

Full Length Research Paper

The effect of soil education project on pre-school children

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The objective of this study is to evaluate the efficiency of the first two group applications of the project named “We are Learning about the Soil with Tipitop and His Friends” within the scope of the project group activities of The Scientific and Technological Research Council of Turkey (TUBITAK) “Schools of Nature and Science- code number 4004”. The aim of the project is to introduce 5-6 years old pre-school children to soil and concepts related to soil. The first two group studies of the project were completed between November and December 2009 in the nursery classes of two primary schools affiliated to the Ministry of National Education in city center of Denizli. Research findings demonstrate that soil related knowledge scores (characteristics of soil, its benefits, living beings on and under the soil, their functions, protecting the soil, erosion) of children in group 1 and 2 in the experiment group of the project have increased in a statistically significant way compared to the control groups. The obtained results prove the efficiency of the project.

Key words: Environmental education, soil education project, science education, pre-school period.

INTRODUCTION

Pre-school period is one of the important periods of life in terms of its short and long term effects. Providing children with knowledge and skills about different concepts in this period is of major importance for supporting their multi-dimensional development. Pre-school education aims to support individual development, and create recognition, awareness and sensitivity towards environment (Akçay, 2006). One of the elements that support rapid individual development in preschool period is children's desire to know the outer world. Children ask questions in line with their curiosity interact with objects and focus on cause and effect relationship. Satisfying children's curiosity in the best and most effective way supports their

development and improves their skills of creative and scientific way of thinking (Buhan, 2006; Smith, 2001). It had been reported by researchers that a healthy interaction with natural environment is a psychological and emotional need (Sebba, 1991; Wilson, 1994b). In addition, researchers point out that children's environmental knowledge and their attitude towards the environment begin to be shaped in preschool period, and environmental awareness acquired in preschool period plays a significant role in adopting a positive attitude towards environment in the years ahead (Grodzinska-Jurczak et al., 2006; Smith, 2001). Erosion is one of the oldest environmental problems of Turkey like many countries in the world. Because the soil which has 2 cm thickness is developing in 200 to 1000 years and Turkey is losing about 700 tones of soil because of erosion in each year, getting attention on this matter seems vital (Yüksel, 2006). Children and their parents knowing about the soil

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will increase their awareness about an important environmental problem which is called erosion.

“We are learning about the soil with tipitop and his friends” project

The aim of the project “We are Learning about the Soil with Tipitop and His Friends”, which was prepared in consideration of the short and long term effects of preschool environmental education, is to introduce 5 to 6 years old pre-school children to soil and concepts related to soil. In line with this scope, it was aimed to provide 5 to 6 years old children with information about the characteristics of soil, living beings on/under the soil, importance of soil, reasons and results of erosion, and to increase their awareness and sensibility towards their environment.

The project included the application of a 9-days program comprising of various activities on specified subjects (characteristics of soil, living beings on/under the soil, importance of soil, protection of the soil, identification reasons and results of erosion) in four different nursery classes. The target group of the project included 5 to 6 years old children attending the nursery classes of Hulusi Kulaklı and Dentaş Primary Schools in the city center of Denizli province, and their parents and teachers. Two criteria were taken into consideration in the selection of the target group: Having a family with low socio-economic level, and not having received any education or participating in any activity on subjects like soil, erosion and environment. These criteria were determined in order to provide children, who did not participate in rich and different educational practices, with positive, different and rich learning experiences. The first two of four groups included in the project are the morning nursery classes of Hulusi Kulaklı and Dentaş Primary Schools. The project included activities prepared with respect to their developmental progress (art, Turkish language, science and nature) and different teaching methods (drama, games, excursion-observation, experiment, question-answer) in order to enable them to learn by self-experience and entertainment. Different types of activities were used to support multi-dimensional development. Activities were determined to ensure that they attract children’s attention and encourage them to ask questions. The project also encompassed various arrangements for ensuring the continuity of the education. The primary studies among these were family participation in parallel to the activities carried out in education environment. Families were included in the project, as they have significant effect on the development of children’s behavior. As it is known, children’s behaviors are shaped in preschool period by taking parents’ behavior as models and through interactions with their parents (Başal, 2003; Musser and Diamond,

1999). By family participation activities, the program aimed to maintain the continuity of the education, increase the knowledge and sensitivity of parents about the subject, improve the interaction between children and their parents as well as the cooperation between the school and families. Another study to provide the continuity of the education was the soil corner prepared in the nursery classes in which the project was applied. The project, which was conducted by the Department of Preschool Education at the Faculty of Education of Pamukkale University, included academics from Pamukkale University and Marmara University, a teacher from Adana Science and Arts Center, a director from Denizli Regional Directorate of Forestry, teachers of the nursery classes of the project group, and a nurse from Pamukkale University Hospital, project coordinator, specialized personnel, an education specialist, a counselor and as project team members.

