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ABSTRACT

Purpose: To assess the fit and style modification of apparel using pattern drafting and free-hand cutting among informal dressmakers and tailors.

Methodology: Design and style modification were measured using a composite score based on the observation checklist of the finished products of apparel made from both free-hand and pattern drafting technique. There was an agreement between the respondents and the researcher on a common style. One of the styles was to check for fit and others for fit and style modification respectively. The finished product from both methods was analyzed on live models to check on the stitches and seam, arrangement of fullness, application of fastenings, arrangements and position of motifs in the fabric as well as the design details that conform to fit standard based on the checklist used by judges. Special areas of apparel that add up to total fit were identified and assessed. These special areas were the most highly ranked and scored by the judges.

Results: sheath dresses constructed using both pattern drafting and free-hand cutting were worn by models for evaluation by the judges. All the five judges indicated that the neckline of the sheath dress made with pattern drafting had no problem giving it a 100% score. The shoulder line of the sheath dress made with free-hand cutting was considered as too long by four (80%) out of the five judges. The implication is that the shoulder line of the sheath dress made with pattern drafting was accepted to be the best. The bust of the sheath dress of both methods was

seen to be good by the judges, one (20%) indicated that the sheath dress made with pattern drafting was too tight while another one (20%) also claimed it was too loose with respect to the sheath dress made with free-hand cutting. There was a vast difference in the nape to waist section of the sheath dress made with free-hand cutting as compared to that of the pattern drafting resulting to ill-fitting that amounted to puckering at the back of the dress made with free-hand cutting.

Unique Contribution to theory, practice and policy: Additionally, an apparel made using Free-hand cutting apparel was superior in areas such as the length of the apparel and fixing of fasteners as compared with pattern drafted apparel. The study therefore recommended the need to develop and train pattern drafting since it bring success into the apparel construction industry and over-reliance on free-hand cutting could keep some dressmakers and tailors out of business with time.

Keywords: *Pattern Drafting, free-hand cutting, apparel fit, style modification*

INTRODUCTION 1.1 Background to the study

Fashion design is a service-oriented industry where the success of most establishments depends on performance excellence and customer delight. Clothes made by fashion designers and fashion industries need to fit well and look attractive on the prospective users (Nzula & Opoti, 2014). However, in some part of Ghana, this simple fact is underestimated as a result of poor fit in apparel making among the informal dressmakers and tailors with respect to pattern drafting and free-hand cutting (Obinnim & Pongo, 2015; Foster &Ampong, 2012). Studies by Mangieri (2006) and Foster and Ampong (2012) revealed that, the input cost, including labour and energy, poor product quality, unpredictability of prices and lack of market outlet are some of the setbacks in the fashion industries in Ghana.

It has been observed that in Ghana, the informal dressmakers and tailors' industry is growing speedily. Limited technical know-how on the skills with regard to pattern drafting which ensures that apparel comes out with unique style and improved fit, seems to pose problems in its use (Efajemue& Lily, 2011; Foster &Ampong, 2012).

The belief is that adequate knowledge on the skills in pattern drafting and free-hand cutting can boost confidence of the informal dressmakers and tailors thereby maximize income from their businesses. Another study by Stone (2013) affirms other challenges with fashion-designing, manufacturing, distribution, marketing, retailing, advertising and communication, publishing and consulting and entreats the need for excellence in the profession.

1.2 Statement of the Problem

Clients now demand better products as they have difficulties with the fit of apparel made by their informal dressmakers and tailors (Wallace & Choi, 2011). The level of dissatisfaction with the fit and modification of apparel by clients of informal dress makers, tailors and apprentices has increased (Dove, 2016). Studies by Foster and Ampong (2012) revealed that pattern drafting still remains a challenge in the informal sector (small scale apparel industries) because it is believed that free-hand cutting instructions were fewer and easier to commit to memory.

