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RESEARCH ARTICLE

Graduate Students, Study Of Envıronmental Lıteracy And Sustaınable Development

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Abstract

The aim of this study is to explore the level of environmental literacy of the graduate students in Amasya University; their approach to environment and environmental issues; and to investigate their beliefs about the sustainable development. The sample of the study is 5 graduate students studying at Amasya University, 3 female and 2 male, in 2012-2013 academic year. The interviews, each of which lasted about 20-25 minutes, were conducted with graduate students. The data collected was analyzed by using content analysis. According to the findings, environmental knowledge of graduate students is not at a high level but their approach to environment and environmental issues, interest of environmental education is at a high level. In addition, they have positive awareness about sustainable development. Graduate students are the teachers or the academics of the future. Therefore, these students' environmental knowledge and attitudes towards environment, sensitivity and interest have a great importance with regard to the solution of environmental problems. With this in mind, further studies like this might be conducted. This study is significant to prepare a background for the studies in this field and to make contribution to the literature.

Key Words: environmental literacy, sustainable development, graduate students

Introduction

In the late 20th century, environment concept began to be more pronounced by beginning of enviromental problems to be appeared and be life-threatening. The environment concept may seem simple and easy to understand. However, once it is examined more closely the topic would be seen as more complex and difficult to distinguish. Environment is an outer setting which becomes house to creatures and provides continuity to creatures for living and relationship among (Karatekin ve Aksoy, 2012).

Karatekin and Aksoy (2012) quoted from Kahraman and Turkay (2006) that the environment includes the economic, social, cultural, historical, etc structures exposed by both mutual relationship of human-being and relationship with other creatures. Therefore, human environment is the issue that needs to be understood on the concept of the environment.

We can describe the environment as which affects human-being and as whole external conditions affected by that. In this way, the integrity of the environment becoming a problem and its relations becoming bad with human can only be associated with supremacy of people.

Although the reason of the environmental problem is human-being, solution to this problem is also human-being. Teaching people about environment is the most important matter for solution of environment problems. Sustainable development would

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be occurred by education on environment. Environmental education focused on the purpose of the dissemination of 'environmental literacy'. If environmental literacy can be developed in individuals then awareness, knowledge, and sensitivity of natural balance and how this balance would be affected by people would be vaccinated. University students graduation and after the thought of their direct effects of social and community life has been one of the major cause on development of environmental education and gaining value on environment-related issues at the higher education institutions. University students' environment-related values gained at the college are expected to carry forward to their lives after school. With this expectation educating college students to become environmentally literate individuals has become one of the important goals at universities. To achieve this goal, the first job is to determine the levels of students' environmental literacy (Teksoz & Sahin & Ertepinar, 2010).

When we look at the international literature there are studies related to determination of the level of environmental literacy. If we sort a few examples; " Environmental Literacy Project" (CELP, 2005) has been carried out in Canada which defending of environment to be an interdisciplinary subject and defending of producing material for teachers in advocating based on need of becoming environmentally literate regardless of the students' fields at schools. Thomas and Nicita (2002) have indicated needs of research to identify environmental literacy on the sustainable development studies in higher education, and with this way they have emphasized determination of the effectiveness of environmental and sustainable development education. In the 2001-2002 period; Michigan State University (MSU) carried out a study (Kaplowitz & Levine, 2005). In the study, it is intended that university's view towards environmental education and making inferences regarding environmental education policy by determination of levels of university students' environmental knowledge and comparison with level of community's environmental knowledge. Looking at the results of the study, the level of students' literacy is higher than the public, but their environmental knowledge is not high in relative. In study on the sustainable development of higher education Thomas and Nicita (2002) had mentioned need of doing studies to determine environmental literacy level and regarding to this need of determining the effectiveness of universities environmental and sustainable development education.

As we could also see from mentioned studies, the environment is one of the most crucial topics of the world after all. This is an important task that imposes higher education institutions and in this task; universities should bring up the next generations of individuals who have advanced knowledge, attitude, behavior and value related to the environment, who care environmental issues and who can see connection among them who also aware of needs of next generation afterwards. The realization of this goal is important to achieve a healthy and sustainable world. In this respect the most and first important stage is determining environmental literacy. On the other hand the social and economic consequences of environmental problems are threats for the future of Turkey. The most important reason of the threats is non-sustainable use of natural resources. The solution is the development of young people's behavior and attitudes in this regard. Attitudes and behavior in order for sustainable resource use is one of the requirements of environmental literacy.

