



## Draping as a technique to develop creative skills in Saudi Arabian fashion design<sup>1</sup>

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**Abstract.** This study aims at studying the effect of fashion design's draping method on a dress form in developing creative skills (Originality, Fluency, Flexibility, The details). This study followed an experimental approach and used a variety of methods and tools to collect the scientific material of the study. The following tools were included: Pre- and post- skills tests, assessment scale to evaluate the designs and observation. The sample size of the study was 75 female students in the experimental group and 30 female students in the control group among the female students of the College of Arts and Design at PNU. The total number of designs was 150 design for the experimental group and 60 for the control group. It was presented and arbitrated by six arbitrators. The total number of questionnaires before and after the applied program was 900 questionnaires for the experimental group and the control group was 360, and they were analyzed statistically. The study arrived at the following results: the design of a series of innovative outfits using the draping method on a dress form. also confirmed that technical performance in dress form draping improves the designers' creative skills development, which then helps them to implement innovative designs.

**Keywords:** Fashion; design; draping method; dress form; developing; creative.

## [es] Drapeado como una técnica para desarrollar habilidades creativas en el diseño de moda en Arabia Saudita

**Resumen.** Este estudio tiene como objetivo estudiar el efecto del método de drapeado del diseño de moda en forma de vestido en el desarrollo de habilidades creativas (Originalidad, fluidez, flexibilidad, detalles). Este estudio siguió un enfoque experimental y utilizó una variedad de métodos y herramientas para recolectar el material científico del estudio. Se incluyeron las siguientes herramientas: pruebas de habilidades previas y posteriores, escala de evaluación para evaluar los diseños y la observación. El tamaño de muestra del estudio fue de 75 estudiantes femeninas en el grupo experimental y 30 estudiantes femeninas en el grupo control entre las estudiantes femeninas de la Facultad de Artes y Diseño de PNU. El número total de diseños fue de 150 diseños para el grupo experimental y 60 para el grupo de control. Fue presentado y arbitrado por seis árbitros. El número total de cuestionarios antes y después del programa aplicado fue de 900 cuestionarios para el grupo experimental y el grupo de control fue de 360, y se analizaron estadísticamente. El estudio llegó a los siguientes resultados: el diseño de una serie de trajes innovadores usando el método de drapeado en forma de vestido. También confirmó que el rendimiento técnico en el drapeado de forma de vestido mejora el desarrollo de habilidades creativas de los diseñadores, lo que les ayuda a implementar diseños innovadores.

**Palabras clave:** Moda; diseño; drapeado; forma de vestido; desarrollo; creativo.

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## 1. Introduction

Creativity is the decisive factor by which a society advances and develops in all aspects of life. Creative ability is considered to be the primary facilitator of scientific and technological advancement. Thus, the question of advancement is not only a question of minds with high levels of intelligence, but rather it is a question of innovative, creative minds that are able to see things from new and diverse perspectives (Baibars, 2003, p. 3). Creativity allows society to establish new ideas that aim to transfer said society from traditionalism to modernity, which then leads to hastening developments in every field in order to support gifted students in handling academic subjects and other matters with greater energy, vigour and positivity (Al-Hidabi ,2011, Al-Ahmedi, 2007).

Dress form draping is a science that requires scientific, creative and innovative skills based on artistic foundations. The dress form draping method is based on scientific rules and foundations in addition to the elements introduced by the designer in using the fabric and its various, unique characteristics to drape the dress form. It is also using their skills and abilities to innovate and imagine and their unique production of a technically creative draping in complete harmony with all elements (Shokry and Abdul Ghaffar 2009: 15). Besides their studies and subject-matter expertise, during their creative modes, successful designers rely on various sources from which they draw and seek inspiration for new ideas that are appropriate for the creative work they engage in (Baibars, 2003, p. 5).

The dress form draping method requires an advanced skill set, as this method promotes the fashion designer's creativity and imagination when using different types of fabrics (Al-Turki and Al-Ghamidi,2013, p. 84). Moreover, the technical performance of fashion design through the use of the dress form draping method helps in developing the creative skills of the designer, which helps them to implement innovative designs in the field of fashion design. The composition of this study is one of the methods used in the design of fashion through the formation of fabrics on the Manicans (industrial body) and transformed into an innovative garment product.

