

# An Overview of Environmental Knowledge Level of Vocational School Students

Z. Deniz AKTAN, and Onur YARAR

**Abstract**—The childhood period is one of the most relevant stages for environmental education; therefore, environmental knowledge level of pre-school teachers is a crucial factor on childhood education. This study attempted to find out the environmental knowledge level of vocational school students who study at different departments by comparing them. In this, the study sample of the current work composed of 80 vocational school students who study at Child Development, Computer Programming, Medical Documentations and Secretariat and Law departments of Okan University Vocational School of Health Services. The environmental knowledge status of participants has been assessed by using 21 items version of the environmental attitude scale [2], [7]. In order to analyse obtained data, a 4x2x2x2 Analysis of Variance (ANOVA) analysis was conducted with gender, pre- environmental education, financial status and study departments as the independent variables (IV) and the environmental knowledge status as the dependent variable (DV). According to the results, there is a significant difference between the environmental knowledge status of students ( $F(3, 76) = p < .002$ ). Moreover, results also indicated that the environmental knowledge status of child development students ( $M=89.15, SD=6.67$ ) more constructive than the students who study at Law department ( $M=82.20, SD=10.79$ ), Medical Documentation and Secretariat department ( $M=79, SD=10.20$ ) and Computer Programming department ( $M=76.35, SD=13.00$ ).

**Keywords**— environment, education, environmental attitude

## I. INTRODUCTION

OVER the past few decades, environmental pollution has been one of the most crucial problems that has been discussed by a considerable amount of researchers [5], [6]. Therefore, a great amount of study attempted to find out how could this issue be solved. Since early childhood period is one of the most appropriate period for making new habits [12], numerous of researchers suggested focusing on environmental education in the pre-school period [9], [4], [10], [11]. However, in this stage in order to be able to build new habits that related to environmental protection, initially the students who study in early childhood education or child development departments have to be well educated. In this, a great amount of researchers has focused on the main structure of environmental education in pre-school period. Specifically, in

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previous work Akcay [1] evaluated pre-school programs in different countries by comparing them. According to the researcher, the childhood period is one of the most relevant stages for environmental education. Moreover, Akcay [1] also assessed the different aspects of environmental education in early childhood period and attempted to analyse the relationship between environmental education and primary school education. According to Erten [3] the environmental knowledge level of primary school teachers is also an effective factor on childhood education; therefore, the researcher has also taken into consideration the environmental knowledge level of pre-school teacher candidates and assessed their adequacy that related to environmental knowledge. This current work take this one step further and attempted to find out the environmental knowledge level of vocational school students who study at different departments.

## II. METHOD

### A. Participants

The participants were selected from the Okan University Vocational School student population, who are studying in the Child Development, Computer Programming, Medical Documentations and Secretariat and Law departments. The study sample composed of 80 participants with 45 females and 35 males.

### B. Design

This work attempted to analyse environmental knowledge level of vocational school students by using a 4x2x2x2 Analysis of Variance (ANOVA). In this, the first independent variable (IV1) is the study department of students and it has four levels as Child Development, Computer Programming, Medical Documentations and Secretariat and Law departments. The second independent variable (IV2) is gender with two levels as males and females, IV3 is pre-environmental education with two levels as yes or no, and IV4 is financial status with two levels as high and low. The dependent variable (DV) of the current work is the environmental knowledge status of students which were measured by using 21 items version of the environmental attitude scale [7].

### C. Materials

The current study consisted of a series of demographic questions and one test which measured the environmental

knowledge level of participants. In the demographic information form there were five questions, and participants were asked about their gender, age, financial status, study department and they were also asked whether they have ever attended any environmental education course. In this, question one consisted of two selections as male and female, question two asked about the study departments of participants the third one asked for the age of participants and there was a gap in order to be able to write the age and the study department of participant. Question four composed of two levels as high and low, and in the last part of the demographic form, students were asked whether they have ever attended any course that related to environmental education and there were two selections as yes or no.

As the aim of this current work is to analyse the environmental knowledge level of vocational school, this work has also used the environmental attitude scale (21 items) in order to measure the participants' environmental knowledge level [2]. In previous work, Senyurt, Temel and Ozkahraman [8] attempted to analyse the different aspects of environmental education in early childhood period and the researcher assessed the environmental knowledge level of participants by using 21 items version of the environmental attitude scale by Berberoglu and Tosunoglu [2]. The authors used the Environmental attitude Scale (21 items version) and in order to evaluate the reliability level of this scale the authors calculated the Cronbach's alpha coefficient and results demonstrated that the reliability level of 21 items version as  $\alpha = .80$  which was very good. Moreover, in earlier work Sama [7] attempted to examine the teacher candidates' attitudes toward environmental problems by using the 21 items version of the environmental attitude scale. The author has also calculated the Cronbach's alpha coefficient in the reliability process of the scale and results demonstrated that the reliability level of this scale was very good ( $\alpha = .77$ ). This current work has also analysed the reliability level of the environmental attitude scale and the result demonstrated the Cronbach's alpha coefficient as  $\alpha = .82$  which is also very good.

