21st CENTURY DIGITAL TECHNOLOGY: AN INNOVATIVE IDEAS IN TEXTILE DESIGN

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Abstract

This paper examines the various innovations in textile design in the last two decades, in attempts; different novelties and technology advancement in textile design have emerged as machinery for the present generation. Meanwhile, Textiles have always played a central role in the evolution of human cultures by being at the forefront of both technological and artistic development. the paper posits that the ideas on technology coupled with diversity of innovations in the production techniques and computing design yielded what makes up the variety of what is today acknowleged as contemporary designs. This paper will identify and discuss the roles of textile professionals and designers towards this development. The bulk of the data for the study will be sourced from field investigation; through interviews, assessment of design fabric sample, while descriptive approach was adopted for analysis.

Keyword: 21st Century, Digital Technology, Innovative idea.

1.INTRODUCTION

In the last several years, design has been widely developed and improved on so that design firms and textile mills are now utilizing these for their production. Textile printing has enabled manufacturers to produce a digital sampling and strike off designs prior to old method. It is apparent that technology has influenced the style of the design that is being produced by textile artists , but digital technology has been utilized to accelerate their design processess.

Meanhile, majority of the printed fabrics have been improved on through the technology that saves time for design processes including; design alternation, colourways and sensibly printed textile. design is much more quickly and efficiently produced for the market needs than conventional printing processes. Consequently, stylists have maintained a higher level of a design quality and aesthetics by continually refining the design in the printing process. The use of photographic imagery, the digital layering of images and the complexities of colour and tone require both knowledge and practical expertise with the requisite software.

However, digital tools such as Computer Aided Design (CAD) have their own aesthetics and vocabularies which are forcing us to re-examine the creative design process. Treadaway (2004) explains, "Any creative enquiry or task demands fluency in the use of knowledge in the domain in which the action takes place". The use of various graphic software and digital imagery to enhance the creative process has become a fundamental aspect of most Colleges, Polytechnics, Universities and Textile industries. Despite the ease of using these tools, expertise is required to control them for the purposes of stimulating creativity. At the same time, Paul (2008) argues, there is a type of digital design that presents the "distinctive features of the digital medium and reflects on its language and aesthetics".

For this reason, the process of teaching textile design aims is to "build and value creative beliefs, attitudes and actions" and to "promote the growth of perceptual awareness, observation" and "personal confidence" (Tudor 2008).

A new look of digitally printed fabrics is emerging in the high-end fashion design field, cottage industries and textile mills. Experimental looks of textile design are emerging in the cottage market, workshops, Seminars, and also by individual designers and students. The creative approaches of Computer Aided Design have led

to successful experimentation by creating new trends of design movements through the use of principles and elements of design. This would allow designers to create successful designs, which are commercially viable.

This paper describes the application and appreciation of computer design to textile and printed fabrics. The application to textile printing differs from applications to other forms of textile design because the printed textile design is applied after the textile is fabricated. Since the patterning mechanism is independent of the fabric forming mechanism, there is no need to represent the design

on a grid paper, (which for other textiles is translated into row by row, design forming information). However, it will also show large class format of designs, the colour-separated images which printed textile designs require can be more efficiently produced using Computer Aided Design.

2.STATEMENT OF PROBLEM

Increased global competition makes the development of a successful digital design easier than ever, technology has significantly increased efficiency in many components of the supply chain. In textile design, it is the designer's role to translate cultural influences into new products.

This research is to enhance the understanding of textile designers on the Post-Modern Context. Computer aided design has been used in the time pass but focus has not really as mush on digital technology for production of wearable cloth. Modernized industrial design on fabrics or cloth through the use of computer system has been towards extinction. But a well-designed fabric with motifs, symbol and pattern has not been developed through direct printing of fabric on digital printing machines in the 21st century.

Meanwhile, it saves the stress of thinking of what a textile artist should do with hand drafted design in a textile industry. Notwithstanding, people have been satisfying their wants by producing their clothes or fabrics through a customized materials on equipment's that will facilitate effectiveness of textile product.

3.OBJECTIVES OF THE RESEARCH

(i) To identify the effective use of digital designs for pattern making on fabrics.
(ii) To examine the significance of computer technology and functional for designing patterns.
(iii) To analyse its uses and importance for fabric decorations.
(iv) To provide possible solutions and benefits to designers or technicians in the industries.

Research Question 1: What are the 21st century digital skills as perceived by industrial professionals?

