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Teaching Sculpture At The Senior High School Level Using Non-Conventional Materials

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Abstract:

The aim of this research was to introduce the use of non-conventional materials for sculpture in Senior High Schools. The researchers were particularly interested in the teaching and learning of sculpture with materials that had been thrown away such as bones, drinking straws, plastic bottles and egg shells. Clay, wood and cement are the main materials that are used for the production of sculpture works at the SHS. The researchers gave opportunity to the students to explore and experiment with various materials (throw-aways) that were not traditional. The main materials used for the execution of the works were Voltic bottles, cow horns, drinking straws, egg shells, false yams and old shoes. Techniques used were gluing, piercing, painting, carving, and tying. This stirred their imagination and productivity. The study discovered that students had keen interest in working with non-conventional materials than conventional materials. It has been discovered that non-conventional materials can be successfully integrated into the teaching of sculpture at Senior High School level.

Keywords*: Anisotropic, Conventional, Creativity, non-conventional, Nomenclature.*

1.Introduction

The scope of the term sculpture is much wider in the 2nd half of the twentieth century and in the present fluid state of the visual arts. Today, however, sculpture is considered an art that grows, changes, and is continually extending the range of its activities and evolving new kinds of objects. Nobody can predict what its future extensions are likely to be. This is confirmed by Goetz (1998) who said that:

> …Twentieth century sculpture is not confined to the two traditional forming processes of carving and modelling or such traditional natural material as stone, metal, wood, ivory and clay. Because present day sculptors use any materials and methods of manufacture that will serve their purposes, the art of sculpture can no longer be identified with any specific materials or techniques (p.48).

Ocvirk et al., (1998, p.223) also confirmed the same point by saying that "Sculpture is no longer limited to carving and modelling. It now refers to any means of giving intended form to all types of three-dimensional materials. These include welding, bolting and riveting, gluing, sewing, machine hammering and stamping". According to Ocvirk, the three-dimensional artists in turn have expanded their range of sculpture forms to include solid and linear construction made of such materials as wood, fabric, steel and plastics. This adds that the resulting sculptures are stronger, even though made of light materials and more open.

In this project, the use of non-traditional materials for teaching sculpture therefore, falls in line with the views expressed by the researchers.

Goetz (1998) continues to emphasize the use of non-conventional sculpture materials for sculpture by stating that: "Modern sculpture has no specific materials. Any material, natural or man-made is likely to be used including inflated polyethylene, foam rubber, expanded polystyrene and neon tubes". (p.48)

It can thus be seen that modern sculpture depends largely on the aesthetic effect that the artist wants to achieve; hence the use of the materials he or she chooses. Assemblage and construction in this project are as a result of the researches conducted into weight reduction and the use of non-conventional materials.

According to Goetz (1998), construction is made by joining of such basic performed components as metal tubes, rods, plates, bars and sheets; wooden lathes, planks, dowels and blocks; laminated timber and chipboards; sheets of Perspex, Formica and glass; fabrics, wires and threads.

Construction in sculpture is made with the same material, unlike assemblage which is the joining together of different types of objects made from different types of materials. In this project old shoes, discarded plastics, straws, rubber foam and paper were prepared in specific shapes before putting them together for the construction.

Fichner-Rathus (1998) also confirms that in assembling or construction sculpture, the artists selects and groups materials to create a new form.

This means that in construction of a sculpture, there is a performed shape which is put together. Thus in the study, non-traditional materials were selected and put together to create new forms.

In the 19th century, as a contribution to abstract art, the constructivism movement was founded by Vladimir Tatlin (1885-1956). This movement was later led by two brothers Naum Gabo and Antoine Pevsner. A lot of construction has been done since their time but most of them were either in wood or metal. Other constructions were done by artists such as David Smith, Carl Andre, Sol Lewitt and Frank Stella. (Ocvirk, 1998). All the artists mentioned above constructed in metal or wood whereas in this project, Alberto Giacometti, a Swiss sculptor and painter who lived in Paris combined wood, glass, wire and strings in his work, "The Palace at 4 am." 1932-33 (Bowness, 1969). This is a good example of multi-media construction. The materials used in this project were not the same as above but the idea of combining different materials is similar.

