



PAT June, 2013; 9 (1):135-146 ISSN: 0794-5213

Online copy available at

www.patnsukjournal.net/currentissue

Publication of Nasarawa State University, Keffi



Figure Types and the Challenges of Making Garments in Nigeria

Anikweze, G.U

Department of Home Science and Management; Faculty of Agriculture, Shabu-Lafia Campus
Nasarawa State University, Keffi 0806 308 1820

Abstract

The paper discusses the common figure types some of which constitute figure problems for women with asymmetrical shapes. The relationship between figure types and garment construction was established indicating the styles of clothing to avoid and the styles to choose depending on one's figure. An attempt was also made to relate figure type to pattern designing. The major challenges of figure types to clothing construction relate to issues of appearance, balance and proportion as they relate to clothing fit. The paper concludes that Nigerians are faced with the challenges of non-existent basic patterns for garment construction for both men and women to facilitate needed modifications for disguising figure faults in individuals with abnormal body proportions. Recommendations were proffered to guide garment makers on how to disguise figure faults.

Introduction

Many women in most cases like to possess a variety of clothes such as blouses, shirts, skirts, coats, dresses, jackets etc. But those women that really appear fashionable endeavour to select only clothes that match their figure. Figure refers to the shape of an individual human body particularly with regard to its slimness or attractiveness. Robertson (2008) in her 'How to Match Prom Dresses to Figure Types' insisted that every girl's body has its own unique shape, and this probably accounts for a myriad of styles, lengths, and shapes of prom dresses available in the market. Weber (1990) explained that figure types are size categories determined by height and body proportions. *Tootal Sewing Products* (1984) posited that all figure types are based on the two measurements of height and back neck-to-waist length. Hence, adult figure types are grouped according to height and proportion.

Appraising her figure and style of dressing, Spenser (1998) declared that:

lower necklines would make my neck look longer and slimmer; shoulder pads would make my hips look smaller, wide belts would not suit me because I'm short-waisted, and long, full skirts were the biggest disaster for my particular shape and height.

Spenser (1998) went further to emphasize that it is the shape of the body and not the size that is the crucial factor in deciding the figure and clothes that may be the most flattering. In her conceptualization, figure types can be categorized into three - Straight, Tapered and Curved. The descriptions given by Spenser (1998) are as follows:

Figure Shape 1 – **Straight:** *Straight/wide rib-cage; little/no waistline; Flat hips/thighs*

Figure Shape 2 – **Tapered:** *Short rib-cage and/or low bust; visible waistline; Rounded hips/thighs*

Figure Shape 3 – **Curved:** *Long and/or tapered rib-cage; Obvious waistline; Flared hips/thighs*

Olaitan and Mbah (1991) analyzed figure types into four categories as follows: short and plump, short and slender, tall and slender, and tall and plump. This categorization agrees with Vulker and Cooper (1987) who preferred the terms: ‘tall and thin’, ‘short and fat’, ‘top heavy and bottom heavy’. But a more comprehensive categorization was later provided by Anyakoha and Eluwa (1999) who identified seven types of figures that are easily recognizable among women, and also recommended the corresponding styles to choose and to avoid. The figure types according to Anyakoha and Eluwa (1999) are Tall and Slender, Short and Plump/Stout, Flat chest, Large bust, Short neck, Long neck, and Large hips.

Based on the exaggeration of the various figure types, figure problems could be identified in individuals and the problem could be of critical concern to women in particular. Quite a good number of Nigerian men move about with embarrassing absurdities that are associated with their figures. The abnormal body proportions of men include pot belly, large arms, heavy waist, bow legs and other indicators of lack of symmetry in body shape. Some of these abnormalities may be natural or hereditary while some are as a result of accident or disease. But in many men, lack of dietary control and lack of exercise often result in obesity that is manifested in abnormally plump and heavy body proportions. Nevertheless, men do not seem to be as preoccupied with their appearance as much as women, hence the issue of figure faults constitute obvious problems to women.

Figure Problems in Women

From the standard body measurements of women’s clothes, it is obvious that any significant deviation will imply figure fault. The most common figure problems are large bust, small bust, low bust, flat chest, narrow chest, round shoulders, broad

shoulders, narrow shoulders, square shoulders, thick waist, hollow back (for skirts), large stomach and plump upper arm (Tootal Sewing Products, 1984). The issue of figure problems becomes magnified for individuals who cannot help themselves in terms of making the necessary adjustment to dresses. From the list of over a dozen different figure faults, it is likely that individuals would derive maximum satisfaction by making their own clothes since that will give them the opportunity to adjust patterns to suit the figure problems.

