

Analysis of Short Films of Prospective Teachers on Environmental Awareness

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Abstract

Environmental education is a theoretical course included in elementary teaching programs in Turkey. Considering the importance of the practical application of theoretical knowledge, it is asked prospective teachers enrolled in this course to make a short film to raise their future students' environmental awareness. A total of 68 prospective teachers participated in this study. Data was collected from short films, as well as the written forms completed by the participants explaining the idea behind the films. The data evaluated in terms of filming location, characters, topics, skills involved, messages conveyed and goals targeted for the audience. The results showed that the prospective teachers mostly focused on the dispersal of waste materials into the environment and importance of keeping the environment clean. In addition, the prospective teachers employed the technical skills of shooting the videos and editing footage, and presentation skills related to elaboration (narration-verbal expression), demonstration (description of tools), and exemplification. Based on the results, it is suggested that Technological Pedagogical Content Knowledge of prospective teachers on environmental education should be developed through future implementations.

Keywords: Environmental education, environmental awareness, short film, prospective teachers.

Introduction

Although positive results have been obtained from films and documentaries used for educational purposes (Alyaz, Isigicok & Gursoy 2017; Culloty & Brereton, 2017; Cakırlar Altuntas & Turan, 2018; Janpol & Dilts, 2016; Onen Oztürk, 2017; Seckin Kapucu, Çakmakçı & Aydogdu, 2015; Valenti, 2018), it is clear that students are passive when watching films. However, through making films, students can gain high-level cognitive, emotional and psychomotor skills (Backenroth & Sinclair, 2015). A review of the literature showed that there is only limited research on the evaluation of short films taken by students (Onen Oztürk, 2017; Yiğit et al., 2017). If the production of a short film is successful, it has a better possibility of reaching a large audience and having a greater effect (Abono, 2016). This study aimed to evaluate short films prepared by prospective teachers within the scope of the environmental education course. For this purpose, in this research, the participants' short films on environment awareness were evaluated in terms of filming location, characters, topics, skills involved, and messages and goals targeted for the audience. It is hoped that with its technological and pedagogical implications, the results of this research will significantly contribute to the educational literature, in particular the literature on environmental education.

Environmental Education and Literacy

The primary and secondary school science curriculum currently implemented in Turkey and last revised in 2018 includes topics related to environmental education. Among the basic objectives related to environmental education are to; acquire basic knowledge on

environmental science; gain scientific process skills and adopt a scientific research approach to offer solutions to environmental problems in the process of discovering the nature and understanding the relationship between human and environment; recognize the mutual interaction between the individual, environment and society; develop awareness of sustainable development in relation to the society, economy and natural resources; and develop an interest in, curiosity about and attitude toward events taking place in the nature and in the immediate vicinity (Ministry of National Education-TEB, 2018). Similarly, in the teacher training programs in Turkey, the environmental education course covers basic environmental concepts, global efforts undertaken related to environmental awareness, ecological issues and problems, and environmental institutions and organizations.

It is very important to develop the knowledge and skills on environmental awareness and conscience of prospective teachers who will educate future generations. In this regard, it is necessary to increase the environmental literacy levels of prospective teachers enrolled in higher education programs (Keinonen, et al., 2016). Here, environmental literacy refers to not only being knowledgeable about the environment but also being able to transform the acquired knowledge into skills and actions (Morrone, Mancl & Carr, 2001). In other words, being environmentally conscious and knowledgeable has an effect on emotions and actions (Roth, 1992). This is also in agreement with the results of Genc and Akilli (2016), who found a high level of positive relationship between knowledge, behavior, attitudes and tendencies concerning the environment. However, being environmentally conscious does not necessarily mean that an individual's level of environmental knowledge is high. For example, a recent survey conducted with university students showed that the participants had positive attitudes toward and a high level of concern for the environment, but their knowledge of this subject was at a low to moderate level (Veisia, Lacyb, Mafakheria & Razaghia, 2018). Similarly, another study also concluded that university students with limited environmental knowledge did have a positive attitude toward the environment (Pe'er, Goldman & Yavetz, 2007).

