

# **An Informal Course for Environmental Education: Using Films in Environmental Education**

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## **Abstract**

*Environmental education is important since environmental problems gradually increasing in today's world. To reduce these problems we need to responsible and consious people who interested in environmental issues. Teachers have an important role to educate students about environmental issues and to equip them with environmental behaviours. The most important thing is teachers also need to have enough knowledge and behaviour related to this issue. To make environmental education more effective and beneficial for students different approaches are applying in different levels of education. One of the different approach in environmental education is using films which make the course more effective. In the light of these thoughts, the purpose of this study is to provide effective ecology course using an informal approach. This study was carried out with 55 preservice primary teachers in the Primary Education Department at one university. All of them were senior students and they analysed the films they had watched. At the end of the courses both of the preservice teachers were asked open ended questions about the environmental course they had attended. Qualitative analysis was conducted for this study. Analysis of open ended questions was done by content analysis and the frequency of responses was calculated. The results showed that preservice primar teachers found this course appropriate for environmental education. Their responses indicated they emphasized many types of environmental problems but global warming was the most important one and this course provide them knowledge and behaviour related with environmental education. Some possible implications are suggested in the light of these results.*

**Keywords:** *Environmental education, Preservice primary teachers, Films*

## **1. Introduction**

In today's world one of the most important problem is undoubtely environmental problems. Due to human activities and natural disasters environmental degradation is gradually increasing. Human activities cause in various environmental problems such as global warming, climate change, hazardous waste, air pollution, water pollution, ozone depletion, drought, over population, acir raining. Anyone in the world is responsible for these problems. To reduce these problems in acceptable level, citizens must be equiped with cognitive and affective abilities regarding environmental issues with the help of environmental education. The purpose of environmental education prepared firstly in 1975 at Bgrade. These aims were revised in 1977 at Tbilisi and some recommendations were accepted to apply environmental education in formal and informal area (Palmer & Neal, 1994, 13) . As a result of these events and subsequent events researchers reached consensus on the importance of environmantal education for today's world. In addition they agreed that environmental educaion is necessary to reach the aforementioned abilities and they also emphasized the aim of environmental education in the following reasons (Erol & Gezer, 2006; Norman, 2010; Palmer & Neal, 1994, 13; Uzunoglu, 1996):

- to make people conscious about environmental problems
- to make people realise environmental problems
- to raise peoples' knowledge about environmental issues
- to raise peoples' awareness towards environmental problems
- to provide people acquire sense of responsibility about environment
- to provide people acquire value judgement

- to provide people become more sensitive and protective towards environment
- to provide people acquire decision making skills about environmental issues
- to provide people participate actively in the solution process regarding environmental problems
- to provide people develop skills for a better quality of life

Environmental education basically begins at home and continues at all levels of education which means that it is a continuous life long process and this training needs to be developed in educational institutions (Jena, 2012; Sever & Yalcinkaya, 2012; Tozlu, 1997). Training children on environmental education at an early age is important for making them conscious and being responsible adults regarding environmental issues when they grow up. Therefore teachers have an important role providing environmental education to children. However, teachers, especially primary teachers, who will provide environmental education need to have knowledge, skills, responsible behaviours, being conscious about environmental issues (Kahyaoglu, et al., 2008; Norman, 2010; Sahin, et al., 2004). Teacher training programs have an important role providing preservice teachers gaining these characteristics. Particularly, preservice primary teachers who will provide environmental education to primary school children and prepare them for the future of the citizens, need to attend effective environmental education courses.

