European Journal of Education Studies
ISSN: 2501 - 1111
ISSN-L: 2501 - 1111
Available online at: www.oapub.org/edu

DOI: 10.46827/ejes.v10i9.4946 Volume 10 | Issue 9 | 2023

INVESTIGATION OF WETLAND AWARENESS OF GIFTED STUDENTS

Derya Sönmez[i]
Teacher,
Ministry of National Education,
Turkey

Abstract:
Wetlands such as lakes, reeds, marshes and deltas are in danger of extinction in the world and in Turkey. The aim of this study is to examine the wetland awareness of gifted students. Wetland awareness of gifted students was examined according to gender and grade level variables. The research was carried out with 120 secondary school students studying in a science and art center in the eastern Mediterranean region of Turkey in the 2022-2023 academic year. In the study, the survey model, which is one of the quantitative research methods, was used. "Children's Wetland Awareness Scale" was used to collect data. The scale includes two sub-dimensions: awareness of the importance of wetlands and the problems experienced, and awareness of wetlands in terms of bird species diversity. As a result of the research, it was concluded that the wetland awareness of the gifted students was at a high level. It was determined that there was no statistically significant difference according to gender and class level in the wetland awareness scale from the eyes of the children, the importance of wetlands and the awareness of the problems experienced, and the wetland awareness dimensions in terms of bird species.

Keywords: environmental, gifted students, wetland, wetland awareness

1. Introduction

70% of the earth is covered with water. 97.6% of the water on earth is found as salt water in wet areas such as ocean and sea. Of the remaining part, 1.9% is in glaciers and 0.5% is fresh water, which is suitable for the use of vital activities of living things. These fresh waters are found in the world as streams, streams, streams, rivers, groundwater and lakes (Güler, 1997). The small amount of fresh water is not evenly distributed on Earth. For this reason, some parts of the world have a very large amount of water, while some regions have very little water. Contrary to popular belief, it cannot be said that Turkey is a water-rich country, but there is a possibility that Turkey will be a water-scarce country in 2030 (Tomar, 2009). For this reason, it is very important to protect and develop our existing

[i] Correspondence: email deryasnmzim@hotmail.com

wetlands in order to leave both drinkable water and wetlands, which are our wealth, to future generations (Selçuk, 2019).

Wetlands, it consists of places with biological diversity such as delta, lake, lagoon, swamp, reeds, sinkhole, dam lake, flood plain. Wetlands, where oxygen, which is important for life, is produced and which is an important part of ensuring the continuity of the nitrogen, sulfur and wetlands; fish production, storage of flood waters, continuity of groundwater, irrigation in agriculture and vital water source for living things (Arı, 2006). Wetlands are home to many species and provide resting, feeding and breeding places for migratory birds. As a matter of fact, wetlands are of great importance for the continuation of bird species (Selçuk, 2019).

Wetlands play a vital role in water collection, irrigation and wastewater management or water availability for flood protection, biodiversity conversion, fish stocks, safe drinking water supply and water quality improvement. Wetlands are very important for the sustainability of water, which is our source of life, as they feed groundwater (Tockner et al., 2010; Ostrovskaya et al., 2012). As human beings started to use the surroundings of wetlands as settlements, wetlands such as swamps and reeds, which are considered worthless, were dried in order to be protected from floods, to open settlements, to obtain agricultural land, and wetlands were destroyed by people. After the 1960s, when the importance of wetlands was understood, the idea of not drying these areas and putting them under special protection was put forward (Korkmaz, 2008). Wetlands are susceptible to degradation from climate change and rapid urbanization and are among the most endangered ecosystems worldwide (Tockner et al., 2010).

While wetlands in Turkey are converted to alternative land uses, they are dried, polluted, invaded by foreign plants and degraded due to hydrological changes. In addition, many wetlands were dried and lost in previous years (Sönmez and Somuncu, 2016; Biler, 2019). The RAMSAR (Convention on the Protection of Wetlands) agreement was signed in 1994 for the protection of wetlands, the importance of which is also understood in Turkey (Çiçek, 2004).

