

TURKISH ELEMENTARY SCHOOL STUDENTS' VIEWS ABOUT ENVIRONMENTAL POLLUTION AT SCHOOL

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Abstract

This study aimed to explore Turkish elementary school students' the views about environmental pollution at school. In this study, a phenomenological research design from the qualitative research methods was used. Study group included a total of 60 students studying in the 2-4th grades of a state elementary school in Balikesir in Turkey. Environmental Pollution Form was used in data collection. Content analysis technique was used in data analysis. The student answers to each question were analyzed under code and category. According to study results, the students explained the concept of environment with natural beauties such as nature, forest, mountain, sea, soil, and they stated that the environment consisted of living and non-living beings. They mentioned that environmental pollution included soil, air, and water pollution, and they mostly associated environmental pollution with garbage, chemicals, fumes, and bad smells. They saw people as the reason for this. Most of the students described the environment in their school as dirty. The students did not obey the rules, environmental awareness was not developed enough in the students, garbage was thrown on the ground, the school servants did not clean the school well enough, etc. could be said among the reasons for this. It has been observed that the students used trash cans to prevent environmental pollution in their schools and warned people who threw garbage in the environment. They emphasized that the school administration and the teachers also took the necessary precautions in this regard, but that the students should be more sensitive about this issue and the school servants should clean their surroundings more. They suggested that the number of recycling bins should be increased and penal sanctions on those who litter when necessary should be imposed. The students stated that resources should be used sparingly since they are limited, which could also help prevent environmental pollution.

Key words: environmental pollution, environmental education, school, Turkish elementary students, elementary education

ТҮРІК БАСТАУЫШ СЫНЫП ОҚУШЫЛАРЫНЫҢ МЕКТЕПТЕГІ ҚОРШАҒАН ОРТАНЫҢ ЛАСТАНУЫ ТУРАЛЫ КӨЗҚАРАСТАРЫ

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Аңдатпа

Бұл зерттеудің мақсаты түрік бастауыш сынып оқушыларының мектептегі қоршаған ортаның ластануы туралы көзқарастарын зерттеу болды. Бұл зерттеу сапалы зерттеу әдістеріне негізделген феноменологиялық зерттеу дизайнын қолданды. Зерттеу тобына Түркияның Балыкесир қаласындағы мемлекеттік бастауыш мектептің 2-4 сыныптарында оқитын барлығы 60 оқушы кірді. Деректерді жинау кезінде "ластану" формасы қолданылды. Деректерді талдау кезінде мазмұнды талдау әдісі қолданылды. Әр сұраққа оқушылардың жауаптары код пен санат бойынша талданды. Зерттеу нәтижелері бойынша оқушылар Қоршаған орта тұжырымдамасын табиғат, орман, таулар, теңіз, топырақ сияқты табиғи сұлулықтармен түсіндірді және олар қоршаған орта тірі және жансыз тіршілік

иелерінен тұрады деп мәлімдеді. Олар қоршаған ортаның ластануы топырақтың, ауаның және судың ластануын қамтитынын атап өтті және олар қоршаған ортаның ластануын қоқыстармен, химиялық заттармен, буланумен және жағымсыз иістермен байланыстырды. Олар мұның себебін адамдардан көрді. Оқушылардың көпшілігі өз мектебіндегі қоршаған ортаны лас деп сипаттады. Оқушылар ережелерді сақтамады, оқушылардың экологиялық санасы жеткіліксіз дамыды, қоқыстар жерге тасталды, мектеп қызметшілері мектепте жақсы тазаланбады және т. б. мұның себептерінің бірін атауға болады. Оқушылар өз мектептерінде ластанудың алдын алу үшін қоқыс жәшіктерін пайдаланғаны және қоршаған ортаға қоқыс тастайтын адамдарға ескерту жасағаны байқалды. Олар мектеп әкімшілігі мен мұғалімдер де осыған байланысты қажетті сақтық шараларын қабылдағанын, бірақ оқушылар бұл мәселеге мұқият қарауы керек екенін және мектеп қызметкерлері айналасын көбірек тазалауы керек екенін атап өтті. Олар қайта өңдеуге арналған қоқыс жәшіктерінің санын көбейтуді және қажет болған жағдайда қоқыс тастайтындарға қылмыстық санкциялар енгізуді ұсынды. Оқушылар ресурстарды аз пайдалану керек, өйткені олар шектеулі, бұл қоршаған ортаның ластануын болдырмауға көмектеседі.

