

CERAMIC ART AND EXPRESSION: EXPERIMENTING WITH MOSAIC ART

By

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CERTIFICATION

I hereby declare that this submission is my own work towards the MFA and that, to the best of my knowledge; it contains neither material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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ABSTRACT

Mosaic art has been practiced all over the world and generally in two dimensional forms. The main objective of this project is to depict Clay beads mosaic in a three dimensional form for better appreciation and artistic grandeur in clay medium. Inspired by the wisdom of the Egret bird, a design was developed to produce a thought-provoking piece titled “Wisdom Bead Mosaic”. This work was achieved through design thinking, systematic procedure and a tandem of artistic skills and studio practice. The materials used were clay, iron rods and binding wire. The nine (9) feet work provided stimuli among both artist and non-artist. It became evidently clear that mosaic art can be expressively executed in three dimensional and be a resource for beautifying the environment. The project has argued for extrapolation of techniques into different dimensions and also the exemplification and careful repetition of beads and material culture.

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DEDICATION

This project is dedicated to my parents Mr. Elijah Owusu and Mrs. Hannah Owusu for their support and prayers during my education.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Mosaic is the art of decorating a surface with designs made up of small closely placed pieces of hard materials or glass materials. Mosaic art is seen and practiced all over the world. Painting Mosaic is very popular as compared to ceramic and other mosaic materials. Japan is particularly noted for producing and using ceramic mosaic in decorating their building.

Johnson et al (2003), defines mosaic as an art form in which small pieces of cut stone or glass are embedded in plaster. Over the years, mosaic making has been developed to include cut pieces of paper, beads, shells and various materials in the craft. This means that various artists are inspired by nature while others source their inspiration from manmade things. The objective of mosaic art is to provide dynamism in the making.

The earliest known mosaics were made by the Chinese. They were carefully arranged pebble-paved mosaics. The Sumerians used cone-shaped rods pushed into pillars and walls for decoration. Their mosaic traced back to primitive man's simple arrangement of pebbles into patterns describing direction or message.

Around 800 B.C. the Greeks began producing pebble mosaics. The designs were originally geometric, usually following rug patterns. It developed to be more intricate after 400 B.C. when it became economical to cut cubes from stone rods.

The techniques gradually developed through history from decorative floor and wall surface. The Romans first emulated and then took mosaic making to the next level. Roman designs included intricate geometric borders, war depictions, stories of the Gods and their antics, and scenes from everyday life. Pavements predominated, but mosaics were also built onto walls and eventually ceilings.

Around 480 A.D., glass and gold began to replace stone as the primary media in Mosaics. Subject matter turned to religious figures and iconography. Since then, stone has not made a comeback. Today, mosaics are constructed primarily from ceramic tile, beads, and other materials. In Ghana, mosaic is used for decorative purpose as well as to keep records of activities within the environment. Like the art of all peoples, the art of mosaic expresses values, attitudes, and thought of the past experience. Mosaic is usually found on large public buildings, institutions and Hotel.

1.2 Statement of Motivation

Enhancing architecture has been in high esteem in the 21st century and decorating buildings with mosaic art has not been exempted. All across the country, people of different ages adorn various parts of their body with beads. There is little exploration of the use of beads (always used on the body) in executing garden ceramics for external beautification.

Mosaic Art has been of interest to many artist in the aesthetic appeals, it provides to the onlooker and the splendor it provide to where it is executed. The Mosaic has been an art form very much rendered in two dimensional forms and very common with disciplines such as paintings and not so common with the physical art such as Ceramics. In addition,

it has been an art form that is mostly seen flat. The motivation for this project stems from a love of expression of art and going beyond the known and extrapolating a well known two dimensional art into three dimensional for better appreciation. Moreover, in terms of materials usage, the project is motivated by the properties of clay and its effects on art production. Clay are hard, durable and can last for thousands of years irrespective of where it was mounted or how it was used without losing its quality. This therefore calls for in-depth exploration and design experiments to project Ceramic Mosaic Art in three dimensional renditions for variety and appropriate appreciation

1.3 Objectives of the Study

The objectives of the study are:

- 1 To develop artistic expression of ideas using mosaic art technique.
- 2 To design and produce clay beads for three dimensional mosaic art forms.

1.4. Arrangement of the rest of Chapters

Chapter one is the introductory chapter which deals with the Statement of Motivation, Objective of the Study, Importance of the Study, Limitations, Scope of the Study. Chapter two is the review of related literature which deals with definition of Mosaic, Nature of Mosaic, History of Mosaic, Bead Production and Three Dimensional Mosaic. The third chapter is the Methodology. It explains and highlights various research methods, tools and material and systematic procedure used in producing the work. The chapter four deals with the Results and Discussion. It reveals the inventory of items in the piece and philosophy behind the pieces. Chapter five contains Summary, Conclusion and Recommendation.

1.5 Limitation of the Study

The project was constrained by numerous factors. Among of these was lack of pressing machine to enhance a faster rate of bead production at the ceramic studio. However, these limitations did not affect the end results of the project.

1.6 Importance of Research

1. The project is to promote alternative use of beads, sustain and transmit the Ghanaian cultural heritage as ceramists.
2. To the project to depict some aspect of the social, political, educational and cultural values through artistic productions
3. To stimulate public awareness of historical facts for the next generation. The project will serve as source of reference material for further studies.

1.7 Definition of Technical Terms

Below are definitions of terms used within the context of the project.

Aesthetic -something that relate to beauty.

Body composition - is a mixture of different clays and other materials.

Mosaic - is the art of decorating a surface with designs made up of closely placed pieces of hard materials.

Three dimensional Mosaic - is a self supported art piece where the viewer can walk completely around the work to see it from all angles.

1.8 Delimitation (Scope of the Study)

The study focused on the production of beads and its alternative use for three dimensional mosaic forms using Mfensi and Afari clays, iron rod and binding wires.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Nature of Mosaics

Mosaic is the decorative art of creating pictures and patterns on a surface by setting small coloured pieces of glass, marble or other materials in a bed of cement, plaster or adhesive. According to Struck (2009) mosaics can be described as the art of decorating a surface with designs made up of small, closely placed pieces of hard material, or tesserae. Struck (2009) again describes mosaic as a picture or pattern produced by arranging together small pieces of stone, tile, glass and other materials.

At the most simple definition, mosaic is "a picture or other design constructed from smaller pieces". As well as the subject and style of the design, it is the choice of materials, plus the skill in creating and placing the pieces that contribute to the personal, artistic and practical value of the mosaic. A special feature is that the pieces are normally solid and durable. The physical qualities of the materials add greatly to the significance of the mosaic. Materials may be reflective or iridescent (glass, gold, mirror). Mosaics can be 3-dimensional, and can incorporate objects and unusual items.

Certain design styles, such as *Gothic Revival* and *Art Nouveau* provided new designs and uses for the art form. Today, mosaic remains a popular craft around the world. All these point to the fact that mosaic is closely linked to architecture and its decorative schemes. The word mosaic has come to have a wider meaning than the original wall painting. Mosaic is now done on wide variety of surfaces. Indeed, these days, mosaics are done on wooden panels, canvas, ceramics etc, and others mounted as wall installations. In her book, "Painting, Ideas, and Techniques", Seligman (2003) stated in the introduction that most art commentators agree that mosaic is a work of art that is created for a particular

site so that it is incorporated into the architecture. In other words, the force of its surroundings strongly influences its composition.

Commentary suggests that for thousands of years, mosaics have been part of interior spaces. Their start can be traced back to primitive man's simple arrangements of pebbles into patterns, describing a direction or message. The techniques gradually developed through history from decorative floor and wall surfaces in villas and cathedrals to the modern expression of mosaics as art. Currently, the largest bead mosaic measured 12 ft. 3 in width by 8 ft. in depth 10 in height (Struck, 2010).

2.2 History of the Mosaic

Scholars have traced mosaics back as far as the fourth millennium B.C. to the Temple of Uruk in Mesopotamia. According to Hunt (2010), the word mosaic is of Greek origin, meaning "patient work of art, worthy of the muses" Other examples equally as ancient are found in Pre-Columbian cultures objects were decorated with the shells, mother-of-pearl and semi-precious stones. Mosaics were also uncovered in Greece, dating back to the fourth century B.C. in the ancient capital city of Pella. But it was the conquest of Greece by the Romans in the second century B.C. that eventually raised the level of artistic refinement. According to Struck (2009) the early mosaic forms ranged from random patterns, to simple decorative floor pieces (such as the Seahorse shown in Figure 2.1), to the extremely elaborate wall mounted art pieces (such as the Chariot Racers shown in Figure 2.2). As noted by Struck (2009), most of these mosaic forms depicted mythology, sea and earth imagery as seen on Figure 2.1 and Figure 2.2. The rise in Christianity later dominated emerging mosaic themes after the fall of the Greek and

Roman Empire.



