



EMPLOYING THE PLASTIC POTENTIAL OF SOLID ENVIRONMENTAL WASTE ON THE WALL PAINTING AS AN ENTRANCE TO DEVELOP ENVIRONMENTAL AND AESTHETIC AWARENESS AMONG ART EDUCATION STUDENTS IN AL-AHSA

Yasser Mohamed Fadl Ebrahim^{1*}, Samah Mohamed Abd El Naser Abouzeid²

Abstract:

Solid waste is one of the major sources of pollution in the world, and the most remarkable sources of pollution in AL-Ahsa because of its increasing prevalence and lack of appropriate technical methods for dealing with such wastes, Modern artists see them as new materials to inspire innovative waste-removing ideas and new artistic techniques such as Assemblage Art as an artistic solution. Many approaches were used, and some contemporary artists attempted to reformulate these wastes using various creative techniques. The benefit of these strategies is that they dealt with environmental issues and opted for solutions in a modern and trendy way, bypassing traditional art. This research aims to shed light on the most important international techniques for turning solid environmental waste into wall paintings, as well as to develop a broad awareness of the aesthetic sense of art education students toward benefiting from these wastes and using them aesthetically in wall paintings at King Faisal University and the city of Ahsa, which lacks artwork in its alleys. By using the descriptive method in terms of the theoretical framework and the experimental method in terms of applied framework to conduct a student analysis on their experience by aesthetically painting with solid environmental waste in their work. key words "Solid Environmental Waste", "Ahsa Governorate", "Wall Painting", "Aesthetic Awareness"

^{1*} Art Education Department, college of Education, King Faisal University, Saudi Arabia
Email: fadlyasser@yahoo.com

² Art Education Department, college of Education, King Faisal University, Saudi Arabia
Email: smsm80nor@gmail.com

***Corresponding Author:** Yasser Mohamed Fadl Ebrahim

*Art Education Department, college of Education, King Faisal University, Saudi Arabia
Email: fadlyasser@yahoo.com

DOI: 10.31838/ecb/2023.12.11.14

1. Introduction:

Waste in general, and solid waste in particular, is one of the contemporary environmental problems facing most countries of the world, especially the Arab countries, because it is one of the most important sources of pollution in them, and this in turn has negative effects on human health and productivity.

Most countries have followed a special approach in solid waste management, until the issue of waste management has become a science and art and is in constant development, which led to the innovation of technical, technical and economic management methods and methods that ensure the success of the solid waste management system in terms of collection, disposal and treatment in ways that ensure environmental protection and benefit

Eur. Chem. Bull. 2023, 12(Regular Issue 11), 151 - 165

from some its components to achieve economic returns, and developed countries have made great strides in the field of waste recycling and reuse. And this method is developing rapidly and it has become absolutely necessary for Arab countries to work to reduce the gap in order to keep pace with the development in the field of solid waste management. (Mohammed and Hisham, 2012, p. 224)

The contemporary artist has looked at solid environmental waste as new materials that draw inspiration from innovative ideas and more modern plastic treatments, and then new artistic trends such as Assemblage Art and others have emerged, in which these wastes were used, as well as various individual methods and global experiences of some contemporary artists that

included Innovative artistic treatments and formulations for these solid wastes, as the research benefits from those technical methods and treatments that dealt with environmental waste, searching for non-traditional artistic solutions and urging art education students to employ them in a mural work characterized by modernity and originality.

2.Statement of the Problem:

The increase in the population, the high standard of living, industrial and agricultural progress, and the failure to follow appropriate methods for collecting, transporting and treating solid waste led to an enormous increase in the amount of waste and thus pollution of the environment elements such as land, water, air and the depletion of natural resources in many regions of the world. Today, solid waste management has become in All countries of the world are vital to maintaining public health and safety in addition to saving in production prices when we use recycled materials.

It is worth noting that there are many studies that dealt with methods of disposal of solid environmental waste, including (incinerators, landfills, thermal decomposition method, organic fermentation, chemical treatment, etc.), and researches concerned with employing these wastes and their treatments in the field of plastic art, making them a source of wealth that contribute to In the national income in the Arab countries and solving the problem of unemployment, especially in the Kingdom of Saudi Arabia, and this is consistent with the premises of the National Vision 2030.

Hence, the research problem becomes clear in answering the following question:

Is it possible to take advantage of the plastic capabilities of solid environmental waste in Al-Ahsa to enrich the mural as one of the visual aids in spreading environmental and aesthetic awareness within the community?