This study is concerned with developing creative skills through fashion design's method of dress form draping. It is significant in the sense of raising the proficiency and enrichment of the creative and innovative background of designers in order to raise the level of thinking in and skill set of the fashion designer to engage in innovative fashion design. The above-mentioned facts show clearly the effect of fashion design's dress form draping in developing a fashion designer's creative skills. The premise of the study posits that it is necessary to prepare the proper conditions for creative thinking through utilization of fashion design dress form draping, which leads to a development of creative skills in fashion design and in draping the dress form in a creative way.

## 2. The literature review

Previous studies have been conducted to develop innovative skills through the formation of fashion, including the study (Al-Ghamdi, 2011,p.4 ) and aimed to identify the relationship between fashion design and the development of innovative skills in fashion design for fourth year students (Level 8) in the Department of Clothing and Textile Design, measuring the level of innovation between the design methods of drawing and design on the composition of the Manicans and comparing the level of innovation in both methods. It used a comparative experimental approach and included the following tools: Pre- and post- tests, a training program for developing innovative skills in fashion design, a scale to evaluate the training course and a scale to evaluate the innovative perspectives in the knowledge test. The program relied on an intentional sample of 42 female students. Among its most important results: There were statistically significant differences between the pre- and post- tests when using different types of fabric in favour of the post-test, which indicates the effectiveness of the proposed program for developing innovative skills in fashion design. There were also statistically significant differences when comparing the two design methods (drawing and dress form draping) in using different fabrics in favour of innovation by using the dress form draping method. The results were executed with fantastical designs and are consistent with the current study in terms of developing creative skills for female students through the formation of Manicans and differ from them as it can be applied on the study at the first level of female students. The Cirella study (2016, p.331-343) aims to propose a conceptual framework for the collective creativity within the organizational design perspective and it aims to assist in clarifying the concept and the method of managing collective creativity in a meaningful way. In particular, this study identifies the organizational variables concerned with the promotion of collective creativity and examines the relationship between collective creativity and organizational performance. Since the theory of collective creativity is completely fragmented, the first part of the research attempts to define collective creativity and to integrate the different theoretical perspectives. The study based on a survey designed in the context of an in-depth collaborative research study with an Italian fashion design company. The study data was collected in the context of cooperative management research based on an intervention research approaches (Hatchuel & David, 2008) to achieve accurate and relevant results. To achieve the objectives of the study. The study Data were collected using a questionnaire that was distributed to all the members of the Product Design and Development Unit. The unit includes four different positions: product managers, designers, experts and sales representatives. The questionnaire items were measured on the six-point Likert scale. The questionnaire was reviewed during several successive meetings of the research team, and the items were better defined to be easily interpreted by the participants. The questionnaire was sent by e-mail with a note from the CEO of all design unit staff. Recipients were asked to print and complete the questionnaire. The questionnaire was sent to the design unit staff in the company, with a response rate of 80.81%. The high response rate ensures multiple responses within roles enabling generalization at the design unit level. The findings of the research indicate why it is important for the researchers to be aware of the collective creativity concept and its meaningful management. In particular, clarity about the work process, including the definition of the task, related phases/activities,

related roles and their level of autonomy, plays a crucial role in enhancing collective creativity as this supports complex teams to focus on key relevant facts and issues. The support provided by relevant technology can also nurture collective creativity thanks to technological competencies and actual use of this technology. For these reasons, 'creativity must be present at every level of every artistic and technical part of the organization' (Catmull, 2008, p. 66). Furthermore, the impact of collective creativity on organizational performance is confirmed. Collective creativity, more than individual creativity, has a positive impact on client satisfaction and economic results (both directly and indirectly via client satisfaction).

