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Determining Preservice Teachers' Levels of Self-Efficacy and Occupational Anxiety*

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Abstract

Teachers are among the key actors of education who are responsible for preparing students to become qualified and well-educated individuals. Therefore, teachers should be trained well throughout their education. The knowledge and skills that teachers acquire throughout their study may have either a positive or a negative impact on their future professional careers. Identifying factors involved in the teaching professional early in the teacher training processes and finding applicable solutions will change the direction of that impact. Against this background, the purpose of this study was to explore the relationship between preservice teachers' levels of teaching self-efficacy and occupational anxiety and find out whether their self-efficacy and occupational anxiety differ according to the year of study. To this end, a descriptive survey research design was used. The sample consisted of 156 preservice teachers studying at the faculty of education of a university. The "Occupational Anxiety Scale for Prospective Teachers" and the "Teachers' Sense of Efficacy Scale" were employed as data collection instruments. The analysis results showed that preservice teachers' self-efficacy differed according to the year of study, while their occupational anxiety did not differ. The results also showed a moderate positive correlation between preservice teachers' levels of teaching self-efficacy and occupational anxiety. Thus, based on the correlation between teaching self-efficacy and occupational anxiety, it is recommended to make efforts to increase preservice teachers' self-efficacy and decrease their occupational anxiety during their study.

Keywords: Preservice Teachers, Occupational Anxiety, Self-Efficacy

1. Introduction

Educational level of members in a society is one of the major factors that contribute to the level of development of societies. It is possible only through teaching and training activities performed at the desired level to prepare individuals to have a high level of education and qualifications. Given that teachers are among the basic components of an education system, teachers and how teachers educate individuals are the key determinants of

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the success of that education system (Erden, 1998). Thus, teachers are of critical importance for the future of societies. The development of education is directly related to the quality of teachers. Therefore, teachers who will take part in the education system should be educated in a qualified way. The education teachers received affects their future teaching profession. At the end of education process, it is important to educate teachers equipped with the desired knowledge and skills.

Teachers' skills and behaviour are among the key factors in meeting the learning needs of individuals. For teachers to fulfil the learning needs of individuals and do effective teaching, they should be knowledgeable about the learning needs of students. To do this, teachers should have certain knowledge and skills and a sufficient level of belief in their capability to fulfil their responsibilities and duties. This situation is closely related to an individual's self-efficacy (SE) perception and many psychological factors affecting this perception (Doğan & Çoban, 2009; Yılmaz et al., 2004).

The notion of SE that lies at the core of Bandura's social learning theory is described as the belief in a person's capability to organise and satisfactorily perform activities necessary to perform a given task (Bandura, 1997; Goddard et al., 2004) SE is a person's belief about the capabilities and competences that he or she expects to show in a situation (Tschannen-Moran & Hoy, 2001). To put it differently, SE refers to people's perception of their capabilities to succeed in specific situations and overcome a certain problem (Senemoğlu, 2007).

SE beliefs have four main sources of (Bıkmaz, 2004). The first source relates to direct experiences that individuals gain from what they have achieved. While the successes of individuals through direct experiences create a positive effect on the individual, failures also have a negative effect. Indirect experiences are seen as the second most important source of individuals' SE beliefs. Indirect experiences, the result of the experiences of the person that the individual adopts as a model, affect the individual's SE. Individuals take as an example people they see close to them. Verbal persuasion made by the people around the individual is seen as the third source that affects the SE beliefs. Verbal persuasion is realistic verbal stimuli that allow individuals to seek and try harder to solve problems. The words they hear from other people support them in not losing their SE beliefs. The fourth relates to individuals' emotional and physical condition and if people feel mentally and physically well, they are more likely to fulfil expectations. Emotional and physical condition of individuals also have an important function in creating SE beliefs regarding the field of the person (Bıkmaz, 2004; Bandura, 1995).

With respect to teaching, SE refers to a set of knowledge, skills, and attitudes knowledge essential to fulfil certain tasks and responsibilities required by the teaching profession. In other words, teaching SE is a teacher's answer to the question "Can I plan and perform the thoughts and actions necessary to perform my tasks and responsibilities?" (Goddard et al., 2004). In general, teaching SE relates to teachers' belief in their capabilities to achieve the desired outcomes, such as interest and learning, even for unmotivated and difficult students (Kafkas et al., 2010). Additionally, SE is a key factor that has an impact on classroom management, the structure of education, and the way of overcoming problem behaviour (Chan, 2008).