Түйін сөздер: қоршаған ортаның ластануы, экологиялық білім, мектеп, түрік бастауыш сынып оқушылары, бастауыш білім

ВЗГЛЯДЫ ТУРЕЦКИХ УЧАЩИХСЯ НАЧАЛЬНОЙ ШКОЛЫ НА ЗАГРЯЗНЕНИЕ ОКРУЖАЮЩЕЙ СРЕДЫ В ШКОЛЕ

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Аннотация

Целью данного исследования было изучение взглядов турецких учащихся начальной школы на загрязнение окружающей среды в школе. В этом исследовании был использован феноменологический дизайн исследования, основанный на качественных методах исследования. Исследовательская группа включала в себя в общей сложности 60 учащихся, обучающихся во 2-4 классах государственной начальной школы в Балыкесире, Турция. При сборе данных использовалась форма "Загрязнение окружающей среды". При анализе данных был использован метод контент-анализа. Ответы учащихся на каждый вопрос были проанализированы по коду и категории. Согласно результатам исследования, ученики объясняют концепцию окружающей среды такими природными красотоми, как природа, лес, горы, море, почва, и понимают, что окружающая среда состоит из живых и неживых существ. Они отмечают, что загрязнение окружающей среды включает загрязнение почвы, воздуха и воды, и в основном загрязнение окружающей среды они связывают с мусором, химикатами, испарениями и неприятными запахами. Причину этого они видят в деятельности человека. Большинство учеников описали окружающую среду в своей школе как грязную. Среди причин этого можно назвать то, что учащиеся не соблюдают правила, экологическое сознание у школьников недостаточно развито, мусор выбрасывается на землю, школьные служащие недостаточно хорошо убирают в школе и т.д. Наблюдение показало, что учащиеся используют мусорные баки для предотвращения загрязнения окружающей среды в своих школах и предупреждают людей, выбрасывающих мусор в окружающую среду. Они отметили, что администрация школы и учителя также принимают необходимые меры предосторожности в этом отношении, но учащиеся должны более внимательно относиться к этому вопросу, а школьным служащим следует больше убирать территорию школы. Они предложили увеличить количество мусорных баков для вторичной переработки и ввести санкции в отношении тех, кто мусорит, когда это необходимо. Школьники заявили, что ресурсы следует использовать экономно, поскольку они ограничены, что также может помочь предотвратить загрязнение окружающей среды.

Ключевые слова: загрязнение окружающей среды, экологическое образование, школа, турецкие учащиеся начальной школы, начальное образование

INTRODUCTION

We have been facing the fact that our world, in which people also live, is becoming increasingly polluted due to several environmental problems for a very long time. The factor most responsible for pollution is again human and the most important way to prevent this is through awareness (Uyanik, 2017). In the future we will no longer have a place to go and no more space to pollute even if we still go to places a little more and consume them very quickly.

Environmental pollution can be divided as soil pollution, air pollution, water pollution, noise pollution, population increase, cutting down trees, and forest fires in general (Kivrak & Uyanik, 2020).

For instance, one of the world's most significant threat to children's health and future is fossil-fuel combustion by-products (Perera, 2018). In another study of Zhao, Zhang, Wang, Ferm, Liang, & Norback (2008), the indoor average concentrations of sulfur dioxide, nitrogen dioxide, ozone, and formaldehyde by class were found as 264.8, 39.4, 10.1, and 2.3 $\mu\text{g}/\text{m}^3$, while outdoor average concentrations of them were two to three times higher. The study results showed that 1.8% had cumulative asthma, 8.4% wheezing, 29.8% had daytime attacks of breathlessness from total of 1,993 pupils in the study. The study of Marzuki, Samsuri and Fong (2015) examined noise pollution levels at three schools and it was found that highest noise level was observed at school located within the industrial area, followed by commercial and residential area, respectively. They reported that motorcycles, passenger cars and small lorries were significantly contributed to high noise level for the schools.