3.Research Objective:

- Highlighting the role of art education in general and the field of wall painting in particular in the field of community service and environmental preservation.
- Developing the environmental and aesthetic awareness of art education students by identifying the plastic potential of solid environmental waste on the surface of the mural.

4.Research Hypothese:

- The plastic potential of solid environmental waste on the surface of the mural can be used to develop environmental and aesthetic awareness of art education students.

5.Significance of the Research:

- Highlighting the role of art education in the field of community service and environmental preservation through the use of solid environmental waste for aesthetic purposes.
- Providing students with new performance methods for producing murals painting bearing the Arab identity through the use of solid environmental waste.
- Revealing the expressive, tactile and color values of various solid environmental wastes and aesthetically employing them in murals.
- Finding new alternatives to enrich the surface of the mural by employing solid environmental waste.
- Employing the potential of young people to implement murals that give the streets of Al-Ahsa a sense of aesthetics.
- Employing solid environmental waste in the field of plastic art makes it a source of wealth that contributes to the national income in Saudi Arabia.
- The research contributes to solving the problem of unemployment, and this is consistent with the principles of the National Vision 2030.

6.Research Method:

The research follows the descriptive approach based on analysis in terms of its theoretical framework and the experimental approach in terms of its practical framework.

7. Limitations of the Study:

- 7.1. Spatial limitations: College of Education, King Faisal University, Al-Ahsa, Kingdom of Saudi Arabia.
- 7.2. Time limitations: the academic year 2022 AD.
- 7.3. Human limitations: a deliberate sample of students of the seventh level, consisting of (12) students.
- 7.4. Objectivity limitations:
 - The research is limited to the study of solid environmental waste, which is represented in (glass waste - wire waste - plastic waste - leather waste - wood waste - ferrous waste - non-ferrous metal waste - ceramic waste). The research does not address hazardous solid waste, which has the characteristics of flammability, reactivity, and toxicity.

- Shedding light on some of the artistic trends that dealt with solid environmental waste in artistic works.
- Analysis of selected artworks resulting from the fields of art education to find out the technical treatments and plastic formulations of the various solid environmental waste in them.
- Employing artistic and plastic treatments for solid environmental waste to conduct a student experiment to produce an innovative mural.

8. Research Concepts:

8.1. The definition of solid waste:

It is solid and semi-solid waste produced from various sectors such as: plastic materials, papers, glass, wood, the remains of metal constructions, rubber, fabrics, and others that are produced from different sources. The production of solid waste varies from one sector to another and from one country to another. As this depends on the nature of the residents of the area and the nature of their needs and standard of living, as well as on the nature of the climate that prevails in the area. (Abu Drais, 2016).

Waste is also defined as the remnants of domestic, agricultural, extractive, transformative and productive human activities, i.e. all movables left or abandoned in a place, leaving them as they are harmful to public health and safety. (Al-Bukhari, 2003, p. 3). From an economic point of view, waste is every substance or thing whose economic value is non-existent or negative for its owner. (Al-Daghiri, 2012, pg. 4)

8.2. Al-Ahsa:

Al-Ahsa was known in the past as Bahrain, and it includes the coastal plain area overlooking the Arabian Gulf, extending between Basra in the north and the outskirts of Oman in the south. And it was known as Hajr until 317 AH, when it began to be known as Al-Ahsa to include the oasis in addition to the plains overlooking the Arabian Gulf, and the area of Al-Ahsa was reduced to the oasis and areas of the desert around it. And 25 minutes, 25 degrees and 45 minutes north, and it occupies an area of 9030 km² and its oases (an area of 3,000 km²) are The largest population and agricultural centers of gravity in this region, and its capital is the city of Hofuf. Administratively, the Emirate of Al-Ahsa region includes, in addition to the cities of Al-Hofuf and Al-Mubarraz, 36 villages and urban complexes.

In the past, a site of great importance was called "Jawatha" and was considered the capital of the

region. In this site, the third mosque built in Islam was erected, which is the destroyed Juatha Mosque, whose drawings are still remain until today. (Abdullah, 1985, p. 45), the population of Al-Ahsa reached about half a million, which is more than 40% of the total population of the Eastern Province in the Kingdom of Saudi Arabia, and more than 20% of the population settled in the cities of Hofuf and Al Mubarraz (Al Sharif, 1987, p. 12).

9. Theoretical framework for research:

9.1. Municipal waste management in Saudi Arabia

The Kingdom of Saudi Arabia is experiencing an industrial boom, an increase in population growth and an increase in the number of new cities, which has led to an increase in pollution and waste rates. Solid waste management is becoming a big daily challenge. With a population of nearly 29 million, Saudi Arabia produces more than 15 million tons of solid waste annually. The estimated average per capita daily waste production is 1.5-1.8 kg.

