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The Investigation of Social Studies Prospective Teachers' Environmental Education Self-Efficacy in Terms of Various Variables

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Abstract

The aim of this study is to investigate prospective teachers' environmental education self-efficacy in terms of various variables. Survey method was applied in the study, and the data were collected in the 2015-2016 academic year. The study group of the paper consisted of 172 prospective teachers from each grade level who are studying in Social Studies Department, Faculty of Education, Afyon Kocatepe University. The data of the study were collected with the environmental education self-efficacy scale developed by Özdemir, Aydın and Akar-Vural. (2009). The 5-point Likert scale consisted of 15 items and had four sub-dimensions. As a result of the analyses, it was concluded that prospective teachers' self-efficacy perceptions of environmental education were moderate and prospective teachers' self-efficacy perception levels did not show a significant difference according to gender and grade level variables.

Keywords: Environmental Education, Self-Efficacy, Social Studies

1. Introduction

Many concepts such as the environment, environmental problems, environmental literacy, environmental education and environmental awareness have come to the fore as a result of the rapid consumption of natural resources, the increase in production wastes and people unconsciously harming nature. (Karatekin 2011; Seçgin, Yalvaç and Çetin 2010). Increased industrialization, population growth, wasting natural resources and lack of education have caused environmental problems to increase rapidly, and this situation has begun to threaten human life and the future of the world. Increasing environmental problems have brought along solution proposals. At this point, the importance of environmental education has emerged (Atasoy, 2006; Başal, 2003). The human being who has a great impact on the environment in the ongoing life, will stop consuming when they gain the awareness of how this effect will return to them in a negative way and they will take the importance of sustainable resources into consideration. Recently, with the industrialization and the increasing population, environmental problems

have increased rapidly and reached a degree of destroying human life and the future of the world. Increased environmental safety has brought solution suggestions with it. Especially in recent years, the relationship between education and environmental problems has started to be re-examined (Atasoy, 2006; Bařal, 2003). While the protection of the environment in which we interact for health and the future is an issue that all people should feel responsible for, more responsibility is on educators who carry this responsibility and who are responsible for raising conscious and qualified people. Because education is the most effective way for individuals to develop this awareness and responsibility towards the environment (řahinpinar, 2018; Kaya, 2014).

Today, rapidly increasing environmental problems constitute a serious danger for the whole world. Studies on this subject are gaining momentum in order to ensure the continuity of the world and leave a livable world to future generations. The common opinion formed as a result of the studies carried out is that the most important step to be taken in order to prevent environmental problems is to raise awareness of people, to raise environmental awareness and to give individuals a healthy and sound environmental education. (Özlu, 2012; Ek, Ögdüm, Kılıç, Düzgün & řeker, 2009; Yazıcı, Kaya & Ekiz, 2018). Environmental education is defined as “the process by which individuals acquire the knowledge and skills necessary to present ideas about the solution of environmental problems and to exhibit positive behaviours towards the environment, and to educate them on environmental issues in order to increase their motivation and attitudes” (UNESCO, 1977). The main purpose of environmental education is to educate environmental literate individuals who are aware of the environmental problems facing the world and know how to solve these problems. In this way, by improving the environmental awareness of individuals, to increase their sensitivity to the environment and to contribute to the creation of a livable environment. (Konakcı, 2019; Hsu, 2004; Roth, 1992).

The awareness and positive attitude that will be formed in individuals with environmental education will have an important effect on the solution of environmental problems. From this point of view, when the role of teachers in the education of individuals is considered, teachers have very serious responsibilities in solving environmental problems. In order to fulfill these responsibilities, teachers must first have a high self-efficacy belief in environmental education. The high sensitivity of teachers to environmental problems will ensure that students who take themselves as an example will also have a high sensitivity to the environment. (Özlu, Özer-Keskin & Gül, 2013; Özdemir & Yapıcı, 2010; Güler, 2009). The ability of teachers and prospective teachers to carry out the competencies required by the teaching profession and to use them effectively depend on their belief that they have a good education and that they can fulfill their duties and responsibilities. Perhaps the most important and effective of these beliefs is self-efficacy belief (Kahyaođlu, 2011). It has great importance that teachers have full self-efficacy beliefs in order to overcome their responsibilities and to perform their duties successfully and selflessly. The concept of self-efficacy beliefs that Bandura proposes does not reflect one's ability to do a job, but his belief in himself to achieve it. Individuals who do not have sufficient skills to perform an activity but have high self-efficacy spend efforts until they succeed in this job, but individuals who have low self-esteem, even if they dominate the subject, fail and give up quickly (Bandura, 1997). The perception of self-efficacy comes into existence with the influence of the environment on the individual and affects his / her communication with the environment as feedback. In other words, the experiences of individuals throughout their lives affect one's behavior and therefore self-efficacy (Bandura, 1997).

