

## Examination of Pre-School Pre-Service Teachers' Environmental Identities

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**Abstract:** The aim of this study is to investigate the environmental identity levels of pre-school pre-service teachers (PSTs) and to examine the differences in environmental identity levels according to gender, grade level, parental education level, the place where they lived, participation in activities and academic grade point average. The descriptive survey model was used in the research. The sample of the research consisted of 135 pre-school PSTs studying at the Faculty of Education of Kırşehir Ahi Evran University in the fall semester of the 2018-2019 academic year. Personal Information Form (PIF) and the Environmental Identity Scale (EIS) were used as data collection tools in the study. One-way Analysis of Variance (ANOVA) and t-test, which are parametric tests, were used in the analysis of the data. According to the findings of the research, pre-school PSTs have a high level of environmental identity. The environmental identity levels of PSTs differ significantly in terms of Academic Grade Point Average (GPA) and grade level variables; however, there is no statistical difference in terms of gender, mother's education level, father's education level, and the place where they lived. According to the results of the research, it has been identified that the cultural values of PSTs, their enjoyment of nature, their experiences with nature and their field knowledge about the environment are effective on their environmental identity. Based on these results, it is recommended to conduct ethnographic studies and increase the number of samples in order to further examine the effect of the gender factor in future studies.

Keywords: *Pre-school Education, Pre-school Pre-service Teachers, Environmental Identity.*

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### 1. INTRODUCTION

Identity can be defined as the distinctive features associated with an individual or group. Individuals' identity is related to their self-concept, values and beliefs about who they are, and what they expect society to know about them (Clayton & Opatow, 2003). Accordingly, identity includes the attributes and characteristics of an individual (Ayaz, Doruk, & Sarıkaya, 2021). Identity, which is related to self-concept, is a concept that includes beliefs about who we are and who we expect to be (Clayton & Opatow, 2003). Identity is formed by the understanding that activates the feelings and thoughts of the individuals and regulates their behavior (Kitchell, Kempton, Holland, & Tesch, 2000). Emotional and behavioral responses vary depending on identity. It is an indication of individuals' identity that individuals react more strongly to the issues related to themselves in accordance with their attitudes and values (Devine-Wright &

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Clayton, 2010). In other words, the identity of the child may alter according to the place and the social structure in which he/she lives (Ayaz, Doruk, & Sarıkaya, 2021). Social roles are defined by identities, and these roles entail some responsibilities (Clayton & Opotow, 2003). Identity has cognitive, emotional, and behavioral consequences as cultural, social, political, and economic forces that has a role in the development of identity. Identities are in a structure that can be influenced and shaped by social interactions and experiences. Children's identities are complex, therefore, their engagement and identification with science can be shaped by social and structural positions, together with class, ethnicity, and gender (Tugurian & Carrier, 2017). This interaction between the environment has led to the formation of the concept of environmental identity.

## **2. LITERATURE REVIEW**

Environmental identity is the belief that people have and feel that they are an important part of the natural environment, which affects the way people perceive the world and act towards it, enables people to establish a connection with the part of the natural environment (Clayton & Opotow, 2003). It has been determined that as children grow and develop, their environmental identities emerge, particularly by being influenced by sociocultural factors as well as experiences in the natural world (Kals & Ittner, 2003). Environmental identity is identified in two ways; externally (how others see us) and internally (how we see ourselves) (Clayton, 2003; Stets & Biga, 2003). In addition, education has an important role in the identity formation of children. Learning environments that will give children an environmental identity create various experiences, competencies and interests for them (Erstad & Sefton-Green, 2013). In a study by Tugurian and Carrier (2017), environmental identities of children were defined. The research has shown that children recognize and define their own environmental identities, however it has been determined that science education, which is a course that is possibly to help children gain this identity, is insufficient in the formation of environmental identity of children. Researchers concluded that the content of science education limits children's interests and emotional attachments to the natural world. It should be noted that in designing curriculum, the content of the program should help children gain an environmental identity.

