



UNDERSTANDING THE TECHNOLOGY OF PRODUCING DECORATIVE BRASS SCULPTURE: A STUDY OF MUSULUMATU MARQUETTE

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Abstract

This study focuses on the technology of brass casting sculpture depicted in culture and religion. Art, culture, and religion are inseparable because they co-exist from the creation and inception of man. Almighty God is a Great and Dynamic Artist, He moulded human beings in His image as recorded in the Holy Bible and the Quran. Based on this, the concept of a Muslim woman was used for this study. This study reiterates that artists strive towards expressing their inner emotions or feelings to mirror society, irrespective of culture, religion, taboo, law, and superstition. It is qualitative research that throws more light on the characteristics of a Muslim woman, such as covering of the body and head with a scarf or hijab, and other forms of head covering. A descriptive approach was used, primary data were collected and analysed through observation during the process of clay modelling, plaster of Paris, different metals, and scraps melted together. Secondary data are grounded in academic journals and books in both hard and electronic copies, while self-determination theory (SDT) and skill acquisition theory (SAT) guided the study. The findings suggest that beauty exists in other people's culture and religion, which has been adopted in Nigeria. Hence, the finished work in brass or bronze is a long, difficult, and painstaking exercise. The recommendations suggest that the government should provide materials and tools for the execution of bronze casting in all the tertiary institutions that offer Fine and Applied Arts - Sculpture, especially. The curriculum planner should make bronze casting compulsory in the Fine and Applied Arts curriculum of the tertiary institutions. This will enhance students' sculpture (bronze casting) skills and knowledge without extra efforts or cost outside the school system.

Keywords: Brass, casting technology, culture and religion, decorative sculpture, Marquette, Musulumatu, understanding.

1.0 Introduction

The fine artists and sculptors mostly live in the world of their own based on creative dynamism. They create and re-create the creations of God most of the time. Although Almighty God is a Great and Dynamic Artist when He moulded human beings in His

image as recorded in the Holy Bible and Quran (Bible Society of Nigeria, 2004; Al-Azhar Islamic Research Academy, 2013). This could also be found in Genesis chapter 1, verses 26-27, and Surat Bakarah chapter 2 verse 30. In some cases, the artist contradicts the norms or tenets of customs



and religion. An artist lives in conjunction with and learns a lot from his immediate environment. He does not pretend not to notice what is going on in society, and he also has no enemy in terms of natural beauty. He appreciates the work of nature and admires man's effort to complement it. A versatile fine artist touches all facets of life that interest him; he believes in satisfying his curiosity and emotion rather than sticking to taboos, norms, or laws (Ajayi & Akhogba, 2026). Artists, especially sculptors, are never subdued in recognising the happening or activities going on around them, always striving hard to capture the mood of the society, be it religion, cultural, tradition, or political phenomenon (Oyedun, 2013). This is the reason for the focus on "Musulumatu", which means a Muslim woman. In reality, the status-quo is better; if not, existence would be boring or less interesting. Nature has made life very abundant and free for every individual.

Consequently, a close look at nature itself indicates that the earth is endowed with land, including rivers, seas, and mountains, as a gift of nature (Oyedun, 2013; Osarumen, 2017). Man has always dared, he has crossed the mountains, sailed the seas and oceans, and finally crossed jungles and wilderness (Ibid). Based on this, we argue that the activities of man show a clear indication that in existence as far as one can be successful in his effort, nature does not recommend any boundary or restriction emanated from man to suit his goals and desires. The researchers' great love for beauty has led them to venture into an area that is regarded as a no-go area for some people, placing a task on us and perhaps on other sculptors. The Muslim woman's way of dressing is of great interest to this study. Therefore, it is considered necessary to bring to life the striking femininity and

beauty in a Muslim woman when fully dressed in a Muslim way. Hence, some Christian women also fully cover their bodies. This study has no bearing on religion, rather on aesthetic values and strives to educate the sculpture students on some of the right technologies and approaches to working with various metals used in sculpture – brass/bronze casting (Ajayi, 2022).

Objectives of the Study

This study aims to establish the fact that beauty exists in every religion and culture. It concentrates on bringing into full glare the wonderful and natural beauty that exists in the Islamic way of dressing in decorative brass Marquette – Musulumatu. Likewise, to achieve the great realism in the drapery, rhythmic posture, and contra-posture of the young woman, suggesting life in abundance and complete submission to the way of life she has chosen as a woman. It is set to imbibe self-determination and self-reliance in the students and practitioners in society. More so, the study appraises the aesthetic movements of a bronze sculpture displayed by the artists or researchers, and different challenges encountered were stated.

