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Structural Patterns in Asante *Kente*: An Indigenous Instructional Resource for Design Education in Textiles

William Badoe[1*] Nana Afia Opoku-Asare[2]
1. Department of Industrial Art, Kwame Nkrumah University of Science and Technology, Ghana
2. Department of Art Education, Kwame Nkrumah University of Science and Technology, Ghana
[*]Email of corresponding author: wbadoe@gmail.com

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Abstract
Asante *Kente* is a richly coloured, intricately patterned indigenous hand woven fabric that is typically produced at Bonwire and Adanwomase in Ashanti Region, Ghana. *Kente* is woven in long narrow strips with brightly coloured silk or cotton yarns on *Nsadua Kofi*, the traditional narrow loom, which is a box-like wooden structure in which the weaver sits to weave. The strips are sewn together lengthways to purposely create definite patterns in the constructed cloth. Asante *Kente* motifs and cloth designs have names with philosophical meanings and colour symbolism that serve as a medium of communication to the indigenes. The cloth designs consist of dots, lines, shapes, textures and colours that are carefully crafted to form geometric shapes and intricate patterns that exhibit balance, rhythm, variety, proportion and repetition. Unlike Asante *Kente* cloth designs that evolve on the loom, weaving in the higher education textiles curriculum requires expression of the structure of design concepts as drafts on point paper. To demystify drafting, which many textiles students perceive as "difficult to learn" led to adoption of the quasi-experimental approach to interpret selected *Kente* motifs to demonstrate the process of drafting to 148 Year One Industrial Art students of Kwame Nkrumah University of Science and Technology, Ghana. Using the draft as instructional resource, the students were guided to translate drafts they had made into woven *Kente* stole on the broadloom. The focus of this work was to bridge the gap between indigenous hand weaving and weaving as it is taught in the formal educational system. The structural patterns of Asante *Kente* designs provided the needed instructional resource and aesthetic experience to ensure successful learning of drafting in textiles design education. The importance of the study is to help preserve this natural cultural heritage of *Kente* weaving in the youth who are given formal education and again to set the pace for further research to be conducted into the use of motifs, symbols and designs in indigenous cloth as vast resource in design education in textiles.
Keywords: Asante *Kente* Design, Structural Pattern, Instructional Resource, Drafting, and Textiles Design Education

1. Introduction

The art of cloth weaving is a dominant occupation across West Africa; it is traditionally common from Senegal in the west to Cameroon in the east, and south of the Sahara to the coast (Duncan, 2002). Weaving is done by men in long, narrow strips of fabric on narrow double-heddle looms that mostly have two or four heddles. The looms are fundamentally simple frames that hold a set of threads in tension; they have no warp beam so weight is used to give tension to the warp yarns during weaving (Insert, 1992 as cited in Ross, 1998). Weaving is also the oldest craft known in Ghana (Hesse, 1990). Before modern weaving was introduced to Gold Coast (now Ghana), the material used for clothing was obtained from the bark of the *Kyenkyen* tree. Long, narrow pieces of *Kyenkyen* bark was softened in water, and beaten over trunks of fallen trees with wooden mallets into somehow flexible material that was used as a covering (Rattray, 1927). When cotton and costly silk cloths came into the Gold Coast from Europe and Asia the Asante people unraveled the yarns and skillfully wove them into extravagant *Kente* cloths of all the varieties of colour and pattern (Baah, 2000). *Kente* that was woven with silk yarns in the past were reserved for royalty and the wealthy (Kwaku Ofori-Ansa, 2009).

1.1 Asante *Kente* Cloth

Asante *Kente* is a woven cloth that is identified by its dazzling, multi-coloured patterns of bright colours, geometric shapes and bold designs (Kwaku Ofori-Ansa, 2009). The word *Kente* is a derivative of *Kɛntɛn,* the Twi word for basket (Kwekudee, 2012); it also represents what Asamoah-Yaw (1992) describes as the 'creative, thoughtful or designer's woven cloth'. *Kente* is unquestionably the most popular and best known of all African textiles because it is produced in greater quantities, exported to more places, and incorporated into a greater variety of forms than any other African fabric. Asante *Kente* has also captured the attention of visitors since at least 1817 as a cloth of splendour and ostentation, of extravagant price and incredible size and weight (Avins & Quick, 1998). *Kente* cloth is constructed and worn according to gender. The woman's *Kente* cloth is worn in

three pieces; one piece is wrapped around the lower body as a long skirt and held down at the waist with a scarf. Alternately, the piece of cloth is sewn into an ankle length skirt held at the waist with a string of cloth or elastic band while the second piece is sewn into a stylish *Kaba* or blouse. The third piece of the woman's *Kente* cloth is either folded widthwise into a small piece and held in one hand like a purse or folded lengthwise and hung over the left shoulder. The male and female *Kente* cloths may bear similar features such as motifs, arrangement and colours yet they have distinct characteristics (Badoe, 2005). The male *Kente* cloth is worn by draping it loosely around the body from the shoulders down with the ends held over the left one shoulder (over the right shoulder is culturally inappropriate) in the manner of the Roman *toga* (Bowdich, 1966 as cited in Badoe, 2005).

