

## REMAKING OF ADINKRA CULTURAL CLOTH THROUGH INNOVATION

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### **ABSTRACT**

*Adinkra is a collection of cultural symbols that have been used for designing Adinkra cloth from antiquity. Over the years, modern consumption dynamics have resulted in the decline of Adinkra cultural cloth usage. The purpose of this study is to transform Adinkra cloth through innovation and explore a form of textile production using digital printing technology to print new cloth using single Adinkra symbol designs. A comparison of the new cloth with the original revealed that digital printing accommodated different colors better, making the cloth more colorful than the original. Also, different color shades appeared differently on the new cloth based on specific fiber and fabric constructions. This study is the first to transform the cloth from its original state by using a single symbol as the design for modern printing technology.*

**KEYWORDS:** *Adinkra Cloth, Designs, Innovation, Digital Printing, Textile Fabrics*

### **INTRODUCTION**

The relationship between fashion and textiles and design is well documented. Without appropriate designs, fashion and textiles may not receive the required attention of a target market. The consumers of fashion and textile products in modern markets are sensitive to trends and dynamics in the fashion and textiles industry. In addition, designers are engaged in constant research to design products that match trends and meet the needs of consumers in fashion and textiles market. Entwistle as cited in Aage and Belussi (2008) argued that fashionable items embody the latest desirable and popular aesthetics in society. In view of this, incorporating the tastes and preferences of consumers into the design and production process has become imperative for modern fashion and textiles designers. One way of serving the needs of consumers is to ensure the direct involvement of consumers in the production process leading to value creation (Niinimäki and Hassi, 2011). In this way, there is the potential to increase uniqueness and personalization of a product. In some cases, it features prominently in the development and crafting of strategies for the marketing of fashion and textile products.

Designs for fashion and textile products are sourced from both natural and artificial materials such as plants and water bodies, as well as immaterial sources such as scenes and other cultural symbols that have specific meanings. Using cultural symbols as designs is particularly important for firms involved in the production of symbolic fashion and textile goods, where the value is mainly attached to the design (and to its symbolic meaning). Generally, fashion and textile products fall within cultural items that reflect users' lifestyles and provide symbolic personal values and cultural

values that facilitate acceptance of products (Moalosi, 2007). Leopold (1992) emphasized that the design of a product is the materialization of these cultural values and symbols into fashion products to meet the needs of a target group. As a result, some designers draw inspiration from cultural symbols mostly to create designs for products and some firms also use these cultural symbols as a tool for marketing culturally based products. Cultural symbols internationally have served as a source of design for fashion and textile products including traditional Chinese characters, Australian Aboriginal symbols, Maori symbols of New Zealand, Aloha motifs of Hawaii (USA), and Adinkra symbols of Ghana in West Africa.

Generally, the choice of cultural symbols as designs for textiles has diminished in use in recent times (Kquofi, Amate, and Tabi-Agyei, 2013). Adinkra is a word that describes a collection of cultural symbols with metaphorical meanings that are mostly used as designs for clothes worn on special occasions in Ghana (Cole and Ross, 1977; Arthur, 2001; LaGamma and Giuntini, 2008; Quarcoo, 1972). Adinkra symbols have meanings which are said to be derived from various aspects of life. These include themes of well-known proverbs, eminent historical events, expressions of particular human attitudes, noted animal behaviors, plants and abstract shapes of inanimate and synthetic entities (Danzy, 2009; Magee, 2010; Willis, 1998). Adinkra symbols are based on the culture of the people of Ghana and serve as a vital source of design for the Adinkra cultural cloth. A recent study by Aboagyewaa-Ntiri and Mintah (2016) suggested that problems such as poor fastness of dyes used for printing the cloth, limited color scheme (black, red and white fabrics) and the weight of the cloth have all resulted in a lack of patronage for the Adinkra cultural cloth. The same study finds production techniques used for making the Adinkra cloth very laborious and outmoded. The combined effect of all these factors has led to a significant decline of the small-scale Adinkra craft-based textile industry. The study therefore, highlights the need to adopt the Adinkra symbols as designs to develop new forms of cloth that can meet the needs of modern consumers through the use of modern textile technologies.

