



Proceeding Paper

Environmental Citizenship of Students of Primary Education of a Greek University †

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Abstract: Exploring environmental citizenship is very important in the context of environmental education and sustainability. Global environmental problems require citizens who are active, critical-minded and able to act as agents of change for society and the environment. Environmental citizenship was defined for the first time with the contributions of many experts in the framework of the COST-Enec network. This paper examines the level of environmental citizenship of undergraduate students of the Department of Primary Education at a Greek university with a recently published questionnaire. Findings regarding the correlation with demographics (gender, year of study and place of origin (urban/rural) are reported.

Keywords: environmental citizenship; education for environmental citizenship; pro-environmental behavior; environmental education; university



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1. Introduction

Environmental citizenship is a basic concept of the vision of sustainable development for a sustainable world. The European COST ENEC Network for Environmental Citizenship, a network of over 130 scholars defined environmental citizenship, for the first time, as the 'responsible environmentally friendly behavior of citizens who act and contribute in society as agents of change, within the private or public sphere, in a local, national or international context, with collective actions, in order to help solving contemporary environmental problems, prevent new environmental problems from arising, as well as for achieving sustainability and a healthy relationship with nature' [1]. The aim of the present study is to examine the environmental citizenship of undergraduate primary school teachers of the University of Crete, and correlate this with demographics, such as gender, length of studies and place of origin (urban and rural).

1.1. Environmental Citizenship and Primary Education

The education of environmental citizenship requires a model, which can be applied to all educational levels and contexts with the appropriate differentiation. The educational approach to environmental citizenship (EEC) was developed in the framework of the ENEC network and six stages were proposed: inquiry, planning of action, civic participation, networking and sharing in scales, reinforcement of environmental and social change, assessment and reflection [2]. The successful application of educational interventions for the promotion of environmental citizenship in primary schools requires suitable approaches and a specially trained teacher [3].

1.2. Environmental Citizenship and Environmental Education

According to EEC's definition, there are eight outcomes, which can be achieved through actions in two dimensions (personal and collective), applied in two different

spheres (private and public) and on three different scales (local, national and international). Based on this model of education for environmental citizenship, a tool named the Environmental Citizenship Questionnaire (ECQ) was developed by Hadjichambi and Paraskeva-Hadjichambi [4] to measure environmental citizenship.

The actions of environmental citizenship are recognized as actions in the public sphere when they affect the relations within the societies, and as actions in the private sphere when they affect the relationships between persons and societies [2]. Hadjichambi and Paraskeva-Hadjichambi [4] used the ECQ they developed to evaluate the environmental citizenship of 520 10th grade students in Cyprus. Their results showed that the students had high scores regarding their knowledge on environmental citizens, as well as on their past actions. However, their mean values regarding the attitudes and values of environmental citizens were quite low, and their values regarding skills and concepts about the environment were average.

2. Materials and Methods

In the present quantitative study, we used the ECQ questionnaire developed by Hadjichambi and Paraskeva-Hadjichambi [4]. The questionnaire consists of 76 Likert-type questions, separated in three different sections, all related to environmental citizenship. The first section investigates past and present actions which were or are carried out by environmental citizens (6). The second section regards participants' knowledge of environmental citizenship (11), opinions about environmental citizenship (12), skills of the environmental citizen (6), and the behavior (8) and values of the environmental citizens (15). The last section investigates future actions as environmental citizens: within the university campus (4), outside the campus (11) and as an agent of change (3). Demographic data regarding gender, semester of study and place of origin (urban/rural) were included. The questionnaire was pilot-tested with post-graduate students. Completion time was reported to be 15 min. small changes were required to be made. Because of the lockdown due to the COVID 19 pandemic, the questionnaire was sent in June 2021, via Google Forms, to the university emails of 994 students of Primary Education from years 1–5. The department has a 4-year study program but there some students that do not graduate on time and extend their study. Factor analysis was performed according to Hadjichambi and Paraskeva-Hadjichambi [4] the researchers that developed the questionnaire.

3. Results

In total 167 students responded, 146 women and 21 men. Regarding the semester of study, 4 students were from the first semester, 45 from the second, 1 from the third, 31 from the fourth, 4 from the fifth, and 43 from the sixth and above semesters 39. We tested differences between the males and females and the urban/rural place of origin of the students, based on the results of the ECQ factors and the nonparametric Mann-Whitney test, because of the abnormality of the dependent variables. No statistically significant difference was found between the two genders, nor between the urban/rural place of origin. We tested the differences between the years of study (Table 1), based on the results of the ECQ factors and the nonparametric Kruskal-Wallis test, because of the abnormality of the dependent variables. A statistically significant difference was found between the different years of study on Factor4, Skills of ECn: third-year students and above presented with a larger score than first- and second-year students ($\chi^2 = 10,678, p = 0.014$).

Table 1. Testing of differences between years of study and ECQ nine factors.

Year		F1 Past Actions as ECn	F2 Knowledge for ECn	F3 Conceptions for ECn	F4 Skills of ECn	F5 Attitudes of ECn	F6 Values of ECn	F7 Future Actions inside School	F8 Future Actions Outside School	F9 Agents of Change
1st year	N	49	49	49	49	49	49	49	49	49
	Median	2.8571	2.4545	3.4167	2.5	3.5556	3.3529	3	2.5455	3.3333
	Range	1.57	2.82	1.92	2.33	1.44	1.88	2.75	2.18	1.67
2nd year	N	32	32	32	32	32	32	32	32	32
	Median	2.8571	2.3636	3.2917	2.5	3.5556	3.3529	2.75	2.6364	3.3333
	Range	1.29	2.18	1.42	2	1.33	1.41	2.75	2	1.67
3rd year	N	47	47	47	47	47	47	47	47	47
	Median	2.8571	2.6364	3.25	2.8333	3.4444	3.4118	2.75	2.6364	3.3333
	Range	1.43	2.55	2	2.83	1.56	1.18	2.5	2	1.67
4th year+	N	39	39	39	39	39	39	39	39	39
	Median	2.8571	2.6364	3.25	2.8333	3.5556	3.4118	3	2.6364	3.6667
	Range	1.29	2.55	1.58	1.83	1	1.24	2.5	2.27	2
Kruskal-Wallis	χ^2	1.095	7.239	0.624	10.678	1.106	4.724	2.102	2.51	0.076
	Asymp. Sig	0.778	0.065	0.891	0.014	0.776	0.193	0.552	0.473	0.995

4. Discussion

Our results indicate that during the 4-year program of study in the Department of Primary Education of the University of Crete, students have opportunities to develop the appropriate skills of an environmental citizen during the third and fourth years of their studies, but this is not the case for the other factors that define environmental citizenship. Therefore, more emphasis should be placed on the program of study to provide opportunities in the other areas that are of interest to environmental citizenship. It would be interest to see similar studies from students from other departments and/or other countries.

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Institutional Review Board Statement: This study was conducted in accordance with the Declaration of Helsinki and it did not require ethical approval, The link to a digital questionnaire was sent by email to students’ departmental emails that contain matriculation numbers, not names. The participation to the study was on a voluntary basis. Questionnaires were answered anonymously.

Informed Consent Statement: Not applicable. The students had the right to choose not to answer the survey.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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