Studies have shown that though pattern drafting is mostly taught at the higher level of the Ghanaian education (Foster & Ampong, 2012), most of the informal dressmakers and tailors may not have gone through secondary education and therefore lack the skills in pattern drafting. To solve this deficiency, the Dressmakers and Tailors Association of the Koforidua in the New Juaben Municipality of Ghana organizes a periodic workshop on pattern drafting for its members, but it seems most of them go back to use free-hand cutting. Research has shown that most clients are likely to resort to use ready-made new clothes when they are not satisfied with the services they receive from their informal dressmakers and tailors (Boakye, 2010; Efajemue & Lily, 2011; Foster & Ampong, 2012, Dove 2016).

1.3 Purpose of the study

To assess fit and style modification of apparel using pattern drafting and free-hand cutting among informal dressmakers and tailors.

LITERATURE REVIEW 2.1Informal Learning in the Fashion Industry

Informal learning is the unofficial, unscheduled, impromptu way of most learning to jobs. It does not follow a specified curriculum and is not often professionally organized, but rather originates accidentally, sporadically, in association with certain occasions, from changing practical requirements. Informal education is a general term for education outside of a standard institution. It can refer to various forms of alternative education, such as home-schooling or self-teaching (Biney-Aidoo, Antiaye, & Oppong, 2013).

Foster and Ampong (2012) observed that, in Ghana, apparel construction is a widespread in small-scale occupation for both men and women and there has been a long and sustained condition of apprenticeship in apparel making. Larbi and Atta (2009) note that apprenticeship in sewing has been the practice by master-craftsmen who have the knowledge and skills in making clothes, and hand down what they have mastered from generation to generation to ensure continuity.

With the foregoing reason these apprentices are not ready or prepared to learn any other method apart from what they already know. Larbi and Atta (2009) further argue that, it is imperative that in the absence of academic certificates and other paper qualifications, the youth be equipped with strong vocational or technical skills as a means of livelihood.

2.2 Fit of Apparel

Apparel fit is one of the major factors considered by consumers in selecting apparel from shops and even in accepting apparel sewn by their dressmakers or tailors. Anikweze (2013) and Dove (2016) described clothing fit as the outward appearance of a piece of clothing to one's body. Fit is one of the first things that clients consider when apparel is made for them by their designers. This is also the first complaint by clients and areas on to reject apparel (Dove 2016; Wu & Ashdown, 2016). Anikweze (2013) further cited that proper fit gives the wearer of a dress a feeling of physical comfort and self-confidence. Anikweze (2013) also proposed that well-fitting clothes should not only appear gorgeous on the wearer but, should offer comfort whether the wearer is standing, sitting, walking or bending and also fit in motion.

In addition, to recognize and identify standard quality apparel, one must be guided by some details which involve almost all of the constructional techniques. In providing guidelines for assessing clothing fit, Dove (2016) emphasized three major considerations, namely; wrinkles, grain and ease. The authors considered wrinkles as the main indicator of improper fit in clothing (Anikweze, 2013). A dressmaker or a tailor may choose to use a standard size that has been pregraded on a purchased pattern or they may decide to design a pattern to better fit the wearer. This may be done by creating a sewer's apparel template from inexpensive muslin material or by customizing a computerized pattern to fit. The three-dimensional technology enables the home sewer to see the final apparel as a virtual simulation on the wearer (Obinnim Pongo, 2015; Dove 2016).

2.3 Apparel Style Modification using Pattern Drafting and Free-hand Cutting

The creation of apparel comprises many processes. The appearance and fit of apparel are highly dependent on a particular process used in the construction (Kumar 2012; Radclyffe-Thomas, 2015). The use of free-hand cutting to make apparel is an initial step in apparel making. The use of patterns is another earlier step in apparel making. It is a craft that has evolved over centuries into a skilled technical process. Today, patterns have been designed to quickly perform repetitive time-consuming tasks, which have allowed apparel manufacturing companies to keep pace with the fast-moving world of fashions (Tamakloe, 2011; Larbi& Atta, 2009; Clark 2008).