The objective of this study focuses on the remaking of the Adinkra cloth through innovation by using the Adinkra symbols as designs for textile. This is achieved by tracing the changes that have been made to the cloth from the first version found in the archives of the British Museum in London to the current version on the Ghanaian market. Also, the study describes the present techniques of production but explores the use of a modern textile production technology in making a new Adinkra textile cloth that enables larger quantities of the cloth production. Also, the study proposes certain products that can be produced using particular fabrics.

## **Background**

### **Adinkra Symbols**

The origin of Adinkra symbolism has not yet been identified although it has been extensively debated (Mato, 1986). History at the time was handed down orally from one generation to another which often means that distortion can occur. In Ghana, the presence of Adinkra symbols is quite pronounced. Adinkra cloth has had a long-standing place and offers a unique window into the ancient textiles and culture of Ghanaians. Willis (1998) and Cole and Ross (1977) discussed the origin of Adinkra cloth as occurring earlier than the Asante-Gyaman War of 1818, which some oral accounts cite as the time Adinkra cloth was introduced in Ghana. Thomas E. Bowdich in 1819 showed evidence of a piece of drawn Adinkra cloth in his book, "Mission from Cape Coast Castle to Ashantee" (Bowdich, 1966).

Adinkra symbols have a historical "core" or group of original symbols. Over the years, new symbols have been periodically introduced, while 'core' symbols have been stylized and fused. Adinkra is constantly evolving and expanding,

and the artists are constantly making new symbols. Adinkra symbols have aesthetic quality but the actual meanings of the symbols are known to few Ghanaians (Williams, 2011; Delaquis, 2013) and ways for the symbols to be used in modern times to serve as designs for modern fashion and textiles products have not received attention either in theory or practice. The reasons for this problem are many and may include the changes in society resulting in a loss of symbolic literacy with loss of both traditional values and the understanding of traditional signs and symbols (Mato, 1986).

Adinkra symbols therefore, have a more diverse background than is ordinarily perceived. It spans the length of African, Ghanaian and Akan history by making allusions to issues related to items or culture.

However, it is believed that constant renewal and usage of cultural symbols through fashion and textiles designs can further advance cultural knowledge of people because these designs and the resulting products can enrich and preserve the culture of the people.

Again, the notions that Western concepts are regarded as “proven” (De Mooij, 2011) have an adverse influence on most cultures, as the people try to be Western in outlook. In the case of Ghana, the British colonial rule with their culture and particular emphasis on the English language has affected the use of cultural materials such as Adinkra symbols. The argument by De Mooij is true and reflects the state of affairs in Ghana today. Although most consumers try to be Western in outlook, it is important for fashion and textiles designers to also realize the constant changes occurring in fashion and the textiles industry in order to keep up with the pace of changes in the global fashion and textile industry. In view of this, certain changes are imminent as a result of the influence of Western concepts, but Adinkra symbols can still serve as a source of design for products in the modern era to meet the changing needs of the marketplace. Table 1 shows three selected Adinkra symbols for this study with their names, literal meanings and roles.

### **Adinkra Cultural Cloth**

Adinkra symbolic cloth is a cultural funeral activity costume. The Adinkra symbolic cloth was made and used only by the royals of Akans of Ghana. However, modern-day use of Adinkra cloth is not meant for royals alone but any member of the society who can afford the price of the cloth can own it. This is irrespective of the position or wealth of the member of the society. This buttresses the assertion that Adinkra symbols are not only viewed from the aesthetic point of view. Anyone creating a new symbol must take this point into consideration and come out with symbols whose philosophies reflect some educational values. Also, numerous foreigners have found Adinkra cloth as a significant souvenir in recent times. Adinkra cultural cloth design has physically not witnessed significant differences since its original form. For example, repetitive designs and the textural patterns have also not seen any major shift to meet present -day needs of consumers who are inundated with designs from different producers. In Figure 1, the first Adinkra cloth which is displayed in the British Museum in London has a similar design as Figure 2 in the form of numerous symbols and similar textural pattern. The two cloth designs were made about a century apart without any major changes.