Research Questions

The following research questions guided this study: To what extent is the technology of the decorative bronze sculpture process understood in Nigerian society? Does significant aesthetic exist in the decorative brass Marquette – Musulumatu? How does beauty exist in the Islamic way of dressing? What are the materials, tools, and equipment used in producing Musulumatu decorative brass or bronze Marquette? To what extent does Musulumatu decorative brass Marquette production encourage students to be self-determined and self-reliance the society? These and many other questions were answered qualitatively in this study.

Significance of the Study

The study of Musulumatu unpacked the technological intricacies of bronze casting for sculpture students and society at large. This artistic significance could be seen in the execution of the work in terms of proportion, rhythm, balanced posture of a woman, femininity, and the humble look of the woman. The intricate treatment of the drapery through the appropriate use of elements and principles of Art suggests a good understanding of the subject matter (Oyedun, 2013; Ajayi, 2022). These potentials in the beauty of the woman's torso and indeed the artistic boldness of observing and presenting beauty anywhere it may be found are second to none. The study of Musulumatu further advances the knowledge and understanding of the students and readers in the field of sculpture based on the execution.

Theoretical Framework

This research is underpinned by self-determination theory (SDT), proposed and promulgated by Deci and Ryan (2000). The SDT is a macro-theory of human motivation, emotion, and development that takes an interest in factors that either

facilitate the assimilative and growth-oriented processes in people (teachers and students). This means teachers and students of Fine and Applied Arts (FAA) should be intrinsically motivated and develop their artistic talent to execute the technology of brass casting sculpture. Despite the fact that the FAA is seen as a discipline for the talented, few students were determined to pursue and excel in it. The society and government, on the other hand, did not encourage or reinforce the pursuit of FAA as a career due to a lack of interest, erroneous assumptions, and underfunding (Deci & Ryan, 2000). Self-determination theory (SDT) encompasses three major human needs to learning: autonomy, competence, and relatedness as depicted in Figure 1. This explains the critical role of students' motivation in learning FAA (bronze casting); they are self-determined with the free will to explore various facilities such as clay, plasticine, plaster of Paris, cement, metal, and many others that can enhance their learning. It hinged on the motivation to accept and use artistic facilities to enhance their learning.



Figure 1: Self-determination theory (SDT). Adopted from Deci and Ryan (2000). Additional information from Cherry (2024).

In expansion, SDT connotes that autonomy, competence, and relatedness are experiences of the artists, and students' volition, motivation, and engagements that foster their enhanced performance, persistence,

and creativity, which resulted in the production of the decorative brass sculpture Marquette tagged Musulumatu. This expansion process of SDT is depicted in Figure 2.

