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Self-efficacy Levels of Special Education, Preschool and Child Development Teachers

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Abstract

Purpose of this study is to determine the level of self-efficacy values of teachers working in three different branches. Those branches are special education, preschool and child development education. Research was carried out with survey research design with survey method. Sampling method of the study was snowball sampling. Total number of participants is 81 in which 31 of are special education teachers, 36 preschool education teachers and 14 child development teachers. Gender and working experience demographic data of the teachers were also acquired for the study. Results indicated that teachers have high self-efficacy values. Teachers in their initial years of profession have higher self-efficacy values than experienced teachers but those differences were not statistically significant. Additionally, female teachers had more positive values than male teachers. Although independent samples t test result indicated that gender had no effect on self-efficacy values of teachers, significance value was at critical point. For that reason, further analysis was carried out for effect size and it was revealed that gender had small effect on self-efficacy values of teachers.

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Introduction

Space Self-efficacy is defined as one's believe in his capacity. For that reason, a high value of self-efficacy also might be an indication of one's possible intellectual and product capacity (Hoffman & Schraw, 2009). Consequently, it is important to know the self-efficacy values of teachers due to teachers' effect on students since it was found that special education teachers' self-efficacy and their effectiveness might be an indication of each other (Tzivinikou, 2015). Although Guo et. al. (2014) pointed out that early childhood special education teachers' self-efficacy might be negatively correlated with instructional support presented by the teachers, self-efficacy values of special education teachers are not only predictive value of achievement but also a signal to determine teachers' job satisfaction. Self-efficacy and job satisfaction of special education teachers are positively related (Adebomi et. al., 2012). Possible determinant factor of self-efficacy caused researchers to focus more on aspects of self-efficacy by inspecting its relationship with other possible determinant factors. For example, years of experience in special education has positive correlation with self-efficacy as well as with education major and training background (Leyser et. al., 2011). Studies done about special education teachers indicate that self-efficacy is also correlated with working hours of teachers. Teachers with fewer working hours have lower self-efficacy values (Nuri et. al., 2017). Special education (SE) teachers' self-efficacy values might be also used to predict their self-esteem and job-burnout (Fu et. al., 2021). All in all, studies indicate self-efficacy of special education teachers might be used to understand what is going on in the classroom and with the teachers.

Importance of self-efficacy caused researchers to study on its effect and relationship with different variables for different teaching branches. For example, a study found self-efficacy positively predicts early childhood teachers' work engagement (Lipscomb et. al., 2022). On the other hand, it should be noted that self-efficacy is not affected only by one variable. In fact, there are many factors affecting early childhood (PS) teachers' self-efficacy values such as working environment, depression severity or challenges faced in the classroom (Kim & Kim, 2010). It is assumed early childhood teachers with high self-efficacy values will also present better teaching skills. Such hypotheses bring more focus on self-efficacy and its relationship with other variables. Additionally, it is assumed teachers with high self-efficacy values would comprehend and present scientific knowledge

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to his students better than teachers with low self-efficacy values. For example, a recent study developed STEM teaching self-efficacy scale for early childhood teachers (Yang et al., 2021). As a consequence, self-efficacy regarded as teacher makers by some researchers since it is a determinant factor creating the teacher identity (Pendergast et al., 2011). Reasons for self-efficacy differentiation is also studied by the researchers. For example, a study found that as the major degree level increases self-efficacy values of teachers decrease (Ertan, 2016). In this regard, it is also important to know self-efficacy levels of child development (CD) teachers. On the other hand, sometimes it is problematic or hard to reach the child development teachers. Therefore, most of the studies are done with teacher candidates (Kerigan et al., 2021). Noteworthy, this study was carried out with teachers instead of teacher candidates.