The purpose of this study is determining Amasya University graduate students' awareness of environmental literacy and approaches to environment and environmental issues and thoughts of sustainable development. At the same time, supporting the efforts in this concept and having information environmental awareness and attitude of Education Faculty students would give an idea to strategies which will be determined for a sustainable future. One of the goals of the study is also to build

the infrastructure for college students about development of environmental literacy. For this purpose the research questions are as follows:

1) How is the awareness of Amasya University graduate students about the environment?
2) What are the approaches of Amasya University graduate students to environmental problems and their ideas to the solutions?
3) What are the thoughts of Amasya University graduate students about environmental education in Turkey and in the world?
4) How is the awareness of Amasya University graduate students about environmental literacy?
5) How is the awareness of Amasya University graduate students about sustainable development?

METHOD

Sample

The sample of the survey includes 5 Amasya University graduate students with 3 females and 2 males. Regarding to sample selection convenient sampling was preferred.

Convenient sampling method gives speed and practicality the researcher. Because in this method, the researcher chooses a case that is easy to reach (Simsek, S. & Yıldırım, A. 2004).

Scale

‘Semi-structured interview ' has been preferred as a data collection tool. According to the semi-structured interview method, the principal task of the researchers is to direct individuals when questions brought out in different than discussion and to ensure individuals participating interview stays focused on the topic. Advantage of this method is asking questions in details related to a special topic and asking questions again in case of having answer not enough or not quite clear and has complete answers at end of the survey. Researcher prepares the interview questions before the interview, but they can provide some flexibility by looking at the individuals and circumstances. Shortly, in semi-structured interview method it is possible to change the order of the questions and to be able to describe in more detail. Because the aim of this study was to obtain an in-depth knowledge about certain topic, semi-structured interview method is preferred.

On this scale, 6 questions were prepared well in advance and scope of validity of questions was provided on the basis of expert opinion. Interviews lasted approximately 20-25 minutes. Interview questions are given in the Appendix.

Data Analysis

The data obtained in this research evaluated by using content analysis and the NVIVO program.

FACTS

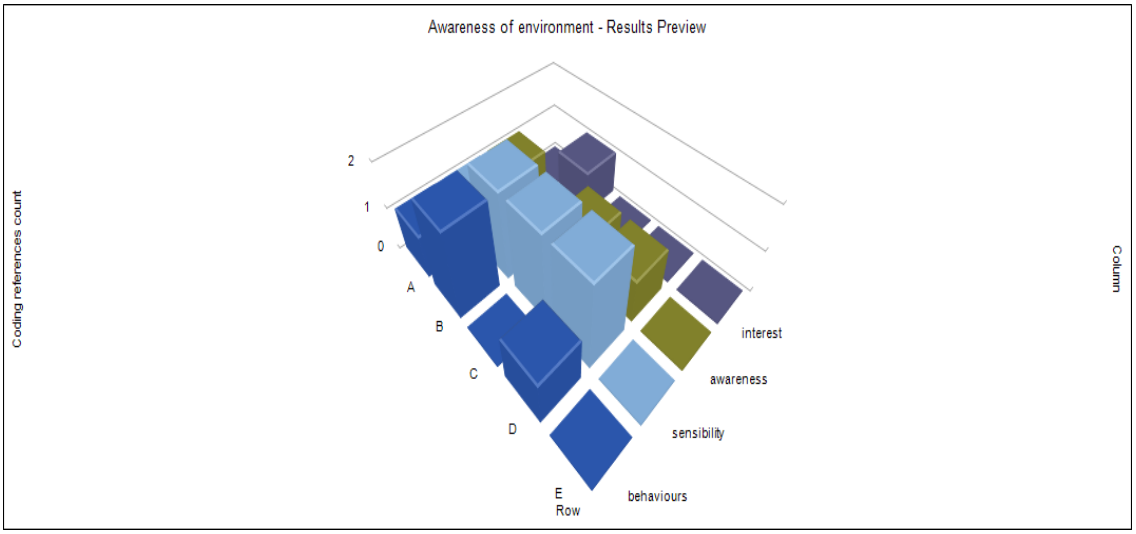


Image 1. The concepts highlighted in the definition of environmental awareness

Most graduate students have mentioned the lower stages of environmental awareness while defining environmental consciousness. However there were no students who could mention all lower stages . There was only one graduate student emphasizes lower perspective 'interest ' of environmental awareness, the other has not emphasized the lower perspective. In this respect;

Student B : used the statement of "means of individual who have the behavior of doing studies for the solution of the problem"

