486	.035	.726	471.497	.468	.07	.09	-.122	.266
Efficacy for classroom management	Equal variances not assumed	4.704	.031	1.119	472.451	.264	.11	.09	-.083	.305

DISCUSSION & CONCLUSION

The present study was conducted in order to determine prospective elementary teachers' efficacy for student engagement, efficacy for classroom management and efficacy for instructional strategies and to investigate whether there is a significant mean difference based on their grade levels. Descriptive analyses showed that the freshman prospective teachers' efficacy sub-scales levels are higher than the senior prospective teachers' efficacy sub-scales levels.This higher scores of their efficacy sub-scales levels are not expected. The reason for the increase in freshmen's self-efficacy beliefs may be due to the fact that prospective teachers who entered the teacher education program were feel that they are a superman who change everything in favorable for students. This higher means were not statistically significantly different for freshman and senior groups in all subscales of TTSES. In fact, education level is a significant factor in determining one's efficacy beliefs, (Durdukoca, 2010; UluçınarSağır&Aslan, 2009). There are different study results in the literature, some of the studies reported that there is no significant mean difference in pre-service teachers' self-efficacy beliefs in terms of the grade level (Aydın &Boz, 2010; Kahraman, Yılmaz, Bayrak&Güneş, 2014; Gencer&Çakıroğlu, 2005).On the other hand, it was found that senior students' scores on self-efficacy beliefs were higher than those of the freshman students while this difference was reported to be not statistically significant (Durdukoca, 2010; Uluçınar,Sağır& Aslan, 2009). It can be due to the teaching experience course taken at the last year of the program. Taking teaching experience course may provide more experimentation and observation to prospective teachers. Also this experience course may provide real experience situation related to teaching in real classroom context to prospective teachers.

In many studies, teacher self-efficacy has been found to be consistently related to teachers' classroom management approaches (Henson, 2001; Savran&Çakıroğlu, 2003, Tsouloupas et al., 2010; Tschannen-Moran & Hoy, 2007). Results of the present study showed that there is no significant mean differences between the freshman and the senior prospective teachers regarding self-efficacy beliefs for classroom management approaches. However, freshman prospective elementary teachers' efficacy for classroom management strategies is higher than senior prospective elementary teachers' efficacy for classroom management strategies. It is a particular result comparing to previous results that the senior students were in-expert teachers who had completed their practice teaching experience, while the freshman students had not started their practice teaching experience, yet. The fact that, the freshman prospective elementary teachers'being more optimistic may be a reason for them to have more efficacy beliefs.

Teachers' self-efficacy has been found consistently related to teachers' efficacy for instructional strategies (Kahraman, Yılmaz, Bayrak, Güneş, 2014; Gencer&Çakıroğlu, 2005). According to results of the present study,

there is no significant differences between the freshman and senior prospective teachers regarding self-efficacy beliefs for instructional strategies. Moreover, freshman prospective elementary teachers' efficacy for instructional strategies is appeared to be very close to senior prospective elementary teachers' efficacy for instructional strategies.

Teachers' with high level of efficacy are more open to use student centered methods in the classroom (Czerniak&Schriver, 1994). Moreover, teacher self-efficacy has been found consistently related to teachers' efficacy for student engagement (Czerniak&Schriver, 1994; Rodríguez, Fernández, Pena, Aguín, & Menéndez, 2014). In the results of this study, there is no significant difference between the freshman and the senior prospective teachers regarding self-efficacy beliefs for student engagement. However, freshman prospective elementary teachers' efficacy for instructional strategies is higher than senior prospective elementary teachers' efficacy for student engagement. Therefore, as stated in the previous studies, teachers' overestimation of their own ability may decrease over time especially after experiencing real teaching situations (Hoy &Spero, 2005).

Limitations
1. The study is limited to data collected from 213 freshman and 240 senior prospective elementary teachers studying in one university, whereas there are 77 elementary teaching departments in different universities in Turkey. Hence, it cannot be generalized to all elementary teaching programs in Turkey but it might give a different perspective from a specific study to other universities and prospective teachers.
2. Second limitation of the study was based on the quantitative data collected through a survey which is structured. Therefore, the study was limited to the items on the survey.

Further Research
1. Survey might be administered at the beginning of the semester and at the end of the each semester to examine the differences in efficacy levels longitudinally.
2. Different instruments can be applied to the prospective elementary teachers in order to evaluate their self-efficacy.
3. Further research might be carried out with more detailed way such as obtaining data from more universities or making interviews with prospective elementary teachers. Interview results may provide a confirmation and more detailed information on their perceptions.
4. Longitudinal studies might be carried out to reveal how prospective teachers' efficacy beliefs develop or change throughout the years from beginning to the end of their undergraduate education as well as on their practicing years.

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