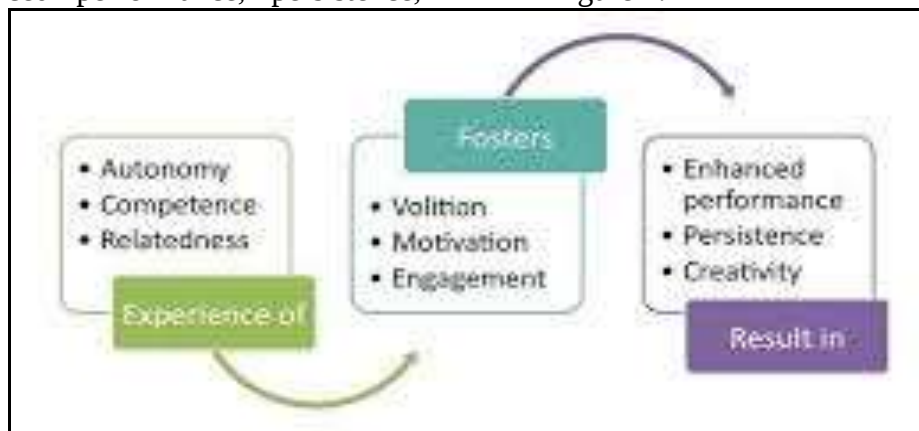
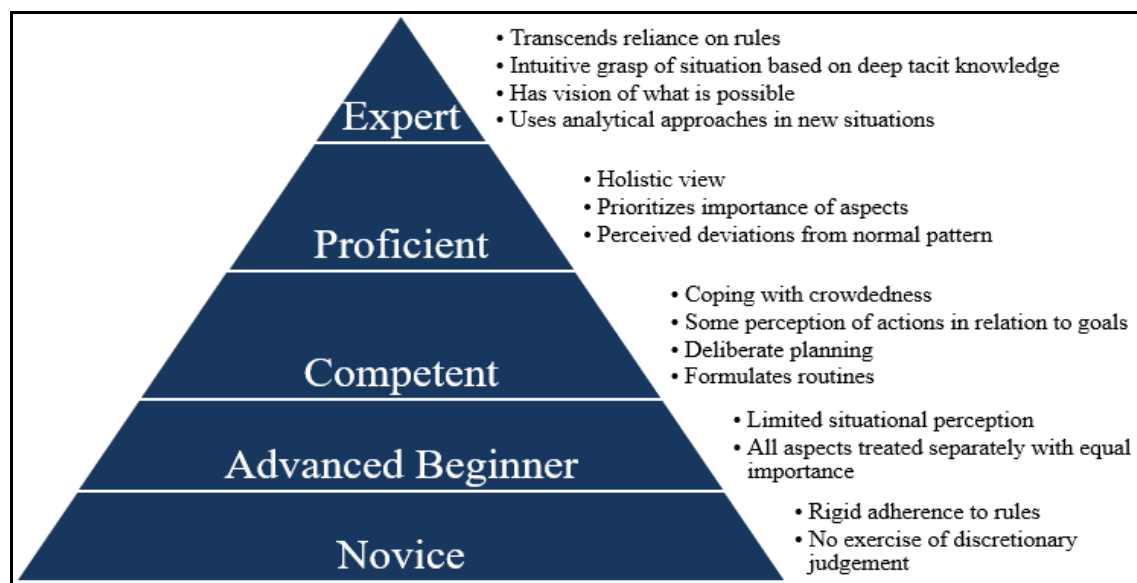


Figure 2: Expansion process of self-determination theory (SDT). Adopted from Deci and Ryan (2000). Additional information from Cherry (2024).

Self-determination, according to Cherry (2024) is the person's ability to make choices and manage their own life. Being self-determined means that students and upcoming sculptors feel greater control of learning bronze casting technology on their own, as opposed to being non-self-determined, which could leave them with the feeling that their life is controlled by others. It is the intrinsic motivation that depicts engagement in activities for the inherent reward of the behaviour itself, Cherry (2024) claimed.

On the other hand, skill acquisition theory (SAT) is not just a theory of the development of language, especially second language, it is a general theory of learning ranging from cognitive to psychomotor skills (Mystkowaska-Wiertelak & Pawlak, 2012). Pondering on this assertion justifies

that SAT is highly encompassing, and according to Cornford (1996) cited in Taie (2014), a skill could involve learning, motivation to learn, content and context knowledge, problem solving, time factor, practice, and performance, among others. Thus, all forms of learning involve the brain (cognitive) and hands (psychomotor), which the technology of decorative bronze sculpture Marquette – Musulumatu is not exempted. In this regard, SAT is procedural as Dreyfus model of skill acquisition and Benner's novice to expert model implicit the process in Figure 3. The diagram affirms that SAT has five prolific stages: novice stage, advanced beginner stage, competent stage, proficient stage, and expert stage. These stages are crucially important to the sculpture students who wish to become professional bronze casters or sculptors.



Figure

3: The five stages of Dreyfus model of skill acquisition. Adopted from Stephan (2017). Additional information from Burke (2020).

In this study, Dreyfus' model demonstrates means of understanding the learning needs and style of learning at different levels of technology of decorative bronze sculpture like Musulumatu. At the novice level, no knowledge/learning is acquired, at advance beginner level, limited important learning springs up, in the competent level, students start working independently with good confidence and efficiency, at the proficient level; he has really learnt and are dynamic in experience, and at the expert level; he is excellent, a master and authority in his action.

Literature Review

Technology of Bronze Casting

The technology of casting in bronze or brass is grounded in the representation of artistic concepts and composition in copper, zinc, and related metals. It is a highly skillful use of metal in the production of artifacts to justify beauty, decoration, elegance,

ornamentation, durability, and other aesthetic values (Ajayi, 2022). In corroborating this claim, Morris (2026) affirms that the technology of bronze casting is the use of a copper-based metal that contains alloying elements other than zinc to create artifacts. Initially, only alloys of copper and tin were regarded as bronzes, but presently it encompasses nearly any alloy of copper (lead, iron, and antimony) except brass and copper-nickel and copper-beryllium alloys (ibid). More so, bronze casting is an alloy that is traditionally made up of copper and the metal tin melt together to produce a model sculpture. The molten metal could be considered as bronze if it is made up of 88% copper and 12% tin (IndustryToday, 2020; Won et al., 2022). Won et al (2022) explained different methods used in bronze casting technology as represented in Figure 4.

