

Art education for sustainability: Exploring creative practices in waste-to-art transformation

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Suggested Citation:

Budumlu Ildes, G. (2025). Art education for sustainability: Exploring creative practices in waste-to-art transformation.
Global Journal of Design Art and Education, 15(1), 1-19. <https://doi.org/10.18844/gjae.v15i2.9580>

Received from April 18, 2024; revised from December 11, 2024; accepted from February 12, 2025.

Selection and peer review under the responsibility of Prof. Dr. Ayse Cakir Ilhan, Ankara University, Turkey

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Abstract

The increasing consumption and waste generated since the Industrial Revolution have significantly disrupted the balance of natural ecosystems. Unlike nature, where waste is reintegrated into the cycle of life, human-generated waste often causes lasting environmental harm. As global sustainability challenges intensify, waste has begun to be re-evaluated not merely as refuse but as a potential resource. In contemporary art, the integration of waste materials into artistic production has emerged as a powerful response to ecological concerns. Despite this, there is a noticeable gap in the integration of waste-based creative practices within formal art education frameworks. This study investigates the role of art education in promoting sustainability through the creative reuse of waste materials. An educational exhibition titled "Transformation from Waste to Art" was developed with first-year art students enrolled in a Basic Art Education course. Over three months, students engaged in ecological research, concept development, material experimentation, and artistic production. Document analysis of the resulting artworks demonstrates how artistic practices can convey environmental messages and foster sustainable thinking. The findings highlight the transformative potential of art education in raising ecological awareness and cultivating creative responsibility among future generations.

Keywords: Art education; ecosystem; sustainability; waste.

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1. INTRODUCTION

Human beings, who have lived in harmony with nature since ancient times, have both existed in and dominated nature. With the Industrial Revolution, industrial establishments emerged and became widespread, and waste that harmed humans and nature was generated. Industrialization, which was optimistically evaluated as a technological development in the early periods of the Industrial Revolution, has turned into waste that can cause permanent damage to human life and nature, and has begun to pose a major problem for the future of nature and humanity (Li et al., 2023).

Waste is any kind of substance that is used, is no longer wanted, and harms the environment. Heavy materials create pollution in air, soil, and water resources and negatively affect the physiology of all living things (Khan et al., 2022). There is no waste in nature's cycle. In nature, the waste of each living creature and ecosystem is considered the food of another living creature or ecosystem. Today, waste is a problem for people all over the world. Wastes defined as "garbage" have begun to be seen as resources that can be utilized with the development of sustainability activities (Awasthi et al., 2021).

Heavy materials cause pollution in air, soil, and water resources and have negative effects on the physiology of plants. For example, heavy materials negatively affect the biological activity of the soil and reduce productivity (Nassiri Koopaei et al., 2020). Harmful waste creates irreversible effects on the ecosystem in which all living things exist. Leaks of waste accumulated in storage areas with the wrong methods mix with groundwater, and then with drinking water (Zhou et al., 2023).

Used frying vegetable waste oils constitute 25% of water pollution, and pouring one liter of waste oil into the sink makes approximately one million liters of drinking water unusable. Waste oils show ecotoxic properties, and when poured into seas, lakes, and streams, they cover the water surface and prevent oxygen transfer from air to water. Therefore, it causes the death of fish and other creatures. Under the Regulation on the Control of Waste Oils, it is prohibited to discharge vegetable waste oils directly to the receiving environment. Waste oils can be recycled by collecting them and using them in biodiesel production.

There are many types of waste, such as plastic waste, paper waste, wooden waste, glass waste, composite waste, metal waste, chemical waste, vegetable waste oils, organic waste, electronic waste, and waste batteries. Among these, wastes such as plastic, paper, wood, and glass are recyclable wastes. A plastic bag can completely decompose in at least 1000 years after being released into nature. Over 1000 years, plastic bags, whose raw material is petroleum, release toxic substances into the soil and destroy living creatures in the soil. It takes very long processes, such as 500 years for plastic plates to decompose in nature, and 400 years for plastic bottles. When the damage caused by the said processes and wastes to the environment is evaluated, it is an undeniable fact that the lives of people and other living creatures are in danger.

In contemporary art, artistic expressions can also be created by using waste materials among alternative materials. The waste problem, which has become a universal problem, attracts the attention of artists as well as conscious young people and art students who are well educated at school and in their families. Waste, which was defined as "garbage" for a long time, began to be seen as valuable resources that can be utilized with the development of sustainability activities. Designs and artworks of art are created from many types of waste around the world, such as plastic waste, paper waste, wooden waste, glass waste, composite waste, metal waste, chemical waste (paints), vegetable waste oils, organic waste, electronic waste, and ocean waste. Artistic productions aim to give a social message with a universal understanding in their forms of expression. The purpose of using waste materials in the construction of artworks is to point out that waste is a universal problem and to contribute to increasing individual and social awareness. At the center of the artworks is the issue of giving a message. Whether three-dimensional or two-dimensional, artistic projects enable artists to create ecological environmental awareness and create new forms of expression in art.

