Problems and Prospects of Exploring *Draw and Paint* Technique for Digital Illustration on Adobe Photoshop Cs4 Application

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Abstract

Photoshop, a program powered by Adobe incorporated, made its debut in 1990, is used for Photo editing, digital drawing and painting, the newer versions of the software were released into the market subsequently as years went by. Awareness and use Photoshop among many Nigerian artists, photographers and advertising designers came in view in the early 21st century. In art schools and corporate graphic and advertising firm, few professional artists explore all the creative possibilities of Photoshop. In local printing and publishing firm, designers with no formal art training make use of it to edit photographs only. However, Photoshop, not only for photo editing, is also a paint program which can be used to create bitmap or raster illustrations for printing, publishing and wall art. This area has not been properly harnessed by aforementioned users of the software. The production processes for applying digital colours and rendering of line drawings scanned onto Adobe Photoshop Cs4 Layout will be explored in this study. Problems and limitations revolving round traditional to digital illustration will be discussed in this study. The research will provide basic information towards traditional to digital bitmap illustration with Photoshop CS4.

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Key words: Digital Illustration, Photoshop, Vector, Bitmap, Draw-and-paint

Introduction

Adedeji-Unuigbe, as cited in Agberia (2002 175) views illustration as "Picturesque element or aesthetic property of visual designs that gives norm for both illiterates and literates to easily understand advertisement messages. It can come in form of stick figure, simple outline drawing, line drawing, silhouette, realistic drawing, and photograph or in form of cartooning. This involves creating with traditional tools such as pen, ink, pencils, brushes and various colours and pigments, etc. on flat surfaces like paper, canvas, wall and other surfaces. On the other hand, digital illustration involves the use of state of the arts equipment such as computer hardware, software, and drawing tablets, to create illustrations. Brower and Everett (2009), on digital illustration aver that "it is the technique of using a computer to produce original artwork". It is simply the use of digital tools to produce images and shapes under the direct control of the artist. Both traditional and digital techniques are similar. This is because almost all the tools used traditionally to produce illustration are represented digitally. These digitally represented tools include pencils, brushes, air brushes, ruler, and colours, among others.

Adobe Photoshop is a program powered by Adobe Incorporated, an American Software producing company. Norr (2010) in his article situates that "The Company was founded in1982 by John Warnock and Charles Gesshke". The Adobe Incorporated, when fully functional had business ties with apple inc. Apart from software programming they also manufacture postscript typefaces that were used for desktop publishing then. According to Norr (2010);

The first application introduced in 1987, was Adobe illustrator, a postscript-based drawing package for artists, designers and technical illustrators. Adobe Photoshop, an application for retouching digital images followed three years later and quickly became Adobe's most successful program. There are many other programmes introduced by Adobe-namely: Premiere, for video editing, aftereffects, Acrobat for reading PDF document formats etc. PDF means portable document format. It is a format for a computer document file that enables a document to be processed and printed on any computer using any printer or word-processing program.

In the wake of 21st century, many technological inventions and advancements had improved all aspects of visual expressions greatly, more especially with the improvement in Personal computer software and hardware with other peripheral devices. In order to key into this trend, this research employed Adobe Photoshop application to explore possibilities of making digital illustration using bitmap technique, also known as draw-and-paint, for printing, publishing and wall art.

On Adobe Photoshop Application

The first version of the program Adobe Photoshop became functional in 1990. The program was aimed at aiding artists to create and produce high-end photographs for print and advertising purposes. Before 1993 drawing and painting tools were included in the program, which made Photoshop versatile. Students and Artists who had opportunity in the foreign countries utilized the golden opportunity and began experiments with the program. It took so many Photoshop Artists like Derek Lea, Mark Hamburg and Thomas Knoll etc, series of trial and error experiments, before they

arrived at great findings that changed the face of digital art and design forever. As Photoshop continued to develop, the programmers added more tools as the versions changed. That made Photoshop more sophisticated, making job outputs by the artists richer. Otaka (2008 22) describes Photoshop and its possibilities for creativity. He said:

> Photoshop as it is fondly called is a professional image-editing application. Adobe Photoshop delivers a comprehensive environment for professional image-editing. With its integrated web application, Adobe Photoshop delivers a comprehensive environment for professional designers and graphics producers to create sophisticated images for print, web, wireless devices and other media.

