



The Influence of Digital Transformation and Technology on Art in Nigeria

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Abstract

Digital transformation has significantly reshaped visual art, expanding creative now playing an increasingly vital role in artistic production. While fields such as painting, graphic design, and textile design have adopted digital innovation, kinetic and functional sculptures remain underexplored in Nigeria. This study examines the role of digital technologies in contemporary Nigerian art, particularly in sculptural practices. Utilizing a combination of literature review, studio-based experiments, and case studies of selected artists, this research highlights the impact of digital tools on artistic expression. The findings underscore the urgent need for revisions in Nigeria's art education curriculum to integrate emerging technologies, ensuring that artists remain competitive in the field of creativity and redefining traditional artistic methodologies globally, including in Nigeria. Historically, art has evolved alongside technological advancements, with digital tools in the creative landscape. The study recommends that curriculum reform by introducing digital tools and technological systems into Nigerian art education at all levels and interdisciplinary collaborations through combining art with technology to foster innovation should be critically looked into by all stakeholders.

Keywords: Digital innovation, Art, Technology, Design, Sculpture

Citation

Seyi-Gbangbayau P. S. & Ganiy, E. O. (2025). The Influence Of Digital Transformation And Technology On Art In Nigeria. *International Journal of Women in Technical Education and Employment*, 6(1), 110 – 118.

ARTICLE HISTORY

Received: April 1, 2025

Revised: April 10, 2025

Accepted: April 24, 2025

Introduction

The relationship between art and technology has been evident throughout history, from early cave paintings to the Renaissance period, where artists like Leonardo da Vinci incorporated scientific principles into their works (Figs 1, 2 and 3) The Industrial Revolution further transformed artistic production, introducing photography and mechanized printing techniques (Birkett, 2016; Almeida, 2012). In the modern digital age, technological advancements such as artificial intelligence (AI), augmented reality (AR), virtual reality (VR), block chain (NFTs), and 3D printing have revolutionized the creative process.

Digital innovation has profoundly reshaped artistic practice, enabling artists to explore interactive installations, generative algorithms, robotic sculptures, and mixed-reality environments. The integration of digital tools into art making has led to new aesthetic forms that blur the boundaries between physical and virtual experiences. Artists now incorporate programmable kinetic elements, AI-driven designs, and sensor-based interactivity to create works that engage viewers beyond passive observation. The mechanomorphic sculpture under discussion exemplifies this evolution, symbolizing the fusion of mechanical motion, artificial illumination, and

sculptural form. By integrating moving parts and illuminated eyes, it challenges traditional notions of static sculpture and embraces interactive, machine-driven aesthetics. This piece situates itself at the crossroads of contemporary kinetic art, cybernetic design, and mechanized aesthetics, reflecting broader themes of progress, innovation, and the evolving relationship between humans and technology.

Globally, artists have embraced technological advancements, leveraging digital tools to create dynamic, interactive, and experimental artworks. This digital shift has transformed various creative

disciplines, reshaping artistic practices and audience engagement. In the Nigerian context, digital technology has also made notable inroads, particularly in fields like graphic design and photography. However, its integration into sculptural art remains relatively limited. Despite the emerging potential of kinetic and functional sculptures—art forms that incorporate movement, interactivity, and digital elements—only a few Nigerian sculptors have begun to explore these innovative possibilities. This study examines the impact of digital transformation on Nigerian Art and Design, with a particular focus on sculpture.



Figure 1: Anatomical drawing



Figure 2: Study of anatomy



Figure 3: Engineering drawing of da Vinci

Figures 1 and 2 are some of the scientific drawings of Leonardo da Vinci
 Photography Courtesy: artlyst.com , 2025

Note: *Mechanomorphic is an art term that often describes artworks, especially sculptures or drawings that resemble or are inspired by mechanical parts, robots, gears, or industrial machinery. These forms may mimic the aesthetic or functionality of machines, even if they are made from non-mechanical materials.*

The objectives of this paper therefore are to trace the historical evolution of technological integration in art; evaluate the current state of Nigerian sculpture and the extent to which digital technology has influenced its development; document and analyze selected Nigerian artworks that incorporate digital and mechanical elements and propose strategies for integrating digital innovation into Nigerian art education and practice.