The literature contains studies on environmental awareness and consciousness. For example, a study conducted with prospective teachers in recent years revealed that their descriptions of the environment were superficial and scientifically incomplete. Moreover, it was reported that students perceived environment as an object, not as a unity of systems (Ahi, Balci & Alisanoglu, 2017). Another study undertaken with primary school students showed that the participants had limited awareness of environmental pollution, and the living and non-living organisms in the environment (Özsoy & Ahi, 2014). Demir and Avgın (2016) aimed to elicit the views of prospective science teachers on global warming and found that their knowledge was insufficient and they had difficulty differentiating concepts. In another research study conducted with prospective teachers, Yavetza, Goldmanb and Pe'erc (2014) reported that the participants did not adequately understand the concept of environment, they did not see people as part of the environment, and they did not view the environment as a complex network of interaction between people, human-made systems and natural ecosystems. Iliopoulou (2018) attempted to determine the perceptions of six- to nine-year-old children about pollution and emphasized that the mental models embedded in the participants prevented them from thinking systematically at a conscious level.

Using Short Films for Educational Purposes

In recent years, studies have been undertaken to evaluate the efficiency of using films (Culloty & Brereton, 2017), short films (Önen Öztürk, 2017), documentaries (Alyaz, Isigicok & Gursoy 2017; Çakırlar Altuntaş & Turan, 2018; Janpol & Dilts, 2016; Seçkin Kapucu, Çakmakçı & Aydoğdu, 2015; Valenti, 2018) and, short videos (Warner, Lamm

& Rumble, 2018) for educational purposes. For example, in a study conducted with students at university level, the use of documentaries improved the participants' perceptions of environmental issues and donation tasks (Janpol & Dilts, 2016). Another study reported that environmental documentaries had an important role in improving the environmental awareness of prospective teachers (Alyaz, Isigicok & Gursoy 2017).

In the literature, there is limited research on the evaluation of short films made by prospective teachers. For example, in a study conducted with prospective science teachers, the participants were asked to prepare short films concerning science-technology-society. The findings obtained revealed that the science concepts were accurately used in the films, the science-society relation could be established, the films had a clear language, they were appropriate for the classroom level, and they could be associated with daily life. Moreover, while the prospective teachers thought that they could effectively use these films during their future profession, they believed that such films should be mostly utilized at the beginning of a lesson (Önen Öztürk, 2017). The screenplays of the short films created by prospective teachers demonstrated their technical skills in making these films, as well as indicating that the content of the films was suitable for pedagogical goals indicators and developmental areas. The short films contained a variety of presentation types in terms of pre-school education, but there were no applications that sufficiently distinguished the characteristics of the preliminary information (Yiğit et al., 2017). Technical skills were defined as adding descriptive information (description/name of film), shooting the video, editing footage, speeding up/slowing down footage, adding appropriate background music where necessary, adjusting music according to environment, and removing/adding footage from/to the ready-to-play films. Presentation skills included elaboration, verbal expressions, demonstration, description of tools, being a model, performing a target action for the other person to copy, exemplification, association with everyday life, teaching through play, playing games, teaching through music, and presenting content with music (Yiğit et al., 2017).

Aim of The Study

The use of short films for educational purposes requires TPCK, which refers to the areas covered by the technology an educator employs, the pedagogical techniques that should be utilized to teach a topic, and the knowledge of how to use the technology (Mishra & Koehler, 2006). Within the scope of this study, the short film preparation process required environmental field knowledge in determining the content of the films, pedagogical knowledge in ensuring that the films were suitable for educational purposes, and the use of technology in editing and finalizing the films.

Methodology

In this research, basic qualitative research design was used to elicit prospective teachers' perceptions regarding how to develop their future students' environmental awareness (Merriam, 2013). Therefore, this research focused on revealing prospective teachers' understanding and perceptions of environmental consciousness in order to offer an insight into the methods and elements they will use in teaching this topic to their future students and increasing their environmental awareness.

Participants

An easy-to-reach sampling technique was used to select participants (Patton, 2002). The sample of the study consisted of 68 prospective teachers attending the second year of a teacher education program in a university located in the Central Anatolia Region in

Turkey. The students had taken a centralized test to join this program. The participants were enrolled in the environmental education course, which was provided during the fall semester. This course took a total of 26 hours over 13 weeks for two hours per week. This research was conducted in the fall of 2017, and the prospective teachers were asked to form groups to make a short film about 'Environmental Awareness'. The selection of groups and the scenarios of short films were left to the participants. The number of students in groups ranged from four to nine, and the groups were generally homogenous in terms of gender. Of the 68 participants, 39 were female and 29 were male. The short film names that the participants take are the following: Keep it clean to have it clean (7 girls), The story of a banana (9 boys), Inner voice (9 boys), I want a clean environment (6 girls), Hope (4 girls, 4 boys), Destiny (4 girls, 5 boys), For a clean environment (8 girls, 2 boys), Environmentalist characters (4 girls), Think again (6 girls).