In the national pre-school curriculum, it is seen that a particular focus has been on the interaction of the child with the environment. In the pre-school curriculum, it has been stated that children are eager to explore and learn about their environment from the moment they are born. It has also been stated that the environment has a significant effect on the development and learning motivation of the child. In the main features of the program, the importance of the immediate environment on the child and the teacher who knows and monitors the close environment and the child's life experiences well have been emphasized. Within this framework, environmental acquisitions are included in the acquisitions that are prepared to support the development of cognitive, language, social and emotional, motor and self-care skills (MoNE, 2013).

Among the acquisitions related to cognitive development, the child is asked to be aware of his/her environment and to make predictions about environmental processes. One of the acquisitions related to language development is that the teacher is a model for the child to

describe the objects and events around him/her. Social and emotional development, which is the third dimension of the program, includes the child's taking responsibility to value and protect the beauties of their environment. Among the acquisitions and indicators related to self-care skills, there are statements about using tools and equipment related to environmental cleaning. The program also underlines science activities to raise environmental awareness in children. In addition, the importance of field trips has been emphasized for children to get to know their environment. In the program, Environmental Protection Week is included in the second week of June in order for children to gain experience in the environment. Children with special needs are also incorporated in the program, and with the aim of raising children with special needs as individuals with environmental identity, all kinds of information about the situation and events around them are conveyed to them and they are encouraged to ask questions about their environment (MoNE, 2013).

In the program, it is stated that the teacher's attitudes must be accurate and they must act accurately so that children can develop accurate attitudes towards their environment and act accurately (MoNE, 2013). The education teachers receive during the undergraduate period plays an important role in determining teachers as individuals with environmental identity. In the pre-school teacher training undergraduate program, there is a course called early childhood environmental education in the 3rd year spring term (VI. Semester). This course is a field training course and is carried out for 3 hours per week. Within the scope of this course, PSTs are given environmental education in the form of theory, planning and practice (YÖK, 2018).

In the literature, environmental identity continues to be a largely human-centered construct rooted in multiple levels of social relationships (Clayton, 2003). In the current study, pre-school PSTs experiences with environment will be revealed, and the effects of some psychometric factors on environmental identity will be examined, taking into consideration the social dimension of environmental identity. In addition, external and internal factors affecting environmental identity will also be examined. The aim of this study is to determine the environmental identity levels of pre-school PSTs and to examine the differences in environmental identity levels according to gender, grade level, parental education level, the place where they lived and academic grade average.

To achieve this aim, the following sub-questions will be sought.

- 1- What are the environmental identity levels of pre-school PSTs?
2. Do pre-school PSTs' environmental identity levels differ significantly according to;
  - a) Gender
  - b) Grade level
  - c) Mother's education level
  - d) Father's education level
  - e) The place where they lived
  - f) Academic grade point average (GPA)

### 3. METHODOLOGY

In this study, a descriptive survey model was used. Descriptive research is carried out to reveal the current state of the problem that is of interest. The main characteristic of this method is to investigate the current situation within its own conditions (Sönmez & Alacapınar, 2011).

In the present study, PSTs' environmental identities are examined as they exist in terms of gender, grade level, family education level, the place where they lived and Academic Grade Point Average (GPA) variables.

#### 3.1. *Participants and Sampling*

The participants in the present study were pre-school PSTs enrolled in the Faculty of Education of Kırşehir Ahi Evran University in the fall term of the 2018-2019 academic year. The sample of the study consisted of a total of 135 PSTs, from the first grade ( $N = 30$ ), from the second grade ( $N = 25$ ), from the third grade ( $N = 42$ ), and from the fourth grade ( $N = 38$ ), selected by convenience sampling (Çokluk, Şekercioğlu & Büyüköztürk, 2012), which is one of the non-random sampling methods.