#### D. Procedure

Recruitment was made by attending vocational school lectures which are delivered at Okan University. In each lecture, the researcher explained the aim of this study and gave information about how to fill the demographic information form and environmental attitude scale. Then, participants were asked to perform the environmental attitude scale and the other forms. In this, 20 participants took part in this current study from each department and final study sample consisted of 80 participants with 45 females and 35 males.

### III. RESULTS

The current work has analysed the obtained data by using the SPSS version 16 for Windows statistical package. The study has initially analysed, the internal reliability level of the environmental attitude scale and the results demonstrated that Cronbach's alpha coefficient was satisfactory ( $\alpha = .82$ ).

In the first step of analysing process, a One-way ANOVA was carried out in order to examine whether there is a significant difference between the environmental knowledge

levels of students who study at different departments. In this, data were entered into the SPSS and analysed by conducting a One-way ANOVA. Initial results demonstrated that, there was a significant difference between the environmental knowledge status of vocational school students who study at different department ( $F(3, 76) = p < .002$ ).

TABLE 1  
MEANS AND STANDARD DEVIATIONS OF EACH STUDY DEPARTMENT

Departments Deviation	N	Mean	Standard
Child Development 20		89.15	6.67
Law 20		82.20	10.79
Medical Documentations 20		79.00	10.20
Computer Programming 20		76.35	13.00

In the second step of this analysis, each department's student's performance was compared to each other by using the Post-Hoc analysis. Initially, the student performance of the child development department was compared to the other departments and the results indicated that while there was a non significant difference between the Child Development and Law departments ( $p < .16$ ), there was a significant difference between the Child Development and Medical Documentations ( $p < .01$ ) and Child development - Computer Programming Departments ( $p < .001$ ). Then, the performances of the other vocational school departments' students were also compared to each other, and the results demonstrated that there was not a significant difference between the environmental knowledge level of Law, Medical Documentations and Computer Programming Departments.

In the third step of this current analysis the effects of the other independent variables such as gender, pre-environmental education and financial status of participants were also examined by conducting a T-test analysis. According to results, there was a significant relationship between the financial status and environmental knowledge level of participants ( $t(78) = 2.43, p < .02$ ). Moreover, there was also a significant relationship between gender and environmental knowledge status ( $t(78) = 3.46, p < .001$ ). The final step has examined the relationship between the pre-environmental education status and environmental knowledge level of students and the result was positively significant ( $t(78) = 2.81, p < .01$ ).

### IV. DISCUSSION

The aim of this current work was to examine the environmental knowledge level of vocational school students by conducting a 4x2x2x2 mixed subject design. Initial results indicated that there was a significant difference between the environmental knowledge statuses of vocational students. According to the results, environmental knowledge level of students who study at Child Development department more constructive than the other students who study at Computer Programming, Law and Medical Documentation departments.

Moreover, results also demonstrated that this difference was created by the students of medical documentation and computer programming performances; however, when the environmental knowledge level of child development students was compared to the students who study at Law departments, results indicated that there was none significant difference between the environmental attitude scale score of both these departments.

The second part of this work has also focused on the relationship between the environmental knowledge status and the other variables such as gender, financial status and the pre-environmental education status of participants. According to the results, there was a significant relationship between the environmental knowledge level and financial status of participants. In other words; high financial status influences environmental knowledge level of students. Moreover, results also demonstrated that there is a significant relationship between genders and environmental knowledge level of students; in other words the environmental knowledge status of females more constructive than male participants. The last part of this research has focused on the relationship between the pre-environmental education status and environmental knowledge level of students. The results indicated that the students who attended the pre-education course on this area, more conscious than the other students who did not attend any course that related to environmental education.

#### V. CONCLUSION

The aim of this work was examine the environmental knowledge level of vocational students and the obtained results demonstrated that the students of Child Development department more environmentally conscious than the other students who study at Law, Computer Programming and Medical Documentation departments. However, obtained results also indicated that gender, financial status and pre-environmental education status of participants may also be an effective factor on the environmental status of participants. When taking this in to account, it is clear that further research is needed in order to be able to differentiate the secondary factors on this work.

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