

# Creative Design and Working Drawing: Challenges of Fashion Design and Textile Students in Technical Universities in Ghana

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## Abstract

Creativity is an integral and essential part of the fashion design process. Without creativity in design, there is no potential for innovation, which is where creative ideas are applied and transformed into commercial value. The purpose of the current study was sought to identify the challenges student face in Creative Design and Working Drawing and suggest measures that can make the teaching and learning of the course meaningful and effective. The descriptive survey research design was employed as the research design for the study. Questionnaires were the primary data collection instrument. The target population was all students at Ho Technical University. Using purposive sampling technique, a total of 122 students were sampled to participate in the study. The study found that students at the Technical university level find it difficult to perceive the main features of the source of inspiration and immediately link those features to design elements in the fashion domain. It was also discovered that the study found that students have challenges regarding the originality of creative designs as they emerge and how they can enhance creativity during the actual process of apparel design. It was observed that the difficulties encountered by the students relative to their creative design and drawing competencies could be attributed to the unavailability of modern studios with the state-of-the-art architecture that can support practical training of the course. Hence imperative that infrastructural improvements remain critical to the sustainability of the Fashion departments.

**Keywords:** Creativity, Creative Process, apparel design

**DOI:** 10.7176/ADS/81-02

**Publication date:** March 31<sup>st</sup> 2020

## Introduction

Creativity is an integral and essential part of the fashion design process. Without creativity in design, there is no potential for innovation, which is where creative ideas are applied and transformed into commercial value (Munford et al. 2012). The fashion and textile industry embroils significant creativity and innovation, satisfying the criteria of both aesthetic design and utility to consumers. Fashion designs may also be manifestations of art, culture and symbolism. According to WIPO (2015), globally, fashion is a multi-billion-dollar industry and creates jobs for designers, models, beauticians and make-up artists, producers, textile designers, manufacturers, event organisers and so on. It is further inherently connected to other creative industries, including the arts, film and music. Thus, the industry offers exciting and rewarding career opportunities with ever-increasing demands for skilled professionals.

The fashion and textile industry is an attractive sector that is poised for growth. The industry itself continues to be an incredibly dynamic and vital sector of the economy, providing enormous scope for well-qualified graduates to make their mark (Yates, 2011). The industry also enjoys significant strengths and advantages, such as availability of raw materials, labour, domestic market and supportive government policies. Advances in technology, combined with the ever-evolving needed skilled manpower, are having a substantial impact on the textile and clothing sector. The importance of innovation-driven textile programmes research and development are essential elements for the present and future developments in the industry.

In response to the expanding demand for creative fashion and textile products, many technical, vocational and other institutions have enriched their curriculum to train skilled and creative graduates to lead the industry since an effective design results from a well-developed idea or theme. Creativity is a very emotive subject in fashion, and the fashion industry itself cannot agree on what it is, or if there can be too much of it (Wood, 2002). The foundation of Design and Technology is driven by the inspiration to improve as well as the ability to create innovative products thus the importance to nurture creativity in students. Consequently, creative design as a course is pivotal in the whole fashion and textile enterprise as it integrates market and trend research, creativity and innovation skills to create new marketable products.

As part of preparing the next generation of creative fashion and textile professionals, all fashion and textile departments of the Technical Universities in Ghana offer a course in Creative Design and Working Drawing. The overarching theme of the course is to imbue fashion and textile students with the elements and principles of design as well as drawing tools. However, the questions that beg for answers include how creativity can be taught, how can a student be taught to design a product for the future when that future has not yet arrived? These are some of the challenges both students, and their teachers face relative to teaching creative design and working drawing in

the classroom.

Notwithstanding the increasing importance of creative design, many fashion and textile students come to offer the course with negative attitudes and which lead to poor performance. In most cases, creative design courses are not well resourced with implements and teachers which all militate against students' success in the field. Using the Fashion Design and Textile Department of Ho Technical University as a case study, the current study sought to identify the challenges student face in Creative Design and Working Drawing and suggest measures that can make the teaching and learning of the course meaningful and effective.