Importance of this study is that although there are studies done on self-efficacy values of special education and preschool childhood education teachers, within our knowledge, there is no study focusing on self-efficacy values of child development teachers. We also didn't encounter any study comparing the self-efficacy values of those branches. For that, purpose of this study is to determine the self-efficacy values of the three different branches of teachers, childhood education, special education and child development. Through that it is also aimed that this study will determine and compare the self-efficacy levels of special education, preschool education and child development education teachers. Additionally, it is also aimed to output any self-efficacy level differences between those three branch teachers with respect to different variables. For that purpose, research problems and subproblems of the study are stated below. Purpose of the study is to determine the self-efficacy levels of SE, PS and CD teachers.

Sub-problems of the study are:

1) What are the self-efficacy levels of special education, preschool and child development education teachers?
2) Is teaching area effective on teachers' self-efficacy levels?
3) Is working experience effective on self-efficacy values of teachers?
4) is gender effective on self-efficacy values of teachers?

Method

Research design

Survey research design is used for the study. For the purpose of the study survey research method is used. Survey research design is useful in collecting and analyzing the data. Data collection method was questionnaire. Questionnaires are useful in gathering data in a short period of time (Karasar, 2009; Ponto, 2015).

Sampling method

Sampling method of the study was snowball sampling method. Researcher reached few special education, preschool education and child development teachers and asked if they could volunteer for the study. Those who agreed to participate in the study were asked whether they could reach to other teachers through their network to participate in the study. For that reason, participation in the study was voluntary. Thus, participants are from different parts of Turkey since they are reached through networking system. A link was provided to volunteered teachers in order to share the participation link for the study.

Study group

Study is composed of 31 special education, 36 preschool and 14 child development teachers. Total number of the participants is 81. Demographics of the teachers are given in Table 1.

Table 1.
Demographic info of teachers

	Gender		Work experience in years					
	Male	Female	0-1	1-2	3-4	5-10	10-15	15 and more
Special education (SE)	17	14	1	4	4	9	2	11
Preschool (PS)	5	31	5	1	1	5	11	13
Child development (CD)	1	13	6	1	2	3	1	1
Total	23	58	12	6	7	17	14	25

Percentage	%28	%72	%15	%7	%9	%21	%17	%31

Data in Table 1 reveals that male constitutes %28 of the sample. Almost half of SE teachers are male (%54) while %14 of PS and %7 CD teachers are male. In terms of experience, it was revealed that %14 teachers are in the first year of profession while %7 is in their second year. %31 of teachers might be regarded fresh in profession while %69 of them are experienced teachers.

Data collection tool

General self-efficacy scale was used as data collection tool. Original scale was developed by Akkuş (2020) with 21 questions and had Cronbach's Alpha reliability of .90 value which is "highly reliable" (Kalaycı, 2010). Self-efficacy scale has 7 filler, 9 reverse coded items with likert type items with five choices. For that reason, a person might get lowest 14 and 70 highest score. Scores below 42 indicates negative self-efficacy value, where above scores indicate positive self-efficacy value. Calculation of scores was based on non-refined methods (DiStefano, Zhu & Mindrila, 2009). An online form was created and distributed to study group. In addition, gender and working experience demographics were also collected via online form. After obtaining data from the study group, an analysis of reliability was done and found as .837 which is "highly reliable" (Kalaycı, 2010). Thus, it was concluded that scale results are reliable.

Data analysis

Data analyses were done with respect to scale items and their distribution with respect to teachers' branches. Scores used for data analyses are based on non-refined methods. Differences among the branches and work experience were tried to be determined through statistical analyses.

Normality analysis

In order to determine the correct test, a normality analysis was done with Kolmogorov-Smirnov test for the study group. Additionally, normality analyses were done through skewness and kurtosis values to ensure the normality distribution of the data.

Table 2.
Normality test result

Kolmogorov-Smirnov test		
Statistic	df	p
.082	81	.200

The Kolmogorov-Smirnov test results (D (81) = .082, p=.200) indicated that the data were normally distributed. Skewness and kurtosis values with standard errors were also calculated based on suggestions (Field, 2013). Data in Table 2 indicated that the data were normally distributed within 5% probability.