#### 3.2. *Data Collection Tools*

Environmental identity involves emotional, cognitive, and experiential elements (Clayton, 2003). Consequently, it is not easy to depict the distinctions of environmental identity by means of quantitative measurements. Researchers have developed tools to assess a variety of interrelated concepts, as well as connectedness to nature (Mayer & Frantz, 2004), emotional closeness to nature (Kals & Ittner, 2003), inclusion with nature (Schultz, 2002), love, and care for nature. To identify pre-school PSTs' environmental identities, the Environmental Identity Scale (EIS), which was developed by Clayton (2003) and adapted into Turkish by Clayton and Kılınç (2013), was employed to identify the degree of relationship between individuals and the natural environment in the study. After deciding on the scale suitable for the sample group, the researchers who developed the scale were contacted via e-mail and permission was obtained to utilize the scale for ethical issues. Data transformation was not recoded because there were no negative statements in the questions. The Cronbach alpha value of 24 items of the applied scale was .75. As the calculated reliability coefficient is higher than .70, the reliability of the test scores is sufficient (Çokluk, Şekercioğlu & Büyüköztürk, 2012).

#### 3.3. *Data Analysis*

The Statistical Package for the Social Sciences 20 (SPSS 20) program was used in the analysis of the data. To determine the statistical tests to be applied in the current study, it was first checked whether the data belonging to the lower and upper groups showed a normal distribution. For this, Skewness (skewness) and Kurtosis (kurtosis) values, were taken into consideration. As a result of the statistical calculations, it was identified that the Skewness and Kurtosis values were between -1.5 and +1.5. Therefore, the data showed a normal distribution (Tabachnick & Fidell, 2012). One-way Analysis of Variance (ANOVA) and t-test, which are parametric tests, were employed in the analysis of the data. ANOVA and t-test scores were used for statistical comparisons.

#### 4. FINDINGS

In this part of the research, the findings obtained after the statistical analysis of the data collected for the solution of the main problem and sub-problems identified in accordance with the aim and the interpretations of these findings are included.

##### *3.1. Findings related to the first sub-problem of the research (What are the environmental identity levels of pre-school PSTs?)*

**Table 1.** Descriptive Analysis Results of the Items in the Test

	Mean	SD	Cronbach alpha ( $\alpha$ )	Min.	Max.
Environmental Identity (24 items)	130,13	21,30	.75	72	167

As a result of the descriptive analysis of the items prepared to reveal the environmental identities of the pre-school PSTs, the total mean of the environmental identity of the PSTs was  $\bar{X}=130,13$ . Accordingly, it can be said that pre-school PSTs have strong environmental identities. It is seen that there is a difference between the item score averages of the PSTs. The highest item was “I like gardens” with an average of 6.38 and the lowest item was the 24th statement with an average of 4.08. The fact that PSTs took environmental courses in their previous academic processes may have formed their environmental identity. In a study on high school students conducted by Blatt (2013), it was highlighted that there was a relationship between environmental science activities and environmental identity, and environmental activities evoke emotional reactions in students.

##### *3.2. Findings related to the second sub-problem of the research (Differences of Pre-School PSTs' Environmental Identity Levels According to Various Variables)*

###### *3.2.1. Do pre-school PSTs' environmental identity levels differ according to gender?*

Table 2 shows the results of the independent sample t-test, which was conducted to identify whether the environmental identity mean scores of the PSTs differ according to the gender variable.

**Table 2.** Independent Sample t-test Results of Environmental Identity Mean Scores of PSTs According to Gender

Gender	N	M	SD	df	t	P
Female	119	130,96	20,89	133	1,229	,234
Male	16	124,00	23,96			

When Table 2 is examined, 119 (88%) of the 135 PSTs participating in the research are female and 16 (12%) are male. The environmental identity questionnaire mean score of the female PSTs was 130.96, and the environmental identity questionnaire average score of the male PSTs was 124. Results reveal that there is not a statistically significant difference between the environmental identity mean scores of female and male PSTs [ $t(133)=1,229, p>.05$ ].