Pattern drafting, prior to the industrial revolution was used only by the rich because tailors had to work hard to customize patterns using personal measurements of their clients. After the industrial revolution, standardized patterns were used essentially to produce ready-to-wear clothing (Aldrich, 2014). Initially, the use of standardized patterns resulted in poorly fitting apparel such as boxy men's suits, and ill-fitted skirts (Anikweze, 2013). However, after extensive experimentation and standardizing sizes, pattern drafting has triumphantly been transformed from customization to standardization (Anderson, 2011; Amander, 2012; Aldrich, 2014).

2.4 Challenges of Flat Patterns and Large-Scale Construction

According to Aldrich (2014) and Semptress (2012), flat pattern is based on commercialized basic patterns with standard measurements but when employed in designing, one makes use of fitting darts to increase apparel fitting. Challenges are obstacles that hinder the progress of work. Despite the numerous advantages the flat patterns have over the free hand methods of cutting fabric for apparel design, one requires technical know-how in order to succeed. Apparel construction processes involves an interest in manufacturing clothing which includes technical knowledge in areas of pattern drafting, designing, sewing, trimming, embroidery, and patterns in the textile print arrangement and organization. To assemble and coordinate the activities and creative imaginations of these categories of craftsmen in a business setting is quite taxing.

Horton (2009) advised that the type of figure, "its proportions and characteristics" should be considered when selecting the style of apparel so as to disguise figure problems. Consideration of figure type and body measurements is also necessary in order to avoid too many alterations of patterns before achieving a perfect fit. The main challenge in flat pattern for large scale construction is the ability to take accurate body measurements for sizing and grading to suit the variance of figure type for mass construction (Obinnim & Pongo, 2015a).

3.0 Research Methodology

Design and style modification were measured using a composite score based on the observation checklist of the finished products of apparel made from both free-hand and pattern drafting technique. There was an agreement between the respondents and the researcher on a common style. One of the styles was to check for fit and others for fit and style modification respectively. The finished product from both methods was analyzed on live models to check on the stitches and seam, arrangement of fullness, application of fastenings, arrangements and position of motifs

in the fabric as well as the design details that conform to fit standard based on the checklist used by judges.

The five judges who comprised three executive members of the Association, one renowned fashion designer and one examiner from National Vocational Training Institute who are all members of the association helped to evaluate the fit and modification of styles of the selected apparel. The assessment was done using a three and four-point scale depending on the part of apparel being assessed.

4.0 Results and Discussion

Results of the experts with regard to sheath dresses '1A' and '1B' are presented in Table 1 below

Table 1: Experts Opinion with regard to Front and Back of Sheath Dress

Fit point	Observation from five judges	Pattern Drafting		Free-hand Cutting		Remarks
		Freq	%	Freq	%	
Neckline	Too low	0	0	3	60	Pattern drafting was accepted as better fit
	Too high	0	0	2	40	
	No problem	5	100	0	0	
Shoulder line	Too short	0	0	0	0	Pattern drafting was accepted as better fit
	Too long	0	0	4	80	
	No problem	5	100	1	20	
Bust	Too tight	1	20	0	0	There was no difference in terms of the bust
	Too loose	0	0	1	20 0	
	Off the fullest part	0	0	0	80	
	No problem	4	80	4		
Waistline	Waistline raised	1	20	1	20 0	Pattern drafting was accepted as better fit
	Waistline drop and	0	0	0	80	
	Sagging at the back	0	0	4	0	
	No problem	4	80	0		
Nape to waist	Too high at the front	0	0	0	0	Pattern drafting was accepted as better fit
	Too low at the back No	0	0	5	100	
	problem	5	100	0	0	
Dart	Wrong location	0	0	1	20	Pattern drafting was accepted as better fit
	Too long at the front	0	0	1	20	
	Too short at the back	3	60	3	60	
	No problem	2	40	0	0	
Hip	Too tight	1	20	1	20	Pattern drafting was accepted as better fit
	Too loose	0	0	3	60	
	Not on the fullest part	0	0	1	20	
	No problem	4	80	0	0	