When the age of children (5 to 6 years) is considered, their potential of learning is observed to be high. Therefore, it is important to draw the attention of children in this period to the issues concerning environment they live in, and to increase their sensibility towards these issues. Enabling preschool children to know their geography more closely and from a different perspective, informing them about a current environmental issue, increasing their awareness, and including teachers as well as families in this process is important for the sake of providing permanence and continuity in the education given. In this respect, families’ knowledge about soil will also contribute to small children’s awareness about an important environmental problem. Insufficient number of studies on environment education for preschool children, and the developmental characteristics of the target group are among the factors that increase the significance of the project.

METHODS

Experimental method with experiment and control groups was used in the research performed to investigate the effect of soil education on 5 to 6 years old children. Four different groups are included in the soil education applications in the school year of 2009 to 2010. Project study for each group lasted sixteen days including pretest, pilot activities, program application, posttest-repeated posttest applications. Before the initiation of project activities, parents and teachers were informed about the objective and content of the project and the activities. Pretests were applied to children in order to determine their level of knowledge about the subject. Before the project studies, pilot activities were applied (conversation, puppet show and drama) in order to introduce children to Tipitop – the main character of the project, and therefore to the project and educators. The activities prepared with respect to the project were practiced for 9 days by the educators with the help of the counselors. 2 to 3 activities were conducted every day. Activities were mostly carried out in the nursery classes which the children attended, Biology Laboratory of Pamukkale University, Greenhouse of Pamukkale University, and Piney Forest and Recreation Area. The project was

conducted by various activities (story, games, drama, song, enigma, excursion-observation, experiment, art) prepared on the basis of subject topics related to soil. A soil corner was prepared in the nursery classroom at the end of the project. When the activities were completed, posttests were applied to the children, parents and teachers. In order to determine the permanence of the acquired information, repeated-posttest was applied to children two weeks after the application of the posttest.

Participants

In order to study the efficiency of the project, control groups were selected from other nursery classrooms, which did not participate in the project, in the same schools where the 1st and 2nd experiment groups were selected. These groups were not given any information about the project, and did not participate in any of the activities. Control groups were applied only pre-, post- and repeated-posttests simultaneously with the experiment groups. Children were randomly assigned to all experiment and control groups.

1st Project (experiment) group and control group

The first experiment group of the project named "We are Learning about the Soil with Tipitop and His Friends" included 8 girls (36.4%) and 14 boys (63.6%) who attended the morning nursery class of Hulusi Kulaklı Primary School and their parents. Average age of children is 5 years, 6 months, 5 days (not less than 4 years, 8 months, 6 days; not more than 6 years, 3 days). The control group selected for the first project group included 10 girls (45.4%) and 12 boys (54.6%) who attended the afternoon nursery class of Hulusi Kulaklı Primary School. Average age of children in the control group is 5 years, 2 months, 23 days (not less than 4 years, 10 months, 17 days; not more than 6 years, 1 month, 5 days).

2nd project (experiment) group and control group

The second experiment group of the project named "We are Learning about the Soil with Tipitop and His Friends" included 15 girls (57.7%) and 11 boys (42.3%) who attended the morning nursery class of Dentaş Primary School and their parents. Average age of children is 5 years, 5 months, 12 days (not less than 4 years, 6 months, 5 days; not more than 6 years, 4 months, 6 days). The control group selected for the second project group included 12 girls (46.1%) and 14 boys (53.9%) who attended the afternoon nursery class of Dentaş Primary School. Average age of children in the control group is 5 years, 27 days (not less than 4 years, 2 months, 13 days; not more than 6 years, 1 month, 5 days).

Measures

Personal information form

Personal information form prepared for children and achievement test for measuring information used as pre-post test were applied as data collection tools in the project. Information form for the children consists of questions regarding the demographic characteristics of themselves and their families. Forms consisting of thirteen questions were filled out by the parents.