This study aims to analyze the creative use of waste materials within art education and its role in fostering sustainability. A literature review was conducted focusing on key concepts such as sustainability, ecosystem dynamics, and the integration of ecological awareness into art education. As part of the study, an exhibition titled Transformation from Waste to Art was organized to promote critical reflection and raise awareness

regarding the global waste crisis and its environmental implications. Over approximately three months, first-year students enrolled in a Basic Art Education course engaged in a process of research, conceptual development, and artistic production using discarded materials. Through a questioning and reflective artistic approach, students explored the environmental degradation caused by excessive waste, drawing particular attention to the vulnerability of wildlife affected by ecological imbalance. The exhibition, comprising 21 artworks, was displayed in a central university library to maximize visibility and engage a broader student audience. The selection of this venue was intentional, aiming to raise awareness among young people as future decision-makers and cultural contributors. All photographs of the artworks presented in this article were taken and prepared by the author.

1.1. Literature review

1.1.1. Sustainability

In our world, where environmental degradation is increasing, sustainability and sustainable development plans have been among the most discussed topics in recent years. Sustainability, which is at the center of the triangle of economy, energy, and environment, is discussed in a wide range of areas. They include governments and intergovernmental organizations, social scientists, natural scientists, politicians, and local and international environmental organizations. The concept of sustainability spans different branches of science due to its multidimensional structure. They have put forward different approaches and different definitions. Due to this multidimensionality, a controversial ground arises. Each unit puts forward approaches to measuring sustainability through the framework they define, sets targets, and proposes policies to be followed to achieve these targets (Yeni, 2014: 182).

Although concerns about sustainability date back to 18th and 19th century economists such as Malthus and Jevons, it emerged as "sustainable development" in the 20th century along with concerns about the environment. According to Beder (1994), the first wave of contemporary environmentalism movements that emerged in the 1960s and 1970s transformed the traditional concern for the protection of nature into awareness of a possible global environmental crisis. Ecologists affected by this first wave saw economic growth, industrialization, western culture, and technology as responsible for environmental problems." Environmentalists affected by this first wave saw economic growth, industrialization, western culture, and technology as responsible for environmental problems" (Yeni, 2014: 182). Rapid population growth and industrial activities, industrial wastes are seriously depleting the world's resources, and the waste materials and pollution produced by humans are increasing incredibly. To achieve sustainability, the seriousness of the situation must be understood and precautions must be taken, and awareness and solutions must be produced by societies and governments. Governments and ecologists have ostensibly announced that measures will be taken to address local environmental problems due to public pressure, but they have not been sensitive to global environmental problems. In the following years, the environmental movement was interrupted, and it was even argued that developing technology and innovations would be the solution to environmental problems. Governments, on the other hand, have been lax in implementing the environmental measures they have adopted (Yeni, 2014: 184).

Sustainability, which can be called "the ability to be permanent," is generally used in the 21st century to refer to the ability of the biosphere and civilization. At the same time, it can be defined as ensuring change in a balanced environment where the exploitation of resources, the direction of investments, the direction of technological development, and institutional change are in harmony and the potential to meet human needs and desires is preserved both today and for the future.

Development that is also capable of serving the purposes of the future generation and meeting today's needs without harming nature is defined as sustainable development. The term Sustainable Development was introduced by the Brundtland Report for the World Commission on Environment and Development (Yeni, 2014: 184).

Although its origins date back to ancient times, Sustainable Development is a guiding principle-umbrella concept that has been frequently used since the last quarter of the twentieth century (Bozlogun, 2010: 1012).

Sürdürülebilir gelişme is the Turkish translation of the concept of "sustainable development". It is defined in the dictionary of Urban Science Terms as "an environmentalist worldview that aims to ensure economic development without sacrificing the principle of using environmental values and natural resources in a rational way that does not lead to wastefulness, taking into account the rights and benefits of present and future generations" (Bozlogan, 2010: 1013).

Although it is not known exactly where and how sustainable development was used for the first time, the appearance and development of the idea of sustainability dates back to the Middle Ages and even ancient Greek mythology. It is stated that sustainability as an idea appeared perhaps for the first time in Gaia, the Earth goddess in ancient Greek mythology. According to Gaia, a goddess who nurtures all beings as if they were her children, everything is derived from her and will return to her when she dies. Ancient Greeks believed that the rulers of the country were punished or rewarded by Gaia. For this reason, the country's rulers had to work devotedly to please Gaia, and they acted with the idea that the work they did would please Gaia and ensure the peace and prosperity of the country (Bozlogan, 2010: 1012).

1.1.2. Ecosystem

Ecology (Greek: home, science) or natural science is a branch of science that studies the relationships of living things among themselves and with their physical environment. Ecology studies living things at the individual, population, community, ecosystem, and biosphere levels. Ecology is a branch of biological science.

Sustainability is a process. However, it is a socio-ecological process characterized by the search for a common ideal. An ideal is not attainable for a particular place and time. When approached persistently and dynamically, the process can lead to a sustainable system. The science of ecology believes that sustainability can be achieved if the balance of species and resources in the environment is maintained. What is required for this is that resources are not consumed faster than natural production (Yeni, 2014: 184).