1.2 Structure of the Male Asante *Kente* cloth

The male *Kente* cloth is made up of 28 strips sewn together. Each strip measures about 4 inches in width. The length is made up of 39 motifs and the break down is as follows:

- 5 motifs for the starting border design and another 5 motifs for the closing border design.
- 29 motifs for the main design.

Note that only 3 different motifs are used for the border design whereas another 2 motifs are alternated to form the main design; thus in all 5 different motifs are use to produce a *Kente* cloth (Plate 1).

1.3 Structure of the Female Asante *Kente* cloth

The female *Kente* cloth is made up of 24 strips sewn together; 8 strips for the *Kaba,* 8 strips for the *Slit* and another 8 strips for the *cover cloth.* Each strip measures about 4 inches in width. The length is made up of 21 motifs with the break down as follows:

- 5 motifs for the starting border design and another 5 motifs for the closing border design.
- 11 motifs for the main design; the middle motif is a unique one.

Note that only 3 different motifs are used for the border design whereas another 2 motifs are alternated to form the main design with a different middle motif; thus in all 6 different motifs are use to produce a *Kente* cloth.

2. *Kente* Weaving

Kente weaving is a traditional cultural art that has been practiced by the Asante people of Ghana since the 17th Century (Ofori-Ansah, 2009). *Kente* weaving as a textile production technique whereby narrow loom is use to produce long and narrow strips of cloth, which may then be joined edge to edge to create square or rectangular cover cloths. The technique offers endless possibilities for variations of scale and composition (Adler, 1995). This cultural heritage of *Kente* weaving is governed by strict gender guidelines (Ross & Adu-Agyem, 2004) until the introduction of indigenous weaving in the school art curriculum, *Kente* weaving was the preserve of men. Construction of the *Kente* cloth is also done according to gender specifications: the male cloth comes in one large, rectangular size while the female cloth comes as a set of three relatively shorter pieces (Badoe, 2005).

Kente is woven in strips measuring approximately 4 inches wide and 144 inches long (10cm x 360cm) for a male cloth and 4 inches x 72 inches (10cm x 180cm) for a female cloth, in two or more colours (Asamoah-Yaw, 1992). Each strip has an open border design that is followed by the main cloth design and a close-end border design as shown in Plate 1. In effect, the main cloth design is sandwiched between two end designs (Badoe, 2005).

Plate 1 Typical male Asante *Kente* strip

2.1 *Kente* Motifs

The three distinct parts that constitute the open-end and close-end border designs (*Akyem, Atwedeɛ* and *Babadua*) of the *Kente* strip in Plate 1 are shown as Plate 2.

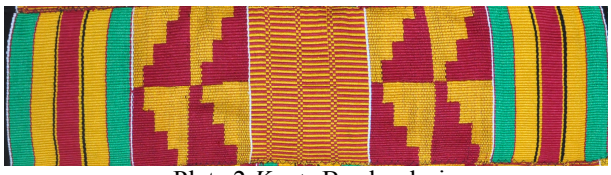

Plate 2 *Kente* Border design

The *Akyem, Atwedeɛ* and *Babadua* motifs constitute the open-end and close-end border designs in Plate1 and illustrated separately in Plates 3–5. The weaver repeats the three different motifs five times in each case to create the open-end and close-end border designs.

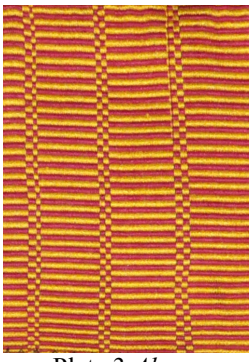
Plate 3 *Akyem*


Plate 4 *Atwedeɛ*


Plate 5 *Babadua*

Plate 6 shows *Nkyimkyim* and *Mpuankron*, the 2 motifs that are repeated 29 times to arrive at the main cloth design in Plate 8.