Along with pollution at the global level, pollution at the country, region and local levels can also be mentioned. Factors such as population growth, scientific and technological developments, the desire to have more things, and consumption frenzy in the world can also increase the damage to the environment and the destruction of the environment. Therefore, more importance should be given to what environmental protection measures and environmental sanctions can be with both intra-state and supra-state cooperation studies to overcome these problems (Aydogdu, 2014).

There are many studies in the literature on the environment and environmental pollution. For example, As Arik and Yilmaz (2017) reported that although prospective science teachers were familiar with environmental problems, their environmental attitude scores were intermediate level. Also, in the study 103 metaphors were produced related to the concept of environmental pollution. Gungor, Ogelman and Alkis (2023) conducted a study on determining the views of preschool children about the environment. In this study, it was determined that young children associated the environment with the protection of nature the most and wanted to live where there were natural beauties. The children stated that human-induced problems were among the causes of environmental problems and that the environment should not be polluted to prevent this. In her study, Uyanik (2017) examined the opinions of students studying in the third grade of two public primary schools, one in the village and one in the city center, about environmental pollution. The students in the village school defined the environment as a place consisting of living beings, while the students in the other school defined the environment as a place consisting of both living and non-living beings. The students wrote the word waste garbage related to environmental pollution. In addition, the students emphasized that air pollution was caused by car exhausts and fumes from chimneys. All students agreed that the most important reason for the pollution of the environment was human. They stated that the most important thing to prevent this was to raise people's awareness.

Since we are the ones who cause the most damage to the environment, if we do not contribute to the environment being more livable, more effective measures need to be taken

before the time is completely over to be more aware that we are in fact rapidly disappearing with the environment in the chaos.

So, what are the solutions to environmental problems? Various steps for this have been taken over the years. On the one hand, environmental pollution is caused, and on the other hand, solutions and projects are carried out to prevent or eliminate environmental pollution. While these projects are being carried out, sustainable environmental projects can be signed by carrying out projects in which governorships, municipalities, national education, schools, administrators, teachers, students, and families are in cooperation. In this process, it is imperative that especially students are included in various environmental projects and that we contribute to the development of environmental awareness at an early age and to the education of individuals who are sensitive to the environment and protect it.

To prevent environmental pollution, we first need to ask ourselves whether people do not care about the environment they are in or whether they contribute to the pollution of the environment by ignoring it because it does not work for them. Finding answers to such questions needs to be done on larger scale studies. However, in this study, we aimed to determine Turkish primary school students' (2-4 grades) opinions about environmental pollution at school.

METHOD

This study was conducted according to the phenomenology study design, which was one of the qualitative research methods (Buyukozturk et al., 2013).

Study group

The study group was carried out with a total of 60 students studying in grades 2-4 at one primary school in Balıkesir in Turkey. Participants were determined according to the convenient sampling method from the purposeful sampling methods (Buyukozturk et al., 2013).

Data collection tools

In this study, Environmental Pollution Form was used as a data collection tool. The form was developed using the form previously developed by Sayan and Cetin (2018). After a draft form was prepared, it was sent to a biology educator for expert opinion. Then, the necessary corrections were made to the form in line with the expert opinion. Thus, the form consisted of a total of 6 questions, consisting of 1 multiple choice and 5 open-ended questions.

Data analysis

Content analysis technique was used while analyzing the data. In content analysis students' answers to each question were classified under code and category headings. Frequency tables containing the categories and codes for the latest questions were created (Yildirim & Simsek, 2006). In addition, in the findings section, the interesting answers obtained from the students were quoted verbatim and "... " in the form of student number (for example, student 5 i.e., S5).

The reliability of the research was ensured by the authors of the article. Miles and Huberman (1994) formula was used to calculate the reliability coefficient. According to this formula, the reliability coefficient was found to be 0.95 in the study.