Two theories of clothing apply very commonly to all women. These are the body image theory and the adornment theory. On the one hand, the body image theory refers to the picture individuals have in their minds about how they appear before others (Horn and Gurel, 1981). Consequently, no woman would deliberately wear a dress that conveys shame on her. The adornment theory, on the other hand, refers to the desire of everybody to sufficiently decorate the body as to appear attractive and fashionable. Hence, every woman wants to appear attractive and presentable and the image a person creates depends partly on clothing (Vulker and Cooper, 1987). Thus, apart from consideration of comfort derived from dress and the easy movement it confers, women should also be conscious of the type of personality and life-style that a particular dress confers on the wearer. For example, women with tiny figures should prefer small patterns which suit their size and colour. If women with tiny figure chose large prints, the dress would appear overpowering and exaggerated for their size. However, confident and sophisticated ladies do not mind how they appear in the eyes of on-lookers.

Relationship between Figure Types and Garment Making

In textile arts, the selection of new clothes should be based on certain principles other than just trying to be like others. These principles include figure and style, family budget, colour, washability and texture of fabrics. To designers and dressmakers however, the most important consideration is the figure type. As figures vary considerably so patterns for clothes fall into certain categories which are available in catalogues. Perhaps the first strategy in dealing with figure faults is to determine the grouping of sizes (not ages) into standard measurements. Anikweze (2003) identified three major groups based on body somatotype. Thus, endomorph stands for the largest category; mesomorph for the middle category and ectomorph for slim lanky figures. Campbell (2004) advocated use of Flat pattern drafting which is a combination of two methods of designing garments for better effects. Those effects are summed up in clothing fit.

'Tootal Sewing Products' (1984) provided the body measurements required for sewing clothes for women and girls, which consist of the height, the bust (fullest part), the

waist, hips (fullest part of figure, about 23cm below waist), back neck to waist, shoulder width, back width, shoulder length from bodice, side bodice, chest, shoulder to elbow, sleeve length, wrist and neck. On the basis of figure types and standard body measurements, Tootal Sewing Products (1984) provided some guidelines for choosing patterns according to one’s figure, emphasizing styles to avoid and styles to choose. The criteria for choice of fitting garments as shown in Table 2 below rely heavily on disguising figure problems and achieving an elegant appearance.

Table 2: Relationship between Figure and Clothing

| Figure | Styles to Avoid | Styles to choose |
|-------------------------|---|---|
| Flat Chest | Fitted bodice, too wide a neckline | Gathered and draped styles So that bodice has added fullness |
| Large Bust | Very high neckline. Frills. Draped and gathered bodices. | Tailored top bodice. Fitted sleeves. Full sleeves Skirt trimmings. Long revers. |
| Short neck | Tie neck bands. High polo-necks. Mandarin necklines. Wide shoulder-lines. | Plunging, long, square or V-shaped necklines, with narrow shoulder-lines |
| Plump, Short figure | Wide necks, full sleeves, gathered Princess lines. | Fitted sleeves, gored skirts. Skirts, horizontal stripes and wide belts. |
| Thin, tall figure | Straight skirts, fitted bodices- Princess lines. | Gathered or draped skirts with wide Belts. Neck trimmings. |
| Large hips | Fitted skirts, pockets at hips, too narrow a bodice. | Shaped skirt from waist. Gathers can be used if the waist is small. Use wide neck and shoulder lines to avoid Triangular shape. |
| Neck and shoulders thin | Wide boat-shaped necklines. | V-shaped necklines, tie collars, Or mandarin standing collars. |

Source: Tootal Sewing Product (1984)

Vulker and Cooper (1987) in their own guide preferred choice of colour, design emphases and choice of fabrics as presented in Table 3.

Horton (2009) further advised that before selecting a pattern, one should be sure of her figure and body measurements. This is necessary in order to avoid too much of pattern alterations before achieving a perfect fit. She further argued that female body shapes vary greatly, and so patterns are sized not only for direct measurements but for figure types of varying proportions.