Plate 6 *Nkyimkyim*


Plate 7 *Mpuankron*

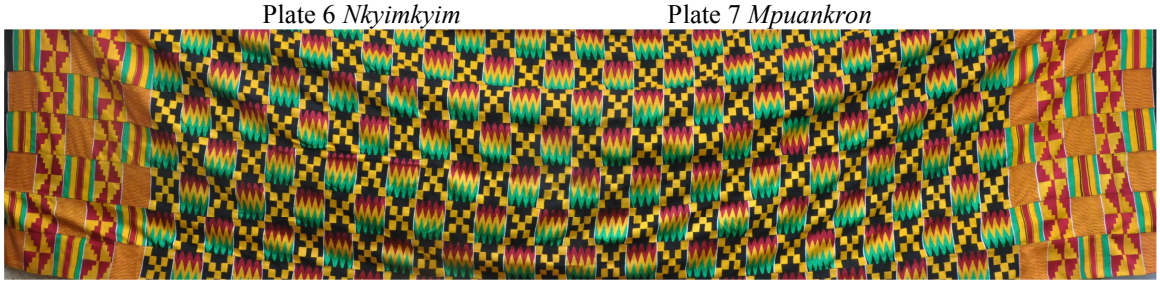
Plate 8 Main cloth design

2.2 *Kente* Patterns

The distinctive characteristics of the Asante *Kente* cloth are the geometric shapes of different sizes in brilliant colours of maroon, gold, green, dark blue and black (Ross, 1998; Avins & Quick, 1998; Edusei, 2006). The structure of the *Kente* strip centres on the creation of weft floats and geometric shapes to achieve an overall design. The most commonly seen designs in *Kente* are produced by combining two distinct decorative techniques: 1) the introduction of rows of supplementary weft floats into the ground weaves; the weft floats are arranged to form triangles, wedges, hour glass shapes and other designs; and 2) the creation of solid blocks of coloured threads across the cloth strip to entirely conceal the warp (Clarke, 2002). The outcome is four groups of *Kente* patterns: *Ahwepan, Topreko, Faprenu* and *Asasia* (Cole & Ross, 1977).

Ahwepan is a plain-weave with or without simple weft stripes; *Topreko* typically features the characteristic 'single weave' *Kente* pattern composed of two blocks of weft-faced *Babadua*, a block of weft-faced *Adwini asa* that is created with double or triple weft threads going over and under, and alternate groups of six warp threads followed by a group thread. *Faprenu* is created with two or three handpicked supplementary weft threads that are wound on a single bobbin with the threads passing back and forth before the ground thread is inserted to create blocks of *Adwini asa* so densely packed that the warp threads are not seen through the weft. This 'double weave' uses twice as many weft threads as the ground thread. *Asasia* is the rarest and most prestigious of the Asante *Kente* patterns. It is a distinctive twill pattern in a diagonal alignment of weft floats. This intricate weft pattern is woven exclusively for the *Asantehene* (Cole & Ross, 1977; Asinyo & Frimpong, 2013).

3. The Traditional Loom

This is called *Nsadua Kofi* in the indigenous language. It is constructed either stationary or in a mobile form; in the case of the former the Upright posts labeled 1, 2, 3 and 4 in Fig. 1 are mounted in the ground exposed to the mercy of the weather whereas the latter is constructed with the support of 12-Flat wooden board that enables it to be moved around.

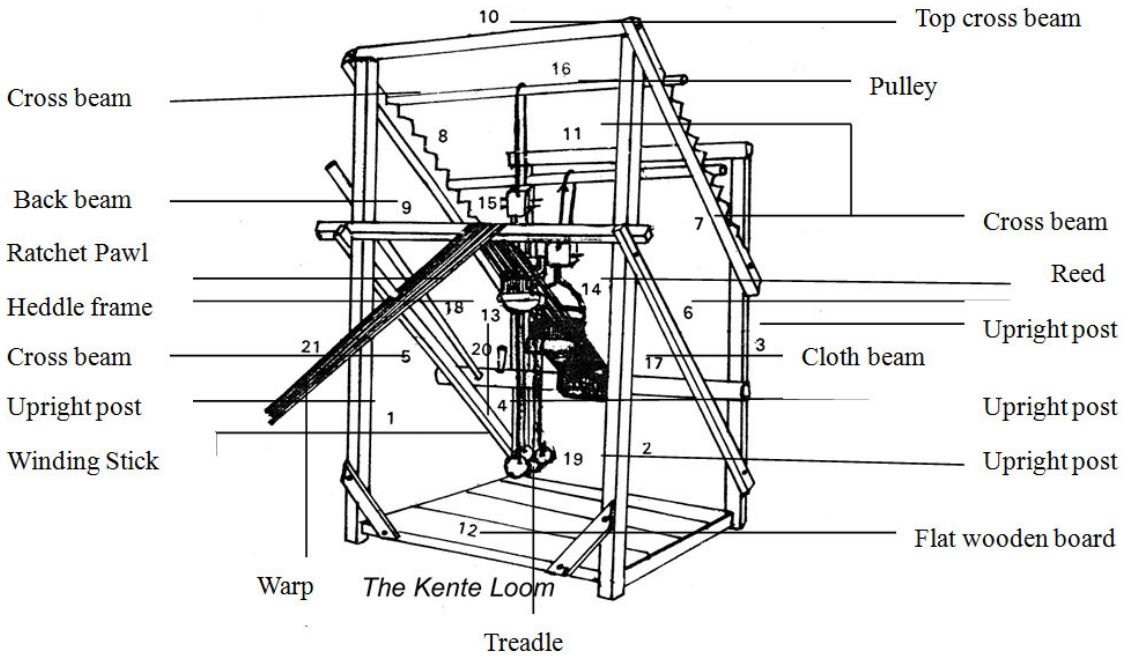

Figure 1 The traditional loom

The traditional *or Kente* loom as shown in Fig. 1 consists of four upright posts, (1, 2, 3, 4) joined together on the sides by four bars (5, 6, 7, 8) which slant towards the back of the main framework. The upper part of the top bars (7 and 8) called *Asatwedee* (heald ladder) are serrated. Two bars, (9 and 10) called *Ponko* (warp protector), connect the two front corner posts (1 and 2) in the middle and top portions of the framework respectively while one bar (11) connects the top of the back corner posts (3 and 4). The bottom part (12) of the framework is covered with flat wooden boards and it on these boards that a stool is placed to seat the weaver. There are four heddle frames (13) called *Asa.* The two front ones are called *Asatia* while the two back ones are called *Asanan*. The beater or reed (14) is known as *Kyereye.* The four heddle frames and the beater are suspended by means of strings on two or more pulley bars (16) called *Nyansoo* which are placed in the notches of the serrated top side bars (8).