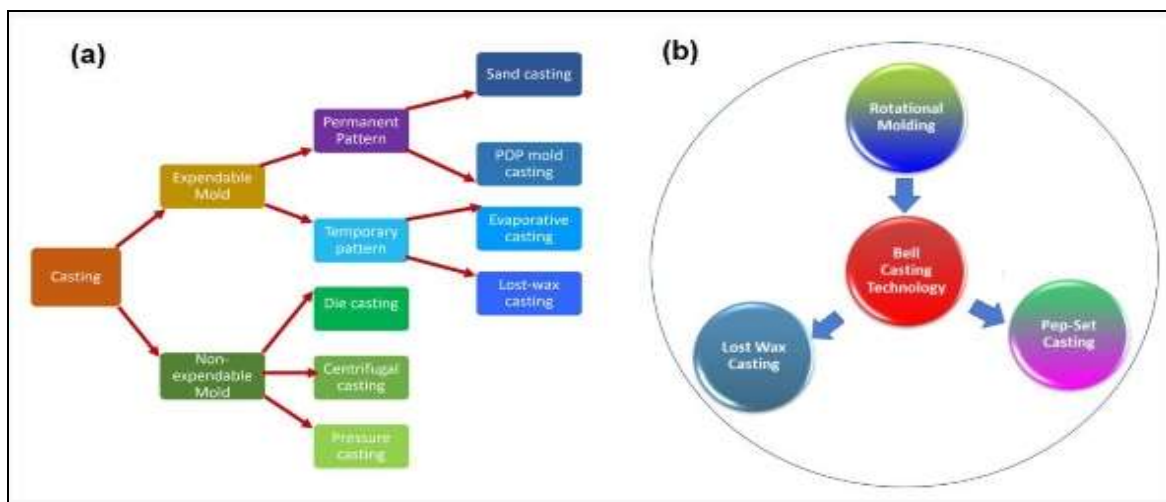


Figure 4: (a) Metal casting technology and (b) Popular bronze cast technologies for bells. Adopted from Won et al (2022).

However, the purpose of this study is limited to the lost-wax method. This is the basis of executing Musulumatu Marquette, and could be achieved through direct or indirect bronze casting technology. Hence, the indirect was used to execute Musulumatu Marquette.

Direct bronze casting technology

This is a process where artist models or works are cast without casting any negative mould. This is often referred to as direct modelling. Though the great sculptors of the world prefer to use the so-called lost wax technique, which can be executed in both direct and indirect bronze casting (Encyclopaedia Britannica,1989; Won et al., 2022). This direct lost-wax technology is capable of casting models with delicacy and complexity. It has two great disadvantages; if, for any reason, the casting failed, the wax model, which is the sculptor's entire work would be lost forever, since the mould had been destroyed during the firing of the mould. Moreover, if the casting is successful, only one bronze could be produced from the sculptor's model. This implies that it is not an ideal method for reproductive sculptor's mode.

Indirect bronze casting technology

This indirect technology of bronze casting is the focus of this study, and it is very effective for reproduction. No later than the last quarter of the fifteenth century, Italian sculptors began to use an indirect method to cast bronzes without destroying their original model; hence, the name indirect casting (Encyclopaedia Britannica,1989). The earliest sculptor known to have routinely used indirect casting was Antico of Mantua (1460-1528). His bronzes showed a mastery of indirect lost-wax casting. The technology of indirect lost-wax casting involves casting a second model in wax, the inter-model, from the original model made by the sculptor (Encyclopaedia Britannica, 1989; Won et al., 2022). Once an inter-model has been made, it can be cast in metal exactly as described for direct casting. The secret lies in knowing how to cast an inter-model. A sculptor may model wax into any conceivable shape, such as complex folded drapery, windblown locks of hair, or multiple entwined bodies (contraposture). Ostensibly, one can make numerous wax inter-models from the same piece mould, and consequently, numerous essentially



identical bronze artifacts, all of which are replicas of the original model. What is less obvious is that the original model need not be of wax at all. Any durable material will serve, even a previously cast bronze. Indirect bronze casting technology permits the sculptor to produce numerous bronze replicas of a popular model. This early anticipation of mass production permitted the distribution of sculpture to a much larger audience than ever.