This research is significant as it contributes to the growing discourse on digital transformation in the arts, particularly in Nigeria. It provides insights into how digital tools can enhance artistic creativity, improve educational curricula, and position Nigerian artists within the global contemporary art scene.

A wealth of literature exists on the intersection of art and technology. For this study, the reviewed works are organized under the following subheadings:

The Historical Relationship Between Art and Technology

The integration of technology into artistic practice has evolved progressively over the centuries. From Leonardo da Vinci's scientific illustrations to the

invention of photography during the Industrial Revolution, artists have consistently embraced technological tools to push creative boundaries (Strosberg, 2010; Almeida, 2012). The emergence of digital art in the mid-20th century—led by pioneers such as Ben Laposky, Harold Cohen, and Frieder Nake—marked a significant shift, as artists began using computer algorithms to generate visual forms. By the late 20th and early 21st centuries, technologies such as digital painting software, 3D modeling, animation, and video art had become common tools in the artist's repertoire (Codreanu, 2015; Paul, 2016). These developments laid the foundation for a broader digital culture in the arts.

The advent of emerging technologies such as artificial intelligence (AI), virtual reality (VR), augmented reality (AR), and 3D printing has expanded the frontiers of artistic expression. Globally, contemporary artists increasingly employ digital tools to create interactive installations, immersive experiences, and generative or data-driven art. According to Grau (2003), the digital medium facilitates a more dynamic engagement between the artwork and the viewer. Moreover, blockchain technology and Non-Fungible Tokens (NFTs) have redefined concepts of ownership, provenance, and distribution in the digital art market (Wolkoff, 2018; McConaghy et al., 2020). These innovations have enabled artists to bypass traditional gatekeepers and reach global audiences directly.

In Nigeria, the influence of digital technology on traditional art forms is gradually becoming visible. Fields such as graphic design, animation, and digital photography have seen significant advancements, driven by a young, tech-savvy generation of artists. However, the application of digital technology in sculptural practice remains underexplored. While artists have incorporated found objects and repurposed materials to reflect environmental and socio-political themes (Ogunduyile, 2008), kinetic and functional sculptures (those that involve movement), interactivity, or mechanization—are still in their nascent stages. Seyi-Gbangbayau (2019) underscores the need for

Nigerian sculptors to embrace mechanized and programmable components to enrich form and functionality. Similarly, Adepegba (1995) and Azeez (2006) stress the importance of integrating digital literacy and technological training into Nigeria's art education curriculum, to better equip artists for contemporary challenges.

Despite the global shift toward digital art practices, Nigerian sculptural art has been slow in adopting digital techniques such as 3D modeling, CNC carving, and sensor-based interactivity. Edewor (2021) notes a growing interest among Nigerian artists in digital media, yet points out the infrastructural and economic limitations hindering widespread adoption. The lack of access to digital fabrication tools and limited exposure to global digital art trends contribute to this gap. This study seeks to fill part of that gap by exploring how digital transformation can be more effectively applied to sculptural art in Nigeria.

Methodology

This study employs a qualitative and studio-based research approach, combining literature review, practical studio experiments, and case study analysis of selected Nigerian sculptors.

Data Collection Methods

A comprehensive analysis of scholarly publications, books, and digital sources related to digital art and technology in sculpture.

Practical explorations of art works like drawing, painting, graphic art, kinetic and functional sculptures using digital tools, mechanical components, and repurposed materials.

The study includes an in-depth analysis of two notable Nigerian kinetic sculptures: *Ogboju Ode* by Seyi-Gbangbayau and *Tomorrow* by John Sunday. These artists were purposively selected based on their innovative use of digital technology, mechanical systems, and repurposed materials in sculptural practice. Selection criteria included the prominence of their work in contemporary Nigerian art discourse,

their demonstrated engagement with sustainable practices, and the relevance of their work to the themes of digital integration and kinetic expression. Their sculptures represent a cross-section of current trends in Nigerian digital and environmental art, making them ideal for exploring the intersection of technology and tradition in sculptural innovation. Other artists who could be giving serious scholastic attention in future include Dotun Popoola, Fidelis Odogwu, Matthew Ehizele, Akeem Murina, Ganiyu Wasiu, Sodiq Odugbola and few others who work with welded metal with different techniques but not kinetics and functional sculptures

These methods provide empirical insights into the relationship between digital technology and Nigerian sculpture, highlighting both opportunities and challenges.