Figure Types and Challenges of Making Clothing

Literature suggests that all figure types are based on the two measurements of height and back neck-to-waist length (Tootal Sewing Products, 1984). Consequently, adult figure types are grouped according to height and proportion. Indeed, Spenser (1998)

emphasized that it is the shape of the body and not the size that is the crucial factor in deciding the figure and clothes that may be the most flattering. The critical issue in dress designing is to achieve clothing fit. Colton (1979) and Robertson (2008) considered clothing fitness based on four main factors, namely: appearance, comfort, design, and fabric.

Table 3: Relationship between Figure Type and Pattern designing (drafting)

| FIGURE | LINE | COLOUR | DESIGN | FABRIC |
|--------------|--|---|---|---|
| Short | > Vertical Lines > Stripes | > One Colour > Separates | > Raised waist lines > Detail at Necklines > Straight - Legged trousers | > Plain textures > Small prints > Soft fabrics |
| Tall | > Horizontal > Yokes and belt > Pockets | > Contrasting > Colours in separates | > Waist or hipline interest > Detail on styles > Flared and Cuffed trousers | > Bulky textures > Plaids, checks, stripes, floral > Soft and crisp fabrics |
| Slim | > Horizontal curved > Rounded silhouettes | > Light, bright colours | > Collars, scarves > Full sleeves > Fashion details such as intricate pockets, plackets pleating. > Wide-legged trousers | > Textured plaids and prints |
| Big build | > Vertical > Easy - fitting silhouettes | > Dark, Cool colors > One-color outfits | > Simple A-line style > Soft self-fabric belts | > Simple, plain textures > Medium prints > Crisp fabrics |
| Bottom heavy | > Vertical horizontal in upper area > Yokes, gathers, tucks | > Contrasting colours. > Bright prints and patterns on tops. | > Neckline interest > Upper pockets > Long jackets > Slimming dresses better than trousers | > Simple texture for skirts or trousers > Texture fabric for tops only. |
| Top heavy | > Vertical > Horizontal in hips area | > Contrast darker colour for tops. | > Asymmetrical closures > Uncluttered upper Silhouettes | > Simple, light weight. > Plain textures for tops |

Source: Vulker and Cooper (1987)

Appearance – To achieve elegant appearance, Robertson (2008) recommends different clothing designs that complement different body shapes and figures. The following instances are noteworthy:

- *Hourglass shape* - Women with hourglass shape (shoulders and hips equally wide with a narrow waist) have coveted figures with nothing to hide or compensate for. They can wear style of prom dress that is long, short, and sleeveless, with or without a jacket.
- *Busty shape* - Women with busty shape (shoulders wider than hips) should wear dresses that de-emphasize the upper body, e.g. a gown that attracts the eye to the

hemline or waistline. A scarf or a jacket can also assist to disguise the figure fault.

- *Triangle or Pear shape* – Women in this category have hips wider than shoulders. Because of their bottom-heavy figure, they should wear prom dresses with an a-line or full skirt to de-emphasize the hips. They can also have a fitted top to draw attention more to the upper portion of the body
- *Petite Figure* – Women that are short and heavy should choose garments that give illusions of height and draw attention to the face and hair, e.g. short skirts rather than ankle-length skirts. For short and slim women, shirtwaist dresses and business suits are recommended. Earrings, necklaces, and hairpieces can also be used to highlight the face, neck and upper body.
- *Square shape or Thick middle* – Women in this category have shoulders, waist and hips are equally wide; the waist is not clearly indented such that waist measurement is similar to that of chest and hips. To appear elegant, choose unfitted, but not full, garments such as over-blouses, empire lines, and tunic and long sweaters.

Comfort - With regard to wearing comfort, the garment should have sufficient ease added to the body measurements to allow the person to sit, walk, reach, and bend without feeling restricted.

Design- In the case of design, the amount of ease added to a garment is based on the design which is either a loose fit (example: caftan), a close fit (example: sloper pattern), or a combination of the two (example: shirtwaist dress with a pair of trousers).

Fabric - Recommendations for fabric are usually enumerated on commercial pattern envelopes which are foreign in origin. Nevertheless, the pattern maker normally takes into account the structural characteristics of a fabric when drafting a pattern. For example, a pattern for a knit will have less wearing ease than a pattern intended to be made in a heavy fabric.