Qualities of bronze casting

Bronze casting is a hybrid technology that involves several chemical materials such as copper, zinc, tin, lead, and alloy, which are made up of 88% copper and 12% tin of molten metal to indicate its relatively strong or hardening. Although it is one of the oldest traditions of sculpture technology in Nigeria, Africa, and the World at large (Encyclopaedia Britannica, 1989). This made it possess the longest dating compared to other contemporary artifacts. More so, the composition of materials used in executing most bronze casting sculptures makes it the most highly durable artifact to the extent that it can last for several thousand years without damage or rust. Aside from that, most bronze sculptures are made mainly for beautification, ornamentation, and decoration, while some others are mostly produced for glorification of the king; Ife and Benin in particular (Ibrahim-Banjoko, 2009; Oyedun, 2013). Although contemporary artists do cast various concepts of their choice, like the concept of this study. In addition, it inspires, promotes, and preserves our traditional and cultural heritage from generation to generation so that they are not forgotten or eroded. Above all, bronze casting technology is a means of livelihood if the skill is perfectly acquired according to skill acquisition theory (SAT) and self-determination theory (SDT), and

could also help in improving the nation's economy if much attention is paid to its production (Burke, 2020; Cherry, 2024).

Research Methodology

This study is qualitative research that used a descriptive approach to contextualise and analyse the primary data, which are the materials and tools used for the execution (Creswell, 2014; Heale & Twycross, 2018). The execution was mainly in three stages: construction of the armature, modelling for two weeks, and casting. These activities were analysed and discussed in steps based on the observation of the researchers (sculptors). It was based on the purposive sampling of Muslim women as participants and their ways of dressing cum the materials, tools, and equipment used for the execution of this study. Several pictures of the sample Musulumatu were captured through a digital camera to record the desired posture of the study. These sorted answers to the research questions stated. These materials and tools include plasticine, plaster of Paris (POP), clay or plasticine, copper wire, brass, iron rod, bidding wire, metal polish, wax, grease, large quantity of charcoal, sand paper (fine and rough), files (rasp and smooth), grinding machine, spatulas, hand glove, and hammer (Brown, 2006; Ibahim-Banjoko, 2009; Oyedun, 2013). Among these materials listed above, clay or plasticine played the major role. Plasticine is best used for Musulumatu Marquette project because of its great flexibility and plasticity. However, before making the Marquette the armature has to be constructed after we have made the sketches.

Procedures for executing Musulumatu Marquette brass

Step 1: Most plastic sculpture projects begin with drawings. Several sketches of the female model were used for the construction

and modelling of this project. These drawings also help in understanding clearly the nature of a Muslim woman in her religious dress. The sequential and

emergency of the drapery was understood without any illusion and determinedly achieved as shown in Figure 5.

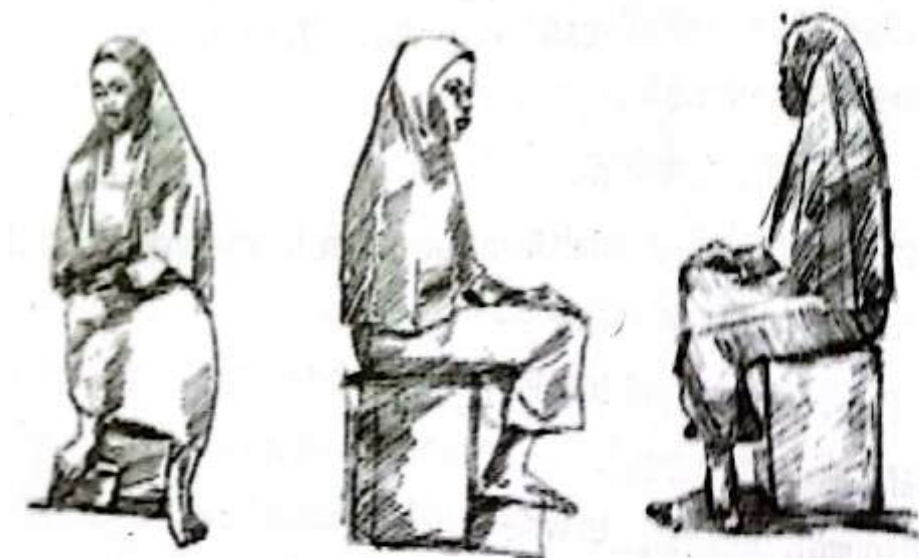


Figure 5: Sketches of Musulumatu, a Muslim woman (Research field).