Many studies (Harness & Drossman, 2011; Güler 2009; Jena, 2012; Klein et al., 2006; Petegem et al., 2007; Powers, 2004; Sahin, et al., 2004; Shin, 2000) have been conducted in order to train preservice teachers more effectively in environmental education courses. In some of these studies (Harness & Drossman, 2011; Lowe et al., Norman, 2000) informal learning strategies were preferred for environmental education. Films can also be accepted as a mass medium and also one of the informal learning strategies, therefore several researchers agreed that films can be used as an educational tool in environmental courses (Bahk, 2011; Barbas et al., 2009; Harness & Drossman, 2011; Lowe et al., 2006; Nolan, 2010; Norman, 2000). In these studies it was stressed the potential role of films in environmental education by emphasizing that films can reach the people visually and transport people to places and situations and also influence people's attitudes, behaviours, raise their awareness and change their concern, sensitivity about environmental issues. In addition Norman (2000) emphasized that people watch and learn together. Moreover films increased anxiety about environmental risks and motivated people to act on environmental problems (Lowe et al., 2006). In addition, films present environmental problems in a natural setting of life stories and in a more progressive and suspenseful way (Bahk, 2011). In the light of this theoretical framework, in this study by using films, an informal environmental education course was prepared and applied to preservice primary teachers, and their opinions about this course were evaluated. For this aim, this study examines the impact of films and film analyzing on preservice primary teachers' environmental opinions.

## **2. Method**

Qualitative research methods were used for this study. A total of 55 (29 male and 26 female) preservice primary teachers at one university participated in this study. All of the participants were at their last year of undergraduate education.

For this study student centered education was adopted with different methods in Environmental Education courses. The study took 2 hours per week in the duration of 14 weeks in separate one classes. Participants analyzed the films they watched. They studied in the groups of 2-3.

Open ended questions were asked to learn preservice primary teachers' opinions about using films in an environmental education course. For this purpose they were asked the purpose of environmental education, appropriateness of the course for environmental education, environmental problems they know, the most important environmental problem according to them, any environmental behavior and knowledge they gained in this course.

***The stage of the procedure***

In the first two weeks participants were instructed importance of environmental education, environmental problems all over the world and history of environmental education both in Turkey and in other countries.

1. Creating groups: Participants were allowed to select their group friends to create their groups.
2. Selecting films: Participants were asked to search films including environmental problems. They were given one week time to determine the film they would study on. Films were given to the participants who could not find by themselves. Participants who selected the same films were asked to find or suggested another one.

Each film was discussed with the participants who selected that film in terms of its appropriateness for environmental education course.

3. Analyzing films: In this stage students were explained how they analyse the films. To simplify this stage, they were presented a report which was prepared by the researcher. They were asked to use this report after watching the film. In this report participants were asked to write some information about the film and to determine environmental issues and the factors (applications) that cause these issues in the film. Participants were also determined whether the factors (applications) that cause environmental problems have any benefits in terms of organisms especially humanbeings. They were asked to search about these problems and their reasons in detail by using resources. Since they were instructed about the reliable resources in internet at the begining of this course they were expected reliable information. After the searching process participants' were asked to write their final decisions and its reasons about the applications on the report. The report also included the resources part which participants used while searching.

Some of the films were listed in Table 1.

**Table 1. Films selected by preservice primary teachers**

<b>Films</b>	<b>Year</b>	<b>Environmental Problems</b>
The day after tomorrow	2004	Global warming
On deadly ground	1994	Water pollution
Intellectual Village Agains Efe Village	2011	Thermal power plant
Wall-E	2008	Wastes
Waste Land	2010	Wastes, recycling
Hardwired	2009	Visual pollution
The impossible	2012	Solar flares, Earthquake
Chernobyl	1986	Nuclear power plants
Rango	2011	Desertification

4. Preparing presentation: In this stage participants were asked to prepare a presentation by using power point. This presentation included some information they have written in their report and film sections related with their subjects. For this stage participants need to know MovieMaker program to cut related parts of the film they watched, therefore participants who did not know about this program was helped by the researcher.

***Data analysis***

Open-ended questions were used to identify preservice primary teachers' opinions about environmental education course they have attended.

Qualitative data analysis was done by coding and creating themes related with participants' responses. Coding process revealed that a response could be fitted more than one category. Therefore total number of responses was found more than total number of participants. To make adjustment and acceptable sets

researcher re-coded the data after a period of time. Based on these two coding process, themes were checked to found if there were any differences. After finishing this process final forms of themes were created.