Table 1: The 21st century digital skills as perceived by industrial professionals

Table One

S/N	ITEM	SD	D	A	SA	MEAN	STD.D
1	How do you perceive digital skill in this 21st century?	1 (1.0)	6 (6.0)	67 (67.0)	26 (26.0)	3.18	0.58
2	How does technology impact you in the area of textile in these 21st century	2 (2.0)	29 (29.0)	50 (50.0)	19 (19.0)	2.86	0.74
3	How does digital skill impact your perception in these 21st century innovation	7 (7.0)	16 (16.0)	54 (54.0)	23 (23.0)	2.93	0.82
	Weighted Average	**2.99(74.75%)**					

Table 1: shows the 21st century Digital skills as perceived by industrial professionals that some of the industrial professional agreed on how they perceived digital skills in this 21st century significantly covered the areas of summary (x=3.18), the table also shows that some of the professionals agreed with the perception of (x=2.86). From the table, the weighted average was 2.99 which is equivalent to (74.75%). Based on this. It can be concluded that the 21st century digital skills is positive.

Research Question 2: What are the 21st century digital design content knowledge area as perceived by textiles professional?

Table Two

S/N	ITEM	SD	D	A	SA	MEAN	STD.D
1	Does textile professional has the knowledge of 21st century digital design?	14 (14%)	36 (36%)	32 (32%)	18 (18%)	2.58	0.94
2	How does 21st century digital design help the textile professionals?	5 (5%)	56 (56%)	7 (7%)	32 (32%)	3.15	0.76
3	Does textile professional perceived digital design in the 21st century?	20 (20%)	6 (6%)	39 (39%)	35 (35%)	2.73	0.85
	Weighted Average	**2.79(69.75%)**					

Table 2*:* Shows that 21st century digital design has no content, knowledge areas as perceived by textiles professionals. The table shows that textiles professionals disagreed with not having the knowledge of 21st century digital design which covered 36 (36%) of 0.94. The table also shows that 56 (56%) which covered 0.76 disagreed that 21st century digital design has not helped the textile professionals. Based on the analysis on table 2 above, the weighted average was 2.79 which was equivalent to (69.75%), therefore; it can be concluded that the general perception of the 21st century digital design has no knowledge of the textile industries.

Research Question 3: What are 21st century digital design tools as perceived by design educators and industrial professionals?

Table Three:

S/N	ITEM	SD	D	A	SA	MEAN	STD.D
1	How does today's technology impact your creativity in digital skill?	1 (1.0%)	10 (10%)	45 (45%)	44 (44%)	3.32	0.69

2	How does digital design tools in the 21st century guide design educator and industrial professionals?	2 (2%)	11 (11%)	47 (47%)	40 (40%)	3.25	0.73
3	Does 21st century digital design improve the productivity of design educators and industrial professionals?	29 (29%)	51 (51%)	3 (3%)	17 (17%)	2.08	1.00
	Weighted Average	**3.27(81.75%)**					

The three: shows that 21st century digital design tools as perceived by design educators and industrial professionals, the table shows that 21st century technology has impacted positively on the design educator and industrial professionals which 45 (45%) of 0.69, the table also shows that 47 (47%) which covered o.73 agreed with the statement that 21st century digital design tools as perceived by design educators and industrial professionals.

4.CONCEPT OF DIGITAL TECHNOLOGY AND APPLICATION ON TEXTILE DESGIN

Digital technology is a computer-aided technique for developing a textile design and textile patterning mechanism which tranform visual information from an artist to the final presentation. The computer is operated by a textile designer or technician who understands the particular textile machinery for which he/she is adapting the original drawing. The designer or technician inputs the original drawing by a combination of graphical input devices; tracing on drawing free-hand printing. After the original design is in core, it is developed into the visual information to control the patterning mechanism of a specific kind of textile desgin. For example, a design to be woven must represent each interlacing of warp and weft; a design to be knitted must represent each stitch of the knitted mesh; and a design to be printed must represent the areas of each colour as separate images.
Meanwhile, the development digital design as a visual information which is done according to both structural and aesthetic rules. The designer and technician are both usually interacts and familiaries them self with the computer using the functional keys and photographic images that will project the stages of the final

presentation. When the design control information been is developed, it may be outputted under

functional key control. The form of the output is commensurate with a specific patterning mechanism.

