EVALUATION OF THE EFFICIENCY OF FLAT PATTERN MAKING AND DRAPING TECHNIQUES

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Abstract: The objective of this research was to compare between two patternmaking techniques- The flat pattern making and the draping techniques. The sampling was the fashion model code no. J:C-W 0181 of Jaspal Company Limited, Bangkok, Thailand. In addition, the standard time for pattern making was also checked while making the patterns and sampling by the three patternmakers. The products were worn by the six models in order to tell the satisfactions. The statistical analysis was used to calculate was percentage and means. The results of the research were discovered that the draping techniques were used for 3.15 hr. for the first session and 1.35 hr. for the second, and the flat pattern making technique was 7.08 hr. for the first session and 4.53 hr. for the second. Additionally, the research was found that the models satisfied 90 percents with wearing the samplings using the draping techniques but 46.67 percents of satisfaction for wearing the sampling using the flat pattern making.

In conclusion, draping techniques used time less than the flat pattern making techniques and the models preferred the dresses made from the draping pattern making much more.

Keywords: Patterner Garment, Pattern making, and Draping

1. Introduction

Nowadays, the ready-made-dress industry has already become the main industry of Thailand. As mentioned, with the export values of $3,000 billion, the export amount jumps up to the fourth order of Thailand. In addition, more than 1 million people are employed in this career. However, in the year 2011, the amount of export values is predicted to grow up to 5 – 10 per cent since in the recent January and February, the export values have already gone up to 6 – 7 per cent [1] and today ready-made-dress producing especially in fashionable styles in Thailand is well accepted internationally.

Related to the process of ready-made-dress producing is the preparation stage which includes marketing, designing, sampling, pattern making and finding the materials. The mass products will then be produced and transferred to the stores for selling. According to the processes mentioned, most of ready-made-dress manufacturers have found problems especially in fashionable styles that may be used for a long time to make both the patterns and samplings. The problems include the following: no proportional making, no fitting with the bodies or the different designing because of the pattern makers' lacking of experience and skills, or misunderstanding in the productive process. Besides, most pattern makers have no thinking skills to create the master patterns and fashionable patterns.

Jaspal is a large garment manufacturer that produces ready-made- dresses, especially male and female fashionable styles including child fashionable dresses. The dresses are distributed in Thailand and also exported to the countries in Asia. There are so many brands in its group – Jaspal brand, CPS Chaps brand, CC Double-O brand. These have been facing the problems mentioned. It is not only Jaspal Company that faces the problems but the other garment manufacturers also face the same problems. The main problem is that the pattern makers cannot make the patterns and samplings for sale in each season. This is why the researcher attempts to find a new technique – draping or moulage – in order to evaluate the efficiency of draping technique and flat pattern making technique.

This research is aimed to evaluate the efficiency of flat pattern making and draping techniques as well as to find the models' satisfaction while wearing the dresses that are being sewn by flat pattern making technique and draping technique.

Figure 1 *: Samples of Fashionable styles*
Sources : http://www.realsimple.com, *http://* www.ecosalon.com, *http://*www.elle.com, http://www.fashionising.com

2. The objectives of the study

The objectives of the study are to evaluate the efficiency of flat pattern making technique and draping techniques and to find the models' satisfaction while wearing the dresses that are being sewn by the flat pattern making technique and draping technique.

3. Materials and Methods

3.1 Materials and Equipment

The materials that are used for this study are non-woven fiber(???) that is produced from mixed fibers between cotton and polyester (slab) in the ratio of 90:10 with the weight of130 g/m, inter lining no. 4500 and color code 10, sewing thread no. 180 and color code no. 1648, and elastic of ½ inch size.