Empty tins or small wooden frames that serve as pulleys *Awiedie* (15) in which are fixed spools with flanges called *Awiedieba* are fixed between the pulley bars.

4. Designs, Draft And Tie-Up Arrangement

Asante *Kente* cloth designs are not drafted prior to weaving but they evolve on the loom, depending on the weaver's ingenuity and craftsmanship and the motive for weaving the cloth. This is in direct contrast to the requirements of the textiles curriculum for higher education, which includes reduction of design concepts into graphical format to guide in generating draft and tie-up arrangement that will aid in weaving a fabric that incorporates the specific design on the broadloom.

4.1Draft

Draft refers to graphical representation of the warp ends on the various shafts of the loom. Draft is derived from design by following the principle of "place all ends that lift alike in a design on the same shaft and all ends that lift differently on different shafts". Heddling order that is generated from a draft is the numerical information in the draft that guides a weaver to pass the ends through the eyes of the healds (Badoe, 2005).

4.2 Tie-up

Tie-up refers to the way the shafts are tied to the treadles on the loom. To open a shed, a treadle must be depressed and because they are tied to the shafts, they cause some of the shafts to be lowered and others to be lifted up. The shafts carry the healds on which the ends are suspended; this causes the ends to be divided into two sheds. The *Kente* loom operates with four treadles (*Ntiamu*) that are connected to four shafts (a pair of *Asatia* and *Asanan*). The first pair of *Ntiamu* is tied to a pair of *Asatia* which are controlled with the feet and used to produce plain weaves. The second pair of *Ntiamu* is tied to another pair of *Asanan* that is made to hang so that the weaver can pull the cord down with the hand to cause an open shed in order to create a desired design weave (See Plates 9 and 10).

Plate 9 Connection of treadles to shafts

Plate 10 Two pairs of *Kente* loom shafts

5. *Kente* Names And Meaning

Kente strips are sewn together lengthways to purposely create definite patterns in the finished cloth from the way the weaver aligns the motifs in the individual strips. All *Kente* motifs have distinctive names that have philosophical meaning and also reflect in the names that are given to the *Kente* cloth that the weaver constructs from individual strips as illustrated in Plates 11 - 13. The motif in Plate 11 is named *Fa hia kotwere Agyeman* (literally means carry poverty to Agyeman or seek help from Agyeman) symbolizes hope, faith, sharing and benevolence.

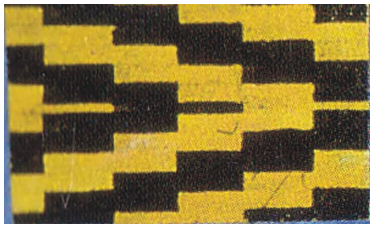

Plate 11 *Fa hia kotwere Agyeman*

The motif in Plate 12 is named *Nsoroma* (star) and symbolizes feminine aspects of life that means faithfulness and affection.

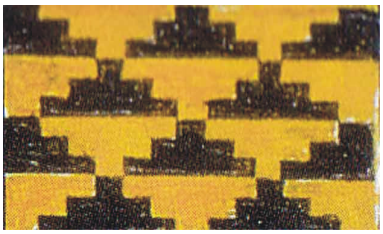

Plate 12 *Nsoroma*

The motif in Plate 13 is named *Sika futuro* (gold dust). It symbolizes wealth, royalty, elegance, spiritual purity and honourable achievement.

Plate 13 *Sika futoro*

Plate 14 shows *Adwini asa* (the end of design) motif, which symbolizes royalty, elegance, creative ingenuity, excellence, wealth, perfection, and superior craftsmanship.

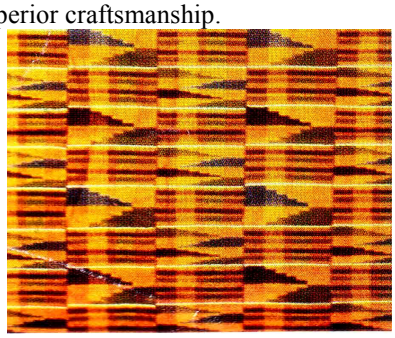

Plate 14 *Adwini asa*

5.1 Innovations in *Kente* weaving

Innovations in contemporary *Kente* weaving include interesting derivatives of original designs to document and commemorate historic national events, outstanding achievements of personalities, and other socio-economic developments. The new designs are also given names that reflect the motive or philosophy behind them. Typical examples are *Kuffuor a te Ghana a nim* (Ex-President John Agyekum Kuffuor has made Ghana proud) in honour of former President Kuffuor's development efforts in Ghana. Similarly, political, social, economic and religious developments in Ghana also inspire the creation of new *Kente* cloth designs, which are also named accordingly (Acheampong, 2012).