RESULTS

Table 1. Views on the Concept of Environment

Category	Code	f
Natural areas	Nature, tree, forest, green areas, natural life, natural beauties, mountain, sand, soil, water	60
Artificial areas	Cities, houses, buildings, schools, streets, parks, roads	23
Habitat	Earth, human, living beings, inanimate beings	21

Positive thinking	Clean space, clean air, cleanliness	12
Negative thinking	Pollution	1

When Table 1 is examined, natural environments were the most important thing for students when it came to the environment. Some of the students, who associated artificial environments with the concept of environment along with natural environments, explained the environment by saying cities, houses, and roads. The students, who related the concept of living space and environment, defined the environment as the home of living beings as environments where people, animals and plants were located, and at the same time stated that inanimate beings were also included in the environment.

S6: "When I talk about the environment, I understand natural beauties, clean nature, trees, birds and flowers. The environment is where we live."

S14: "When I say environment, I understand where we live."

S23: "The environment is the habitat of living things. When I think of the environment, I think of natural beauties, fresh air, flowers, insects, forests, sea, soil, school, streets."

Table 2. Views on Environmental Pollution

Category	Code	f
Pollution	Nature, our world, garbage, factory fumes, polluted environment, bad smell, water pollution, air pollution, light pollution, chemical wastes	68
Causes	People, factories, throwing garbage on the ground, polluting, disrespecting the environment	18
Results	Unhappiness, extinction, negative impact on living things, negative impact on nature, global warming	14

According to Table 2, when environmental pollution was mentioned, all negative factors that polluted the environment, especially garbage and chemical gases, came to mind. Stating that these factors affected the future of the world, the students warned that we might face negative consequences. At the same time, the students divided environmental pollution into its types and cited the irresponsible and selfish behavior of people as the cause of environmental pollution. They mentioned that the living things in the world were adversely affected by this. They also emphasized the psychological dimension of environmental pollution by stating that it made people unhappy.

S5: "When I talk about environmental pollution, I understand people's disrespectful behavior towards the environment. It is people's fault that our world is polluted."

S11: "The life of living things is affected by environmental pollution. For example, baby turtles cannot reach the sea because of the light."

S25: "Nature becomes very dirty, the air we breathe becomes dirty, which often causes us to get sick."

Table 3. School Pollution Level

Level	f
Very dirty	21
Dirty	18
Middle	10
Clean	7
Very clean	4

As can be seen in Table 3, it was seen that 49 of the students participating in the study expressed a negative opinion about the pollution level of their schools. Of these students, 21 students stated that their school was very dirty, 18 students said that it was moderately dirty, and 10 students said that it was dirty. As the Table 3 shows, only 11 students found their school clean or very clean. This showed that the school environment where the students were located was not clean.

Table 4. Causes of Pollution at School

Category	Code	f
Environment	School, classrooms, filthy toilets, garden, throwing garbage on the floor, non-compliance with the rules, misuse of toilets	55
Negative behaviors	Irresponsible behavior of students, poor cleaning by administrators, ignorance of students and deacons about environmental pollution, disregard for the environment	52

When we looked at Table 4, they indicated that the polluted environments in the students' schools and attributed the cause of the pollution of their schools to the negative behaviors of the students and their disregard for the environment. At the same time, some of the students stated that the fact that the deacon staffs did not perform their duties caused this pollution.

S7: "The reason why our school is dirty since some children do not care about school."

S16: "It is not the fact that children and servants do not acquire information about environmental pollution."

S33: "Throwing garbage on the floor, not caring about nature, misusing toilets are the reason why our school is dirty."

Table 5. Things done to prevent environmental pollution at school

Category	Code	f
Trash, Cleaning	Using a trash can, warning garbage throwers, picking up garbage, cleaning	126
Information	Preparing and hanging banners, giving information	34

When we examined Table 5, the students thought that they were doing their part in preventing environmental pollution at school and that they were fulfilling their duties and responsibilities to keep the school clean by not throwing garbage on the floor and by warning those who threw it. They stated that the deacon staff working at the school were doing their duty and working to keep the school clean. According to the students, the school administration and teachers also tried to prevent environmental pollution by informing students about environmental pollution.

S17: "I take the garbage on the floor wearing gloves. Some children pollute the environment a lot. They throw the boxes of food they bought from the canteen on the floor. I am very angry with them."

