

An Examination of the Relationship between Pre-school Children's and Their Teachers' Attitudes and Awareness towards the Environment

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Received: December 13, 2017

Accepted: December 29, 2017

Online Published: January 16, 2018

doi:10.5539/jel.v7n2p221

URL: <http://doi.org/10.5539/jel.v7n2p221>

Abstract

The purpose of this study is to determine the level of awareness and attitudes towards environment of pre-school children's and their teachers' and to examine the relationship between them. This study was based on correlational research model. The study group consisted of 26 pre-school teachers working in kindergartens and primary schools in a province, and 208 children in the 5-6 age groups in which these teachers entered their classes. In this study, "Environmental Awareness and Attitude Scale for Pre-school Children" was used to determine the awareness and attitudes of pre-school children's towards the environment. The "Attitudes towards Environmental Problems Scale" was used to determine the attitudes of pre-school teachers' to the environmental problems and the "Awareness Scale for Environmental Problems" was used to determine teachers' awareness of environmental problems. As a result of the study, it was determined that pre-school children's attitudes towards environmental problems are high but their awareness about environmental problems is moderate. On the other hand, it was determined that pre-school teachers' attitudes towards environmental problems were moderate and their awareness of environmental problems was generally high. Finally, it was determined that a moderately significant relationship was found between pre-school children's and their teachers' attitudes towards environmental problems, while there was a weak relationship between children's and their teachers' awareness of environmental problems.

Keywords: attitude, awareness, children, environment, teacher

1. Introduction

1.1 Introduce the Problem

Individuals' emotional traits such as attitude and awareness are formed and developed from very early ages, so children need to be educated from early ages in order to develop their attitudes and awareness towards the environment. As children learn and grow older, attitudes and awareness towards the environment will change and develop (Poortinga, Steg, & Vlek, 2004). It is important to develop children's attitudes and awareness towards the environment as children develop attitudes and awareness towards the environment while gaining interest and responsibility for environmental and environmental problems (Soydan, Koçyiğit, Samur, & Kiremit, 2015). As a result of the rapid increase in the value given to the environment in recent years, it has been decided that environmental education should be started from the kindergartens and that the higher education levels should continue to be systematically and regularly given "emphasis on practical environmental education for the development of environmental awareness in pre-school age children" (www.cedgm.gov.tr/cevreatlasi/cevreegitimi.pdf as cited in: Kesicioğlu, 2008).

Environmental education was defined in the first environmental conclusion report made in 1991; "The development of environmental awareness in individuals is defined as acquiring environmentally sensitive, positive and permanent behavioral changes and preserving natural, historical, cultural, social, and aesthetic values, ensuring active participation and taking part in solving problems" (Ministry of Environment, 1991).

Environmental education is important in terms of improving the attitudes and awareness of children towards the environment, but another important issue that needs to be carefully considered here is the quality of this education. With regard to the developmental characteristics of pre-school children, environmental education

should be designed to contribute to the development of children's cognitive, emotional, linguistic and psychomotor, as well as allowing them to develop positive attitudes towards the environment (Dinçer, 2005). Xuehua (2004) states that the most important goal of environmental education is to develop environmental awareness in children, which means that children may be aware of the richness of their environment. In this context, environmental awareness can be defined as being knowledgeable, awake, and alerted to environmental issues (Newhouse, 1990, as cited in: Stepath, 2004).

Children's awareness of the environment is influenced by many factors. Some researchers state that the press and media are at the forefront of these factors. However, the most important learning environments for improving children's environmental awareness are the schools (Jinliang et al., 2004). Within this rationale, one of the points that should be emphasized here is the quality of the environmental education given in the school in order to develop environmental awareness in children and therefore the quality of the teacher.

Another important goal of environmental education should be to give children positive attitudes towards the environment since children's attitudes towards the environment, as well as their level of knowledge, are also highly influential in their behavior towards the environment. Attitudes towards the environment; it can be considered as all of the positive or negative behavior and thoughts towards the individuals. These positive or negative behavior or thoughts of individuals are generally caused by fears, anger, disturbances, and value judgment resulting from environmental problems (Erten, 2005). One of the most important ways to cope with environmental problems is to develop positive attitudes by informing the individuals on these issues (Gürbüz, Kışoğlu, & Erkol, 2007). The pre-school period is critical as it creates the attitudes of individuals towards the environment. With environmental education given in childhood, the positive attitudes of individuals towards the environment can be transferred to their later ages (Wilson, 1996).