Teachers need to have a high level of SE perceptions and have received a quality education so that they can perform their profession as best as they can (Ateş & Cevher Kalburan, 2016). Previous studies have shown that teachers with a high level of SE beliefs make more effort to teach and provide a more effective educational environment, thereby promoting students' achievement (Brouwers & Tomic, 2000; Sariçam & Sakız, 2014). Teachers with high SE are more willing to criticize student mistakes less, study more with difficult students, and apply new strategies to understand students' needs, etc. On the other hand, it is stated that teachers with low teaching SE behave less responsibly towards the profession. It is seen that these teachers use authoritarian, teacher-centered approaches and blame others for failure (Knoblauch & Woolfolk-Hoy, 2008; Lewandowski, 2005; Goddard et al., 2004; Ross, Cousins, & Gadalla, 1996).

Another factor that may affect preservice teachers' perceptions of the teaching profession is occupational anxiety (OA). The concerns about the profession, which are encountered during the educating of teachers and have a important effect on the quality of this process, may negatively affect the educational processes and motivation of preservice teachers'. This situation may also differ among pre-service teachers (Ralph, 2004). As active

members of education systems, teachers assume various duties and responsibilities towards the school administration, their students, and students' families. However, teachers' competence is the most important factor in succeeding in education and training. Thus, teachers must make efforts to improve and upgrade their skills and professional qualifications (Özer et al., 2009). Therefore, teachers are likely to have some professional concerns. Preservice teachers may experience several concerns about the teaching profession both during and after their educational life. Professional concerns may be caused by several reasons such as course subjects, overcrowded classrooms, student motivation, difficulties in implementing the curriculum, learning problems, teachers' own SE, extracurricular tasks, the lack of teaching materials, and individual differences such as (McCormack, 1996; Meek & Behets, 1999; Özer et al., 2009).

It can be said that teachers feel OA result due to the lack of knowledge, skills and competence. A normal or high level of OA may discourage preservice teachers and aggravate their concerns and fears about the conduct of the teaching profession (Çelen & Bulut, 2015).

It is hoped that by examining preservice teachers' OA and SE, the present study will contribute to efforts and endeavours to decrease preservice teachers' OA and increase their SE. It has been shown that one of the key factors that affect teachers' SE is the feeling of anxiety that they have while performing their profession is (Coladarci & Breton, 1997; Lin & Gorrell, 2001; Hoy & Spero, 2005). There has been a discussion on the existence of a positive or negative association between teachers' SE and OA (Davis, 2007; McGrath et al., 2015). In this sense, the present study also tried to explain the relationship between preservice teachers' SE perceptions and OA levels.

Studies investigating preservice teachers' SE and OA can be considered as studies aimed at promoting the qualification of preservice teachers trained in teacher training institutions. As a matter of fact, discovering preservice teachers' SE and OA plays an important role in training preservice teachers in how to be effective and efficient teachers (Cabı & Yalçınalp, 2013). It is thus of key importance to examine preservice teachers' SE and OA, which both are likely to influence their future success in the teaching profession, starting from the first year of their study and up to the fourth year when preservice teachers are now equipped with occupational knowledge and skills.

Against this background, this research purposed to explore the relationship between preservice teachers' levels of teaching SE and OA and find out whether their SE and OA differ according to the year of study. To this end, it sought answers to the following questions:

- What are preservice teachers' levels of OA about the teaching profession?
- What are preservice teachers' levels of teaching SE?
- Do preservice teachers' levels of OA about the teaching profession differ according to the year of study variable?
- Do preservice teachers' levels of teaching SE differ according to the year of study variable?
- What is the relationship between preservice teachers' levels of teaching SE and OA?
- What is the relationship between preservice teachers' levels of teaching SE and OA in terms of the year of study variable?

2. Methods

2.1. Research Design

The research design used for this study was a descriptive survey method. A correlational survey design was used to explore the correlation between preservice teachers' levels of teaching SE and OA and a cross-sectional survey design was used to find out whether their SE and OA differ according to the year of study. Correlational research is aimed at exploring the correlation between two or multiple variables without making any intervention in the variables. Cross-sectional research usually surveys a large sample of individuals with many different characteristics (Büyüköztürk et al., 2011).

2.2. Participants

The participants of this study consisted of 156 freshmans, sophomores, juniors, and seniors who are preservice teachers in the education faculty at a university.