S9: "I do not pollute the toilets and I do not throw garbage on the floor. Our principals and teachers warn the children who throw garbage on the floor, but the children do not obey."

S45: "I throw my garbage in the trash. I make posters and hang them in the appropriate places in the school. The school administration warns those who pollute the school. They are doing everything in their power to keep the school clean, but the kids are very irresponsible."

Table 6. Things to Do to Prevent Environmental Pollution at School

Category	Code	f
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Positive behaviors	Keeping clean, cleaning the environment	52
Activities	Competitions, prize giving, environmental events, campaigns	15
Information	Lecture, posters, warning papers	10
Recycling	Recycle bin	6
Administrative practices	School administration, principal, camera, security, penalties	5
Tasks	Repair and maintenance of toilets, servants	3

As shown in Table 6, the students stated that they have responsibilities such as not polluting the environment, taking garbage when they saw it and throwing it in the trash can, and that they could contribute to the cleanliness of their schools by fulfilling them. The students presented suggestions such as organizing competitions, giving awards, and conducting different environmental activities in various fields within the scope of environmental cleaning. They also said that the school administration should have the toilets repaired and maintained and that the servants should work in a better way.

S56: “Environmental cleaning lessons can be held every month. There may be an environmental cleaning competition and prizes are awarded. Thus, the students are more careful and do not throw garbage on the floor. The school administration can organize campaigns within the school.

S8: “Recycling bins should be placed everywhere in the school. We must warn those who throw garbage on the ground. The school administration can put up signs inside the school. Teachers can give more environmental information in lessons. Activities can be done in the lessons.”

S34: “Classrooms and toilets should be cleaned well, the garden should be constantly swept, napkins and soaps in toilets should be checked and a new one should be put when finished. The school administration should control the deacons and ensure that they perform their duties. “

S57: “There should be cameras everywhere and those who throw garbage on the floor should be punished.”

Table 7. Relationship Between Resource Saving and Environmental Pollution

Category	Code	f
Resources	Limited, important, exhaustible, effective use, savings	55
Recycling	Sorting, paper, glass, plastic, battery, books, notebooks, recyclable waste, recycling mark	52
Utility	economy, economic contribution, earnings, convert, reuse, health, cleanliness, clean world, clean future	51

When Table 7 is examined, it has seen that students knew that resources were limited and could be exhausted. They stated that effective use was important for the future of the world and resource savings could be achieved by recycling. Realizing that the separation of recycling materials would be beneficial both in terms of environmental cleanliness and economic contribution, they explained that saving resources would also prevent environmental pollution.

S42: “Our resources in nature are limited, so we must use our resources sparingly. If we use our resources sparingly, we will prevent environmental pollution. For example, if we use too much paper, forests will be damaged. Paper is thrown on the floor and there is environmental pollution.”

S48: “We should separate what we use for recycling. This is important for saving our resources. Because the resources used are recycled for reuse.”

S55: "Recycling is important for saving resources. Everything we recycle ensures that our world's resources are not depleted. In terms of our country, our economy develops. And our world is not polluted."

CONCLUSION AND DISCUSSION

In this study, the thoughts of Turkish primary school students about environmental pollution at school were determined. Based on the findings obtained in the study, the following conclusions were reached:

The concept of environment was explained with natural beauties such as nature, forest, mountain, sea, and soil, and at the same time, people, animals, and plants were a part of the environment by the students. According to the students, both living and inanimate beings made up the environment.

According to the students, the most important cause of environmental pollution was human and human behavior. Environmental pollution was associated with garbage, chemicals, bad odor, and smoke by the students, and it was explained that pollution occurred in various environments such as air, soil, and water and threatened the life of living things. Similarly, in their studies in Kivrak and Uyanik (2020), they reported that the students in the village mentioned about soil pollution, water pollution, air pollution, animal droppings, cut trees, and garbage in the streams in their explanations and drawings about environmental pollution, while the students in the district center mentioned about the fumes of factory chimneys, waste of factories, and non-recyclable materials related to environmental pollution.