The Nigerian Artist out of experience with Photoshop over the years declares and affirms its unlimited creative possibilities it offers to artists. This is because he has carried out experiments for Photo editing and special effects, which yielded surprising results. The decision to make catchy, communicative and beautiful designs lie within the artists' creative horizons. Otaka (2008) continues. He further affirms that:

> With its comprehensive set of retouching, painting, drawing and web tools, Photoshop helps you complete any image-editing task efficiently. And with features like the history palette and editable layers effects, you can experiment freely without sacrificing efficiency. Adobe Photoshop is published by Adobe Systems incorporated. It is the market leader of graphic design software in the field and has nearly monopolized the market.(22)

Photoshop is very effective for both image-editing and digital drawing and painting. The software has dominated the market over the years and is demanded popularly by artists, teachers and trainers in this field of study.

Some Nigerian artists got in touch with Photoshop in late 1990s, while many began their training and experiments in early Twenty first-century. Nigerian Artists were familiar with Photoshop 7.0, which was programmed and released into the market in 2002. Interest rose amongst artists, Ad practitioners, art teachers and students. Since Photoshop 7.0 made its appearance, many of them dropped and failed to grab the opportunity to master this tool. Many artists that mastered Photoshop only embark on Photo editing, ignoring vector and raster illustration art techniques provided by the tool – Adobe Photoshop. The techniques for achieving digital drawing and painting, illustration and designs are technical in nature, but are not difficult to master. It may take time though. Highlights of this work will be on the techniques for applying digital colours and rendering of line drawing onto Photoshop CS4 Layout, and of tracing original illustrations from photographs and rough sketches using vector forms. The research will hopefully provide basic information needed for experimenting on traditional sketches to digital painting illustration, vector-tracing of original artworks from photographs and rough sketches. It should provide information for researchers in this field in future.

Types of Computer Graphics

Generally, Computer graphics is basically made up of two forms. One is known as vector and the other one is called bitmap or raster image. Their basic characteristics are explained hereunder.

Vector graphics is associated with the use of geometrics like lines, points and polygons etc, to create digital shapes. Vectors are dependent on mathematical equations which were used to create the programs. Lea (2007) in his opinion, hints:

> Vectors are mathematical objects that define shapes or curves. Unlike pixels, vectors are resolution independent. This means that they can be scaled to any size, edited or transformed to infinite amount of times without any deterioration of clarity or loss of detail. In Photoshop, vector art can be integrated into your image files in the form of paths, vector masks or shape layers. (19)

In Photoshop, It is the vector shapes and points that are used to trace original artwork from sketches or Photographs. One advantage of vector graphics is that the colours are based on fill and gradient effects. In this sense there can be change of colour fills at any point in time.

Von Alten (2007), reiterates on vector graphics:

> Vector graphics are made up of lines and curves defined by mathematical objects called vectors. These graphics retain their crispiness weather they are moved, resized or have their colour changed. Vector graphics are appropriate for illustration, type and graphics such as logos that may be scaled to different sizes. (282)

All graphic programs have text tools. Text tools are used to generate typefaces onto workspace. Types in their whole are vector forms, which is an element of traditional and digital art and design.

On the other hand, Bitmaps or raster graphics are made up of square dots per inch (dpi). Those dots with varying tones make up raster images which includes Photographs. The dpi is the element

that make up pictures or other graphic in that form. Picture elements are sometimes called resolution. In view of this Laybourne (1998 8), adds;

> The computer screen is actually composed of tiny dots called pixels. They are exactly seventy-two pixels in a square inch of computer screen resolutions. One way to create an image is delineating a patch of pixels – maybe a thin line or maybe a solid shade of colours – that is known as bitmap. (8).