As already stated, Adinkra cloth was a mourning cloth for the royal family; as a result, it was produced initially in black color for funeral purposes and in line with customs. Black is a mourning color for the death of a close relative in Ghana. Forster (2013) describes Adinkra cloth as a cultural symbolic printed dark cloth worn is to send farewell messages to the deceased by the bereaved and sympathizers. There has been a gradual change in the colors used for the production of Adinkra cloth. As culture is dynamic so are the features found in that particular society. Lasimbang, Moo-Tan, and Regis (1997) point out that the changes in people’s clothing reflect changes in the environment as well as in society.

Cloth as a material culture always reflects culture as much as culture reflects cloth. People's attitudes, values, beliefs and their environment will continue to change; these changes are a mirror-image reflection on what people wear in that particular society. In view of this, Adinkra cultural cloth has also seen some changes as compared to earlier versions. Generally, Adinkra cultural cloth has been noted for two major colors (white, and black colored fabrics) and a single color paste (black). When the cloth is produced for funeral purposes, the black fabric is combined with the black paste to produce the cloth. On a white background, the Adinkra cloth is then used for other cultural occasions such as a naming ceremony and funeral reception on Sundays after a major funeral event on Saturdays. The funeral designed clothes are now available in hand-printed stamps as well as screen printed. From Figure 3, it is quite obvious that, although the symbols can be seen, it is very difficult to identify the symbols from a distance because of the black colored fabric printed with black colored dye.

Figure 4 shows a hand-printed Adinkra cloth on a white blended cotton-polyester background with black paste. The photo has been enlarged to clearly show defects in the printing of the cloth. As a result of these shortcomings in the old approach to the production of the cloth using stamping and hand printing of the cloth, the artisans adopted screen printing as a new approach. In Figure 5, an Adinkra based on the screen printing method of design is exhibited. The design quality is better than the stamping approach but the use of two different symbols or more does not enhance the symbolic cultural significance of the cloth because each symbol has a meaning which then gives the cloth its meaning. Another method adopted in the production of the cloth is the use of embroidery stitches after the hand stamping or screen printing is completed. This production method adopts a hand woven embroidered approach and combines it with a printed symbolic cloth. Figure 6 displays Adinkra cloth joined with hand embroidery stitches. This method has been found to be costly and time consuming based on interactions with the stakeholders in the industry during fieldwork in 2014. In effect, it is only a few affluent people in the Ghanaian society who can afford to pay the expensive prices to purchase the clothes that are made using the hand embroidery approach.

The present method of production of the cloth adopts an approach of inserting a woven Kente (Kente is another colorful cultural cloth) cloth strip at two joints as a substitute to the hand embroidery method. This is done to reduce the time for producing the cloths and the cost of production. Even though there seems to be an improvement on the design and aesthetics of the cloth, it is virtually impossible to produce the clothes on a large scale because of the various processes involved. In Figure 7, a sample of the Adinkra cloth with an inserted hand woven Kente strip is displayed to demonstrate the new version of the cloth. This Adinkra cloth still has the numerous symbols that do not demonstrate the actual meaning of the cloth based on the symbol used as a design which affects the cultural symbolism of the cloth. Cole and Ross (1977) reveal that most Ghanaians do not consider the design of textile printed material alone during purchase but the proverbial names and meanings they carry. The use of numerous symbols as designs for a single cloth is then unwarranted as it affects the proverbial meaning of the textile design. The newly proposed Adinkra cultural cloth will be designed with a single Adinkra symbol to give the cloth a meaning and a new look as compared to the existing version.