The test of evaluation

The second tool for data collection is the test of evaluation used as

pre- and post-test about the project. The pre-post tests about the project aim to reveal children's level of knowledge about the project topic, and the effect of the project on children's level of knowledge. The test of evaluation used as pre- and post-test consists of questions to be answered electronically in computer. There are twelve questions in the test, which consists of photographs and pictures due to the illiteracy of the children. Questions were prepared according to the subtopics of the project (structural characteristics of the soil, living beings on and under the soil, benefits of soil, functions of soil, protection of soil, erosion).

Procedure

Pre- and post-test were applied to children by trained personnels before the initiation and after the completion of the project individually in the classroom environment. Trained personnel showed slides to the children and asked questions. Children used the computer mouse to answer the questions. Test was completed by the audio warning received for wrong and correct answers. 7 of 12 questions in the test consist of 3 close-ended questions. One of the remaining questions is open-ended, one of them requires finding the differences, one of them requires sequencing events, and two of them require telling the events. Each slide introduces one question. Score values of each question ranges between 0 and 6 scores.

Total test scores are calculated by adding the score values of each question. The lowest and highest scores that can be obtained from the test are 0 and 41, respectively. In the slides introducing open-ended questions, children were asked the questions and their answers were recorded in a sound recorder. Pre-post test questions and answer options were prepared by the project coordinator, and the test was formed in the electronic environment by the trained personnel.

In order to determine the permanence of the acquired information, post-test was repeated two weeks after the application of the post-test. Within the framework of this research, pre-post test and repeated post-test findings obtained from the 1st and 2nd groups and the selected control groups are presented below under relevant headings. Pre-post test and repeated post-test results of children were analyzed by SPSS 15.0 packet program. Wilcoxon marked-rows test was performed in order to determine the relationship between pre-post test and repeated post-test applications of the experiment and control groups before and after the project. Mann Whitney U test was performed in order to compare results of pre-post tests and repeated post-tests of children. Since the number of children in the groups is much below 30, non-parametric statistical analysis techniques were used.

RESULTS

Findings of the 1st project group (experiment) and control group

According to the Mann Whitney U Test results for pre-test score averages of children in the experiment and control groups before the project, no significant difference was observed between the two groups (experiment and control) ($U = 277.50$ $p > 0.01$) (Table 1). Before project applications, average scores of the two groups were not found to be significantly different indicating that experimental and control groups' level of knowledge about the soil were equal.

Table 1. Mann Whitney U test results for pre-test score averages of children in the experiment and control groups of the 1st group before the project.

| Group | n | Average of rows | Total rows | U | p |
|------------|----|-----------------|------------|---------|-------|
| Experiment | 22 | 23.16 | 509.50 | 277.500 | 0.731 |
| Control | 22 | 21.84 | 480.50 | | |

Table 2. Mann Whitney U test results for post-test score averages of children in the experiment and control groups of the 1st group after the project.

| Group | n | Average of rows | Total rows | U | p |
|------------|----|-----------------|------------|--------|-------|
| Experiment | 22 | 30.61 | 673.50 | 63.500 | 0.000 |
| Control | 22 | 14.39 | 316.50 | | |

Table 3. Mann Whitney U test results for repeated post-test score averages of children in the experiment and control groups of the 1st group after the project.

| Group | n | Average of rows | Total Rows | U | p |
|------------|----|-----------------|------------|-------|-------|
| Experiment | 22 | 29.66 | 652.50 | 84.50 | 0.000 |
| Control | 22 | 15.34 | 337.50 | | |

Table 4. Wilcoxon marked-rows test results for score averages of pretest-posttest of children in the 1st group (experiment group) before and after the project.

| Posttest- pretest | n | Average of rows | Total rows | z | p |
|-------------------|----|-----------------|------------|------|-------|
| Negative row | 0 | 0.00 | 0.00 | | |
| Positive row | 22 | 11.50 | 253.00 | 4.11 | 0.000 |
| Equal | 0 | | | | |

According to the Mann Whitney U test results for post-test score averages of children in the experiment and control groups after the project, a significant difference was observed between the two groups (experiment and control) ($U = 63.500$ $p < .001$) (Table 2).. Average score of the experimental group was found to be significantly higher than that of the control group.

According to the Mann Whitney U Test results for score averages of repeated post-test of children in the experiment and control groups after the project, a significant difference was determined between the two groups (experiment and control) ($U = 84.50$ $p < .001$) (Table 3). Average score of the experimental group was found to be significantly higher than that of the control group.

According to Wilcoxon marked-rows test results of children in the 1st group (experiment group) obtained before and after the project, a significant difference was detected between the score averages related to the subject of soil ($z = 4.11$ $p < 0.001$) (Table 4). Average

score of posttest after the program was found to be higher than average score of pretest before the program.