Findings and Discussion

The Impact of Digital Innovation on Drawing, Painting, Graphic Design Textile and Fashion Design

The advent of digital tools such as Adobe Photoshop, Corel Painter, and Krita has revolutionized drawing

and painting. These software applications allow for enhanced precision, layering, and real-time modifications, enabling artists to experiment with various styles and textures. In Nigeria, digital illustration has gained recognition in commercial and creative industries.

Art especially drawing, painting and Graphic designs have experienced a profound transformation due to digital technology. Design software like Adobe Illustrator and CorelDraw has streamlined workflows, replacing traditional hand-drawn signboards with digital printing techniques. This shift has contributed to the growth of Nigeria’s advertising and branding industries.

Computer-aided design (CAD) software has modernized textile and fashion design, facilitating intricate pattern creation and digital textile printing. Innovations such as laser cutting and 3D-printed garments have further expanded creative possibilities in the Nigerian fashion industry.

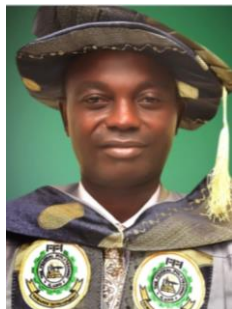


Figure 4: Photography



Figure 5: Digital painting



Figure 6: Conventional oil painting

Different images of the same picture

The Evolution of Sculpture: From Static Forms to Kinetic and Functional Art

Traditional sculpture, characterized by static and labor-intensive methods, has gradually integrated digital techniques. Technologies such as 3D modeling, CNC machining, and 3D printing allow for greater precision

and efficiency. Although Nigerian sculptors have yet to fully embrace kinetic and functional sculptures, Seyi-Gbangbayau Paul, John Sunday, and Otuekong Udoebom have produced sculptures that have through

the use of technology broken the boundaries of static and nonfunctional sculptures in Nigeria. However, the use of various metal materials through welding methods, which is technology-oriented, is gradually transforming the atmosphere of Nigerian sculptural

practice. Artists like Dotun Popoola, Fidelis Odogwu, Matthew Ehizele, Akeem Murina, Ganiyu Wasiu, Sodiq Odugbola, and a few others are names to mention when it comes to the technique of welded sculpture in Nigeria.



Figure 7



Figure 8



Figure 9.



Figure 10

Owl and Elephant

Metal and mixed media

Type: Mechanomorphic

Photograph Courtesy: Ganiyu, 2024

Case Study 1: Ogboju- Ode by Seyi-Gbangbayau Paul S.



Figure 11: Ogboju Ode, (Finished work)

Photograph courtesy: Seyi-Gbangbayau 2012

Type: kinetic sculpture. The head can rotate 180 degrees. Medium concrete, metal, and fiberglass. Others are stainless steel, wires, led, and electric motors.

Fig 9 & 10: Painted scraps

Type: Mechnomophics

Courtesy: www. Art 635.gallery. com



Figure 12: Ogboju Ode: hunter's light is on

This kinetic sculpture exemplifies the integration of art and technology in contemporary Nigerian sculpture. By incorporating an electric motor that enables a 180-degree rotation of the head, the work achieves a

dynamic and interactive quality uncommon in traditional African sculpture. The use of diverse materials such as concrete, fiberglass, stainless steel, wires, LED lights, and an electric motor underscores

the evolving landscape of Nigerian sculptural practice, where artists explore hybrid materials to enhance both aesthetic and functional value.

Material and Technical Composition

The combination of concrete, fiberglass, and metal offers both durability and artistic flexibility.

Concrete provides structural strength, ensuring the longevity of the sculpture despite exposure to environmental conditions.

Fiberglass contributes to the lightweight nature of certain sculptural components, allowing for a more refined finish and facilitating movement without excessive weight.

Stainless steel and wires serve as reinforcements, adding mechanical strength while also supporting the integration of kinetic elements.

LED lighting and an electric motor enhance the sculpture's technological appeal, transforming it into an interactive piece that engages with its audience through movement and illumination.