The importance of the relationship between self-efficacy perception and teaching skills is becoming more evident day by day. Studies show that the high self-efficacy level of teachers positively affects every stage of teaching. The level of self-efficacy has a great importance in applying the curriculum, in carrying out the curriculum effectively, in teaching a course or subject, and in taking risks. (Gorski, Davis & Reiter, 2012; Tschannen-Moran & Hoy, 2007; Tschannen-Moren & Hoy, 2001). Teachers with higher self-efficacy beliefs are more willing in the classroom. They can plan their times better and work longer. This situation increases the students' performance. In other words, the success of the teacher brings along the success of the students. Self-efficacy beliefs of successful students will increase accordingly (Schunk, 2014; Aydın, 2008; Leithwood ve Jantzi, 2008). Therefore, teachers or prospective teachers' self-efficacy beliefs about environmental education are very important for effective environmental education (Kahyaođlu, 2011). When the curricula are examined, it is seen that the content of environmental education in schools is mostly loaded with science lessons (Çetkin, 2019). However,

environmental education subjects and achievements are also encountered in the curricula of different courses. Especially when the social studies curriculum is examined, it is seen that there are many subjects and acquisitions related to the environment. When the studies on the subject are examined in the literature, it is seen that although there are studies on environmental education self-efficacy of teacher candidates (Erkol & Erbasan, 2018; Okumuş & Bozkurt, 2019; Yıldırım, Kışoğlu & Salman, 2018), studies with social studies teacher candidates are limited (Apaydın- Timur, 2020; Öcal, 2013). For this reason, it is important to investigate the environmental education self-efficacy of social studies teacher candidates in terms of contribution to the field.

Purpose of the Research

The general purpose of this study is to examine the prospective teachers' perceptions of environmental education self-efficacy in terms of various variables. In order to achieve the aim of the research, the answers to the following questions were sought.

1. What is the level of self-efficacy perceptions of social studies prospective teachers?
2. Do prospective teachers' perceptions of environmental education self-efficacy show significant differences in terms of gender?
3. Do prospective teachers' perceptions of environmental education self-efficacy show a significant difference in terms of grade level?

2. Method

In this study, which was conducted to measure the environmental education self-efficacy perceptions of social studies teacher candidates, the scanning model, which is one of the quantitative research approaches, was used. Scanning model is a research approach that aims to describe the past or present situation as it is (Karasar, 2012). In survey studies, the subject, event or phenomenon studied is tried to be examined without any intervention of researchers (Sönmez & Alacapınar, 2011).

2.1 Study Group

The population of the study consists of prospective social studies teachers studying at Afyon Kocatepe University's Faculty of Education. The sample of the study was formed by using maximum sampling techniques. The purpose of this technique is to reflect the views of individuals with different attitudes in the universe to the study (Yıldırım and Şimşek, 2013). Volunteer students from all grade levels participated in the study. The sample group of the study consisted of 172 students, 98 female and 74 male.

2.2 Data collection tool

In order to determine prospective teachers' perceptions of environmental education self-efficacy, Environmental Education Self-Efficacy Perception Scale which was developed by Özdemir, Aydın and Akar-Vural (2009) was used. The scale consists of two parts: In the first part, there are questions that reveal the demographic information of the participants. In the second part, there are items aiming to reveal the participants' perceptions of environmental education self-efficacy. The scale consists of 4 dimensions; academic competence, responsibility perception, instructional competence and orientation perception. The Cronbach Alpha coefficient of the original scale was found to be 0.76. Responses to the scale developed in the five-point Likert type are ranked as "I disagree, disagree, agree, agree a little and agree completely." The lowest score that can be obtained from the scale is 15 and the highest score is 75. Increasing scores indicate positive perceptions of self-efficacy on environmental education. Within the scope of this study, the Cronbach's alpha value for the scale was calculated as 0.88.

2.3 Analysis of Data

Mean, t-test and one-way analysis of variance were performed on the data obtained from the administration of the data collection tool to 172 prospective teachers. ANOVA (one-way analysis of variance) and t-test were used to

determine whether the prospective teachers' tendencies towards the environment differed in terms of grade level and gender. The following cut-off points were taken into consideration in the interpretation of the general average of the scale;

Low for 24 and below

Medium for 25-49 and

High for 50-75.

3. Findings

What is the level of self-efficacy perceptions of prospective social studies teachers?

Table 1: Levels of Social Studies Prospective Teacher Perceptions of Environmental Education Self-Efficacy

Environmental Education Self-Efficacy Perception	N	X	SS	Min.	Max.
	172	46,67	7,66	19	67

According to the information given in Table 1, mean of the scores obtained from 172 pre-service teachers is 46.67. According to this finding, the level of perceptions of social studies prospective teachers on environmental education self-efficacy is medium.

Do prospective teachers' perceptions of environmental education self-efficacy differ significantly by gender?