Figure 2.1: *Seahorse Mosaic - Rome, 1st Century A.D. (Struck, 2009)* **Medium:** sea shell.

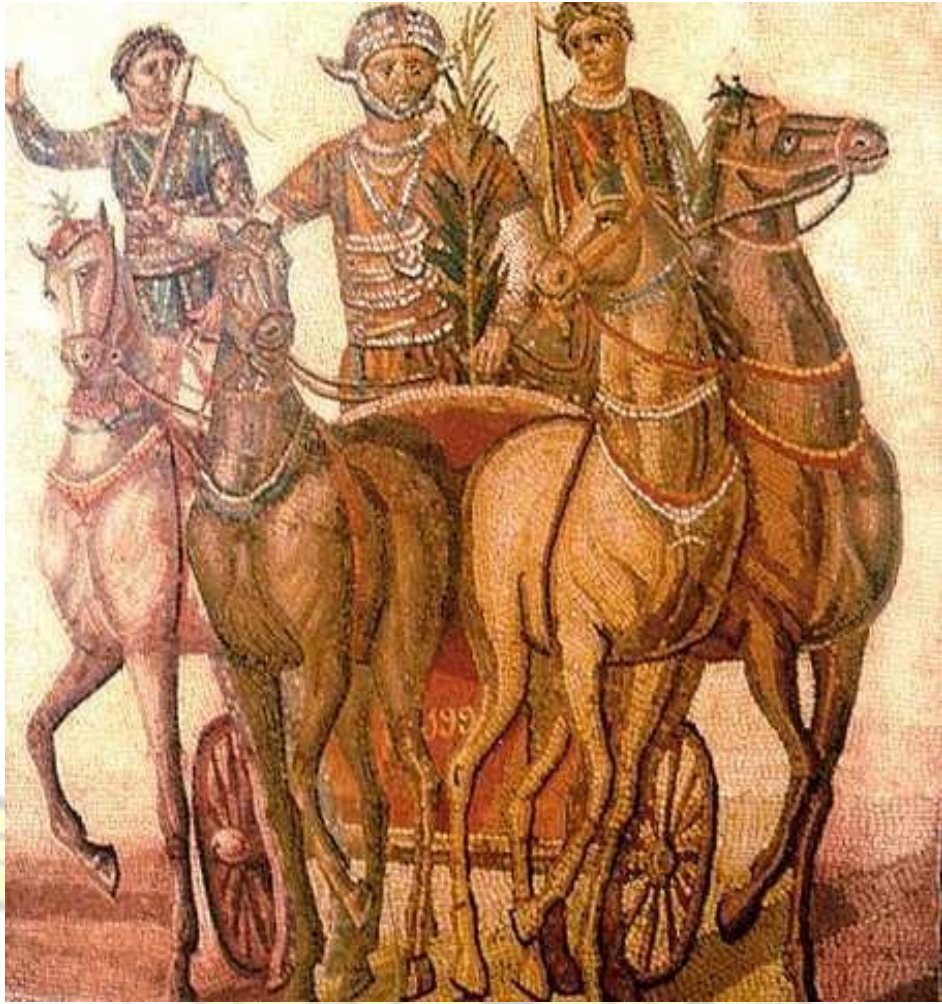


Fig 2.2: *Victorious Charioteer* by Struck, 2009.

Medium (Marbles)

2.3 Bead Production

Ghana , beads are a part of an assemblage or a mixture of materials such as twigs, seeds, shells, metals, bones, ceramic wares and glass put on as necklace or article of jewellery in a seemingly haphazard way so that the object may not appear to have been designed (Avotri, 2009).

Beads may be divided into several types of overlapping categories based on different criteria such as the materials from which they are made, the process used in their manufacturing, the place or period of origin, the patterns on their surface, or their general shape. In some cases, such as millefiori and cloisonné beads as shown on Figure 2.3, multiple categories may overlap in an interdependent fashion (Rentetzi, 2009).



Figure 2.2: *Cloisonné beads (Rentetzi, 2009)*

Medium: Cloisome beads

2.4 Components of Beads

Beads can be made of many different materials. The earliest beads were made of stone and seed. These, after they were gathered, could be readily drilled and shaped. As humans became capable of obtaining and working with more difficult materials, those materials were added to the range of available substances. More recently, synthetic materials were added. In modern manufacturing, the most common bead materials are wood, plastic, glass, metal, and paper (Rentetzi, 2009).

2.5 Natural materials for Beads production.

Beads are made from many naturally occurring materials, both organic (i.e., of animal- or plant-based origin) and inorganic (purely mineral origin). However, some of these materials now routinely undergo some extra processing beyond mere shaping and drilling such as colour enhancement via dyes or irradiation (Dwumfour, 2011). The natural organics include bone, coral, horn, ivory, seeds (such as tagua nuts), animal shell, and wood. For most of human history pearls were the ultimate precious beads of natural origin because of their rarity; the modern pearl-culturing process has made them far more common. Amber and jet are also of natural organic origin although both are the result of partial fossilization. The natural inorganic include various types of stones, ranging from gemstones to common minerals, and metals. Of the latter, only a few precious metals occur in pure forms, but other purified base metals may as well be placed in this category along with certain naturally occurring alloys such as electrum.

With the Making of the Wood Beads, soft wood is cut, turned, and polished by hand.



Figure 2.3 *Wood shaped to form beads*

Source: Photograph by the artist



Figure 2.4 *natural-Smoky-Quartz as necklace*

Source: photograph by the artist



Figure 2.5: *Beans seed as beads*

Source: Photograph by the Artist



Figure 2.6: *Cowries necklace*

Source Photograph by the artist

2.6 Synthetic materials for Beads production

The oldest-surviving synthetic materials used for bead making have generally been ceramics: pottery and glass. Beads were also made from ancient alloys such as bronze and brass, but as those were more vulnerable to oxidation they have generally been less well-preserved at archaeological sites. Many different subtypes of glass are now used for bead making, some of which have their own component-specific names. Lead crystal beads have a high percentage of lead oxide in the glass formula, increasing the refractive index. Most of the other named glass types have their formulations and patterns inseparable from the manufacturing process (Rentetzi, 2009).

Small, colourful, fusible plastic beads such as Hama, Perler, and Pyssla can be placed on a solid plastic-backed peg array to form designs and then melted together with a clothes iron. Alternatively, they can be strung into necklaces and bracelets or woven into key chains. Fusible beads come in many colours and degrees of transparency/opacity, including varieties that glow in the dark or have internal glitter; peg boards come in various shapes and several geometric patterns.

Plastic toy beads, made by chopping plastic tubes into short pieces, were introduced in 1958 by Munkplast AB in Munka-Ljungby, Sweden, under the brand Nabbi. Known as Indian beads, they were originally sewn together to form ribbons. The pegboard for bead designs was invented in the early 1960s as a therapy for elderly homes; the pegboard later gained popularity as a toy for children (Rentetzi, 2009).

The bead designs were glued to cardboard or Masonite boards and used as trivets. Later, when the beads were made of polyethylene, it became possible to fuse them with a flat iron. (Munkplast, 2005) introduced the Photo Pearls software that converts digital photos to bead designs. Hama comes in three sizes: mini (diameter 2.5 mm), midi (5 mm) and

maxi (10 mm). Perler beads come in two sizes called classic (5 mm) and biggie (10 mm). Pyssla beads (by Ikae) only come in one size (5 mm) (Glover & Bellina, 2011).

2.6.1 Glass Beads

Glass beads often serve as a mirror of the culture and speak a lot about the social, political, religious and economic history and status of those who made and used them. Among some ethnic groups e.g. The Krobo of Ghana, glass beads are worn from birth to death and are buried together with their owners. The beauty of glass beads increases with use and time. (Asumadu, 2010)



Figure 2.7a: *Sample of powdered glasses.*

Source: (Asumadu, 2010)



Figure 2.8b. *Sample of powdered glasses
which have been fused to form beads in
African Traditional way
(Asumadu , 2010)*

In Ghana glass beads also form part of the communication system of the multiple layers of the Ghanaian society. Decorations with glass beads communicate cultural values in a symbolic language which expresses status, religion, politics and artistic attitudes (Asumadu, 2010).

In societies without the written word, art objects acquire vital importance as visual documents, and serve to transmit traditional knowledge. They constitute a dense concentration of ancestral wisdom that has to be preserved and passed on to the next generations and, being another form of jewellery, play significant role (Adu-Agyem, etal 2009).

The technology for glass bead making is among the oldest human arts, dating back 3,000 years (Agyei, 2009). Glass beads have been dated back to at least Roman times. Perhaps the earliest glass-like beads were Egyptian faience beads, a form of clay bead with a self-forming vitreous coating. Glass beads are significant in archaeology because the presence of glass beads often indicate that there was trade and that the bead making technology was being spread. In addition, the composition of the glass beads could be analysed and help archaeologists understand the sources of the beads.