Many factors influence children's attitudes towards the environment. These factors include school, parents, teacher, and peers. Children have similar attitudes to their parents, teachers, and peers. The greater the degree of proximity, the greater the impact on attitude formation (Remmers, 1954; McNab, 1976, as cited in: Kesicioğlu, 2008). It is clear that adults support is an important factor in the development and change of children's attitudes. Because of the support of adults, children will gain the ability to make logical connections between concepts related to environment and to approach scientifically the problems they may encounter in daily life (Şahin, 1998). Attitudes of adults, especially those close to children, will play an important role in the development of children's environmental awareness (Kesicioğlu, 2008). In this context, the parents of the children (Soydan & Samur, 2014) and the teachers (Şeker, 2013) can be considered as important factors in the formation and development of children's affective characteristics.

1.2 The Significance and the Aim of the Study

Many factors such as socioeconomic level, family structure, peers, and teachers can affect the attitudes and awareness of children's towards the environment. Especially in the pre-school years, the children are mostly affected by pre-school teachers after their parents (Şeker, 2013).

In this context, it can be argued that the attitudes and awareness of the teachers towards the environment may affect the attitudes and awareness of the children's towards the environment. Because the role of well-educated and environmentalist teachers is very important in educating individuals with environmental responsibility and awareness (Başal, Özen, & Bağçeli-Kahraman, 2015).

While there are many studies (Aydın & Çepni, 2012; Değirmenci, 2012; Erol & Gezer, 2006; Erten, 2005; Gökçe, Kaya, Aktay, & Özden, 2007) which examines the attitude and awareness towards the environment on the other levels of the education system (primary, secondary, and higher education), the literature shows a limited research attention regarding attitude and awareness towards the environment in the pre-school period (Soydan & Samur, 2014). On the other hand, there also some studies which examined the children's attitudes towards the environment examined in terms of demographic variables such as parent, gender, and socio cultural characteristics (Çabuk, 2001; Haktanır & Çabuk, 2000; Kesicioğlu & Alisinanoğlu, 2009; Körükçü & Gülay-Ogelman, 2015; Soydan & Samur, 2014; Surbrook, 1997). However, to our knowledge, no study yet investigated the relationship between, children's and teachers' attitudes and awareness towards the environment.

From this point of view, this research presents new results in terms of bringing out the relationship between the attitudes and awareness of pre-school children's and their teachers' towards the environment. In this context, it is thought that the research is important since it examines the attitudes and awareness of teachers' and children's towards the environment together.

In light of all this information, the purposes of this study were; (a) to determine the level of awareness and attitudes of pre-school children's and teachers' towards the environment; and (b) to examine the relationship between them.

1.3 Research Problem and Sub Problems

Within this framework, the research questions were: (a) What is the level of attitudes and awareness of pre-school children's and their teachers' towards the environment?; and (b) is there a relationship between these characteristics?

Sub-problems examined within this general problem are as follows;

- a) What is the level of attitudes and awareness of pre-school children's towards the environment?
- b) What is the level of attitudes and awareness of pre-school teachers' towards environmental problems?
- c) What is the relationship between, pre-school children's and their teachers' attitudes and awareness towards the environment?

2. Method

In this section, research model, study group, data collection tools, data collection, and data analysis are included in the subheadings.

2.1 Research Model

This study is a relational research. Correlational and causal comparative studies are the most basic examples of relational studies (Frankael & Wallen, 2000). This research was conducted on the basis of the correlational research model, because the relationships between the different variables included in the study were investigated.

2.2 Study Group

The study group of this study consisted of 26 pre-school teachers working in primary pre-schools and primary schools in a province, and 208 children aged 5-6 who entered into the classes of these teachers.

Within the scope of the research, the relationship between the awareness and attitudes of the children's towards the environment and the attitudes and awareness of their teachers' towards the environment were examined. For this reason, 8 children per each teacher (totally 208 for 26 teachers) participated to the study group. The study group was based on convenience sampling method.

2.3 Data Collection Tools

In this study, "Environmental Awareness and Attitude Scale for Pre-school Children" was used to determine the awareness and attitudes of pre-school children's towards the environment.

"The Attitude Scale for Environmental Problems" was used to determine the attitudes of pre-school teachers' towards environmental problems. In order to determine teachers' awareness of environmental problems, "Awareness Scale for Environmental Problems" was used.

2.3.1 Environmental Awareness and Attitude Scale for Pre-School Children

The environmental awareness and attitude scale for pre-school children was developed by Soydan & Samur (2014). The aim of the scale is to determine the awareness and attitudes of the children's aged 60-66 months towards the environment. The scale has two factors consisting of 26 items in total, with the first factor (attitudes towards the environment) being 14 items, and the second factor (environmental awareness) being 12 items.