Most of the students joined into survey thought their schools were dirty. For example, they thought that their school was dirty because of the misuse of toilets, the fact that students did not follow the rules, the environmental awareness of the students was not developed enough, garbage was thrown on the floors, and the servants did not clean the school well enough.

In the study, the students stated that they always threw their garbage in garbage cans to prevent environmental pollution at school and warned those who threw the garbage into the environment. At the same time, they believed that the school administration was doing the necessary work to prevent pollution of the environment. The students were aware of the importance of throwing garbage in the trash can to prevent environmental pollution for their schools. They knew the importance of throwing garbage in the trash can for their schools to prevent environmental pollution. Garbage was one of the most important causes of polluting the school. Activating recycling, providing enough recycling bins, and placing them in certain places in the school were offered by the students as suggestions. It was also emphasized by the students that the school administration should carry out the maintenance and repair of the toilets on a regular basis.

In this current study, the students supposed that various information could be effective in preventing environmental pollution in the school. The students stated that those who polluted the school environment should be punished by the school administration. According to the findings obtained in the research, the students supposed that it was necessary to use resources economically and that saving resources would prevent environmental pollution. They were aware that resources were limited and exhaustible, and that effective use was important. They reported that recycling was important for the future of the world. They stated that recycling should be given importance and people should be made aware of it both economically and for a more livable world.

Since we are the ones who cause the most damage to the environment we are in and if we do not contribute to making the environment more livable, it is imperative that we take fast and reliable steps to take more effective measures before the time is completely over to be more

aware that we are rapidly being dragged into extinction in the chaos. We all have our duties for this.

As Uyanik (2017) states in his study, the most important reason for the pollution of the environment is human, that is, us, and it is through human beings and raising human awareness that will take the most important steps in the prevention of environmental pollution. It is very important to create environmental awareness at the point of solving environmental problems. To create environmental awareness in the child, it should be started from the immediate environment. School is the most important environment in which the child spends the vast majority of his or her time. The work done for the cleanliness of the school environment becomes permanent behaviors in the students. At this point, the school should be used effectively as the most important learning environment for the child in terms of environmental education. For this, environmental education should be carried out first in the family and then in cooperation with the school, family, and society. Students should be encouraged to participate in various environmental projects. For this, first students should be taught what environmental problems are and their causes in lectures and extracurricular environments. Then, various activities can be done in lectures on how to create solutions to them.

Sukma, Ramadhan and Indriyani (2020) studied on the integration of environmental education into the classroom learning processes of primary school students. In their study most teachers considered it important to integrate environmental education into the learning process in classrooms for students, especially primary school students. To do this effectively, they recommended that environmental education issues be integrated with science lessons. In addition, seminars, workshops, videos, etc. in schools and on different platforms should be made continuous with the contributions of non-governmental organizations for awareness raising (Alim, 2006; Kahyaoglu, 2009). On the other hand, more studies are needed with larger samples on environmental issues and environmental pollution.

One of the most important tasks for the continuation of environmental awareness activities in schools falls on governorships, municipalities, national education directorates, non-governmental organizations, school administrators and teachers. We should discuss together and identify the environmental problems of a city and brainstorm and develop project ideas about how they can be solved and discuss together by all stakeholders what can be done to make existing projects more effective. In terms of disseminating environmental education, both civil society organizations and mass media should be used effectively. Students and families should also be included in this process. It should be kept in mind that the students, who will be the shapers of the future, are one of the most important stakeholders in this process to carry out projects by living by doing environmental problems and to take care of their own environment. With the environmental education and practices to be given in this way, it will be possible for us to protect our environment with the wide participation of the students (Atasoy & Erturk, 2008). For this purpose, activities and projects that develop environmental awareness are very important for children to develop the right behavior and awareness on this issue. In this respect, projects that will develop students should be implemented and students should be supported in this regard.

As in their study, Gungor et. al. (2023) put emphasized that about the recommendations of preschool children about the protection and cleaning of the environment for the beautification of the environment, more studies are needed on very current concepts such as global warming, and environmental problems. Moreover, air pollution level indoor and outdoor of schools (Zhao et al., 2008) and noise pollution at schools (Marzuki et al., 2015) should be studied in future studies.

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