### 3. Findings

**Table 2. Preservice primary teachers' opinions about purpose of environmental education**

<b>Purpose of environmental course is...</b>	<b>(f)</b>
Making people conscious	33
Raising peoples' sensitivity	8
Raising peoples' awareness	8
Enlightening people about	10
<i>Environmental issues, factors and solutions</i>	3
<i>Identify environment</i>	4
<i>Produce solutions</i>	3
Gaining behavior and responsibility	7
<i>Protecting environment</i>	1
<i>Stopping improper and harmful practices</i>	6
Providing holistic thinking (Thinking other organisms)	4

Table 2 shows frequency of responses obtained from preservice primary teachers' responses about purpose of environmental education. According to this table majority of the participants, the purpose of environmental education is to make people consciousness about environmental problems, protecting nature etc.

One of the participants stated the purpose of environmental education as below:

*The purpose of environmental education is to make people consciousness about protecting nature and teaching people the rights of organisms which also have rights to live as humans. Therefore environmental education is necessary to make people consciousness from age of 7 to 77...*

Almost the same number of participants emphasized enlightening people about environment, make them gain behaviour and responsibility as the purpose of environmental education. On the other hand, more participants emphasized the raising sensitivity and awareness about environmental issues. In addition few participants indicated holistic thinking for the purpose of environmental education.

**Table 3. Preservice primary teachers' opinions about appropriateness of the course**

<b>Opinions</b>	<b>(f)</b>
Appropriate	50
Partially appropriate	5
Not appropriate	-

Table 3 shows preservice primary teachers' responses about appropriateness of the course they attended. From this table it can be understood that, majority of the participants' found this course appropriate for environment education course.

One participant explain his thoughts as follows:

*I think this course is appropriate for the purpose of environmental education. This course brought me a lot of thigs, for example, I reduced lenght of the shower ... I don't run the dish machine and washing machine while empty. I give the plastics who collect them.. In this course I became more consciousness and aware of the environmental problems..What I wrote is part of these things..*

Another participant stated about the appropriateness of this course as follows:

*The purpose of environmental education is to know our environment closely and prevent the damages that we gave without being aware... With the films that we watched I started to look at the events from different perspectives. I feel pain when I left the tap or lamp open as it will never run out. I realized that being efficient is not being parsimony..*

One of them also mentioned effectiveness of the films in this course and specified his opinions in this way:

*...this course is one of the most effective course I've attended during my university years. Since it include destruction of the nature with all aspcts, such as global warming, oil pollution, wastes etc. and supported with films, it attracted students' attention. This course is suitable for the purpose of environmental education. It displayed whay we should do and not do for the solutions of the problems we had, and also dimensions of serious problems we will live in the future.*

**Table 4. Preservice primary teachers' responses related to environmental problems**

<b>Environmental problem</b>	<b>(f)</b>
Damage of natural environment	<b>34</b>
<i>HES –Hydroelectric power plants</i>	17
<i>Destruction of species habitat</i>	3
<i>Destruction of forested areas</i>	5
<i>Rapid consumption of natural resources</i>	2
Water pollution	<b>32</b>
<i>Thermal reactor</i>	2
<i>Sea pollution</i>	7
Noise pollution	<b>31</b>
Global warming	<b>26</b>
<i>Greenhouse gases</i>	2
Air pollution	<b>25</b>
<i>Thermal reactor</i>	2
Soil pollution	<b>22</b>
<i>Waste</i>	16
<i>Failure of recycling</i>	2
<i>Garbage</i>	4
Radioactive pollution	<b>13</b>
<i>Nuclear power plant</i>	12
Desertification	<b>8</b>
<i>Unconscious water consumption</i>	1
Visual pollution	<b>3</b>
<i>Unplanned urbanization</i>	2
Light pollution	<b>2</b>
Energy problem (consumption)	<b>2</b>
Decreasing of biodiversity (Overfishing)	<b>1</b>
GDO	<b>1</b>
Others	<b>2</b>

Table 4 indicate preservice primary teachers' responses related environmental problems. This table revealed that majority of the preservice primary teachers mentioned damage to the nature including HES, destruction of spesies of habitat, destruction of forested areas and rapid consumption of natural resources among other environmental problems. In addition most of tehms also indicated water pollution, noise pollution, global warming, air pollution and soil pollution respectively.