Balance and Proportion

The issue of balance and proportion is one that any woman should give consideration to, if she wants to make her own clothes. Nowadays, the designers and dress makers for women pay proper attention to balance and proportion. A woman making her own clothes should follow suit because a garment looks best when the interesting details are not concentrated in one area alone. According to Wolfe (1989), balance implies a sort of equilibrium or evenness among the parts of a design. It is a visual distribution of weight to all parts of the dress design and can be produced by structural parts and added decoration, e.g. two halves may be identical so that the garment has symmetrical look, or one area (a long sleeve blouse) has special emphasis while hem of the skirt could be used for balance.

Proportion requires all parts of the dress to be related to one another in size, length, and bulk. Proportion is also important when relating the areas of the garment to one another and to the figure. In this case, the style lines, the design details, the pattern and the figure type should be taken into account otherwise observers may start murmuring and making spiteful allusions to the wearer. But the aspect of proportion that is offensive to the eye is the one that gives wrong parking or obtrusive appearance to the woman's breast or to her hips. Incidentally, these are two likely areas of figure problems in many women. Perhaps a way of camouflaging the figure problems is to prefer sheer and bulky fabrics that seem to enlarge the sizes of the wearers (Watts, 1984).

Clothing fit

Clothing fit is one of the factors generally considered by consumers in selecting dresses from shops and even in accepting dresses sewn by tailors. Marshall *et al* (2000) described clothing fit as the correspondence in outward appearance of a piece of clothing to one's body which agrees with Kefgen and Specht (1971) that proper fit gives the wearer of a dress a feeling of physical comfort and self confidence. Kefgen and Specht (1971) further emphasized that fitting clothes should not only look attractive on the wearer but should also be fit in motion as well as offer comfort whether the wearer is standing, sitting, walking or bending. In addition, care should be taken to ensure that the under-clothing equally fits correctly and is not exposed.

Kefgen and Specht (1971) equally provided some criteria for judging clothing fit on an individual woman. These include the amount of ease offered by the clothes, the drape, length, shoulder placement and closeness to the body. These criteria however, depend on the style of the dress, the use and the preference of the wearer. For instance, some garments are designed to be somewhat loose on the body, while some are designed to fit more tightly. Either way, the appearance of the body is affected.

Igbo and Iloeje (2003) advocated the provision of overlap in sewing of skirt as a way of covering up figure-faults in women. Generally, a loose fitting dress worn by a slender person makes her appear thinner due to the contrast provided. On the other hand, a very plump woman in loose fitting dress appears less heavy due to lack of contrast. Kefgen and Specht (1971) summarized the areas to check for fit in a woman's dress as follows:

1. Collar or neck edge lies flat and fits neckline for fit in a woman's dress line snugly as designed.
2. Shoulder length is correct for body and style
3. Horizontal grain is parallel to floor at bust and hip.

4. Length grain is perpendicular to floor at center and at side seams.
5. Darts point toward and end before the fullest part of curve, bump or bulge
6. Adequate sleeve width
7. Waisted dresses meet natural waistline
8. Pocket openings and pleats lie flat while standing.
9. Adequate seat room
10. No horizontal fold below waist back
11. No diagonal wrinkles unless part of design.

In providing general guidelines for assessing clothing fit, Marshall *et al* (2000) emphasized three major considerations, namely: wrinkles, grain and ease. Wrinkles are considered as the main indicator of improper fit in clothing. Brown (1992) has tabulated the causes and solutions of wrinkles as shown in Table 4.

Table 4: Causes and Solutions of Wrinkles

| Types of wrinkles | Causes | Effects/Solutions |
|----------------------------------|--|--|
| <i>Tight</i> | <i>Inadequate Fabric to cover the intended area.</i> | <i>Skirts that are too light in the hip will often slide up towards the waist until released at the sides for extra width.</i> |
| <i>Horizontal</i> | <i>Garment is too small</i> | <i>Garment will try to slide toward a smaller area</i> |
| <i>Vertical</i> | <i>Garment is too short</i> | <i>Can be corrected by letting out the waist or a horizontal seam.</i> |
| <i>Diagonal</i> | <i>garment is too small, narrow or short</i> | <i>Can be let out horizontally and vertically.</i> |
| <i>Loose</i> | <i>too much fabric</i> | |
| <i>a Horizontal</i> | <i>Garment is too long</i> | <i>Adjust at a horizontal seam</i> |
| <i>b Vertical</i> | <i>Garment is too wide</i> | <i>Adjust side seam</i> |
| <i>c Horizontal and vertical</i> | <i>Garment is too long and too wide</i> | <i>Adjust horizontal and vertically</i> |