Kente weaving is being influenced by tourism so bookmarkers, banners, tapestry and other functional and decorative products can be found on the Ghanaian market and also internationally. The study of *Kente* weaving as a school art has also broken the strict traditional gender rules that bar women from weaving *Kente* because both male and female students have to satisfy the same course requirements. This, however, has not eroded the authenticity of the *Kente* cloth, which is the preserve of the master weavers of Bonwire, Adanwomase and other communities in Ashanti Region in particular.

6. Data collection

Data for this qualitative study were gathered through direct observation of indigenous Ghanaian *Kente* weaving processes at Bonwire and Adanwomase in Ashanti Region, interview of master weavers, and study of old and newer versions of Asante *Kente* designs. The next stage was adoption of a quasi-experimental drafting of selected *Kente* motifs to demonstrate the possibility of adapting this Ghanaian cultural exemplar of indigenous creativity and technology as a tool to facilitate quality teaching and learning of textile design in higher education. The population for this study comprised 148 Industrial Art students of Kwame Nkrumah University of Science and Technology (KNUST) whose semester project for course IAT 152 Introduction to Weaving Techniques was to draft a selected *Kente* design and weave a *Kente* stole based on that design. This foundation class comprised students who had background knowledge in textiles from Senior High School and those who had prior learning in other Visual Arts subjects but not textiles.

As Adekeye (2008) indicates, classroom use of instructional materials has enormous benefits for teaching and learning at all levels because they provide interesting and compelling platforms for conveying information that enhances conceptualization and understanding in different ways; and a sound basis on which concepts and ideas can be concretized. Instructional materials also simplify the teaching-learning process and facilitate learning and understanding of content by adding elements of reality that attract attention, develop interest, and adjust the learning climate towards promoting acceptance of an idea (Abdelraheem & Al-Rabane, 2005).

Instructional media that assisted the teaching-learning process were assorted strips of male and female *Kente* cloths and the prototype draft of *Kente* motifs illustrated in Figs. 2 and 3, which enabled the students to

visualize design concepts and the structural patterns that make up a variety of *Kente* cloth designs, including what is shown in Plate 1. These resources were used with the understanding that involvement of the learner in relevant experiences which appeal to the senses is a vital part of the communication process that results in greater interest, correct interpretation, clear understanding and retention of what is learned (Farrant, 1996). By adopting the media method of teaching art that focuses on building knowledge through techniques and experimentation (Campbell, 2012), the class of 148 students were able to critically examine different *Kente* fabrics and discussed the texture, colour scheme, constituent motifs in the patterns, and other characteristics of the different samples, which made it easy for them to ask and answer questions on the elements and principles of design and how this knowledge applies in *Kente* weaving.

The ensuing discussions touched on the names of *Kente* designs and its philosophy, and the distinctive patterns that are visually discernible from the constructed cloth after individual strips have been sewn together. This knowledge platform enabled assessment of each student's level of comprehension of the principles of design and to also ascertain from them how these principles were applied in their areas of prior learning as individuals and small groups. They were also asked to examine critically and familiarize with the character of the different samples of *Kente* fabrics in order for them to develop a deeper understanding of the placement of the motifs in the overall design evident in those fabrics. Complex motifs that came up for detailed discussion included *Nkyɛmfrɛ* and *Fa hia kotwere Agyeman* (Fig. 2: top left and right). Using the two motifs as examples of *Kente* designs that incorporates 'turning point' in the design, reference was made to the drafts of each motif and how *Kente* weavers achieve that feat.

Identifying the two motifs in the fabrics and their representation in Figs. 2 and 3, 'turning point' was explained as where the weaver reverses the motif by picking out two coloured weft yarns on depressing the design treadle with the hand, inserting a white pick from the left, bringing it to the mid-point and then out again. He then inserts a black pick from the mid-point to the end to complete one pick, then effects beat-up to push the pick to the fell of the cloth and in return, creates a counter-shed, and thus repeats the process to complete the next pick. To achieve the angular diagonal pattern in *Nkyɛmfrɛ*, the weaver reduces the distance of each successive pick after each shed and counter-sheds to build up the motif to a step where a 'turning point' shows in the pattern. The draft instructional resource came in handy to enable the students' compare the angular pattern on point paper to the motifs in the fabric and describe the distinctive features in both formats.

The *Kente* motifs and structural patterns identified in the samples offered opportunity to discuss the concept and process of drafting, which many textiles students perceive as a 'difficult to learn' topic in textile design. At this stage, the students were introduced to laminated sheets of draft *Kente* motifs such as seen in Figs 2 and 3 which they were allowed to study carefully in groups for a while. The ensuing discussion focused on mainly identifying those draft motifs in the patterns in the sample *Kente* fabrics to induce the students communicate their views and ask questions. Issues that emerged from the discussion turned the students' attention to field notes made on an earlier trip to observe *Kente* weavers at Bonwire and Adanwomase and to observe the weaving processes and interact with them.