In summary, the cloth has gone through stages of development in line with changes in the tastes and preferences of users who demand colorful products. However, the transformation of Adinkra cloth has not been rapid and at the same pace as the changes that have occurred in the consumption pattern of the Ghanaian fashion and textile consumption society. The present state of the cloth and the production method, that is the use of numerous symbols as designs and

screen printing as a production method, does not ensure that the cultural symbolic meaning of the cloth is explicit for the consumers to decipher the meaning of the symbols. Again, modern consumption has also changed dramatically to mimic the consumption patterns of the West; hence, the adoption of the cloth is seen as belonging to the older generation. In view of this, the adoption of the cloth has been quite slow as compared to other forms of cloth in the Ghanaian community. As a result, the cloth has to be transformed through innovation to meet the needs of modern consumers in order to ensure acceptance of the cloth.

### **Production Method**

Adinkra cloth started as traditional hand stamped printed cloth. There are three major processes involved in Adinkra cloth production. These include preparation of stamp, preparation of dye and stamping of symbols on cloth (Rattray 1927; Mato 1986). The first step is to prepare the stamp. The selected Adinkra symbol is drawn and curved onto the outer smooth side of a piece of the gourd. The handle of the stamp is made of thin bamboo sticks, fixed to the fluffy inner side edges of the gourd. These sticks are then held together and tied with a piece of fabric; a picture of stamps is shown in Figure 8. The second stage involves the preparation of the dye (Adinkra aduro). The cloth dye is made from the bark of a tree called 'badie'. Its botanical name is *Bridelia Miranda* of the natural order Euphorbiaceae (Quarcoo 1972). The bark of the tree is cut into pieces and soaked with water overnight to soften. The water is drained and the bark is pounded to break and soften the tissues. The pounded bark is mixed with the already drained water and boiled to reduce half of the content of the water used. The mixture is drained to remove the pulp. Stones and pieces of iron are put in the solution to serve as mordant.

The solution is boiled until it becomes thick enough to stick on fabric. Personal communication held during fieldwork on the 13<sup>th</sup> August 2014 with one Adinkra cloth artisan revealed that, when the dye is not well prepared, it affects the brightness of the color and its absorbency rate on printed fabrics. The quality of the dyes has also been found to be of a great challenge to the production techniques of the Adinkra cultural cloth (Aboagyewaa-Ntiri and Mintah 2016). The third stage is the technique in the stamping of cloth: fabric used for printing or stamping can be of local or foreign make. Usually, the fabrics are plain, thick and absorbent. The fabric is laid on a long specially constructed table. The artisan's designed textile work on a specific fabric would depend on his skills or choice and again a design requested by the customer. Mostly, horizontal and vertical lines are made to divide the cloth into smaller sections. The selected Adinkra stamps for the work are dipped into dye and carefully stamped into the sections already created. The finished cloth is put to dry under a scorching sun that the artisans claim increases the color fastness property and hardens the cloth.

Adinkra is made by several processes. A weaver may weave the cloth and then dye it. Sometimes an imported cloth is used, but primarily smooth-surfaced, factory-produced cotton manufactured in Ghana is used. A stamper then stamps the cloth with Adinkra patterns. The stamper may or may not be the person who carves the Adinkra stamp, which is normally done by a professional carver who may or may not be an Adinkra stamper. It is this process of production and the outcome of the process (Adinkra cultural cloth), which have both become almost obsolete with time due to the changes in the consumption patterns of modern Ghana. Again, issues such as the weight of the Adinkra cultural cloth, the fastness of the dyes and the limited colors used for the product that has also contributed to the heavy decline of the Adinkra cultural cloth sub-sector of the textile industry. As a result, the Adinkra cloth and the process of production

must witness some changes in order to meet the needs of modern consumers. This can be achieved through both product and process innovation.