According to Wilcoxon marked-rows test results of children in the 1st group (experiment group) obtained from pretest and repeated posttest a significant difference was detected between the score averages related to the subject of soil ($z = 3.95$ $p < 0.001$) (Table 5).. Repeated posttest average score after the program was found to be higher than pretest average score.

According to Wilcoxon marked-rows test results of children in the 1st group (experiment group) obtained from posttest and repeated posttest, a significant difference was detected between the score averages related to the subject of soil ($z = 2.07$ $p < 0.05$) (Table 6). Repeated posttest average score after the program was found to be higher than posttest average score.

According to Wilcoxon marked-rows test results of children in the 1st group (control group) obtained before and after the project, no significant difference was detected

Table 5. Wilcoxon marked-rows test results for pretest-repeated posttest score averages of children in the 1st group (experiment group) before and after the project.

| Repeated posttest- pretest | n | Average of rows | Total rows | z | p |
|----------------------------|----|-----------------|------------|------|-------|
| Negative row | 2 | 2.50 | 5.00 | | |
| Positive row | 20 | 12.40 | 248.00 | 3.95 | 0.000 |
| Equal | 2 | | | | |

Table 6. Wilcoxon marked-rows test results for posttest-pretest score averages of children in the 1st group (experimental group) before and after the project.

| Posttest- pretest | n | Average of rows | Total rows | z | p |
|-------------------|----|-----------------|------------|------|------|
| Negative Row | 13 | 10.23 | 133.00 | | |
| Positive Row | 5 | 7.60 | 38.00 | 2.07 | 0.38 |
| Equal | 4 | | | | |

Table 7. Wilcoxon marked-rows test results for pretest-posttest score averages of children in the 1st group (control group) before and after the project.

| Posttest- pretest | n | Average of rows | Total rows | z | p |
|-------------------|----|-----------------|------------|-------|-------|
| Negative Row | 3 | 2.83 | 8.50 | | |
| Positive Row | 2 | 3.25 | 6.50 | 0.276 | 0.783 |
| Equal | 17 | | | | |

Table 8. Wilcoxon marked-rows test results for pretest-repeated posttest score averages of children in the 1st group (control group) before and after the project.

| Repeated posttest- pretest- | n | Average of rows | Total rows | z | p |
|-----------------------------|----|-----------------|------------|-------|-------|
| Negative row | 13 | 2.00 | 6.00 | | |
| Positive row | 1 | 4.00 | 4.00 | 0.368 | 0.713 |
| Equal | 4 | | | | |

between the score averages related to the subject of soil ($z = 0.276$ $p > 0.05$) (Table 7). Pretest-posttest average scores were not found to be significantly different for control group.

According to Wilcoxon marked-rows test results of children in the 1st group (control group) obtained from pretest and repeated posttest, no significant difference was detected between the score averages related to the subject of soil ($z = 0.368$ $p > 0.05$) (Table 8). Repeated posttest-pretest average scores were not found to be significantly different for control group.

According to Wilcoxon marked-rows test results of children in the 1st group (control group) obtained from posttest and repeated posttest, no significant difference was detected between the score averages related to the

subject of soil ($z = 0.241$ $p > 0.05$) (Table 9). Repeated posttest-posttest score averages after the program were not found to be significantly different.

Findings of the 2nd project group (experiment) and control group

According to the Mann Whitney U test results for pre-test score averages of children in the experiment and control groups before the project, no significant difference was observed between the two groups (experiment and control) ($U = 204.500$ $p > 0.05$) (Table 10). Average scores of the two groups were not found to be significantly different.

According to the Mann Whitney U test results for post-

Table 9. Wilcoxon marked-rows test results for posttest-repeated posttest score averages of children in the 1st group (control group) before and after the project.

| Repeated posttest- posttest | n | Average of rows | Total rows | z | p |
|-----------------------------|----|-----------------|------------|-------|-------|
| Negative row | 5 | 4.90 | 24.50 | | |
| Positive row | 4 | 5.13 | 20.50 | 0.241 | 0.809 |
| Equal | 13 | | | | |

Table 10. Mann Whitney U test results for pre-test score averages of children in the experiment and control groups of the 2nd group after the project.

| Group | n | Average of rows | Total rows | U | p |
|------------|----|-----------------|------------|---------|------|
| Experiment | 26 | 28.20 | 620.50 | | |
| Control | 26 | 21.37 | 555.50 | 204.500 | .089 |