Source: Brown (1992)

Grain consists of lengthwise and crosswise yarns in a woven fabric that is at right angles to each other. As pointed out by Marshall *et al* (2000), a properly fitting garment starts with fabric that is cut and sewn in such a way that the lengthwise yarns run down the centre front and back, while the crosswise yarns go around the body. In this regard, garments should not only envelop the body without wrinkles, they should also balance

evenly around the body. Lengthwise grain is perpendicular to the floor at the centre and the side seams, while horizontal grain is parallel to the floor at the chest and hips.

According to Marshall *et al* (2000), clothing ease could be defined as the difference between the actual dimension of a person and a garment. They then distinguished ease into two types, namely: wearing ease and design ease. Wearing ease refers to room allowed the wearer to move in a garment while design ease refers to 'the intentional fit of a garment' (Liechty *et al* (1992). These authors of Fitting and Pattern Alteration posit that the body irregularities or figure problems can be camouflaged by the use of adequate design ease. For instance, tight - fitting garments will reveal body irregularities by emphasizing their contours. On the contrary, moderately loose - fitting garment will hide away figure problems and at the same time fail to provide a contrast that would either make a thin person look thinner, or a heavy person look heavier.

Apart from the factors that influence clothing fit, Musheno (1980) insisted that a perfect fit depends largely on appropriate or standard body measurements with necessary adjustments according to the requirements of particular individuals. Musheno believed that elegant styling and superb fit are dependent on the adjustments and alterations made in sewing. While adjustments are "minor changes made 'in the flat' on the pattern tissue before cutting the muslin, the alterations are major changes that are made on the muslin fitting shell to ensure they will relate to body contours. In essence, clothing fit depends mainly on design patterns.

However, Varney (1980) found out that one problem related to satisfying the consumer with a pattern is that everyone does not agree on what "perfect" fit should be. She agreed with Nastiuk (1975) that fit is a personal thing. Nastiuk (1975) as cited in Varney (1980) explained in the following words:

Is there such a thing as "perfect" fit? Though "FIT" means something different to everyone, I guess one could really say that "if a garment is comfortable, it fits". Of course, to be comfortable, it must have the correct proportioning for all our body parts. Some of us like our clothes tight and others prefer them loose - so that "fit" is also a personal feeling. If we just had a basic pattern of our own body - a sort of blue-print like an architect uses - (it would have all of our correct measurements and proportions built in) - we wouldn't have to hold our breadth each time we cut out a garment.

Fit is composed of many parts. According to Varney (1980), the most complete definition of fit for dresses was given in Reader's Digest Complete Guide to Sewing by Colton *et al* (1979) as consisting of four main factors, namely: appearance, comfort, design, and fabric.

In consideration of **appearance**, the shoulder seam should rest smoothly on top of the shoulder and end at the shoulder joint; sleeves should hang straight to the elbow and then bend toward the front; all vertical seams should look straight; the hem should be even; darts should taper toward and stop short of the fullest part of the area they shape; and the waist seam should rest at the natural waistline and fit closely without binding. All darts and seams must fall in the proper place and the garment should have a smooth look - no pulls, wrinkles, sagging or bagging.

With regard to **comfort**, the garment should have sufficient ease added to the body measurements to allow the person to sit, walk, reach, and bend without feeling restricted.

In the case of **design**, the amount of ease added to a garment is based on the design which is either a loose fit (example: caftan), a close fit (example: sloper pattern), or a combination of the two (example: shirtwaist dress with a full skirt).

With regards to fabric, it is noted that appropriate fabrics are usually recommended and indicated on commercial pattern envelopes. This is necessary because the pattern maker has to take into account the structural characteristics of a fabric when drafting a pattern. For instance, a pattern for a knit will have less wearing ease than a pattern intended to be made in a heavy fabric.

Conclusion

In the Nigerian cultural background, it is apparent that the clothes worn by men as well as most of the unisex dresses are based on body measurements developed in western countries. Nigerian garment makers should therefore confront the challenge of drafting patterns for large scale production of ready-to-wear garments. The road to actualizing this feat will start with determined effort to render accurate measurements of customers' body parts.

Recommendations

The following recommendations are given to lever the indigenous garment makers to produce their own commercial patterns.