There are 95 wetlands under protection in Turkey, of which 14 are ramsar areas, 59 are wetlands of national importance, and 22 are wetlands of local importance (Ministry of Agriculture and Forestry, 2022). However, wetlands are increasingly endangered despite the international and national regulations that ensure their protection (Turner et al., 2000). When the literature is examined, it is seen that there are a limited number of studies on wetlands in the field of education and training.

In the study conducted by Selçuk (2019), the destruction of wetlands in the lakes region in Turkey was examined in terms of environmental education. It was determined that the subjects of water pollution, water cycle and water saving were included in the secondary school curriculums examined, but there was no content on wetland destruction such as drying out wetlands. It has been emphasized that wetland destruction can be prevented when regulations that include the objectives of environmental education are made in the curriculum. In the study conducted by Sülük, Nural and Tosun (2013), the awareness level of the local people living around Işıklı Lake in Turkey about wetlands was examined. As a result of the research, it was determined

that the lake water was used unconsciously, illegal hunting was carried out, and there was a solid waste problem. In order to raise awareness about wetlands, it has been suggested to organize awareness trainings, starting from primary school age, school trips to wetlands and bird-watching houses.

In the study conducted by Tankuş (2011), biodiversity conservation behaviors of students studying at various high schools in Şanlıurfa, Turkey were examined. Problem-focused coping increased students' tendency to protect wetlands; It has been revealed that social factors are a greater obstacle than personal factors in protecting wetlands.

In the study conducted by Aydaş (2006), the effect of the problem-solving method on 7th grade students' understanding of wetlands was investigated. At the end of the research, it was concluded that teaching with the problem-solving method was more effective than traditional teaching methods in understanding the wetlands subject of 7th grade students.

In order to prevent the extinction of wetlands, which are among the current environmental problems in the world and in Turkey, it is necessary to convey the awareness and importance of wetlands to children at an early age. In line with this reason, the necessity of conducting this study has been put forward. It was thought that it would be important to examine the wetland awareness of our gifted students, who may have a say in decision-making mechanisms in the future. When the literature is examined, no academic study has been found on wetland awareness for children. It is thought that this study will be important in terms of eliminating this deficiency in the field and guiding future studies.

The problem sentence of this study is "What is the wetland awareness level of gifted students?" determined as. The following sub-problems were created in line with the determined variables:

Wetland awareness of gifted students;

a) to gender,
b) to grade level,
c) is there a statistically significant difference?

2. Method

2.1 Research Design

In this study, which examines the wetland awareness of gifted students according to various variables, the survey model, which is one of the quantitative research methods, was used. A screening model is a study that aims to collect data to identify certain characteristics of a group. The purpose of survey research is to make a description by taking the existing photograph related to the research subject. For this purpose, in survey studies, information is collected from a wide audience, using the answer options determined by the researcher. In this study, cross-sectional survey research was used. Variables to be described in cross-sectional surveys are measured once. Cross-sectional studies are generally those in which the sample is large and include many different populations (Büyüköztürk et al., 2014).

2.2 Study Group

The study group of the research consists of 120 secondary school students, who are studying in a science and art center in the Eastern Mediterranean Region of Turkey in the 2022-2023 academic year, determined by the easily accessible sampling method. The easily accessible sample is used for situations where the researcher has advantages such as time, accessibility, convenience and low cost while collecting data (Yıldırım & Şimşek, 2018). In this study, an easily accessible sample was used in the research since the researcher received help in collecting data from the school students he was teaching while reaching the sample.

Table 1: Demographic characteristics of the study group

Variables		**N**	**%**
Gender	Girl	60	50
	Boy	60	50
Grade Level	5th Grade	36	30
	6th Grade	44	36.7
	7th Grade	40	33.3
Total		120	100

When Table 1 is examined, 120 (100%) secondary school students, of which 60 (50%) girls and 60 (50%) boys, participated in the study. 36 (30%) of the students stated that they were in the 5th grade, 44 (36.7%) were in the 6th grade, 40 (33.3%) were in the 7th grade. Since it is difficult to reach 8th grade students who are preparing for the High School Entrance System exam, they were not included in the study group.