Table 11. Mann Whitney U test results for post-test score averages of children in the experiment and control groups of the 2nd group after the project.

| Group | n | Average of rows | Total rows | U | p |
|------------|----|-----------------|------------|--------|-------|
| Experiment | 26 | 36.84 | 810.50 | | |
| Control | 26 | 14.06 | 365.50 | 14.500 | 0.000 |

Table 12. Mann Whitney U test results for repeated post-test score averages of children in the experiment and control groups of the 2nd group after the project.

| Group | n | Average of rows | Total rows | U | p |
|------------|----|-----------------|------------|-------|-------|
| Experiment | 26 | 37.30 | 820.50 | | |
| Control | 26 | 13.67 | 355.50 | 4.500 | 0.000 |

test score averages of children in the experiment and control groups after the project, a significant difference was observed between the two groups (experiment and control) ($U = 14.500$ $p < 0.001$) (Table 11). Average score of the experiment group was found to be significantly higher than that of the control group.

According to the Mann Whitney U test results for repeated post-test score averages of children in the experiment and control groups after the project, a significant difference was determined between the two groups (experiment and control) ($U = 4.500$ $p < 0.001$) (Table 12). Average score of the experiment group was found to be significantly higher than that of the control group.

According to Wilcoxon marked-rows test results of children in the 2nd group (experiment group) obtained before and after the project, a significant difference was detected between the score averages related to the subject of soil ($z = 4.46$ $p < 0.001$) (Table 13). Posttest

score average after the program was found to be higher

According to Wilcoxon marked-rows test results of children in the 2nd group (experiment group) obtained from pretest and repeated posttest after the project, a significant difference was detected between the knowledge score averages related to the subject of soil ($z = 4.46$ $p < 0.001$) (Table 14). Repeated posttest score average after the program was found to be higher than pretest score average.

According to Wilcoxon marked-rows test results of children in the 2nd group (experiment group) obtained from posttest and repeated posttest a significant difference was detected between the score averages related to the subject of soil ($z = 2.07$ $p < 0.05$) (Table 15). Repeated posttest score average after the program was found to be higher than posttest score average.

According to Wilcoxon marked-rows test results of children in the 2nd group (control group) obtained from pretest and posttest, no significant difference was

Table 13. Wilcoxon marked-rows test results for pretest-posttest score averages of children in the 2nd group (experiment group) before and after the project.

| Posttest- pretest | n | Average of rows | Total rows | z | p |
|-------------------|----|-----------------|------------|------|-------|
| Negative row | 0 | 0.00 | 0.00 | 4.46 | 0.000 |
| Positive row | 26 | 13.50 | 351.00 | | |

Table 14. Wilcoxon marked-rows test results for pretest-repeated posttest score averages of children in the 2nd group (experiment group) before and after the project.

| Repeated posttest -pretest | n | Average of rows | Total rows | z | p |
|----------------------------|----|-----------------|------------|------|-------|
| Negative row | 0 | 0.00 | 0.00 | | |
| Positive row | 26 | 13.50 | 351.00 | 4.46 | 0.000 |
| Equal | 0 | | | | |

Table 15. Wilcoxon marked-rows test results for posttest-repeated posttest score averages of children in the 2nd group (experiment group) before and after the project.

| Repeated posttest-posttest | n | Average of rows | Total rows | z | p |
|----------------------------|----|-----------------|------------|-------|-------|
| Negative row | 13 | 9.88 | 128.50 | | |
| Positive row | 10 | 14.75 | 147.50 | 0.290 | 0.772 |
| Equal | 3 | | | | |

Table 16. Wilcoxon marked-rows test results for pretest-posttest score averages of children in the 2nd group (control group) before and after the project.

| Repeated posttest -pretest | n | Average of rows | Total rows | z | p |
|----------------------------|----|-----------------|------------|-------|-------|
| Negative row | 9 | 7.44 | 67.00 | | |
| Positive row | 10 | 12.30 | 123.00 | 1.143 | 0.253 |
| Equal | 7 | | | | |

detected between the score averages related to the subject of soil ($z = 1.143$ $p > 0.05$) (Table 16). Pretest-posttest score averages were not found to be significantly different.

According to Wilcoxon marked-rows test results of children in the 2nd group (control group) obtained from pretest and repeated posttest, no significant difference was detected between the score averages related to the subject of soil ($z = 0.408$ $p > 0.05$) (Table 17). Repeated posttest-pretest score averages after the program were not found to be significantly different.