Factors are generally concerned with environmental problems, and each sub-factor has been gathered under three sub-dimensions, namely consumption, environmental pollution, and protection of living things. The Cronbach's alpha coefficients for the internal consistency of the items that constitute the scale were found to be .76 for the attitude sub-factor and .66 for the awareness sub-factor.

2.3.2 Attitude Scale for Environmental Problems

The "Attitude Scale for Environmental Problems" developed by Aksu (2009) aims to determine teachers' attitudes towards environmental problems. The scale consists of 11 items and one factor. The lowest score that can be taken from the five-point Likert-type scale is 11, the highest score is 55.

2.3.3 Awareness Scale for Environmental Problems

The "Awareness Scale for Environmental Problems" developed by Güven & Aydoğdu (2012) which aims to determine the awareness of adults about environmental problems, has been prepared in accordance with Bloom Taxonomy.

The scale had six factors in accordance with Bloom's six categories in the cognitive domain taxonomy (Knowledge, Comprehension, Practice, Analysis, Synthesis and Evaluation). The scale consists of 44 items. Table 1 presents both the number of items for each sub-factors and Cronbach's alpha internal consistency coefficients calculated for the sub-factors of the scale.

Table 1. Number of substances in the sub factors of environmental awareness scale and Cronbach's alpha internal consistency coefficients calculated for each sub factor

Cognitive Domain Categories	Number of items	Cronbach's alpha internal consistency coefficient
Knowledge	8	.95
Comprehension	8	.91
Practice	6	.71
Analysis	8	.90
Synthesis	7	.95
Evaluation	7	.75

As shown in Table 1, the scale consists of a total of 44 items and six factors, measured on a 3-point Likert response scale.

2.4 Data Collection

The data of the study were collected during the last weeks of the 2016-2017 academic years. In order to allow the children to interact with their teachers for longer, the data were collected at the end of the academic year.

Firstly, scales were applied to 26 pre-school teachers working in different schools. Then, the scale was applied to the children to whom these teachers trained.

The scale was applied by the researcher in a separate room with each child, in a quiet environment, by showing pictures of each other on a table suitable for children and by reading the scales to the child. The answers from the children were noted on the scale. For each child, the duration of the application lasted approximately 20-25 minutes.

2.5 Data Analysis

Descriptive statistics were used to determine participants' attitudes and awareness levels, and mean scores, minimum and maximum scores, and standard deviations for each scale and sub-factor were summarized. Standardized mean scores were used in reporting mean scores. In order to qualitatively interpret these standardized mean scores, interval widths were determined.

In order to examine the relationship between the awareness and attitudes of the children's and their teachers, towards the environment, the Pearson correlation coefficients between the scores obtained from the scales were calculated.

3. Findings

3.1 Findings Related to Attitudes and Awareness Levels of Pre-school Children's towards the Environment

The first research problem investigated in this research was stated as "What is the level of attitudes and awareness of pre-school children's towards the environment?" Table 2 contains descriptive information on pre-school children's' attitudes and awareness towards the environment.

Table 2. Descriptive information about pre-school children's attitudes and awareness towards the environment

	n	min.	max.	M	sd
Attitude	208	0.67	2.00	1.70	0.33
Awareness	208	0.18	1.91	1.17	0.29

As shown in Table 2, pre-school children's attitude scores for environmental problems ranged from 0.67 to 2.00 and their awareness levels ranged from 0.18 to 1.91. On the other hand, it was determined that participants' mean scores about attitudes towards environment was 1.70, while their mean scores about awareness was 1.17.

Standardized mean scores were used to report scores from environmental awareness and attitude scales for pre-school children. In calculating these scores, the total score for each factor was obtained by dividing by the

total number of items in the factor. Standardized scores ranged from 0-2 points. Range widths were determined for qualitative interpretation of these standardized mean scores. Interval widths were calculated by dividing the array widths by the number of options. The range width for the scale was set to " $2/3 = 0.67$ " and the range of points; $0 \leq \text{Low} < 0.67$, $0.67 \leq \text{Medium} < 1.34$ and $1.34 \leq \text{High} \leq 2.00$.

According to this finding, it can be said that pre-school children's attitudes towards environment are high but their awareness about environment is medium.

3.2 Findings Related to Attitudes and Awareness Levels of Pre-school Teachers' towards Environmental Problems

The second research problem was expressed as "What is the level of attitudes and awareness of pre-school teachers towards environmental problems?" Table 3 contains descriptive information about pre-school teachers' attitudes and awareness towards environmental problems.