Step 2: This is the construction of the armature of the project using copper wire, which is the main function of the wire. This was constructed in a human 'frame' or 'skeleton': As we all know, the bones support the muscles and allow the human figure to stand erect; otherwise, without the bones in our body, we would be like a sack filled with cotton wool. The armature was constructed with great care, taking into consideration the proportion of the human skeleton as a guide (Brown, 2006; Oyedun, 2013). An armature is not difficult to make. The wire was cut into three parts: the pelvic girdle with the chest and the two legs took the lion's share, while the wire for the two hands and the chest is the second part in length. The shortest part, of course, consists of the head and the wire that led to the support stand (iron rod), where they were all firmly tied together with binding wire.

The support is to hold the armature and prevent the work from collapsing, as indicated in Figure 6.

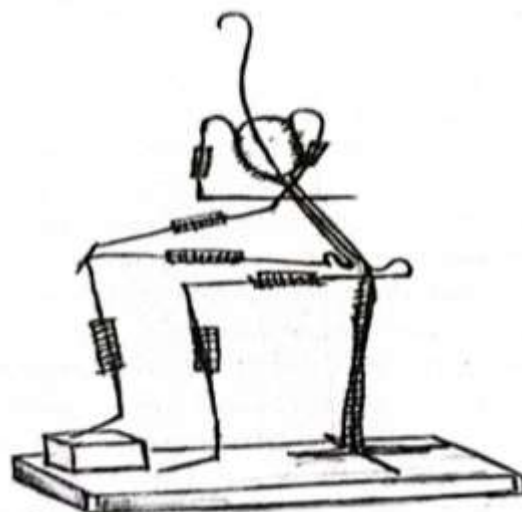


Figure 6: Construction of armature for the project Musulumatu. (Research field).

As mentioned earlier, the armature was necessary because plasticine was used for the Marquette. Had it been clay, armature

would not have been necessary for a small work like Marquette. However, plasticine, if available, remains the best material for Marquette, the reason being that it is very flexible, it does not dry quickly, it can take years to dry, and it cannot crack even with wire inside, it is like that of clay. A point to be considered is that one would not have battled with the composition and at the same time battled the work from cracking or falling down, as it may happen when clay is being used for Marquette.

Step 3: The modelling of Musulumatu Marquette. After the armature had been constructed, a live female model's posture was carefully studied to achieve an appropriate and accurate understanding of the human figure and its anatomy. The human body is very complex; the fact that we see each other every day does not mean we have mastered the anatomy (Oyedun 2013). In this project, a female model was modelled in a full figure, and this lasted for two weeks; thereafter, she was paid off. The Marquette and the copied model, also known as the study for the original work, were used to produce Musulumatu Marquette with self-determination (Burke, 2020; Cherry, 2024). The Marquette and the copied model are very important in this project as the Marquette was for the project, while the copy modelled was like a dictionary of anatomy, which the sculptor always needs from time to time as the work progresses. A professional sculptor will never copy a model directly and term it a composition or a project. If a sculptor does this, then he may not be regarded as a professional. Copying a model will never make the work original, as what one can call the sculptor's idea or hands will never be represented in the work. In other words, it will be best known as a copied work. In this project, the Marquette was enlarged two

times in size. It is also very important to understand how work can be enlarged in sculpture, which is like scaling in other exercises, and is not difficult to execute. Understanding how the work is enlarged is very crucial for the architect when constructing a building that will include sculptural work. The aim is for the architect to know approximately the size and weight of the sculptural piece or pieces so that it may be included in the planning and construction of the building to prevent the weight of the work from adversely affecting the building.

Step 4: This was the stage of casting in rubber due to the completion of the original composition modelling. The rubber used in casting is very much related to natural rubber, which has both positive and negative chemicals mixed at a particular ratio to achieve the rubber. The mixture of the chemicals determined the strength of the rubber. The manufacturers of the chemical have their own guidelines on how the contents should be mixed. For a work like this project, the rubber has to be supported by plaster of Paris (POP), without this support, no casting could be achieved or obtained from the negative mould cast with rubber. The rubber-cast mould and the supported POP are indicated in Figure 7.



Figure 7: Pieces of the rubber negative mould and its plaster of Paris support. The hole in the rubber indicated the key for good registration (Research field).