Findings

Descriptive values of self-efficacy scores
Descriptive values of self-efficacy scores were obtained and indicated in Table 3.

Table 3.
Self-efficacy item results

Self-efficacy scale items					
Item		Branch	N	M	SD
2	I am sure that I am capable of executing my plans	SE	31	3.94	.814
		PS	36	4.19	.668
		CD	14	4.14	.864
3	If I can't do something first time, I try over and over	SE	31	4.03	.795
		PS	36	4.36	.593
		CD	14	4.00	.392

4	I hardly establish new friendship	SE	31	1.84	1.068
		PS	36	1.81	.951
		CD	14	2.07	.917
7	I **hardly** accomplish my goals when I set them	SE	31	2.71	1.296
		PS	36	2.64	1.199
		CD	14	2.64	1.216
8	I leave things uncompleted	SE	31	2.23	1.087
		PS	36	1.94	.791
		CD	14	1.71	.726
9	I **avoid** to encounter the obstacles	SE	31	2.06	1.093
		PS	36	1.75	.806
		CD	14	1.64	.745
10	I **don't** spend effort if it seems very complicated	SE	31	2.26	1.210
		PS	36	1.94	1.040
		CD	14	1.71	.726
12	If I encounter an obstacle which I don't like, I try to overcome it with all my efforts	SE	31	3.65	1.050
		PS	36	3.83	.971
		CD	14	3.79	1.188
13	If I decide to do something, I focus on it	SE	31	4.23	.560
		PS	36	4.44	.607
		CD	14	4.57	.514
14	I hardly believe in my capability	SE	31	1.58	.765
		PS	36	1.78	.637
		CD	14	1.57	.938
15	I can't socialize easily	SE	31	1.90	.944
		PS	36	1.78	.898
		CD	14	2.00	1.109
17	When I start to learn something new and can't learn at first then I give up studying/try learning	SE	31	1.87	1.147
		PS	36	1.86	.961
		CD	14	1.57	.646
19	My self confidence is high	SE	31	4.00	.730
		PS	36	4.28	.701
		CD	14	4.21	.893
21	I trouble to overcome obstacles that I encounter in life	SE	31	2.19	1.014
		PS	36	1.92	.906
		CD	14	2.07	.829

Data in Table 3 indicated that teachers from different departments had nearly similar scores for the items. All teachers have high values in their self-efficacy. Values of 1 and 2 is accepted as negative values while values between 2 and 3 accepted as values having tendency towards negative values. Score of 4 and 5 is accepted as having positive values while scores between 3 and 4 accepted as values having tendency towards positive value. Consequently, when each scale item is reviewed individually, it was observed that PS and CD had definitely positive values whereas SE had positive values for item 2. All branches had definitely positive value for item 3. SE and PS had positive value for item 4 but CD had tendency towards negative value. For item 7 it was noted that all the branches had low scores. Although none of them had negative values, the tendency was towards to negativity. For item 8, 9 and 10 it was noted that PS and CD had values towards positive value but SE had value towards negative value. For item 12, 14, 15 and 17 all the branches had scores towards positive values. It was observed that all the branches had positive values for item 13 and 19. Lastly, it was observed that although PS had value towards positive values SE and CD had values towards negative values.

Statistical analyses of self-efficacy scores for the teaching branches

A homogeneity of variances was checked thorough Levene's test and found (F (2.78) = 1.285; p = .282) that homogeneity of variances was kept. Consequently, a one-way Anova test was run to determine whether there was significant difference between the branches. Descriptive results are shown in Table 4 and Anova result is shown in Table 5.

Table 4.
Descriptive statistics for branches

		N	M	SD
Branch	PS	36	57.69	7.479
	SE	31	55.19	7.414
	CD	14	57.71	5.810

Based on scale items it was accepted that values below 28 accepted as negative values while scores between 28 and 42 accepted as values having tendency towards negative values. Similarly, scores above 56 accepted as positive values while scores between 42 and 56 accepted as values having positive tendency. When average values of scores are reviewed, it was observed highest score was obtained by CD (57.71) and followed by PS (57.69). SE had the lowest score (55.19). So, PS and CD had positive self-efficacy values while SE had score indicating that branch's score had tendency towards positive value.