Table 3. Descriptive information on pre-school teachers' attitudes and awareness towards environmental problems

		n	min.	max.	M	sd
Attitude		26	2.64	3.82	3.34	.30
	Knowledge	26	0.63	1.75	1.38	.28
	Comprehension	26	0.88	1.75	1.42	.19
Awareness	Practice	26	0.83	2.00	1.68	.34
	Analysis	26	0.75	2.00	1.38	.34
	Synthesis	26	0.57	1.57	1.26	.23
	Evaluation	26	0.83	2.00	1.55	.35

As shown in Table 3, it can be seen that pre-school teachers' attitude scores for environmental problems varied between 2.64 and 3.82. The mean score of participants' attitudes towards environmental problems was 3.34.

Standardized mean scores were used in reporting the scores obtained on the attitude scale for environmental problems. Standardized scores range from 1 to 5 points. Range widths were determined for qualitative interpretation of these standardized mean scores. Interval widths are calculated by dividing the array widths by the number of options. The range width for the scale was set to " $4/5 = 0.80$ " and the range of points; $1 \leq \text{strongly disagree} < 1.80$, $1.80 \leq \text{disagree} < 2.60$, $2.60 \leq \text{neither agree nor disagree} < 3.40$, $3.40 \leq \text{agree} < 4.20$ and $4.20 \leq \text{strongly agree} \leq 5.00$.

According to this finding, pre-school teachers' attitudes towards environmental problems seem to be over the average. It can be said that their attitudes are at the level of neither agree nor disagree in qualitative sense.

As shown in Table 3, the pre-service teachers' awareness scale scores for environmental problems ranged from 0.57 to 2.00. When the participants' mean scores of the subscales of the awareness scale for environmental problems are examined, it is seen that the highest mean for the application factor and the lowest mean for the synthesis factor. Standardized mean scores were used in the reporting of pre-school teachers' scores from the awareness scale for environmental problems. Standardized scores range from 0-2 points. Range widths were determined for qualitative interpretation of these standardized mean scores. Interval widths were calculated by dividing the array widths by the number of options. The range width for the scale was set to " $2/3 = 0.67$ " and the range of points; $0 \leq \text{Low} < 0.67$, $0.67 \leq \text{Medium} < 1.34$ and $1.34 \leq \text{High} \leq 2.00$.

According to this finding, it can be said that pre-school teachers' awareness about environmental problems is high for the synthesis factor and medium for other sub factors.

3.3 Findings Related to the Relationship between Pre-school Children's and Their Teachers' Attitudes and Awareness Levels towards the Environment

Findings related to the relationship between pre-school children's and their teachers' attitudes and awareness levels towards the environment are given in Table 4.

Table 4. Findings of relationship between pre-school children's and their teachers' attitudes and awareness levels towards the environment

		Children's Environmental Awareness	Children's attitudes towards the environment
Teachers' attitudes towards environmental problems			.57*
Teachers' awareness of environmental problems	Knowledge	.51*	
	Comprehension	.15	
	Practice	.30	
	Analysis	.10	
	Synthesis	.01	
	Evaluation	.19	

Note. * $p < .05$.

As shown in Table 4, a moderately significant relationship was found between pre-school children's and their teachers' attitudes towards environmental problems. While the children's and their teachers' awareness towards the environment were determined as moderate and significant relationships in the knowledge factor, the other factors were found to be weak and not significant relationships.

4. Conclusion and Discussion

Within findings of the first sub-problem examined in the research; it is determined that pre-school children's attitudes toward the environment are high but environmental awareness is moderate. In parallel with the results of this study, it was stated that pre-school children's attitudes towards the environment were high in the result of a study which examined the attitudes and awareness of the pre-school children towards the environment (Soydan & Samur, 2014). Similarly, Musser & Diamond (1999) found that children's attitudes towards the environment were high in a study of children's attitudes towards the environment. However, unlike the results of this study, Soydan & Samur (2014) determined that the awareness of children's towards the environment was also high. In another research that examined the awareness of pre-school children towards the environment, Çabuk (2001) found that children's awareness levels were high.

It is thought that the partial disagreement between the Çabuks' (2001) study and this study results from the study group. Because, as stated in by Çabuk's (2001) study, the whole of the study group of his study was the children of the families in the upper socio-economic level. But the participants of this study are at different socioeconomic levels.

It can be said that the attitudes of the children's towards the environment are generally high with the results of this study and the related literature. However, it seems difficult to talk about a general opinion in the literature for children's awareness of the environment. According to the results of some previous studies, while the awareness of the children's about the environment was determined moderately, unlikely it was found that it is high in other previous studies. One of the possible causes of this difference can be explained by the fact that the study groups were different.