The Department of Fashion Design and Textiles currently offers a 3-year programme leading to the award of the Higher National Diploma (HND). It also offers a 2-year non-tertiary Advanced Fashion programme. The courses offered in the Department of Fashion Design and Textiles aims at preparing students to become fashion and textile designers, fashion writers and teachers of fashion. The training is also geared towards producing independent entrepreneurs who can establish small-scale businesses for a start. However, attitudes associated with Creative Design and Working drawing appear to affect student's performance in the subject.

## Literature Review

### 2.1 Creativity

Creativity is rudimentary to all academic disciplines and educational activities, not just fashion (Kampylis & Berki 2014; Massaro et al. 2012; Baer, 2010). Creativity is a value that is exceedingly esteemed; nonetheless, it is not always well understood (Beveridge, 2004). Studies have demonstrated that creative people are more spontaneous, expressive, and less controlled or reserved. A common misunderstanding equates creativity with originality (Ferrari et al. 2009; Beghetto & Kaufman, 2007). In reality, there are very few absolutely original ideas. Most of what appears to be novel are merely the bringing together of previously existing ideas in an innovative way. Hence creativity is the ability to perceive connections and relations where others have not. The capability to reason in spontaneous, non-verbal, and graphic terms has been proven to enhance creativity in all disciplines.

Gruber & Wallace (1999) defines creativity as the application of knowledge and skills in new ways to achieve a valued goal. In this formulation, creativity is not an innate endowment, a once-and-for-all fixed entity; it is incremental and malleable and can be learned. Thus, in order to realise the creative potential of all individuals and to boost competitiveness in the knowledge economy, we must make radical changes to the education system (Kidd & Workman, 1999). The fact that creative thinking is grounded on knowledge of prior work in one's field is the justification for teaching the history and fundamentals of a particular field as a resource for future research and creative work. It is possible to develop one's ability to think intuitively and creatively (Aspelund, 2010).

Rather than limiting creativity to the acquisition of knowledge in arts subjects, the 'creative self' needs to be developed across curricula (Nagai et al. 2009) in order to produce motivated 'can do' individuals, promote social and cultural development through collaborative practices and teamwork, and encourage an entrepreneurial culture (Catanach et al. 2014; Pedgley, 2007; Craft, 2001). Teaching creative apparel design is a focus comprehensively covered in proceedings for the International Textile and Apparel Association Annual meetings. Murray (2005) conducted a qualitative study examining the creative process experienced by fashion design students and discovered that the students' creative process paralleled the steps defined in the literature that describes the creative process.

Rudd & Riley (2004) described a course in which they focused on a variety of fashion illustration techniques to generate creative design ideas. Similarly, Lee (2005) explained a process of generating creative design ideas through integrating a systematic and holistic approach to collection development. Kim & Beck (2003) worked with students who chose to adopt the Lamb & Kallal (1992) apparel design framework to follow while creating experimental fashion designs. Student evaluation of the process revealed support of the framework as an effective guide in the creative development of fashion design ideas.

### 2.2 Factors of creativity in design

The current debate on design creativity centres on how the creativity of individuals, particularly design students, can be assessed. Guilford (1981) outlined four core features in measuring creativity when practised. These comprise originality or innovation; elaboration; fluency and flexibility. In design, innovation and elaboration are viewed as two vital components used to measure the creativity of any design output. Since every design problem is unique, innovation and the search for originality are indispensable features describing design (Kelley & Kelley, 2013; Sternberg, 2012; Guilford (1981). Besides, the quality of a design product has much to do with the capacity to advance it up to a required level of detail. Conversely, flexibility and fluency are two indispensable characteristics of a creative design process.