2.3 Data Collection Tool

In order to examine the wetland awareness of gifted students, the "Wetland Awareness Scale in the Eyes of Children", which is a 3-point Likert type consisting of 14 items developed by Uysal, Şayan, Uysal, Temel and Uysal (2022), was used. There are 2 sub-dimensions in the scale: "Awareness of the importance of wetlands and the problems experienced" and "Wetland awareness in terms of bird species diversity". The 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, 10th and 11th items of the sub-dimension "The importance of wetlands and awareness of the problems experienced (Sub-Dimension 1)" in the scale 11 items, including; "Wetland awareness in terms of bird species diversity (Sub-Dimension 2" sub-dimension consists of 3 items as 12th, 13th and 14th items. The answer options of the scale are 1 point "Disagree", 2 points "Partly Agree" and 3 points "Agree" All of the scale items are positive items. In line with the data of this study, the sub-dimensions and reliability values of the whole scale for the "Wetland Awareness Scale in the Eyes of Children" are given in Table 2.

Table 2: Reliability values of the wetland awareness scale and its sub-dimensions from children's eyes

Scale Sub-Dimensions	Confidence Value
Awareness of the importance of wetlands and the problems experienced	.82
Wetland awareness in terms of bird species diversity	.59
Whole scale	.82

When Table 2 is examined, the Cronbach alpha internal reliability coefficient of the scale was .82 for the whole scale; .82 for the sub-dimension of awareness of the importance of wetlands and the problems experienced; It is seen that it is .59 for wetland awareness in terms of bird species diversity. The reliability coefficient calculated for the whole scale is .70 or higher, which is generally considered sufficient for the reliability of the test scores (Büyüköztürk, 2016). In line with these data, it was concluded that the scale could be used for this study.

2.4 Data Collection Process

Before starting to collect the data, permission to use the scale was obtained from the person who developed the data collection tool and permissions from the relevant institution to apply the scale. After obtaining the necessary permissions, data collection was carried out. The forms, which were filled in correctly and completely by the gifted students, were organized to be included in the study dataset. In all processes of this study, precautions were taken to ensure that it was carried out in accordance with ethical rules, and all the rules were followed.

2.5 Data Analysis

The data obtained in the study were statistically analyzed in the computer environment. Demographic characteristics of gifted students participating in the study were determined by calculating frequency and percentage values (See Table 1). Both descriptive and inferential statistical analyzes of the data obtained from the scale were performed. For inferential statistics, it was first examined whether the data showed a normal distribution. The skewness-kurtosis normality distribution test was used to determine whether the data were suitable for the normal distribution according to the variables. Whether the data are normally distributed or not is given in Table 3.

Table 3: Normal distribution of data

Scale	Skewness	Kurtosis
Wetland Awareness Scale in the Eyes of Children	-1.22	0.97

When Table 3 is examined, it is seen that the skewness is -1.22 and the kurtosis is 0.97 for the Children's Wetland Awareness Scale. According to Tabachnick and Fidell (2013), skewness and kurtosis values need to be between -1.5 and +1.5 for a normal distribution. In this context, it was determined that the data showed a normal distribution as a result of the analyses. Therefore, parametric tests were used in the analysis. In the analyses, an independent sample t-test was used for variables with two independent groups, and one-

way analyses of variance [ANOVA] for variables with three or more independent groups. The results were evaluated at the 95% confidence interval and the significance level of ϱ<0.05. Levene test was used to test the homogeneity of the groups and homogeneity was evaluated at the p>0.05 level.

3. Findings and Results

The total scores of gifted students from the wetland awareness scale and its sub-dimensions are given in Table 4.