Full length	Too short	0	0	0	0	There were no differences in terms of length
	Too long	0	0	0	0	
	No problem	5	100	5	100	
Sleeve length	Too long	0	0	0	0	There were no differences in terms of length
	Too loose	0	0	0	0	
	No problem	5	100	5	100	
Sleeve Bicep	Too tight	0	0	4	80	Pattern drafting was accepted better fit
	Too loose	0	0	1	20	
	No problem on fit	5	100	0	0	
Arm scye	Too tight	0	0	4	60	Pattern drafting was accepted as better fit
	Too loose	1	20	2	40	
	No problem on fit	4	80	0	0	

According to Table 1 sheath dresses constructed using both pattern drafting and free-hand cutting were worn by models for evaluation by the judges. Special areas of apparel that add up to total fit were identified and assessed. These special areas were the most highly ranked and scored by the judges. For instance, all the five judges indicated that the neckline of the sheath dress made with pattern drafting had no problem giving it a 100% score. The shoulder line of the sheath dress made with free-hand cutting was considered as too long by four (80%) out of the five judges.

The implication is that the shoulder line of the sheath dress made with pattern drafting was accepted to be the best. The bust of the sheath dress of both methods was seen to be good by the judges, one (20%) indicated that the sheath dress made with pattern drafting was too tight while another one (20%) also claimed it was too loose with respect to the sheath dress made with freehand cutting. There was a vast difference in the nape to waist section of the sheath dress made with free-hand cutting as compared to that of the pattern drafting resulting to ill-fitting that amounted to puckering at the back of the dress made with free-hand cutting.

All the five (100%) judges agreed that, nape to waist was too low and as a result the problem observed on the sheath dress made with free-hand cutting was obvious. It can further be noticed from Table 4.14 that though the judges accepted the darts on the sheath dress made with pattern drafting, it is worth mentioning that three (60%) of the judges had the opinion that the darts at the back of both dresses were short.

On the fit points such as the full length and the sleeve length of the sheath dress, all five (100%) indicated that there were no problems with either pattern drafting or free-hand cutting. This meant that the dressmakers and tailors had full accuracy as far as the measurements of the full length and the sleeve length of the apparel were concerned.

4.2Fit and Style Modification of Long Panel Skirt (Slit)

Table 2 presents the results of the evaluation of fit and style modification for both methods by the five judges.

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Table 2: Experts Opinion on Front and Back of Panel Long Skirt

Fit point	Observation	Pattern Drafting		Free-hand Cutting		Remarks
		Freq.	%	Freq.	%	
Hips	Too tight	0	0	0	0	Pattern drafting was
	Too loose	0	0	3	60 0	Accepted as better fit
	Not on fullest part	0	0	0	40	
	No problem on fit	5	100	2		
Waist	Too tight	1	20	0	0	Pattern drafting was
	Too loose	0	0	4	80	accepted as better fit
	No problem on fit	4	80	1	20	
Skirt length	Too short	0	0	0	0	There was no difference
	Too long	0	0	0	0	on both methods
	No problem on fit	5	100	5	100	
Panel positioning	Wrong position Good position	0 5	0 100	0 5	0 100	There was no difference on both methods
Panel shaping	Wrong shaping Good shaping	1 4	20 80	3 2	60 40	Pattern accepted as better in modification
Fullness at hem	Too full	1	20	0	0	Pattern drafting was
	Not enough	0	0	3	60	accepted as better in
	Rightful amount of fullness	4	80	2	40	modification

Judges assessed the fit of the long panel skirt (slit) on the wearer based on the criteria on the checklist used. As noted from Table 2, all the judges accepted there were no differences in the long panel skirt in terms of the panel position and skirt length for both pattern drafted and freehand skirts. However, with all other fit points, the judges noted that pattern drafting method resulted in better fit. Looking at the details, one can observe from Table 4.16, 3(60%) of the judges noted that the hips of the long panel skirt made with free-hand cutting was too loose. Another concern identified by the judges was the waist fitting for both methods. One of the judges mentioned that the waist was too tight on the pattern drafted skirt while three of them indicated it as too loose on the skirt made with free-hand cutting.

The panel shaping of the skirt made with free-hand cutting was judged by 3(60%) of the experts as wrongly shaped while 4(80%) of them indicated that it was well shaped on the pattern drafted skirt. Regarding the fullness of the hem, three (60%) of the judges were of the view that it was not enough for the skirt made with free-hand cutting though the other two (40%) indicated it showed the right amount of flare.