It is collected from individuals or public containers and disposed of in landfills or landfills. The waste disposal system in Saudi Arabia is characterized by the absence of expenses or fees for waste disposal. However, recycling, reuse and energy recovery are still at the beginning of the road, but they are receiving increasing attention. Waste sorting and recycling are carried out by active non-official bodies. The percentage of waste that is recycled is about 10-15%, mostly due to the presence of informal agencies that sort paper, metals and plastics from solid waste. Most recycling activities are manual and labor intensive. Currently, efforts are directed towards spreading waste-to-energy technology in the Kingdom. All efforts related to waste management are coordinated and funded by the government. (Al-Ghamdi, 2019).

The Ministry of Municipal and Rural Affairs manages municipal waste in the Kingdom of Saudi Arabia. Other bodies work in the field of waste management and recycling, such as the ministries of industry and health. SKAB Group has special rights for municipal waste in the Kingdom and recycles waste, and DAMATH transports hazardous and municipal waste. The Gulf Environmental Services Company is conducting a study on the hazards of waste. There are consulting offices, companies and other groups working in the field of waste treatment and recycling. Saudi Arabia has taken care of public

health, and has established various sectors concerned with it, including the municipal sector, which is handled by the Ministry of Municipal and Rural Affairs represented by the secretariats, water departments, municipalities and village complexes. These bodies undertake the work that leads to the preservation of the environment and the reduction of its pollution. (Ahmed, 2004).

9.2. Environmental Solid Waste Management in Al-Ahsa

9.2.1. (Friends of the Green Environment) campaign in Al-Ahsa:



Figure (1) Pictures of the Friends of the Green Environment campaign in Al-Ahsa

Reducing the waste that results from our domestic, civil and industrial uses, conducting research that serves the community and the environment, strengthening the relationship between the association and the various sectors of society, serving the environment, contributing to the national campaign to protect the environment from pollution, and transforming discarded matter into a wealth that benefits the community (Al-Obeid, 2004).



Figure (2) Pictures of the waste sorting station and environmental landfill in Al-Ahsa Municipality

transferred to the Secretariat. The station will generate an average of 40 tons of household and commercial waste per hour, at a rate of 20 working hours per day. Waste components will be separated according to their classification into organic, plastic and wood, to be recycled into useful products, which will contribute to preserving the environment, and will contribute to

In the year 1416 AH, a group of young people from the city of Mubarraz, figure (1), established a project to recycle paper, collect and sell waste, and benefit from its price to meet the needs of some needy families. One of the project's objectives is to work on raising healthy environmental awareness among society groups, paying attention to the environment and urging a change in the wrong behavior and habits of individuals and industrial establishments that harm the environment.

9.2.2. (Waste sorting station and environmental landfill) in Al-Ahsa Municipality:

Al-Ahsa Municipality is intensifying its efforts in the current period to allocate a project to rehabilitate the old environmental landfill on an area of 90,000 square meters. The aspect of service development in the municipal sector. The project took into account the elements of modern technology with the latest equipment and equipment Figure (2), It is an investment project for a period of 15 years, in terms of construction, operation and maintenance. At the end of the project, the ownership of the station will be

saving operating costs for the Municipality of Salman, (Abdullah.2017).

9.3. Classification of solid waste:

Many studies dealt with several classifications of solid environmental waste, including by origin, by physical state, and by chemical nature. The current research will focus on the following classification:

9.3.1. household solid waste:

The chemical, metallurgical and other industries result in wastes that are hazardous to human health and safety, and there are continuous processes to dispose of waste in unspecified places, thus causing pollution to the environment. The developed industry can reduce the amount of waste generated by re-utilizing the largest possible amount of waste, And adopting modern methods of manufacturing, in addition to employing them and treating them technically according to the objectives of the current study, which leads to saving the consumption of sources of wealth. Examples of industrial waste are the structures of dead vehicles, damaged electrical appliances, and others. (Al-Wahhab, 1998, p. 42).

9.3.2. Agricultural Waste:

It is all waste or waste resulting from all agricultural activities, plant and animal (Al-Dabiyat, 2000, pg. 53). The current research uses agricultural waste represented in the remains of branches and tree timber.

9.3.3. Demolition and Construction Waste:

It is a search and build process. Such as (concrete, plaster, plastic, wood, iron, block) (Al-Wahhab, 1998, pg. 43).