This study is consistent with the current study in terms of developing the creative skills in the research sample and the number of participants in the study, and they both emphasize the importance of enhancing creativity and developing learning based skills that can be planned. The two studies differed in terms of method and tools, as the questionnaires were administered on the study sample while the current study used the experimental method and the pre and post skills tests.

Cirella, Canterino, Guerci and Abraham B. (Rami) Shani study (2016, p. 211–222) investigates the relationship between different types of organizational learning mechanisms and creative climate. In the context of an action research study, this paper focuses on insights from a survey that was administered to all the employees of the Product Design and Development unit of the company. Data was collected using a survey sent to all the personnel of the 'Product Design and Development' unit. In the Design unit, people work with a specific client on a collection. The questionnaire was sent by email. The survey items were measured on the 6-point Likert scale. The study population consists of all the personnel of the 'Product Design and Development' unit who received the email. The response rate was %80.8 of the total staff of the product design and development unit in the company. Therefore, the final sample consisted of a total of 80 respondents.

The results demonstrate that the three different types of organizational learning mechanisms considered in the study (cognitive, structural and procedural mechanisms) are associated with creative climate. The study generates new scientific knowledge about the role of organizational learning mechanisms and provides specific recommendations for organizations that aim to enhance creative climate. This finding contributes to the development of new knowledge in different ways. The finding of this study contributes towards a better understanding of creative climate, because it confirms that: creativity is not (only) about 'creative individuals', but is an organizational competence that can be improved upon or hindered by organizational learning mechanisms, and ,creativity is not a 'romantic inspiration', but a process that is based on learning, which can be planned, institutionalized, formalized and designed with organizational learning mechanisms coherently with the suggested notion of collective creativity-by design. This is consistent with the current study developing creativity at the research sample and finding the relationship between creativity and organizational performance. It was different from the current study as it focuses on collective creativity than more the individual creativity and used the experimental methodology.

Fashion design and art form in which elements of design and aesthetics are applied to the creation of clothing and accessories. Fashion design requires skill at arranging elements and ideas, and adaptation to society at a particularly point in time. It is also a process, the purpose of which is to create something new and innovative (Shokry

and Abdul Ghaffar, 2009, p. 31). In this study, it means choosing or arranging the particular elements of the clothing's design from lines, shapes, colours and raw materials in a new and innovative method to suit the human body.

Dress form draping in this study, draping is one of the methods used in fashion design through fashioning fabrics on the dress form (the artificial body) and transforming them to an innovative clothing product.

Design thinking is the methods and processes used to examine the ambiguous problems, acquire information, analyze knowledge and present solutions in design and planning, in other words, it is all the cognitive activities of design applied by designers during the design process. This technique of thinking is characterized by the ability of taking the conditions of all aspects of the problem, then analyzing all components and creativity in generating insights and solutions using design thinking (Haroush and Maaroufi, 2017, p. 119-120).

Creative skills the individual's ability to produce ideas, works or knowledge expressing something new or unfamiliar to others. It may be an imaginary activity or material production, or a new depiction of old experiences, or a link of former relationships with new positions. (AL-Tartouri and Jowayhan, 2011, p. 13). Torrance (1965, p.8-5) identifies innovation as a process in which an individual becomes sensitive to problems, realizes gaps, shortages and imbalance in information, and elements, then searching for solutions, testing the validity of these solutions, re-examining, modifying them, and then presenting the results. He identifies the innovative skills with four abilities which are fluency, flexibility, originality and details. Fluency means multiple ideas and flexibility is the individual's ability to change the mental angle through which he looks at things and various situations. Originality refers to the ability to produce ideas characterized by novelty, facetiousness and scarcity, it is the ability of an individual to determine details that contribute to the development of a specific idea (Al Otaibi, 2002, p. 33). In this study, it refers to the skills of originality, fluency, flexibility and elaboration.

