CREATION OF UTILITARIAN SCULPTURES DERIVED FROM FISH FORMS

BY

AFOLAYAN Daniel
P13EVFA8003

DEPARTMENT OF FINE ARTS,
FACULTY OF ENVIRONMENTAL DESIGN,
AHMADU BELLO UNIVERSITY,
ZARIA

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AFOLAYAN Daniel
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DEPARTMENT OF FINE ARTS,
FACULTY OF ENVIRONMENTAL DESIGN,
AHMADU BELLO UNIVERSITY,
ZARIA

APRIL, 2018

DECLARATION

I declare that this Dissertation titled **"Creation of Utilitarian Sculptures Derived from Fish Forms"** has been written by me in the Department of Fine Arts. It is a documented record of my research work. This work has not been presented in any previous application for Degree or Diploma at any institution to the best of my knowledge. All sources and information used for this research are duly acknowledged and recognized by means of references.

Afolayan Daniel _____ _____

Signature Date

CERTIFICATION

This Dissertation titled **"Creation of Utilitarian Sculptures derived from Fish Forms"** by Afolayan Daniel meets the regulation governing the award of Master of Fine Arts (MFA) degree in Sculpture of the Ahmadu Bello University, Zaria and is approved for its contribution to knowledge and literary presentation.

_____ **Date** _____

Dr. Muyideen A. Jaji
Chairman, Supervisory Committee

_____ **Date** _____

Dr. Lasisi Lamidi
Member, Supervisory Committee

_____ **Date** _____

Dr. Gambo G. Duniya
Head, Department of Fine Arts

_____ **Date** _____

Prof. Sadiq Z. Abubakar
Dean, Postgraduate School

DEDICATION

This Dissertation is dedicated to my beloved parents Mr. and Mrs. Timothy O. Afolayan.

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ABSTRACT

This study **"Creation of Utilitarian Sculptures derived from Fish Forms"** is an expression of ideas generated from nature – guppy and tilapia fish, to support the making of sculptures that possess utilitarian value. Guppies are small active freshwater topminnows mostly kept in aquariums while tilapias are members of the Cichlidae family, with squat body shape commonly known as fin fishes. The objectives of this research are to: (a) produce sculptures inspired by the guppy fish form (b) execute functional sculptures using tilapia as inspiration (c) explore the movement of fish in utilitarian sculpture (d) create abstract utilitarian sculptures using the fish. The framework of this research is based on Andrzej projection that a careful study and analysis of the anatomy of every subject enables the recreation of the subtlest tensions of musculature and movement, and to articulate vision with high levels of accuracy. Functional art refers to aesthetic objects that serve utilitarian purposes. In this research, the word 'utilitarian' and functional' is used interchangeably. Muscato maintains that in Mesopotamian art, animals appear both with humans, and alone, indicating their prominence in ancient culture. Animals were respected for their strength, speed, or ferocity and appear in art as representations of those ideas. The study was done in the studio via Practice-Based method. It involved modeling and casting, welding and wood carving. From primary and secondary sources, sketches of the guppy and tilapia fish were produced to understand their features and movement especially in water. The final works produced gives a catalogue of the several traits in these species of fish and more importantly unique utilitarian sculptures. The elegance in guppies and the squat body shape of tilapia allow room for exploration in sculpture. The outline and individual components of these fishes can be manipulated to create an assortment of art expressions. Both abstract and representational ideas of sculptures have been designed bearing flowing and rhythmic figures from the locomotion of fish. Many other species of fish, like the guppy and tilapia, hold unique aesthetic qualities that can be considered and harnessed in creating novel works of art. This study has ascertained the possibility of creating utilitarian sculptures derived from fish forms. It also validates the synergy of guppy and tilapia as patterns that could be incorporated in other art expressions. A total of twelve works were produced, with four in each of the categories – representational, stylized and abstract.

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CHAPTER ONE

1.1 Introduction/Background to the Study

Fish have been a subject in art for at least 14,000 years and appeared in primitive art from many cultures. In ancient civilization of the West, fishes were a constant motif. Fish designs in ancient Egypt were common and showed little change for 1500 years. Decorative fish designs of the Greeks and Romans (often with mythological significance) were adopted by early Christians as religious symbols. With the development of art, the non – religious depiction of fish became more widespread so did the realistic paintings of fish appear during the Renaissance. This tradition reached a peak in 17th century Netherlands. After 1750, fish images appeared in many different contexts. Over the years, artists have used animal forms, and the inspiration from animals to produce art in several ways. Animals occupied an important place in medieval art and thought. Artists readily employed animal motifs, as part of their decorative vocabulary (Moyle, 1991).

Generally, the animal form is a subject that has and is still largely explored in different concepts, aspects and techniques. Bozimo, (2012) states that the endless resource in nature is inevitably expressed in virtually every artistic endeavor; be it music, literature, performance, sculpture, painting among others, and the multidimensional functions of art gives it essence to be used in the daily activities of individuals. Nigerian artists like Sunday Chukwumeremeze and Adeola Balogun have used animal forms in different concepts. Isaac (2000) studied animal forms in relief sculpture in his Master of Fine Art research at Ahmadu Bello University, Zaria titled: Development of form: A Study of Animals in Relief Sculpture, while Santas (2016) explored the charging cock form in sculpture.

Animals also carried a rich variety of symbolic associations often drawn from the past. The lamb served as an important sacrificial animal in ancient Near Eastern religious rites, including those of the Israelites. Christians adopted the lamb as the symbol of Christ emphasizing His sacrifice for humanity (Holcomb and Boehm, 2001).

The term fish, according to Britannica (1994) refers to a variety of cold-blooded aquatic vertebrates of several evolutionary lines. It describes a life-form rather than a taxonomic group. As members of the phylum Chordata, fish share certain features with other vertebrates. These features are gills slits at some point in their life circle, a notochord, or skeletal supporting rod, a dorsal hollow nerve cord, and a tail. The study of fishes, the science of ichthyology, is of broad importance. Fishes are of interest to humans for many reasons, the most important being their relationship with and dependence on the environment. A more obvious reason for interest in fishes is their role as a moderate but important part of the world's food supply.

The popular conception of a fish as a slippery, streamlined aquatic animal that possesses fins and breaths by gills apply to many fishes, however far more fishes deviate from that conception than conform to it. For example, the elongated body in many fishes, and greatly shortened in others; the body is fattened in some (principally in bottom-dwelling fishes) and laterally compressed in many others; the fins may be elaborately extended, forming intricate shapes, or they may be reduced or even lost; and the positions of the mouth, eyes, nostrils, and gill openings vary widely. A random assemblage of fish merely using some localized resource such as food or nesting sites is known simply as an aggregation. When fish come together in an interactive, social grouping, then they may be forming either a shoal or a school depending on the degree of organisation. A shoal is

a loosely organized group where each fish swims and forages independently but is attracted to other members of the group and adjusts its behaviour, such as swimming speed, so that it remains close to the other members of the group (Wikipedia 2015).