### **Innovation**

Innovation is a broad concept that applies to all disciplines. Several researchers have given different definitions of innovation. There are marked differences in contributions especially relating to the definition and understanding of the innovation concept because of the different fields of specialization of researchers, for example, psychology, poetry, managerial and marketing (Shavinina 2003). The methods of approach to innovation research also vary from one discipline to another and have quite different views of its impact on an industry or organization's survival, growth, productivity and performance (Gopalakrishnan and Damanpour, 1997). Innovation is an idea, behavior or object that is perceived as new by its audience. Also, innovation as an outcome can be defined as "an idea, practice or object that is perceived as new by an individual or another unit of adoption" (Rogers, 1995, 11). In view of this, the newness of a product or technical process of making a product for an identified market can be defined as an innovation. In affirmation, Cooper (1999, 5) posits that "one of the top success factors of innovation is delivering a differentiated product with unique customer benefits and superior value for the user". There is the need therefore to the quest for superior products that meet customers' needs rather than market competition.

Product innovation can be defined as new products or services introduced to meet an external user or market need (Damanpour and Gopalakrishnan, 2001). Product innovation according to Romano (1990) may be a new product or modification of an existing product through the introduction of new features to enhance its values. The new or modified product with new features is targeted towards a market and is supposedly customer driven (Utterback and Abernathy, 1975). Instead of an entirely new product, the proposed Adinkra cultural cloth will be a modification of the existing cloth but new features will serve as a solution to the issues with the existing Adinkra cultural cloth. The newly proposed Adinkra cultural cloth is based on the views of customers and users of the product as found in a recent study by Aboagyewaa-Ntiri and Mintah (2016); therefore, the product has the potential to meet the needs of the customers.

Innovation can also be changed to the process of work. According to Utterback and Abernathy (1975, 641), a production process (innovation) is "the system of process equipment, workforce, task specification, material inputs, work and information flows, that are employed to produce a product or render a service". In other words, process innovations are new elements introduced into an organization's production or service operation (Knight 1967). According to Subramanian and Nilakanta (1996), production process innovations, in other words technical innovations, affect the technical system of an organization. They define the technical system as consisting of the equipment and methods of operation used to transform raw materials into products or services. Process innovations generally evolve in the production process of a product (innovation) where the primary focus of it is to improve the efficiency of the production of that product (innovation) (Stobaugh and Gagne, 1988). Since the current production process of the Adinkra cultural cloth is very laborious, time-consuming and does not ensure efficiency in production, there is the need to adopt a new form of technology to ensure that there can be a larger production of the proposed products to achieve both efficiency and the transformation of the cloth. For the purposes of this study of transforming the Adinkra cultural cloth through innovation (both product and technical process), it appears to be more related to the transformation of an existing product using a form of technology that is new to the Adinkra cultural textile cloth sub-sector to meet the needs of modern consumer societies.

The definition of innovation therefore, is focused on product and technical process innovation.

### Digital Printing as an Innovative Method of Production

One of the methods that can be utilized to improve production efficiency and result in the transformation of the Adinkra cultural cloth is digital printing. Photoshop or Adobe Illustrator software is utilized in designing a pattern to be digitally printed. File type is 'Adobe 1998 RGB color' and has to be saved as a Photoshop Document (PSD) or Tagged Image File Format (TIFF). The design should be text printed. The Roland Soljet III XJ-640 is a large-format printer used by Royal Melbourne Institute of Technology University's (RMIT) Textile Design studios to print directly to textiles. The print bed width of the Roland Soljet III XJ-640 is 1600mm, allowing for rolls with a maximum print area of 1500mm. Bidirectional printing ensures that banding is eliminated.

In industry print bureaus using this system, fabrics are initially pre-treated with a chemical solution to ensure optimal ink take-up and adhesion to fabrics, and good washability. Since the printing technology relies on a roller take-up system to tension fabric properly for printing, sheer (more open-weave) and stretch fabrics are challenging, with extensive testing and research required to achieve good results. The printer utilizes a pre-heater to initially warm the fabric and remove any creases; a print heater then operates to promote ink adhesion, and finally, the dryer allows the ink to dry properly prior to the automated winding onto the lower calendar.