The ecosystem is a large system and refers to the interactions and relationships between all living organisms in a certain geographical area or environment and the physical environment. Ecosystems represent natural habitats where various components such as plants, animals, microorganisms, soil, water, and air come together in a complex way. The interactions of all these, energy and matter cycles, food chains, and ecological balance, are the basic features of ecosystems.

The natural environment and healthy ecosystems are essential for the survival of other organisms. Eco-friendly environmental engineering, chemical engineering, environmental resources management, and environmental protection can act together to reduce human negative impact. Data is obtained in units such as green chemistry, earth science, green computing, environmental science, and conservation biology. Ecological economics examines areas of academic research that target human economies and natural ecosystems. Moving towards sustainability is a social challenge that also concerns international and national law, urban and transport supply chain management, local and individual lifestyle, and ethical consumption (Yeni, 2014: 184). For sustainable living, it is necessary to rearrange living conditions. Sustainability can be ensured when human-ecosystem balance is achieved.

The United Nations Framework Convention on Climate Change (UNFCCC), which aims to "succeed in stopping the accumulation of greenhouse gases in the atmosphere at a level that will prevent the dangerous human-induced impact on the climate system", was negotiated for a long time at Intergovernmental Conferences in the late 80s, and it was opened for signature at. It was opened for signature at the Earth Summit held in Rio in 1992. The basis of the agreement is based on the commitments of the party countries" (T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, n.d.).

Turkey joined the UNFCCC as the 189th Party on 24 May 2004, by approving it with the law numbered 4990 dated 16.10.2003, published in the Official Gazette numbered 25266 dated 21.10.2003 (T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı, n.d.). The Paris Agreement was adopted in 2015 under the United Nations Framework Convention on Climate Change (UNFCCC) to address climate change mitigation, adaptation, and finance. It entered into force on November 4, 2016, after meeting the required threshold for ratification (UNFCCC, n.d.-a). As of February 2023, 195 UNFCCC members have ratified the agreement (Wikipedia

contributors, n.d.). The agreement's long-term goal is to limit the global average temperature increase to well below 2°C above pre-industrial levels, with efforts to limit it to 1.5°C. Achieving this target is crucial to significantly reduce the risks and impacts of climate change (United Nations, n.d.). To meet these goals, countries aim to peak greenhouse gas emissions as soon as possible and achieve a balance between emissions and removals in the second half of the 21st century (McMahon, 2015).

Under the Paris Agreement, each country must determine, plan, and regularly report its contributions to mitigating global warming, known as Nationally Determined Contributions or NDCs (UNFCCC, n.d.-b). Despite these efforts, natural habitats comprising ecosystems, flora, fauna, microorganisms, soil, water, and air remain under threat due to inadequate preventive measures by governments and individuals. This situation poses a serious risk to future generations. For sustainability and ecosystem protection, collective awareness and action from governments, societies, individuals, and artists are imperative.

Artists, as sensitive members of society, have contributed to the discourse on human–nature relationships, ecology, and environmental pollution through their artworks, aiming to raise awareness. Since the late 1960s, ecological art has adopted an activist stance, offering new perspectives on the human–nature relationship (The Art Story Foundation, n.d.). These projects seek to enhance environmental consciousness and protect the natural environment. The transformation of nature by human activities has accelerated over the past 250 years, especially with industrialization, leading to significant environmental challenges. “The problematizing of ecology and its intense entry into the agenda of art coincides with the second half of the 1960s. Depending on the changing political and social climate from the 1960s to the present day, dozens of exhibitions and projects centered on ecology have been realized in the world and continue to be realized” (Sezgin, 2022: 10).

1.2. Purpose of study

This study aimed to encourage critical thinking and raise awareness about the creative reuse of waste materials in art education, emphasizing the interconnected issues of sustainability, ecology, and waste management. It sought to engage students in reflective artistic practices that address the environmental challenges threatening the future of the planet.

2. METHOD AND MATERIALS

2.1. Participants

The participants of the study were first-year students enrolled in the Basic Art Education course within the Faculty of Art, Design and Architecture. Over three months, students engaged in the development of original artworks for an exhibition titled Transformation from Waste to Art, 2024. The process included conceptual research, creative thinking, collection of waste materials, and the artistic production of works aimed at exploring environmental issues through visual expression.

2.2. Data collection method

Data were collected through two primary sources. First, a literature review was conducted focusing on key concepts such as sustainability, ecosystem, ecology, and waste within the context of art education. Second, the artworks produced for the exhibition served as primary data. Each student’s work represented a visual response to ecological themes, and the exhibition itself functioned as a pedagogical tool aimed at public engagement and environmental awareness.

2.3. Data analysis method

Document analysis was employed to examine both the conceptual literature and the student artworks. The analysis focused on identifying recurring themes and messages related to environmental degradation, the impact of technological development on ecosystems, and the role of human activity in the destruction of natural habitats. Particular attention was given to how students used artistic language to represent the plight of non-human life affected by ecological crises. The exhibition, held in a central university library to maximize student engagement, was designed to foster environmental consciousness among young individuals positioned to shape future societal values.