Data Collection Tools

The data collection tools of the study were the films prepared by the participants and their written explanations about the films. Different data collection techniques were utilized to diversify the data (Patton, 2002). The duration of the short films of the participants varied between 4' 21'' and 8' 11''. All the participants were asked to provide their views on the short films they prepared. For this purpose, they were presented with the following written question, "What kind of environmental awareness did you aim to develop in your future students with the short film you prepared?" and were given approximately 30 minutes before the collection of the completed forms.

Data Analysis

During the data analysis process, firstly, the films and written views of the participants were gathered. Then, a content analysis was performed on the data collected. Descriptive analysis was performed to present the findings. The sources in the literature were utilized during the data analysis process. For the creation of categories and codes of the skills involved in the films, the technical and presentation skills described by Yiğit et al. (2017) and the goals included in the 2018 science education curriculum (MoNE-TEB, 2018) were used. For increased reliability, the researcher undertook data analysis at three different times. In addition, during data analysis, she was assisted by another researcher at the doctoral level in the field of education.

Findings

The nine short films prepared by the participant groups were examined according to the following categories:

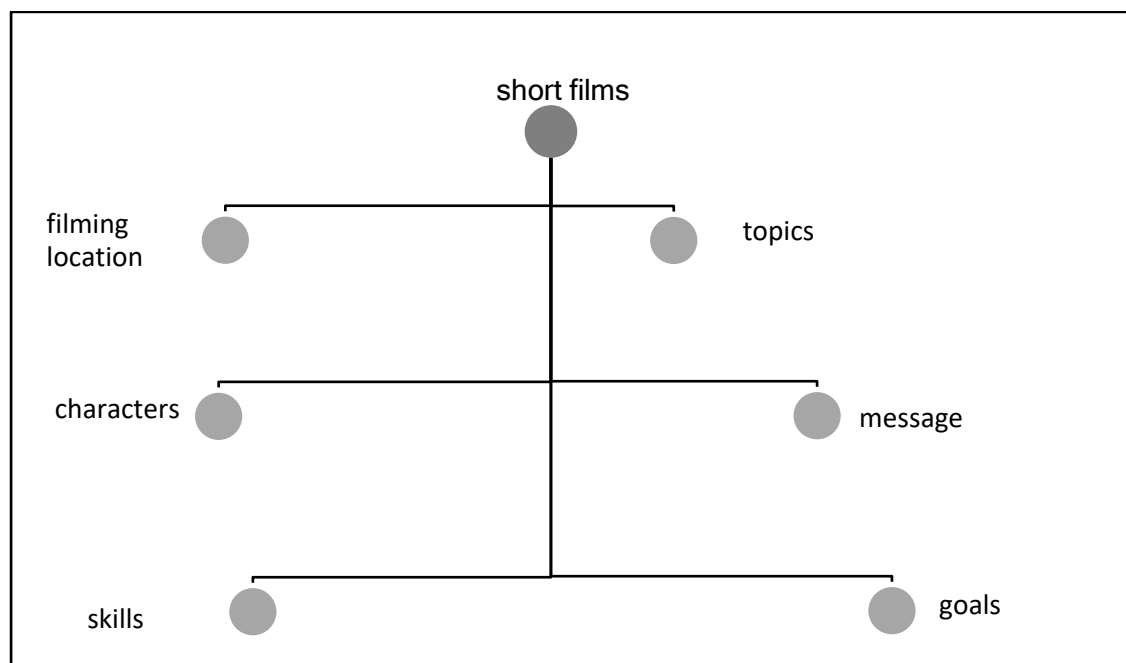


Figure 1. Categories about short films prepared by the participant groups

Each category is described below with examples.

Filming location: The short films were shot by the participants in indoor or outdoor environments. The participants mostly chose outdoor areas, such as parks, gardens and streets for filming. In the outdoor films, the activities mostly included eating and drinking after which the packaging waste was thrown into the environment. In one of the films, the characters planted trees. Only one film was shot in an indoor space; an apartment block.

Characters: Most of the characters in the short films were classified into the sub-categories of advisory, warning and informative nature. The advisory sub-category included codes, such as good vs. bad voices, father vs. son, and teacher vs. student. In the films containing these codes, it was seen that an experienced senior individual usually gave advice to a younger and less experienced character about keeping the environment clean. The warning sub-category included the codes of neighbor vs. neighbor and an environmentally conscious citizen vs. a group of friends. These films depicted an environmentally conscious character verbally warning an individual or a group of people polluting the environment. Finally, in the informative sub-category, environmentalists working in the municipality informed a group of friends about recycling. Apart from these sub-categories, there were other characters in the films but only some of the prominent examples are given here.