### 3.2.2. Do pre-school PSTs' environmental identity levels differ according to grade level?

The grade levels of the PSTs were examined under four categories as 1st grade, 2nd grade, 3rd grade, and 4th grade. Accordingly, the ANOVA results performed to identify the significance of the difference of the environmental identity mean scores of the groups according to the grade level are shown in Table 3 below.

**Table 3.** ANOVA Results on The Significance of The Difference Between PSTs' Environmental Identity Mean Scores According to Grade Levels

Source of Variance	Sum of Squares	df	Mean Squares	F	P
Between groups	5099,338	3	1699,779	3,999	,009
Within groups	55688,262	131	425,101		
Total	60787,600	134			

The results of the analysis show that there is a significant difference between the environmental identity mean scores of pre-school PSTs according to grade level [ $F(3-134)=3,999, p<.05$ ]. In other words, PSTs' environmental identity levels differ significantly depending on the grade level. According to the results of the Scheffe test, which was carried out to find out in which classes the differences were, it was identified that the environmental identity levels of PSTs studying in the 3rd grade ( $\bar{X}=134.90$ ) were higher than those studying in the 2nd grade ( $\bar{X}=117.56$ ).

### 3.2.3. Do pre-school PSTs' environmental identity levels differ according to their mother's education level?

PSTs' mother education levels were examined under six categories: illiterate, literate, primary school graduate, secondary school graduate, high school graduate, and higher education graduate. Accordingly, the ANOVA results performed to identify the significance of the difference of environmental identity groups according to mother's education level are shown in Table 4 below.

**Table 4.** ANOVA Results on the Significance of the Difference between PSTs' Environmental Identity Test Scores According to Mother Education Level

Source of Variance	Sum of Squares	df	Mean Squares	F	P
Between groups	1385,992	3	461,997	1,019	,387
Within groups	59401,608	131	453,447		
Total	60787,6	134			

The results of the analysis show that the environmental identity levels of pre-school PSTs do not differ according to mother's education level [ $F(3-134)=1.019 p<.05$ ]. In other words, environmental identity levels of PSTs do not differ significantly depending on mother's education level. According to the results of the Scheffe test, which was carried out to find out in which groups the differences in mother education level were, the first group mother's education level was ( $\bar{X}=126.77$ ), the second group mother's education level was ( $\bar{X}=133,16$ ), the third group mother's education level was ( $\bar{X}=128,19$ ) and 4th group mother's education level was ( $\bar{X}=126,11$ ).

### 3.2.4. Do pre-school PSTs' environmental identity levels differ according to their father's education level?

PSTs' father education levels were examined under six categories: illiterate, literate, primary school graduate, secondary school graduate, high school graduate, and higher education graduate. Accordingly, the ANOVA results performed to identify the significance of the difference of environmental identity groups in terms of father's education level are shown in Table 5 below.

**Table 5.** ANOVA Results on the Significance of the Difference Between PSTs' Environmental Identity Test Scores According to Father Education Level

Source of Variance	Sum of Squares	df	Mean Squares	F	P
Between groups	2859,654	3	953,218	2,156	,096
Within groups	57927,946	131	442,198		
Total	60787,600	134			

The results of the analysis show that the environmental identity levels of pre-school PSTs do not differ according to father's education level [ $F(3-134) = 2.156, p < .05$ ]. In other words, environmental identity levels of PSTs do not differ significantly depending on father education level. According to the results of the Scheffe test, which was carried out to find out in which groups the differences in father education level were, the first group father's education level was ( $\bar{X} = 129.50$ ), the second group father's education level was ( $\bar{X} = 133,31$ ), the third group father's education level was ( $\bar{X} = 136,77$ ) and 4th group father's education level was ( $\bar{X} = 125.41$ ).