Glass beads are usually categorized by the method used to manipulate the glass - wound beads, drawn beads, and moulded beads. There are composites, such as millefiori beads, where cross-sections of a drawn glass cane are applied to a wound glass core. A very minor industry in blown glass beads also existed in 19th-century Venice and France.

2.6.2 Wound Glass Beads

Probably the earliest beads of true glass were made by the winding method. Glass at a temperature high enough to make it workable, or "ductile", is laid down or wound around a steel wire or mandrel coated in a clay slip called "bead release." The wound bead, while still hot, may be further shaped by manipulating with graphite, wood, stainless steel, brass, tungsten or marble tools and paddles. This process is called marvering, originating from the French word "marbrer" which translates to "marble". It can also be pressed into a mould in its molten state. While still hot, or after re-heating, the surface of the bead may be decorated with fine rods of colour glass called stringers (Glover & Bellina, 2011)

2.6.3 Drawn Glass Beads

The drawing of glass is also very ancient. Evidence of large-scale drawn-glass bead making has been found by archaeologists in India, at sites such as Arekamedu dating to the 2nd century. The small drawn beads made by that industry have been called IndoPacific beads, because they may have been the single most widely traded item in history found from the islands of the Pacific to Great Zimbabwe in southern Africa (Kanungo, 2004).

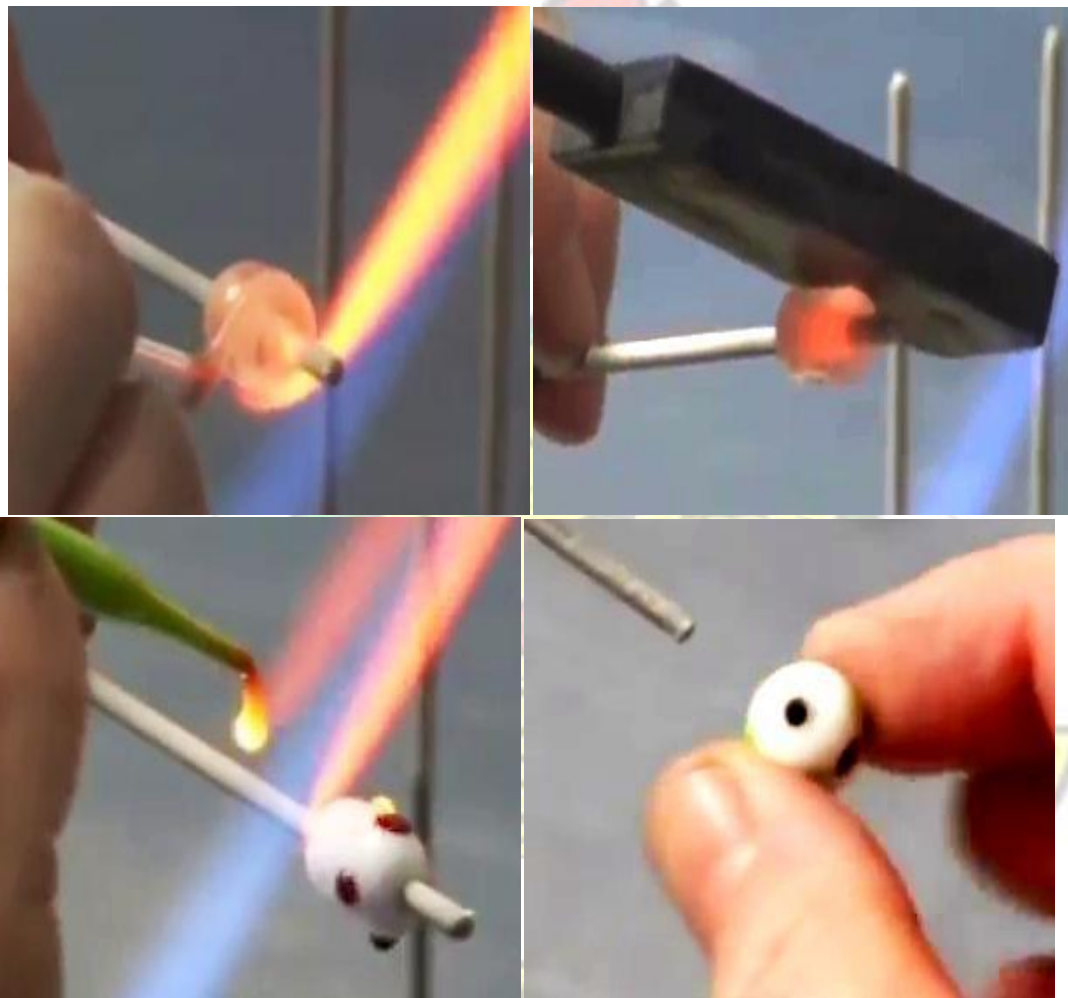


Figure 2.9: *glass beads wrapped around a metal rod and heated to form desirable shape, called a mandrel.*

(Kanungo, 2004)

There are several methods for making drawn beads, but they all involve pulling a strand out of a gather of glass in such a way as to incorporate a bubble in the centre of the strand to serve as the hole in the bead. In Arekamedu this was accomplished by inserting a hollow metal tube into the ball of hot glass and pulling the glass strand out around it, to form a continuous glass tube. In the Venetian bead industry, molten glass was gathered on the end of a tool called a puntile ("punting up"), a bubble was incorporated into the centre of a gather of molten glass, and a second puntile was attached before stretching the gather with its internal bubble into a long cane.

The pulling was a skilled process, and canes were reportedly drawn to lengths up to 200 feet (61m) long. The drawn tube was then chopped, producing individual drawn beads from its slices. The resulting beads were cooked or rolled in hot sand to round the edges without melting the holes closed; were sieved into sizes; and, usually, strung onto hanks for sale (Kanungo, 2004).

2.6.4 Seed Beads

The most common type of modern glass bead is the seed bead, a small type of bead typically less than 6mm, traditionally monochrome, and manufactured in very large quantities. They are a modern example of mechanically-drawn glass beads. The microbead or "seed bead", are so called due to their tiny, regular size. Modern seed beads are extruded by machine and some, such as Miyuki delicas, look like small tubes as shown in figure 2.10.



Fig:2.10: *Seed beads of different colours and sizes*

Source: Photograph by the artist.

2.6.5 Pressed glass beads

Wound beads can be pressed or spun in a half-mould to give them a special shape, but true moulding was a development of the Bohemians. The original moulds were handheld tongs into which a bit of hot glass from a cane was placed. In ancient Indian moulded glass beads, usually a very thin rim is seen. This is caused when the mould is joined and the flow of excess glass creates a thin circumference around the piece. Alternatively, it is caused by differential cooling of the glass in the upper and lower faces. (Francis, 1992).

Pressed or moulded beads are associated with lower labour costs. These are made in the Czech Republic. Thick rods are heated to molten and fed into a complex apparatus that stamps the glass, including a needle that pierces a hole. The beads again are rolled in hot sand to remove flashing and soften seam lines. By making canes (the glass rods fed into the machine) striped or otherwise patterned, the resulting beads can be more elaborately colour than seed beads.

One 'feed' of a hot rod might result in 10–20 beads, and a single operator can make thousands in a day. Glass beads are also manufactured or moulded using rotary machine where molten glass is fed on the Centre of rotary mould and solid or hollow glass beads are formed. The Bohemian glass industry was known for its ability to copy more expensive beads, and produced moulded glass "lion's teeth", "coral", and "shells", which were popular in the 19th and early 20th century Africa trade.



Figure 2.11: *Samples of pressed glass beads (Francis 1992)*

2.6.6 Furnace glass beads

A variant of the wound glass bead making technique, and a labour-intensive one, is what is traditionally called lampworking. In the Venetian industry, where very large quantities of beads were produced in the 19th century for the African trade, the core of a decorated bead was produced from molten glass at furnace temperatures, a large-scale industrial process dominated by men. The delicate multi-coloured decoration was then added by

people, mostly women, working at home using an oil lamp or spirit lamp to re-heat the cores and the fine wisps of colour glass used to decorate them.

These workers were paid on a piecework basis for the resulting lampwork beads. Modern lampwork beads are made by using a gas torch to heat a rod of glass and spinning the resulting thread around a metal rod covered in bead release. When the base bead has been formed, other colours of glass can be added to the surface to create many designs. After this initial stage of the bead making process, the bead can be further fired in a kiln to make it more durable.



Figure.2.12: Samples of Furnace glass

Source (Wikipedia)

2.6.7 Dichroic glass beads

Dichroic (pronounced dye-crow-ick) glass, commonly called dichro for short, literally means "two colours" and is derived from the Greek words "di" for two, and "chroma" for colour. It was thus named because of its fantastic multi-colour and reflective properties. When you look at this glass, it appears to have more than one colour at the same time, especially when viewed at different angles.

