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Comparison of Teachers and Teacher Candidates in terms of Their Environmental Attitudes

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Abstract

It has been aimed to compare the environmental attitudes of teachers and teacher candidates and to present the importance of environmental education in teacher training. The sample of the research includes 605 final year students attending undergraduate programs of pre-school education and child development education in the universities of Konya, Ankara, Afyon, and Denizli provinces during 2008-2009 academic year and 300 pre-school teachers attending National Education Ministry In-service Training Programs conducted in Yalova, Aksaray and Rize provinces during 2008-2009 academic year. "Environmental Attitude Scale" has been used as the data collection tool. According to t-test and MANOVA results, it has been determined that teacher candidates got higher scores than pre-school teachers in terms of the total results of environmental attitude scale, and particularly the sub-factors "Importance of Field Trips in Environmental Education" and "Environmental Conservation Activities". Also, it has been stated that the difference between the scores of teachers and teacher candidates taken from the sub-factors "Requirement of Education for Environmental Problems" and "Environmental Pollution and Conservation" is not significant. In the light of the findings, researchers and practitioners have been provided with suggestions.

Key Words

Environmental Attitude, Environmental Education, Early Childhood Teachers, Early Childhood Teacher Candidates.

Environmental education has a critical importance to prevent negative effects of technology, consumerism and urbanism that gradually increase on ecological balance in the globalizing world. According to Bakker (2006), ecological balance can be provided through behaviors. Behavior requires a level of awareness. This awareness depends on environmental attitudes of individuals. Lubomira (2004) stated that environmental education is the most effective way to change environmental attitudes that are the unique opportunity for saving human being and future of world.

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According to Vrasidas, Zembylas, Evagorou, Avraamidou, and Aravi (2007), objectives of environmental education include to improve environmental awareness for problems and probable solutions, to raise awareness for using resources economically, to respect the rights of all the living things, and to help individuals develop positive environmental values and attitudes. To accomplish this goal, teachers should be aware of factors that develop understandings about environment belonging to themselves and their students (Desjean-Perrota, Moseley, & Cantu, 2008).

Researches showed that environmental education improved environmental attitudes of teachers and teacher candidates (Chatzifotiou, 2006; Meichtry & Smith, 2007; Volk & Cheak, 2003). Supporting teachers to acquire knowledge and understand the importance of developing environmental conscious in early years is crucial. Flogaitis and Agelidou (2003) found that preschool teachers had contra-

diction in terms of nature and environment. In addition, Flogaitis, Daskolia, and Agelidou (2005) determined that conceptions of the kindergarten teachers were knowledge-Centered type of environmental education. In addition, they are primarily Centered on nature and protection of nature in terms of environmental education content. Besides, they aim not only to shape citizens willing to adopt environmental measures recommended by the experts, but also to participate actively in social actions for the protection of the environment.

Erten (2005) found that any early childhood teacher candidates did not spend their spare times with nature activities. In addition, they do not worry about environmental issues and they are not sensitive about environmental protection. Çabuk and Karacaoğlu (2003) ascertained that teacher candidates thought their training did not include subjects of air, water, and land pollution.

The present study aims to compare preschool teachers and teacher candidates in terms of their environmental attitudes by setting forth the importance of environmental education in teacher training.

Method

Research Design

The current study is descriptive in nature, which puts forward the relationship between the environmental attitudes of preschool teachers and teacher candidates.

Participants

The sample for the study was comprised of 605 senior students, attending School of Vocational Education at Gazi University as well as School of Education at Afyon Kocatepe University, Pamukkale University and Selçuk University during the 2008-2009 academic year, and of 300 preschool teachers from different parts of Turkey, enrolling in in-service training programs conducted by the Ministry of Education during 2008–2009 academic year in Yalova, Aksaray, and Rize. The number of teachers involved in the study was determined based on the total number of the pre-school teachers in Turkey (28848), with the confidence level of 0.95 (0.10), 0.90 mass width and tolerance level. 93.1% of the teacher candidates who participated in the study were female whereas 6.9% of them were male. On the other hand, 89.7% of the teachers were female while 10.3% of them were male.