The equipment used includes two mannequins with size M, white paper for pattern making with 60 gram thick, three scissors with 8 inch size, a sport timer, color tape for placing on the mannequin's proportions, an industrial sewing machine for folding the edge (4OL), and an industrial sewing machine for folding the edge (3OL)

3.2 Methods

2.1 Flat Pattern Making Technique and Draping Technique

2.1.1 Select 1 pattern maker by considering her working experience of at least 2 years in this field and having at least a vocational certificate in dressing and garment from a vocational school or a school of dress making; and most importantly, the pattern maker must be interviewed by the researcher.

2.1.2 Select a dress design of 10 fashionable styles that were produced in the pattern making and sampling department of Jaspal Company Limited for making the flat pattern technique and draping technique.

2.1.3 Examine the pattern makers' pattern making in order to know their basic knowledge in both flat pattern making technique and draping technique.

2.1.4 Train the pattern makers with both flat pattern making technique and draping technique.

2.1.5 Record the standard timing by a sport timing watch of each technique for at least 2 times.

2.1.6 Examine the samplings that are made from both flat pattern making technique and draping technique.

2.2 Finding six models' satisfactions while wearing the samplings made from both flat pattern making technique and draping technique.

Both of the samplings completed will be worn by the six models who will respond to the questionnaire for satisfaction while wearing the sampling.

The result from measuring the six models' satisfactions is as follows:

4.21-5.00	defines	most satisfaction
3.41-4.20	defines	much satisfaction
2.61-3.40	defines	satisfaction
1.81-2.60	defines	less satisfaction
1.00-1.80	defines	least satisfaction

Data are then statistically analyzed in terms of means and percentage.

4. Results and Discussions

4.1 Experiment for Flat Pattern Making and Draping Techniques

Fashionable style that is used for this research is J-C-W Code number 0181, Size M with the flat pattern making technique as shown in Figure 2 and draping technique as shown in Figure 3 and 4. The results of the experiment are shown in Table 1.

Figure 2 *: Steps of Flat Pattern Making Technique of Sampling Design*

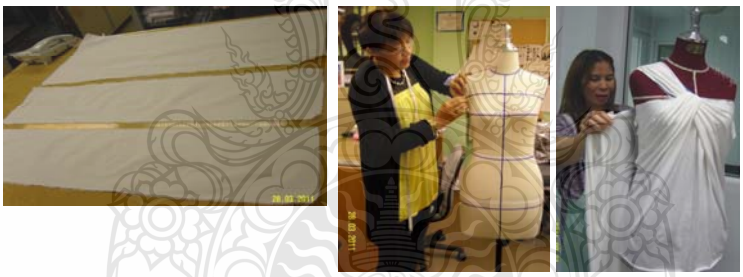

Figure 3 *: Steps of Draping Making Technique of Sampling Design*

Table 1: *Comparison of the standard time of the flat pattern making and draping technique*

Steps	Activities	Flat Pattern Making Technique			Draping Technique		
		Time/Min		Means	Time/Min		Means
		Number of Time			Number of time		
		1	2		1	2	
1.	Analysis the fashionable drawing from the sampling orders	18	10	14	12	5	8.50
2.	Make a copy of the master patterns on the pattern papers	4	3	3.50	-	-	-
2.	Place the laser tapes on the mannequin and provide the tasks	-	-	-	15	10	12.50
3.	Make the complete flat pattern	410	280	345	-	-	-
3.	Place the clothes on the mannequin	-	-	-	180	80	130
4.	Make a copy of the flat pattern for making a complete pattern.	25	20	22.50	-	-	-
4.	Make a copy of the draping pattern for making a complete pattern.	-	-	-	28	20	24
	Total (hours)	7.37	5.13	-	3.55	1.55	-
	Average value (hours)	-	-	**6.25**	-	-	**2.55**

Table 1 shows the standard time recorded by a sport timing watch for both pattern making techniques – the flat pattern making technique and draping making technique. Both techniques were repeated for 2 times and then the average time was calculated. From the

experiment, the time recorded for different steps of the flat pattern making technique is as follows: the time for analysis of a pattern design from a sample order was 14 minutes; the time for making a copy of master pattern onto the pattern paper was 3.50 minutes; the time for making the complete flat pattern was 345 minutes; the time for making a copy of the pattern onto the pattern paper for making the complete flat pattern was 22.50 minutes and the whole time for making the flat pattern was 6.25 hours.