3. RESULTS

Wastes that harm the ecosystem cause negative changes in nature. Governments and societies have begun to realize the damage caused to nature by waste, and solutions have begun to be sought for the waste problem. However, taking the problem seriously is different for each government. As stated in the Paris Agreement and the United Nations Environmental Agreement on Climate Change, the danger to the ecosystem has reached a serious level and has begun to negatively affect the world's living beings. The precautions that must be taken to ensure that people and all living species can survive without any problems have been determined. Governments have to act together on this issue, but there are still ongoing wrong practices. Again, from time to time, some people feel entitled to dominate the nature they live in, and some disregard the damage to the ecosystem and continue to cause damage.

In contemporary society, there is a growing awareness among individuals who are sensitive to issues concerning the ecosystem and sustainable living. However, ensuring the continuation of a sustainable world requires systemic efforts, particularly through the education of younger generations. Governments have a critical responsibility to integrate sustainability and ecological awareness into all levels of education. Addressing waste and its environmental impact, one of the most pressing global issues, must become a central theme in educational curricula, from early childhood through to higher education.

With this perspective, the exhibition Transformation from Waste to Art was conceptualized and implemented with university students to encourage critical reflection on ecological issues such as the ecosystem, environmental degradation, and the harmful effects of waste. The aim was to engage students in research-based creative thinking and to facilitate the development of original artworks over three months. Students in the Basic Art Education course explored these themes using diverse artistic approaches and expressive forms. A manifesto outlining the exhibition's conceptual framework was presented at the opening and displayed alongside the artworks. The deliberate use of waste materials in each piece emphasized the universality of the waste problem and sought to enhance both individual and collective ecological consciousness. Through both two-dimensional and three-dimensional works, students exercised their creative freedom to convey messages on sustainability, reinforcing the potential of art as a tool for environmental education. Figure 1 illustrates the transformation from waste to an art exhibition poster.

Figure 1

Transformation from waste to an art exhibition poster



Figure 2

Goddess of waste by Medine Asel Tokacı



The artwork titled Goddess of Waste (Figure 2) presents a three-dimensional representation of a goddess constructed entirely from discarded materials, symbolizing humanity's role in the creation and perpetuation of environmental degradation. A crown made of waste plastics and papers adorns the figure, highlighting the dominance of consumer waste in contemporary life. On the figure's right shoulder, red candles represent the animals that have died as a result of pollution and human negligence, with red waste paint flowing from them to evoke imagery of spilled blood. In contrast, the white candles on the left shoulder signify the pollution of the air, alluding to the slow, invisible impact of breathing contaminated air on human health. The pearls placed on the chest of the goddess symbolize suffocated breaths, referencing the destruction of oxygen-producing trees to make way for urban development. The black fabrics enveloping the figure serve as a visual metaphor for the internal chaos and moral unrest within human beings in the face of ecological collapse. Through its symbolic elements, the artwork invites viewers to reflect on the interconnectedness of human actions, environmental destruction, and the spiritual cost of unsustainable living.

Figure 3

Waste sphere by Esra Akbal



Waste materials used: Sea sand, soil, seashell, mussel, clay, Styrofoam sphere, leaf, flower, plastic, glass bottle, paper, surgical glove, metal box, plastic lid, plastic fork, straw, rope.

In the study titled Waste Sphere (Figure 3), it is pointed out how the negative effects of waste on land and sea and how living things are slowly disappearing. In the study, elements such as sea sand, seashells, and mussels, which are parts of nature, were used together with wastes that people use and throw away, polluting

the environment and nature. Humans are also a part of nature. In the study, it was aimed to emphasize that beings living in the same ecosystem and the same nature, just like seashells belonging to the sea, should not be allowed to take away the right to life of another, except for eating to live.

Figure 4

Enjoy your meal by İrem Aydın



Waste materials used: wire, tulle, rope, pet bottle, bag, waste paper, plastic fork, plastic knife

In the work titled “Enjoy your meal” (Figure 4), it was aimed to draw attention to the importance of water in life, and it was emphasized that oceans, seas, lakes, and even rivers are ruthlessly polluted. The study aims to make an irony about how sea creatures living in polluted seas are poisoned and how the toxic bodies of poisonous sea creatures are eaten with pleasure at people's tables.

Figure 5

Monsters by Ayşegül Dag



Waste materials used: Canvas, bag, mesh, pet bottle, tulle, cardboard, silicone

“The study titled “Monsters” (Figure 5) aimed to explain the damage that waste thrown into the seas causes to marine life. Wastes, whether liquid or solid, harm the ecosystems of marine life. Approximately 70 percent of the waste thrown into the sea, such as glass, metals, and marine materials, sinks to the bottom of the sea or ocean. Among the marine litter, it is seen that most plastic material wastes, such as plastic bottles, bags, and nets, which do not sink but hang on the surface of the water and are visible from the outside, can cause

ocean living creatures to suffocate by getting tangled in their bodies. When some marine animals think that this garbage is food and want to eat it, it can get stuck in their mouths, and they can die of starvation.