Few of the them indicated radioactive pollution and desertification. Only a few of them mentioned visual pollution and light pollution

**Table 5. Preservice primary teachers' responses related to most important environmental problems**

<b>Environmental problems</b>	<b>(f)</b>
Global warming	<b>20</b>
<i>Greenhouse gases</i>	2
<i>Gases from fossil fuels</i>	5
<i>Gases from power plants</i>	2
<i>Industry</i>	3
<i>Deodorants and parfumes</i>	6
Soil pollution	<b>19</b>
<i>Waste</i>	9
<i>Failure of recycling</i>	2
<i>Do not make people aware of the problems</i>	2
<i>Disposal of waste</i>	4
<i>Lack of related institutions' services</i>	1
Destruction of natural environment	<b>15</b>
<i>Urbanization</i>	2
<i>Building HES (Hydroelectric power plant)</i>	4
<i>Unconsciousness usage of natural resources</i>	2
Air pollution	<b>13</b>
<i>Industry, gases from factories</i>	5
<i>Vehicles</i>	7
<i>Gases from thermal power plant</i>	1
Water pollution	<b>6</b>
<i>Spraying of agricultural lands</i>	1
<i>Unconsciousness</i>	3
<i>Coastal pollution</i>	1
Desertification-Shortage of water	<b>6</b>
<i>Unconsciousness of water consumption</i>	5
<i>Overgrazing</i>	1
All of the environmental problems	<b>3</b>
Noise pollution	<b>2</b>
Natural disasters	<b>1</b>
Radioactive pollution	<b>1</b>
Others (over consumption)	<b>8</b>

Table shows preservice primary teachers' opinions about the most important environmental problem. As it is seen in the table three of the participants thought all of the environmental problems as important, so they did not mentioned any of them. On the other hand, most of the participants emphasized global warming as an most important environmental problems among others. A participant stated global warming explained his reasons as follows:

*...As a result of accumulation of greenhouses gases in the atmosphere, the atmosphere is heating day by day. Humans and their unconscious behaviour are the most important factor for this problem...Damage to the forest, unconscious water usage, fosil fuel uses in tha factories, use of high voltage bulbs, use of air conditioners are cause global warming..*

As sen in the table many of the participants specified soil pollution, destruction of the nature and some of them also specified air pollution, water pollution and desertification as the most important environmental proplem.

Even though noise pollution is frequently mentioned among environmental problems as can be seen in Table 4, just a few participants mentioned this problem.

**Table 6. Preservice primary teachers' responses related to behaviours they have gained in environmental education course**

<b>Opinions</b>	<b>(f)</b>
<b>Yes</b>	<b>53</b>
<i>Behaviours ...</i>	
Prevent wastes	<b>34</b>
Recycling	25
Do not throw rubbish	9
Prevent water pollution	<b>19</b>
Prevent household waste	5
Make people consciousness	<b>12</b>
Energy saving	5
Prevent individual consumption	2
Prevent desertification	<b>8</b>
<b>No</b>	<b>3</b>

Table 6 shows preservice primary teachers' opinions related they have gained in environmental education course. As seen in this table almost all of the participants believed that they gained behaviors in environmental course they have attended. In this table, it can be said that most of the preservice primary teachers gained behaviors to prevent wastes especially by recycling them. In addition, some of the participants thought that they gained behaviour preventing water pollution and to making people conscious about environmental problems.