Concerning the draping pattern making technique, it was found that the pattern makers spent 8.50 minutes on analyzing the ordered pattern and 12.50 minutes on placing the laser tape on the mannequin as well as providing the pieces of clothes. Besides, the pattern maker spent 130 minutes when placing the piece of clothes on the mannequin, 24 minutes on copying the completed pattern on the pattern papers, and 2.55 hours on draping making on the mannequin. In conclusion, the whole process of making the flat pattern took 6.25 hours or 375 minutes while the draping technique took only 2.55 hours or 153 minutes. Obviously, the flat pattern making took more time for making the pattern than the draping pattern making. The difference between the two techniques was 3.7 hours.

Actually, the daily working hours of a manufacturer are 8 hours or 480 minutes per day and the minimum wage according to the labor law is Baht 215 per day. Therefore, the capital cost of the flat pattern making technique is Baht 167.97 (Baht 215 × Baht 375/480 min) while the capital cost of the draping technique is Baht 68.53 (Baht 215× Baht 153/480 min.). According to the results of the study, the time and the capital cost of the draping technique are less than those of the flat pattern making technique.

4.2 Surveying the satisfaction of the sampling

After making the completed samplings - both of the flat pattern making and draping techniques as shown in Figure 5&6, the whole samplings were worn by 6 models who later gave responses to the questionnaires for surveying the satisfaction. The results were shown in Figure 7 – 8 and in Table 2 – 3.

Figure 4*: Sampling of the flat pattern making*

Figure 5*: Sampling of the draping Technique*

***Figure 6**: Comparison between the sampling made from the flat pattern making technique (left figure) and the draping technique (right figure)*

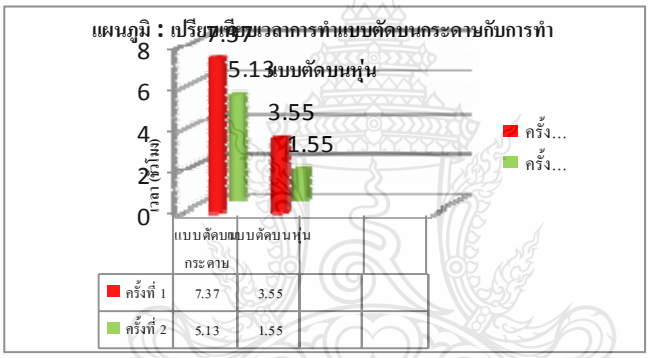

***Figure 7 :** Chart of time comparison for the flat pattern making technique and draping technique*

***Table 2:** The models' satisfaction when wearing the samplings in the fashionable pattern making*

	Flat pattern making		Draping technique	
	Average scores	Level of satisfaction	Average scores	Level of satisfaction
1. Satisfaction with body fitting and dividing of the proportion of the patterns (25 marks)				
1.1 Sampling pattern was precise to the order task	2.17	quite less	4.83	Most
1.2 Dividing the proportion of the patterns was suitable and nice	2.00	quite less	4.67	Most
1.3 The cascade of the fabric grain was suitable	2.00	quite less	5.00	Most
1.4 Level of the draping distribution got nice proportion	2.00	quite less	5.00	Most
1.5 The cascade of the pleat lines and proportional level was appropriate	2.00	quite less	4.67	Most
Total	**10.17**		**24.17**	
2. Models' satisfaction with wearing the samplings (15 marks)				
2.1 Feel comfortable while wearing the samplings	2.33	quite less	4.50	Most
2.2 Feel fitting with the body	2.67	moderate	4.67	Most
2.3 Feel quite active while moving	2.83	moderate	4.00	Much
Total	**7.83**		**13.17**	
3. Model's satisfaction with cutting and sewing (15 marks)				
3.1 The neatness of the connecting seams	2.50	quite less	4.00	Much
3.2 The light fabric sewn smoothly	3.17	moderate	4.00	Much
3.3 The precise of the sewing lines	2.83	moderate	4.17	Much
Total	**8.50**		**12.17**	
Total marks	**26.50**		**49.51**	