The fact that *Kente* weaving involves no drafting yet generates highly creative designs on the traditional narrow loom came up very strongly and enabled in-depth discussion of how abstract ideas could be expressed as a tangible structure on point paper. The scenario offered opportunity to explain why it was important to produce the experiment drafts and the need for selecting to work with complex motifs. The step-by-step process of drafting those motifs was explained to demonstrate accurately how to arrive at a draft on point paper, its significant use as visual reference resource to enable them understand how draft is interpreted in tie-up and weaving of a designed fabric on the broadloom.

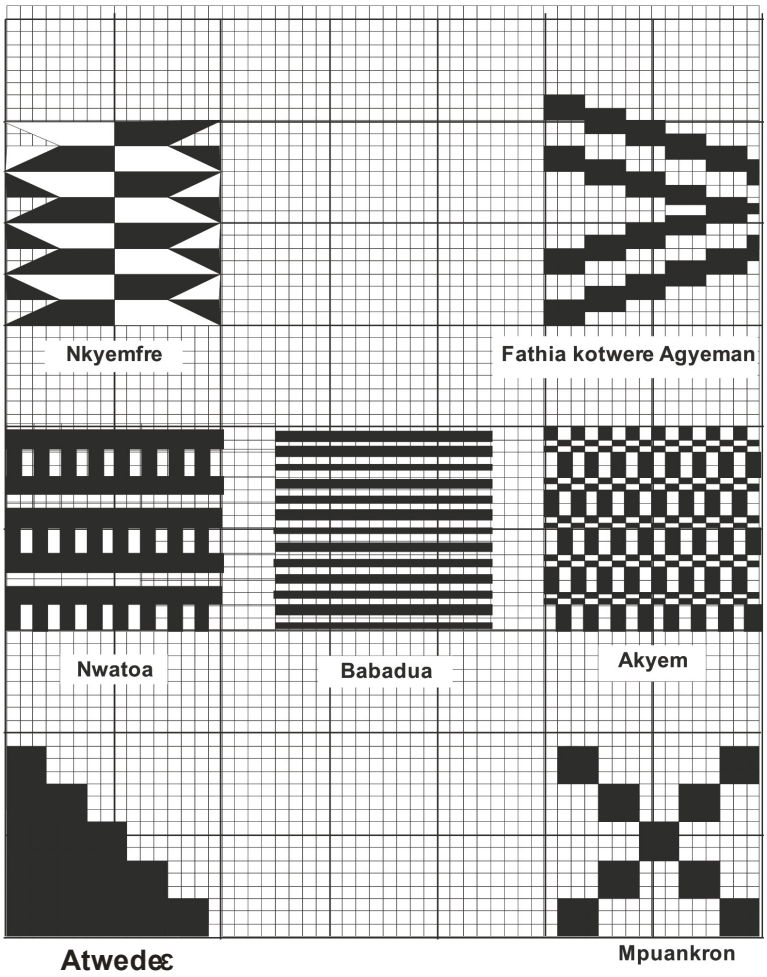

Figure 2 Graphical representations of selected *Kente* motifs

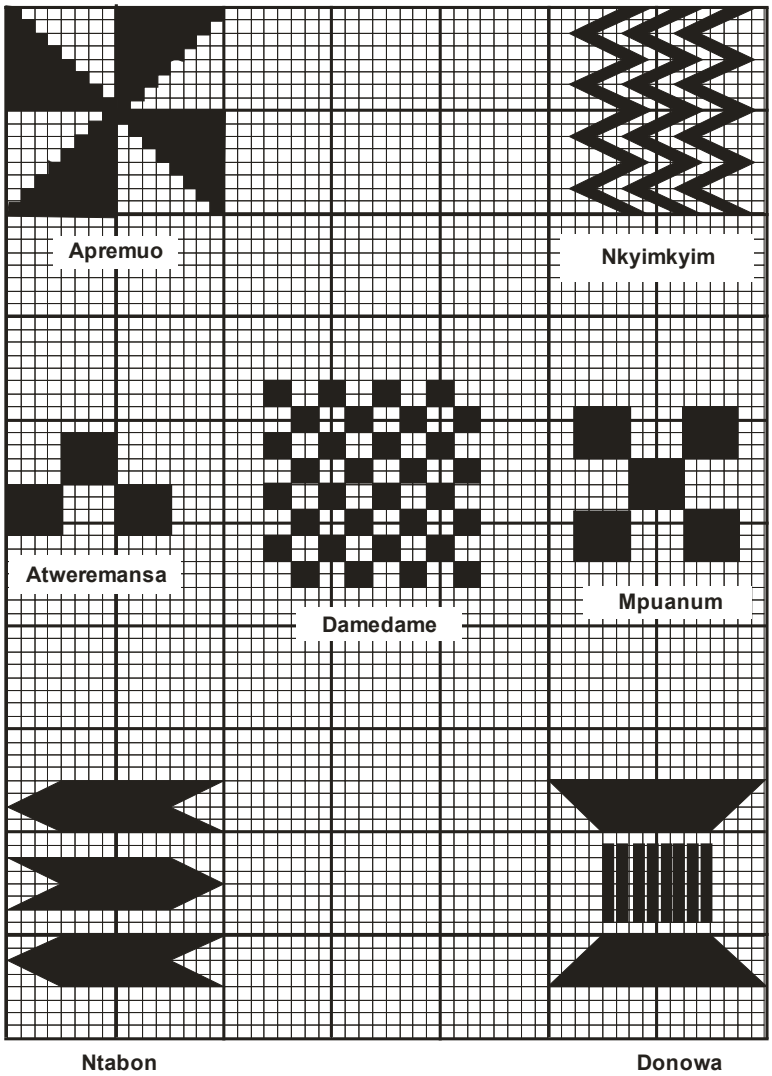

Figure 3 Graphical representations of selected *Kente* motifs

Using Fig. 4 to illustrate two repeats of *Kente* draft and the corresponding heddling order where each row represents a shaft (numbered from bottom up), the step-by-step process of drafting motifs was explained to enable the students conceptualize and understand the 1-2-1; 4-3-4 heddling order in *Kente* weaving which is explained as follows: 1st end goes through heald on shaft 1, 2nd end goes through heald on shaft 2, 3rd end goes through heald on shaft 1, 4th end goes through heald on shaft 4, 5th end goes through heald on shaft 3, and 6th end through heald on shaft 4 to complete one repeat of heddling. The same process is repeated until all the ends are heddled through the eyes of the healds (heddling).

			X		X				X		X
				X						X	
	X						X				
X		X				X		X			
1	**2**	**1**	**4**	**3**	**4**	**1**	**2**	**1**	**4**	**3**	**4**

Shaft 4
Shaft 3
Shaft 2
Shaft 1

Figure 4 *Kente* draft

7. Results and Discussions

As an indigenous craft, acquiring the skill of *Kente* weaving is done through long years of apprenticeship and constant practice under a master craftsman because no system of formal education exists for training professional *Kente* weavers (Asamoah-Yaw, 1994; Badoe, 2005). On the other hand, higher education in textiles specifies delivery of the Visual Arts curriculum via theory and practical lessons and assigning of class exercises that test understanding of what is taught (CRDD 2010). Drafting prior to weaving also contradicts the traditional way of cloth weaving in terms of the requirement to translate inert ideas that come to mind as conceptualized designs that can be visualized and reduced to a graphic image on point paper. Reducing *Kente* weaving to the level of an academic discipline therefore requires in-depth understanding of the intricate processes and the technical competence to successfully adapt the broadloom for weaving broader pieces of *Kente* fabric instead of narrow strips that the weaver has to sew together to construct a cloth.