### 3.2.5. Do pre-school PSTs' environmental identity levels differ according to the place where they lived?

The environmental identity levels of PSTs were examined under three categories according to place where they live: city center, district and rural settlement. Accordingly, the ANOVA results performed to identify the significance of the difference according place of the environmental identity groups are shown in Table 6 below.

**Table 6.** ANOVA Results on the Significance of the Difference between the Place of PSTs

Source of Variance	Sum of Squares	df	Mean Squares	F	P
Between groups	572,601	2	286,301	,628	,535
Within groups	60214,999	132	456,174		
Total	60787,600	134			

The results of the analysis do not show that there is a significant difference in environmental identity levels of PSTs according to place [ $F(2-134) = .628, p > .05$ ]. In other words, environmental identity levels of PSTs do not differ significantly depending on place where they lived. According to the results of the Scheffe test, which was carried out to find out in which groups the differences in place were, it was identified that there were city center ( $\bar{X} = 131.28$ ), district center ( $\bar{X} = 131.28$ ) and village/town ( $\bar{X} = 130.13$ ).

### 3.2.6. Do pre-school PSTs' environmental identity levels differ according to their academic grade point averages (GPA)?

Environmental identity levels of PSTs were examined under three categories based on 3 different grade ranges. Accordingly, the results of the ANOVA performed to identify the significance of the difference in environmental identity of preschool PSTs according to their GPA are shown in Table 7 below.

**Table 7.** ANOVA Results on the Significance of the Difference Between PSTs' GPA According to Departments

Source of Variance	Sum of Squares	df	Mean Squares	F	P
Between groups	3495,218	2	1747,609	4,175	0,18
Within groups	50234,489	120	418,621		
Total	53729,707	122			

The results of the analysis show that there is a significant difference in the environmental identity levels of PSTs according to GPA [ $F(2-122)=4.175$ ,  $p<.05$ ]. In other words, environmental identity levels of PSTs differ significantly depending on their GPA. According to the results of the Scheffe test, which was carried out to find out in which groups the differences in the averages were, it was identified that the environmental identity levels of the PSTs in the 1st grade range ( $\bar{X} = 120,40$ ) were lower than those in the 2nd grade range ( $\bar{X} = 133.5658$ ). The 3rd grade range was ( $\bar{X} = 133,91$ ).

## 5. RESULTS AND DISCUSSION

This descriptive study was carried out to find out whether the environmental identity levels and environmental identities of preschool PSTs differ according to some factors. When the data obtained in the research were examined, it was found that the environmental identity levels of the PSTs were high. Through the descriptive analysis of the Environmental Identity Scale (EIS) items, which were applied to reveal the environmental identity levels of pre-school PSTs, the mean environmental identity of the PSTs was  $\bar{X} = 130,13$ . Accordingly, it can be stated that pre-school PSTs have a high level of environmental identity and there is a difference between the mean scores of the items in the scale. The highest item was the 10th expression (I like gardens) with an average of 6.38. and the lowest item was the 24th statement (I keep some memories from nature such as seashells, stones, or bird feathers in my room) with an average of 4.08. When these two items are examined, seashells and bird feathers are not easily accessible materials, however people can often be found in green areas for instance parks and gardens. These green spaces are ideal environments for people to establish a positive relationship with nature. People experience many positive experiences (picnics, trips, etc.) towards nature in these areas, and positive experiences have positive effects on human psychology (Özdemir & Kıray Vural, 2015). In a study conducted by Tanık Önal, Kılınç and Saraçoğlu (2020) on the environmental identities of PSTs, it was determined that pre-service science teachers have a high level of environmental identity. They associated this situation with the stress factor. They argued that people spend time in gardens to get rid of the stress of daily life, and this may be due to the thought that being in such environments is effective in living a



healthy life. In their study, Clayton & Kilinc (2013) found that PSTs have a high level of environmental identity. They associated this situation with culture. They have determined that the influence of the Shaman tradition, which has deep traces in the culture of the Turks, and the religion of Islam, which the majority of the society believes in, and the belief systems of the PSTs who were raised within the environmental rules of today's modern society significantly affect the environmental identity.

