SUSTAINING THE FUTURE OF ART PEDAGOGY AND PRACTICE IN THE FACE OF TECHNOLOGY

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Abstract
There is no doubt that technology is here to stay. Its influence is being noticed and reflected in studio and classroom situations. Students of Art in the 21st Century are technology-driven. Their orientation and day-to-day experience toll this line. Despite the many opportunities afforded to art teachers in technology today, many of them avoid these opportunities; either because they are not interested or they prefer the traditional way of teaching or they lack the know-how to use them. A cursory look at our Art institutions and Departments in Nigeria today reveals a need to overhaul the training methods and facilities in the system to meet global standards and the technology-driven society of our time. The author thinks, there is a need to embrace the use of technology in the teaching and learning of Art if its future is to be sustained. This paper discusses the place of technology in Art pedagogy; looking at studio practice and theory, its influence on Art production, careers in Art now; and sustainability in the future. The methodology adopted includes literary review and practical studio work experience. The paper points to the fact that the role of technology cannot be over-emphasized in art teaching and learning, exhibition and sale, recording, preservation, as well as documentation and archiving of art experiences. It is recommended that teachers of Art must be up-to-date with modern techniques in teaching in the dynamic and technology-driven world of today.
Keywords: Camera Obscura, Education, Future, Pedagogy, Technology,

Introduction

Students of Art in the 21st Century are technology-driven. Their orientation and day-to-day experience toll this line. Therefore, there is a need to embrace the use of technology in the teaching and learning of art if its future is to be sustained. The 21st century today has witnessed a great deal of technological advancement. A lot of computer packages, software, and gadgets have been invented to make the job of artists

simpler. It is, therefore, necessary to embrace these facilities and opportunities provided in this regard in Art pedagogy. Pedagogies are approaches used by a teacher to get his or her message across to the students. Art pedagogy implies methodology of teaching and learning of Art. Hence, for the future of art to be sustained, the use of technology within the studio and classroom situation cannot be over-emphasized.

 Technology and its use in Art Practice over time

Technology has come to stay; there is no doubt about this fact. Its influence is being noticed and reflected in studio and classroom situations. Many students today adopt the use of the camera and other gadgets in solving some artistic problems. They see it as a quick aid to produce their artwork; using the camera on their phones.

Hodge (2008, p.6) notes that over two thousand years ago, Aristotle wrote about the Camera Obscura; and by the early 1500s, artists were using it as a drawing instrument. It was believed by many artists of that time that incredible accuracy and details in painting could be achieved by using the photograph. Upon seeing the Camera Obscura in 1839, Paul Delaroche (1797-1856); a French Painter said "From today, painting is dead" (Harrison, 2005, p.55). This was a result of the fear that the camera would make artists lose their jobs and service would no longer be needed. Instead of losing their jobs, artists of the period quickly used the camera as a tool in their profession.

The camera; for instance, is a product of technology and has become an important aid to artists across ages. It comes in various forms and types; from analogue to digital and even now in cell phones. Students now see it as an important aid in accomplishing artistic tasks. The teachers of Art today see it as a threat to creativity instead. But is the camera a threat or an aid?

Great artists in the past had employed the use of technology in their creative quests. For instance, the pronouncement of the camera in 1839 brought the tension between photography and painting to a verbally dramatic head. Paul Delaroche's often-quoted claim, "Painting is dead, long live photography" (Kosinski, 1999, p. 44), was a result of the fear that the camera would take the job of the artists. Instead of this, artists of the period quickly used the camera as a tool. Delaroche, however, was convinced not so much of the demise of painting but of the fact that photography would constitute an important aid for the artist. The photograph would serve as an object of observation and study. With this in mind, Delaroche was the first to recommend that his artist colleagues build up photographic study collections which they could only acquire otherwise at the price of much time and effort, and still not of the same perfection, however great their talent might be.

To Edgar Degas (1834-1917) the camera was a useful agent of modern vision. The photographer's power of selecting and framing a view, of isolating the note-worthy in a scene of haphazard detail, appealed to the omnivorous eye of this naturalist. For Degas, the camera played an essential role in his artistic life. Photography was alternatively an agent of humour and parody, the keeper of precious personal memory, the crucible for examining his aging face, the vehicle by which he could seize the model or landscape afresh in his imagination (Kosinski, 1999, pp. 71-87).

In at least fifty works of Paul Gauguin (1848-1903) created in Polynesia, - paintings, sculptures, drawings, prints, and illustrations are informed by his appropriation of poses or motifs taken from his large collection of photographic reproductions of art and from ethnographic photographs of indigenous people of Oceania. Gauguin was never an artist shy of "plagiarizing" the works of another he admired, the use of photographs served to neutralize or even naturalize his acts of borrowing pictorial ideas from the world encyclopedia of art. He also used photography to

maintain his attenuated relationship with the avant-garde in France (Kosinski, 1999, pp. 117-140).