Table 5.
Analysis for teaching branches

	Sum of squares	df	Mean square	F	p
Between groups	120.221	2	60.110	1.159	.319
Within groups	4045.335	78	51.863		
Total	4165.556	80			

Although PS and CD had similar self-efficacy scores and higher than SE, Anova test results (F (2,78) = 1.159; p = .319) revealed that there was no significant difference between the branches.

Statistical analyses of self-efficacy scores for teaching experience

A homogeneity of variances was checked thorough Levene's test and found (F (5.75) = .806; p= .549) that homogeneity of variances was kept. Consequently, a one-way Anova test was run to determine whether there is significant difference between the experience and self-efficacy scores. Descriptive results are shown in Table 6 and Anova result is shown in Table 7.

Table 6.
Descriptive statistics for teaching experience

		N	M	SD
Teaching experience	0-1	12	60.42	6,171
	1-2	6	58,33	8,017
	3-4	7	55,71	4,608
	5-10	17	55,71	6,142
	10-15	14	55,86	7,472
	15 and higher	25	56,08	8,524

Based on scale items it was accepted that values below 28 accepted as negative values while scores between 28 and 42 accepted as values having tendency towards negative values. Similarly, scores above 56 accepted as positive values while scores between 42 and 56 accepted as values having positive tendency. When average values of scores are reviewed, it was observed that teachers who are in their first two-year profession had positive self-efficacy scores

along with teachers who have experience of more than 15 years. On the other hand, scores with experience between 3 and 15 years had scores indicating that they had self-efficacy values towards positive values.

Table 7.
Anova result for teaching experience

	Sum of squares	df	Mean square	F	p
Between groups	224.793	5	44.959	.856	.515
Within groups	3940.762	75	52.543		
Total	4165.556	80			

Although fresh and highly experienced teachers had higher self-efficacy scores higher than teachers with experience of 3 and 15 years in profession, Anova test results (F (5,75) = .856; p > .515) revealed that there was no significant difference between the teaching experience.

Statistical analyses of self-efficacy scores for the gender

An independent samples t test was run to determine whether there was a significant difference between the gender. Test result is shown in Table 8.

Table 8.
Independent samples t test result for gender

		N	M	SD	t	p
Gender	Male	23	54.26	7.978	-1.983	.051
	Female	58	57.72	6.712		

Levene's test showed that the equality of variances (F (1,81) = .046, p=.831) was kept. Independent samples t test indicated (t (79) = -1.983; p = .051 > .05) that there was not a statistically significant difference between the genders. Due to position of significance value (p = .51) Hedges' g was calculated (g = .484) and found as having small effect (Lenhard & Lenhard, 2016). The results showed that the gender has effect upon the self-efficacy values.

Since female teachers in special education consists of %74 of total female teachers of the sample, a second independent samples t test was run within the SE to determine whether the test results occurred due to that branch's gender distribution. Levene's test showed that the equality of variances (F (1.29) = .966; p = .334) was kept. Independent samples t test result (t (29) = -1.505; p = .143) revealed that there was no significant difference between the gender among the special education teachers. Hedges' g was calculated (g = .529) and found having intermediate effect (Lenhard & Lenhard, 2016).

Discussion

Peeters et al. (2015) indicated that male percentage of early childhood education teachers in Turkey was up to %7 in 2014. When other studies done in Turkey reviewed it was observed that situation although male percentage increased, the gender ratio is still similar for PS. For example, male percentage was %20 in 2017 (Yalçın et al., 2017) and %15 in other study in 2019 (Koçak & Kaygusuz, 2019). In this study male percentage was %14. Thus, it may be concluded that sample of the study reflects the nature of the population in focus. Afat & Çiçek (2019) extracted a sample from all the universities in Turkey and found that %42.9 of students studying at SE department are male. Male percentage in this study for SE is %54 thus, it may be concluded that nature of the sample reflects the nature of the population in focus. Ezgin Ağıllı & Turğuter (2021) indicated that male percentage of students studying at CE department is %10 for whole Turkey. Male ratio of this study for CE is %7 thus, it may be concluded that nature of the sample reflects the nature of the population in focus. For that, we assume the findings of this study reflect the case of the population in focus, in nature.