A creative process encompasses the skill to define an issue from unconventional viewpoints, and the exploration of several alternative solutions that varies from familiar ones (Osburn & Munford, 2006). Thus the four factors advocated by Guilford are noteworthy and often considered in valuations of individual creativity in a multiplicity of fields concerned with problem-solving. Granting they are indispensable; these factors are

inadequate in assessing creativity in fashion terms. One unique reason is the intricacy and peculiarity of design problems, which embroils a large number of dynamics (Robinson, 2011; Warr & O'Neill, 2005).

Besides Guildford's (1981) factors, seven other pertinent elements have been considered by Kreidler & Casakin, (2009) and Casakin and Kreidler (2005) These elements deal with consideration of problem constraints; functionality of the design product; value of the design product; aesthetics of the design product; productivity in the design process; practicality of the design product; and relation of the design to the physical context.

### 2.3 The Creative Process

Problem-solving is the common aspect in creative any process which is also the very basics of design. The creative process is described as a succession of thoughts and actions leading to original and appropriate productions (Lubart et al., 2015). The creative process may be described at two levels: a macro level, highlighting the phases of the creative process, and a micro level, clarifying the mechanisms underlying the creative process, such as divergent thinking or convergent thinking (Botella et al., 2016).

However, basic five-step processes have been outlined that are frequently used in problem-solving as well as for design problems. Resolving a design problem is a contingent procedure, and the process is subject to unanticipated obstacles and thus changes as it develops (Botella et al. 2017; Botella & Lubart, 2015; Munford et al. 2012). The five stages employed for solving design problems include the definition of the problem; the gathering of relevant statistics; generating multiple solutions; analysing and selecting a solution and testing and implementing the solution. The first phase in the design process is the problem definition. This characterisation commonly comprises a catalogue of requirements and information regarding a product or service among others. In the next step, relevant information for the design of the product or service is obtained.

Once the specifics of the design are clearly identified, multiple alternatives are generated to achieve the goals and the requirements of the design. The analysis phase allows a complete study of the solutions and results in the identification of the final design that best fits the product requirements. When solving a design problem, there may a need to go back to a previous step. The solution chosen may prove unworkable for any number of reasons and may require redefining the problem, collecting more information, or generating different solutions. In psychophysiological terms, the creative process can be understood as the production of something new from existing knowledge, experience, memory, observation, everything that the brain stored up to that moment (Erlbaum, 1992).

### 2.4 Creative Process in Design

Principally the design process is a problem-solving procedure, and the designer, just like the laboratory scientist, will be most effective if the problem is approached systematically. Effective fine artists commonly follow similar patterns in developing their creative ideas, though they may be less conscious of the process they are following (Gürçüm, 2017; Rauth et al. 2010; Warr & O'Neill, 2005). Initially, the designer is inclined to experiment in a rather arbitrary manner, gathering ideas and skills through reading or experimentation. Progressively a particular issue or question will become the focus of experimentation. The subsequent phase is to formulate a tentative problem and begin to explore that topic.

Eventually, the problem is refined into a research question or design problem that the person will then pursue through repeated experimentation. In design or fine arts production, this takes the form of works created in a series. Each effort solves specific problems and suggests issues be dealt with in the next work (or experiment). Working in a series is the most critical stage of the design process. The capacity to experiment, to value and learn from errors, and build on the experience realised is the hallmark of a truly successful and creative person, whatever the field.

Visual awareness and data gathering are necessary tools for creativity, but they are not sufficient for all the times. These notions are necessary for problem-solving and necessary for us to make sense of the world that we live in and make sense of the experiences that we had. However, we also need to enhance and encourage creativity (Erlbaum, 1992). A suitable ground for fashion design students must be found for the act of creation. They must both learn to collect knowledge and to develop their level of creativity. It is a fact that human beings are endowed with different degrees of creative powers. Nobody is equal to another. However, it is also a fact that every person can find a proper way to develop his/her talent. Creativity is a state of mind to be nurtured and exercised. Dealing with various concepts and ideas in a design field is the best way to enforce the creative activity of the average fashion design student.