Table 4: Descriptive statistics of students' wetland awareness

Wetland Awareness	n	Minimum	Maximum	$\bar{X}$	S
1st Sub-Dimension	120	16.0	33.0	31,17	2.78
2nd Sub-Dimension	120	4.0	9.0	7,62	1.39
Whole Scale	120	20.0	42.0	38,80	3.65

When Table 4 is examined, the highest score of the gifted students regarding the wetland awareness scale is 42.0, the lowest score is 20.0, the scale average is 38.80, and the standard deviation is 3.65; the highest score for the importance of wetlands and awareness of problems sub-dimension (1st Sub-Dimension) was 33.0, the lowest score was 16.0, the scale average was 31.17, and the standard deviation was 2.78; in terms of bird species diversity, the highest score for the wetland awareness sub-dimension (2nd Sub-Dimension) was 9.0, the lowest score was 4.0, the scale average was 7.62, and the standard deviation was 1.39.

An Independent sample t-test was used to analyze the wetland awareness of gifted students to gender. Statistical analysis of gifted students' wetland awareness to gender is given in Table 5.

Table 5: Statistical analysis of students' wetland awareness to gender

Size	Group	N	$\bar{X}$	S	sd	t	p
1st Sub-Dimension	Girl	60	2,84	.19	118	0.62	.536
	Boy	60	2,81	.29			
2nd Sub-Dimension	Girl	60	2,68	.62	118	0.59	.556
	Boy	60	2,61	.61			
Whole Scale	Girl	60	2,93	.21	118	0.94	.347
	Boy	60	2,88	.34			

*ϱ<0.05

When the sub-dimensions of the scale of wetland awareness in children's eyes are examined, there is no statistically significant difference in terms of the importance of wetlands and awareness of the problems experienced to gender (t=0.62, p>0.05). In terms of bird species diversity, there is no statistically significant difference according to gender in the wetland awareness dimension (t=0.59, p>0.05).

The Levene test was used to determine whether gifted students were homogeneous according to the grade level of the awareness scale and sub-dimensions of the wetlands in the eyes of the children, and the homogeneity analysis is given in Table 6.

Table 6: The results of the homogeneity test of the wetland awareness scale and its sub-dimensions according to the grade level in the eyes of children

Size	F	df1	df2	P
1st Sub-Dimension	2.547	2	117	0.83*
2nd Sub-Dimension	1.963	2	117	0.14*
Whole Scale	1.818	2	117	0.17*

*ϱ>0.05

When Table 6 is examined according to the Levene test result, it was determined that the importance of wetlands and awareness of the problems experienced (p=0.83), wetland awareness in terms of bird species diversity (p=0.14) sub-dimensions and the variances of the groups in the whole scale (p=0.17) were homogeneous. (p>0.05).

One-way analysis of variance (ANOVA) was conducted to understand whether there was a statistically significant difference in the wetland awareness scale and sub-dimensions of gifted students according to grade level. Statistical (ANOVA) analysis of gifted students' wetland awareness to grade level is given in Table 7.

Table 7: Statistical analysis of students' wetland awareness to grade level (ANOVA)

Size	Source of Variance	Sum of Squares (SS)	Sd	Mean Squares (MS)	F	p
1st Sub-Dimension	Between Groups	0.074	2	0.037	0.570	0.567
	Within Groups	7.557	117	0.065		
	Total	7.631	119			
2nd Sub-Dimension	Between Groups	0.632	2	0.316	0.828	0.439
	Within Groups	44.668	117	0.382		
	Total	45.300	119			
Whole Scale	Between Groups	0.301	2	0.151	1.818	0.167
	Within Groups	9.691	117	0.083		
	Total	9.992	119			

*ϱ<0.05

When Table 7 is examined, it is seen that there is no significant difference in the wetland awareness of the gifted students according to the grade level [F(2-117)=1.818, p>0.05]. When the sub-dimensions of the Wetland Awareness Scale in the Eyes of Children are examined, the awareness of the importance of wetlands and the problems experienced [F(2-117)=0.570, p>0.05] and the awareness of wetland in terms of bird species diversity [F(2-117)=0.828,p> 0.05] dimensions, it was determined that there was no statistically significant difference according to grade level.