One of the participants explained changes in his behaviours in this way:

*...Let me explain by giving example; I requested a recycling box from municipality. I'm not throwing glasses, plastics and batteries in the trash anymore, I'm packing them and throwing them in the recycling boxes. I'm trying to separate recycling materials and trying to use water properly, and also trying to stay away from chemicals...*

One more participant explains behaviours she gained express in this way:

*...I've been more sensitive to the environment. Before this, I was disposing the wastes in the bin, now I began to use recycling box. I began to respect animals' rights by empathizing with them closely. I began to read news related with environmental issues. I began to plant trees in the treeless parts of our garden. We requested recycling box for the garden of our apartment...I didn't just show them in my behaviour, these were placed in the most important part of my brain. I mean, my thoughts and my feelings were in the same way.*

Another participant explained how she prevent water pollution:

*...After this course I reduced duration of my shower, I'm turning off the tap while brushing my teeth, while washing the dishes I first clear the oil on the plate. I reduced parfume using. I'm also informing the people around me about events affecting the life such as water etc...I noticed that all of the people should have environmental consciousness.*

**Table 7. Preservice primary teachers' responses related to knowledge they have learnt in environmental education course**

<b>Opinions</b>	<b>(f)</b>
<b>Yes, knowledge related to ...</b>	<b>55</b>
Global warming	<b>20</b>
Responsibilities towards environment	<b>16</b>
<i>Suggestions for environmental problems</i>	<i>11</i>
<i>Rights of organisms</i>	<i>3</i>
<i>Protecting environment</i>	<i>2</i>
Damage of natural environment	<b>16</b>
<i>HES</i>	<i>13</i>
<i>Use of natural resources</i>	<i>3</i>
Environmental issues	<b>15</b>
Problems	<i>7</i>
<i>Factors cause environmetal problems</i>	<i>3</i>
<i>Environmental problems in Turkey</i>	<i>3</i>
<i>Environmental problems in other countries</i>	<i>1</i>
<i>Regulations</i>	<i>1</i>
Radioactive pollution	<b>13</b>
Waste	<b>12</b>
<i>Garbage</i>	<i>1</i>
<i>Disposal of waste period in nature</i>	<i>2</i>
<i>Recycling</i>	<i>8</i>
<i>Danger of waste</i>	<i>1</i>
Natural disaster	<b>8</b>
Noise pollution	<b>5</b>
Air pollution	<b>2</b>
Visual pollution	<b>1</b>
Energy consumption	<b>1</b>
Others	<b>2</b>

Table 7 presents preservice primary teachers' responses related to knowledge they gained in environmental education course. According to this table, almost all of the participants indicated that they gained knowledge in this course. In addition, most frequently mentioned knowledge by participants is global warming.

One of the participants who stated global warming as the most important environmental problem expressed his opinions as follows:

*...for example I presented global warming issue. Everyone in the class including me have knowledge about this issue was wrong. While searching this issue we learnt the right information and other students learnt from us. The other issue affected us was Chernobyl...I heard about the word and its effects but I learnt the reasons of this event and studies related this issue in the classroom. Another issue is Tsunami...With given information about this subject.*

From this table it can be said that some of the participants mentioned responsibilities towards environment, damage to the environment and environmental issues in general as the most important environmental problems. Few participants also indicated radioactive pollution and wastes.

One participant explained effects of films on gaining knowledge as follows:

*..Yes, it affected my knowledge level because, we have seen not only problems in Turkey but also the environmental problems in the world and discussd them. Thus, I also learnt about Tsunami which was our subject. I also learnt that it can be possible in Turkey in small size. Accept from this, I learnt and watched about such as storm, HES, Chernobyl, nuclear power plant which were presented by my friends. If these subjects were given only verbally, it did not affect us. Handling these issues with films by watching them provided our knowledge more perminant.*

One of the participant emphasized environmental consciousness and express his opinions as follows:

*...It increased my knowledge. It provided me acquiring environmental consciousness and informing people about these issues. In many issues such as nuclear power plants, hydroelectric power plants, global warming, water etc. I can make comments in both negative and positive aspects not as hearsay... I noticed realized that the simplest things we saw were very important in terms of environment. We learnt waste separation, water conservation, fresh air and allso healthy environment affect human life and all of the life forms.*