In the upper section of the artwork, a fish is depicted as poisoned by plastic waste, and a sea turtle entangled in discarded fishing nets highlights the severe impact of marine pollution. A blue plastic bag was utilized to symbolize the sea, reinforcing the artificial and contaminated nature of what should be a natural environment. The purpose of this visual representation is to underscore the ongoing and largely unregulated accumulation of waste in marine ecosystems, a crisis that remains insufficiently addressed and inadequately sanctioned. Through these symbolic elements, the artwork seeks to raise awareness about the devastating consequences of human negligence on aquatic life and the urgent need for more responsible waste management practices.

Figure 6

Perception of beauty by Zülfiye Eylül Ceylan



Waste materials used: Yogurt containers, finished make-up materials, make-up cotton, chip bags, waste syringes, newspaper, draft papers, waste dolls, fake nails, rope, plastic bags, broken jewelry, pieces of cardboard, shopping bags, old canvases, old waste paints, glue, brush, lighter

In the study titled “Perception of Beauty” (Figure 6), it was aimed to emphasize the shopping frenzy, which is a major problem of the age, and the habitual perception of beauty that affects psychology. The baby sitting on the armchair symbolizes women, and the red string passing over it represents the tight attachment to the capitalist system. The star on the armchair describes the effort to be perfect. The syringes and melted plastics refer to the aesthetics that are done. In the study, it was aimed to draw attention to how the perception of beauty is directed today and how women are consumed for the sake of beauty.

Figure 7

Freedom of movement by Yigit Can Eren



Waste materials used: Plastic bottle caps, waste cardboard, silicone, 5-liter pet bottle, clothes hanger

In the study titled “Freedom of Movement” (Figure 7), it was to emphasize the transformation of plastic water caps into wheelchairs. It was aimed to prevent waste plastic bottle caps from causing damage and pollution to the environment, and to focus on the sustainable acquisition of a wheelchair that can be a light for a disabled person. These chairs are usually made of recycled materials, which reduces the amount of waste and contributes to the protection of natural resources. In addition, recycled wheelchairs provide freedom of movement for disabled individuals, making their lives easier, while offering an environmentally friendly option. In this study, it was aimed to give a message to society to contribute to the elimination of disabilities.

Figure 8

Inner world by Mustafa Samet Çubuk



Waste materials used: Bag, peg, bottle and cap, wire, fabric, clay, paper, foam, and pencil

In the study titled “Inner World” (Figure 8), it was intended to explain that the world is damaged by waste and that people cannot get out of the waste impasse even if they want to, despite realizing that the potential of waste is high. It was stated that people created from waste clay see that their lives are becoming increasingly difficult in a world full of waste and that they are trapped in their inner worlds as a result of predicting that an even more difficult life awaits them in the future if the necessary precautions are not taken.

Figure 9

Fragile by Asya Küçükatçeken



Waste materials used: Old wooden frame, plastic leaves, waste wires

In the work titled “Fragile” (Figure 9), a new formation was attempted through the female body. The leaves on the female figure’s head and the wire surrounding her body bear the traces of the oppression and abuse imposed by society and to which women are subjected. While the wooden frame symbolizes the molds in which the figure is imprisoned, the fragile but resilient structure of the body emphasizes the struggle for

existence despite the deep scars created by the abuse. In addition, the work aimed to create awareness on gender and to convey the message of questioning the oppression of the female body.

Figure 10

Dirty Breath by İlke Sude Ergül



Waste materials used: Waste plastic water bottles, cigarette butts, tobacco, thin tree branches, waste clay, waste paint, waste duralite

In the study titled “Dirty Breath” (Figure 10), lung vessels were created with crumpled waste plastic water bottles and thin branches. In the study, which emphasized the negative effects of cigarette smoke on the lungs and the lethal effects of unhealthy breathing for humans, waste materials were used. Just as the lethal effects of cigarettes on human health over a certain period are mentioned, air pollution also has a lethal effect on humans over a certain period. It was aimed to create awareness by establishing a relationship between air pollution and cigarette smoke.

Figure 11

Bud by Rabia Çetin



Waste materials used: Canvas base, newspaper, glue, scissors, needle, easily bendable wire, paper tape, fishing line, artificial rose

“Newspaper is used in the work called “Bud” (Figure 11). Newspapers, which are thinly rolled and woven like a mat, cover the canvas chassis. The plastic red rose is the symbol of what the individual loves. The symbol, the rose, is very special to the person. It can be a piece of nature or it can represent an emotion, a person, or any object. He wants to protect it from the whole world, keep it, and have it belong only to him. Over time, he tries to control the rose. This situation can harm the rose. While the rose wants to bud and flourish, it may not be able to achieve what it wants. Loving it very much does not mean that it or they belong to the person. The text “Don't rule it, let it”, cut from old newspaper clippings and placed on the work surface, carries a message and gives meaning to the need for individuals to be free.