Student A : used the statement of "Environmental awareness is to be sensitive to the environment and environment-related problems"

Student C: used the statement of "I think environmental awareness means as an individual everyone is sensitive to environmental issues"

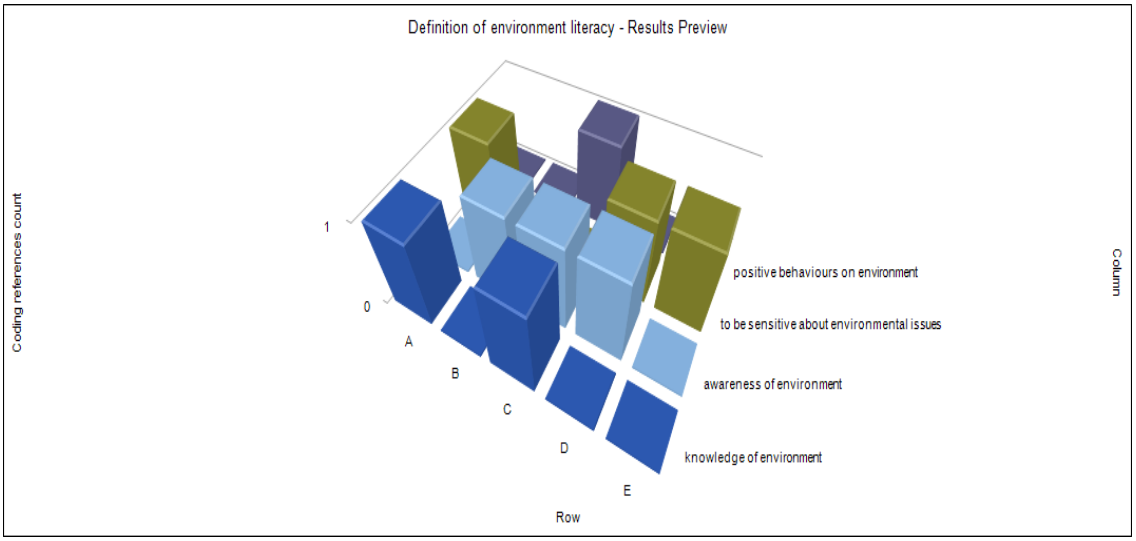


Image 2. The concepts highlighted in the definition of environmental literacy

While graduate students described the definition of environmental literacy; although it is not adequate, they mentioned lower stages of environmental literacy. 'Behavior' was made as the least emphasis on lower stage. In this respect;

Student A: used the statement of "Environmental literacy means taking responsibility to arouse consciousness and to create awareness towards environment, environmental issues and to gain responsibility." Student C: "But I think goals should not be only to train students as environmental literacy individuals. It must be ensured that every human being at the age of from seven to seventy should have this sensitivity and become environmental literacy individuals. For example, if the environmental education programs in schools cover their family's participation in the activities, there will be more people become sensitive towards topic and become environmentally literate."