Types of fashion design: Fashion design as a production, Fashion design involves the organization and development of a plan to create an aesthetically pleasing fashion piece. It is divided into: Sensual design: Where the sense of touch is considered to be the most important formative element in the field of fashion design, thus it depends on the feel and look of the fabric. Behavioural design: It is used in clothing production and consumption. Among the factors that influence behavioural design are the market system, income, customs and traditions. Fashion design as a system is the planning and organizing in order to achieve a specific goal. The design is applied to everything innovative for the sake of realizing a sensual or behavioural goal. Fashion design as a system is divided into: Functional design is connected to the purpose for which the outfit was designed, for example, designing clothing for the bride differs from designing clothing for a bank employee. Thus, the designer prepares the drawing and the specifications, then drapes that on the dress form, marking the drawings, cutting them, sewing them and finishing them. After all of that, the clothing model wears it and it is revealed to the public.

Formative design (structural): Transforming the two-dimensional fabric into a three-dimensional form. This is done through the process of dress form draping.

Decorative design does not influence the structural or functional design, but rather adds a decorative and aesthetic aspect to the model, such as using trimmings,

buttons, lace, embroidery, printing, painting, etc. It is similar to using some of the accessories such as belts, shawls, etc. (Ahmed, 2011, p. 20-23).

A fashion designer is considered the primary driver and foundation of the field of fashion design and style. Among the necessary, important qualities in a fashion designer is innovative ability, meaning that they put forth new ideas. Thus, an innovative person is one who possesses the ability to extract a greater possible number of diverse ideas from one idea. Another important quality is artistic sense and taste, i.e. having the ability to grasp relationships between lines, colours and raw materials, then bring them together in a coordinated way to express high aesthetic value in the end. This also includes having a high degree of intelligence, meaning that one has the ability to understand and adjust to the surrounding environment and all its properties. To be familiar with the society for which the design is done and the influencing factors in it, from the social, cultural, economic and technological perspectives in order to bring forth the design that is suitable for that era and society. Finally, the designer needs to have training and experience, because it is likely that their unique hidden talents will remain unapparent without training. They must search for resources that promote their talents and allow them to engage in ample production and information (Sarraj, 2010.).

### **3. Aims and objectives**

- Designing innovative outfits using the dress form draping method.
- The effect of fashion design's draping method on a dress form in developing creative skills in-between the pre and post tests.

#### **3.1 Hypotheses of the study**

- There are statistically significant differences between the pre- and post- tests in the experimental group in overall creative skills in favour of the post-test in the field of dress form (draping).
- There are statistically significant differences between the experimental and control groups in overall creative skills in the post-test in favour of the experimental group in the field of dress form draping.

### **4. Methodology**

Experimental is the use of experience in proving hypotheses. The program was designed in the form of the fashion design on the industrial model (the Manicans) to a group of students of the College of Arts and Design. The independent variable (the experimental variable) is the program. The creative skills are the dependent factor. The factor that results from the influence of the independent factor has been conducted on one group of students to determine the effect of the independent factor. They were tested before and after exposure to the influence of this independent or experimental factor. The control group, which is not exposed to the experimental variable, is considered to be under normal conditions and is considered the basis of the judgment and the knowledge of the result. The differences between the experimental and control groups are the result of the experimental variable that influences the experimental group.

#### 4.1. Procedure and Sample

A variety of methods and tools to collect scientific data for the study. Thus, to ensure that the obtained information and data was complete and precise, the following tools were included:

- Program proposed in the development of creative skills in the field of formation on the Manicans (duration of the program four weeks at a rate of 5 hours).
- Pre- and post- skills tests
- Assessment scale to evaluate the designs (A rating scale to evaluate designs, a scale is designed to measure the development of creative skills, included 12 axes distributed on each skill of creative skills which are originality, flexibility, fluency and the details, and a five-point method for measuring (extremely achievable - highly available- moderately available - weakly available - not available) depending on the respondent's (arbitrator) specific view options (who fills in a scale form), representing an area of the scale as a percentage).
- Observation.

To ensure the authenticity and reliability of the Assessment, it was evaluated by a group of experts in the curriculum, scientific research and the preparation of questionnaires and scientific measurements, as well as experimenting on a limited number of the sample of the study to ascertain the clarity of the questions, interview some of the sample from which the information was collected by the questionnaire to make it again, the answers were identical, and this achieves stability.. It was also tested on a set number of the study sample to ensure the clarity of the questions. A few participants from the sample were asked to fill out the questionnaire for a second time. The responses were similar which verifies the reliability of this tool.