Instrument

As the data collection tool, "Environmental Attitude Scale" was utilized in order to identify the environmental attitudes of the pre-school teachers, designed by Fernandez-Manzanal, Rodriguez-Barreiro, and Carrasquer (2007). Validity and reliability tests were given to 952 university students, using the original scale, which is comprised of 20 items. It is a five-point Likert-type scale with options "Strongly Agree [5], Agree [4], Undecided [3], Disagree [2] and Strongly Disagree [1]". Eight items in the scale remained for reverse-scoring.

Environmental Attitude Scale was adapted into Turkish by Yurt, Cevher-Kalburan, and Kandır (2010). Internal reliability coefficient for the scale was calculated as Cronbach alpha 0.83. Item-total correlation varied between 0.28 and 0.57. Moreover, split-half reliability analysis proved that the reliability coefficient was 0.68 for the first half, and 0.78 for the second half. Spearman-Brown correlation coefficient between the two halves of the scale and the Guttman Split-Half reliability coefficient were 0.78.

A scale with 4 sub-factors and 20 items was constructed following the statistical analysis. The alpha coefficient of the first sub-factor determining the need for education about environmental problems is 0.75 while that of the second sub-factor indicating the importance of fieldwork and activities for environmental education is 0.67. The coefficient of the third sub-factor showing the environmental contamination and the need for conservation is 0.60 whereas the last sub-factor measuring the environmental protection actions is 0.55. Based on the data, the scale is concluded to be valid and reliable (Yurt et al., 2010). The adapted version of the scale embodied the same sub-factors and number of items as the original scale.

Process

The data gathered was analyzed through "SPSS 18.0 program". Descriptive statistical techniques were applied, and frequency distribution, mean, and standard deviation were calculated. In order to identify the discrepancies between scores obtained from the Environmental Attitude Scale and its subfactors, independence t-test was employed. One Way MANOVA Test was used in order to analyze whether the environmental attitudes of preschool teachers and teacher candidates vary based on the sub-factors of the Environmental Attitude Scale. The t-test is used to test whether the means of two

independent variables are statistically different from each other whereas MANOVA test is used for assessing the linear combinations of the dependent variables and whether there is a difference among population means for each independent variable and its categories. Besides, Eta-square was calculated for the statistically significant results of t-test and MANOVA (Green & Salkind, 2008).

Results

The effect size on the scores obtained through the Environmental Attitude Scale was calculated with partial eta-square (hp2). According to Stevens (1992), the value of partial eta-square is small when it is ηp2 ≤ 0.01, medium when it is ηp2 = 0.06 and large when it is ηp2 = 0.14. The research found that there is a statistically significant difference based on the total scores obtained from the Environmental Attitude Scale. However, the value of partial eta-square regarding the effect of the participants was calculated as η2= 0. Thus, in practice, the effect of the participants is small.

One Way MANOVA, which was employed in order to find out whether the environmental attitudes of the participants vary depending on the sub-factors of Environmental Attitude Scale indicated that there is a significant difference between the mean scores of the preschool teachers and teacher candidates based on the sub-factors of Environmental Attitude Scale [Wilks' Lambda (L)= 0.969, $F(4)=7.183$, $p<.05$]. Despite the significant difference regarding the sub-factors of the scale, partial eta-square measuring the effect of the participants was calculated as η2= 0.03, which indicates that the effect is small.

When the participants are taken into consideration, in the sub-factor titled "The Importance of Fieldwork and Activities for Environmental Education", teacher candidates ($\bar{x}$=11.20) scored higher than the pre-school teachers ($\bar{x}$=10.71) at a statistically significant level. Furthermore, a statistically significant difference in the sub-factor titled "Environmental Contamination and The Need for Conservation" was found as the teacher candidates ($\bar{x}$=15.79) scored higher than the pre-school teachers ($\bar{x}$=15.11).