9.4. The main reasons for the increase in industrial solid waste in Al-Ahsa:

- Rapid industrial spread without taking into account the problem of waste generated by industry.
- Lack of awareness and responsibility on the part of some industry owners, which causes them to dispose of industrial waste in improper ways.
- Lack of environmental legislation in the field of solid waste management.
- Lack of environmental awareness among individuals.
- High standard of living. (Al-Balawi, 2014, p. 21)

9.5. The role of art education towards the employment and treatment of solid environmental waste:

Art education, along with the rest of the study subjects, contributes to the preparation of the integrated individual, and gives him the ability to respond to beauty wherever it is found. To taste and the correct criteria to enjoy the values of things that pass under his sight or in himself, and to enable him to respond to them with all his senses in response to the enjoyment who obtained his share of technical training.

One of the definitions of art is that it transforms what is within the scope of an individual's thinking into aesthetic images using various artistic methods and encourages them, such as the individual artistic style. The function of art in education is a creative function that creates the innovative individual and works to unleash him to express his thoughts, feelings and emotions. Art education seeks to create a new and unfamiliar form of activity in which the individual is capable of creation and creativity, learns how to think and solve his problems. This can only be done through the conscious practice of experimental thought.

According to the previous definition, the research is oriented towards solid environmental waste and its aesthetic treatment to provide innovative visions for the mural, and on the other hand, the development of preserving the environment and creating aesthetic dimensions in it. Aesthetic and expressive dimensions according to the different entrances and starting points of formation" (Mutawa, 2006, p. 522). This requires that the student be familiar with many technical and technical expertise and appropriate treatment methods for environmental waste, which allow him to experiment on the surface of the mural.

9.6. Experimentation with solid environmental waste:

The continuous experimentation in raw materials, which appeared in modern and contemporary works of art, in addition to the multiplicity of raw materials and waste residues in the local environment, made the innovation process not limited to a specific approach or style, and not restricted to any kind of traditional raw materials, This led to the emergence of many manifestations of experimentation in the works of most artists, such as the use of metal wires, tin and plastic residues, as well as paper and cardboard of various sizes and shapes, breaking ceramics of different shapes and colors, and other materials that opened a large field for the practice of many experimental operations using all materials and in a variety of ways. (Fadl, 2012, p. 231)

There are various individual experiences among some contemporary artists and art education students that included innovative artistic treatments and formulations for environmental waste, especially "compounds and many materials in environmental waste after separation and treatment that can be used as raw materials to produce new products, including: glass, plastic,

paper, metals and tires, and others.” As these wastes constitute raw materials for the production

of fine crafts (Al-Wahab, 1998, p. 48).

The following is an analysis of samples of artwork resulting from the decision of shaping with raw materials, which dealt with solid environmental waste:

• Forming leftover household kitchen utensils



Figure (3) Pictures of various formations of birds, animals and aquatic animals in solid household waste

• Cardboard shaping



Figure (4) Pictures of Flat and Stereoscopic Configurations in Cardboard Waste

• Waste paper preform



Figure (5) Pictures of waste paper formations

• Waste leather preform



Figure (6) Pictures of waste leather formations

• wood waste preform



Figure (7) Pictures of Flat and Stereoscopic Formations of Wood Waste

• Forming with tree waste



Figure (8) pictures of various formations with tree waste

• **Preform with miscellaneous waste**



Figure (9) Pictures of artistic formations with various wastes (plastic - buttons - threads - glass - cloth - beads)

It is clear from the images of previous business models that they were all based on the treatment and employment of solid environmental waste, to represent multiple themes between (landscape, portraiture, silent nature, animals, birds and engineering relations) and this confirms the possibility of employing these wastes in all different fields of art.

It is worth noting that most of these works for students of the Department of Art Education at King Faisal University were done under the supervision of professors specialized in art and art education. It is clear from them the multiplicity of techniques and technical treatments for solid environmental waste, such as (composition in the form (3), sticking in the form (8), arguing in the form (9) of the tree, bending in the form of (7) in the formation of fish, and in the same form the braiding shows the formation of the horse, winding in the form of (5) Composition in rolls of paper, assembly in the form (3), synthesis in the form of (6), grafting in the form of (7), and welding in the form of (3), there have been numerous attempts at creativity in the artistic field and the development of thought “and the emergence of schools and modern artistic trends such as(Dadaism, Pop Art, Assemblage, New Realism, Constructivisme) their effects on the form with awareness of the importance of the material as new materials were introduced that had an impact on the artwork and its quality in addition to the designer’s intellectual and artistic trends. It includes principles, values and intellectual concepts” (Saleh, 1998, p. 39).