Skills: In the short films they prepared, the participants used the technical skills of recording video footage and editing their own footage. Almost all the films were found to have descriptive information (description / film name, role distribution). In some short films, the participants also employed skills related to the addition of background music and footage from other ready-to-play films. A noteworthy finding was that none of the participants utilized the technical skill of speeding up or slowing down footage. Concerning the presentation skills, elaboration (narration-verbal expressions),

demonstration (description of tools), and exemplification were used in all films, but none of the participants incorporated playing games or teaching through music into their films.

Topics: In their short films, the participants generally addressed environmental pollution, which they depicted as an individual throwing garbage into the environment, and the films emphasized the necessity of keeping the environment clean by throwing waste into the bin. In addition, the short films, “Keep it clean to have it clean” and “Environmental characters” focused on recycling issues; separating glass, plastic and paper waste and delivering them to processing plants to be recycled. In most films, the actions taken in relation to the environment were prompted by an external warning. Only one film presented environmentally conscious behavior following an internal warning. On the other hand, some films also referred to people’s expectation that it is the municipality workers and caretakers’ responsibility to keep the environment clean. The names and topics of the short films are given below.

Keep it clean to have it clean: A group of students having a picnic sort their garbage and put it in different waste bins.

The story of a banana: A father explains to his child that he should keep the environment clean.

Inner voice: A group of students have a picnic listen to their inner voice and clean the environment.

I want a clean environment: A group of students have a picnic sort their garbage and put it in different waste bins.

Hope: A teacher informs her students about environmental awareness and they plant a tree together.

Destiny: Everyone keeps their own living area clean.

For a clean environment: Students polluting the school yard are warned by their teacher.

Environmentalist characters: A group of students having a picnic sort their garbage and put it in different waste bins.

Think again: The behaviors of environmentally conscious and unconscious students are compared.

Message: The messages conveyed in the short films were classified as written, verbal, and behavioral. In the written form, the message was usually included in sayings (e.g., “Polluted environment pollutes the soul, polluted souls pollute the environment” and “Eyes that don’t see the green are deprived of the pleasure of color”). The verbal messages were in the form of advice and sayings again (“He who destroys the environment destroys himself”, “Packaging is not garbage, recycling is the way to be conscious”, and “Protect nature and it will protect you”). Lastly, behavioral messages included in the films shot in outdoor areas, such as parks, gardens, and road focused on the interaction between the environment and human beings, and how the pollution of these spaces negatively affected people.

Goals: As mentioned in the data analysis section of this paper, the short films prepared by the participants were associated with the goals in the science education curriculum in Turkey. All the films featured the item, "Taking an active role in the cleaning of one's living environment", which is part of the "My Environment and Me" unit of the grade 3 curriculum. Unlike the other films, the film called "Hope" depicted planting trees for future generations and focused on what should be done for the environment. This corresponds to the goal, "Discussing the beneficial and harmful situations in human-environment interaction based on examples" included in the unit "Human and Environment Relationship" of grade 5. The films "Keep it clean to have it clean" and "Environmentalists characters", which both addressed separation of recyclable waste, were related to the goal, "Understanding the significance of recycling and resources required for life" in the "Human and Environment" unit for grade 4.

Results and Discussion

The multi-faceted training of teachers is very important in increasing the quality of education. In this research, in order to contribute to this multi-faceted development, the participant prospective teachers were asked to make a short film on environmental awareness. These films were then evaluated in terms of filming location, characters, topics, skills employed, and targeted messages and goals.

In this study, the prospective teachers mostly focused on the dispersal of waste materials into the environment and importance of keeping the environment clean; i.e., behavioral pollution. When preparing the short films, the participants used the technical skills related to shooting videos and editing footage, and the presentation skills of elaboration (narration-verbal expressions), demonstration (description of tools), and exemplification. However, the participants did not address higher-grade goals included in the science education curriculum implemented in Turkey (MoNE-TEB, 2018). Another noteworthy finding was that the films generally portrayed a knowledgeable, experienced or environmentally aware character that warned or gave advice to someone polluting the environment. In this sense, the participants appear not to have internalized environmentally conscious behaviors. Supervisory control is one of the factors that influence responsible behavior toward the environment (Hines, Hungerford, and Tomera, 1987). However, it is clear that behaviors exhibited in the presence of a supervising or warning mechanism are not permanent, and environmentally friendly behaviors should be internalized (Hungerford & Volk, 1990; Peyton & Miller, 1980).

