

Descriptive Study for Ottoman Age Women's wear "Case Study:"The Great Century TV Series "

Prof. Naglaa Teama

Faculty of Applied Arts, Damietta University

naglaateama1@yahoo.com

Prof. Doha El Demerdash

Apparel Design and Management Department, Faculty of Applied Arts, Helwan University

dr.doh.demer@gmail.com

Researcher. Alaa Eldaly

Master's Researcher - Faculty of Applied Arts - Damietta University

fashionesta61@gmail.com

The research summary

The study shows the following:

First; the **theoretical side** and it consist of (4) chapters, the first chapter consists of an introduction to the study which shows that: - the art of design is one of the applied arts which is based on art and science together, as it includes both benefit and beauty. Fashion design is one of the most important basic arts as it shows a lot of character of people through the centuries. Clothing is divided according to the type of activity to either work clothes, evening clothes, morning clothes, night clothes in addition to sports clothes. Sportswear is one of the most important requirements for sports activities according to various gymnastics' studies for sportswear for motor disabled challengers.

The research problem:

- lack of caring about motor disabled challenger sportswear and its suitability for functional properties for three dimensional fabrics.

The research importance: -

- 1- Paying attention to motor disabled challenger sportswear.
- 2- Improve player performance and decrease injury rate.
- 3- Creating distinctive designs that suit the function.

The research objective:

- Reach the best sportswear in function and characteristics.

The research hypotheses: -

- 1- The thermal processing effect in mechanical and physical principles of the fabrics of the three-dimensional search samples.
- 2-The raw material effect in mechanical and natural principles of the three-dimensional search samples.
- 3- The floor design effect in mechanical and natural principles of the three-dimensional search samples.

The research methodology:

- Analytical experimental methods.

Search limits:

-Humane limits: - it is based on motor disabled challenger

Places limits: - Damietta governorate

Time limits: - 2018/2019

Terminology

Clothing design: - A technical language composed of a set of interrelated elements such as calligraphy, shape, color, and space, which are governed by a number of foundations such as control, balance, rhythm, harmony, etc. This helps to use them in harmony with the nature of the human body and achieve the utilitarian and functional side of it in a framework that highlights the beauty of the design and designed it at the same time.

Sportswear: - It is suitable clothes to wear during the work of sports and physical activities as the body during the work of sport produces a huge amount of increased heat as the duration of training increases, therefore sports clothing, must have specific functional characteristics that will help in the ease of breathing and circulation and allow freedom of movement and durability. Clothing should be involved in regulating the temperature difference between the body and the surrounding atmosphere (between skin and clothing) through thermal insulation, ventilation, absorption, and transmission of sweat.

Motor handicapped :- A condition that people suffered with some dysfunction in their motor abilities, affecting the manifestations of their social, mental and emotional development, which need to special education, including cases of cerebral palsy, spinal disorders, muscular dystrophy, multiple sclerosis and epilepsy, a condition in the area of bone, muscle and nerves limit their ability to use their bodies naturally and flexible as others, which adversely affect their participation in one or more of their life activities and impose restrictions on their participation in routine school activities.

Knitted fabric: It is the stitch that is collected among them to form the area of the cloth to create a vertical columns and horizontal rows, the relationship between rows and columns is determined in the unit area to determine the properties of the cloth.

Weft knitted: - It is a way to interweave a single thread or a group of threads in the form of stitches characterized by the presence of spaces between each other, there is an opportunity to move the threads within the weaving, which earns high mobility and sequential flexibility.

Double layer knitted: They are produced using both sides of the machine and are also called double stitches such as rib and interlock (rib and interlock). These are the basic structures that comprise all fabrics of weft knitted and each type of these fabrics consists of different configurations of stitches front and back, intertwined in a certain order of needles. The fabric can consist of a single basic structure consisting of regular and clear stitches and buttonholes, or it can consist of more than one basic structure along the length of the fabric.

Three dimension knitted: - three-dimensional weft knitwear is a new area of development of twin knitted fabrics which can be produced as knitted fabric with two separate layers of fabric to be connected by a number of separate yarns that connect the two layers in an orthogonal plane at a 90 ° angle that is easy to separate into two layers for final uses.

Used fabrics in producing knitted fabric in the research: __





Cotton / lycra - acrylic – chenille – boucle






The second chapter includes a brief about design as it is a process which aims to put solutions to achieve needs in different occasions which hypotheses defined cases, and explain its basics, principles, design needs, design process steps, clothing design, clothing section, and ergonomics.

In addition to showing its relation with clothing, this study is specialized for motor handicapped challenger people of disability, and that is showed in the third chapter: - that shows a definition about them, their needs, their sports, their sportswear terms.




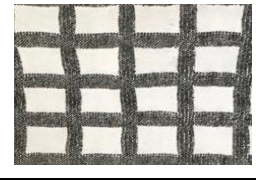



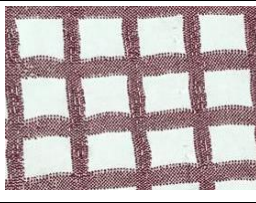




The fourth chapter: shows the searcher suggested fabric for study (boucle, chanellie, acrylic) yarns using cotton / lycra for the fabric floor with double layer construction for weft knitting fabrics then thermal processing which result the three dimension knitting fabrics which Provide comfort for players, decrease friction with the floor and doesn't hinder during practice of sport. Then the applied side is shown in the fifth chapter: It presents the specifications of the used machine and the followed method which is the thermal processing of the double construction of the weft knitting, which produces the three-dimensional effect of the produced fabric then it views the specifications of the used yarns, the design of the floor, the proposed designs for implementation and tests that were conducted, hence based on those tests and statistics for the results, were the implementation of the best two samples for the implementation (2).

and the following tables show characteristics of weft knitting fabric .