Figure 12

Rusty Nail by Adem Berat Acar



Waste materials used: Metal pipe, thick and thin wire, screw, aluminum foil, model cardboard, round metal

In the work titled “Rusty Nails” (Figure 12), waste nails and screws consist of metal parts left over from building construction or carpentry work. These materials play an important role in recycling processes. Recycling metal waste is an environmentally friendly practice that allows efficient use of resources and reduces their amount. Nails that are sometimes stepped on without realizing it, nails that are bent under the hammer, become metal waste. Sometimes, nails can get stuck in the tires of cars on the roads near construction sites. Waste nails can also cause tires to turn into waste. To create awareness about the possibility of a small nail having a big impact, large-sized nails were created.

Figure 13

Last Stage by Sümeyye Akça



Waste materials used: Waste tulle, oil cap, napkin, plastic bag, newspaper, sand, clay, wood

In the study titled “The Last Stage” (Figure 13), it was aimed to draw attention to the fact that it takes many years for waste to disappear in nature and the damage caused to the ecosystem by chemical wastes that harm nature, soil, and water when mixed in. The importance of strict industrial and chemical factory waste controls in protecting the natural resources of life was emphasized. Air pollution makes it difficult for plants to grow, depletes nature, and affects human health.

Figure 14

Green thorn by Melda Alemdar



Waste materials used: Waste paper, cardboard pieces, waste fabric pieces, paper tape, paint, waste pencils

The work called "Green Thorn" (Figure 14) increases environmental awareness and recycling awareness. This type of activity encourages the reuse of waste materials while emphasizing hedgehogs, which are a part of nature. It aims to raise awareness on sustainable living, nature, and environmental protection.

Figure 15

Love is worth transforming by Zeynep Şimal Erdoğan



Waste materials used: Waste gum fortune papers, waste ropes, waste plastic pieces, torn jewelry, waste paper and cardboard pieces, paper tape

The study titled "Love is Worth Transforming" (Figure 15) transforms waste into an artistic value, reveals the existence of alternative and creative solutions in waste management, thus strengthening the awareness of society about sustainability. In this study, which is based on the multifaceted nature of love and the fact that it has a different meaning for everyone, a different love story is represented on each of the 45 waste gum

paper. It is aimed to convey the excitement, sadness, enthusiasm, or grief of love to the viewer through waste gum papers, and to remind the viewer of thoughts and experiences related to love. Surprise little love cartoons, where waste turns into love memories, take the person on a romantic inner journey.

Figure 16

No nice to get dirty by Seda Aydogan



Waste materials used: Waste cloths, waste plastic water bottles, garbage bags, waste tar, waste rags

In the work titled “No nice to get dirty” (Figure 16), a Caretta turtle, the symbol of natural life, is seen covered in tar with waste materials. With the Caretta covered in tar on a blue garbage bag covered in tar, attention is drawn to sea pollution, and the danger that natural life is in is shown as a focal point.

Figure 17

A bouquet of daisies by Furkan Ulukale



Waste materials used: Old newspaper, plastic water bottle, plastic straw, paper napkin

In the work titled “A Bouquet of Daisies” (Figure 17), daisy-like flowers were created by cutting plastic water bottles, wrapped in a newspaper with an article titled Contemporary Painting and turned into a bouquet. Considering the saying that imitations keep the original alive, the imitation of a daisy is far from being an artificial flower, a representation of nature’s yellow and white pure emotions. However, it neither turns yellow

nor fades. It can remain intact for centuries. However, it has neither a velvety texture nor a scent. The aim was to show the viewer the difference between artificiality and naturalness.

Figure 18

Freedom by Eren Aldemir



Waste materials used: Newspapers, waste paper pulp, waste paper tape, waste wire, waste clay, glue

In the work titled “Freedom” (Figure 18), there is a bird cage made of waste and a parrot sitting on it. Those who feel the true meaning of freedom are those in captivity. Birds are free when they fly with their wings, and those who watch birds fly only imagine the feeling of freedom.

Figure 19

Global warming by Hilal Günay

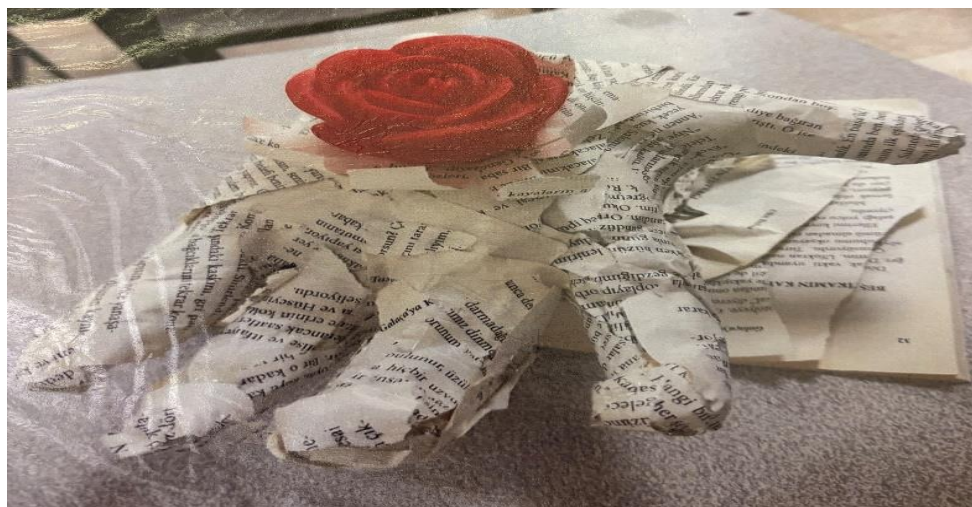


Waste materials used: Waste cardboards, waste white cloths, blue colored waste fabric, cotton pieces, nylon bags, blue paint

The study titled “Global Warming” (Figure 19) aimed to draw attention to the effect of global warming on polar bears. The importance of the melting of glaciers and the shrinking of polar bears’ habitat, and the fact that their future generations may face the danger of extinction, is emphasized.