As soon as photographs or line drawings are scanned onto a layout, it is converted to pixels. The square dpi can be visible when level increases up to 70 percent zoom. Von Alten (2007 283), in her description of bitmap graphics and its properties hints:

> Bitmap images, technically called raster images, are based on a grid of colours known as pixels. Each pixel is assigned a specific location and colour value. In working with bitmap images, you edit groups of pixels rather than objects or shapes because bitmap graphics can represent subtle gradations of shade and colour, they are appropriate for continuous images such as photographs or artwork created in painting programs.

Working with digital pen, ink and eraser involves bitmap because when one is adding colour via airbrush or pencil, dots that make up the image are added. On the other hand when part of the painting is wiped via the eraser tool, pixels making the image up are erased in turn.

Creative Tools in Adobe Photoshop Cs4

There are various tools on the tool box panel Photoshop CS4, which are used for photo editing, digital drawing and painting,

Tracing, vector tools and text tools, among others. Once the "Photoshop CS4" icon is clicked from the desktop, it will load. On the Photoshop window, there is the title bar, area where the file name is located. There is the menu bar which contains Pop-up menu options. Here the "File", "view", "edit" and layers etc, are located there. There is the standard bar, where shortcuts for each tool selected are located. Property bar displays the layout size and orientation. Finally the toolbar, situated to the left corner of the screen, contains the lowdown of the digital tools that are used for unlimited artistic experiments.

Some of the tools for painting and colouring are pencil tools, brush tools, gradient and paint bucket tools, clone tools, pattern stamp tools, eraser tools, blur tools, sharpen and colour burn tools, etc. In the case of photo editing, tools that are used basically are crop tool, healing brush tool, red eye tool, lasso tools, marquee tools, magic wand tool, blur, sharpen, smudge, and much more, etc.

Fig. A illustrates the tool box with all the bitmap and vector tools on Photoshop CS4 layout.

Also tools for vector drawings are pen tool, freeform pen tool, add and delete point tool, text and shape tools that habour polygons, rectangle, lines, star shape, sphere etc. Generally, colour palette tools, swatches, are applicable to both photo editing, drawing and painting. This is so because colour is an essential element of design. Another general factor in Photoshop is layering. "Layering is another camera-like effect. Yet it is so revolutionary the dense

flow and over lapping of multi-image is so powerful". Laybourne (1998 131). He made it known that layering is simply the superimposition of multiple image one after the other onto one given workspace. It is applicable to photo editing, vector and bitmap graphics.
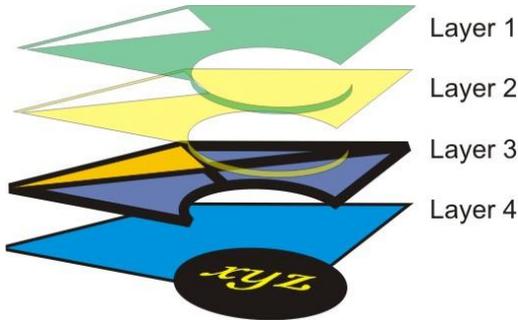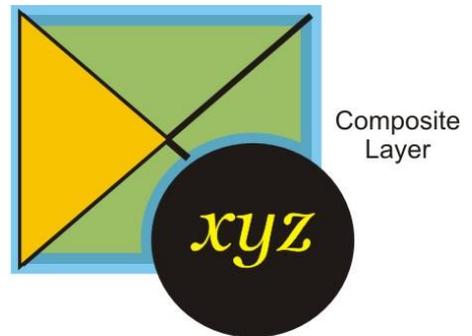

Fig. B   **Fig. C**

In figure B, four layers are shown where differences in each layer are clearly noticeable, whereas in figure C, all the layers seem to merge. It is an optical illusion that makes all the layers seem to be one object. Notwithstanding, each layer can be worked on independently without affecting other layers of images. When the work is finished, all the layers are merged together as one. The keyboard shortcut to that is "Shift + ctrl + E" for merging of visible layers only and "Ctrl + E" for merging of all layers. Another way of merging all layers automatically is by saving the design in a different file format known as JPG or JPEG, which renders the images to non-layered bitmap form. Encarta dictionary describes JPEG as Joint Photographic Experts Group.