This reflective phenomenon is known as thin-film physics, which is also why you see swirling rainbow patterns in a soap bubble, floating colours from oil on water and the dramatic colours of dragonfly wings.

Dichroic glass is not reflective because of special glass or textures. Instead, it is a special coating treatment that is done to the glass. This beautiful glass represents an adaptation of aerospace technology to the world of art. Nasa, (1990) originally developed dichroic glass for use in satellite mirrors and also uses it for re-entry tiles on space shuttles.

Making dichroic glass requires a complex processing technique and is only made by a handful of manufacturers that have high-tech equipment like high temperature vacuum chambers, vaporizing electro-guns, and high temperature kilns. The intense, computerized process involves vaporizing metallic oxides, such as magnesium or titanium, with an electro-gun. Once it is vaporized into floating dust, it settles on and coats the surface of hot glass inside an airless vacuum chamber. The complete process may require from 15 to 45 different layers to talking in a width that is smaller than a human hair. The type, order applied and number of metallic oxide layers used will determine the final look of the glass. Once the coating process is completed, the whole coated piece is fired in a kiln at high temperatures to fuse the oxides to the glass.

Dichroic glass does not use paints, dyes, or any other kind of colouring agent to create its colour, but sometimes pieces of colour glass are coated. The coating itself doesn't have its own inherent colour, but rather it bends light to reflect colours exactly as a prism makes rainbows. With so many combinations of oxides, glass colours and patterns available to make dichroic glass, the possibilities are endless for incredibly rich and varied colours and patterns. These amazing dichroic design elements add flash and pizzazz, sparkle and intrigue to jewellery, creating a sense of luxury and artistic class as shown in figure 2.13.



Figure 2.13: *Samples of Dichroic beads (Nasa, 1990)*

2.6.8 Lead Crystal Beads

Lead crystal beads are machine cut and polished. Their high lead content makes them sparkle more than other glass, but also makes them inherently fragile.

Regular glass is mainly made of Silicon Dioxide (SiO_2), with the addition of other ingredients, such as Sodium carbonate (Na_2CO_3), Calcium oxide (CaO), Magnesium Oxide (MgO) and Aluminium Oxide. The resulting glass contains about 70 to 72 % silica by weight and is called a soda-lime glass. Soda-lime glasses account for about 90 % of manufactured glass.

In general, manmade ‘crystal’ is a glass that has had one or more of certain minerals added to a standard glass formulation to make the product more brilliant. Lead is the mineral of choice here, as lead oxide added to the molten glass gives lead crystal a much higher index of refraction than normal glass, and consequently much greater “sparkle”.

The presence of lead also makes the glass softer and easier to cut.

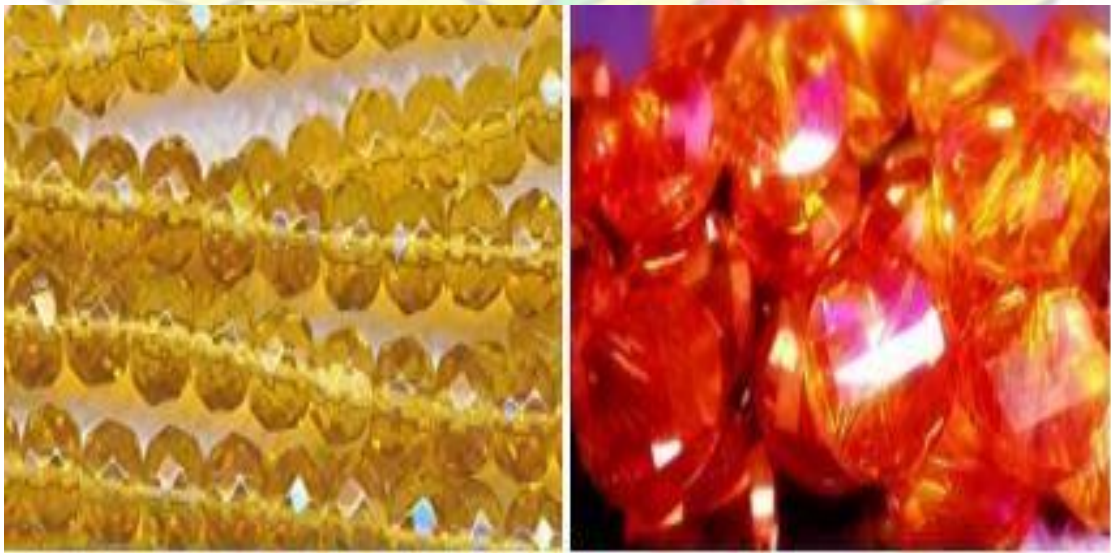


Figure 2.14 *Samples of Lead Crystal beads (Kanungo, 2004)*

2.7 Ghanaian Bead Usage and Significance

Art historian Gott (2007) examines Ghana's unique bead relationship in her dissertation, *Precious Beads and Sacred Gold: Trade, Transformation, and the Unifying Principle of Generative Nurturance in the Arts of Southern Ghana*. According to the writer, historic Gold Coast peoples shared traditional views leading to the belief that beads have a spiritual nature because of their "mysterious origins, supernatural powers, and generative capacities" (Gott 2007).

Sackey, (1985) notes that most ethnic groups in Ghana use beads for body adornment. A common type among West African groups is that what many authors call "precious beads. They are considered sacred because of their antiquity, their association with deities, and because many of these beads supposedly have the power of selfreproduction. There are several sacred and highly valued beads found in the coastal areas, but historically Ghanaians treasure those called Aggry the most. They are the earliest of the precious beads. Later, the Bodom bead came into popularity, which many bead researchers agree happened in the nineteenth century (Liu et al. 2001). Currently, valuable antique beads include the koli (a Ga term), bota (a Fante term), or abute (an Ewe term). Evidence suggests that Ghanaians either made or reworked all of these beads locally, but the materials for all the beads came from imported European glass (Gott 2002).

Gott provides a glimpse of the sacredness of beads from several West African groups. The writer states that, the Ewe of south-eastern Ghana and Togo, spiritually-empowered beads are said to appear as excrement deposited by the rainbow serpent deity Dan Anydohoédo as he rises from under the earth in order to plunge into sacred waters—a supernatural origin similar to the bead-wealth excrement of Òsùmàrè, the primordial rainbow serpent

of the Yorùbá also for the Ga of Ghana. For the Krobo, a Dangme people of south-eastern Ghana, beads and stone celts with special curative powers are produced when the lightning of the sky deity strikes the earth. In Akan belief, beads possessing reproductive powers may be retrieved after they miraculously emerge from underneath the forest floor, the sacred realm of the maternal earth deity AsaseYaa (Gott 2002).

This belief illustrates a strong spiritual link to specific bead groups and provides insight into West African views that beads in general have a higher value, both culturally and monetarily, than other objects. This view is especially relevant when compared to the value historically attributed to beads by Europeans (Kumekpor et al. 1995).

The concept of supernatural origins of beads, as ancient gifts from deities, was perpetuated by the discovery of those beads in the ground, which many researchers believe were actually beads emerging from historic burials, previously occupied sites, hidden caches, and other similar instances (Liu et al. 2001). The consequence of burying beads in the soil is that it creates a deteriorated porous surface on the beads, reinforcing the ancient imagery regarding their age. The idea that beads have life-giving abilities came from stories of people finding not just one bead, but groups of beads in the ground. The occurrence was common enough to support the local belief that beads have supernatural regenerative powers. Ghanaians call these special beads “ground beads,” and some believe these beads can reproduce themselves if reburied (Gott 2002; Gott 2007; Kumekpor et al. 1995). The fertility powers associated with these beads led to the belief that ground beads have many life-giving properties; eventually, these powers were associated with not just those beads, but many others too.

2.7.1 Daily Bead Usage

There is a tradition in Ghana that all precious beads have reproductive powers, and one of their main functions is the use as waist beads for women, which is still a popular tradition in modern Ghana. Waist beads, in utilitarian form, are strands of beads that women use to hold their loincloths in place (Quarm 1989). In Asante, the people call waist beads “tomma,” and they are the most fundamental part of female attire (Gott 2007). “Tomma” consist of up to six strands of beads worn on the waist, and all West Africans consider both these beads and this part of the body to be private (McLeod 1981). This belief extends the idea that women must always hide the beads and the waist from view (Gott 2002).



Figure 2.15: *Ghanaian women adorned with beads (Gott, 2002)*



Fig:2.16: A woman dressed with waist bead

Source: Photograph by the artist

Waist beads have many other functions beyond their utilitarian uses. Gott (2002) explains that waist beads are closely associated with the female concepts of fertility and sexuality. Traditional belief held that waist beads possess supernatural fertility powers, which “extends to include those waist beads of imported or locally manufactured glass beads” (Gott 2007). Women often include precious beads in the strands of waist beads since they believe them to enhance female fertility through the power of touch. West African women make strands of waist beads using local powder glass beads and imported glass beads. When rare precious beads are available, they incorporate them as well (Gott 2007).