### Textile Designs for Digital Printing

Figures 11-16 show samples of modern Adinkra cultural textile designs and a catalogue with a digitized printed swatch of Adinkra symbolic fabrics with a single symbol as designed styles selected from the collection of Adinkra symbols. Only three Adinkra symbols have been used for this study and these are the basis for the designs that have been created and produced by different fabrics.

In Figures 11 and 12, the symbol "*Mate Masie*" is shown. It means "I have heard and kept it" and symbolizes knowledge and wisdom that has been used as a textile design on three different fabrics: linen cotton canvas, heavy cotton twill, and polyester. This result in a variety of fabrics for printing using a single symbol as the design for comparative purposes based on the choice of fabric. In Figures 13 and 14, the symbol "*Okodee mmowere*" which means "The eagle's talons" and represents strength and unity has been used for the textile design, the printed cloth in Figure 14 utilised fabrics such as cotton interlock knit, performance knit and silk crepe de chine. In Figures 15 and 16, the symbol "*Nyansapo*" – "Wisdom knot" is shown, symbolizing wisdom, ingenuity and patience and this symbol has been used to design and print the cloth. The fabrics used for the printed cloth in Figure 16 come in cotton silk, performance knit and cotton voile.

### Discussion on Digitized Printed Fabrics

As stated in the objectives, the study sought to adopt a single symbol as the design and explore the potential of using a modern technology as a production method for the newly proposed Adinkra cultural cloth. Due to the problems associated with the original cloth such as poor fastness of dyes used for printing the cloth, limited use of colors and weight of the cloth, there has been a lack of patronage for the Adinkra cultural cloth. In view of this, the newly proposed Adinkra cultural cloth took into consideration solutions to the problems in order to create a design to meet the needs of modern consumers. On the choice of fabric, a careful examination of each roll of the three sample fabrics was conducted.

This revealed different construction and textures. For example, the heavy cotton used in Figure 12 has a different feel and texture as compared to the linen cotton canvas and polyester. Although the heavy cotton and linen cotton canvas share one type of fiber (cotton), the blend of linen with the cotton in this case gives a different texture. Similarly, cotton interlock knit, cotton silk, cotton voile and heavy cotton all had different textures. Comparing Figures 12, 14 and 16, it was realised that all the different fabric types had a different texture and feel. The different fabrics also resulted in different weights for the cloths that were printed. A comparative texture inspection of the different cloths in Figure 12 revealed that the linen cotton canvas felt heavier and crisper than the heavy cotton and the heavy cotton also felt heavier than the polyester. Similarly, in Figure 14, the silk crepe de chine felt lighter than the performance knit and the performance knit also felt lighter than the cotton interlock knit. In the case of Figure 16, the performance knit felt heavier than both the cotton silk and the cotton voile. A cross case analysis using the performance knit fabric combined with different ink colors in figures 14 and 16 resulted in the same feel for the texture after printing. Thus, the design and color shade did not affect the feel of the texture of the fabric after printing. The nature of fabric was thus: type of fiber, construction of yarns and filaments, fabric construction and chemical treatment, providing a diversity of choices for the manufacturing of additional textile products.