Techniques for Making Digital Illustration on Photoshop user interface

There are various skills for creating illustrations digitally with Photoshop, involving both vector and bitmap graphics. Photographs or rough sketches can be used to create original art works in Photoshop. When Photographs or rough sketches are imported onto Photoshop layout, they can be traced. Tracing here means to create original lines through marking of lines that make up the object from the sketch or photos. Traditionally, new images are traced from photographs using tracing paper or transparent papers. Photographs or sketches are placed above while the tracing paper below copies the image when strokes are created with pen or pencil from the images. This is also done on Photoshop interface with pen tools. Mathematical points are added, which multiplies on each click from the mouse. After tracing, colours can be applied on the new vector objects. New artwork independent of the photographs or sketch is created. One advantage of skill is that it looks brighter and more artistic than the photo. Secondly, the artist can change colour and tone of the drawing at will.

Sketch, Scan and Colour

This is a flexible technique of producing illustration in Photoshop. Here you colour your scanned drawings directly. However, before proper filling of colours there are basic things to do immediately after scanning. Once you finish sketching, trace your pencil lines with ink, erase the pencil lines thoroughly and scan the job. It is better to clean pencil lines on the real paper than on Photoshop. It is simply not as easy as we imagine on the user interface because even on the user interface it has to be done manually. Laybourne (1998 283) states why;

> It is much less time consuming either to erase superfluous lines on the actual drawing paper or, even better, to return to the light table and retrace the drawing onto a fresh sheet of paper than to attempt

using a computer graphics application. Truth is, the eyes and hand are faster at spotting and eliminating unwanted marks than computer will ever be. The computer cannot distinguish a faint line from a partially erased line.

The Illustration "Nne Uzu" below was used to explain this processes

Plate 1: Pen and Ink sketch. 2011. Chidi Onwuekwe

Plate 2: Ink sketch of the same drawing scanned on Photoshop. 2011. Chidi Onwuekwe

In plate 1, the sketch was scanned with pencil marks on it. Note that it was very difficult to clean the pencil marks once it is scanned. Plate 2 shows the clean scanned work. The pencil mark was actually erased before scanning. Plate 3 shows part of the arm where pencil marks did not join and if not enclosed, and the colour of the arm is filled via paint bucket tool, it will flow into the wrapper. To avoid this you have to fill up the spaces with black ink tool. Plate 4 is the finished artwork with defined Chiaroscuro and beautiful colour fills. "It is recommended to clean up pencil lines after tracing with ink so that images will look defined when fed onto the layout". Laybourne (1998 283).
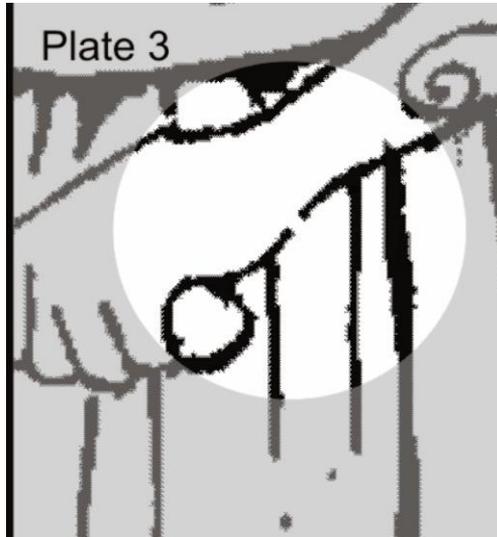
Plate 3: Broken ink lines to be enclosed with digital ink. 2011. Chidi Onwuekwe

Plate 3: Illustration as it is after filling the flat colours, midtone colours,
highlight colours and texture. 2011. Chidi Onwuekwe

As soon as this stage is complete, next is filling of white spaces with desired colour. This is done using "Paint bucket" tool. This covers all the white spaces with colours. This fills serve as base colours which have no mid-tones or highlights yet. The next step is to consider the direction of light on the job as light and value is an integral visual element of design. This will help the artist achieve chiaroscuro that will make the illustration realistic.