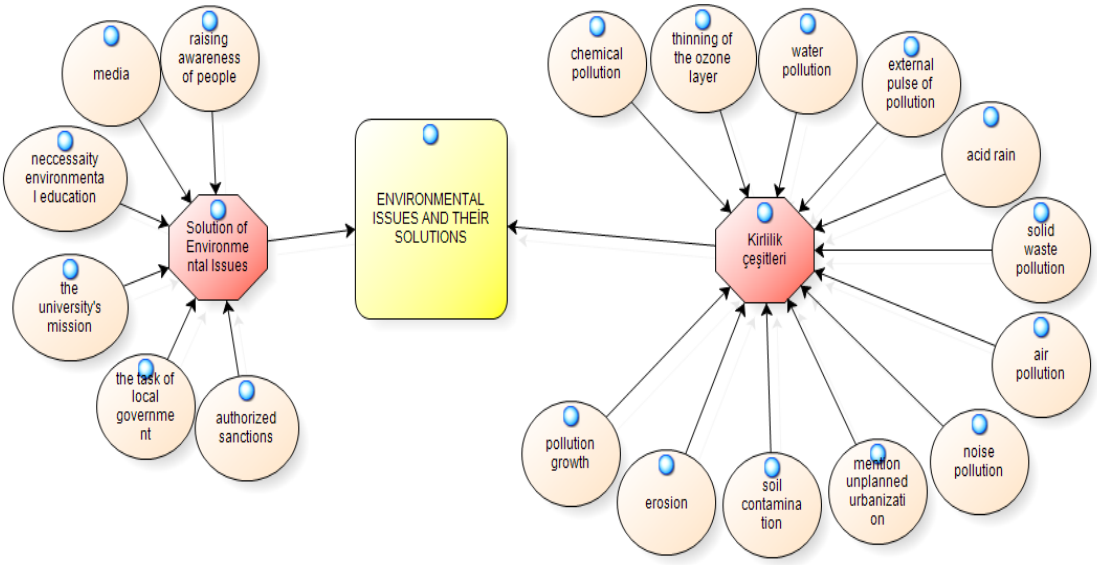


Image 3. Emphasis on environmental issues and their solutions

All graduate students take water pollution, air pollution, soil contamination and noise pollution as the biggest environmental problems in consideration. They also often mention unplanned urbanization, solid waste pollution, acid rain, chemical pollution among varieties of pollution. Environmental issues such as pollution growth, erosion, external pulse of pollution, thinning of the ozone layer are mentioned less as environmental issues.

They all have made consensus about neccessity of environmental education, raising awareness of people, necessity of applying related implementation of various application and sanctions by government. Most of the graduate students have indicated that city universities, the media and local governments should take responsibility in solving environmental problems and agreed on it would be effective. In this respect;

Student A: used the statement of " The only way of solution about environmental problems is to raise awareness of, to give information about the results of these cases and where the world goes." , Student C: "the most major environmental issues are air, Earth, water pollutions. However, when we think it's more a result of the amount of unplanned population and accordingly consumption increase, distorted urbanization, air pollution as result of poor quality fuels use, solid pollution by unconscious use of

land in rural areas, infrastructure problems in major cities... These are all very important environmental issues."

	A	B	C	D	E
1 : environment is legecay to us	1	0	0	0	0
2 : sustainable development is balance between human and evironment	1	0	0	1	0
3 : questions in front of sustainable development	0	1	0	0	0
4 : solutions of questions in front of sustainable development	0	1	1	0	0
5 : defination of sustaianble development	1	1	1	0	1
6 : to succes sustainable development	0	0	0	1	1

Image 4. The emphasis of the sustainable development issues

Most of the graduate students made the definition of sustainable development as future generations to benefit from environment, to have their rights protected by us in order to meet their needs. Speaking of sustainable development they emphasizes that environment should be seen as a legacy left to us and sustainable development is the way to balance between environment and human. They have indicated as the biggest obstacle for staying sustainable; the countries did not move together and but act self-seeking oriented. In order to overcome this obstacle they have also explained; countries to move as a single body and the international organizations to move together with institutions. Another concern is still highlighted as bringing up environmental literate individuals is the only way to have sustainable development to be successful. Accordingly, everyone starting prior to school should be given environmental education. Open-public Environmental seminars should be provided. In this respect;

Student B: used the statement of "Sustainable development become conditioned to protect the existing current ideological schemes. Catastrophe occurred in one place is not concerned as a concern in elsewhere. This is because the countries intend to protect only existing schemes and care only for self-seeking oriented purpose."

Student C: used the statement of "You must not think of sustainable development in only the size of the country. Because the world is all of ours and that means the common legacy of mankind's. Countries should not act only according to their own economies. In order to avoid this we could have educational curriculums in related to an international sustainable development around the world or could have a project of awareness initiatives."