2.Methodology

The study is qualitative in nature, using descriptive and action research methods. It involved 90 respondents comprising 84 students and 4 teachers all from Asanteman Senior High School and Kumasi Senior High Technical School and 2 professional sculptors.

Best (1981) describes qualitative research as a means in describing recording, analyzing and interpreting conditions that exist. It also takes care of some types of comparison and contrast and attempts to discover relationships between existing non manipulated variables.

Sidhu (2003) also examines qualitative research as a vivid description of whatever is being observed rather than comparing the effects of a particular treatment in description. This means that in qualitative inquiry there should be a clear description of phenomenon.

The qualitative research design was the most suitable method for the topic due to the fact that it

occurred in a natural setting, that is, a school thus facilitating the description and interpretation of the data in words rather than numbers.

Conditions were able to flow naturally at their own pace without any attempt to manipulate any behaviour, description, explanation and analysis of phenomenon as they occur (Blease and Cohen, 1990).

According to Hitchcock and Hughes (1995) the researcher is the primary instrument for collecting, gathering and analyzing data in qualitative design, due to the fact that the method gives a clear revelation of human experiences and situations. The researcher needs an instrument flexible enough to capture the flexibility of that human experience. The human instrument is essential in qualitative research to talk with the people in the setting, observe their activities and read their documents and written records and to record the information in the field notes and journals. The method chosen gave enough room for the researchers to collect data and analyze it, produce a descriptive and analytic report that can be interpreted and put into good use.

3.Methodology For Producing The Sculpture Works

The methodology used for the production of the sculpture works are ideas development, collection of materials and equipment and the actual production of the works.

4.Idea Development – Designing

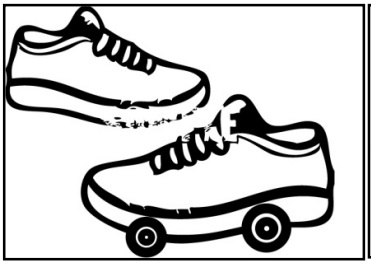

Figure 1a : the vehicular shoe

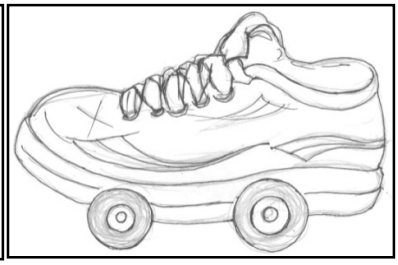

Figure 1b :the vehicular shoe II

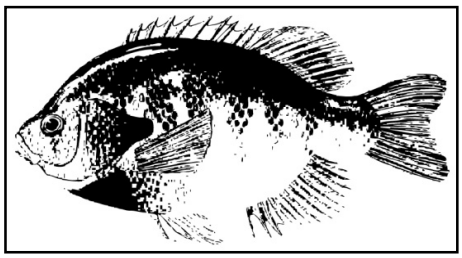

Figure1c : the fish

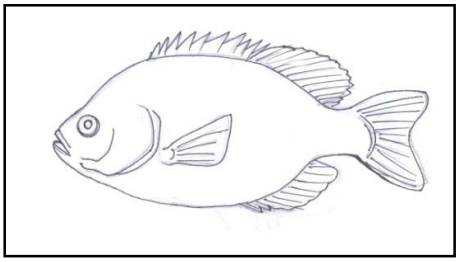

Figure 1d : the fish II

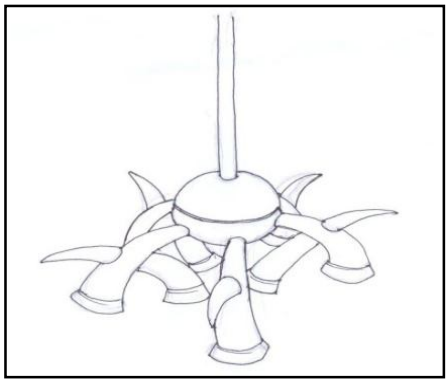

Figure 1e : the chandelier

The ideas and designs were developed based on the materials available for the production of the work. The designs were drawn from imagination for some of the works.

2.Project 1 – The Vehicular Shoe

2.1.The Materials Used

A discarded army shoe, nylon thread, black shoe polish, bathroom slippers, ¼ inch steel rod, polypropylene binding sheet, shoe maker's glue and reflectors.