9.7. mural Painting:

Mural painting is one of the aids in spreading an educational, visual, artistic and aesthetic culture for society as a whole in all its segments and categories. “The works of mural painting are distinguished from other visual arts by being the closest in the field of vision, as they are available to everyone as required by the nature of life circumstances” (Qanso, 1995, p. 11). The positive

effects that mural paintings have on the hearts of their recipients, whether those with a passing or scrutinizing look, have occupied the minds of many thinkers and philosophers, who have concluded their importance in human life and upgrading it in all fields to elevate their tastes and cultures with it.

Mural painting is an indirect means of communication between the artist and the recipient of the artwork, and it is common knowledge that the communication that takes place through art is more authentic than other types of communication between people. More than just conveying this reality in its familiar form.

9.8. The educational and cultural role of the mural:

The mural achieves an important educational and cultural goal, as it reflects the civilized, social, political and religious factors of society through the content of the mural work. On the cultural communication between the artist and society” (Abdullah, 2009, p. 60). If we consider that the mural work must stem from the environment in which the mural is located, here it is an important factor in spreading environmental awareness of the importance of the raw materials used in its formulation, which are solid environmental waste, the subject of the current study.

The art of murals is also considered a clear record of the features and identity of society and a reflection of the culture of its citizens. Rather, it has played a key role in reviving visual culture, aesthetic awareness and environmental awareness. The mural is also considered a documentary work, whether it addresses the past or the present. There are archaeological murals that we find on the walls of Pharaonic, Greek and Roman temples. All of them were documentary, and their content mimicked the social, political, and economic reality and everything that occupies the members of society. If it has this important social goal, it

also does not come out as emphasizing another aesthetic goal that stems from upgrading public taste, developing visual culture and environmental awareness among community members.

Hence the role of the pure artistic message of the mural in disseminating ideas and serving the community through a visual cultural aesthetic

9.9. Local and international experiences that transformed solid environmental waste into murals:

9.9.1. A pioneering Syrian experience represented in a mural on the wall of "Martyr Nahla Zeidan School"



Figure (11) A mural on the wall of "Martyr Nahla Zeidan School"

The "Guinness World Records Encyclopedia" mentions that it is a pioneering Syrian experience represented in the largest mural in the world of solid waste and that its area is 720 square meters until its area at the end of the work reached more than 1,000 square meters, extending to the wall of the "Martyr Nahla Zaidan School Figure (11). It is located on the "Mazze Highway" in the capital, Damascus, and was classified in the same register as the largest mural in the world, implemented from the recycling of solid household waste. Ali Suleiman, Rajaa, Bi, Safaa, Bi, Hudhayfa Otri and Adnan Abdullah in the form of (10), they worked to transform household dishes, juice bottles, drinks, ceramic pieces, mirrors, plastic, iron, copper and other metals, into an exquisite painting. (Guinness World Records, 2017).

The artist Ali Suleiman mentions that the work that he participates in with the work team has multiple features, as it is educational, artistic and environmental. From an educational point of view, the idea of the mural came to carry an awareness message, educational, directed towards the

perspective, In most cases, the mural is associated with teamwork, where a number of artists participate in its implementation, and this in itself is a positive thing through which the diverse energies and skills of each interact in light of artistic and behavioral controls that give the artwork the feature of unity and integration.



Figure (10) The team executing the mural "Martyr Nahla Zeidan School"

importance of benefiting from waste, recycling and maintaining a clean environment. The work lasted about a year. Complete, and about twenty tons of solid waste was used to cover the wall. It presents a modern visual scene stemming from a human vision of the artists who worked on it stemming from the love of the homeland (Amer, Fouad Amer, 2013).

9.9.2. The Rhythm of Life painting "A mural on the wall of Bassam Hamsho School"

The Rhythm of Life painting is a mural on the wall of "Bassam Hamsho School" in the Trade District in Damascus, made up of industrial waste residues with the aim of presenting an aesthetic artistic message calling for the preservation of the environment. The painting is about 185 meters long and 4 to 5 meters high. It is composed mainly of solid waste remnants such as ceramics, empty bottles, plates, cups, and various metal pieces. Those in charge of executing the mural are the same team that executed the mural work on the wall of the "Martyr Nahla Zeidan School". (Al-Zoubi, 2013).