Analysis of scale items indicated that teachers have high believe in their capacity. Teachers responded to scale items with positive values except item 7. For that reason, it was concluded that teachers believe in their capacity and efficiency. PS and CD had similar values

(nearly identical) in total score but higher than SE (2.5 higher at least) but, analyses indicated that self-efficacy scores didn't change with respect to teachers' education branches. Descriptive results of the scale indicated that none of the branches had negative self-efficacy values. On the other hand, PS and CD had definitely positive self-efficacy values. Within our knowledge, there is no study comparing self-efficacy values of PS, CD and CE branch teachers' self-efficacy scores. However, there are studies done with at least one of the branches. Like our study, Karahan & Balat (2011) didn't find a statistical significance on work experience showing its effect on self-efficacy values of teachers. However, contrary to our study, Pıştav Akmeşe & Kayhan (2017) found that self-efficacy of teachers increased statistically with experience. As a side note, Yüksel (2020) indicated that self-efficacy values of PS teachers statistically had a positive correlation with positive character settings.

It was found that teachers in their first year of profession had the highest self-efficacy scores and was followed by second year teachers. Scores obtained by those groups also indicated that they had definitely positive self-efficacy values. On the other hand, as the experience of the teachers increased, we didn't observe an increase in self-efficacy scores. Scores obtained by experienced indicated that although they had positive self-efficacy values yet, we can't claim that those beliefs were definitely positive. It is assumed such case happened due to increased experience. It is an expected result that fresh teachers in their first years of profession to have high values in their skills and capacity. This idea is reflected in descriptive results of the scale results. On the other hand, as teachers encounter obstacles and new challenges and fails then naturally, their sense of efficacy decreases. For that reason, it is also assumed efficacy values after few years in profession also reflects the actual case for teachers. It is also noteworthy to mention that descriptive results indicated that teachers with experience more than 15 years had definitely positive self-efficacy values along with fresh teachers. Similar to our study, Gömleksiz & Serhatlıoğlu (2013) also found that self-efficacy values of PS teachers didn't have statistical difference in terms of experience. Kaya (2019) also found that self-efficacy scores of PS teachers didn't have statistical difference in terms of experience and gender. Although, in this study we also couldn't find statistical difference in terms of gender and experience, it is noteworthy to mention that contrary to those studies we found p value for gender (.51) indicated that there might be difference with regard to gender of teachers. In fact, effect size calculated for the gender revealed that gender had small impact on the self-efficacy of teachers. Thus, it may be concluded that female teachers might have more positive sense of efficacy values than male teachers. However, contrary to our results, Wu et al. (2019) indicated that experience had effect on self-efficacy of teachers where gender had no effect. Additionally, Perera et al. (2019) noted that literature has inconsistent results regarding the teachers' genders and, in their study, they also found that female teachers had higher self-efficacy values than men.

Conclusion and Recommendation

As for final notes, it is hoped that results of this study would benefit the researchers who would like to study on self-efficacy values of PS, CE and SE teachers and other respective teaching areas. It is believed this study provided helpful results for gender and teaching experience. It is assumed that making more studies on effective variables for teacher efficacy might provide valuable insights. Additionally, effective role of gender on self-efficacy values might be investigated with different samples. Qualitative studies regarding the gender might provide more insight for the future studies.

Limitation

It should be noted that sampling method chosen for the study might have impact on the results as only volunteered teachers participated in the study. The sampling method is limitation of the study. Thus, another study with different sampling method might be carry out in order to detect the possible flaws due to sampling method.

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