Although weaving as a school subject is taught under the section on traditional cloth weaving, effective teaching and learning of weaving ought to be done via the appropriate narrow loom and its accessories. However, the traditional *Kente* loom is not produced and sold on the open market; traditionally, looms are specially made for a weaver or he inherits a loom from family members (Asamoah-Yaw, 1994). There does not seem to be trained technicians to service traditional looms, which probably explains why Ghana Education Service only supplies broadlooms to support the teaching and learning of weaving (Osei, 2012). Perhaps the few schools that have traditional looms but do not use them for the intended purpose (Danso-Sintim, 2009) are hindered by the absence of *Kente* weavers in their communities. While these may offer sufficient grounds for teachers not to teach weaving, art education in Senior High Schools have problems accessing adequate levels of logistics and institutional support to implement the curriculum, including funding for fieldtrips to acquire relevant aesthetic experiences from community resources (Owusu-Afriyie, 2009; Agbenatoe, 2011; Evans-Solomon & Opoku-Asare, 2011; Osei-Mensah, 2012; Opoku-Asare et al, 2014). Using *Kente* as instructional resource to ensure effective teaching and learning of weaving is an appropriate means to counter the challenges involved in providing the high quality knowledge and skills required for national development.

The fact that the *Kente* fabric embodies numerous intricate and interesting motifs makes this culturally significant symbol of indigenous creativity the most appropriate artefact to facilitate quality instruction in textile design.

8. Conclusion

This Year One class in *Kente* weaving lays the needed foundation for textiles students to assimilate the step-by-step process of breaking a design into modules that can be learned easily and represented as drafts on point paper to indicate accurately, the appropriate tie-up arrangement required to guide weaving. The teaching of design, draft and tie-up arrangement as part of textiles designing and fabric structure cannot be taught without recourse to the *Kente* fabric itself. Thus, utilizing samples of authentic *Kente* fabrics as instructional resource was therefore the most appropriate means to enable visualization of the object of the lesson and satisfying the requirements of the textiles syllabus even though the most appropriate loom was not accessible for the project. The semester's objectives could not have been achieved without the out-of-the-classroom interaction with *Kente* weavers, which enabled collection of a variety of *Kente* fabrics and documentation of the indigenous weaving processes as digital photographic and video format to aid independent learning over a long time.