Pablo Picasso's use of the dark mirror gave a modern form to ʾjugement du miroir' as advocated by the Renaissance treatises. The use of the dark mirror, a small mirror usually made of black glass, was still a common practice in the studios of the nineteenth century, where it could often be found alongside the Camera Obscura and the Camera Lucida. The dark mirror facilitates the perception of the relationship between the different tones of colour and facilitates the comparison between nature and the object to its image in a painting (Kosinksi, 1999, p. 289). Kosinski remarks that the photograph was perceived as an automatic medium that could not be helped but to record reality without subjectivity, sentiment, or interpretation. He concludes by saying:

> For this generation, the photograph serves not just as a document, a tool, or an aid but as an essential intermediary between the experience of memory and the knowledge of the eye; between the external world of nature and the private world of studio, between the phenomenological world of action and objects and the private exercise of creativity. (p.16)

The invention of the computer paralleled the introduction of the television during World War II, and the computer was used as an electronic information storage and processing device. The image innovation of the computer and television merged into a new field of study; computer imagery. It became obvious that a distinct relationship existed between television, computer imagery, and image processing and transmission (Bassam, 2006). Recent developments in photography include the Advanced Photo System (APS); capable of giving you the choice of three image formats; so that you can choose the best one for subjects simply by pressing a button. The other feature of APS is index printing. The index printing is returned with a sheet showing thumbnail images of each shot, so ordering enlargement of new prints is very easy (Harrison, 2005).

Technology and Sustaining the Future of Art Teaching and Practice

Gregory (1995) noted that technological innovation is a worldwide paradigm shift in many aspects of society, including the educational community and the way they operate. As computers became popular in education, they assumed a different role. They were and still are used to acquire information, process, send, deliver, and serve as tools for teaching and learning. To Gregory (1995) electronic imaging can no longer be set apart from the basic construct of Art Education. The media has changed the way Art is taught, how students learn about Art, and how Art teachers conceive the idea of Art Education. Computers change the process and techniques for creating images in every field in which Art students engage such as drawing, painting, print-making, design, and in modern times 3-dimensional design.

According to John M. Hicks (1993), three reasons were given for including computer technology and media arts in Art programs. One is the growing importance of visual symbols; another is the growing importance of technology-related aesthetic decisions, both on individual and cultural levels and the third reason is the growing social need for connectionism or the emphasis on how phenomena relate to one another. Gardener (1988:30), a researcher in curriculum development said: "The heart of any arts educational process must be the capacity to handle, to use, to transform different artistic symbols system-*to think* with and in the materials of an artistic medium". He explained further that if the media is computers, thinking in them implies sensitive application, manipulation, and adoption of the qualities and potential of computers for artistic production.

However, with the many advantages of computers and modern technologies in education as well as the teaching-learning process, the adoption of traditional methods and techniques of teaching cannot be pushed aside. According to Greh (1990), computers are not a substitute for studio Art; instead, they work side by side for the students 'benefit.

They can co-operate and they can combine, but they must not destroy each other. Winslow (1989) made a strong case for the inevitability of combining new technologies with traditional forms of Art. He believes that we must mirror the old with the new and that in the process of relating technology with traditional forms, new and important perceptions will evolve. McCulloch (1984) shares the opinions of Winslow and Greh, as he acknowledges that "the introduction of computers in Art education should not replace other current methodologies, but should be an extension of the creative process employed in any valid Art instruction. Madeja Stanley (1993) explained that technology should thought of as facilitating the artistic and creative process in which the artist or designer engages. It is a delivery system for instruction in Art, and an Art form itself. Stanley (1993) said that Art education implies a total rethinking of how we deliver instruction in the visual arts and the content of the Art curriculum at every level.

One key principle in the future of Art education is how Art teachers will integrate traditional tools, processes, and the thinking skills needed to synthesize a diversity of concepts and a world of complex information. Students must be systematically engaged with technology from the earliest age, especially since computers are now accessible to most students and most schools, and the capacity of the computer in terms of its memory and the programs that are now available can be adapted to various levels of instruction within the Art curriculum. The need for computer literacy is necessary for all students in the 'Visual Arts', most especially at the university level as it allows students to be educated in the visual use of technology while being educated in and about the content of the curriculum, studio arts, aesthetics, art history, and art appreciation. A wide range of computers, cameras, Android cell phones, i-Pads, and other gadgets has become the electronic wheel for generating, inventing, creating, sorting, storing, analyzing, combining, enhancing,