Conceptual Significance

Ogboju-Ode transcends mere representation by embracing kinetic energy, making it not just an object of visual appreciation but an active participant in its environment. The ability of the head to rotate signifies adaptability, vigilance, and awareness—qualities that can be symbolically associated with leadership, resilience, or technological progress in Nigeria. Furthermore, the use of LED lights, possibly embedded in the head, may metaphorically represent

enlightenment, knowledge, or surveillance, depending on the context of the artwork.

Context within Nigerian Art and Global Kinetic Sculpture

In Nigerian contemporary sculpture, the integration of technology remains relatively nascent. However, this work aligns with global trends in kinetic art, pioneered by figures like Alexander Calder and Jean Tinguely, who revolutionized sculptural form through movement. Nigerian sculptors are increasingly experimenting with motorized and interactive components, bridging the gap between indigenous sculptural traditions and modern technological advancements.

Sustainability and Material Innovation

The sculpture's use of recycled and industrial materials (e.g., stainless steel and wires) aligns with sustainable art practices. Given Nigeria's pressing concerns with waste management and environmental degradation, artists repurposing materials into sculptural forms contribute to ecological consciousness while pushing the boundaries of creative expression.

This kinetic sculpture serves as a testament to the fusion of art, engineering, and interactive technology in contemporary Nigerian sculpture. Its ability to engage viewers through motion and illumination highlights the potential for future explorations in kinetic and multimedia art. By employing diverse materials and incorporating technological advancements, the work signifies an evolution in sculptural practice, reinforcing the importance of interdisciplinary approaches in contemporary African

Case Study 2: Tomorrow by John Sunday



Figure 13: Tomorrow, Metal and Fibre glass, 12ft, Oyu, Nigeria, (John, 2012)
Photograph Courtesy: Omoniyi Oluwaseun, 2019

A mechanized sculpture symbolizing the intersection of art and technology. It features moving parts and illuminated eyes, reflecting themes of progress and innovation.

This mechanomorphic sculpture embodies the fusion of art and technology, symbolizing progress and innovation. By integrating mechanized movement and illuminated eyes, the artwork transcends static representation, engaging the viewer through motion and light. The incorporation of mechanical elements suggests a deeper dialogue between humanity and technological advancement, positioning the piece within the broader discourse of contemporary sculpture and mechanized aesthetics.

Material and Technical Composition

Mechanomorphic sculptures typically integrate industrial materials such as metal, wires, motors, and LED lights to enhance both durability and functionality. This particular work employs moving parts and illuminated eyes, which serve as focal points for its technological essence. The mechanization of the sculpture suggests the presence of motors, gears, and electronic circuits, enabling controlled movement and illumination. These components not only enhance the interactive experience but also reflect the evolving role of technology in artistic practice.

Symbolic Interpretation

Intersection of Art and Technology: The mechanized movement suggests an evolving relationship between creativity and machinery, reflecting how technology continues to redefine artistic expression.

Illuminated Eyes: The glowing eyes can symbolize awareness, intelligence, or foresight, possibly representing technological consciousness or the idea of a mechanized observer. In a broader sense, they might allude to the pervasive influence of artificial intelligence and surveillance in modern society

Motion as Progress: The integration of moving parts conveys a sense of dynamism, reinforcing themes of advancement and transformation. The sculpture could be interpreted as an embodiment of industrialization, digital evolution, or even the fusion of organic and artificial intelligence.

Context in Contemporary Art

"Tomorrow" as a Mechanomorphic sculpture aligns with movements such as kinetic art, cybernetic art, and postmodern industrial aesthetics. Artists such as Jean Tinguely and Arthur Ganson have explored mechanical motion in sculpture, emphasizing movement as an expressive form. In the Nigerian context, where traditional art often leans toward static forms, this work represents an innovative step towards technological

hybridity in sculpture, bridging heritage with modern advancements.

Cultural and Philosophical Relevance

As Nigeria and the broader African continent continue to embrace technological innovation, this sculpture reflects a shift in artistic priorities—moving from purely cultural representation to addressing themes of modernity, mechanization, and artificial intelligence. The illuminated eyes may serve as a metaphor for the increasing presence of digital surveillance, machine intelligence, or even the philosophical question of what it means to be sentient in an age of machines.