The availability of variety of Adinkra symbolic textile prints using different fabrics can enhance the production of Adinkra symbolic cloth for different modern social activities, as well as provide consumers a variety of choices. In order to surmount the challenge posed by the limited colors in the current versions of Adinkra cloth, different colors were combined with different fabrics to print the cloths in Figures 12, 14 and 16. The use of different colors resulted in different outcomes for different fabrics. In Figure 12, it can be seen that the use of polyester resulted in richer shades of color as compared to the linen cotton canvas which has a muted color. Comparing all the different fabrics with the original design, there was a marked difference in color contrast as all the fabrics had different color shades from the original design. In Figure 14, it was the performance knit that had the strongest color shade deviation from the original design as compared to the other fabrics. Also in Figure 16, the performance knit had a brighter color shade as compared to both the cotton silk and cotton voile. Even though the performance knit was brighter than the other fabrics in Figure 16, it was unable to match the selected colors in the original design. On a cross case analysis, it can be seen that most of the fabrics are cotton and polyester based on all the samples. A compelling observation was that the polyester-based fabrics exhibited brighter shades of color compared with the cotton-based fabrics. This is evident in Figures 12, 14 and 16. The utilization of different ink colors on the textile designs and subsequent prints has the ability to widen the use of the textile products. The difference in preference, taste and occasion of the costumer plays a significant role in the choice of colors. The available varieties of colors for the Adinkra textile designs can enhance the usage and propagate the symbols.

### **Suggestions of Products Based on Type of Fabric**

The differences in the texture of the fabrics have implications for the type of product to produce in practice. The properties of all the newly produced Adinkra cultural textile cloths using different fabrics avail themselves for different product ideas and constructions of clothing for use in the wider context. Firstly, in Figure 12, three fabrics: linen cotton canvas, heavy cotton twill, and polyester were used for printing cloth. In view of the heaviness of the linen-cotton canvas fabrics, it is suggested that it can be used for making bags and wallets. The heavy cotton twill can also be used for products such as trousers and skirts, whereas the polyester can be used for shirts, and blouses for consumers.

Due to the numerous social activities that require the use of traditional drape styles, it is suggested that the heavy cotton is used for such clothing.

The performance knit fabric has the potential to be used for manufacturing sports clothing. The silk crepe de chine on the other hand, can also be used for making scarves, the cotton interlock knit for T-shirts and tights (clingy garment), and cotton silk and cotton voile can be used for the production of dresses, shirts, and blouses.

## **CONCLUSIONS**

The study explored the potential of remaking the Adinkra cultural cloth to meet the needs of textile consumers in the Ghanaian textile industry. Through the concept of innovation and the use of modern technology, the current Adinkra cultural cloth was modified using a single symbol as a design and different colors combined with different types of fabrics. The use of different fabrics including performance knit, heavy cotton twill, cotton silk, cotton voile, silk crepe de chine, cotton interlock knit, linen-cotton canvas and polyester mostly resulted in lighter weight Adinkra cloth as compared to the original version which was a heavyweight. As a result of the use of lightweight materials which were based on the needs of potential consumers, it is argued that consumers will patronize the newly improved versions of the Adinkra cultural cloth. Also, the use of different fabrics and shades of colors for the newly improved version of the Adinkra cloth can be utilized for a wide variety of clothing products such as traditional drape styles, blouses, shirts, and trousers. The availability of different Adinkra symbolic clothing can enhance the choice, selection, and usage of the newly improved Adinkra cultural cloth.

The Adinkra cloth has ,therefore, become very important in the lives of people not only as a means of clothing themselves but also symbolizes the graphic representation of the Ashanti cosmological beliefs about God, the spiritual world, morality, power etc. The two main classifications based on the number of symbols on a single cloth and the preparation of the background on which the stamping is done to portray the ingenuity of the designers thereby conferring certain artistic properties like originality and creativity through an unconscious employment of the principle and elements of design. Technical innovation in the form of the use of a digital printing machine has the capacity to produce the newly improved version of the Adinkra cloth and even on a large scale to improve production efficiency. The digital printing machine uses ink that ensures that the cloth can be washed without the color fading as in the case of the use of the dyes in the existing method of production. Thus the digital printing method results in superior products with enhanced benefits for consumers.