Sketching, finding new compositions and alternatives, including various concepts related to the current problem, are direct ways leading to creative designs. In other words, the first possible design is never enough, but one has to continue searching for other designs. Also, focusing on one point of view must be eliminated. Such an act will only limit the imagination and prevent the student from looking at that problem from different viewpoints. All kinds of limits upon student's imagination must be eliminated (Erlbaum, 1992).

## 2.5 Framework of the fashion design process in apparel design

The Creative Design course occupies a particular position in the Fashion Design Process, which, to some extent, can be taken to represent what is covered under most courses in the Fashion Design and Textile programme. Researchers and designers have suggested versions of this process with some serving as blueprints for the production of different types of garments. Thus, several design process frameworks of various scopes have been examined in the field of apparel design. For instance, Watkins (1988) advocated for a seven design process model revised from Koberg & Bagnall (1981) which includes accept, analyse, define, ideate, select, implement, and evaluate.

On the other hand, Lamb & Kallal (1992) recommended a more wide-ranging design framework for apparel design students who take creative design and working drawing course. This framework was advanced from the amalgamation of features from other design process models supporting the functional-expressive-aesthetic model. Labat & Sokolowski (1999) revised the procedures employed in different design domains and outlined three basic stages of the fundamental design process. These comprise problem definition and research, creative exploration, and implementation. Earlier suggested that design process models afford apparel design students with a summary of the complete design process, assisting them to think through important standards as they develop design concepts, and offer a guide for considering minor goals throughout each phase.

Generally, the Creative Design course encompasses the first three steps: the brief, research and design development, and in particular, the third. Under design development, students are expected to apply knowledge on elements and principles of design to design garments and accessories through sketching, illustrations, technical drawings or digital designs, among others (Burke, 2011).

Briefs are usually provided by the teacher and students select and develop their version of the design process for the task: develop a design for a garment or collection.

The work is usually presented on platforms known as design boards (Burke, 2011), and mood/theme/concept board (Mazumder, 2011). There are also colour/fabric, styling and eventually, presentation boards.

- *The mood board/theme/ concept board tells the design story.* It is an inspiration board for the designer (Mazumder 2011). Designers collect a variety of photographic images or anything that sparks creativity and imagination as appropriate inspiration material. Concepts or themes related to the inspirational source are selected. Whiles Bradley (2010) describes a design concept as the idea behind the design, Eckert (1997) explains themes as ideas tying together a range of garments in the collection to be designed and are expressed by sketches of garments, colour palettes and some topical images which keep the designer focused, throughout the development process, on the collection. A colour board is created separately or as part of the mood board.
- *Colour/Fabric Board:* (if the colour is not incorporated in the mood board), is where the colours and fabrics in tune with the design themes are presented with colour and fabric swatches (Burke, 2011). The fabric and colour selection is also based on the season and the look of the garment. Fabrics can be of different weaves, printed, woven or knitted depending on design themes (Mazumder 2011).
- *Style Board:* Burke (2011) describes it as presenting in detail a selection of styles based on a specific category of garments and a 'cohesive collection': a range of garments connected by a theme or target market. This board could also feature flats (working drawings-front and back), fashion illustrations and colour palettes depicting the print. The collection: the theme and the mood board will inspire colour, fabrics, prints and silhouette.
- *Presentation Boards:* this is more like a storyboard where the student designer organises the research (inspirational) and design concepts to present a specific theme using pictures and objects such as presented on the preceding design boards (Burke, 2011). In other words, it presents the design effort so far, as in a story, chapter by chapter, to tell a clear, cohesive visual story with such an attractive layout that would lead the viewer to appreciate the direction the design theme. To achieve this, the student requires a good level of mastery in combining the design elements and principles with working in harmony with the design concept. It is when this synergy is realised that his/her concept is translated into the design.