This mechanomorphic sculpture is a compelling synthesis of industrial materials, movement, and light, reinforcing the role of technology in contemporary artistic practice. It engages themes of progress, surveillance, and human-machine interaction, making it an important contribution to the discourse on mechanized aesthetics in Nigerian and global art. By integrating motion and illumination, the artwork challenges traditional sculptural norms, offering a glimpse into the future of technologically infused creative expression.

Challenges and Opportunities

Challenges: Many Nigerian artists lack the necessary resources for digital experimentation; hence, limited access to technological tools is the first setback to the influence of digital innovation on art in Nigeria. Another challenge is a lack of formal training because Art education curricula do not adequately incorporate digital and mechanical systems. Financial constraints also constitute another challenge because the high cost of digital tools and technological equipment restricts accessibility to the majority of artists.

Opportunities: Integration of digital tools into education through curriculum reform can equip artists with the necessary digital skills. Increased funding by government and private institutions toward investing in digital literacy programs for artists can also improve the impact of digital innovation on art. Moreover, encouraging experimental art practices among Nigerian

artists can promote the emergence of technologies in their creative processes. Art competitions in new trends could also be sponsored among art students and upcoming artists to further encourage them

Conclusion and Recommendations

Digital transformation has significantly reshaped visual art, yet kinetic and functional sculptures remain underdeveloped in Nigeria. To address this gap, the study recommends that Curriculum reform by introducing digital tools and mechanical systems into art education. Investment in digital literacy by providing resources and training for Nigerian artists will go a long way to promote the growth of art through technology and digital innovation. Finally, this research recommends encouragement of interdisciplinary collaborations through combining art with technology to foster innovation should be critically looked into by all stake holders.

Nonetheless, future research should explore sustainable materials and digital fabrication techniques for enhancing interactivity in contemporary Nigerian art.

References

- Adepegba, C. O. (1995). *Nigerian Art: Its Traditions and Modern Tendencies*. Jodad Publishers.
- Azeez, W. A. (2006). *Visual Artist and the Challenges of New Media in Art*. In E. O. Filani (Eds.), *Potentials of Visual Arts and Creative Industry in Africa*. Cultural and Creative Art Forum.
- Almeida, T. (2012). *Rethinking the Relationship Between Art and Science in Contemporary Art*. International Conference on Digital Art (Artech, 2012).
- Art History About. (2019). *Kinetic Art as a Modern Development in Sculpture*. Retrieved from www.arthistory.about.com
- Bascom, W. (1973). *African Art in Cultural Perspective*. W.W. Norton & Company.



- Codreanu, F. (2015). Art and Technology: The Role of Technological Advance in Art History. *Conference on Communication, Context, and Interdisciplinary Studies*.
- Eyo, E. (1976). Highlights from 2,000 Years of Nigerian Art. Federal Department of Antiquities.
- Edewor, N. (2021). Emerging digital practices in contemporary Nigerian art. *Journal of African Cultural Studies*, 33(2), 210–225.
- Grau, O. (2003). *Virtual Art: From Illusion to Immersion*. MIT Press
- Marros, M. (2016). Impact of Technology on Textile and Fashion Design. Study.com.
- McConaghy, T., Marques, R., Müller, A., & De la Rouviere, M. (2020). The rise of NFTs and blockchain in the art world. *Journal of Digital Economy*, 6(2), 76–89.
- Ogunduyile, S. (2008). Nigerian cultural heritage and the contemporary artist: A challenge to art practice. *Journal of African Studies*, 13(2), 92–101.
- Paul, C. (2016). *Digital Art* (3rd ed.). London: Thames & Hudson.
- Price, C. (1994). *Made in West Africa*. Studio Vista
- Seyi-Gbangbayau, P. S. (2019). Trash to Cash: The Metamorphosis of Discarded Materials to Objects of Aesthetic Value. Paper presented at the *7th National Conference of the School of Environmental Studies*, The Federal Polytechnic Ilaro, Nigeria.
- Seyi-Gbangbayau, P. O. (2019). Mechanization in Nigerian sculpture: A call for digital integration. *Nigerian Journal of Visual Arts and Technology*, 8(1), 34–45.
- Strosberg, E. (2010). *Art and Science*. Abbeville Press.
- Wolkoff, J. (2018). 6 Things You Don't Know About Leonardo Da Vinci. Retrieved from www.artsy.com