The power of beads starts at birth when mothers, especially Asante mothers, “tie strands of imported or locally produced beads at strategic points on an infant’s body around the wrists, elbows, ankles, calves and waist” (Gott 2007). Infant females wear miniature waist beads and girls continue to wear them into adulthood. Ghanaians traditionally believe that waist beads help create a curvy body, which is equated with health and beauty (many modern Ghanaian women now attribute this tradition to gauging a baby’s weight and growth).

The seventeenth century Mueller (1983) also noted similarities in the dress of newborn infants. The writer observed that a child’s neck was draped with various kinds of beads and gold and that the child’s waist, hands, and feet were decorated in a similar fashion. He explained that the local people believe these fetishes give their babies strength against the devil and from illness, injury, or accidents (Jones 1985).

Sackey (1985), one of the only other authors to mention small beads, noted similar practices in 1983. She observed that beads were used not only to adorn infants, but also to usher them safely into the “living” world after their first eight days of life. Some groups used three beads, called *Gyanie*, *Abia*, and *Nwansana’ti*, while the Fante use several small *bodom* beads or one big *bodom* bead. She also observed that tiny white beads called “mfufua” (Akan) are also tied to wrists, neck, legs and waist of the child.

The mother and close relatives also put on “mfufua” to signify their victory and joy. Two strings of red and black tiny beads called “Abrekuni” (Akan) are tied round the child’s neck to protect and hold the fragile neck from falling back.

Additionally, Sackey (1985) says that Akan twins also wear special beads called an *Abamcharm* that consists of red (*Nenkyerma*), yellow (*bodom*), and blue (*Ekuar*) beads.

The Ga people use flat white beads and round black beads instead of *bodom*, which are normally reserved for priests (Sackey 1985). Therefore, one can see that many types of beads, including precious and simple small beads, are used for protection, to signal happy or significant events, and are used during birth rituals. Women dress their daughters with waist beads to help form full curves and well developed bottoms and thighs that they associate with fertility and sexual attractiveness. (Quarm, 1989).

(Kumekporet al.1995) maintain that among the Akan, it was disgraceful for adult women not to wear their waist beads. If a woman is barren, she can carry an *Akuaba* fertility doll that is adorned with small beads, thought to improve a woman's reproductive abilities. Sackey (1985) noted that in the Asante nobility rites for girls reaching marriageable age, the girls receive waist beads from her family or her future husband. He further discussed how an "initiate's family or future husband presented her with special gifts of *tomma*" that denoted "her entrance into female maturity and sexual life".

Sarpong (1977) also notes that the special beads are not exceptional because of their beauty, stating that many locals do not find them attractive but are special because of their antiquity and reproductive powers. Sackey (1985), explains that the Krobo, of the Ga-Adangbe people, have a similar rite of passage for girls called the "Dipo." The ceremony also incorporates waist beads and many other strands of precious old beads around the neck, arms, and legs.

As a rule of privacy, only other women generally see waist beads, often during bathing and other such activities. The exception to the rule is when a woman takes on a lover or husband. Then she uses the beads to indicate when she wants to make love, and she will

move around to make the beads rattle audibly, so the man can hear them when she is nearby (Gott 2002; Quarm 1989).

Even in death a “woman would be dressed with waist beads prior to burial, as a testimony to her fulfillment of the generative and maternal ideals of Asante womanhood” (Gott 2002). Sackey contends that normally “two girdles of waist beads, a necklace and wrist beads are used to “adorn” a woman’s body at death and that the type of beads chosen can often reveal her social status.

(Quarm,1989) claims that a man can even swear an oath by his wife’s waist beads, while it is suggested that revealing a married woman’s waist beads is the same as adultery, and the person can be sued for damages. When a woman dies, friends and family put her waist beads on her body at the funeral, so everyone can see she was a good maternal woman. They even give gifts of *tomma* (waist beads), and the loincloths worn with them, for her use in the afterlife because according to Akan customary beliefs, there is an ancestress deity that “guards the entrance to the ancestral world to ensure that all women who enter are wearing waist beads” (Gott, 2007).

While some Ghanaians believed beads were related to witchcraft, it was more usual for people along the Gold Coast to believe that beads or gold could be used as a personal means of protection (Gott 2002; 2007). The information provided here not only illuminates the significance of beads in a woman’s daily life but also its spiritual significance to the Ghanaian woman.

2.8 Using Beads to Create Mosaics

This section examines some known mosaic forms including the uses of bead which is the focus of the study. Clay bead have a unique property that characterize the end products. It

is easily fashioned in a variety of shapes that makes it suitable for a particular art work and for that matter, clay bead mosaic, being it in two or three dimensional form, they have special and interesting finishing that does not change or fade out. They are hard, durable and can last for thousands of years irrespective of where it was mounted or how it was used without losing its quality.

Mosaic as an art form is closest to painting: both represent two dimensional images. Struck (2009) indicate that, both mosaic and painting are suitable for large-scale surface decoration. However, unlike the painter, the mosaicist is limited in his colour-palette and forms which is two dimensional, by his choice of materials. Thus it is extremely difficult to achieve the same tonal variation of light and shadow as can be attained by using (for example) oil paint, whose colour spectrum is enormous. Even so, mosaic art has attributes that render it more effective for distance effects. Chief among them is the light-catching qualities of the glass tesserae used, which can be further enhanced by the application of gold/silver foil to the back of the glass pieces, or by setting the latter at a reflective angle.

2.8.1 Method of Mosaic-Building

There are three main ways of constructing mosaics: the direct method, the indirect method and the double indirect method. The method by which mosaics are made hasn't changed much since ancient times. Advancements in tools and materials have made the process easier, quicker, and the results more varied and visually appealing, but overall the process is the same. There are few written records of early mosaic techniques. The most comprehensive information regarding the creation of mosaic art was written around 77 A.D. by Pliny. In the 36th volume of his natural history series, Pliny stated three main methods for the proper mosaic work as: direct, indirect and double indirect.

2.8.2 The Direct Method of Mosaic-Building

According to the encyclopedia of Arts, the direct method of mosaic-building involves affixing the individual *tesserae* directly onto the surface of the chosen support. Preliminary drawings may be made before hand on the area to be decorated. The direct method was a popular approach used by traditional artists in the completion of many famous European wall and ceiling mosaics. It is also used in conjunction with the surfaces of three-dimensional objects, such as vases. One disadvantage of the direct method is that the mosaicist must work at the site to be decorated, which may not be feasible for any length of time. According to Lowden (2001), a modern improvement involves the use of a fiberglass mesh. The mosaic is constructed on the mesh, in the artist's workshop, before being brought to its final location.



Figure 2.17: Tiles which have been fixed directly son walls (Lowden 2001)

2.8.3 The indirect method of mosaic creation

The indirect method of mosaic creation is customarily employed for large-scale commissions with repetitive design elements, requires the components (glass, tiles etc.) to be affixed face-down onto a sticky backing. Later, they are transferred to their final destination. The advantage of this approach is that it gives the artist the opportunity to rework areas (Lowden, 2001).

Originally the design for the mosaic was drawn on a piece of cloth or flat of clay, the tiles were laid on the cloth or clay in the accordance to the design, and a layer of mortar was spread over the back of the tiles. Then the backing was applied to the tiles and the design was flipped over and grouted.

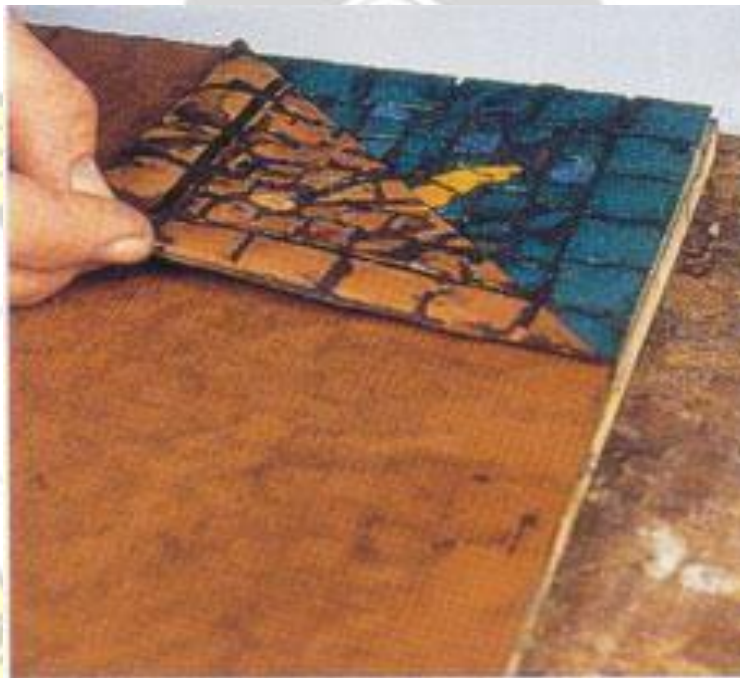


Figure 2.18 *Arranging tiles onto a sticky background*



Figure 2- 19: *Transferring the mosaic to the final destination*

(Lowden, 2001)

2.8.4 The double indirect method

Lowden states that the double indirect method is like the indirect method with an extra stage. Instead of tiles being placed face-down onto sticky backing, they are placed faceup. This allows the mosaics to see the pattern being created. Once the mosaic is finished, another layer of sticky backing is applied onto the top of it. Then the original layer is peeled off. The mosaic can then be transferred to its final resting place, as in the indirect method. The advantage of the *Double Indirect Method* is that virtually the entire mosaic from concept to completion can be pre-assembled away from the site, in the artist's workshop or studio where there are less distractions and there is the benefit of more controlled conditions and better facilities.