## 2.6 Elements and Principles of Creative Design

The elements and principles of design are sometimes described as the "language" of art; the items serve as the visual pieces, symbols, or structural components (e.g. colour, line, shape and form, space, value, texture, pattern), whereas the principles are the organizational components (e.g., balance, repetition, emphasis, unity and rhythm contrast, harmony, proportion, gradation, scale) that guide artists to arrange expressive features into a structural whole or a composition in order to achieve specific effects with media. Design is both a noun and a verb as it defines the thing created as well as the process of creating it. A design is fashioned with elements such as line, shape, colour, value and texture that are put together using principles – unity, variety, emphasis, balance and scale (Tersiisky, 2004).

Even though design can be divided into elements and principles; it is only when these elements and principles

work together to form a whole that a design is considered successful. Design, like writing, involves problem-solving, planning and organising. In verbal communication, we choose which words to use and how to put them together to best communicate our thoughts and ideas. In visual communication, we choose which elements to use and how to put them together to best communicate our thoughts and ideas (Tersiisky, 2004).

## 2.6 Student's Attitude towards Creative Design and Working Drawing

Fashion Design as a science of art is one of the pivots in the Technical Universities curriculum and, students' success in the programme invariably depend on mastery in, among other courses, creative design and working drawing. The Department of Fashion Design and Textiles of Ho Polytechnic runs Advanced Fashion 1 and two programmes which are non-tertiary alongside the traditional Higher National Diploma (HND). Plans are afoot to mount a Bachelor of Technology (BTech) Fashion Design and Textile programme. Among other requirements for graduation, each student is expected to design, produce and mount garments with accessories in year 2 and year 3, for both Advanced Fashion and HND programmes respectively. It is mostly during these periods that lecturers supervising their projects works feel the reality of students' challenges with the course.

Black & Cloud (2009) suggested, among other things, that current trends in the industry demand of fashion designers to enhance and advance their design and creative skills as dressmakers. Kozar & Connell (2014) also maintain that there are concerns regarding fashion designers' professional development relative to prevailing trends in apparel production. The study of fashion involves the pursuit of truth, a process that instils diligent artistic work and creativity in learners. Fashion learning develops the creativity habits in students that are transferable to other aspects in life. Such habits include non-reliance on superstition, the use of critical thinking and reverence for other peoples' feelings.

Bye (2010) infer that learners' achievement is affected by favourable attitudes towards oneself and the subject. A learner with positive self-concept of ability devotes more time and dynamism in the subject, thus acquiring mastery of subject resulting in success. A study on the attitudes of the students towards Mathematics has shown that achievement in Mathematics, or any other subject, is determined by one's attitude towards the subject rather than one's attitudes being determined by one's achievement in the subject (Maritim, 1979).

The theoretical framework based on Ajzen and Fishbein's (1975 theory of reasoned action) assumes that the beliefs represent the information that is known by an individual about the subject. Thus an individual's attitude towards any subject is a function of that person's beliefs about that object as well as the implicit evaluative responses associated with those beliefs. It could, therefore, be argued that beliefs affect attitudes, and these attitudes affect the intentions and behaviours. The enhancement of positive self-concept of the ability of a student in creative design and the working drawing will possibly, in turn, enhance the students' performance by fostering the development of favourable attitudes towards the art subject.

Again, Deboer (1987) points out that a student with positive self-concept of ability in a subject has a higher probability of developing favourable attitudes towards that subject, a necessary condition for success in that area. Deboer further argues that as a result of this success, the student is reinforced further to continue performing well in the subject, possibly developing stronger favourable attitudes towards the subject, resulting in a vicious cycle.

Mwamwenda (1995) opines that a person's self-concept is a guide to their personality in terms of his or her feelings, attitudes, psychological health and the way he or she is likely to interact with others in and outside his or her environment. Mwamwenda also agrees that a student with a positive self-concept stands a better chance of performing better than a student who little or no confidence in his/her ability. Thus it can be argued that the enhancement of positive self-concept of the ability of a student in the art will possibly enhance the students' performance by fostering the development of favourable attitudes towards creative design and working drawing. However, Mwamwenda notes, care should be taken when interpreting the results of a relationship between achievement and attitudes. This is because low achievement does not necessarily mean the students have unfavourable attitudes, towards science or any other subject for that matter.