In this research, tilapia and guppy fish forms are used. Arrignon (1998) affirms that tilapias are members of the *Cichlidae* family. This is a widespread group with over 3300 recorded species. Within this family, species are grouped together into genera. The tilapias all used to belong to a single genus, Tilapia, but have now been reclassified into three genera, Tilapia, *Sarotherodon and Oreochromis*. Tilapia has a squat shape which can easily be stylized to give a quick sketch of the fish during talks and demonstrations. Tilapia is a finfish. Although the general coloration of tilapias is usually silvery grey, there are significant differences between species and sexes, in response to environmental factors and sometimes depending on the emotional state of the fish. Tilapias have small mouths with articulated lips and teeth on their jaws. The males are larger and tend to grow faster than the females (Popma and Masser, 1999)

According to Funk and Wagnalls (1986), a guppy is a freshwater fish that belongs to the family *Poeciliidae*. Guppies are popular pet fish. They are often kept in an aquarium in homes. They are usually about 2.5 cm long. The males are very colourful. Unlike most fishes, the females give birth to live babies (viviparous) and do not lay eggs. The Fancy guppy is also known to tropical fish keeping enthusiasts as the rainbow fish, missionary fish, million fish or mosquito fish. Although it is widely distributed throughout the world and is arguably one of the most popular freshwater fish of all times, its natural range is in northeast South America. The Common Guppy is a highly adaptable species that can survive and thrive in a variety of relatively “harsh”

environments. They are found in almost every freshwater body accessible to them, but prefer smaller streams and still pools rather than large, deep, or flowing rivers. Because of their high tolerance to salt water, they have also populated brackish water estuaries (Tropical-fish.com 2015).

Rikowskiy (2015) alleges that male guppies have the tendency to harass females. They chase them around the tank constantly and display their colours in front of the females in an attempt to mate. The researcher used male and female guppy fish as well as tilapia fish to create functional objects of aesthetic appeal.

1.2 Statement of the Problem

From available literature, it seems that there is hardly any documented scholarly work using the fish form to derive functional expressions in sculpture; however Bozimo (2012) used croaker fish to explore masks in sculpture. The problem of this study is centered on using forms derived from the fish to create utilitarian sculptures, thereby narrowing the gap between form and function.

1.3 Aim and Objectives of the Study

The aim of this research is to create utilitarian sculptures using fish forms, while the objectives are to:

i. produce sculptures inspired by the guppy fish form
ii. execute functional sculptures using tilapia as inspiration
iii. explore the movement of fish in utilitarian sculpture
iv. create abstract utilitarian sculptures using the fish forms

1.4 Research Questions

i. How can sculptures inspired by guppy fish form be produced?

ii. What are the possibilities of producing functional sculptures inspired by tilapia?

iii. In what ways can movement of fish be explored in utilitarian sculptures?

iv. How can abstract utilitarian sculpture be created using the fish forms?

1.5 Justification of the Study

Fish forms have been a constant subject in art for at least 14,000 years. Primitive art from many cultures have also exhibited fish forms in their designs and their embellishments bordered on motifs. The Egyptians showed fish forms in their designs which were common and almost consistent for 1500 years

The reason for this research is to improve the aesthetic quality of utilitarian object, using the structure and movement of fish. Secondly, to promote the idea of creating and representing functional art using the fish form.

1.6 Significance of the Study

In exploring possibilities of creating three-dimensional pieces that have utilitarian form, there are probable results to achieve, which include enhanced sculptures of more than one media and innovative representations of stylization from natural forms. Hence, the importance of this study is that it enhances the creation of sculptural pieces that have both aesthetic and functional value.

1.7 Scope and Delimitation of the Study

The scope of this research is limited to two of the fishes from the *Cichlidae* family of over 3,300 species, which is the guppy and tilapia fish. They were selected based on the researcher's preference, and also for their availability and proximity.

1.8 Conceptual Framework

The conceptual framework for this study is based on Andrzej' (2014) projection that says,

> A careful study and analysis of the anatomy of every subject enables the recreation of the subtlest tensions of musculature and movement, and to articulate vision with high levels of accuracy. This deep understanding of physical characteristics gives the artist ability to manipulate and create something new, rather than recreate the reality.

This research therefore embarked on an analysis of the anatomy of fish; the gill slits, squat shape body, tail and fins among other features as source of inspiration to create utilitarian sculptures.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews related literature and works which provide a concise chronicle of both functional sculpture and the exploration of fish forms in art. It also considered concepts and issues relating to fish and functional works, both traditional and contemporary. It further analyzes works of artists that are generally associated with utilitarian sculptures.

2.2 General Review

In this research, the word ‘utilitarian’ and functional’ is used interchangeably. Allenchey (2013) defined functional art as aesthetic objects that serve utilitarian purposes. The genre is remarkably inclusive: it encompasses everything from furniture and lighting to dishes and even books. While the terms "fine" or "high" art typically apply to works that carry an intellectual and emotional sensibility alongside a dose of old-fashioned beauty, functional art infuses these aesthetic ideals into things that one might never expect to view as art. He added that many functional art objects today are as avidly acquired by collectors as their fine-art brethren, and are appreciated just as much for their beauty as their use value. Ancient Chinese vases, for example, while still capable of performing their originally intended function (displaying flowers), are prized for their historic and aesthetic value more than anything else.

Numerous probable outcomes could be impressed by line as an element in design. According to Knopp (2014), a single line can express gesture and movement, direction and depth on a flat surface. The artist has explored the aesthetic qualities of line for many

years, first with life drawings, then with sculpture. Knopp made his first sculptures with plywood and was surprised to discover the linear strata inherent in the medium. Carving laminated blocks of the wood, he creates flowing, liquid lines that engage the senses as the eye travels over the complicated contours of his objects. The artist prefers an intuitive process, viewing the collaboration between ideas and materials central to his creative output. His creations start with a vision and a rough sketch. There are no defined templates or 3D models or software used. His pieces are functional, but he tends to focus on the aesthetic qualities rather than design principles. The constant changes that occur as he works keep the work alive as it morphs into his interpretation.

In the early Christian art, certain animals served as or symbolized ideas imbued to special beliefs, most of which originated from stories in the old and new testaments books of the Bible. According to Wikipedia (2016),

> After the recognition of the Church by Constantine I, the Apocalypse is the source from which are derived most of the decorative themes of Christian Art. The lamb is now the most important of these, and its meaning is either the same as before or, more frequently perhaps, it is symbolic of Christ… The dove is the Holy Spirit, and the four animals that St. John saw in Heaven are used as personifications of the Four Evangelists. With the animals of the country, domestic or wild, those of remote parts of the earth, known by a few specimens, are also represented: the lion, the elephant, apes, etc.; legendary animals also, like the unicorn, the basilisk, the dragon, and the griffin. Thus, for the lion depicts strength, vigilance, and courage; the siren shows voluptuousness; and for the pelican, charity… The Bible, also, gives some motives, as the ram of Isaac, the golden calf and the brazen serpent.

Muscato (2003), maintains that in Mesopotamian art, animals appear both with humans, and alone, indicating their prominence in ancient culture. Certain animals were respected for their strength, speed, or ferocity and appear in art as representations of those ideas. This also had a spiritual element, as these qualities were associated with gods who

shared those traits. For example, the bull represented the god of thunder due to its strength and low, rumbling bellow. The image of a bull in art did not mean the god had taken the form of a bull but was a metaphor for the presence of the god.

The pictures and representations of fish might vary slightly in different civilizations due to certain beliefs and views of the people. Significance plus the value placed on fish possibly will influence the manner in which they are portrayed.

2.3 Review of Related Works

The following are works of artists who have produced functional works or have a connection with the fish form as it appears in art. These works are in different styles. A total of eleven works have been reviewed in this study.

2.4 Cobalt Blue Glass Fish Sculpture (Unknown Artist, unknown year)



Fig. 1: Cobalt Blue Glass Fish Sculpture,
(Unknown artist, unknown year) 29.5cm high,
artofglass.com

This is a vintage glass sculpture of a fish with bullicante (controlled bubbles) and a graduated cobalt blue cased body. It was made on the islands of Murano and measures 29.5cm in height. The fish looks straight ahead while its tail is stretched upwards. The

glassy, translucent appearance of the fish creates an illusion of water as is their natural habitat. Cobalt blue and sometimes green relates to water or ocean in terms of colour.

Popova (2014), avers that the world is blue at its edges and in its depths. This, amidst other opinions could be the choice of colour in the fish. The dorsal, pelvic and caudal fins appear transparent which suggests the shallow areas of a water body.