5.LITERATURE REVIEWS

There is a powerful relationship between science, technology and arts. Art is the making things: new tools and materials that generate new forms of creatie practice. The relationship betwwen the arts and technology has always been dynamic. Technology makes new forms of expression possible. Artists drive technology to new level of sophistication.
This is happening now with digital and computer technologies. Perharps, new technologies are also generating new forms of creative practice-in computer animation, cartooning and digital graphics. Some of the most adventurous developments in the arts are taking place at the boundaries of the new technologies: in multimedia and cyber technology. The new technologies are providing for new language of methods and modes of creativity in the arts. For example the interaction of design and technology has been inter-woven in the industry. Throughout the world industrial designers and technologists work together; they create new product systems and services.
Therefore,Technology is a complex phenomenon too broad to be confined to a specific definition. To me

technology like culture is a way of life. It is an assemblage of methods, procedures, tools, knowledge, resources and man. In other words, it consists of those techniques deployed by man for survival. The word technology according to George (2006) is of Greek origin "tekhnologia," meaning a systematic treatment of an art or craft (tekhne–, skill + -logia, -logy). For Misa (2003) "technology" refers to a body of knowledge about the useful arts. Meaningfully, the existence of technology in the human world goes back to the antiquity of its incubation stage which was rather crude. At this time in Misa's view technology, as a set of devices, a complex of industries, or as an abstract force in itself, had yet to appear.

However, technology involves activities and this seems to dominate its definition. As Oslon (2010) citing Childe (2004) writes: "Technology should mean those activities, directed to the satisfaction of human needs, which produce alterations to the material world [along with] the results of those activities". Here Childe saliently portrays the transformative nature of technology which is today responsible for the different eras (Stone Age, Iron Age, Computer Age, etc) experienced by man. In this vein, technology has long been viewed as significant to the formation of social relationships, and has sometimes been analysed as determining the very structure of society (Shilling, 2005). Similarly, Humphrey (2010) posits that technologies are inventions of humans that have allowed us to survive, and have enabled our cultures to advance. By this only the processes involved in invention is acknowledged but technology is more than mere means of fabricating objects.

Heidegger (1977), posed two answers, (1) Technology is a means to an end; (2) Technology is a human activity. He analysed the definitions stating that, the manufacture and utilization of equipment, tools, and machines, the manufactured and used things themselves, and the needs and ends that they serve, all belong to what technology is. Invariably it is a means to an end, otherwise known as entities created by the application of mental and physical effort in order to achieve some value (Lewis, 2000). It is important to note that all technologies are created by a manufacturing process resulting from human intention and design, and technology cannot be in any functional sense without a relational human engagement (Keirl, 2006).

This makes man the focal point or the entire essence of technology which Burkitt (2002) buttressed in the following words: 'Technology is a means through which humans produce not only products and works, but also themselves as human selves in both their reflexive and non-reflexive aspects. It is through various technologies that humans develop the habits, capacities, skills, identity, and knowledge that mark them out as individual members of a social and cultural group'. Olson (2010) citing Volti (1995) acknowledged technology as a system based on the application of knowledge, manifested in physical objects and organizational forms, for the attainment of specific goals. The knowledge that is presumed to be a feature of a technology here is not the kind of formal theoretical knowledge usually associated with the notion of a science, but instead a kind of tacit knowledge.

In the ancient world, craft know-how was virtually always transmitted orally and/or bodily from master to apprentice and was not written down (Olson, 2010). Such knowledge has long been associated with the terms `local knowledge' or `ethnoscience,' indicating knowledge systems that are specific to cultures or groups in particular historical or social contexts (Richards et al. 1989).

In practice, technology involves the application of ideas to device techniques and to procreate. The compilation of these techniques including skills, resources and processes forms the foundation of indigenous technology. Simply put, it is the creative ability of a group of people to transform their environment using resources within. Such learned pattern of creativity was prevalent in pre-colonial Nigeria and passed from one generation to another.

6.EFFECTIVENESS AND USES OF INNVATIONS ON 21ST CENTURY TEXTILE DESIGN

21th century can be called a digital visual era that enables shopping, entertainment, communication and information sharing on a virtual and digital environment. Photos, documents and videos can be shared globally with the facilities of video sharing, webpages (like Youtube), social networks (Facebook, Twitter) and other web media. This has caused changes on social and cultural structures especially on the art scene. Speed has affected almost all places of life; easy access to information and the rapid consumption of the new era

have also changed traditional production methods including weaving.

7.CONCLUSION

The advent of wearable technologies has affect many aspects of our daily lives and by the new development technologies. Today, Many designers have provides the means to sustain the existing one and also to validates the manual processes of designer fabrics through the process of mass productions on our daily fabrics.

With the western world, the ideas has been brought up by individuals to experiments on new ideasfor mass production of textile product which will reduce the humancapital and labourers in the industrial.

So far, the development of the technology in the industries has been traced in order to give a viable information on the advent of technology and how its has increase the pase on commercial values in our society today.

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