Figure 20

Secret World by Başak Durcan



Waste materials used: Old damaged book, hard plastic rosebud, waste clay

In the work titled “The Secret World” (Figure 20), people who do not read books are unaware of the worlds inside books. They can never reach those unique worlds and the pure, bright state of knowledge by not opening the cover of the book. Books that serve to fulfill the thirst for knowledge in human nature in its fullest form are the most genuine source of knowledge. This unique red rosebud is the presentation of knowledge from the pages of books. Books, which form the building blocks of social consciousness with the information they contain, have illuminated the darkest night of mankind like a lantern for centuries and shown him the way.

Figure 21

If people weren't cruel, elephants would be happy too, by Ebru Balci



Waste materials used: Cloth waste masks, buttons, branches with artificial leaves, pieces of cloth, pieces of wood

In the work titled “If humans were not cruel, elephants could also be happy” (Figure 21), nature has become the home of living beings that live on earth. Nature is not a legacy from the past, but a trust that must be protected and passed on to future generations in the best possible way. Environmental pollution occurs when foreign substances that negatively affect the living and nonliving elements of the environment, cause structural damage and deteriorate their qualities, mix intensively with air, water, and soil, causing life-

threatening danger. It was intended to draw attention to the real owners of nature, animals, with a discourse about elephants, the symbol of natural life, being unhappy because of what human beings have done.

Figure 22

Dream catcher by Mert Özcan



Waste materials used: Broken model cardboards, aluminum foil, plastic water bottle pieces, plastic bottle caps, plastic straws, old newspapers

The work titled “The Dream Catcher”(Figure 22), which is created from waste materials, was discovered by Native Americans long ago and is among the frequently used accessories today, used to promote a comfortable sleep. According to belief, dream catchers protect people from nightmares during sleep. There is a subtle irony in the work between the waste that will be a nightmare for humanity and the world in the future, and the dream catcher, which is thought to protect people from evil while they are asleep, at their most vulnerable time. The work, which was established on the viewers' noticing this irony, aimed to raise awareness about waste.

4. CONCLUSION

Humanity, as an integral component of the natural environment, celebrated industrial development during the Industrial Revolution; however, this progress has significantly contributed to environmental degradation through the accumulation of industrial waste. Extensive deforestation driven by mineral extraction, soil contamination from cyanide, and the release of chemical waste from factories and chemical weapons have inflicted considerable damage upon ecosystems. Urban development policies, often guided by economic gain, have failed to preserve green spaces, instead permitting the construction of high-rise buildings. Consequently, trees have been replaced by concrete structures, and shrinking forest areas have remained unprotected.

Governments that have disregarded the consequences of unregulated urbanization and widespread concreting have exhibited similarly negligent attitudes toward aquatic ecosystems. Bodies of water, including seas and rivers, have been polluted by domestic sewage and industrial effluents, severely disrupting aquatic life. The resulting decline in marine biodiversity poses a serious threat to the sustainability of these ecosystems. Furthermore, global warming has emerged as a critical environmental issue, underscoring the extent of atmospheric pollution and the systematic destruction of the natural environment through practices that disregard ecological balance.

The anthropocentric perception of superiority over nature, coupled with the exploitative use of natural resources, has led to irreversible ecological damage. Although recognition of this destruction has come belatedly, efforts have begun to identify potential solutions and preventive measures for achieving ecological balance and sustainability. International accords such as the Paris Agreement and the United Nations Framework Convention on Climate Change represent significant policy responses. However, the

implementation of these agreements varies across nations, raising concerns about their overall effectiveness. The planet now faces a severe ecological and sustainability crisis, with considerable uncertainty surrounding the environmental legacy to be inherited by future generations.

In addition to governmental interventions, societal engagement and awareness are essential. Particularly, it is imperative that younger generations, who will constitute the adult population of the future, develop a deep understanding of the challenges facing the ecosystem. One objective of this study is to raise ecological and sustainability awareness among youth, to examine existing environmental issues, and to foster critical thinking and research regarding these concerns.

The exhibition titled Transformation from Waste to Art reflects this objective by showcasing artworks created from waste materials. Through innovative and original expressions, participating youth highlighted environmental degradation and conveyed subtle messages advocating for sustainable practices. Waste materials were recontextualized as artistic media, transformed into two-dimensional and three-dimensional artworks that captivated audiences with their creative use of form, texture, and material.