and changing visual images. A wide range of applications are available to assist students by stimulating traditional tools, providing textures, manipulating images, and allowing unlimited digital art experience. By using technology, students have the opportunity of a range of multimedia and interactive sessions to compose, sketch, disseminate, and illuminate their ideas easily. Hannor (1991) notes that computer-assisted learning in Art education promotes higher-level thinking skills develops creativity and sensitivity, and assists in the development of technical, critical, and analytical skills. Most national governments look to educational systems to address the need for digital literacy, which places the responsibility on schools and teachers (Epstein, Nisbet & Gillespie, 2011) the approach to meeting this need for an ICT-conversant workforce varies widely by country and region as do the barriers, challenges, and limitations to access, skills, and usage of digital technology (ITU, 2009). Moving away from techno-centrist approaches requires a significant change in thinking by policymakers and those in leadership positions. Nonetheless, it is an important step in conceptualizing technology-rich environments that are likely to improve teacher practice and student learning. Globally, this shift continues to be a challenge, as decades-old calls to consider pedagogy as an integral part of technology (Watson, 2001). In a few countries of the world, where access, skill, and usage of technology were available, the absence of skill and usage by the teachers limit students' skills and usage. In the context of skill and usage, technology-rich environments are dependent on the teachers who instruct the students as much as they are dependent on the availability and affordances of technology itself. Pedagogies within technologically rich environments are linked to teachers' pedagogical knowledge, technological knowledge, and context knowledge (Chai Ling Koh, Tsai, & Lee Wee Tan, 2011). Other contextual factors also influence teaching, including students' home environments, cultural context, and their differences.

Bassam (2006) notes further that with advances in technology, the computer took the additional role of generating, inventing, creating, sorting, combining, analyzing, enhancing, and changing visual images. It was also capable of accepting images from other sources such as video images, still photographs, electronic images, and drawings. Similarly, with a variety of modern technology as seen in the invention of the computer, it is possible to cast a scene on a plane canvas using computer-generated and edited images. This could be painted out with ease and better accuracy without necessarily looking for such natural scenery; even though such practice comes with some shortcomings, its use cannot be overemphasized and neglected as it affords beginners and upcoming artists to learn to create images and scenes from their day-to-day experiences. Lectures and practical sessions can also be recorded, played, and replayed to enhance better understanding of students. Technology promotes engagement of students in learning: it provides a great opportunity for both the teacher and students to engage themselves in and out of the classroom.

To sustain the future of Art education, this paper highlights the following opportunities for art teachers:

- Technology promotes collaboration: students are allowed to work in groups. Ideas can be shared among themselves using packages like Google Drive/Slides, Google Disc, Padlet, Prezi, and so on.
- Discussions and practical sessions can be done using software like Google Slide which is good for art presentations or using the Plickers.
- Use of technology offers a variety of opportunities for integrative assessments: students' formative assessment can be done easily by teachers in the class. A lot of Computer Based Tests (CBT) is available and used effectively in Nigerian institutions today.

- The use of technology is an easy way to track students' progress. Art practical scan be monitored individually or in groups using apps for digital portfolios like YouTube, Creatubbles, Seesaw, Antonia, and Google.

- It increases opportunities for research work. The use of laptops, smart phones, and tablets encourages students to discover facts by themselves. It is a fantastic and fascinating way for students to learn and conduct research.

- Technology helps teachers to transform their teaching methodologies and strategies in Art classes. It provides an opportunity for a teacher to vary his/her methods of teaching. Use of projectors, cameras, iPads, Chrome books, smart or interactive boards, as well as smart phones. The era of the conventional classroom of 'teachers- do-it alone' is gone. This confirms the saying by Alexandra K. Tremfor - "the best teachers are those who show you where to look but don't tell you what to see".

- Technology allows for flipped learning. This can be a great way to share information with your students without continuously repeating yourself. A student who came late for class can be helped by watching videos of work earlier presented.

- Traditional art forms can be transformed using different apps. Artworks created manually can be manipulated and transformed using a variety of apps. For instance; a photograph or drawing earlier made can be edited with apps like Aviary.

- Students are offered the opportunity to create art in a new way. A few apps that can be used include; Aviary, Paper5$_3$, DoodleArt, Green Screen, KaleidaScam, Piccard, and Procreate (http://www.theartofeducation.com).

Below are examples of paintings made from life objects and a photograph in a previous study by the author. One can see greater

details and accuracy recorded in the painting made from a photograph which is a product of technology.

Fig. 1

A painting made from real objects.
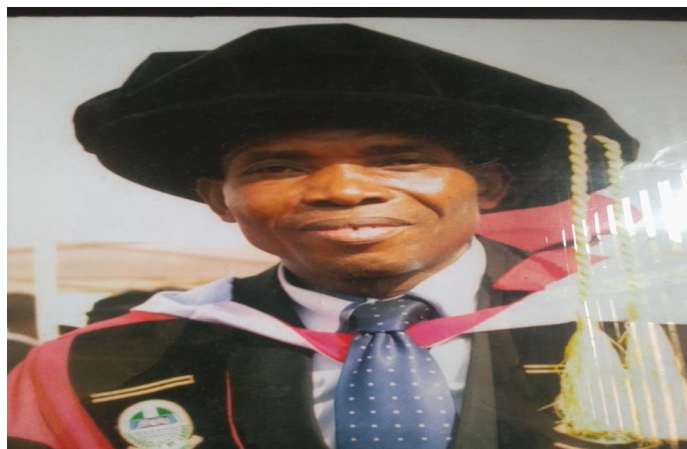**Source:** The Author, 2015.