Table 1: Distribution of the Participants across the Years of Study

Year of Study	N	%
1st Year (Freshmans)	41	26.3
2nd Year (Sophomore)	28	18
3rd Year (Juniors)	39	25
4th Year (Seniors)	48	30.7
Total	156	100

As shown in Table 1, among the participants, 26.3% were freshmans, 18% were sophomores, 25% were juniors, and 30.7% were seniors.

2.3. Data Collection Tools and Methods

The “Occupational Anxiety Scale for Prospective Teachers” developed by Cabı and Yalçınalp (2013) was used to measure preservice teachers’ OA. The eight-factor scale consists of 45 items and is rated on a 5-point Likert-type scale ranging from 1 (extremely anxious) to 5 (not at all anxious). A high score on the scale indicates a low level of anxiety, and a low score indicates a high level of anxiety. Cronbach’s Alpha for the scale was found to be .95. In this study, the internal consistency was recalculated for the entire scale and Cronbach’s alpha was found to be .97. The lowest possible score is 45 while the highest possible score is 225, and high scores indicate that students are less anxious about the teaching profession (Cabı & Yalçınalp, 2013).

The “Teachers’ Sense of Efficacy Scale” developed by Tschannen-Moran and Hoy (2001) was used to measure preservice teachers’ SE. The validity and reliability of the scale for the Turkish culture was tested by Çapa et al. (2005). The scale consists of 24 items under 3 sub-scale and is rated on a 9-point Likert-type scale ranging from 1 (nothing) to 9 (a great deal). In their study, Çapa et al. (2005) found Cronbach’s alpha to be .93 for the entire scale. The lowest possible score is 24 while the highest possible score is 216. Cronbach’s alpha was found to be .96 for the entire scale in this study.

2.4. Data Analysis

Frequency, standard deviation and mean values were calculated during data analysis. First, the Kolmogorov-Smirnoff test was employed to test the normality of the data. The results of the Kolmogorov-Smirnov test showed that the data obtained from both scales were normally distributed ($p = .200$, $p > .05$). Table 2 and Table 3 show the analysis results on the normality of the data.

Table 2: Normality Test Results for Teaching Self-Efficacy

	Kolmogorov-Smirnoff			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total	.040	156	.200*	.985	156	.099

Table 3: Normality Test Results for Teaching Occupational Anxiety

	Kolmogorov-Smirnoff			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total	.062	156	.200*	.973	156	.004

The correlation between the groups was analysed using the Pearson product-moment correlation coefficient (PPMCC) and the difference between the groups was analysed using one-way analysis of variance (ANOVA) and Tukey's HSD test.

3. Results

Table 4 gives the results of the descriptive statistics for preservice teachers' total scores on the "Occupational Anxiety Scale for Prospective Teachers" and the "Teachers' Sense of Efficacy Scale". Table 5 gives the results of the descriptive statistics for preservice teachers' levels of teaching SE and OA in terms of the year of study variable.

Table 4: Results of the Descriptive Statistics for Occupational Anxiety and Self-Efficacy

	N	Min	Max	Mean	Standard Deviation
Occupational Anxiety	156	45.00	225.00	159.1859	35.21964
Self-efficacy	156	39.00	216.00	151.1859	31.63640

Table 4 shows the minimum, maximum, arithmetic mean and standard deviation values of the pre-service teachers' SE and professional anxiety scale in general. As seen in Table 4, there was not a large difference between preservice teachers' mean SE scores and OA scores ($X_{SE} = 151.1859$; $X_{OA} = 159.1859$).

Table 5: Results of the Descriptive Statistics for Self-Efficacy and Occupational Anxiety according to the Year of Study

	N	Min	Max	Mean	Standard Deviation
1st year Occupational Anxiety	41	45.00	225.00	159.3659	37.53182
1st year Self-efficacy	41	83.00	216.00	154.7561	31.26002
2nd year Occupational Anxiety		95.00	225.00	155.9643	28.92837
2nd year Self-efficacy		39.00	206.00	153.9286	33.28655
3rd year Occupational Anxiety	39	66.00	225.00	153.4615	31.93154
3rd year Self-efficacy	39	70.00	216.00	132.2821	29.19711
4th year Occupational Anxiety	48	46.00	225.00	165.5625	38.88275
4th year Self-efficacy	48	108.00	207.00	161.8958	26.72177

Table 5 shows the minimum, maximum, arithmetic mean and standard deviation values of the general SE and professional anxiety scale depending on the years of study of the preservice teachers. Looking at the levels of teaching SE and OA in terms of the year of study in Table 5, it is apparent that the mean teaching SE and OA scores of the first-, second-, and fourth-year preservice teachers were close to each other. However, there was a difference for the third-year preservice teachers. Table 6 and Table 7 show the results of the one-way ANOVA conducted to determine whether preservice teachers' mean SE and OA scores differ according to the year of study.