#### **4. Discussion and Coclusion**

Results of this study showed that PPTs emphasized environmental consciousness as purpose of environmental education. They also thought that the purpose of environmental education include environmental sensitivity, environmental awareness, making people knowledgeable about environmental issues and solutions for the purpose. In addition they had opinions that these aims can be reached by using films in environmental education course. With these results it can be said that using films influence PPTs' opinions regarding environmental issues. Bahk (2011) also stated that movie is a significant predictor for the attitudes toward environmental issues. He argued that people perceived realism in the film and they felt like they were experiencing the events in the film. On the other hand, few of the PPTs in this study found the course partially appropriate for environmental education. They recomended that outdoor experiences (such as visiting a recycling plant or activities can be applied in primary school) could be useful to see environmental problems in actual place or to inform people regarding these issues.

Results showed that of the environmental problems, PPTs mostly mentioned damage to the nature, water pollution, noise pollution, global warming, air pollution and soil pollution respectively. However, among these problems significant number of them indicated global warming as the most important environmental problem. It was interesting that even they mostly mentioned damage to the nature among other problems, they stated global warming as the most important one. This result may be due to the visuality of the movie. The film regarding global warming might have affected to the PPT more dramatically than others. In addition noise pollution was also mostly mentioned by PPT, but just a few of them thought that it as a most important issue. This result showed that even most of them have seen noise pollution and water pollution as environmental problems, they did not think they were important as the others.

Results of this study indicated that PPT became more favourable in their behaviours regarding environmental issues. In fact, they stated that this course provide them acquire environmental behaviours which were related preventing waste like recycling materials or not to throw them away rubbish and also preventing water pollution like being carefully about confusing household to the water. Kollmuss and Agyeman (2002) identified these behaviour as pro-environmental behaviour and explained that people who have these behaviours minimize the negative impact on the natural world. According to them, internal and external factors have an important role shaping environmental behavior. In our study films can be thought as external factor to effect PPTs' environmental behaviours. In

addition this result also suitable for the purpose of environmental education which includes providing value and attitudes towards environment and environmental issues and named with affective objectives (ECNC, [www.turcek.org.tr](http://www.turcek.org.tr)).

Studies emphasized that teachers have an important influence to educate children who will be tomorrow's individuals in protecting environment and act for environmentally healthy world, and therefore they should have good knowledge related with environmental issues (Esa, 2010; Rowe, 2002). In this study, It was found that with this course PPTs obtain knowledge about environmental issues through films. These knowledge specifically was related with peoples' responsibilities towards environment and factors that damage to the nature such as building HES (Hydro electric power plants), global warming, effect of nuclear power plants. Researchers determined positive relationship between students' environmental knowledge and environmental attitudes in teacher training college which means that if preservice teachers can be good enough in their knowledge their attitudes might become more positive (Pe'er et al., 2007). Since attitudes affect behaviours, having good knowledge about environmental issues become more important. However, researchers indicated that environmental knowledge did not effect environmental behaviour directly and also they argued that more environmental knowledge did not increase environmental behavior (Kollmuss and Agyeman, 2002).

There are some important implications of these findings for PPTs and environmental educators. It can be said that using films in environmental education influence PPTs opinions regarding environmental issues; firstly, films attracted PPTs' attentions to the course, secondly, these films enhanced PPTs' viewpoints since they noticed different kinds of environmental problems and search them, thirdly this course provide PPT acquire new environmental behaviour and knowledge, fourthly, films provide PPT to visualize environmental issues and provide a beter understanding of these issues with the help of stories in the films. PPT also started to consider environmental issues in the films that they did not notice before. There are also limitations of this study such as an outdoor experience. These experiences are limitation (deficiencies) of this study and it can be accepted a suggestion for the future studies. If PPTs' allowed to apply outdoor experiences chosen by them and internalize it, the course would be more effectine in terms of acquiring environmental behaviors.

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