Fig. 2

A painting made from a photograph.
Source: The Author, 2015.

Fig. 3

A Photograph from a Camera
Source: The Author, 2023.

Fig. 4

A Computer Edited Photograph.
Source: The Author, 2023.

Barriers and Challenges to Implementing Technological Pedagogy in Nigeria

Ertmer (1999) classifies challenges to implementing technological pedagogy into two notably first-order (extrinsic) and second-order (intrinsic). Ayanso et al (2014) note that globally, first-order barriers are most likely to be encountered in developing countries like Nigeria. First-order barriers are external to teachers and are associated with the availability of resources, such include;

➢ The availability of high-speed internet facilities and teachers' pedagogical development may be absent.

➢ Time challenge is another; this relates to student's access to Information and Communication Technology (ICT) and teachers' development and planning usage of time. It is often noticed that in most cases, the time allotted to lectures and usage of technology in most Art institutions of higher learning is grossly inadequate to enhance students' and teachers' usage and learning with technology. This should be looked into if the future of Art Education is to be sustained.

➢ Technical support is a common barrier and prerequisite to the successful implementation of pedagogical approaches in technology-rich Art classrooms in developing countries such as Nigeria. Technical staff attached to Art Departments and studios; where available at all lacks the willpower or technical know-how to make them perform their duties effectively. This places much pressure on the teachers and, hence, puts teaching and learning at risk.

➢ Non-availability of Hardware and Software in a learning environment can hinder in a technology-rich environment. When confronted with such, teachers and students can get frustrated and stop using technology in the classroom. Up-to-date hard and soft wares should be made available to enhance the teaching and learning of Art for its sustenance.

First-order barriers may also be localized to institutions. For instance, a lack of clear-cut goals, vision and mission statements for the integration of ICT can emerge as first-order barriers. If technology is chosen with curricular goals in mind, it can easily become a distraction; hence students may have access to computers and other technological facilities as a reward (Doron, Tamara & Mark, 2017). The pitfalls above point to the importance of involving teachers in creating a school's technology vision.

Second-order barriers are complex and require significant attention at the teachers' instructional level. These include ;

➢ Teachers' belief system about the role of technology in their classroom or studio could be a belief about their traditional teaching and willingness or ability to change their practice (Ertmer, 1999). From a skill and usage perspective, if a teacher's belief does not align with effective technological pedagogy, it is unlikely that

students will have opportunities to develop their skills and usage of technology.

➤ The social and cultural context of students also plays an important role in the interaction between students and teachers and their beliefs about the use of technology for learning.

➤ Teachers 'backgrounds and beliefs inform their pedagogical practice (Chen, 2008). This includes teachers valuing of constructivist approaches (moving from teacher-centered to student-centered instruction), their attitudes towards the use of technology in the classroom, and their teaching and technology self-efficacy. Gorder (2008) notes that changing teacher beliefs and practices to integrate technology in student-centered ways takes an extended period. Classes and studios teachers teach in and available instructional and pedagogical supports they have to play important role in teachers' classroom technological pedagogical practice.

➤ Lack of commitment by teachers and students can be a factor that can serve as a barrier to the use of technology in art classes. Purchase of gadgets, software, and improvisation from local material, where necessary may be lacking.

Conclusion

The paper concludes that the use of technology cannot be over-emphasized in modern-day classrooms and studios; hence its use is imperative if the future of Art education is to be sustained. By doing this, the students will be better off for the job and practice in line with global standards. Computers and other gadgets can be tremendously powerful tools in terms of students' output and the teaching-learning process; there is much educational value in using technology to enhance learning. Computer-assisted programmes can promote a learning environment that supports student-teacher interaction.

Recommendations

The following recommendations are made to improve pedagogical practice in Art:

- Teachers need more support as they become more proficient at technology-based instruction in student-centered ways. This could be done through periodic pre-service and in-service training.

- Art classrooms and studios should made more attractive and conducive for teaching and learning.

- Art teachers must strive to be up-to-date with modern techniques in teaching in the dynamic and technology-driven world of today.

- Policy-makers and those in positions of authority should draw up policies that promote technological development.

- School management should allocate enough time for teachers' and students' usage in a technology-rich environment.

- Procurement of up-to-date hard and soft wares must be of paramount concern to school managers.

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