2.5 Steampunk Fish Sculpture by Edouard Martinet (2009)

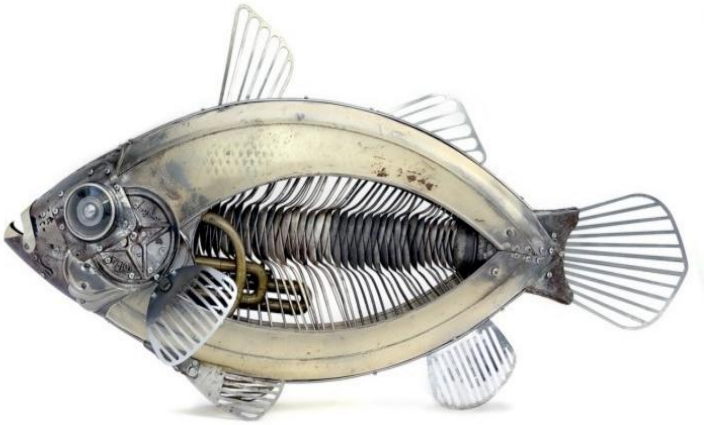


Fig. 2: Steampunk Fish Art, Edouard Martinet (2009)
The Reef and Marine Aquarium Blog.htm

This work is done by French sculptor, Edouard Martinet. Martinet has an original affinity to transform metal junk to beautiful works of art. Steampunk fish art is unique in that all the pieces are assembled to fit together like a puzzle. They are usually life size and carry and enormous amount of parts and detail. Alongside this sculpture, the artist has produced birds and insects with similar traits. Although the piece is not functional, it appears to possess a robotic guise, as though it could move its mouth, fins and tail, the central area is hollow showing what seems to be the spine, and this gives an impression

that the whole body is connected. The fish, as is used in this study, is portrayed in a fashion that suggests strength and potency.

2.6 Contemporary 'Angel' Stool (Unknown artist, 2016)



Fig. 3: Contemporary 'Angel' stools, Unknown artist, 2016,
45 cm x 26 cm x 47 cm, metal, addinterior.htm

This sculptural stool with a poetic shape evokes an angel with wings spread out. The name originates from the shadow of the school. The "Angel stool" consists of a minimalist seat and base made of 6mm and 8mm rods. The result is a comfortable and robust stool that is both decorative and functional in use, with a dimension of 45 cm in width, 26 cm in breadth and 47 cm in height. They are powder coated in red, turquoise yellow and black. These stools suggest garden furniture or playground chairs and on the other hand could pass for used in children schools since they have beautiful colours. They also evoke an impression of opened hands to welcome or invite a viewer. Two of these

stools could be placed facing each other to serve as a cage. They are simple and highly functional (addinterior.htm).

2.7 The Octopus Chair by Maximo Riera (2012)



Fig. 4: The Octopus Chair by Maximo Riera, 2012, 130 cm x 129 cm x 174 cm, Dark Art: Functional Sculpture; Polyurethane and fine Leather, Photograph by David J. Rodgers

This work from a collection of furniture based around animals, of Spanish born artist, Maximo Riera, is made of polyurethane (internal frame: Steel) and fine leather, measuring 130cm in width, 129 cm in height and 174cm in length. It shows a large octopus at the back of the chair with its legs as the support behind. Riera in this work and probably others in the category, sought to capture and reflect the beauty and magnificence of nature in each living thing. The key to his work is his attention to detail and the many influences from travel and other abstract artists (Rodgers 2012). The idea of an octopus at the back of the chair gives this piece a feel of aquatic scenery and produces an impression of a riverside or sea area to those sitting on it. The similarity

between this work and those in this research is the animals form and the functionality; however, Riera used an octopus as the subject matter meanwhile fish form is being used in this case.

(http://davidjrodger.files.wordpress.com).

2.8 Prestige Stool: Caryatid by Buli Master (1810 – 1870)



(Front view)



(Side view)

Figs. 5 (a & b): Prestige Stool: Caryatid by Buli Master, possibly Ngongoya Chintu (Hemba, ca 1810 – 1870) Wood Carving, Buckeye Trust and Charles B

The wood furniture sculptural piece in Figures 5 and 6 is a stool showing a standing female figure holding on her head what appears to be a flat bowl, with a body three times the size of her head, her hands are slightly emphasized, while her legs are shortened and placed on an elevated round platform. She has an elaborate hairdo. The work is 24 inches in height and is carved out of wood. It was done in Buli, a village in Democratic Republic of the Congo. There are various vague interpretations of this piece

including the fact that since it is a female figure, it could depict support in the home front.

As it is in most African countries, the woman's role in providing assistance in the home cannot be overemphasized. According to Stalsburg (2016) women are increasingly their family's breadwinners – more than 40% of working mothers are the sole or primary income earners in their household. The Prestige stool is relevant to this study because it is functional. (http://timelineofarthistory.com)

2.9 Legs Table by Alida Walsh (1933 – 2006)



Fig. 6: Legs Table by Alida Walsh, 2012, 34.3cm x 55.9cm x 50.8cm, alidawalshfunctionalsculpture.htm

This is a table or cabinet base that was designed by Alida Walsh (1933-2006), a feminist artist, filmmaker, and Art Professor who died in Schenectady, New York after a lengthy and notable career in sculpture, mixed media and film. The work consists of fiberglass cast legs with a top that measures 34.3 cm wide, 55.9 cm across and it stands 50.8 cm high. It is a funky and phenomenal piece of art that is functional as well. A

separate black lacquer tray was added to the top in order to show what it would look like as a table. Walsh probably used those many legs that appear to be feminine to suggest togetherness as they serve as the support. The base could be used in any number of ways. Walsh's legs table is appropriate for consideration in this work due to the way it was fabricated, whereby the legs hold up the flat top horizontally. In this study, however the works are merged to the surfaces with a binder (alidawalshfunctionalsculpture.htm).

2.10 Butterfly Chair by Eduardo Garcia Campos (2013)



Fig. 7: 'Butterfly Chair' by Eduardo Garcia Campos (2013),
Our Top 10 Selection Winners for A'Design Award
And Competition 2012-2013 Period Tuvie.htm

Eduardo Garcia Campos got inspiration from nature, particularly the Mexican 'Monarca' Butterfly, a beautiful insect that has fragile appearance of its wings yet it is known for its strength. The pure lines resemble the wing shape of a butterfly and its structure is made to create a very comfortable and strong piece. The artist developed this piece as part of the collection which is an exercise in exploration of metal processes. He believed that through design artists can be instruments to rescue the antique knowledge

(handcrafted techniques) by applying it to a new generation works. Complexity and undulating flow are characteristics of this piece that is also highly functional. The side view of one of these chairs shows a wing; therefore by simply placing two pieces side by side, together, facing each other, they create the shape of a butterfly. (Source: Our Top 10 Selection Winners for A'Design Award and Competition 2012-2013 Period _ Tuvie.htm)

2.11 Table Ash by Tihomir Velichkov (1999)



Fig. 8: Table Ash by Tihomir Velichkov, 1999, 107cm x 34cm x 28cm, http://artparks.co.uk

Tihomir Velichkov is a Bulgarian sculptor who has made decorative tables, stands and widow dolls that are functional and at the same time very impressive plastic piece. The artist combines various materials: wood, glass, brass and sometimes, ceramic. Velichkov is also an author with a strong individualistic style that focuses on form, presenting his own vision about it. The silhouette contours are dominant in his works;

sometimes they have symbolic implications. The leg of the table is carved from sycamore tree wood and the top is blue glass. This table is 107 x 34 x 28cm (height, width and depth), and weights 8 kg. Velichkov's table, like those in this research serves a utilitarian purpose.