#### 4.2. Measures

The data of the study was tested and analysed using the following statistical methods: The use of frequency tables, percentages, the mean and standard deviation of the experimental and control groups for the pre- and post- tests to measure the effect of fashion design's dress form draping method in developing creative skills. T-test for knowing the statistical differences between the pre- and post- tests in the experimental and control groups to measure the effect of fashion design's dress form draping method in developing creative skills. Graphics to summarize and display the information.

The proposed course was shown to a group of assessors specialized in this field to ensure the suitability of the application. The assessors agreed unanimously upon the course's suitability while making some suggestions for the course in their field of expertise. The assessment scale to evaluate the designs was shown to five assessors to identify their vision concerning the appropriate extent of the scale before applying it and determine if it achieved the desired goals. The assessors made their remarks. The scale was amended after taking into account these remarks. The sample participants' designs were shown to a group of assessors who specialize in the field of fashion design, who then judged them (six assessors). Reliability of the skills test: It was reapplied and arrived at similar results.

## 5. Results

### 5.1 The effect of fashion design's dress form draping method in developing creative skills

#### 5.1.1. First

T-test for knowing the statistical differences between the pre- and post- tests in the experimental and control groups to measure the effect of fashion design's dress form draping method in developing creative skills explains the T-test to show the statistical differences between the pre- and post- skills test in the experimental group.

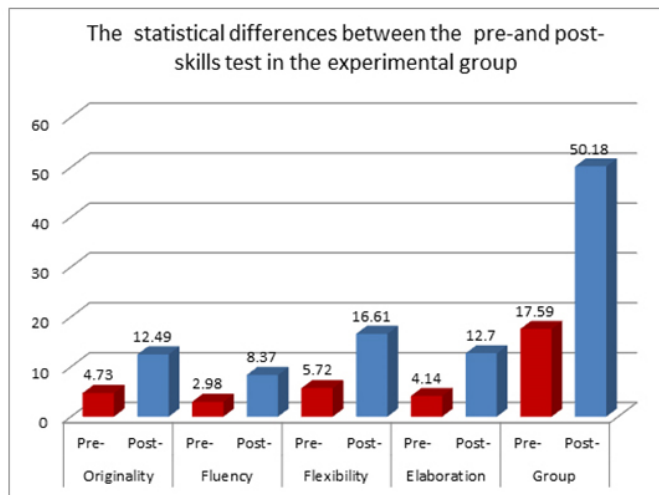


Figure 1. Explains the T-test to show the statistical differences between the pre- and post-skills test in the experimental group.

#### Explanation of Figure 1.

- There were statistically significant differences between the pre- and post- tests in the experimental group for the skill of originality in favour of the post-test, which reached a T-coefficient of - 53.03 at a degree of freedom of 74 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the experimental group for the skill of fluency in favour of the post-test, which reached a T-coefficient of - 57.24 at a degree of freedom of 74 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the experimental group for the skill of flexibility in favour of the post-test, which reached a T-coefficient of - 55.67 at a degree of freedom of 74 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the experimental group for the skill of elaboration in favour of the post-test,



which reached a T-coefficient of - 67.42 at a degree of freedom of 74 and a level of significance of 0.00 and is smaller than 0.05.

- There were statistically significant differences between the pre- and post- tests in the experimental group in overall skills in favour of the post-test, which reached a T-coefficient of - 61.38 at a degree of freedom of 74 and a level of significance of 0.00 and is smaller than 0.05.