4. Discussion and Conclusion

In this study, in which the wetland awareness of gifted students was examined according to various variables, the following results were reached;

It has been determined that gifted students have a high level of wetland awareness in line with the findings obtained from the wetland awareness scale from the eyes of children. At the same time, it was concluded that the awareness of the students was at a high level in the sub-dimensions of the importance of wetlands and awareness of the problems experienced, and in the sub-dimensions of wetland awareness in terms of bird species diversity. Çayır (2016) found that gifted students care more about environmental problems than their peers; Sontay (2013), on the other hand, determined in his study that gifted students have a higher level of environmental literacy compared to their peers. Sontay, Gökdere, and Usta (2014) found in their study that gifted students have higher environmental behavior levels compared to their peers. On the other hand, Nacaroğlu and Bozdağ (2020) found in their study that the perceptions of gifted students towards environmental problems are not sufficient. As a result, in this study, it can be said that the wetland awareness of gifted secondary school students is at a high level.

It was determined that there was no statistically significant difference in the wetland awareness scale and its sub-dimensions according to gender and class level. In the study conducted by Uysal et al. (2022), they concluded that there is no significant difference in the wetland awareness of secondary school students according to gender.

As a result, it has been determined that gifted secondary school students have a high level of wetland awareness, and there is no significant difference in wetland awareness according to gender and class variables.

5. Recommendations

In the study, analyzes were made using only quantitative data. For more detailed research, researches that will reveal in-depth results can be carried out by using both quantitative and qualitative data. By including different variables in the scale used in the study, more detailed results of the gifted students can be reached. Researches on wetland awareness can be conducted for students studying at different levels. Teachers and academicians in the field of education and training can conduct academic studies on the applicability of different teaching methods and techniques to examine students' wetland awareness.

6. Scientific Ethics Declaration

The author declares that the scientific ethical and legal responsibility of this article published in EJES journal belongs to the author.

Acknowledgements and Notes

For this research, the researcher was entitled to be supported by the Scientific and Technical Research Council of Turkey (TÜBİTAK) 2224/B Support Program for Participation in Domestic Scientific Activities for the term 2023/1.

This research was presented as an oral presentation in the online environment of 8-11 June 2023 Xth International Eurasian Educational Research Congress.

Conflict of Interest Statement

The author declares no conflicts of interest.

About the Author

Derya Sönmez is a primary teacher at Osmangazi Science and Art Center in Onikişubat, Kahramanmaraş/Turkey. His study fields are environmental education, primary education and gifted education. Orcid ID: https://orcid.org/0000-0003-1265-9059

References

Arı, Y. (2006). Ramsar Sözleşmesi'nin doğa koruma yaklaşımına eleştirel bir bakış. *Doğu Coğrafya Dergisi, 11*(15), 275-302.

Aydaş, S. (2006). İlköğretim 7. sınıf öğrencilerinin sulak alanlar konusunu anlamalarına ve çevreye karşı tutumlarına problem çözme yöntemi ile öğretimin etkisi. Yüksek lisans tezi. Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, Ankara.

Büyüköztürk, Ş. (2016). *Sosyal bilimler için veri analizi el kitabı*, Ankara: Pegem Akademi Yayıncılık.

Büyüköztürk, Ş., Kılıç Çakmak, E. Akgün, Ö.E., Karadeniz, Ş. ve Demirel, F. (2014). *Bilimsel araştırma yöntemleri.* Ankara: Pegem Akademi Yayınları.

Çayır, Ş. (2016). Üstün yetenekli öğrencilerle akranlarının çevreye yönelik tutumlarının ve çevre sorunlarına çözüm önerilerinin karşılaştırmalı incelenmesi. Yüksek lisans tezi, Sakarya Üniversitesi Eğitim Bilimleri Enstitüsü, Sakarya.

Çiçek, E. (2004). Su Basar Ormanların Özellikleri ve Türkiye'nin Su Basar Ormanları. İstanbul Üniversitesi Orman Fakültesi Dergisi, 2 (54).