Although research has further shown that there is a positive correlation between attitudes and achievement; however, neither attitudes nor achievement is dependent on the other; instead they interact with each other complexly and unpredictably (Ajzen & Fishbein, 1975). Factors that influence students' attitudes towards a subject vary from one subject and or place to another. Furthermore, there are also other stronger predictor variables outside the school, which influence students' attitude towards a subject. These include parental influence and beliefs from one's culture (Muya, 2000). This may occur, for instance, when a parent or guardian directly or indirectly compels the ward to choose a particular programme of study for family prestige, succeed member in a family business or some other consideration.

A study was recently conducted by Obinnim and Pongo (2015) on the application of aspects of creative design and working drawing, specifically, the appropriate use of elements and principles of design for garment construction. The observation necessitated the study that dressmakers and tailors in the Ho municipality develop and construct garments with a concentration on the measurements to fit (not too tight, not too loose) the customer, to the neglect of the combination and effective use of the elements and principles of design in the process. The

result of this challenge was that garments produced by the dressmakers turned to show either over-elaborate, avoidance or misuse of the elements and principles of design, a situation the researchers wondered whether was deliberate or precipitated by the insufficient grasp of the concept at school.

The study discovered, among other things that, out of 100 respondents, a total of 82% had secondary/technical/vocational and tertiary education- levels at which the researchers noted, respondents should be able to apply the knowledge of the elements and principles of design in the industry. However, although 84% agreed the correct application of the concept in garment development (or design) and production was essential, the percentages of respondents who faced challenges applying both elements and principles, only elements and only principles of design, were 71%, 94% and 88% respectively.

The indication is that one cannot ignore the fact that these challenges could be a culmination of difficulties some of the respondents encountered during training in school. The purpose of this study is to, among other things, unravel the challenges students face with the Creative Design and Working Drawing course; challenges the researcher, in over four years of handling the course at the Advanced 1 and 2 levels (Non-Tertiary) and the HND level as a teaching assistant, has observed exist.

### Methodology

This study employed a descriptive survey design. Survey design is a type of research design that involves the collection and the analysis of a large amount of quantitative data from a sizeable population through the use of descriptive and inferential statistics (Creswell 2014). They are popular and authoritative research strategy, affording researchers more control over the research process. The target study population were students of the Department of Fashion Design and Textiles who are engaged in the teaching and learning of creative design and working drawing in Ho technical University. Consequently, the purposive sampling technique was used to select 122 students. According to Zhi (2014), purposive sampling is appropriate when the study aims to glean knowledge from targeted respondents deemed to have specific knowledge in the field of study.

### Discussions

The study was dominated by females (n=86, 97.7%) as compared to their male counterparts (Table I) and more than half (n=52, 59.1%) were third year (HND3) students whereas 19 (21.6%) were in their first year HND.

Table 1: Demography of respondents

Gender	<i>n</i>	%
Male	2	2.3
Female	86	97.7
<b>Total</b>	<b>88</b>	<b>100.0</b>
Academic Year		
HND 1	19	21.6
HND 3	52	59.1
Advanced	17	19.3
<b>Total</b>	<b>88</b>	<b>100.0</b>

Table 2 sought to assess the challenges students encounter coming up with creative designs. The students agreed strongly that the goal of a fashion designer is to create aesthetically pleasing garments by manipulating design elements is conditionally based on design principles. In Table II more than two-thirds (n=78, 88.6%) of the respondents strongly agreed with that assertion the goal of a fashion designer is to create aesthetically pleasing garments by manipulating design elements conditionally based on design principles. The item obtained the highest mean score of (M=4.83, ±SD=.572), which indicates that most of the students were in agreement with the assertion.