Design no	Double Floor design	Sample no	Raw material	No. face yarn	Fabric for back	No. back yarn	Used construction	gauge	Executive style
Design 1		1	Boucle	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
		2	Chanellie	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
		3	Acrylic	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
Design 2		4	Boucle	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing

		5	Chanellie	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
		6	Acrylic	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
Design 3		7	Boucle	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
		8	Chanellie	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing
		9	Acrylic	28/2	cotton /lycra	14/1 2yarn	Weft knitting (double construction)	7	thermal processing

Produced fabrics

Sample no	Sample design	Sample raw material	Fabric before processing	Fabric after processing	Fabric back
1		Boucle			
2		Chanellie			
3		Acrylic			

4		Boucle			
5		Chanellie			
6		Acrylic			
7		Boucle			
8		Chanellie			
9		Acrylic			

Suggested designs:

					
Design (1)		Design (2)		Design (3)	

The following tests were performed

1. Bursting force test (psi). The test is carried out according to ASTM-D3786.
2. Internal Absorption test. The test is carried out according to AATCC 79.
3. Tests for estimating the thickness of fabrics (mm). The test was carried out according to the standard specification 295/1962 .

4. The test of estimating the weight of fabrics (g / m2).The test was carried out according to the Egyptian Standard No. 295 C3 for the year 2008.

The sixth chapter: includes statistics results and their analysis, and results of the study and its recommendations.

Statistics results:

1- Evaluate the overall quality of the three-dimensional search samples properties

Sample No	Raw No	Column No	Thickness	Weight	Bursting force	Floor abrasion	overall quality	ranking
1	75.43%	88.89%	95%	83.33%	78.24%	100%	86.76%	4
2	75.43%	77.78%	55%	93.12%	72.62%	100%	78.99%	9
3	100%	100%	55%	88.02%	83.83%	100%	78.81%	3
4	72.99%	88.89%	65%	81.14%	75.71%	100%	80.62%	8
5	85.18%	100%	70%	94.28%	44.49%	100%	82.33%	7
6	93.87%	100%	60%	76.89%	73.82%	100%	84.10%	6
7	78.13%	88.89%	100%	89.64%	81.43%	100%	89.68%	2
8	92.03%	100%	75%	100%	44.87%	100%	85.32%	5
9	90.18%	100%	60%	90.49%	100%	100%	90.11%	1

It shows ratio and performance for mechanical and physical properties for the three-dimension search fabrics, as the sample No (9) has the highest overall quality with (90.11%) ratio then the sample No (7) with ratio (89.68%) then the sample No 1 with (86.76%) ratio, then followed with other samples and the sample No (2) is the lowest overall quality with (78.99%)ratio.

2- Evaluate the overall quality of three dimension search samples raw material

Raw material	Raw No	Column No	Thickness	Weight	Bursting force	Floor abrasion	overall quality	ranking
Boucle	83.62%	88.89 %	86.67%	84.67%	78.39%	100%	85.69%	2
chanellie	84.01%	96.30%	95.80%	95.80%	54%	100%	82.21%	3
Acrylic	86.78%	96.30%	%85.14%	58.33%	85.14%	100%	87.34%	1

It shows that acrylic is the best with overall quality of (87.34%) then boucle with (85.69%) Then chenille with overall quality of (82.21%).

3- Evaluate the overall quality of the three-dimensional search samples according to the floor design:

Floor design	Raw No	Column No	thickness	Weight	Bursting force	Floor abrasion	overall quality	Ranking
Design (1)	83.62%	88.89 %	68.33%	88.12%	78.16%	100%	84.52%	2
Design (2)	84.01%	96.30%	65%	84.11%	64.67%	100%	82.35%	3
Design (3)	86.78%	96.30%	78.33%	93.38%	75.44%	100%	88.37%	1

It shows that the third design is the best with overall quality of (88.37%) then the first design with overall quality of (84.52%), then the second design with overall quality of (82.35%).

The Search Results Feed:

At the end of the research we find that the hypotheses of the research have been achieved and can be summarized in the following: -

1. Thermal processing affects the physical, mechanical properties of fabrics of the research samples.
- 2 - Type of raw material affects the physical and mechanical properties of fabrics of the research samples.
- 3 - Design affects with small percentage the physical and mechanical properties of fabrics of the research samples.

Research recommendations:-

- 1 – pay attention to the knitting industry as one of the important industries because of its future in the coming period.
- 2 - Increase scientific research in the field of three-dimensional fabrics because of their important functional characteristics.
- 3 – pay more attention to the category of disability challengers as they are a class with a high degree of activity and mental abilities that qualify them to excel in all areas and give more attention to their clothes.
- 4 - must take into account the periodic study of all new techniques in fabrics and apply it to sportswear to achieve the highest degree of comfort and freedom of movement

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