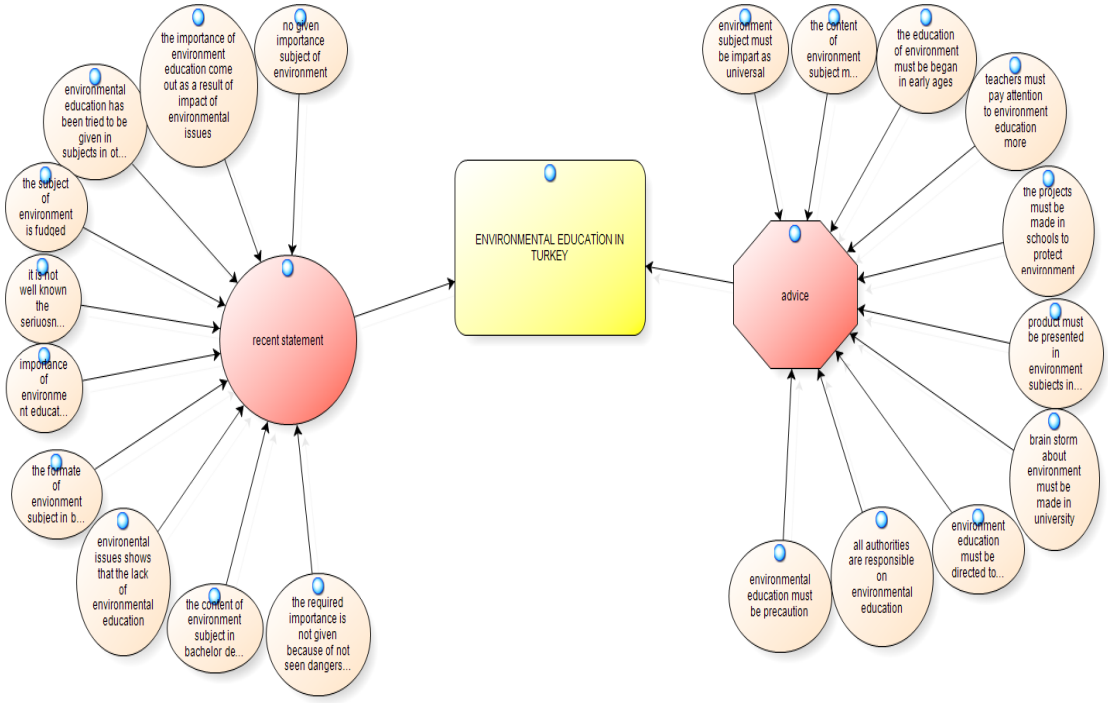


Image 5. Emphasis on environmental education-related in Turkey

While graduate students have interpreted environmental education in Turkey they have mentioned about current situation and the requirements. If we talk about the current state of environmental education accordingly, the first thing to say is that the environment and environmental education is ignored. Environmental courses are being ignored in primary education comparing to other subjects (science and technology, social studies, life science). At the secondary and higher education it is still not progressing in important matter. In addition, they also think that environmental courses have insufficient contents and lesson format is wrong. In recent years, the importance of environmental education has become increased as a result of environmental problems began to be understood.

They give advices for these issues. They have emphasized that environmental education should be given as propose to environmental problems preventive and eliminator. Some solutions have been provided such as; environmental education should begin at an early age, and must be given to individuals of all ages, whole world must act as one body, some projects should be applied in schools to protect the environment, environmental lesson contents must be filled, output should be put out in the university environment lessons. In this respect;

Student A: used the statement of “Other courses in the subjects to be given to students in environmental education. Environmental education has been tried to be given in subjects in other courses. We have taken environmental lesson in college as a compulsory course. I wish I could say something about those environmental problems, could do brainstorming to arise out good thing, and could become self-aware about the environment and environmental issues and got people to become self-aware in same respect. However, we only learned that how many endemic plants there in Turkey what we've seen in them where this plant is and what plant's features are. We have obviously memorized them to pass the class and now I don't remember any of them”

Student D: used the statement of “Problems are usually revealed as the result of many years. In fact, the ozone layer was worn as result of global warming and this is the greatest threat to people. However, the people do not see the result of this immediately they do not comprehend. I think that's why they don't pay attention to a lot of things.” “For example, I'm just going through my many years of education life and I did not have environmental class in elementary school and middle school and it was taught in other subjects like Science and Social Science.”

ARGUMENTS AND RESULTS

Without adequate environmental information, it is not possible to make the environmental literacy-related definitions (NEETF & Roper, 2005, Teksoz, Sahin&Ertepinar). According to the result of this study it is interpreted that Faculty of education graduate students at Amasya University do not have enough environmental knowledge.

There are developments in environmental education-related in Turkey along the developments around the world.Environmental education in Education Faculties at universities have been on the agenda of projets prapared by Ministry of National Education (MEB) and Higher Education Council (YÖK) in 2007. However, although a lot of the international literature on environmental literacy place, environmental education-related scientific studies in Turkey have not gone further than specifying the students ' attitudes yet. (Alp, Ertepinar, Tekkaya & Yilmaz, 2006; Tuncer, Ertepinar, Tekkaya & Sungur, 2005; Yilmaz, Boone & Anderson, 2004). Environmental education-related studies are limited in Turkey (Berberoglu & Tosunoglu, 1995).

The findings in this study may contribute to studies of environmental education in Education Faculties made new application. According to the findings level of environmental information for graduate students is low; however, their level of attitudes and interests towards environment and environmental problems is high. There has been saying that individuals in this view are more prone to see themselves as part of nature and to take responsibilty to protect envronment (Thompson ve Barton, 1994). These individuals try to solve the problems by resolving incompatibility between society and environment (Barr, 2003).