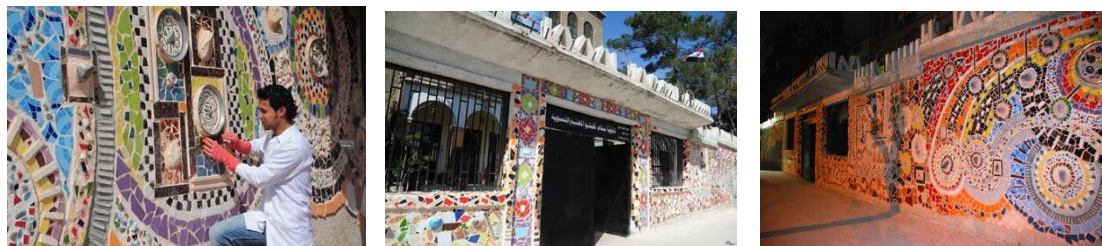


Figure (12) parts of the mural, The Rhythm of Life, on the wall of Bassam School

The painting includes decorations and modern contemporary art in the form (12) imposed by the nature of the remains used to decorate walls and buildings and give them color, with the aim of getting rid of these remains by decorating some school walls with different colors and teaching children how to take advantage of industrial remains and turn them into an artistic aesthetic value that raises the level of their taste Optical.

The project aims to exploit the industrial remains for aesthetic purposes and increase citizens' awareness of the importance of making use of all materials used in daily life and employing them in the context of preserving the environment and giving an aesthetic character to the city of Damascus, which lacks artistic mural work and color.

The artist, Safaa Wabi, a participating plastic artist, confirmed that the work carries artistic, environmental and social values, explaining that

the mural will encourage others to do greater work with the aim of beautifying the streets of Damascus and getting rid of waste.

The artist Nasser Nabaa, part of the work team, said that the painting is based on solid environmental waste, such as stone, ceramics, and others, using different tools, indicating that the main message of the work is to make something out of nothing. From the artistic, environmental and aesthetic awareness of people. All those responsible for the implementation of the mural believed that the painting would transform the area into a center for artistic meeting and could turn into a tourist attraction. (Al-Mushrif, 2011)

The following figure (13) shows details from the mural of the Rhythm of Life painting on the wall of Bassam's school with some solid environmental waste used in formulating the elements of the mural's composition.



Figure (13) Detail from the mural, The Rhythm of Life

Research framework:

The researchers intended to direct the students, the research sample, to use more than one technique and method while employing solid environmental waste as one of the steps of the research methodology that contribute to the production of a contemporary mural, based on heritage assets that *Eur. Chem. Bull.* 2023, 12(Regular Issue 11), 151 - 165

are subject to many processes for dealing with the remnants of environmental waste and drawing inspiration from the aesthetics of Arabic calligraphy and Islamic and popular decoration with inspiration From the aesthetic configurations of the buildings of King Faisal University, following the following steps.

10.1. Preparation of materials and tools:

10.1.1.waste collecti

There are large numbers near the source of waste releasing in large and varied sizes, close to places of commerce, factories, hotels, as well as contacting the (Friends of the Green Environment) campaign and (sorting station and environmental landfill) in Al-Ahsa Municipality to select some types of waste in the mural formation.

10.1.2.waste sorting:

Waste was transferred from the tankers to the waste sorting places - a designated place in the College of Education - and then transferred to the places of treatment and technical employment in

the Art Education Department (Fig. 14) after they were classified and they are.

- Remnants of ceramic pieces that vary in colors, types and sizes.
- The remains of colored sand that vary in color and texture.
- Scraps of colored artificial leather.
- Scraps of cloth and pieces of wood.
- Remains of pieces of glass that vary in colors.
- Remnants of plastic pot lids.
- Materials for fixing, installing and gluing such as (nails, glue, whole, plaster ... and others).



Figure (14) The stage of transporting

The research was concerned that the forming material is the remnants of raw materials that can be obtained from the remnants of factories and some workshops that use the aforementioned raw materials within the limits of the research, all of which can be obtained free of charge. Thus, an economic goal is achieved by accustoming students to making murals with an aesthetic formation from the simplest solid environmental waste at the lowest costs.

10.2. Introducing the methods of treating solid environmental waste on the surface of the mural:

- The two researchers showed a video recording of his preparation and pictures showing the methods of treating solid environmental waste on the surface of the mural.

- Presenting artworks in the theoretical framework that were previously implemented with solid environmental waste, so that students become familiar with the methods of implementation and the methods of treatments they contain, using the Data Show device.