The *Kente* samples facilitated firsthand experience of authentic *Kente* cloth, enabled physical examination and analysis of the characteristics of the fabric, and the variety of motifs, patterns, names and philosophy of different *Kente* cloths. This laid the foundation for the students to appreciate traditional weaving and a means to trace out the structure of *Kente* motifs and the patterns that emerge when the weaver sews strips of *Kente* fabric of a particular design together to construct a male or female cloth. This knowledge platform enabled understanding of the issues involved and aided the drafting process and comprehension of how inert ideas could be interpreted on point paper to satisfy textile design. The experimental draft of *Kente* motifs also provided opportunity for the students to compare the structure of the visible motifs and patterns in the sample *Kente* fabrics with the structure of those same motifs presented in graphical format to enable them appreciate indigenous creativity and the relevance of this cultural heritage to textiles design education.

In the experiment, all 148 students were able to draft a choice *Kente* design and produce a stole each. It needs emphasizing that a mixed class of students with different backgrounds in art; 28 or 18.9% of them had ever done any weaving before and the 120 or 81% had no knowledge about weaving at all constituted the population engaged in the study. Nonetheless, adopting the observation, demonstration, discussion and experiential approaches to teaching the subject made it easy for each of the 148 students to draft selected *Kente* designs on point paper, interpret those ideas in the heddling, reeding, and tie-up that constitute warp preparation processes. They successfully wove a *Kente* stole each measuring 10cm by 180cm on the broadloom to satisfy the requirements of course *IAT 152 Introduction to Weaving Techniques* within the semester.

Preserving the Asante traditional cultural heritage of *Kente* weaving by integrating it into the school

textiles programme and also merging this tradition with broadloom weaving approaches can encourage capacity building through research by textiles staff and students. It is culturally right and appropriate that the heritage of indigenous creativity and examples of *Kente* weaving be studied through collaboration and cooperation between higher education and indigenous artists to ensure quality of visual arts education in Ghana.

The uniqueness of Asante *Kente* as a cultural heritage lies in the generational protection it has enjoyed over centuries. The original designs, names and philosophical content have been preserved and new designs are evolving. *Kente* has defied modern technological advancements in the textiles industry to the extent that Asante *Kente* cannot be produced in commercial quantities with the use of sophisticated power looms. Asante *Kente* cloth enjoys so much prestige worldwide as a symbol of Ghanaian culture and identity that it has become the ceremonial 'gift' to give to state visitors and the cloth for kings, chiefs, politicians, and people of high standing in society. The clergy in Ghana have their vestments adorned with *Kente* strips and many individuals use *Kente* cloth at durbars, state functions, special ceremonies and church services (Ofori-Ansah, 2009).

Because authentic Asante *Kente* cloth is hand woven by indigenous people on narrow traditional loom with the indigenous warp preparatory accessories, production of the *Kente* cloth takes a long time, which makes it expensive. However, contact between traditional weavers and practitioners of school art as a result of research into indigenous art forms has made it possible for textiles students to weave modernized versions of *Kente* on the broadloom as part of the requirements of the school syllabus. This collaboration has also enabled the weavers outside academia to infuse contemporary designs into *Kente* to the extent that new versions of authentic designs are being woven and given names that philosophically intertwine with development, politics, and national events.

As this study shows, *Kente* as an indigenous artefact is a sustainable means of satisfying objectives specified for the principles and practice of design, draft and tie-up within the textiles syllabi for secondary and higher art education institutions. The fact that *Kente* can be plotted on point paper offers great opportunity for simplifying and demystifying textile designing, drafting of designs on point paper, and tie-up arrangements which are classified as 'difficult to teach' and 'difficult to learn' aspects of the textiles curriculum. *Kente* is a rare instructional resource that adds quality to the teaching and learning of the elements and principles of design, colour symbolism, philosophy of design and weaving on the loom in particular and should be adopted by art educators in schools, colleges and universities.

Higher education in textiles curriculum mandates the theory-to-practice teaching of design, draft and tie-up arrangement as part of textile design and fabric structure. Incorporating *Kente* weaving in the school syllabus provides a sustainable means to preserve and transmit indigenous culture and infuse heritage studies into contemporary education. *Kente* provided the needed foundation for students to assimilate the step-by-step process of breaking a design into modules that textiles students' can easily learn to draft on point paper and also indicate the appropriate tie-up arrangement. As an indigenous craft, acquiring the skill of *Kente* weaving is done through apprenticeship and constant practice under a master craftsman. No system of formal education exists for training professional *Kente* weavers (Asamoah-Yaw, 1994; Badoe, 2005). In direct contrast to this informal education system, textiles students are required to translate the conceptualized design into graphical format on point paper to guide weaving of *Kente* on the broadloom instead of the traditional loom that generates narrow strips.

Reducing *Kente* weaving to the level of academic studio art requires in-depth understanding of the intricate processes and relevant technical competence to successfully adapt the broadloom for weaving broader width of *Kente* fabric. Areas of further research interest to this study include weaving traditions in Ghana, and a comparative analysis of motifs, designs and character of Asante *Kente* and Ewe Kete of Ashanti and Volta Regions of Ghana respectively.

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