(http://artparks.co.uk/s3483)

2.12 Vintage Ashanti Stool (Unknown Artist, 1950 – 1960).



Fig. 9: Vintage Ashanti Stool from Ghana (1950 – 1960)
23 x 44 x 23 cm, 1stdibs.htm

The Vintage Ashanti stool is used by story tellers and chiefs, native to Ghana. It has amazing geometric and intricate designs patterns and its maker is anonymous. This stool was hand-carved from wood; it is 23cm H, 44 cm W, 23 cm D, and was made between 1950 and 1960. It consists of a slightly curved top facing up, two solid circular shaped support at the middle and a flat base, all carved from a block of wood. This stool

with many others in different sizes, shapes and design from Ghana is basically an indoor functional furniture and therefore relevant in this research work. (1stdibs.htm)

2.13 Bronze Fish Sculpture by Willy Kreitz



Fig. 10: Bronze Fish Sculpture
66 cm x 35.5 cm x 56 cm
www.talismanlondon.com

This piece, standing at a height of 66 cm, 35.5 cm width and depth of 56 cm, portrays a fish in what appears to be a 'C' shape with its head extended upward. The sculpture is made in bronze and supported on a cone base having minimal contact to it. It has a small round mouth and a cylindrical body.

2.14 Copper Fish Sculpture by Alanna Baird



Fig. 11: Copper Fish Sculpture
23 x 19 inches, www.custommade.com

This sculpture was produced in St. Andrews New Brunswick. it measures 23 inches in length, and is 19 inches high. It is made from recycled copper roofing, post mounted on a brass pipe cap base. This sculpture is an elaborately detailed representation of the pajama cardinal fish. This particular fish is one of the most unique looking of all fish species because of its solid vertical black bar mid-body with the red polka dots on a white body that looks like pajama buttons.

2.15 Conclusion

It is palpable from the works reviewed that they either possess utilitarian qualities; as seen in Riera's 'Octopus Chair', 'Prestige Stool', Walsh's 'Legs Table', Eduardo's 'Butterfly Chair', 'Angel stools', 'Velichkov's 'Table Ash', and the Ghanaian 'Vintage

Stool'; or have the fish form as subject matter; as it is in Martinet's 'Steampunk Fish Art', 'Cobalt Blue Glass Fish Sculpture, 'Copper Fish Sculpture', and 'Bronze Fish Sculpture by Willy Kreitz'.

As the researcher reviewed the works of Riera, Walsh and the Vintage Stool in Figs. 4, 7 and 10, and discovered that captivating and interesting shapes can be derived from the structure of the fish. In Figs. 5 and 8 (Prestige Stool and Butterfly Chair), the use of negative and positive spaces alongside the concept of balance and in a sense, simplicity, is quite obvious, enhancing the aesthetics of these functional works. This realization makes room and gives the bases for further study in these areas.

The elegance in Fig. 9 (Table Ash) can be likened to gracefulness, poise and equilibrium seen in guppy and also suggests the movement patterns created by a swimming fish. 'Contemporary Angel Stools' in Fig. 3 depicts a basket-like shape made with metal rods. This in a way, can be viewed as the ripple effect on water as soon as it is troubled – the waves on the surface of water. These stools also portray, as it were, the lower body and tail (caudal fin) of a fish diving into water.

All these works are significant in this research as they augment the various possibilities and prospects that were realizable in the long run. This study, therefore, narrows the gap between form and function by deriving inspiration from nature to produce utilitarian sculptures. It also enhances the natural quality of functional art.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this chapter, the methods, instruments, procedure, data collection, data analysis and studio exploration are discussed. The researcher employed Practice-Based methodology which aspires to advance erudition sculpturally by bringing into play fish forms in producing functional sculptures. Archer (1995), asserts that there are circumstances where the best or only way to shed light on a proposition, principle, material, process or function is to attempt to construct something, or to enact something, calculated to explore, embody, or test it. Gershon (2015), who works on balance and stability in equestrian forms, and Dung (2017) who explored sculptural decorative columns both utilized the studio practice-based method in their works.

In this study, the researcher began by producing a concrete pond which measures about 183cm x 54cm x 59cm, acquiring guppy and tilapia fish and housing them in the pond. Three table-size aquariums were also constructed in order to study the fishes from side view. From time to time, the pond and aquariums were visited to monitor and scrutinize the fish in terms of shape, colour, habitat, behaviour, relationship, form, and movement in and out of water. Several sketches and drawings of guppy and tilapia fish from life fish, images and imagination were made individually, and then in the form of stools, tables and other functional objects. These sketches were used as reference material alongside images of fish from the internet for clay models to the specific measurements that suits the particular functional object that is made after which moulds were taken with

plaster of Paris. These moulds were retrieved and charged in fibre glass. The works were produced in three groups: the representational, stylized and abstract.

3.2 Instruments for Data Collection

Observational Method: this instrument involves a logical and deliberate scrutiny of guppy and tilapia fish in water from aquariums and outside water, to monitor their traits and characteristics, and to examine their basic structural appearance.

3.3 Tools for Data Collection

1. Camera: A digital camera is the tool used in recording images of tilapia and guppy fish, these pictures were taken from ponds and aquariums that were built in the course of the research. The images are reference materials for this study.
2. Internet: selected pictures and videos were downloaded from various sites on the internet to strengthen the visual imagery of the researcher.
3. Aquariums: fishes were kept in aquariums to study their movement and behavior.
4. Sketch Pad: this tool was used for making sketches to study both the guppy and tilapia fish form, the sketches were done from the images retrieved from the internet.
5. Computer System: this tool was used for viewing and watching images and videos of the selected species of fish.

3.4 Data Collection

In this study, primary and secondary sources were used in gathering data. The primary source includes observation of the life fish in a fish pond and an aquarium to study their forms, behaviour and movement. In the secondary source, images, pictures and video clips of fish from the internet were collected and sketched to understand their basic shape and forms.

3.5 Data Analysis

Several images and pictures gathered from various sources including photographs taken by the researcher and those downloaded from the internet were arranged and organized to make sketches of utilitarian objects. The basic form of the Tilapia and Guppy fish led to the outcome of the work in stylized and abstract categories

3.6 Procedure and Processes

The procedures used were modeling and casting, wood carving and welding approaches. The study of fish forms made on paper was used as reference. Armatures were constructed with 8mm metal rods, cut and welded together in the desired shape according to the selected sketches which served as reinforcement to produce the clay works. After the fish form had been modeled in clay, moulds were taken in plaster of Paris (P.O.P.), and then charged in fibreglass. After the moulds were removed, the works were painted and polished in suitable colour which was predominantly dark for the purpose of blending in with other objects. Some of those with wooden tops were sprayed with vanish and their edges covered in black matt auto base paint.