Discussion

Environmental education that has the feature of multi-discipline is not only limited with formal education but also continues with lifelong learning. It should also help individuals have sensitivity and ethic values towards nature and protect potential of productive and aesthetics characteristics. Teachers with self-efficacy and environmental sensibility have a critical role in terms of this effort (Tabak, Akyıldız, & Yıldız, 2003).

The results of the present study revealed that the mean scores of the preschool teachers were lower than those of the teacher candidates. Oral (2004) states that pre-service and in-service training programs, which aims to enhance teaching skills, focus more on field knowledge and practical skills, yet qualities in regard to affective domain are overlooked; therefore, more emphasis should be given on the affective domain. All in all, the reason why the scores of pre-school teachers are relatively low seems to be the fact that they need to improve their professional knowledge and skills, which will enhance their environmental attitudes.

The results of the study in terms of the scores of the pre-school teachers and teacher candidates, obtained from the sub-factor "Need for Education about Environmental Problems" were not statistically significant. Recently, environmental problems such as global warming, greenhouse effect, decline in biodiversity, deforestation, carbon emission, acid rain, and the hole in the ozone layer have been on the agenda through mass media. Moreover, national and international non-governmental organizations, foundations for environmental protection, campaigns conducted by official and private agencies and many other activities aim to raise ecological awareness by enabling individuals to play an active role in finding solutions for environmental problems (Chan, 1999; Eagles & Demare, 1999; Evans, Gill, & Marchant, 1996; Kostova & Atasoy, 2008; Mikami, Takeshita, Nakada & Kawabata, 1995; Pant, 2005; Rickinson, 2001;Vrasidas et al., 2007). The reason why there is no significant difference between the environmental attitudes of preschool teachers and teacher candidates may be the comprehensiveness of such activities, which aim to reach people of all ages, status and different regions.

Moreover, the study showed that teacher candidates obtained higher scores from the sub-factor "The Importance of Fieldwork and Activities for Environmental Education" than did the preschool teachers, which indicates that preschool teachers should raise their own awareness for the environmental problems of the 21st century. Experiences about discovery and problem solving in nature facilitate development of critical thinking and concern. During the nature activities, skills such

as exploration, communication, observation and problem solving may improve (Chatzifotiou, 2006; Palmer, 1998; Sorrick, 2007).

Uçar and İpek (2006) and Uşun and Cömert (2003) stated that teachers did not have adequate and effective training during the process of improvement and innovation. Similarly, Temel, Ersoy, Tezel-Şahin, Avcı, and Turla (1997) determined that preschool teachers need in-service training about science and nature activities. In this context, it is thought that early childhood teachers need to develop their awareness in regard to environmental issues and understanding of the importance of environmental education.

In public schools, getting permission for field trips takes approximately one week. Besides, preschool teachers have to be equipped with professional skills to manage and discipline the preschool children during a field trip, which might seem to preschool teachers as an impediment to effective planning. Within this context, it can be inferred that the preschool teachers could not put the theoretical information that they received during their undergraduate education into practice, thus they cannot precisely observe the learning behaviors of preschool children. Teachers' attitudes towards the importance of fieldwork in environmental education as indicated in the present study is likely to have resulted from the fact that they do not embody professional skills lest they should confront procedural adversities while organizing field trips.

The results of the research showed that teacher candidates got higher scores in the sub-factor "Environmental Protection Actions" than did the preschool teachers. Universities are autonomous institutions in which ideas are explored and current issues and possible solutions are discussed. Teacher candidates have a chance to play an active role in the learning process during their university education, and to keep up with the developments regarding environmental issues. That the teacher candidates got higher scores from the sub-factor "Environmental Protection Actions" is likely to result from extracurricular activities and student clubs they joined during their university education, which increases their level of awareness.

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