Concerning the models' satisfaction when wearing the samplings by responding to the questionnaire, it was found that the models were more satisfied with the draping pattern than the flat pattern making. With the score of satisfaction at 4.00 to 5.00 levels, the models' satisfaction to the body fitting and dividing of the proportion of the draping patterns especially the level of the draping distribution with nice proportion and the suitable cascade of the fabric grain was the most satisfaction (5.00) while sitting down of the cloth on the line of pleat, proportion level, sitting down appropriately gained most satisfaction (4.67). In addition, the models' satisfaction when wearing the sampling was the most satisfaction: the comfort for wearing the sampling (4.50), fitting on the body (4.67). While the models' satisfaction to sewing of the sampling such as the kindliness of the link seam was much satisfaction (4.00), the frequency of the ways of sewing was 4.00, the accuracy of sewing was 4.17. The results of the models' satisfaction to the pattern making indicated that the sampling made from the draping pattern making technique was more satisfying than the flat pattern making technique because the qualification, proportion, fitting, size and the cascade of the fabric grain of the sampling made from draping technique were better than the flat pattern making technique as shown in Figure 7

Table 3: *Summary of Models' satisfaction when wearing the sampling of fashionable style*

Factors for Evaluation	Flat Pattern Making				Draping Pattern Making			
	Total Score	Score of questionnaire	Score of Satisfaction	Percentage	Total Score	Score of questionnaire	Score of Satisfaction	Percentage
	55			100	55			100
1. Satisfaction with body fitting and dividing of the proportion of the patterns.	25	61	10.17	40.68	25	145	24.17	98.68
2. Models' satisfaction with wearing the samplings..	15	47	7.83	52.20	15	79	13.17	87.80
3. Model's satisfaction with cutting and sewing	15	51	8.50	56.67	15	73	12.17	81.13
Total	55	159	26.50	48.18	55	297	49.51	90.01

Table 3 shows the scores of the models' satisfaction when wearing the sampling in the form of fashionable style which were made from the flat pattern making technique and draping pattern making Apparently, the score of proportion between the two techniques concerning fitting the body and dividing the proportion of pattern making were 61:145; moreover; the score of the models' wearing satisfaction was 47:79 and sewing was 51:73 respectively. The results of analysis related to the sewing time were different both in terms of the sewing methods and the procedures in the two sewing techniques.

5. Conclusion

With reference to the comparison, it was apparent that the second time of pattern making by both techniques was faster than the first time and the draping pattern making technique was faster than the flat pattern making technique. Besides, the draping pattern making was able to reduce more of the time waste and was still more accurate in getting the right proportion to the cloth design than the flat pattern making technique. It was also found that the pattern making could be seen clearly on

the mannequin while working on the task (3 dimensions) (Liu, Y., Zhang, D. and Yuen, 2010) so the pattern makers could correct the pattern immediately within one time. The result of surveying the models' satisfaction indicated that they preferred the samplings made from draping pattern making to flat pattern making techniques.

6. Suggestions

Since draping pattern making can be made for both basic pattern making or fashionable pattern making in any styles. The pattern makers should have the basic dress making knowledge and especially they should know how to cut, make the pattern, and sew the dresses very well because they have to apply the knowledge in using the correct methods and cutting-sewing accurately.

Selecting any kinds of clothes for making the pattern on a mannequin needs careful attention in using the same kind of cloth or the cloth of the same weight that will be sewn as the sampling. The reasons are to get rid of the difference of stretching and sitting down of the cloth when cutting and sewing the samplings.

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