Figure 2.20: The pencil outlines



Fig.2.20b: The design is drawn with pencil onto a semi sticky surface



Figure 2. 21: *work is removed from the sticky surface*



Figure 2.21b *Mortar is applied to the back from the sticky surface*



Figure 2.21c backing is applied (Lowden, 2011)

2.8.5 Computer Aided Designs

Recent evidence shows that mosaics can now be made using computer-aided design (CAD) software. These programs may be employed by individual craftsmen, or by robotic manufacturing systems. As stated by (Lowden, 2011) in order to speed up the mosaic making process, eliminate errors and reduce costs, mosaics are now being assembled by computer-driven robots, rather than by hand. Production can be 10 times faster with fewer errors.

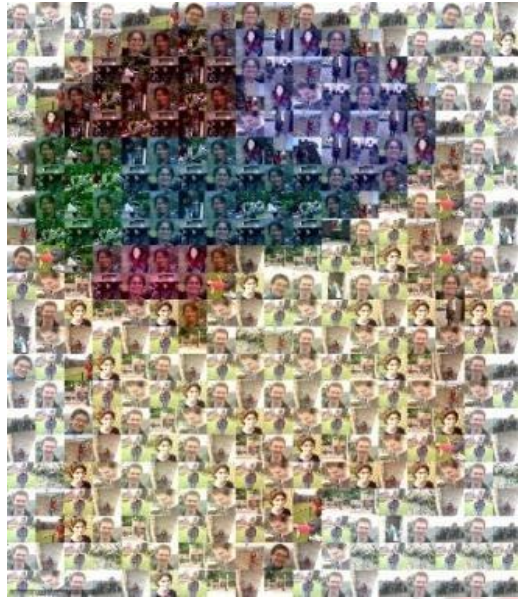


Fig. 2.22a: *Portrait pictures been arranged to create another picture (Lawden, 2011)*



Fig 2.22b: *Box forms of different mosaic on the computer screen*

2.9 Three dimensional Art Mosaic

Three dimensional media occupies space defined through the dimensions of height, width and depth. It includes sculpture, installation and performance art, decorative art, and product design. Two processes are responsible for all three-dimensional art form: additive, in which material is built up to create form, and subtractive, where material is removed from an existing mass, such as a chunk of stone, wood or clay.

2.9.1 Types of Three Dimensional Mosaics.

Sculpture can be freestanding, or self-supported, where the viewer can walk completely around the work to see it from all sides, or created in relief, where the primary form's surface is raised above the surrounding material, such as the image on a coin. Bas-relief refers to a shallow extension of the image from its surroundings, high-relief is where the most prominent elements of the composition are undercut and rendered at more than half in the round against the background. Three Dimensional mosaics take the additive method of making a three dimensional Art in which material is built up to create form. The materials are added or fixed on a surface to create a self-supported mosaic art that one can go round it to see the whole form as shown in figure 2.23 and figure 2.24.



Fig.2.23: Broken tiles glued together for three dimensional Mosaic by (Quarm,1989)



Fig 2.24: Stone beads mosaic.

Source: (Wikipedia)

CHAPTER THREE

MATERIALS AND METHODS

3.1 Materials

Materials used in the study included Mfensi and Afari clays, iron rods and binding wires.

3.1.1 Clays

Mfensi and Afari clays are both located in the Nkawie districts in the Ashanti region. Both clays are relatively plastic, rough and sandy in nature; and used extensively for pottery and brick production.

3.2 Idea development

Idea development involves critical thinking regarding themes, materials and the techniques to be adopted in the execution of art works. The development of the idea requires great thinking and brainstorming since it provides the nexus for creativity. Through idea development, an artist is able to create an interesting work out of an existing work. However, the development calls for careful thought and skills. Norty et, al (2013) asserted that the development of an idea must be very generative, in-depth exploration analysis, spontaneous play and association, design development and revision.

The artist was inspired by behavior and nature of Great Egret bird from heron family. Heron are breeders of coastal and inland wetlands. They nest along swamps, marshes, lakes, ponds and other wet habitat with trees and shrubs to provide secluded nest site.

They can even nest in dry woods and as long as there is water nearby for foraging. It has a slow flight with its neck retracted unlike the other stocks, cranes and spoonbills which extend their necks in flight.

A study of actions and non-actions of Heron, reviews that they know how to take advantage of things and events for their own benefit and it teaches us how to take perfect our personal flight through life. In other words, one would know how to take advantage of things and events that most people would not bother with. Again, to know what is best for you and to be persistent when opportunities present themselves so that you do not let them get away from you.

These powerful animals enjoy their own company and are loners. It is rare to see them flocking together. The Herons hunt by standing still at the water's edge, in vegetation, or

by walking slowly in shallow water. When a fish approaches, the heron lunges and darts its head, grasping the fish with its heavy bill. They sometime lure-in fish using items such as bread crust, earthworms, feathers, twigs or insects as bait by dropping them on the surface of the water to entice the small fish. The small herons crouch patiently to surprise fish with a snatch of their dagger like bill.

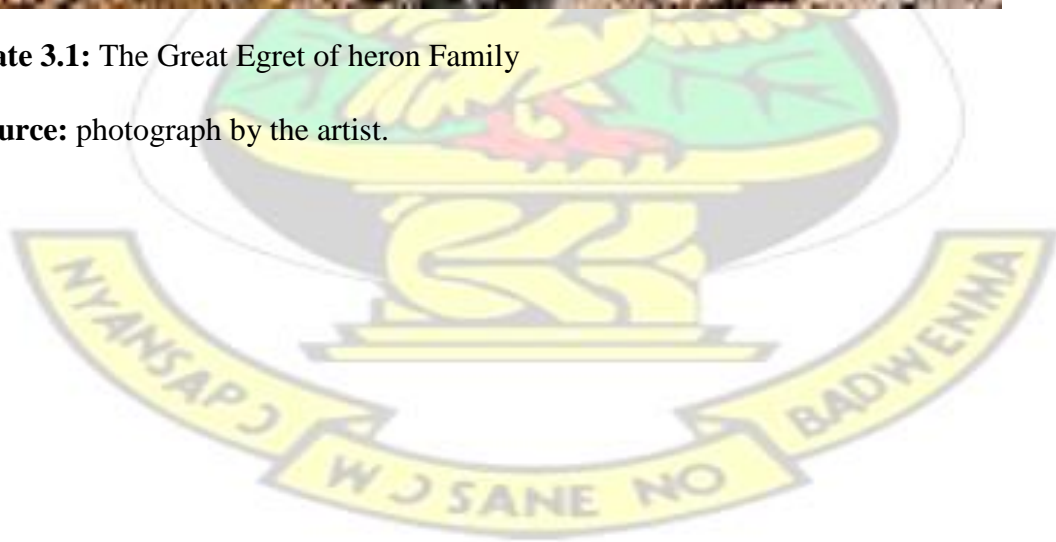
In many cultures, the herons are used as symbols. Chinese uses it as a symbol of strength, purity, patience and long life. The Egyptians also use them as a symbol of prosperity and some American tribes took note of its inquisitiveness, curiosity and determination. The heron is at home in three elements: water, earth and air and this speaks to the artist of diversity and comfort in multiple element also show easy transition. Considering all of these attributes linked with these water creatures, heron becomes a symbol of wisdom due to its good judgment skills.





Plate 3.1: The Great Egret of heron Family

Source: photograph by the artist.