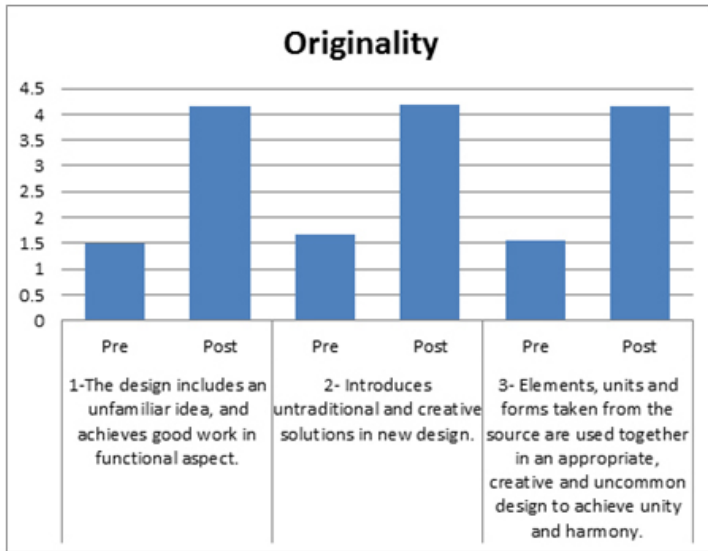


Figure 1-1. Originality.

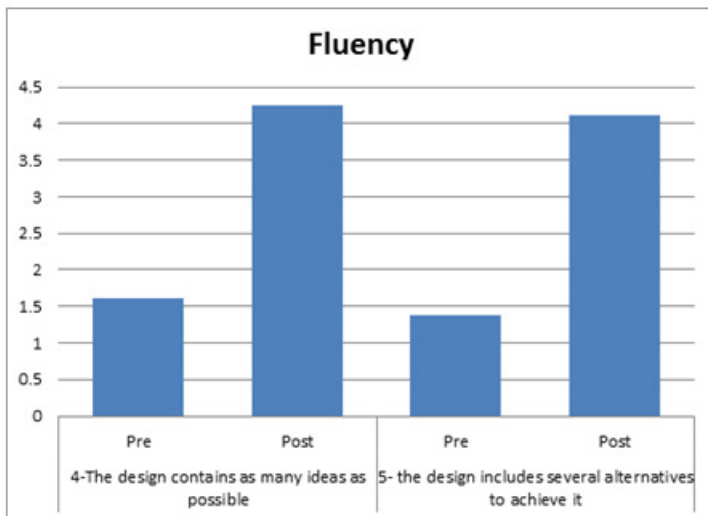


Figure 1-2. Fluency.

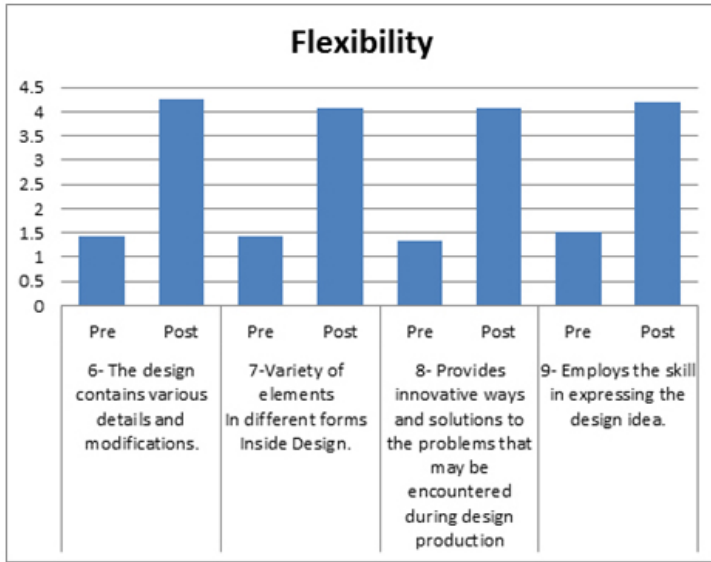


Figure 1-3. Flexibility.