To apply dark portions and mid tones on the flat colours, "Lasso" or "magic wand" tool is used to select the required parts of the work that are to be mid tone areas. Once the 'magic wand' tool is used, click to select the desired part, hold 'Shift' key to select more spaces in the illustration. After that right-click with the 'magic wand' tool still active and select 'feather' option. Set the value to 2 or 3 points and hit 'enter' key. This effect softens the edges of your selection. Any brush work on this selection will blend into the flat colours that were filled previously. This same technique should be applied for mid tones and highlights, considering the direction of the light.

Presentation of finished works in Photoshop

The same production processes were employed in producing the works presented below, which can serve aesthetic and decorative purposes.

Plate 5 Title: Sketch for "If God interfered..." Artist: Chidiebere Onwuekwe, Medium: Prints, Date: 2011
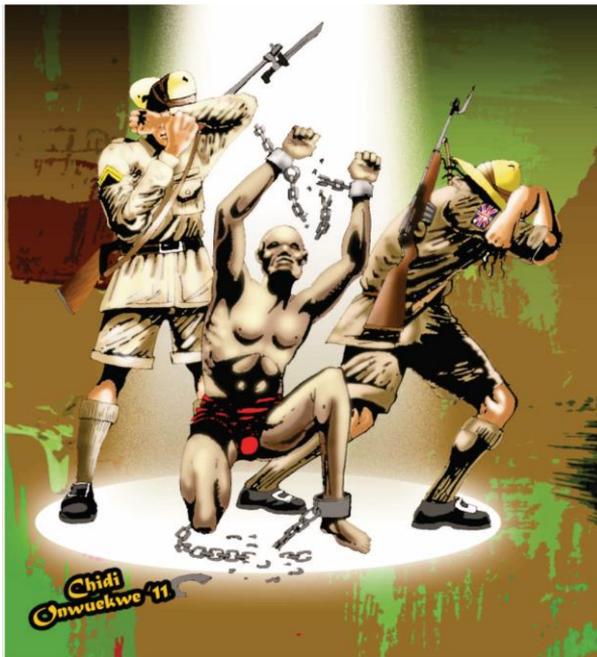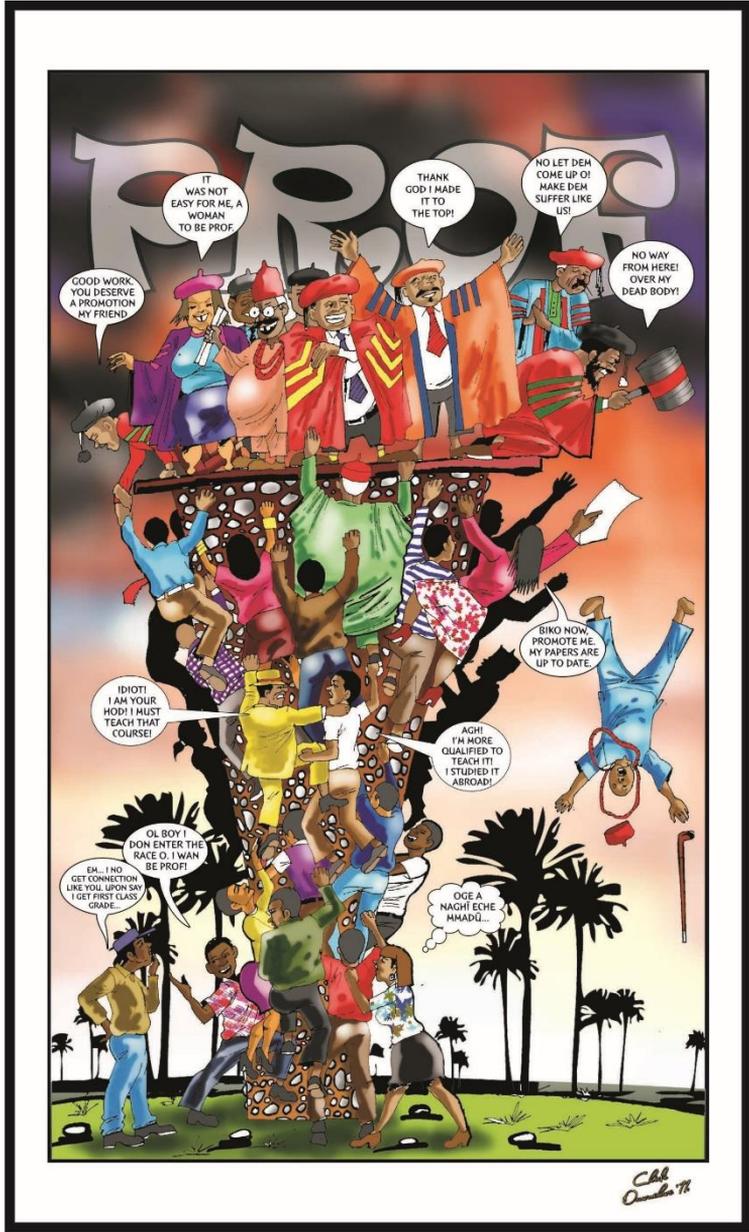