According to research results; once graduate students have enough environmental knowledge, they will become individuals who are environmentally literate. Based on that, environmental training in higher education matters very much in Turkey as a country of being developing, having population growth, natural resource use, being high consumption and production. Moreover, these graduate students are also the teacher candidates and prospective teachers to be environmentally literate are important for future generations to be literate citizens and in terms of the realization of the goal of sustainable development it is important as well.

There are many studies in literature proving that the courses improve environmental knowledge and attitudes of the students. The study about the effects of environmental education programs on students was carried out by Hsu (2004) in Taiwan. Another study was an event presented by Poudel Vincent and colleagues (2005) to improve the motivation of the students. Moody et al. (2005) did studies for college students to be environmentally literate before graduating. Powers (2004) examined the contribution of education programs on environmental literacy level.

When we look at the findings of the literature review environmental education in Turkey, environmental literacy promotion issue and sustainable development education should be handled by academics, experts, and administrators in a more

serious manner. Environmental literacy and environmental education studies start recently and including this study studies should be referenced in higher education as active environmental education content. Even today environment topic is considered as unnecessary by students and teachers. This correction is only possible by science and education organizations to be able to see environmental topic more important.

SUGGESTIONS

The environment is an issue with lack of attention. Necessary interest and importance should be performed, in fact the number of these and similar studies should be increased. Similar related studies should be spreaded throughout Turkey and should be implemented in evey possible universities. In order to provide environmental literacy and education for sustainable development, firstly the current situation shall be determined and according to the situation hands-on programs in appropriate content should be prepared. In this context, especially like Higher Education Council (YÖK), Ministry of National Education (MEB) and RESEARCH (TUBİTAK) scientific and program improving organizations should look after the issue. There must have been at least one mandatory environment class at universities in every faculty in one semester. Especially teachers of future generations must be very good environmental literate individual. Thus, there should be not the only one environment class especially at Education Faculty, there should be supported by more environmental education lessons, practices and projects. In addition, public environmental seminars and trainings must be provided.

▪ ▪ ▪

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APPENDİX-1

INTERVİEW QUESTIONS

1) How is their awareness to the environment?
2) How their approaches to the environmental issues and what are their thoughts of the solutions?
3) How would prospective teachers' point of view differ according to their gender?
4) What are their thoughts of environmental education in Turkey and around the world?
5) How is their awareness to environmental literacy?
6) How is their awareness to sustainable development?

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RESEARCH ARTICLE

YÜKSEK LİSANS ÖĞRENCİLERİ, ÇEVRE OKURYAZARLIĞI VE SÜRDÜRÜLEBİLİR KALKINMA ÜZERİNE BİR ÇALIŞMA

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Özet

Bu çalışmanın amacı Amasya Üniversitesi yüksek lisans öğrencilerinin çevre okuryazarlığı seviyelerini belirlemek, çevre ve çevre sorunlarına yaklaşımlarını ve sürdürülebilir kalkınma ile ilgili düşüncelerini öğrenmektir. Çalışmanın örneklemini, 2012-2013 eğitim öğretim yılında Amasya Üniversitesi'nde eğitim görmekte olan, 3 bayan 2 erkek olmak üzere 5 yüksek lisans öğrencisi oluşturmaktadır. Yüksek lisans öğrencileriyle her biri yaklaşık 20-25 dakika süren mülakatlar yapılmıştır. Elde edilen veriler içerik analizi ile değerlendirilmiştir. Elde edilen bulgulara göre yüksek lisans öğrencilerinin çevre bilgileri yüksek düzeyde değildir ancak çevre ve çevre sorunlarına yaklaşımları, çevre eğitimine ilgileri yüksek düzeydedir. Ayrıca sürdürülebilir kalkınma ile ilgili olumlu farkındalıklara sahiptirler. Yüksek lisans öğrencileri geleceğin öğretmen ya da akademisyenleridir. Bu yüzden bu öğrencilerin çevre bilgileri ve çevreye karşı tutum, duyarlılık ve ilgileri çevre sorunlarının çözümü açısından büyük önem arzetmektedir. Bunu göz önüne alırsak bu ve bunun gibi çalışmalar yaygınlaştırılmalıdır. Bu çalışma bu alandaki çalışmalara alt yapı hazırlaması ve literatüre katkı sağlaması açısından önemlidir.

Anahtar Kelimeler: çevre okuryazarlığı, sürdürülebilir kalkınma, yüksek lisans öğrencileri

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