3.7.1 Images of Guppies



Fig. 12: Male Guppy, badmanstropicalfish.com



Fig. 13: Blue Guppy Fish Poecilia Reticulata, badmanstropicalfish.com



Fig. 14: Female Guppy, breedingguppies.com

3.7.2 Images of Tilapia



Fig. 15: Tilapia (Oreochromisniloticus), www.lorisfoods.com

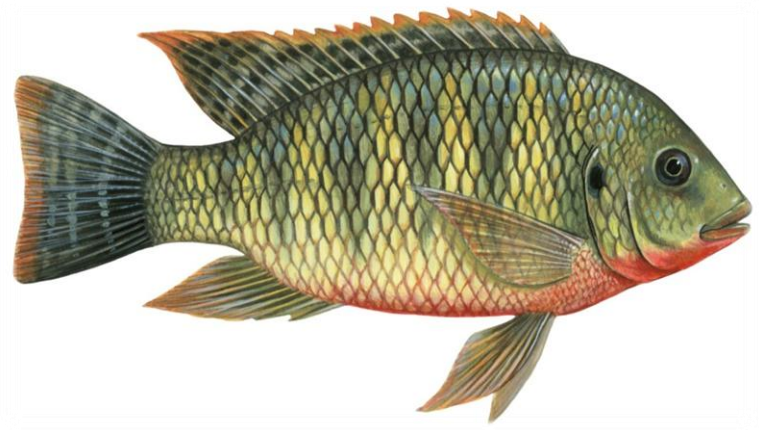


Fig. 16: Tilapia Rendalli



Fig. 17: Spotted Tilapia, http://www.daf.qld.gov.au

3.7.3 Sketches of Representational Stage

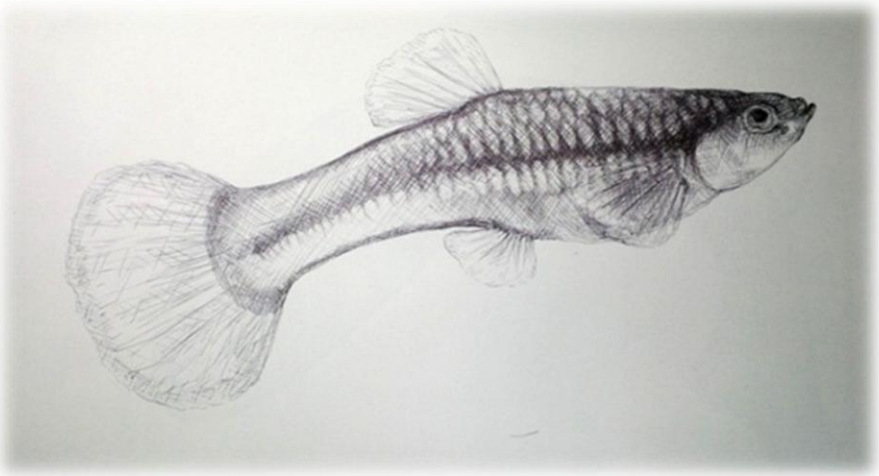


Plate I: Preliminary Drawing (Study of female guppy)

Pen on Paper, 2016, 29.5 cm x 8.7 cm

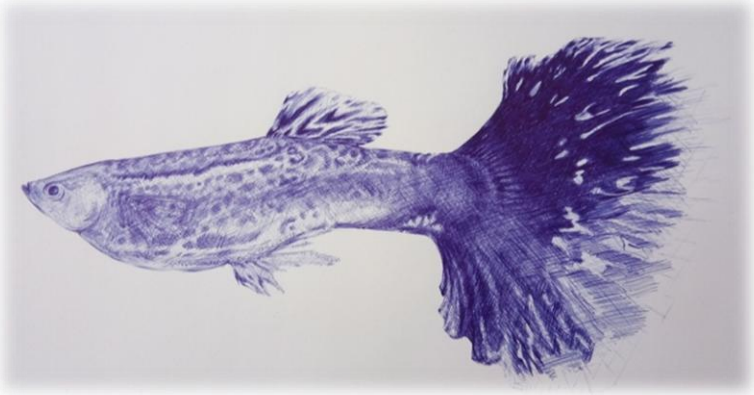


Plate II: Preliminary Drawing (Study of male guppy)

Pen on Paper, 2016, 25 cm x 8.4 cm

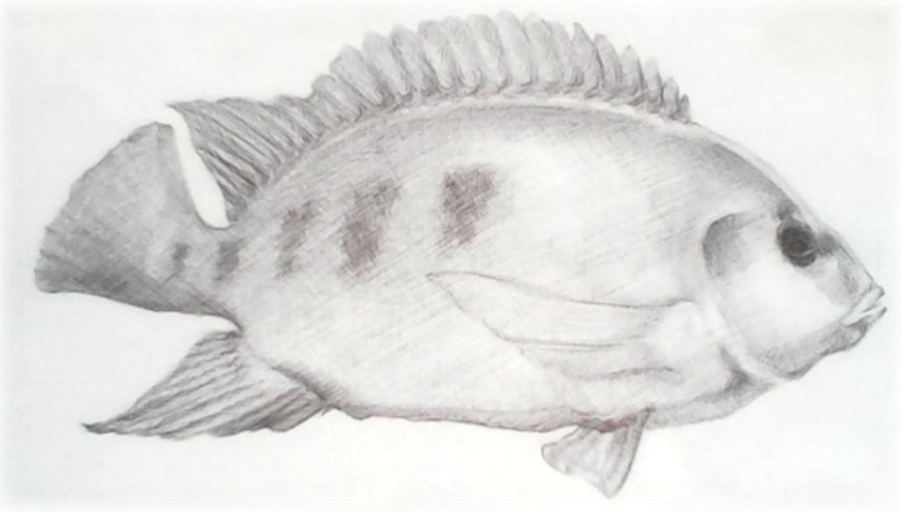


Plate III: Preliminary Study of the Spotted Tilapia, Pen on Paper, 2016, 7.5 cm x 25.7 cm

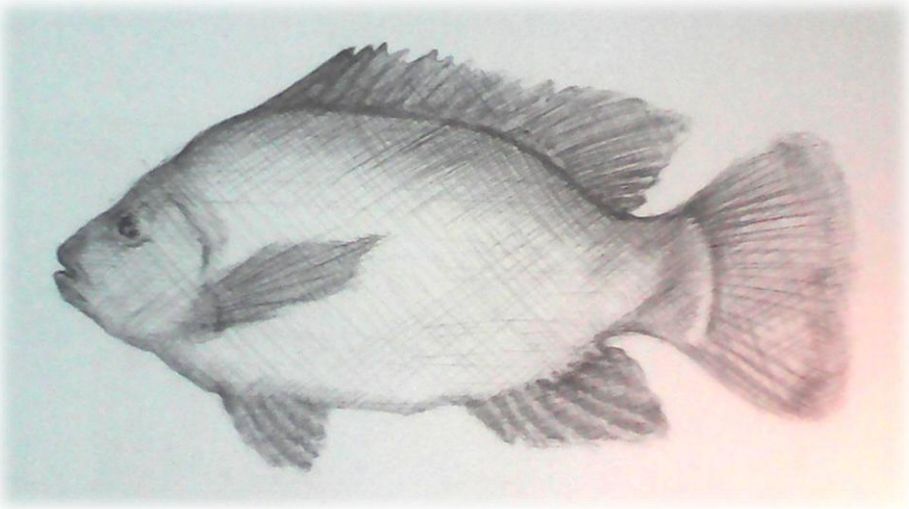
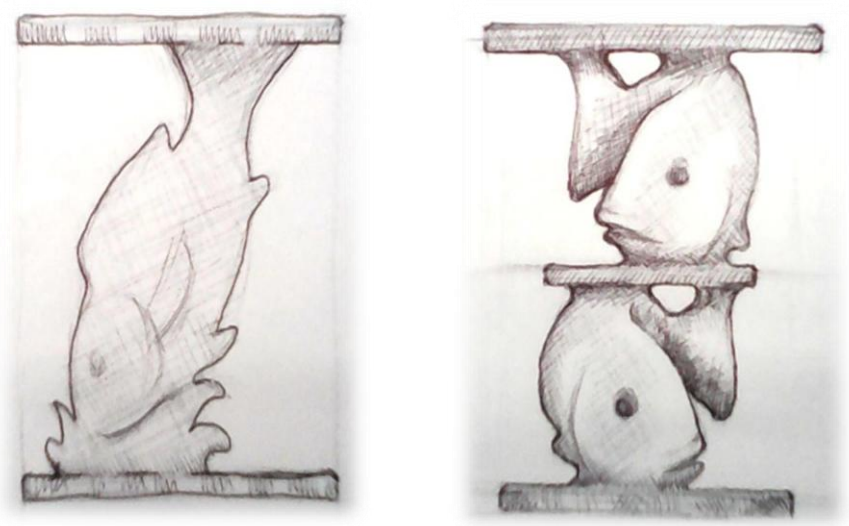
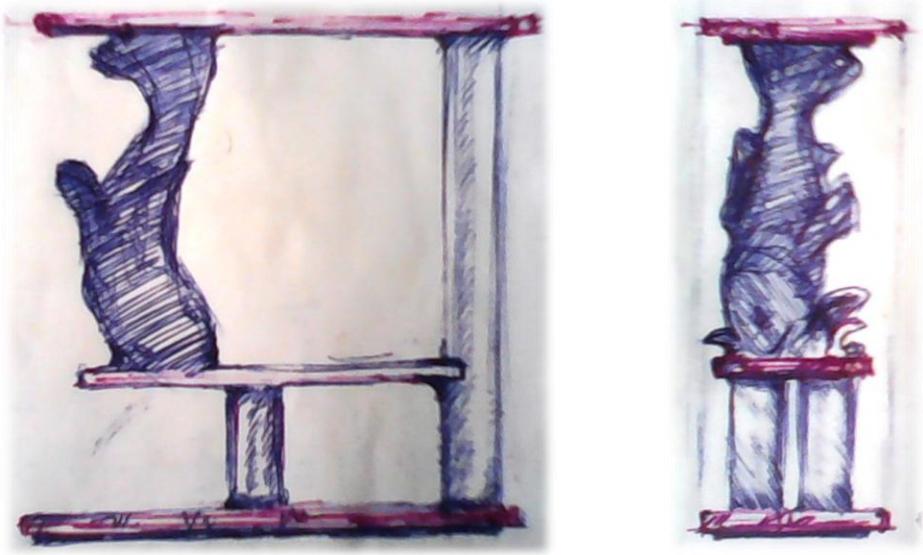