Plate 6; Title: "If God interfered..." Artist: Chidiebere Onwuekwe, Medium: Prints, Date: 2011

"Race to the top". 2011, 36X60 inches, Digital Illustration, Chidiebere Onwuekwe,

"Volition of Men". 2013, 36X45 inches, Digital Illustration, Chidiebre Onwuekwe.

Problems and Restricting Flaws in the use of Photoshop for Illustration Design

In as much as there are vast creative possibilities in Photoshop that artists should explore, there are problems they will experience. It takes time to master the usage of digital tools in Photoshop and unfortunately, not very many artists are patient enough to sit tight and get accustomed to the tools, more especially when making illustrations. To this end it bores the beginners, more especially when creative results are yet to emerge. Again, painting in Photoshop is not as flexible as in actual canvas and paper where artists employ brushes and other tools to illustrate and express their radical feelings direct on the layout. The brush work done by use of mouse, tablet and light pen, etc for illustration is not exactly accurate since its application is indirect and will never give the artist the feeling of controlling the movement of the brushes as with his hands. Therefore, it is not easy to work with bitmaps because the pixels or dpi of certain images are limited. Once the image is scaled or expanded, it will try to maintain the same resolution in the large format, thereby loosing details.

Conclusion

Adobe Photoshop CS4 is a good digital tool for both vector and bitmap illustrations. It should not be limited to Photo editing alone. Conscious efforts should be made at understanding the similarities and differences between traditional and digital illustration, and that everything started from somewhere including illustration art. With the advent of this new tool, traditional illustration should not be discarded, but be harnessed toward new vista of using both

techniques concurrently, to achieve creative feats. Nigerian artists should see Photoshop CS4 not only as a digital darkroom where they achieve photographic effects, but also see it as an opportunity to create wonderful illustrations that can be used for commercial purposes, academic purposes and information that can also be hosted online for access by millions of web users worldwide.

Works Cited

Adedeji-Unuigbe, M.O. "Communication effectiveness of Graphic designs and   illustrations as visual tools in Adevertising in Agberia", Ed. Design History in   Nigeria. Port Harcourt. Emphi Press 2002. Print

Brower, M. and Everett, W. *What is digital illustration?* Extracted from *Http// www.wisegeek.com.*   2010. Web

Laybourne, K. *The animation book. New York.* Three Rivers Press. 1998. Print

Lea, D. *Creative Photoshop: Digital Illustration Art and Techniques*. Massachusetts. Focal Press.   2007. Print

Norr, H. "Adobe Systems incorporated." *In Encyclopaedia Britannica. Encyclopedia Ultimate   referencing Suite.* Chicago. Encyclopedia Britannica 2010. DVD

Otaka, J. *Graphic Design Software Application in Nigeriain Print media.* Awka. Nnamdi Azikiwe   University Degree Unpublished Project, 2008. Print

Von Alten, W**.** *Classroom in a Book: Adobe Photoshop CS3.* California. Peach Pit, Berkeley 2007.   Print