Table 6: Results of the One-Way ANOVA for Occupational Anxiety according to the Year of Study

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3521.628	3	1173.876	.945	.420
Within Groups	188743.981	152	1241.737		
Total	192265.609	155			

As seen in Table 6, the results of the one-way ANOVA yielded no statistically significant difference between the preservice teachers in their mean OA scores in terms of the year of study ($F = .945$; $p = .420$; $p > .05$).

Table 7: Results of the One-Way ANOVA for Self-Efficacy according to the Year of Study

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	20175.814	3	6725.271	7.575	.000
Within Groups	134957.795	152	887.880		
Total	155133.609	155			

Looking at the results of one-way ANOVA in Table 7, a statistically significant difference was found between the preservice teachers in their mean SE scores in terms of the year of study ($F = 7.575$; $p = .000$; $p < .05$). The Tukey's HSD test was conducted to detect the means that are significantly different from each other because the number of the groups was similar. Table 8 shows the results of Tukey's HSD test.

Table 8: Results of Tukey's HSD Test for Self-Efficacy

(I) year of study	(J) year of study	Mean Difference (I-J)	Standard Error	Sig.
1.00	2.00	.82753	7.30518	.999
	3.00	22.47405*	6.66497	.005
	4.00	-7.13974	6.33665	.674
2.00	1.00	-.82753	7.30518	.999
	3.00	21.64652*	7.38080	.020
	4.00	-7.96726	7.08573	.675
3.00	1.00	-22.47405*	6.66497	.005
	2.00	-21.64652*	7.38080	.020
	4.00	-29.61378*	6.42368	.000
4.00	1.00	7.13974	6.33665	.674
	2.00	7.96726	7.08573	.675
	3.00	29.61378*	6.42368	.000

Looking at the results of Tukey's HSD test in Table 8, preservice teachers' SE scores statistically significantly differed in the third year compared to the other years of study. Table 9 displays the results of the Pearson product-moment correlation analysis for the correlation between preservice teachers' overall levels of teaching SE and OA.

Table 9: Analysis Results for the Correlation between Self-Efficacy and Occupational Anxiety Scores

	N	r	p
Occupational Anxiety Self-Efficacy	156	.475	.000

As seen in Table 9, there was a significant moderate positive correlation between preservice teachers' SE and OA scores ($r = .475$; $p = .000$; $p < .05$). Table 10 present the results of the Pearson product-moment correlation analysis for the correlation between preservice teachers' overall levels of teaching SE and OA in terms of the year of study.

Table 10: Analysis Results for Correlation between Teaching Self-Efficacy and Occupational Anxiety Scores in terms of the Year of Study

Occupational Anxiety - Self-Efficacy	N	r	p
1st Year	41	.543	.000
2nd Year	28	.265	.174
3rd Year	39	.518	.001
4th Year	48	.494	.000

As can be seen from Table 10, there was a significant moderate positive correlation between preservice teachers'

SE and OA scores in the first year, third year, and fourth year of study ($r_1 = .543$; $r_3 = .518$; $r_4 = .494$; $p < .05$).

4. Discussion and Conclusion

This study set out to examine preservice teachers' levels of teaching SE and OA and explore the relationship between the two variables. To this end, preservice teachers' SE and OA were measured and analysed in relation to the year of study variable to find out whether their SE and OA differed according to the year of study.

The analysis results showed that the preservice teachers participating in the study had a low level of OA about the teaching profession. This finding is thought to be due to participants' low level of OA and their high SE beliefs in the teaching profession. This finding is in parallel with those of earlier research investigating preservice teachers' OA. This finding is consistent with those of previous studies reporting that preservice teachers had a low level of OA (Aycan & Üzümlü, 2019; Çelen & Bulut, 2015; Kahraman & Çelik, 2019; Varol et al., 2014). The analysis results also indicated that the preservice teachers had a high level of teaching SE, thereby increasing the probability that SE may have a positive effect on OA. To test this probability, the correlation between the two variables was analysed and as a result of the analysis, a moderate correlation was found. However, the results of earlier research into preservice teachers' OA contrast with the present results. Preservice teachers' OA was found to be moderate in Ünlü & Erbaş (2018) and in Brodar (2020) and to be high in Saban et al. (2004). This study found that preservice teachers' level of OA decreased with the advancing year of study. This result was predicted before the study; thus, preservice teachers' OA is expected to gradually decline from the first to the fourth year of their study. Additionally, it can be said that teaching practice classes offered at faculties of education allow preservice teachers to broaden their experience of teaching. All in all, it seems that the OA of preservice teachers who had gained experience in both theoretical and practical class decreased with their increasing experiences.