These creative endeavors not only addressed themes of waste and sustainability but also served as tools for increasing environmental awareness. Global challenges related to ecology and environmental consciousness have inspired artists to explore alternative modes of expression. The use of waste materials in art has facilitated the creative process by providing accessible, ready-made components that enhance the exploration of visual elements such as color, shape, and structure. This method accelerates the integration of conceptual development, ideation, and design.

Through participation in these transformative art projects, young individuals engaged in educational research on sustainability, waste, and ecological issues. This process fostered an increased understanding of environmental problems and empowered participants with the knowledge and awareness necessary to contribute to future solutions. Their involvement in artistic production, grounded in creative thinking, not only enhanced their educational experience but also positioned them as informed contributors to the resolution of contemporary and future environmental challenges.

Conflict of Interest: The authors declare no conflict of interest.

Ethical Approval: The study adheres to the ethical guidelines for conducting research.

Funding: This research received no external funding.

REFERENCES

- Awasthi, M. K., Wang, M., Wang, Q., Ren, X., Zhao, J., Huang, H., & Li, R. (2021). Environmental sustainability of waste treatment by composting: Implications of waste management for greenhouse gas emissions and soil improvement. *Journal of Cleaner Production*, 316, 128301. <https://doi.org/10.1016/j.jclepro.2021.128301>
- Beder, S. (1994). Revoltin' developments: The politics of sustainable development. *Arena Magazine*, (11), 37–39. <https://search.informit.org/doi/abs/10.3316/informit.030208176825273>
- Bozlagan, R. (2010). Sürdürülebilir gelişme düşüncesinin tarihsel arka planı. *Sosyal Siyaset Konferansları Dergisi*, 50, 1011-1028. <https://dergipark.org.tr/en/pub/iusskd/issue/891/9943>
- Khan, M. U., Malik, R. N., & Muhammad, S. (2022). Health risks associated with heavy metals in the environment and their possible mitigation strategies. *Science of the Total Environment*, 843, 157103. <https://doi.org/10.1016/j.scitotenv.2022.157103>
- Li, J., Li, Y., Jin, X., Zhang, J., & Wang, Z. (2023). Impacts of industrialization on environmental degradation: Evidence from panel data analysis of emerging economies. *Environmental Impact Assessment Review*, 98, 106958. <https://doi.org/10.1016/j.eiar.2023.106958>
- McMahon, J. (2015, December 14). *Inside the Paris Agreement: How the world agreed to 'balance' greenhouse gas emissions*. Energy Policy Institute at the University of Chicago. Retrieved April 18,

2025, from <https://epic.uchicago.edu/news/inside-the-paris-agreement-how-the-world-agreed-to-balance-greenhouse-gas-emissions/>

Nassiri Koopaei, H., Daryabeigi Zand, A., & Shahabivand, S. (2020). The effects of heavy metals on soil microbial communities and enzyme activities. *Ecotoxicology and Environmental Safety*, 191, 110187. <https://doi.org/10.1016/j.ecoenv.2020.110187>

Sezgin, E. (2022). *Sanat ve Ekoloji: Sanat/Yaşam/Üretim*. İstanbul: İletişim Yayınları. <https://iletisim.com.tr/Images/UserFiles/Documents/Gallery/sanat-ekoloji.pdf>

T.C. Çevre, Şehircilik ve İklim Değişikliği Bakanlığı. (n.d.). *Birleşmiş Milletler İklim Değişikliği Çerçeve Sözleşmesi*. İklim.gov.tr. Retrieved April 18, 2025, from <https://iklim.gov.tr/bm-iklim-degisikligi-cerceve-sozlesmesi-i-33>

The Art Story Foundation. (n.d.). *Environmental Art Movement Overview*. The Art Story. Retrieved April 18, 2025, from <https://www.theartstory.org/movement/environmental-art/>

United Nations Framework Convention on Climate Change. (n.d.). *Nationally Determined Contributions (NDCs)*. UNFCCC. Retrieved April 18, 2025, from <https://unfccc.int/process-and-meetings/the-paris-agreement/nationally-determined-contributions-ndcs>

United Nations Framework Convention on Climate Change. (n.d.). *The Paris Agreement*. UNFCCC. Retrieved April 18, 2025, from <https://unfccc.int/process-and-meetings/the-paris-agreement>

United Nations. (n.d.). *1.5°C: What it means and why it matters*. United Nations Climate Action. Retrieved April 18, 2025, from <https://www.un.org/en/climatechange/science/climate-issues/degrees-matter>

Wikipedia contributors. (n.d.). *Paris Agreement*. Wikipedia. Retrieved April 18, 2025, from https://en.wikipedia.org/wiki/Paris_Agreement

Yeni, O. (2014). Sürdürülebilirlik ve sürdürülebilir kalkınma: Bir yazın taraması. *Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 16(3), 181-208. <https://dergipark.org.tr/en/pub/gaziuiibfd/issue/28309/300838>

Zhou, C., Wang, Y., Li, X., Liu, J., & Wu, D. (2023). Groundwater contamination due to leachate migration from uncontrolled landfills: A critical review. *Journal of Hazardous Materials*, 452, 131027. <https://doi.org/10.1016/j.jhazmat.2023.131027>