Behavioral pollution is an environmental problem caused by negative behaviors of individuals which affect the elements, such as air, water and soil. It can be stated that the topics of the films prepared within the scope of this research were limited to behavioral pollution in general terms. This result is consistent with the relevant literature in terms of the limited environmental considerations of the participants (Ahi, Balci & Alisinanoglu, 2017; Demir & Avgın, 2016; Iliopoulou, 2018; Keinonen, et al. 2016; Yavetza, Goldmanb & Pe'erc, 2014; Özsoy & Ahi, 2014). In recent years, studies have been conducted on noise pollution (Bulunuz, 2014), electromagnetic pollution (Köklükaya, Güven Yıldırım & Selvi, 2017), and light pollution (Contel, Ferrandis & Ferrandis, 2016).

As mentioned in the introduction section of this paper, to date, only a small number of studies have evaluated short films made by prospective teachers (Önen Öztürk, 2017; Yiğit et al., 2017). The results of the current study were similar to those of previous research on the analysis of short films made by pre-school teacher candidates in terms of the suitability of technical skills used and content for pedagogical goal indicators and developmental areas (Yiğit et al., 2017). Furthermore, our findings on the understandable language of the films, their suitability for the classroom level, and the

content being related to everyday life are in agreement with those reported by Önen Öztürk (2017). In terms of presentation skills, we observed elaboration (narration-verbal expressions), demonstration (description of the tool), and exemplification, similar to the categories described by Shulman (1986).

In this study, at the beginning of the environmental education course, the participants were provided with a general topic to form the basis for their short films. In future studies, in order to address more issues, students can be assigned the task to make short films on goals and topics selected from the curriculum at the beginning of the target course. Environmental awareness is a socio-scientific issue that requires the understanding and discussion of a wide range of concepts, such as global warming, recycling, conscious consumption, acid rain, and air-water-soil pollution. Similarly, the first few class hours can be allocated to informative presentations to develop prospective teachers' technical and presentation skills, as well as their TPCK. Prospective teachers can be provided with specific environmental topics for films to enhance their knowledge of environmental awareness and education, increase their creativity, and contribute to the development of multiple skills that would also be useful for the improvement of their future students' skills.

In education faculties having the primary objective to develop effective teachers, students should be provided with training for the effective use of short films in their future teaching. Prospective teachers should also be provided with detailed information on how to use short films they find on the internet and how to prepare their own short films as teaching material. For this purpose, film archives categorized according to courses and topics can also be created. Finally, the effect of the films prepared by prospective teachers on their TPCK can be examined.

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Öğretmen Adaylarının Çevre Bilinci Konusunda Çekmiş Oldukları Kısa Filmlerin Analizi

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Özet

Çevre Eğitimi dersi Türkiye'deki sınıf öğretmenliği programında yer alan teorik bir derstir. Teorik bilgiden ziyade uygulamanın öneminden yola çıkarak bu ders kapsamında öğretmen adaylarından, gelecekte öğrencilerine çevre bilincini kazandırabilecekleri kısa bir film çekmeleri istenmiştir. Araştırmaya toplam 68 öğretmen adayı katılmıştır. Veriler çekilen kısa film ve yazılı formlar aracılığı ile toplanmıştır. Toplanan veriler filmlerin çekim yeri, karakter, konu, kullanılan beceri, verilmek istenen mesaj ve kazanımlar açısından incelenmiştir. Çekilen kısa filmlerin konularının genel olarak atıkların çevreye atılması ve temizlenmesi olduğu görülmüştür. Ayrıca öğretmen adayları teknik becerilerden video çekimi yapma ve kendi çekimlerinden ekleme-kesme; sunum becerilerinden açıklama (anlatım-sözlü ifadeler), gösteri (araç ile ilgili açıklama yapma) ve örneklendirmeyi kullanmışlardır. Son olarak öğretmen adaylarının çevre eğitimi konusundaki Teknolojik Pedagojik Alan Bilgilerinin gelecek uygulamalarla geliştirilmesinin gerekliliği önerisinde bulunulmuştur.

Anahtar Kelimeler: Çevre eğitimi, çevre bilinci, kısa film, öğretmen adayları.