According to Wilcoxon marked-rows test results of children in the 2nd group (control group) obtained from posttest and repeated posttest after the project, a significant difference was detected between the score averages related to the subject of soil ($z = 2.070$ $p < 0.05$) (Table 18). Repeated posttest-posttest score

averages after the program were not found to be significantly different.

DISCUSSION

It was concluded that soil education, which aimed to provide preschool children with knowledge about the soil, the problem of erosion and an environmental awareness towards the protection of soil, increased the knowledge scores of the children in the 1st and 2nd experiment groups about soil (its characteristics, benefits, living beings on and under the soil, its functions, protection of the soil, erosion) in a statistically significant way compared to control groups. Furthermore, soil related knowledge scores in experiment groups showed increase after the completion of the project. The obtained results

Table 17. Wilcoxon marked-rows test results for pretest-repeated posttest score averages of children in the 2nd group (control group) before and after the project.

| Repeated posttest -pretest | n | Average of rows | Total rows | z | p |
|----------------------------|---|-----------------|------------|-------|-------|
| Negative row | 9 | 7.56 | 68.00 | | |
| Positive row | 8 | 10.63 | 85.00 | 0.408 | 0.683 |
| Equal | 9 | | | | |

Table 18. Wilcoxon marked-rows test results for posttest-repeated posttest score averages of children in the 2nd group (control group) after the project.

| Repeated posttest-posttest | n | Average of rows | Total rows | z | p |
|----------------------------|----|-----------------|------------|-------|-------|
| Negative row | 5 | 3.00 | 15.00 | | |
| Positive row | 0 | .00 | .00 | 2.070 | 0.038 |
| Equal | 21 | | | | |

demonstrate the efficacy of the project. Literature survey has not revealed any soil education study conducted in Turkey and abroad for 5 to 6 years old children. However, it is possible to come across descriptive studies in Turkey about the variables effecting the environment perception of especially preschool children (Kesicioğlu and Alisnanoğlu, 2009; Taşkin and Şahin, 2008).

As an example for applied studies, the issue of recycling was taught to children with several activities, especially with music studies and the Applied Environmental Education Project carried out in primary schools and nurseries in 2000 to 2001 education year in Bursa (Sungurtekin, 2001). When examples in foreign countries are considered, it is seen that 6 to 8 years old children participated in the Forest Schools Project that started in 2003 in England. At the end of the project which included activities like, games suitable for their development level, problem solving and creative thinking, it was observed that children's environmental awareness as well as their perception of self worth increased and their social relationships improved (Swarbrick et al., 2004). In addition, Wilson (1996) carried out a study which investigated 9 environment education program for preschool children in various countries (the United States, England, Canada, India), and specified the common points that activate environment education programs.

These common points include focusing the problems of immediate surroundings, giving particular importance to the activities carried out in the natural environment, encouraging empathy development, increasing sensitivity towards natural environment, preparing programs according to the development level of children, preparing these activities as 2 to 3 h or half-time activities, and involving families in these studies. It had been reported by Maynard and Waters (2007) that at the end of the environment education participated by 3 to 7 years old

children in England, the activities performed by children in environments outside the school provide them with an opportunity to learn many things and reinforce their sensitivity towards nature as well as their development (cognitive, social, physical). Shin (2008) applied a 14-weeks program with teachers in the study he conducted in Korea with 4 nursery school teachers.

The program was developed to increase teachers' environmental awareness and sensitivity, and enable them to include environmental activities in the classroom more regularly and in different ways. It was reported at the end of the program that the number and type of activities performed with regard to environment education increased, and children developed a higher environmental awareness. In the study on environment education programs carried out in preschool education institutions in Poland, Domka (2004) noted that the application of various projects on water protection and recycling (Blue Thump, Clean up the World) increased and became widespread in such institutions. It was also emphasized that these studies attracted the attention of children and helped them develop positive behaviors. Wilson (1994a) said that supporting young children's knowing their environment will provide enormous contributions to relations between humans and environment.

As it is shown both in this research and other related studies, environmental education in preschool period was determined to increase children's environmental sensitivity and improved their several other developmental areas. The increase in environmental problems especially in the last 30 years have brought along the requirement of including environment education in all levels of education in a systematic way starting from the preschool education. At this point, it is important to increase the number, type and quality of environment education programs to be prepared for young children. Moreover, more

active participation of teachers and parents in education programs should be provided.

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