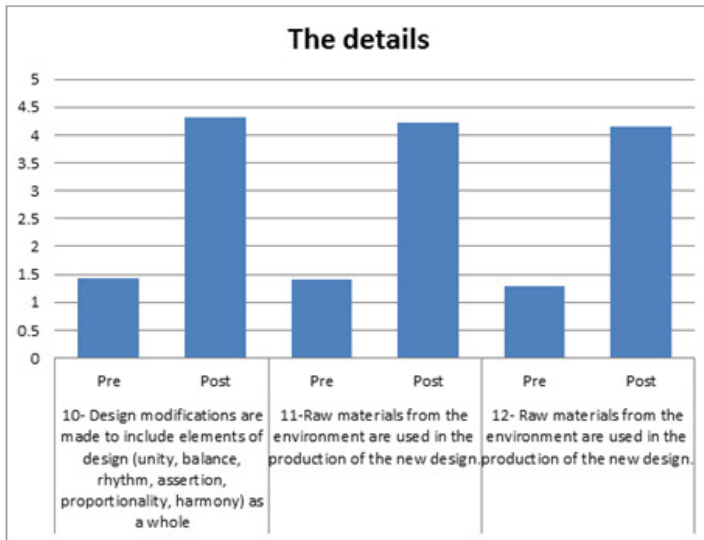


Figure 1-4. The details.

Samples of some of the students’ designs before and after course application in the field of fashion design (modelling on a mannequin) the experimental group:



Figure 2. Designs 1 before and after course application.



Figure 3. Designs 1 before and after course application.



Figure 4. Designs 3 before and after course application.

**5.1.2. Second**

T-test for knowing the statistical differences between the pre- and post-test in the control group to measure the effect of fashion design’s dress form draping method in developing creative skills:

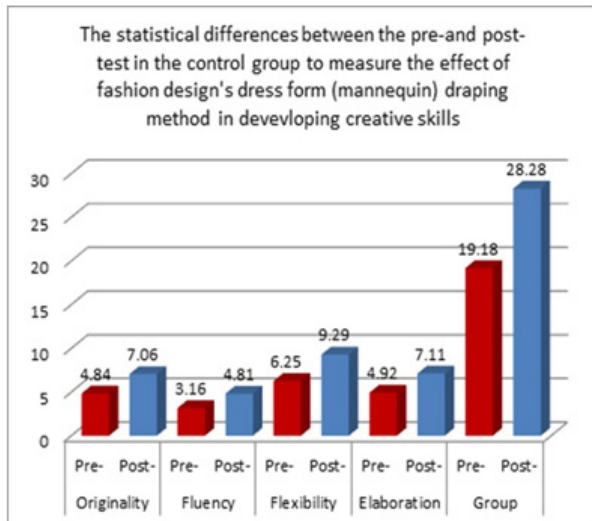


Figure 5. Explains the T-test for knowing the statistical differences between the pre- and post-test in the control group to measure the effect of fashion design’s dress form draping method in developing creative.

### Explanation of Figure 5:

- There were statistically significant differences between the pre- and post- tests in the control group for the skill of originality in favour of the post- test, which reached a T-coefficient of - 7.45 at a degree of freedom of 29 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the control group for the skill of fluency in favour of the post-test, which reached a T-coefficient of - 9.02 at a degree of freedom of 29 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the control group for the skill of flexibility in favour of the post-test, which reached a T-coefficient of - 8.40 at a degree of freedom of 29 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the control group for the skill of elaboration in favour of the post-test, which reached a T-coefficient of - 8.62 at a degree of freedom of 29 and a level of significance of 0.00 and is smaller than 0.05.
- There were statistically significant differences between the pre- and post- tests in the control group in overall skills in favour of the post-test, which reached a T-coefficient of - 5.57 at a degree of freedom of 29 and a level of significance of 0.00 and is smaller than 0.05.