In some studies (Değirmenci, 2012; Erol & Gezer, 2006; Gürbüz et al., 2007; Kesicioğlu, 2008; Salı, Körükçü, & Köksal-Akyol, 2015) examining attitudes and awareness towards the environment, only these characteristics have been examined in terms of various demographic variables (e.g., gender, parent's education level, socioeconomic level, etc.). The findings of demographic variables were reported in these studies, but the information about the level of attitudes and awareness in general was not given, which makes it difficult to determine the general tendency regarding this issue in the literature.

Similar research in this sense would first provide information on the levels of attitudes and awareness in general, and then providing information on the comparison of these variables by demographic characteristics could provide more valid comments on the general situation of attitudes and awareness towards the environment. In this context, it is also clear that new studies are needed to develop a deeper understanding of this issue.

Within the second sub-problem examined in the research; pre-school teachers' awareness of environmental problems was found to be moderate for the synthesis factor and high for the other factors. It was also found that pre-school teachers' attitudes towards environmental problems were slightly above average. Contrary to the results of this study, Güven & Aydoğdu (2012) found that teacher candidates' awareness of environmental problems was low. Similarly, in the study conducted by Oncu & Unluer (2015), it was determined that

pre-school teacher candidates' had a low level of awareness towards the environment. It can be argued that one of the possible reasons for this difference between the results is due to difference between the study groups in the studies. In parallel with the results of the teachers' attitudes towards the environment, Erten, Özdemir, & Güler (2003) found that pre-school teachers' attitudes towards the environment were high in generally. In another study, in which pre-school teachers' awareness and attitudes towards the environment were examined, researchers did not provide a direct knowledge of the level of awareness and attitude of teachers' in the study. However, they found that there was no significant relationship between teachers' awareness and attitudes towards the environment (Sali et al., 2015).

Within the third sub-problem examined in the research; a moderately significant relationship was found between pre-school children's and their teachers' attitudes towards environmental problems. While the children's and their teachers' awareness towards the environment was determined as moderate and significant relationship in the knowledge factor, the other factors were found to be weak and not significant relationships. As previously explained, to our knowledge, there was no research which examined on the relationship between pre-school children's awareness and attitudes towards the environment and their teachers' awareness and attitudes towards the environment. However, it is known that pre-school children's attitudes and awareness towards the environment are influential in parents and school education (Eagles & Demare, 1999; Musser & Diamond, 1999). For example, Kroufek, Janovec, Chytrý, & Simonová (2016) found a moderate relationship between parent's attitudes towards the environment and their children's attitudes. In a similar research conducted in Turkey, it has been determined that there was no significant relationship between the attitudes and awareness of the pre-school children's and their mother's attitudes and awareness towards the environment (Soydan & Samur, 2014).

It is thought that while similar previous studies were carried out only with parents, this research was conducted with teachers, thus leading a new perspective for the literature. It is taught that teachers' affective characteristics towards environment may be influential on the children they educate, as the children take their teachers as examples (Şeker, 2013) as well as well-educated and environmental teachers have a role in the training of individuals with environmental responsibility and awareness (Başal et al., 2015). This research is important from the perspective of examining this relationship but it is known that many external variables (parents, peer groups, press and media, etc.) are influential on the awareness and attitudes of children towards the environment. In this context, it is obvious that further studies are needed to investigate the effect of different external variables on awareness and attitudes of children towards the environment.

4.1 Limitations and Recommendations of the Study

In this study, care was taken to collect the data especially at the end of the academic year, and the children were able to receive training and interaction for a longer time with their teachers. However, the fact that the two semesters in which the children spend their time with the teachers may have a limited influence on their attitudes towards the environment is a limitation of this study. But it is also clear that this relationship can't be traced in very long periods due to short pre-school period in Turkish education system. In this context, it is suggested that the studies to be examined for such relations are spread over a longer period. For example, a study of the relationship between primary school teachers' and their students' attitudes and awareness can better reflect the impact of the interaction over a period of four years (for Turkish education system).

The data obtained in this study were limited to 208 children and 26 pre-school teachers. Especially, the fact that the study group consists of very younger children has caused some limitations in the data collection process. The number of participants was limited due to the both of application of measurement tools (individual applications were made with children) and the long duration of evaluation of these data. However, it can be suggested that these numbers be increased when working with larger research teams.

This study was limited to the attitudes and awareness towards the environment in terms of the variables examined, and it is suggested to work with different affective variables in the new studies to be done. This study was limited to examining the relationship between pre-school children's and their teachers' attitudes and awareness towards the environment. However; it is suggested to carry out new researches which are taken together in other external variables that may have an effect on the awareness and attitudes of the children towards the environment.

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