1. Garment makers that have access to patterns manufactured in European countries should try to imitate such patterns and evolve 'Nigerianised' average body measurements. Such adoption or adaption is one strategy to acquire technology.
2. Women with figure faults should learn to sew their own clothes so as to make adjustments that disguise their figure problems according to their own liking instead

of relying on tailors.

3. Although the issue of clothing fit is a personal thing, yet individual should be savvy in their choice of tight or loose garments at least for the purpose of modesty.

References

- Anikweze, G. U. (2003). Development of Dress Patterns for Women with Figure Problems in Enugu State. Unpublished M.Ed. Thesis, Dept. of Vocational Teacher Education, University of Nigeria, Nsukka.
- Anyakoha, E. U. and Eluwa, M. A. (1999) *Home management for schools and colleges*. Onitsha: Africana-FEP Publishers.
- Brown, P. (1992). *Ready-to-Wear Apparel Analysis*. New York: Macmillan.
- Campbell, N. (2004). American Youth Cultures. Retrieved on 21st July 2009 from <http://books.google.com.ng/books?id=gAjSpqxcGuoC&pg=PA187&lpg=PA187&dq=Youth++Keniston&source=bl&ots=x9->
- Colton, V. (1979). *Reader's Digest complete guide to needlework* (Ed.) Pleasantville, New York: Reader's Digest Association. Downloaded on 23rd May 2009 from <http://catalogue.library.cambridge.wa.gov.au/AmlibWeb/webquery.dll?>
- Horn, M. J. & Gurel, L. M. (1981). *The Second Skin: An Interdisciplinary Study of Clothing*, (3rd Ed.). Boston: Houghton Mifflin Company.
- Horton, T. L. (2008). *Sew it Yourself*. Internet File : <http://www.sew-it-yourself.com/> Retrieved on 23rd may 2009
- Igbo, C. A. & Iloeje, C. I. (2003). *The Basics of Dress Pattern Drafting*. Enugu: Isenberg (Nigeria) Ltd.
- Kefgen, M. and Touchie-Specht, P. (1971). *The Perfect Fit Pattern Drafting and Fashion Styling Book*. New York: Perfect Fit Publishing Company.
- Liechty, E.; Pottberg, D. and Rasband, J. (1992). *Fitting and Pattern Alteration*. New York: Fairchild Fashion and Merchandising Group.
- Marshal, S. G.; Jackson, O. H; Stanley, S. M.; Kefgen, M. and Touchie-Specht, P. (2000). *Individuality in Clothing Selection and Personal Appearance*. New Jersey: Prentice Hall.
- Musheno, E. J. (1980). *The Vogue Sewing Patterns Book (Ed.)*. New York: Vogue Patterns and Butterick Publishing.
- Nastiuk, V. (1975). *Personal Pattern Development - Book 1*. Seattle: Virginia Nastiuk.
- Olaitan, S. O. and Mbah, C. O. (1991). *WABJ Junior Secondary Home Economics, Book 3*. Lagos: West African Book Publishers Ltd.
- Robertson Chris (2008). *How to match Prom Dresses to Figure Types*. Majon International; http://www.majon.com/articles/Clothing_for_Women/prom_dresses_657.html; retrieved on 5th May 2009.

- Spenser, C. (1998). *Carol Spenser's STYLE, Counsel Slim line clever ways to flatter your figure*. London: Judy Piatku (Pub) Ltd.
- Tootal Sewing Products (1984). *Sew Simple: A Step by Step Guide to Dress making (Revised Edition)*. London: Hutchinson Educ. Ltd.
- Varney, L. S. (1980). 'An Individualized Pattern System for Drafting Women Skirts, Bodices, sleeves and pants'. Unpublished Ph.D. Dissertation, Kansas University, U.S.A. University Microfilms International.
- Vulker, J. and Cooper, H. (1987). *Textiles, Fabrics and Design*. London: Heinemann Educational Books, Ltd.
- Watts, G. (1984). *Decorative Dress and Fashion*. London: Hutchinson Company Limited.
- Weber Jeanette (1990). *Clothing, Fashion, Fabrics, Construction (Second Edition)*. New York: Glencoe McGraw-hill
- Wolfe, M. C. (1989). *Fashion! A study of clothing design and selection, textiles, the apparel industries, and careers*. South Holland, Illinois: The Goodheart-Willcox Company, Inc.