Plate IV: Preliminary Study of the Tilapia, Pen on Paper, 2016, 8.5 cm x 27 cm

3.7.4 Sketches of Stylized Stage



Plates V and Plate VI: Preliminary Drawings for a table,
Pencil on Paper, 2016, 5.7 cm x 5.3 cm, and 5.5 x 5.1



Plates VII and VIII: Preliminary Drawings, Pencil on
Paper, 2016, 5.8cm x 5.9cm and 5.8cm x 3.4cm

3.7.5 Sketches of Abstract Stage

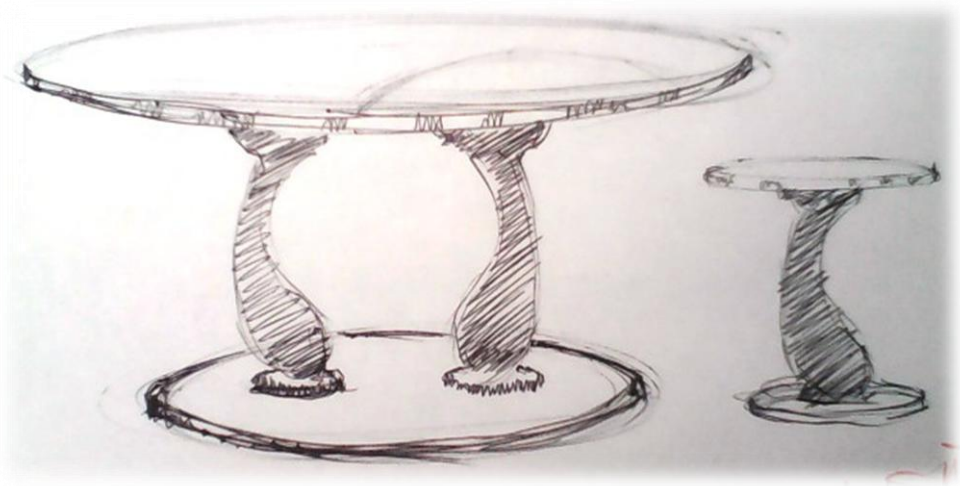


Plate IX: Preliminary Drawing for a Table and Stool,
Pen on Paper, 2016, 9cm x 5.7cm,

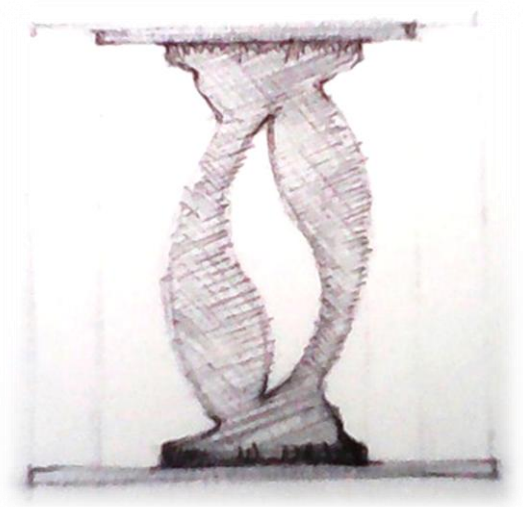
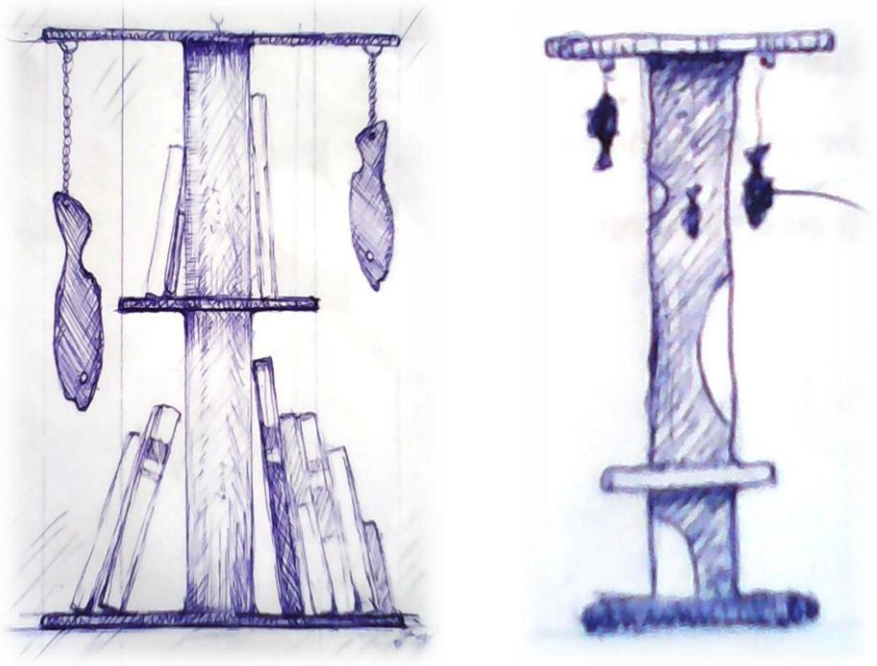