10.3. design stage:

The researchers were keen to urge the students, the research sample, to choose a topic The composition of Islamic and folk traditional elements Figure (15) besides Benefiting from the aesthetics of Arabic calligraphy and the aesthetic nature of the reality of the buildings of King Faisal University as a plastic entrance, in an effort to reach the different artistic values, while allocating time for them to conduct exploratory experiments on the methods and methods of treating waste selected from the surrounding environment.



Figure (15) The stage of designing the mural

10.4. implementation phase:

The data of the theoretical study contribute to finding new approaches to the artistic treatment of mural painting by drawing inspiration from the characteristics and characteristics of folk and Islamic decoration with Arabic calligraphy.

- Non-compliance with the perspective and control of the decorative flatness.
- Using writing as a formative element with stereoscopic shapes.
- Placing the stereoscopic figures in the front location to give the painting importance and meaning.
- Not adhering to the frame of the painting and leaving figures and vocabulary outside it.
- Use contrasting colors in a flat manner.

The intellectual premise is based on:

Employing the potential energy of the symbols of decorations and popular and Islamic drawings to achieve the expressive dimension through the intersecting, intersecting and overlapping grouping relationships of the decorative units with the Arabic calligraphy.

The technical point of view is based on:

- Experimentation aims to search for new artistic approaches to creativity by taking advantage of

the plastic capabilities of environmental solid waste of various textures, colors and others, in the implementation of the mural as well as the elements of building the artwork, thus it is possible to link the intellectual and technical direction of the study to the process of experimentation.

- The entrances to experimentation are technical starting points that the human mind approaches in search of new dimensions, and technical solutions that address the issues of formation with a new vision that differs from the traditional visions, meaning that the entrances to experimentation are the intellectual beginning from which the human mind starts to form and transform solid environmental waste into plastic meanings with artistic values from During:
- Establishing morphological and tactile relationships between the different types of solid environmental waste added to each other.
- Using various techniques as an expressive medium in formulating design elements with solid environmental waste on the surface of the mural in a two- and three-dimensional formation. This is evident from the following images:



Figure (16) The stage of installing the metal part on the surface of the mural, which represents an element of the buildings of King Faisal University



Figure (17) The stage of fixing nails and wire and placing plaster on the surface of the mural



Figure (18) The stage of unloading and placing the Islamic decoration on the metal and wooden part on the surface of the mural



Figure (19) The stage of placing broken glass and ceramics on the surface of the mural



Figure (20) The stage of applying the filler to the ceramic and colored sand on the surface of the mural



Figure (21) The final pictures of the mural (the research experiment) that was implemented with solid environmental waste

11. Research Findings:

- The mural is the product of the practical research experience, bearing an educational aspect in promoting collaborative work, and an environmental aspect through the students and recipients' awareness of the waste they thought was of no value. It embodies a painting that has an artistic and aesthetic value.
- Re-using solid waste reduces the quantities prepared for burial, which reduces the volume of

land used for burial, and thus reduces the rate of air pollution.

- Employing solid environmental waste technically helps to save a lot of foreign currencies due to the lack of import of technical materials.
- The use of solid environmental waste technically on the cognitive and environmental awareness of art education students and the development of their aesthetic sense helped produce an

innovative mural bearing the character and features of the Arab identity.

12. Research Recommendations:

- Providing different industries with knowledge and awareness of the application of solid environmental waste recycling practices in the field of plastic art.
- Benefiting from solid environmental waste to solve the unemployment problem by establishing specialized technical workshops that rely on solid environmental waste as molding materials.
- Developing an incubating environment for investments in environmental beautification activities through plastic art using solid environmental waste.
- Organizing art competitions by Al-Ahsa Municipality and in cooperation with the university and schools to beautify areas in the environment surrounding solid environmental waste.
- Allocating more than one plot of land to serve as a warehouse to store and classify the solid environmental waste collected from factories, schools and others, until it is used in the field of technical formation and other areas in Al-Ahsa Governorate.
- Holding seminars, giving lectures and technical workshops entrusted with informing the local community about environmental problems and how to address them, introducing the latest technologies used in the field of environment, preparing awareness pamphlets on the environment, and establishing an environmental database at the level of Al-Ahsa Governorate.
- Preparing well-thought-out educational media programs in which all concerned parties cooperate to highlight to the community the problem of solid environmental waste, as well as the importance and mechanism of personal sorting of waste at its source in order to benefit from its elements.
- The necessity of deepening the principles and concepts of environmental awareness among students through the course of environmental education as a curriculum, at all levels of education, that is concerned with developing their necessary skills towards the environment and respecting the relationship that binds them to their environment.
- Establishing more private or public institutions for solid environmental waste capable of providing an integrated waste treatment program and making it a source of wealth that contributes to the national income.