2.2.Tools Used Are: Electric Drill

Using series of drawings as reference (figs. 1a and 1b), the shoe was cut according to the proposed drawing (fig. 2a). The nylon thread was used to sew along the cut edges of the shoe. This was necessary to prevent the cut areas from tearing further down into the shoe.

Neoprene (glue) was used to stick the polypropylene sheet unto the cut areas of the shoe to be translucent to lighten the inside of the object when in light (fig. 2b).

This was meant to highlight the cut areas, which served as the suggested doors and lights of the vehicle. Primary colours of yellow and red reflectors were used in a metaphorical way to suggest both areas back and front lights of the vehicle. Holes were drilled through the shoe with an electric drill, to accommodate the tyre rods into which ¼ steel rods were inserted and tyres put on oval shapes suggestive of tyres were cut out from bathroom slippers and used as tyres for the vehicle (fig. 2c). Finally, the shoe was polished to give it a finish using Lude black polish.

Figure 2a : cutting the army shoe to size

Figure2b: working on the shoe

Figure 2c : fixing the tyres

Figure 2d: side view of the shoe

Figure 2e :front view of the shoe

Carving Fish from False Yams

Works for this project were made from false yams. The yams were collected from a farm at *Kokoso,* in the Ashanti Region of Ghana where the farmer had already uprooted them and thrown them away. They were then peeled, carved into fishes and polished.

Fig. 3a – the false yams

Fig. 3b – peeling the false yams

Fig. 3c – carving the false yam

Fig. 3d – the carve false yam

Fig. 3e– a painted false yam

3.Chandelier from Horns and Calabash

This project was made with horns (fig. 4a) and calabashes to form a chandelier. In processing the horns, the remaining flesh on the horns and the cartilage inside the horns were removed. It was easy to do it when heat was applied. At times it was difficult to remove the cartilage, when this occurs the horn can be hit against a hard surface to detach it from the hard part of the horn.

3.1.Process

- The unwanted parts were sliced off with the aid of a hacksaw blade. The horns were cleaned and dried (Fig. 4b).
- Sections of the horns were cut and smoothened (Figs. 4c and 4d).
- Fixing the horns; epoxy was used as the binding agent to fit the horns together.
- Grooves and holes were created on the horns to allow paths for the wires.
- Holes were made in the calabashes with cutter knife to hold the lamp holders (Fig. 4e).
- Calabash fittings: They were then fitted at the end of the horns (fig. 4f).
- Fixing the horns: epoxy was used as the binding agent to fit the horns into the calabash.
- Lamp holder fittings: glue was applied in the holes to hold the lamp holders (fig. 4g).
- Bamboo fittings: Further fitting were done using bamboo chains. Thin bamboo sticks were cut into short lengths and threaded unto the wires (fig. 4h).
- Wiring: Wires and lamp holders were connected and fixed in the already created holes. Tests were made at every stage to ensure that proper connections were made.
- Fixing of bulbs: Bulbs were fixed in the lamp holders and connected to electricity (fig. 4i).

Figure 4a: the cow horns

Figure4b :slicing off the unwanted parts


Figure 4c: cutting the cow horns Figure 4d : sanding the cow horns


Figure 4e :cutting holes in the calabash Figure4f: fitting the cow horns into the calabash


Figure 4g: fixing the lamp holders Figure 4h :fixing the bamboo holder and wiring

Figure 4i : fixing bulbs into the sockets

4.Advantages Of Non-Conventional Materials

These materials which include empty plastic bottles, egg shells, false yams, rattan, calabashes, horns, and straws are readily available and cheap. Students can easily scout for these materials. Most of them are waste materials, using them would reduce the filth in our environment. These materials give the artist an opportunity to explore the use of other resources to create interesting sculpture pieces. The finished works look different and the natural textures as well as colours add to the aesthetic value and appeal of the art works.

5.Disadvantages Of Non-Conventional Materials

It was detected that the non conventional materials were not as durable as the conventional materials. These materials have to be treated well before use; for example, the horns had to go through several processes before they could be used to produce the work. This sometimes takes weeks to do.