Table 2: T-Test Results of Environmental Education Self-Efficacy Perceptions in Terms of Gender

Perception of Environmental Self-Efficacy	Gender	N	X	SS	T	P
Academic Competent	Female	90	18,52	3,90	,671	,503
	Male	71	18,07	4,63		
Responsibility	Female	98	9,12	3,04	,145	,885
	Male	74	9,05	3,10		
Instructive Competent	Female	97	11,25	1,85	,421	,675
	Male	73	11,11	2,42		
Guidance Perception	Female	98	8,59	2,42	1,677	0,95
	Male	72	7,93	2,69		
Total	Female	98	47,34	7,23	1,308	,193
	Male	74	45,80	8,16		

Table 2 shows the t-test results of social studies prospective teachers' perceptions of environmental education self-efficacy in terms of gender. According to the information given in the table, the differences in the perceptions prospective teachers on environmental education in sub-dimensions of self-efficacy isn't statistically significant in terms of gender. According to the same table; the average of female prospective teachers (47.34) is higher than the total average of male prospective teachers (45.80). The statistical significance results show that the difference between the mean scores of male and female prospective teachers is not significant. In other words, there is no significant relationship between gender and environmental education self-efficacy perceptions.

Do prospective teachers' perceptions of environmental education self-efficacy show a significant difference in terms of grade level?

Table 3: Anova Results of Environmental Education Self-Efficacy Perceptions in terms of Grade Level

Perception of Environmental Education Self-Efficacy	Source of Variance	Sum of squares	Sd	Mean Squares	F	P	Significant difference
Academic Competent	Intergroup	6,36	3	2,12	,117	,950	----
	In Group	2858,84	157	18,20			
	Total	2865,20	160				
Responsibility	Intergroup	36,84	3	12,28	1,320	,270	----
	In Group	1563,66	168	9,30			
	Total	1600,51	171				
Instructive Competent	Intergroup	7,77	3	2,59	,578	,630	----
	In group	744,20	166	4,48			
	Total	751,97	169				
Guidance Perception	Intergroup	23,41	3	7,80	1,201	,311	----
	In group	1079,06	166	6,50			
	Total	1102,47	169				
Total	Intergroup	76,35	3	25,45	,429	,732	----
	In group	9959,40	168	59,28			
	Total	10035,76	171				

Table 3 shows the results of the ANOVA test on whether prospective teachers' perceptions of environmental education self-efficacy differ in terms of grade level. According to the information in the table, sub-dimensions of self-efficacy perception of environmental education do not show significant differences in terms of grade level. According to the same table, it was found that the total scores of social studies prospective teachers' perceptions of environmental education self-efficacy did not differ in terms of grade level. In other words, there is no significant relationship between prospective teachers' classroom levels and self-efficacy perceptions of environmental education [$F(3, 173) = 1,789$ $p < 0.05$].

4. Conclusion Discussion and Suggestions

As a result of the analyses, it was determined that prospective teachers' self-efficacy perceptions of environmental education were moderate in the scale in general and in academic competence perception, responsibility perception, instructional competence perception and directing perception sub-dimensions. This result supports the studies of Kahyaoğlu (2011), Gökmen, Ekici and Öztürk (2012) and Zayimoğlu Öztürk, Öztürk and Şahin (2015). In these studies, it was concluded that prospective teachers' perceptions of environmental education self-efficacy were moderate. In addition, high level of environmental education self-efficacy was found by Özlü et al. (2011) and Tungaç (2015) with science teachers, Çimen et al. (2011) with biology prospective teachers, Erkol and Erbasan (2018) with classroom teachers and Yüksel & Kaya (2019) with teacher candidates in their studies.

When the prospective teachers' self-efficacy perception levels were examined according to gender variable, it was determined that female students scored higher in the overall and sub-dimensions of the scale. According to the t-test results, it was concluded that there was no significant difference between male and female students. Aydın (2008), Çimen, Gökmen, Altunsoy, Ekici ve Yılmaz (2011), Kahyaoğlu (2011), Gökmen, Ekici ve Öztürk (2012), Zayimoğlu Öztürk, Öztürk ve Şahin (2015), Yüksel & Kaya (2019) and Erkol and Erbasan (2018) found that environmental education self-efficacy beliefs did not show a significant difference in terms of gender variable in their studies.

When the environmental education self-efficacy perception levels of teacher candidates are examined according to the grade level, there is no significant difference in terms of environmental education self-efficacy perception, the overall scale and its sub-dimensions. This result shows parallelism with some studies in the literature. Konakçı (2019) states that there is no significant difference in environmental education self-efficacy scores of science teachers candidates according to age groups in his study. Likewise, Şahin and Doğu (2018), Akyol (2014), Güven, Yurdatapan, Parlak and Şahin (2013), Özgen (2012) stated in their studies that the attitudes of teacher candidates towards environmental problems do not differ according to grade level. In the studies conducted by Altunçekiç, Yaman and Koray (2005) and Gökmen, Ekici and Öztürk (2012), it is seen that there is a significant difference according to grade levels, and the difference is in favor of upper classes.

According to the findings obtained above, the following recommendations can be made:

1. Environmental education courses and course hours can be increased.
2. More practices can be given for effective environmental education.
3. No matter how well-informed individuals are in a field, they cannot be expected to be productive unless their self-efficacy is high and positive. For this reason, activities can be organized to increase the prospective teachers' self-efficacy beliefs in environmental education.
4. Activities that will increase the self-efficacy of teachers and instructors who will give environmental education courses can be done.

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