Step 5: It is the link to the main casting; the casting of the positive mould in wax from the negative mould. With intrinsic motivation and self-determination, the wax was heated on fire until it turned to liquid form (Deci & Ryan, 2000; Cherry, 2024). This is where the bronze casting skill acquired was executed to achieve the project – the competence, proficiency, and expertise (Burke, 2020). It should be noted that natural wax is better than synthetic wax because it is more plastic in nature, almost like plasticine; unfortunately, it is more costly than synthetic wax. Albeit, at this junction, one should not forget that during the process of casting the negative mould in rubber, an entrance was left in the rubber mould to allow the pouring of wax, and the wax should not be poured when it is extremely hot. To know whether the wax is too hot, a stick is dipped into the hot wax; if it runs down quickly, then it is too hot and not good for pouring. On the other hand, if the wax sticks a little to the stick, then it is ready for pouring. After the wax had been poured into the mould, it was allowed to cool or solidify. This process was repeated until the required thickness of the wax was achieved. Meanwhile, it is the thickness of the wax in advent would determine the thickness of the melted metal – brass or bronze poured into the mould.

Step 6: Is the pre-main casting. After the wax had cooled down properly, paraffin or kerosene wax was used to seal up the air bubbles that might have formed when the hot wax was being poured. To achieve a smooth-surfaced sculptural piece, it is very necessary to do this before the molten metal is finally poured (Deci & Ryan, 2000;

Cherry, 2024). After the smoothing of the wax sculpture, connecting wax rods were attached to the work, and an entrance in the form of a funnel was created in the wax sculpture to enhance the good glow of the molten metal. More so, an iron rod was connected between the plaster poured inside the wax and the outside part of the wax sculpture. This iron connection was done before the plaster had set. The wax sculpture was then completely covered with plaster, leaving a space for the escape of vapour and pouring of the molten metal. The wax inside the plaster was put on fire or in a kiln for the wax to melt out, living space where the wax had been covered for molten metal to be poured. The sculptors were able to achieve all these processes successfully through self-determination (ibid). This is indicated in Figure 8.

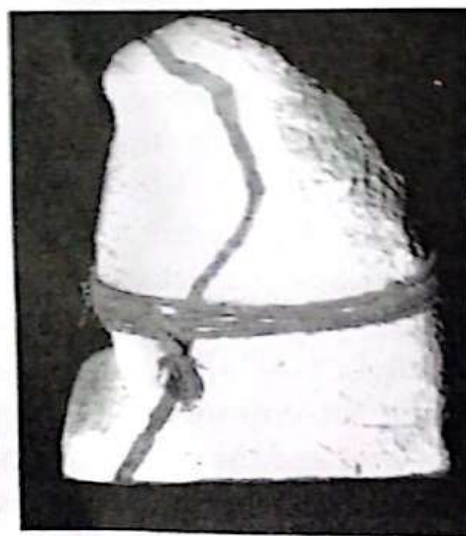


Figure 8: The negative mould in rubber and its plaster of Paris (POP) support for the already coupled together mould. The red line on the plaster indicated the registration point of the mould (Research field).

Step 7: This is the main bronze casting. The process of melting is time-consuming, requires self-determination, and is indeed difficult to achieve, especially if it is done

manually as projected in this study. It requires serious motivation, competence, endurance, and resilience to achieve good results as the set objectives (Deci & Ryan, 2000; Burke, 2020; Cherry, 2024). However, the metal was melted at about 1,100 °C and poured into the cavity created by the melted wax. Pouring the molten metal was also dangerous, which was better done by two people, each person holding the shank at each end of the carrier or rods of the shank

that held the crucible. After the melted metal had properly cooled down, the plaster was broken, and the metal sculpture inside emerged. A lot of work still has to be done on it; the connecting rod, which serves as channels for free flow of molten metal, was cut with a hacksaw, file and sandpaper were used to clean its surface (ibid). It was later polished with metal polish and then mounted on a pedestal as indicated in Figure 9.



Figure 9: The finished work of Musulumatu mounted on a pedestal (Research field).

Challenges Encountered

Metal casting is not an easy thing to do using a forge, and particularly a locally made one. A lot of energy was spent on melting the metal, which took a long time of

hard work. Brass, which is an alloy of copper and zinc, melts at about 1,100 °C, and to achieve this height in heat generation manually is a difficult task, which created the major problem encountered during the



process of melting the brass. Pouring of the metal was also difficult, hence other hands were needed.