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Table 1: A Collection of Adinkra Symbols Used for the Study

Symbols	Names of Symbols	Literal Meanings	Roles
	<i>Mate masie</i>	"I have heard and kept it"	Symbol of knowledge and wisdom
	<i>Okodee mmowere</i>	"The eagle's talons"	Symbol of strength and unity
	<i>Nyansapo</i>	"Wisdom knot"	Symbol of wisdom, ingenuity and patience



Figure 1: Adinkra Mourning Cloth

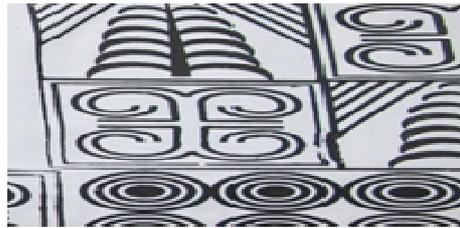
Source: British Museum, museum Number Af1818, 1114.23. It was Collected in 1817 and donated by Thomas Edward Bodwich



Figure 2: Present- Day Adinkra Cloth  
Source: Photo by Main Author (2014)



Figure 3: Adinkra Cultural Cloth in Black Color  
Source: Photo by Main Author (2014)



**Figure 4: Adinkra Cloth on White Background with Printing Defects**

Source: Photo by Main Author (2014)



**Figure 5: Adinkra Printed Cloth Made from Black Cotton Fabric with Black Dye**

Source: Photo by Main Author (2014)



**Figure 6: Adinkra Cloth Joined with Hand Embroidery Stitches**

Source: Photo by Main Author (2014)



**Figure 7: Adinkra Cultural Cloth with an Inserted Hand Woven Strip of Kente Cloth**

Source: Photo by Main Author (2014)



**Figure 8: Stamps used for Adinkra Printed Cloth**

Source: The Main Author Purchased the Stamps from the Artisans (2014)



Figure 9: Main Author with Artisans at Adinkra Cloth Production Site

Source: Photo by Main Author (2014)



Figure 10: Digital Printing Machine – Roland Soljet III XJ-640

Source: RMIT Brunswick Campus (2016)



Figure 11: *Mate masie* Fabrics "I Have Heard and Kept It" Symbol of Knowledge and Wisdom Textile Design



Linen Cotton Canvas



Heavy Cotton twill



Polyester

Figure 12: *Mate masie* - "I Have Heard and Kept It" Symbolic Digitized

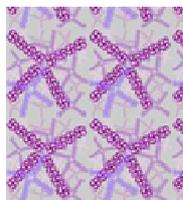
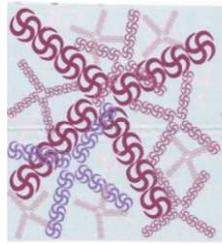
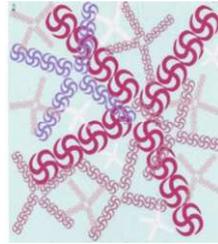


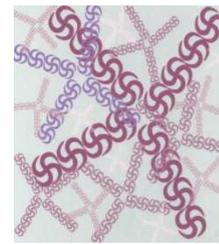
Figure 13: *Okodee mmowere* – Shine "The Eagle's Talons" Symbol of Strength and Unity Textile Design



Cotton Interlock



Performance Knit



Silk Crepe D

Figure 14: Okodee mmowere – "The Eagle's Talons Symbolic Digitized Fabrics

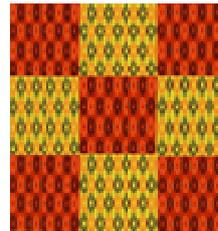


Figure 15: Nyansapo – "Wisdom Knot" Symbol of Wisdom, Ingenuity and Patience Textile Design



Cotton Silk



Performance Knit



Cotton Voile

Figure 16: Nyansapo - "Wisdom Knot" Symbolic Digitized Fabrics

**Note:** All the Adinkra symbolic textile designs and print fabrics in Figures 11-16 were developed by authors in collaboration with RMIT Masters of Fashion Entrepreneurship students, 2015 group.

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