Environmental identity levels of PSTs differ significantly in terms of GPA and grade level variables. On the other hand, there is not a statistical difference in terms of environmental identity levels of PSTs and factors such as gender, mother's education level, father's education level, and place where they lived.

As a result of the analysis of the environmental identities of the PSTs according to gender variable, no significant difference was found between these variables. In modern Turkish society, women are in constant interaction with their environment as they actively take part in education life as much as men. Regardless of gender, individuals interact with their nature as they wish. In addition, people today are shaped by the media from an early age. Therefore, materials on the environment are presented to individuals, regardless of gender. As a result, male and female individuals living together in social life have similar experiences and perceptions about environmental awareness. The similarity in the experiences and perceptions of the female and male PSTs towards the environment may ensure that their environmental identity levels are close. In a study conducted with university students by Akilli, Kemahli, Okudan and Polat (2008), it was examined whether the amount of consumption, which is one of the environmental issues differs according to gender. It was also identified that the amount of consumption between the genders did not differ significantly. In a study conducted by Öz Aydın, Şahin and Korkmaz (2013), environmental attitude levels of PSTs studying in pre-school, primary school and science education were examined. A significant difference was found in the environmental attitude levels of PSTs studying in science and primary school education according to gender, however a significant difference was found in the environmental attitude levels of pre-school PSTs according to gender. In a study by Miao and Cagle (2020), the role of gender in the development of environmental identity was examined by analyzing students' narratives in a qualitative study conducted with 30 undergraduate students. According to the results of the research, it was concluded that gender affects the environmental identity development of students by influencing the social factors in the development of environmental identity and life experiences related to nature.

As a result of the analysis of the environmental identities of the PSTs according to the grade level variable, it was concluded that there was a significant difference between the environmental identity average scores of the PSTs studying in the 2nd and 3rd grades. The PSTs included in the sample take undergraduate courses within the framework of the 2006 pre-school teacher training undergraduate program. PSTs do not take "Science education" course and "Environmental education" compulsory course at the 3rd grade level. It can be said that the knowledge and perceptions of the PSTs about the environment remain at a similar level as the first-year PSTs have a certain level of environmental knowledge as they prepare for the university entrance exam, and the fourth year PSTs focus more on pedagogical courses due to

the Public Personnel Selection Examination (PPSE). The education they received on environmental issues within the scope of science education in the 3rd grade may enable PSTs to have more information on these issues and to increase their perceptions of environmental issues. Briefly, the PSTs' content knowledge on the environment is effective on environmental identity. In a study conducted by Karatekin and Aksoy (2012), environmental literacy levels of PSTs studying in social studies teaching were examined in terms of their environmental education status. The environmental literacy scores of the PSTs differ significantly in terms of taking environmental education course, and the environmental literacy levels of the PSTs who took environmental education were higher. Similarly, Ek, Kılıç, Öğdüm, Düzgün and Şeker (2009) conducted a study on the attitudes of university students studying in different departments towards the environment, the attitudes, and sensitivities of senior students towards environmental problems were significantly higher than those of first-year students. On the other hand, in a study conducted by Deniz and Genç (2007) on the environmental attitudes and knowledge levels of primary school teachers, teachers who took environmental science course and did not take the course were compared. A significant difference was found between their achievement scores, however no significant difference was found between their attitude scores. On the other hand, in a study conducted by Ek, Kılıç, Öğdüm, Düzgün and Şeker (2009) on the attitudes of university students studying in different departments towards the environment, the attitudes of senior students towards the environment were significantly higher than those of first-year students.