4.3 Researcher's Observation on Steps in Apparel Construction

The researcher did an observation to check on the strength and weakness of pattern drafting and free-hand cutting during the process of apparel construction by selected dressmakers and tailors. It was observed that the dressmakers and tailors had problems with taking of accurate body measurements. These included problems such as which position to measure in relation to the type of measurement required, poor calculations leading to extra fullness or sagging in some of the apparel and inability to do proper analysis of styles. These resulted in the sheath dress having a three-quarter sleeve at the end of the construction instead of the expected long sleeve and the flared peplum turning out to be like (A line style).

Another observation was that most of the apparel made using free-hand method had poor fit because they lacked the opportunity to make corrections once a mistake occurred. Thus, if dressmaker or a tailor makes a mistake while using the free-hand cutting, the fabric is usually wasted (Shailong and Igbo, 2009). There was a great disparity between fit of apparel made with pattern drafting and free-hand cutting due to techniques involved in the use of patterns. This was seen in areas such as the interpretation and analysis of styles, differences in the way measurements were taken and recorded, as well as the assembling techniques.

Apparel fit has also been attributed to selection of right seam, good stitching and regular pressing during apparel construction (MacDonald, 2010). It was observed that, selection of the right type of stitches was not a problem among the respondents. The researcher further observed that some apparel made using free-hand cutting showed poor seams and seam allowances. This may be due to the fact that a lot of guesswork was used in the design analysis and cutting out of fabrics when using free-hand cutting. As noted by Aldrich (2014) apparel fit is important determinant of superiority and plays an important role in the choice of apparel by clients (Dove, 2016). For apparel to be competitive in the global market, apparel constructed should fit well (Aldrich, 2014).

5.0 Conclusion and Recommendations

The use of pattern drafting as a method of constructing apparel brought outstanding features in areas such as shoulder line, nape to waist, dress and sleeve length, sleeve bicep and arm scye compared to free-hand cutting. Though there were discrepancies and mismatch in most of the selected fit points, these parameters were well achieved using the pattern drafting. In summary, it can be said that though the sheath dress made with pattern drafting was generally accepted by the judges to have better fit, the sheath dress made with free-hand cutting equally had some good features in fit points such as the bust, full length and the sleeve length.

From a vantage position, all the judges scored high marks for apparel constructed by the pattern drafting technique. Most of the apparel made by the pattern drafting technique was accepted as having a better fit though there were some few areas that were rejected. Many fit points of apparel constructed using the free-hand cutting method did not meet the standard requirements. The use of pattern drafting method during construction contributed to the fit and style modification of apparel as observed in this study. Shailong and Igbo (2009) had also reported that most dressmaking industries in Nigeria were folding up mainly due to the use of free-hand

cutting technique for constructing apparel that resulted in poorly fitting apparel. Generally, major differences were observed in style modification between apparel constructed with free-hand cutting and pattern drafting. Additionally, an apparel made using Free-hand cutting apparel was superior in areas such as the length of the apparel and fixing of fasteners as compared with pattern drafted apparel. The implication is that these style points did not require any technical knowledge as compared with other style points.

The study therefore recommended the need to develop and train pattern drafting since it bring success into the apparel construction industry and over-reliance on free-hand cutting could keep some dressmakers and tailors out of business with time. Further the study recommended on job training sessions for the informal dressmakers and tailors to help them improve the skills that they have in modifying styles in both free-hand cutting and pattern drafting. In addition, this would improve their skills of transfer of learning that underscores benefit to be derived from modification of styles. Finally, Dressmakers and tailors should endeavor to meet the requirements of their clients by constructing apparel to cater to their fit and style modification preference. Also, dressmakers and tailors should develop guidelines for each technique or method so that they can align to the clients' preference to the fit and style modification of apparel.

The study suggested that future studies focus on the scope of apprenticeship training contents to fashion courses within the formal setting. This will ensure standardization of training to boost the fashion industry

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