Er, A. (2019). Uyuz Gölü'nde çevresel DNA ile biyoçeşitlilik tesbiti: Göçmen kuşlar modeli. Yüksek lisans tezi. Ankara Üniversitesi Fen Bilimleri Enstitüsü, Ankara.

Güler, Ç. (1997). Su kalitesi, *Çevre Sağlığı Kaynak Dizisi, 43,* 9-12.

Nacaroğlu, O. ve Bozdağ, T. (2020). Özel yetenekli öğrencilerin çevre sorunlarına yönelik algılarının kelime ilişkilendirme testi kullanılarak incelenmesi. *Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 40*(2), 385-409.

Ostrovskaya, E., Douven, W., Schwartz, K., Pataki, B., Mukuyu, P. ve Kaggwa R. (2012). Capacity for sustainable management of wetlands: Lessons from the WET win project. *Environmental Science & Policy*, In Press, Corrected Proof.

Selçuk, H. (2019). Göller bölgesinde bulunan sulak alanların tahribi ve çevre eğitimi açısından önemi. Yüksek lisans tezi. Burdur Mehmet Akif Ersoy Üniversitesi Eğitim Bilimleri Enstitüsü, Burdur.

Sontay, G. (2013). Üstün yetenekli öğrencilerle akranlarının çevre okuryazarlığı düzeylerinin karşılaştırmalı incelenmesi. Yüksek lisans tezi, Gaziosmanpaşa Üniversitesi Eğitim Bilimleri Enstitüsü, Tokat.

Sontay, G., Gökdere, M. ve Usta, E. (2014). Üstün yetenekli öğrencilerle akranlarının çevresel davranışlarının karşılaştırmalı incelenmesi. *Türk Üstün Zeka ve Eğitim Dergisi, 4*(2), 90-106.

Sönmez, M. E. ve Somuncu, M. (2016). Sultansazlığı'nın alansal değişiminin sürdürülebilirlik açısından değerlendirilmesi. *Türk Coğrafya Dergisi*, 66, 1-10.

Sülük, K., Nural, S. ve Tosun, İ. (2013). Sulak alanlarda halkın çevre bilincinin değerlendirilmesi: Işıklı Gölü örneği. *Avrupa Bilim ve Teknoloji Dergisi, 1*(1) , 7-11.

Tabachnick, B. G. ve Fidell, I. S. (2013). *Using Multivariate Statistics, New International Edition*. Harlow: Pearson Education Limited.

Tankuş, M. (2011). Öğrencilerin biyolojik çeşitliliği koruma davranışlarının incelenmesi. Doktora tezi. Hacettepe Üniversitesi Fen Bilimleri Enstitüsü, Ankara.

Tarım ve Orman Bakanlığı Doğa Koruma ve Milli Parklar Genel Müdürlüğü (2022). Sulak alanlar. https://www.tarimorman.gov.tr/DKMP/Menu/31/Sulak-Alanlar (Erişim: 5.12.2022)

Tockner, K., Push, M., Borchardt, D. ve Lorang, M.S. (2010). Multiple stressors in coupled river-floodplain ecosystems. *Freshwater Biology 55*(1), 135–151.

Tomar, A. (2009). Toprak ve su kirliliği ve su havzalarının korunması. TMMOB İzmir Kent Sempozyumu'nda sunulmuş bildiri, 8-10 Ocak, İzmir, 333-345.

Turner, R.K., van den Bergh, J.C.J.M., Söderqvist, T., Barendregt, A., van der Straaten, J., Maltby, E., & van Ierland, E.C. (2000). Special issue: The values of wetlands: Landscape and institutional perspectives. Ecological-economic analysis of wetlands: Scientific integration for management and policy. *Ecological Economics*, 35, 7-23.

Uysal, İ., Şayan, N., Uysal, B. E., Temel, K. ve Uysal, A. Ç. (2022). Developing the wetland awareness scale through children's eyes and example application, *Environmental Toxicology and Ecology*, 2(1), 50-65.

Yıldırım, A. ve Şimşek, H. (2018). *Sosyal bilimlerde nitel araştırma yöntemleri*. Ankara: Seçkin Yayıncılık.