When the environmental identities of the PSTs were examined according to the parental education level variable, no significant difference was found between the environmental identity levels in terms of these variables. It can be said that environmental identity levels increase with the cognitive and behavioral support of pre-school PSTs who were raised in family environments with environmental awareness rather than their parents' education level. In a study conducted by Demiral (2022), parents with a low level of education were reported to actively participate in the education process of their children as well as educated parents. Furthermore, children who were raised in a wealthy, educated family could be prevented from doing even their daily chores and that parents who could not have enough time for their children might be a cause of a form of child abuse. Briefly, the low level of parental education, which seems to be a negative effect, can have a positive effect on supporting children's education in terms of behavioral although not academic. According to Goldman (2020), parents stated that if they participated in their children's learning about the environment, children would have an increased sense of value in the subject areas. In a study conducted by Karatekin and Aksoy (2012), the environmental literacy scores of PSTs who were raised in families with high environmental awareness were significantly higher than those of families with low levels of environmental awareness.

When the environmental identities of the PSTs were examined according to place variable, no significant difference was found between the environmental identity levels. The total scores of all three settlements are quite close to each other. Cities and district centers are not isolated areas from natural environments. Although these centers are few, there are parks and green areas in these places. PSTs may have maintained their ties with nature in these areas. A similar

result was found in a study conducted by Tanık (2012). PSTs who grew up in an urban environment satisfied their longing for nature in a limited number of public gardens.

When the environmental identities of the PSTs were analyzed according to the GPA variable, a significant difference was found between the environmental identity levels the environmental identities of PSTs with high GPA were higher. Academic achievement requires having a certain level of environmental knowledge. Having this level of knowledge may enable PSTs to have environmental identity. In a study conducted by Doğan and Keleş (2020), environmental awareness and environmental behavior levels of secondary and high school students were examined in terms of GPA. As a result of the research, it was stated that academic achievement had an effective impact on environmental awareness, but not on environmental behavior. The researchers explained that the environmental acquisitions in the curriculum focused on developing awareness rather than behavior. Goldman (2020) revealed that there is a relationship between environmental identity and academic achievement. The main factor in the emergence of this relationship is family participation. It has been concluded that when the parents of the students participating in the project named "Ocean Conservation" participate in the activities of their children, the students have an increasing sense of value in their environmental identities, and this also affects the academic success of the children.

## **6. RECOMMENDATIONS**

Multiple dimensions need to be considered when examining a person's relationship with nature. Qualitative research methods can increase the potential to depict the cognitive, emotional, and experiential factors of environmental identity. For this reason, the data obtained by interviewing a certain number of people with the purposeful sampling method in new studies can be examined in depth.

In this study, no significant difference was found between genders in terms of environmental identity. This situation is because men and women have equal social rights in modern Turkish society and that they are in contact with the media at a similar level. Ethnographic studies can be designed if the effect of the gender factor will be examined in future studies that are planned to be conducted on a similar subject. In other words, gender-environmental kinship comparisons can be made between modern society and individuals in a closed (patriarchal) society. Moreover, environmental identity levels in societies where access to media is easy and in societies where access is difficult can be examined comparatively. In addition, there are 119 female and 16 male PSTs in the current study. Considering the difference in numbers between the two groups, it is necessary to examine the results related to gender aspre-school education is a department preferred especially by female students, in future studies, taking the difference in the number of females and males into account, pre-school PSTs from different universities can be included in the sample and the numbers of female and male PSTs can be balanced.

In the study, the environmental identities of the PSTs who took environmental lessons were reported to be higher. It can be said that field knowledge on the environment has effects on environmental identity. However, over time, different orientations in the learning process may cause regression in content knowledge. For this reason, it is recommended that a more

permanent environmental education be given in undergraduate programs, especially in environmental education, which is based on practice and enables PSTs to gain experience.

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## 8. ABOUT THE AUTHORS

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