The analysis results showed that the preservice teachers had a high level of SE. This result is considered as an indication that the undergraduate education provided in the faculty at which the participants were studying fosters preservice teachers' SE perceptions. The literature includes other studies aimed at determining preservice teachers' levels of teaching SE. This finding is in accord with that reported by Karimova et al. (2020), Ahmad and Akbar (2020) and Dadandı et al. (2016). As discussed earlier, a possible explanation for this result might be that theoretical and practical classes that preservice teachers take during their study help them gain an idea of their occupational success. The analysis results also showed that preservice teachers' levels of teaching SE increased with the advancing year of study from the first to the fourth year of study excluding the third year. A possible explanation for this result might be that the participating preservice teachers were pursuing different years of their study. The reason for the decline of SE in the third year might be that the number of classes increases in the third year and third-year classes are relatively harder. The reason for the increase of SE in the fourth year might be that preservice teachers adjust to classes in their respective teaching discipline in the fourth year.

The analysis results showed that preservice teachers' OA did not differ according to the year of study. This finding was also reported by Aycan and Üzümlü (2019). The fact that preservice teachers' levels of OA did not differ according to the year to study might be due to their high level of SE. Another possible reason for this result could be that preservice teachers are not primarily responsible for instruction while gaining experience in both teaching practice and internship courses and this situation may cause preservice teachers to feel more comfortable. There are earlier observations, which are in contrast to the present finding. Some studies reported that preservice teachers' levels of OA differed according to the year to study (Sadıkoğlu et al., 2018; Uzundağ et al., 2020; Türkdogan, 2014).

According to the analysis results, preservice teachers' levels of teaching SE differed according to the year of study and the difference was significant in the third year. This finding is consistent with those of previous studies reporting that SE levels differed according to the year of study (Durdukoca, 2010; Oğuz, 2012; Şahin & Şahin, 2017; Mauraji & Wiyarsi, 2021). The difference between preservice teachers' levels of teaching SE according to

the year of study could be explained by several reasons such as increasing adjustment with the advancing year of study, gaining experience during their study, increasing motivation, and a growing feeling of being a teacher. In contrast to the present finding, however, some studies reported that preservice teachers' levels of teaching SE did not differ according to the year to study (Aktağ & Walter, 2005; Seçkin & Başbay, 2013).

The analysis results showed a significant moderate positive correlation between preservice teachers' OA and teaching SE. This result could be seen as the proof that preservice teachers' high level SE perceptions contribute to their low levels of OA. Previous studies have reported a significant positive but low correlation between preservice teachers' SE and OA (Deniz & Tican, 2017; Kafkas et al., 2010). The present study found that the correlation between preservice teachers' SE and OA was moderate. It can thus be said that the higher preservice teachers' SE is, the lower their OA is. Additionally, the correlation between teaching SE and OA has been found to be negative, moderate, and high (Dadandı et al., 2016; Gökmen & Ekici, 2018; Gönüldaş, 2017; Kahraman & Çelik, 2019; Özmen, 2016; Ünlü & Erbaş, 2018; Sharma & Marwaha, 2020). According to the analysis results, a significant moderate positive correlation was found between preservice teachers' SE and OA in the first year, third year, and fourth year of study. However, there was an insignificant low positive correlation between preservice teachers' SE and OA in the second year of study.

The results of the study suggest that teaching SE and OA are correlated. It is clear that teacher SE and OA are issues that should be given importance in the educating of preservice teachers. It is thought that efforts to strengthen preservice teachers' SE beliefs and eliminate their OA will contribute positively to the teaching profession. Thus, an important practical implication is that faculties of education make efforts to promote preservice teachers' SE so that preservice teachers will have lower OA when they graduate. This study was carried out with a certain number of pre-service teachers using a cross-sectional design. Conducting such studies with a larger number of participants and faculties may contribute to the generalizability of the research findings. Further research may also employ a longitudinal design within the bounds of possibility to analyse different variables by monitoring the same group of preservice teachers for their entire four-year study. Data obtained from such studies are considered valuable as they provide insight into the competencies of academic staff and the effectiveness of undergraduate teaching programs training teachers of the future; thus, such studies could be repeated.

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