**Table 2: Challenges with Student's Creativity**

Item	Frequency (Percent)					$\mu$	$\pm SD$
	1	2	3	4	5		
The goal of a fashion designer is to create aesthetically pleasing garments by manipulating design elements conditionally based on design principles	1 (1.1)	-	2 (2.3)	7 (8.0)	78 (88.6)	4.83	.572
I have challenges in the changes of design elements in a clothing design process which are also affected by all other design variables.	18 (20.5)	23 (26.1)	21 (23.9)	11 (12.5)	14 (15.9)	2.77	1.353
It is difficult to perceive the main features of the source of inspiration, and immediately linked those features to design elements in the fashion domain	26 (29.5)	10 (11.4)	17 (19.3)	22 (25.0)	13 (14.8)	2.84	1.461
I have difficulties in capturing intriguing design elements and applying different design principles to them	24 (27.3)	22 (25.0)	19 (21.6)	13 (14.8)	10 (11.4)	2.58	1.337
I have difficulties regarding design elements and principles and how they are concurrently applied to clothing design and then changed as I develop design ideas.	22 (25.0)	10 (11.4)	25 (28.4)	17 (19.3)	14 (16.1)	2.87	1.388
Sometimes it is difficult to identify which types of elements or principles are being used because of their complex interaction within the design process	13 (14.8)	10 (11.4)	17 (19.3)	29 (33.0)	19 (21.6)	3.33	1.335

**Key: 1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=strongly agree**

Furthermore, challenges relative to changes in design elements in the clothing design process (Table II) which are also affected by all other design variables. Responses to that effect in Table II shows that the majority ( $n=23$ , 26.1%) of the respondents disagreed whereas 18 (20.5%) also disagreed strongly with the assertion. The mean statistics ( $M=2.77$ ,  $\pm SD=1.353$ ) of the student confirm that the students have challenges with noticing changes in design elements in the clothing design process.

Moreover, it could be observed from the responses that most of the students' responses were on the disagreement end of the scale regarding the assertion that they have difficulties in perceiving the main features of the source of inspiration and immediately link those features to design elements in the fashion domain ( $M=2.84$ ,  $\pm SD=1.461$ ). This gives the impression that the fashion students at the Technical university level find it difficult to perceive the main features of the source of inspiration and immediately link those features to design elements in the fashion domain.

Students disagreed that they have difficulties in capturing intriguing design elements and applying different design principles to them ( $M=2.58$ ,  $\pm SD=1.337$ ). This is evidenced by half ( $n=46$ , 52.3%) who were on the disagreement end of the scale. More so, the results further show that the students disagreed that they have difficulties regarding design elements and principles and how they are concurrently applied on a clothing design ( $M=2.87$ ,  $\pm SD=1.388$ ).

On the difficulty to identify which type of elements or principles are being used because of their complex interactions within the design process more than half ( $n=48$ , 54.6%) of the students were uncertain regarding the difficulty of dealing with the types of elements or principles that are to be used considering the complexities associated with the interactions within the design process ( $M=3.33$ ,  $\pm SD=.572$ ). Consistent with the works of Obinnin & Pongo (2015) the results of the study suggests that contrary to foreknowledge fashion students do not have problems with the application aspects of creative design particularly when it relates the adoption of appropriate elements and principles of design in garment construction.

**Table III Challenges with Students' Drawing**

Item	Frequency (Percent)					$\mu$	$\pm SD$
	1	2	3	4	5		
I have challenges on how an original creative design emerges and how to enhance creativity during the actual process of apparel design	21 (23.9)	8 (9.1)	18 (20.5)	29 (33.0)	12 (13.6)	3.03	1.393
When asked to describe how I draw/design and how to generate design ideas, I find it difficult	34 (38.6)	13 (14.8)	11 (12.5)	18 (20.5)	11 (12.5)	2.53	1.493
I have challenges in the formation of new design concepts which always requires me to break settled ways of looking at things, to 'come apart' with respect to them, before the formation of a new design concept	29 (33.0)	9 (10.2)	15 (17.0)	21 (23.9)	12 (13.6)	2.74	1.489
I have difficulties in developing and solving design problems as I work through the process	27 (30.7)	17 (19.3)	26 (29.5)	14 (15.9)	4 (4.5)	2.44	1.212
I lack the knowledge regarding the apparel design process, and this holds me back during the creative design and working for drawing class	27 (30.7)	12 (13.6)	22 (25)	19 (21.6)	7 (8.0)	2.62	1.340
The creative design and working drawing course rely mainly on trial-and-error practice and tends to work through the simple repetition of a series of design problems	16 (18.2)	6 (6.8)	20 (22.7)	17 (19.3)	26 (29.5)	3.36	1.463
No proper studio setting to practice	12 (13.6)	3 (3.4)	2 (2.3)	8 (9.1)	61 (69.3)	4.20	1.454