Findings and Discussion

The findings are based on the observation of the researchers (sculptors) during the execution of the project – Musulumatu brass Marquette. The observation corroborates the research questions 1, 2, and 3. **RQ 1: To what extent is the technology of the decorative bronze sculpture process understood in Nigerian society?** The observation data revealed that most sculpture students, non-sculpture students, and people within the university community, who are Nigerian, are aware of the values of bronze sculpture based on their Art History knowledge (Ife, Benin, Igbo-Ukwu Arts). However, they had no experience and understand the process of producing the bronze sculpture before. More so, the few students and people within the university environment who understood the process are not artists or sculptors, thus, they lack the knowledge and skills (novice) of producing bronze sculpture. This corroborates Dreyfus' model of skill acquisition (Stephan, 2017; Burke, 2020). The few sculptors who understood the process lack the motivation, determination, competence, and proficiency to embark on the production of bronze casting. This suggests that brass or bronze casting is a long, difficult, and painstaking exercise that requires self-determination and resilience (Burke, 2020; Cherry, 2024).

RQ 2: Does significant aesthetic exist in the decorative brass Marquette – Musulumatu? Beauty depends on the holder, they say. The finding revealed that the dynamic, elegant, and sequential nature of the draperies achieved in Musulumatu decorative brass Marquette indicates the existence of beauty in other people's culture and religion if a close study of such is

embarked upon without a biased mind, as depicted in Figure 9. The self-determination and display of proficiency and expertness, according to Cherry (2024) and Burke (2020), pave the way for a Muslim woman – Musulumatu, who is fully dressed in her hijab; the striking femininity and beauty are second to none. However, the researchers argue that in some cases of the Musulumatu, the beauty is disrupted

RQ 3: To what extent does Musulumatu decorative brass Marquette production encourage students to be self-determined and self-reliance the society? From the observation during the execution of the project, the date evidently indicated a long, difficult process and painstaking exercise, reason many sculptors avoid it. Despite the challenge, most of the sculpture students, especially 300 level (8 out of 56 students) and 400 level (5 out of 46 students), cherished and admired finished work in Figure 9. The 13 sculpture students vow to try their hand at bronze casting in the future, as other students specialised in other branches of Art. Their gesture suggested that Musulumatu figure motivated and encouraged a good interest in bronze casting. Interest matters in creativity, especially sculpture, with their interest and determination, they could develop a vocation and become self-reliance in the society (Deci & Ryan, 2000; Cherry, 2024). Presently, entrepreneurship is considered the order of the day; thus, practicing bronze casting was found cheaper through buying the metals and scraps from Hausa condemned buyers and scavengers. It largely assists the success of Musulumatu decorative brass Marquette project.

Conclusion

This study has appraised the process of producing bronze casting. The production is difficult and painstaking, reason few



sculptors start a work of this type from scratch and end it in metal successfully. The fact that all trained sculptors understand the process and the difficulties involved always puts many sculptors off. Apart from this fact, metals are expensive, and that is the main reason most metal sculptures produced without being commissioned are usually small in size. Hence, the joy of expressing skills and inner feelings made the sculptors embark on the project. It has interestingly exposed the beauty that exists in other people's culture and religion in brass, the foci of the study.

Recommendations

Bronze casting is extremely technical and challenging in Nigerian society. Although it is our heritage, and the practice must continue to solve joblessness and unemployment of the youth that anchor various crimes and vice in society. The technicalities could not be understood if the practice is not trending. Based on this, it is recommended that:

1. Self-determination should be imbibed to understand the technicalities, procedure, and right approach to handling bronze casting sculptures. An interesting work of this nature.
2. The government should try its best in making sure that the materials, tools, and equipment for the execution of metal casting are available in all the tertiary institution that offers Fine and Applied Arts, especially Sculpture.
3. The state government should establish a bronze casting centre where youth who cannot afford to acquire tertiary institution education can learn cheaply and exhibit their bronze artifacts biannually or annually for sale. This will motivate and encourage other youths to learn and become self-reliant.

4. Bronze casting workshops and seminars like that of stone carving, organised by the Department of Creative Arts, University of Lagos in 2024 should be recurrently organised by experts through physical contact and digital tools like Zoom, Google Meet, Telegram, WhatsApp, and a host of others to create more awareness of it and impart more knowledge to young sculptors.

5. The curriculum planners should make metal or bronze casting compulsory in the Fine and Applied Arts curriculum of the tertiary institutions. This will enhance the students' acquisition of verse skills and knowledge without extra effort or cost outside the school system to become self-reliant.

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