Plate X: Preliminary Drawing for a Stool,
Pen on Paper, 2016,5cm x 4.8 cm



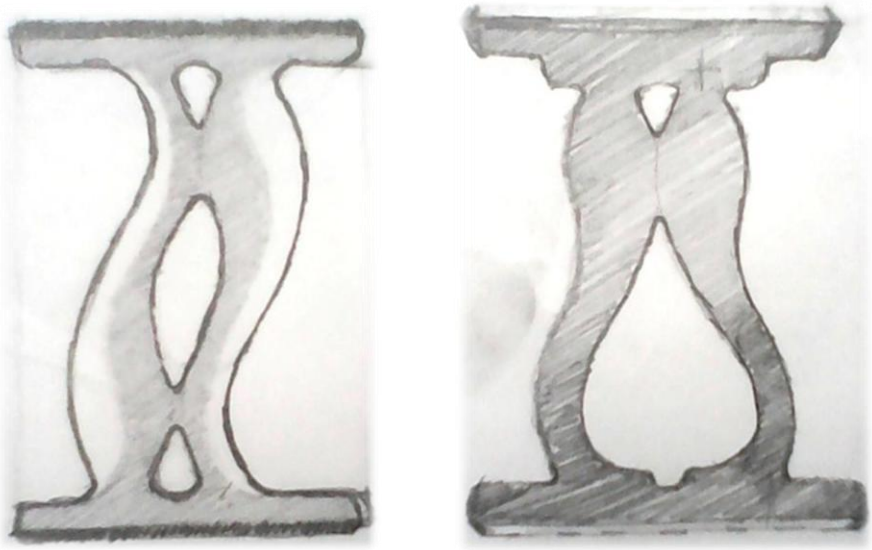
Plates XI and XII: Preliminary Drawings for a Book Shelf and tall Stool,
Pen on Paper, 2016, 8.4cm x 5.8cm and 4.2 cm x 5.7cm



Plate XIII: Preliminary Drawings for Stools,
Pencil on Paper, 2016, 9.4 cm x 5 cm



Plates XIV and XV: Abstract Stage: Drawings for Stools, Pen on Paper and Pencil on Paper, 2016, 5.3 cm x 5.2cm and 4.8cm x 4.5cm



Plates XVI and XVII: Drawings for Stools,
Pencil on Paper, 2016, 5cm x 5.4cm

3.8 Preliminary Studio Exploration

The exploration commenced with sculpture of a single tilapia and guppy, emphasizing their basic shapes and body parts. Modeling and casting process was adopted for the execution of this works. The compositions were rendered as simple as possible to ensure that the structure and resemblance – likeness was captured. This was produced using clay on an armature. After the clay work was finished, moulds were taken in plaster of Paris (P. O. P.) and then charged with fibreglass. The work was retrieved from the moulds by gentle striking with a small hammer or metal pipe, and the parts were joined together and finished.

3.8.1 Step One: Preparation of Armature

In the preparation of an armature, 5mm metal rods were acquired and cut to required length. The process is followed by bending the metal to achieve the shape represented on the reference or sketch, these bent metals were then welded together. Small pieces of wood were fastened to the armature with binding wire.



Plate XVIII: Armature, Metal rod, binding wire and wood pieces, 74 cm x 22 cm

3.8.2 Modeling in Clay



Plate XIX: Clay Modeling, 78 cm x 25 cm

3.8.3 Taking the Moulds



Plate XX: Moulds in Plaster of Paris (P.O.P.)

3.8.4 Charging the Mould:



Plate XXI: Fibre Glass Resin Charged Moulds

The process of charging the mould involved mixing resin with Plaster of Paris to increase the viscosity, and applying it to the mould. This was followed by the laying of fiber matt for strength as seen in Plate XIX. Waste moulds were separated from the cast by hitting gradually with a small hammer.



Plate XXII: Separation of the work from the mould

3.8.5 Coupling the Work



Plate XXIII: Coupling the work

The pieces retrieved from the mould were initially held together with binding wire, while gel coat of fibre glass was applied to seal the openings at the edges and fasten the whole piece, after which the work was painted with matt black.



Plate XXIV. The Finished Work

Artist: Afolayan Daniel

Title: Hunger Strike

Dimension: 83cm x 52cm

Medium: Fibre Glass

Year: 2016

CHAPTER FOUR

CATALOGUE AND ANALYSIS OF WORKS

4.1 Categories of the Works

A total of twelve works are categorizes into three stages and are analyzed in this chapter. ‘Green Tail’, ‘Mayday’, ‘Twin Tower’ and ‘Home, Sweet Home’ are in the first stage of works inspired by the guppy and tilapia fish. ‘Hunger Strike’, ‘Sports’, ‘Fellowship’ and ‘Return’ belong to the second stage of works that explore the movement of fish. The third and last stage shows works that are in abstract form as seen in ‘Camouflage’, ‘Pregnancy’, ‘Night Vision’ and ‘Small Talk’.

4.2 Green Tail



Plate XXV. ‘Green Tail’, Plaster of Paris, 58cm x 19cm, 2017, Photo: Geoffrey Yawati

The male guppy has more obvious beautiful colours than the female. In ‘Green Tail’, the researcher shows a male guppy from the pond with a light green stripe on the upper part of the caudal fins, which is represented by the opening on the tail. While studying the basic shape and structure of the guppy, effort was made to express its agility

and maneuverability; these features are often seen during courtship and in the rush for food.

The fish is portrayed here in a horizontal position, without a base. The caudal fin is about half the length of the body and it is slightly tilted, forming the support behind; the pectoral fins are spread out while the dorsal fin is perpendicular to the body.

The inner frame is made of wire mesh, covered with old news paper and glue, after which P. O. P. was applied directly and gradually in several layers. 'Green Tail' was finished with a slight silver spray.

4.3 Mayday



Plate XXVI. 'Mayday', Fibre glass, 14.5cm x7cm, 2015, Photo: Afolayan Daniel

The international distress signal "Mayday" is always repeated three times in the row – "Mayday-Mayday-Mayday" so that the situation will be clearly understood as a

life threatening emergency, (O.D.B. 2017). The fish appears to be moving downwards to the bottom of the pond as though it were falling in a nose dive, which is the basis for the title. Like most fishes at night, tilapias stay at the surface of the water body, but they nose dive at any sign of danger. In this work, there was an attempt to understand the unique shape of tilapia and the positioning, length and width of the pectoral, dorsal, pelvic and caudal fins.

Made by the process of casting, this tilapia fish stands in a diagonal or slanting position on a support that suggests the water bed and it shows a claim satisfaction that comes from acquiring safety. It also presents the tilapia in an elaborate manner showing its beauty as well as its uniqueness.

4.4 Twin Towers



Plate XXVII. 'Twin Towers' Wood and Carton, 43cm x 25cm, 2015, Photo: Geoffrey Yawati

The stool above is analogous to the World Trade Centre designed by American architect Minoru Yamasaki, built in Manhattan, New York. These towers were previously

ranked as the world's tallest buildings and became a symbol of the city's financial power. The buildings were demolished by a terrorist attack twenty eight years after they were completed.

The curved lines around the cylindrical cartons on the stool's support can be symbolic for smoke or flowing water. A guppy fish made of flat plywood, having three negative spaces – one representing the eye, and the others, colour patches, as seen mostly on male guppies – is suspended between the pillars of the stool. The top and base of this stool is of square- shaped plywood, having curves at two opposite sides.

4.5 Home, Sweet Home



Plate XXVIII: 'Home, Sweet Home', Fibre glass, 45cmx 23cm, 2015, Photo: Geoffrey Yawati

The struggle for territorial space in male animals is common among tilapias as well which often leads to regular fights between them. Several species are popular

aquarium fishes because of their interesting behaviour and attractive colouration. In an aquarium, they can chase themselves around to show dominance or authority. ‘Home, Sweet Home’ is a stool that illustrates a fish (above) chasing away another (below), its top and base are square-shaped wood while both fishes are made of fibre glass. It was executed in a stylized method showing a paradigm of simplicity and cubism.

4.6 Hunger Strike



Plate XXIX: ‘Hunger Strike’ Fiberglass and Carton, 83cmx 52cm, 2016, Photo: Afolayan Daniel

This work shows two fishes with their heads in opposite direction and tails flanking each other. The fishes form a pillar-like structure alongside a cylindrical carton

that both support a base and a top made of plywood, creating a tall side table. Tilapias have the tendency of refusing to eat when they are uncomfortable with their habitat or feel threatened by people around. A platform that looks like a shelf sits at the midpoint of the cylindrical pillar which serves as an additional surface to carry small objects.