Thanks and appreciation:

The researcher thanks the Deanship of Scientific Research at King Faisal University in Al-Ahsa Governorate for its material and moral support in financing this research project No. (GRANT3355).

13. References:

1. Abu Drais, M. S. (2016). *Waste sorting educational brochure*. Jordan Green Building Council, Amman, Jordan.
2. Ahmed, F. H. (2004). *Waste management in Saudi Arabia*. The First Arab Environmental Journal, Issue (78), available at: <http://www.afedmag.com> (retrieval date: 03/15/2022).
3. Al-Bukhari, A. (2003). *The role of the private sector in solid waste management*. Directorate of Hygiene in Damascus Governorate, Syrian Arab Republic.
4. Al-Balawi, K. A. (2014). Solid Waste. *Master's thesis* in regional planning.
5. Al-Sharif, A. R. (1987). *Geography of Saudi Arabia*. Part One.
6. Aleabayda, A. (2004). *Recycling paper for humane and presumptive purposes*. Available at: <https://www.alyaum.com/articles/159155> (retrieval date: 3/03/2022).
7. Al-Ghamdi, N. A. (2019). *Economic pluralism and sustainable investments*. Available at: <https://maaal.com/2019/01/117824-2/> (retrieval date: 03/15/2022).
8. Al-Dughairy, M. I. (2012). *Define solid waste. Types and methods of treatment*. King Saud University.
9. Al-Zoubi, F.H. (2013). *The Rhythm of Life is a modern and lively mural*. Available at: <https://eng-art.yoo7.com/t18162-topic> (Retrieved date: 2/23/2022).
10. Aldibyati, A. (2000). Study of the environmental impact of garbage and treatment methods. *Master's thesis*, Homs, Syria.
11. Salman, A. (2017). *A station for sorting 40 tons of waste in 60 minutes in Al-Ahsa*. Available at: <https://makkahnewspaper.com/article/614805/> (retrieval date: 23/2/2022).
12. Almusharaf, M. M. (2011) Cultural Report: "Uqae Alhayaa," a Syrian mural of waste residue. *Journal of Science and Culture*, available at: <http://arabic.people.com.cn/31657/7318577.html> (retrieval date: 23/2/2022).
13. Al-Wahhab, A. A. (1998). *Waste Recycling Technology*, Arab Publishing House, Cairo.

14. Hajim, Mohamed Youssef and Jamil, Hisham Tawfik. (2012). The role of the private sector in solid waste management in cities, a study between theory and practice. *Journal of the College of Basic Education, University of Babylon*, Issue (8).
15. Khorshid, H. T. (2010). Domestic solid waste in the city of Baquba and the possibility of treatment with the recycling industry. *Master's thesis*, College of Education, University of Diyala, Iraq.
16. Saleh, M. H. (1998). Experimental approaches to enriching the field of artistic works in the light of modern artistic trends. *PhD thesis*, Faculty of Art Education, Helwan University, Cairo.
17. Amer, F. A. (2013). " *Uqae Alhayaa* "... A mural on the wall of Nahla Zeidan. Available at: <https://2u.pw/FYjrd> (Retrieved date: 23/2/2022).
18. Abdullah, A. M. (1985). Al-Ahsa Oasis: A Study in the Geographical Background of Development. Riyadh. Aldara, a refereed quarterly journal. Issue (2).
19. Abdullah, A. (2009). Symbolic Expressionism in Contemporary Murals as One of the Entrances to Artistic Appreciation. *First Arab Conference, Plastic Arts and Community Service*. College of Arts, Luxor.
20. Fadl, Y. M. (2012). The culture of treating environmental materials in the art of Painting as an entrance to developing environmental awareness and aesthetic sense for students of the Faculty of Specific Education in Assiut, *the Ninth International Conference on Art and Culture of the Other*, Faculty of Fine Arts, Minya University.
21. Kalso, A. (1995). *Arab Folk Painting*. Knowledge World, Kuwait.
22. Mutawa, M. (2006). Analytical dimensions of material handling and development using concept maps in the field of arts, *the ninth scientific conference of the Faculty of Education*, Helwan University, Cairo.
23. Guinness Book of Records. (2017). *The world's largest mural of waste "a pioneering Syrian experiment"*. Available at: <https://m.bintjbeil.org/article/124269> (Retrieved date: 6/3/2022).