Even though these materials are cheaper, one has to go through several trash cans and rubbish dumps before the quantity required for one piece could be obtained.

6.Appreciation And Discussion Of Works

6.1.Vehicular Shoe (Figures 2d And 2e)

The vehicular shoe is a mixed media work made from an old discarded army shoe, old bathroom slippers, transparent plastic (polypropylene) and reflectors. It was fabricated

using the hand forming technique. Parts of the shoe were cut off to serve as doors and windscreen. Round shapes were cut from the bathroom slippers to represent tyres. The work was polished with shoe polish which makes it look like a painted car. It also has different colours and shapes making it look proportional and balanced.

This sculpture piece shows that a lot of objects can be put together to create one work. The work represents unity in diversity; in that different components can be put together to form one united community. This work takes a cue from Lucky Dube's song titled "Together As One". Many conflicts, wars and misunderstandings have erupted from religious, ethnic, social and even economic differences. The Rwandan genocide in 1994, The Konkomba and Nanumba war in Ghana and presently the Boko Haram issues in Nigeria are few examples of conflicts resulting from ethnic and religious differences.

What this work seeks to do is, tell us that despite our differences, we are still one people.

7.Fishes

Figure 5a: Fishes, (carved from false yams)

The fishes were carved from false yams using carving tools, knife, sandpaper and paint. The bark of the yams were first peeled off with a knife and carved using carving tools. The surfaces of some of the fishes were polished with sandpaper to give them smooth surfaces. Some of the fishes were not sandpapered to show its natural state. They were then painted and pasted with glue on plywood. The plywood was painted blue and white which makes the work look like fishes in the sea. Some elements and principles of design that featured in the work are texture, movement, colour, form and harmony.

This work represents the fact that nothing or nobody is a complete waste. Usually, when the false yams are harvested, they are thrown away because they are not edible, but its conversion from a waste food product to a work of art means no matter how ***"useless"*** something or a person is in one field, it does not make s/he *"**good-for-nothing"*** because s/he can function very well in other aspects of life when given the opportunity.

8.Chandelier (Figure 4i)

The chandelier was made from cow horns, calabashes, rattan, bulbs, and electric wires. The horns were cleaned and fixed on the calabash with epoxy. Some of the horns were cut into two and fitted on the ones that has not been cut with epoxy to form a cross shape. Small calabashes were fixed at the end of the horns. Holes were made in them to allow wires to be passed through and to hold the lamp holders. Different colours of bulbs were then fixed unto the lamp holders and connected to electricity. The combination of different materials makes the chandelier a multimedia work. They have been designed beautifully and compliment each other. The chandelier looks local showing creativity and originality and emits light just like a foreign one. It also shows movement, colour, form, texture, line, balance, variety and proportion. This concept was inspired by a flower called periwinkle.

9.Major Findings From The Study

These findings were made during the study:

- The use of non-conventional materials for the production of works of art is cost effective as most of these materials can be obtained locally and mostly free of charge.
- Even though these materials are obtained locally and free of charge, it sometimes takes weeks to obtain and process the right materials and quantity that are required to produce a particular work.
- It was very challenging to assemble different materials of different weight into one unit. For instance, during the production of the ***Chandelier,*** the thickness of the calabash could not support all the horns and so some cracked. They were replaced with thicker ones and that solved the weight problem.

- It was also difficult to drill holes into the horns to pass wires to the lamp holders. Initially, a plastic tube was used as the pole to hang the lamp to the ceiling, but it proved to be weak and shaky so it was replaced with rattan.
- The use of non-conventional materials gives room for students to learn to work with various waste materials for the production of their art works.

10.Conclusion

The project has brought about the fact that things that we normally throw away as trash can be employed in sculpture works that exceeds stereotypes by allowing students to stimulate and exercise their creative abilities and come out with works that one can marvel at.

The study as revealed that non-conventional materials such as cow horns, eggshells, straws, plastics and paper can be used as alternative materials for sculpture in Senior High Schools (SHS).

Students showed much interest in the collection and gathering of throw-aways. Students were able to manipulate the non-conventional material creatively and came out with useful and interesting works. Students have been exposed to useful waste. Sculpture students should experiment with other materials that can be used as hobbies. They need workshops to improve upon their creativity and skills.

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