3.2.1 Brainstorming and Concept Realization

Having conceived the idea of the Great Egret and developing it as shown on Plate 3.2, the final design for production was attained. The final design was achieved through manipulation of the original drawing of the bird. The characteristics of the bird such as long beak and interesting curvatures were slightly enhanced to give the intended art work the wisdom accolade. The final design was named “the Wisdom Bead Mosaic”



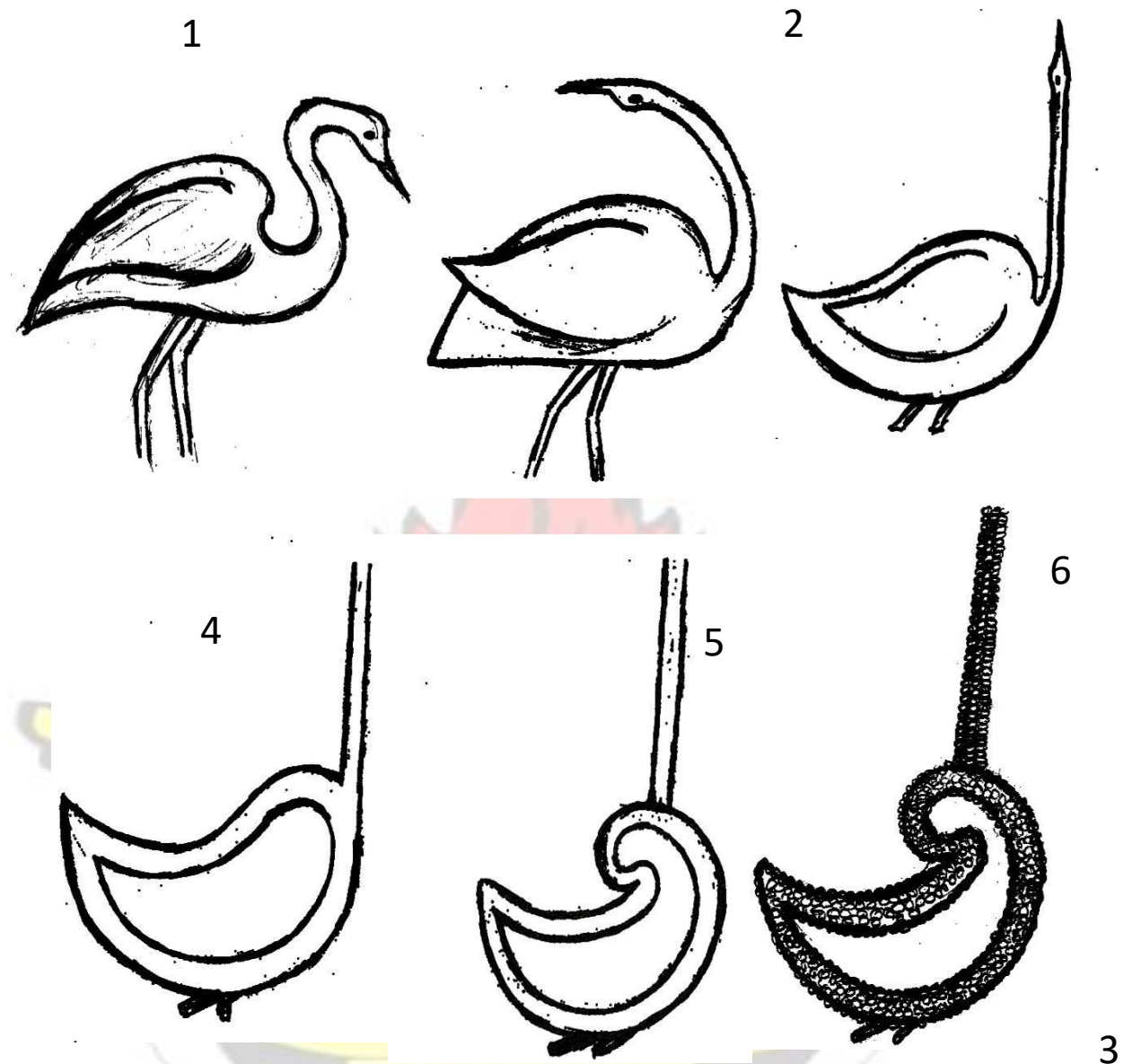


Plate 3.2: pencil sketches

Source: Sketches by the Artist

3.3 Clay Preparation

Mfensi and Afari clays were soaked in separate water for 24 hours and pugged. It was then stored in polythene sheets for 2 weeks to age. This was done to improve on the plasticity

and workability of the clays. The clays were then wedged and kneaded to remove pockets of air.



Plate 3.3: The Soaked Clay

Source: A photograph by the Artist

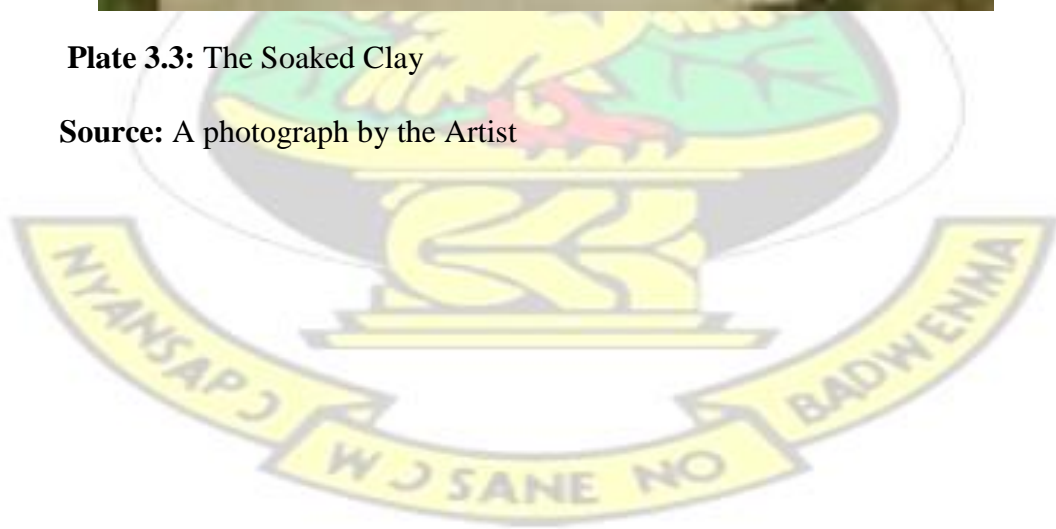




Plate 3.4: Transferring the Clay from the wheel barrow

Source: Photograph by the Artist



Plate 3.5 *processed Clay packed in polythene Sheets*

Source: *A photograph by the artist*



Plate 3.6: Kneading of Clay

Source: A photograph by the artist

3.4 Forming Methods for the production of the “Wisdom Bead Mosaic”

There are various forming methods available to the ceramist artist of which the pinching and coiling methods were adopted for the project. These methods of forming were used to form the beads which involve the making of the basic shape with mass of clay and hollowing it by pressing the thumb into mass to create a uniform wall thickness.

The nature of the project called for smaller beads and the artist used pinching and coiling methods for such work. Afari and Mfesi clay were best for this kind of work because of sandy nature which gives strength to created beads and the flexibility to create the holes. Nevertheless, for stringing Mfensi clay in small amount was added to bring variety of colours in the work after firing. Small lump of clay was worked into a ball using the hand to form the beads as seen on plate 3.7. The process was repeated to produce 8000piece of

beads. Beads made from the Afari clay was 6000 and the one from the Mfensi clay was 2000.



Plate 3.7: *Rubbing the clay against the two palms to form beads for the production of the “Wisdom bead Mosaic”. Source: Photograph by the artist.*

The balls (beads) in their semi leather hard state were handily picked and bamboo stick was used to drill a hole in them from one end to the other end. Sizeable foam was carefully used to remove excess clay so that the shapes do not distort and to give them a clean finished as seen on plate 3.8.



Plate 3.8: Creating of holes in the beads

Source: Photograph by the artist.



Plate 3.9: The beads with holes in them

Source: Photograph by the artist

3.4.1 Drying of the beads

Drying is one of the crucial stages where much attention is needed. When one does not control the drying aspect of ceramic work, you may lose the work, cracks may be developed or there would be distortion of the work. For these reasons, the beads were spread around on boards to enable equal ventilation and even drying. Hence an appropriate drying area was very essential. They were loosely covered with polythene to allow gradual movement of air through and to avoid rapid drying. The drying of the beads took a period of seven days to ensure that they all have received equal air and after the seven days, they were exposed for additional 21 days to make sure that they are all well dried.



Plate 3.10: Drying of the beads

Source: photograph by the artist

3.5: Firing of the beads

Firing impacts colour, strength, and durability of ceramic products. The artist made use of electric kiln firing. Both clay beads went through a sequence of fundamental changes as temperature builds up during firing. The electric kiln was cooled for 2 day before it could be removed from the kiln. Packing dried and fragile beads calls for proper handling. The Afari and Mfensi beads were packed into the electric kiln and excess water was expelled through preheating of the kiln before mature firing. Firing was done for twelve hours to a temperature of 1050°C. The kiln was put off and allowed to cool off gradually for about 12 hours. The pieces in the kiln were allowed to cool to the temperature of 40°C, before the beads were unpacked from the kiln.