**1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=strongly agree**

Relative to the concerns with regards to fashion designers' professional development on prevailing trends in apparel production; the students were asked to give the extent of their agreement or otherwise on a series of questions on challenges they have in the drawing. The first question sought to assess their views on the challenges of how an original creative design emerges and how to enhance creativity during the actual process of apparel design. Summary of the responses revealed that the majority (n=41, 46.6%) of the students agreed that they have challenges on how an original creative design emerges and how to enhance creativity during the actual process of apparel design (M=3.03,  $\pm SD$ =1.393).

More so, the results show that the students disagreed they find it difficult to describe how they draw/design as well as how they generate design ideas (M=2.53,  $\pm SD$ =1.493) with about half of the students (n=47, 53.4%) disagreeing. Likewise, most of the students identified with the challenge in the formation of new design concepts which always requires students to break settled ways of looking at things, to come apart with respect to them, before the establishment of a new design concept (M=2.74,  $\pm SD$ =1.489).

Besides, the fashion students disagreed with the fact that they have challenges with developing and solving design problems as they work through the process (M=2.44,  $\pm SD$ =1.212). Meanwhile, they again denied the assertion that they lack the knowledge relative to the apparel design process as this holds them back during the creative design and working drawing class (M=2.62,  $\pm SD$ =1.340) as the majority of the students when asked disagreed (n=39, 44.3%).

However, the students agreed that (n=43, 48.9%) that the creative design and working drawing course relies mainly on trial-and-error practice and tend to work through the simple repetition of a series of design problems (M=3.36,  $\pm SD$ =1.463). It is also apparent the fashion department lacked proper studio setting to facilitate practice (n=69, 78.4%) of the students pointed out this as a challenge they face in their quest to master creative design and drawing (M=4.20,  $\pm SD$ =1.454).

## Conclusion

Overall, the study found that one of the major challenges of students had to do with difficulties in noticing changes in design elements in the clothing design process. Students find it difficult to perceive the main features of the source of inspiration and immediately link those features to design elements in the fashion domain. However, students do not have any challenge with concurrent application of design elements and principles on clothing design.

The study found that students have challenges regarding the originality of creative designs as they emerge and how they can enhance creativity during the actual process of apparel design. Students have difficulties when it comes to the formation of new design concepts, which always requires them to break settled ways of looking at things.



On the contrary, it emerged students do not have problems with developing and solving design problems as they work through the process, and also the students do not lack the knowledge relative to the apparel design process as it delays them during creative design and working for drawing classes.

Students during creative design and working drawing courses; rely on trial and error practices and tend to work through the simple repetition of a series of design problems. The technical universities lack the infrastructure necessary for effective creative and design teaching and learning.

## 6. Policy Implications

Fashion Design as a science of art is one of the pivots in the Technical Universities curriculum and, students' success in the programme invariably depend on mastery in, among other courses, creative design and working drawing. Creative Design and drawing occupy an important position in the fashion design process. As recommended by Lamb & Kallal (1992) a more wide-ranging design framework for apparel design students who take creative design and working drawing courses management of Technical Universities in Ghana should devote resources and commitment to improving and creating the enabling environment for students to thrive. Infrastructure improvements are key to the sustainability of the Fashion departments. Challenges encountered by the students relative to their creative design and drawing competencies can be attributed to the unavailability of modern studios with the state-of-the-art architecture that can support effective training of the course.

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