4.7Sports



Plate XXX: **'**Sports', Fibreglass and Wood, 44cm x 24cm, 2016, Photo: Geoffrey Yawati

In this piece titled 'sports', one of the recreational postures of tilapia is captured. Two fishes, the big one below and small one above, are in what appears to be a play or a dance. Both fishes are in a curved position with their heads and tails touching each other at the middle of the composition. The top of the stool is made of plywood while the two fishes and the base are executed in fibreglass. This composition is similar to the number

eight in solid form, which is symbolic to the ideal shape of a woman, mostly expressed as ‘figure 8’, however in this case, it is subjectively employed to illustrate the visual gorgeousness and stunning concord that occur among fishes in water.

4.8 Fellowship



Plate XXXI: ‘Fellowship’ Fibreglass and Wood, 49cm x 21cm, 2016,
Photo: Geoffrey Yawati

According to Encarta Dictionaries 2009, the word ‘fellowship’ refers to a group of like-minded people who share common interests, goals, experiences or views. It also means companionship or a friendly association. In ‘fellowship’ the researcher attempts to capture the actions, nature and activities of tilapias in water as they move around in a

pond or aquarium. Using three fishes created from fibre glass, one turned downwards being the lower support; and the other two, upwards in opposite direction; a stool is built with a circular base and top made of plywood.

4.9 Return



Plate XXXII: 'Return', Wood and Metal, 45cm x 23cm, 2017, Photo: Geoffrey Yawati

The wave on a water body caused by light storm is partially expressed in 'Return'. The fish surrounded by the metal spring supporting two circle-shaped pieces of wood at the top and bottom, appears to be swimming upwards probably searching for shelter or a place to rest. This stool is also a representation of persistence, since the force in a storm is able to obstruct movement, there has to be strength and endurance to

compete with the water force; even though for fishes in water, like birds in the air, there is usually not much struggle because of the connection between their body design/shape and their habitat. The tilapia inside the metal spiral hangs on a thick rope attached to the wooden top.

4.10 Camouflage



Plate XXXIII: ‘Camouflage’ Wood and Carton, 2016, 78cm x 22cm, Photo: Geoffrey Yawati

Guppies have the ability to disguise in an aquarium or a pond, making it quite difficult for them to be seen, they are able to do this by taking the basic colour in their

habitat, like the chameleon; these appear on their body, sometimes in patches. In ‘Camouflage’ the element of disguise is depicted using black and white colour; the five guppies represented in an abstract form are hanging (tail up) from the round middle platform. This tall stool shows a cylindrical pillar with a top, middle and base. The five wooden abstract guppy forms, finished in the same pattern as the pillar suggest the uniqueness of the disguised colouration among guppies and emphasize the round patches on the fish.

4.11 Pregnancy



Plate XXXIV: ‘Pregnancy’, Fibre glass and Wood, 2016, 45.5cmx 23cm, Photo: Geoffrey Yawati

The physical condition of a woman or female animal carrying unborn offspring inside her body, from fertilization to birth is referred to as pregnancy (Encarta Dictionary, 2009). It could also mean significance or having numerous possibilities or implication.

Female guppies are almost twice the size of the male (sometimes) and are more translucent because they have less obvious colours. Before delivery, like most animals, the belly becomes bigger, this is shown by the projection at the lower segment of this stool. The spherical shape below, containing a void leads up to a cylindrical pillar that supports a flat round top. Circles and spheres were specifically chosen to adequately express the idea of pregnancy.

4.12 Night Vision



Plate XXXV: 'Night Vision', Wood, 41cm x 20cm, 2017, Photo: Geoffrey Yawati

Guppies and tilapias are examples of fishes that find it difficult to see at night. This piece created from wood carving is an abstract representation of the head of a fish projecting upwards with exaggerated eyes. 'Night Vision' portrays a scenario of wide open eyes yet unable to see properly probably because of darkness. The circular

engraving at the midpoint – which is the pupil – is finished in a dark tint, leaving the smaller inner spherical protrusion. The cylindrical form of the wood trunk was retained at the top and bottom of this piece while the middle section carries what appears to an oval shape.

4.13 Small Talk



Plate XXXVI: 'Small Talk' fibre glass and Wood, 2016, 47cm x 32cm, Geoffrey Yawati

Tilapias have an attitude that looks like a duet dance in which both fishes are side by side each other and move rhythmically to a silent music. 'Small Talk' captures one of the forms of movements as seen by these fishes. It shows two stylized fishes in opposite directions (head to tail) with a wooden base and top.

‘Small Talk’ also illustrates a cozy conversation between two parties. In this piece, the researcher explored balance while playing around with curves and spirals; and texture in the outlook of ‘Small Talk’ by introducing polythene to the moulds before charging them so as to change the tactile value of the final surface.

CHAPTER FIVE

SUMMARY AND CONCLUSION

5.1 Summary

The purpose of this study was to produce sculptural pieces that possess utilitarian values drawing inspiration from the guppy and tilapia fish forms. A total of twelve works were produced in the cause of this research, four of the works were done using the guppy form while the tilapia inspired seven works. Three categories are identified; the representational –showing four works, stylized –with four works and four works for the abstract stage.

5.2 Findings

1. The structural configuration of the guppy is fascinating based on the position and length of the dorsal, ventral and especially the caudal fins of the male, alongside the elegance and elaborate nature of their entire body. The symmetry in this fish has been relatively dealt with and in the process it was discovered that the outlines and individual components of the fish is more likely to marry in a composition. Therefore, the production of sculptures inspired by the guppy fish form is achievable. This can be seen in plates XXV, and XXVII.
2. Tilapias have a moderately simple outline that can easily be represented in two and three-dimensional forms for identity and emphasis. They also possess a squat shape body that allow room for exploration in sculpture of several expressions, and they being fin fishes also generate ideas for manipulating the segments of their body into representations of art. This is portrayed in plates XXVI, XXVIII and XXIX

3. In water, fishes have an interesting locomotion that can be used to produce utilitarian sculptures. These include diagonal, circular, horizontal and vertical movements as captured in plates XXX and XXXVI.
4. Both guppies and tilapias bring about vast opportunity in abstraction of sculpture resulting from many factors connected to the fish, from structure to habitat. Their size and proportions were controlled to suit different ideas leading to an effect of rhythmic and harmonious masterpiece.
5. Guppies and tilapias are able to cohabit in the same pond despite their sizes which is about one to ten; this makes it possible to study both species together and in so doing new ideas involving stylization or abstraction are attained.

5.3 Recommendation

The *Cichlidae* family of fish has over 3,300 recorded species. Like the guppy and tilapia, each specie possesses unique and interesting aesthetic qualities that can be used and harnessed in sculpture and the visual art, for creating novel works of art. Further study could be carried out on other species of fish and sea animals at large.

The fancy guppy has the ability to camouflage as it adjusts and blends into its habitat; this trait is an interesting aspect of its existence that could be harnessed as it shows different forms and colour schemes that may not have been considered thoroughly in art and consequently leading to various aspects of exploration especially on finishing in sculpture.

5.4 Contribution to Knowledge

This study has established:

1. the possibility of creating utilitarian sculptures inspired by the guppy and tilapia fish in contemporary Nigerian art.
2. other prospects of creating artworks from nature using the basic shape, characteristics of guppy and tilapia as data in Practice-Based research in sculpture.
3. dynamic possibilities in interior design using fish as motifs in sculptural exploration
4. the synergy of guppy and tilapia as patterns that could be incorporated in other art expressions – ceramics, graphics, painting, textiles among others.

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