3.5.1 The Building process of the “wisdom bead mosaic”

Having made ready all the needed materials for the production of developed design named “Wisdom Bead Mosaic”, it was expedient that the building process begins. The materials for the building process were the fired clay beads, iron rods, and binding wire. In order to have an artistic and interesting, the beads were arranged based on their size, shape, colour and texture. The sizes ranges from 1.5cm to 3cm, some appears oval, and crescent. In terms of colour, they appeared dark and light brown and was achieved as the result of clamp firing method used. A plan of the design was drawn onto the plywood using chalk. The required length of the iron rods were cut after which, chalk was used to divide them into three sections (the head, body and tail) and were labeled A, B and C.

They were then bent and shaped according to the contour of the design drawn on the plywood. The rod was placed in between two nails that have been hammered against table, which aid the bending of series of the iron rods that have been measured and cut. The rods were hammered to flatten and to straighten the edges to enhance smooth stringing of the beads and building. A tape measure was used to measure and marked out with chalk from 2inches to 14inches variation on the full length of the rod. The rod was put on working table and held firmly with lamp to enhance effective cutting. The hacksaw blade was placed in the wasted side of the rod. Sawing was successfully done with the guide of the thumb. The blade was moved in forward direction to cut across the grains of the rod .The same process was repeated to all the rod cuttings





Cutting of Iron Rods to desired length



Bending of Iron Rods.



Bent frame of Iron Rods

Plate 3.11.Fabrication of metal

Source: Photograph by the artist

3.5.2 Stringing of beads on the individual rod frames

Bead in itself is art work and when strung together, they portray a different artistic effect.

Stringing requires a critical observation to develop the compositional skills. For the

purpose of this project, the individual beads were picked and strung around the metal frame based on the shapes, colours and sizes to suit the concept of the project. The process continues till the whole rod frame was filled with beads. The same process was repeated to have various sections of frames. The interval between each strung bead is about one (1) millimeter as shown on plate 3.12 and plate 3.13



Plate 3.12: Stringing of beads on individual frames

Source: photograph by the artist



Plate 3.13: Individual strung frames
Source: Photograph by the artist

The frame section ranges from 13.0inch, 12.0 inch 11.5inch 10.0inch, 9.0inch, 8.0inch 7.5inch 6.5inch and 5.5inch were used respectively used for the construction of the clay bead mosaic. Twenty-seven frames were used for construction for the three pieces of clay bead mosaic. Nine frames were used for each piece. The nine (9) sections of frames were labeled from largest to smallest as A, B, C, D, E, F, G and H, respectively to enhance successful building. From the extreme end frame A was used to start the construction of the wisdom bead mosaic. The frame B was held on top of frame A and fastens together with binding wire. Frame C was then positioned on the closed side of frame B with binding

wire as shown on Plate 3.14. The process was repeated till the entire frames were closely built to arrive at a suitable piece. The building was done in anticlockwise manner.



Plate 3.14: The building stages of the “wisdom bead mosaic”

Source: Photograph by the artist



Plate 3.15: "Wisdom Bead Mosaic."

Medium: Clay

Dimension: 3ft width by 3ft depth by 9ft height

Year: 2015

Artist: Paul Owusu Attakorah



Plate 3.16: Different views of the “Wisdom bead Mosaic”

Source: Photograph by the artist

CHAPTER FOUR

DISCUSSION OF RESULTS

4.1 The philosophy behind the pieces

This project was executed and presented based on the philosophy of artistic expressions of ideas in three dimensional forms using mosaic art techniques. According to Morawski (1974) “expression is widely reputed to be an aspect of the work of art which is as mysterious and elusive as it is attractive and compelling”.

The forms developed by the artist in producing the pieces went through series of transformations before the actual design was achieved. However it was for the purpose of expressions of ideas in three dimensional forms using mosaic art techniques. Mosaic art has functioned as a decorative piece mostly found on flat surface and have been subjected to two dimensional designs. Although interesting designs depicting various cultural values, social, political and others have been made with various materials; Nonetheless, little did people know as to how to identify all the techniques that are involved in mosaic art and all the surfaces on which they are placed to be able to termed as three dimensional mosaic work and to bring variations in the making of mosaic arts.

4.2 The “Wisdom bead Mosaic”

The wisdom bird piece was made from clay beads, iron rod and binding wire. The artist used the Afari and Mfensi clay for the construction of the “*wisdom bead Mosaic*” because of the physical properties of the material. They are highly in sand and that make it practically better for such a piece. The amount of sand in the material helped the twisted paths to stand firm and made it suitable for a base as such to be feasible. The piece is abstracted form of a Bird called, Great Egret and it is titled “*Wisdom Bead Mosaic*” because of the unique nature of the Great Egret in the Heron Family. Studies by National Geographic Society, U.S (1996-2015) confirm how this bird takes advantage of fish and other animals for food and this behavior of the bird accounted for the construction of this piece to signify a symbol of wisdom because of its good judgment skills.

A closely stringing of the beads on each of the surfaces of the metal frames created an illusion of arranged objects on a round surface and of cause on the surface of the iron rods accounts for the expression of the ceramic mosaic piece in a round form and hence attracts great attention from the observers.

The artist considered the features of the inspired bird although the work itself is in abstract form, it would still not be difficult for a lay man to figure out the source of the inspiration. The necks were stretched to a height of five feet to create high seat for the heads. The head, symbolically, is said to be the seat of wisdom.

One may wonder why there is wide space at the centre of each of the pieces since the idea is from a bird. It is true that there is no such space in the bird, but the Artist created that opening to allow free movement of air in and out of the work. This is to signify, allowing oneself for all the opportunities, events and to explore them and take advantage of them

in the quest of our personal flight through life. It also signifies one's freedom and exposure in many natural resources available and to think and create something from them.



Plate: 4.1: Title: "Wisdom bead Mosaic"

Medium: Clay Beads

Dimension: 3ft width x 3ft depth x 9ft height

Year: 2015

Artist: Paul Owusu Attakorah

4.3 Finishes

Finishing is an integral part of art in general and for that matter, bead making and the researcher adapted to some in enhancing the pieces. In the traditional way of ceramic bead making, the beads in their Leather-hard are incised with patterns to make them beautiful. The studio ceramists however have achieved quality finishing through the application of glazes and other ceramic materials. The artist however made uses of incision. Incisions were done on the “wisdom bead mosaic” piece at the leather-hard state to bring variations because the finishing ended after the bisque firing. The beads were bisque fired at the temperature of 1050°C. Because of two different ball clay used and due to somehow uneven heat distribution, there were variation of colours after firing for which the artist used to create some effects on the work as part of the finishing.



CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The main aim of the study is to develop artistic expression of ideas using mosaic art techniques. Most mosaic arts are characterized by two dimensional forms and are mostly done on walls. However it is the objective of the project to produce decorative mosaic art that would be in three dimension using clay beads. Clay made from Afari and Mfensi were used to form the beads and fired in bisque in an electric kiln. The artist then stringed the individual beads on the metal frames and finish the piece in bisque firing to ensure monochrome effect.

In order to achieve the objective of expanding the knowledge of ceramic art using clay beads, the artist reviewed literature related to the project to arrive at in-depth understanding of material and technique for ceramic mosaic to educate and to function as a decorative piece. Moreover the various tools for the project were carefully identified. Preliminary sketches were made and then developed into the actual designs for the project. This has also widened the knowledge about mosaic making in this modern era. Forming techniques such as pinching and coiling were investigated and used to come up with simple but nice forms of these decorative pieces. Despite all the challenges the results was successful.

5.2 Conclusion

The production of ceramic mosaic art in three dimensions is possible when technical execution is applied to the thinking and production processes. This study has shown that, it is very interesting seeing a mosaic works which have been artistically and conceptually produced. It gives some sense of what others also think about all aspect of art and all the techniques that are involved. Many think mosaic works are only done on flat and broad surfaces and can only be two dimensional which of course this project reviews that it is possible in three dimensional as well. There are other techniques that can be termed as three dimensional designs. A successful work was achieved by the introduction of the new techniques and forms in making mosaic. This project has argued for extrapolation of techniques into the production of stupendous work. The project exemplifies the careful repetition of beads and materials culture.

This project concludes that mosaic art remain monotonous until its beauty is appreciated regardless of where it is being viewed.

5.3 Recommendations

It is recommended that ceramic bodies that can withstand all weather conditions be formulated to enable the works have longer life span when exhibited in the environment. In order to achieve mass production, casting methods should be explored to enable the fast production of the unit materials such as beads for the production of the ceramic mosaic art.



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