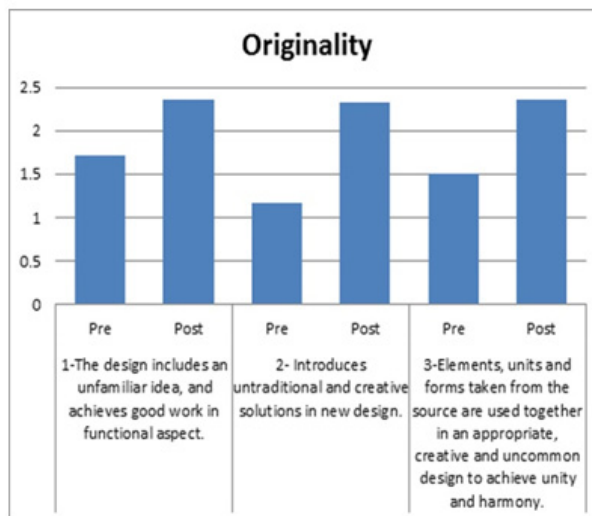


Figure 5-1. Originality.

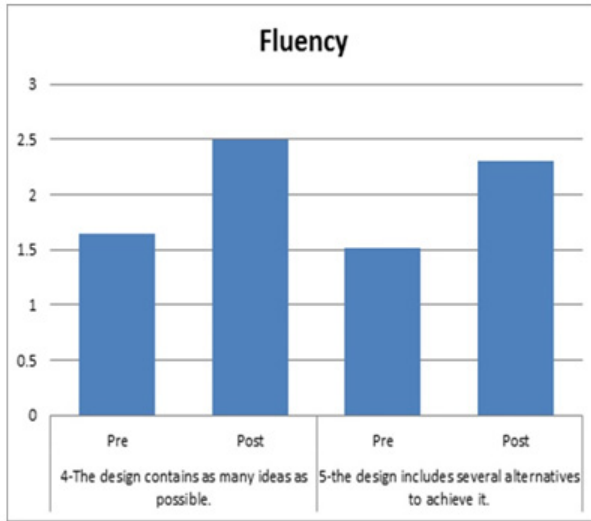


Figure 5-2. Fluency.

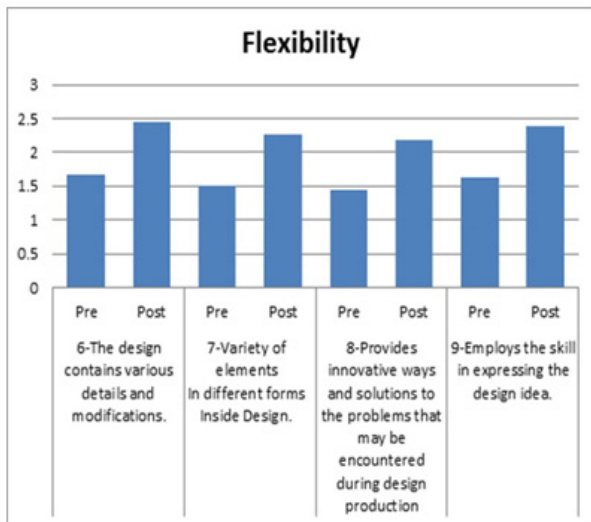


Figure 5-3. Flexibility.

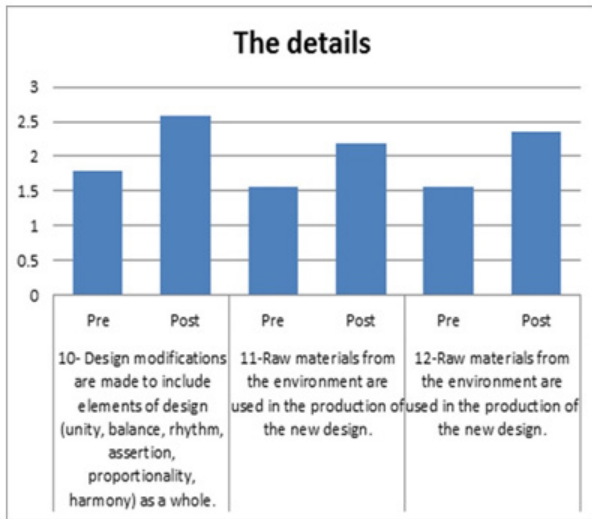


Figure 5-4. The details.

Samples of some of the students' designs before and after in the control group:



Figure 6. Designs 1 before and after.



Figure 7. Designs 2 before and after.

**5.1.3. Third**

T-test for knowing the statistical differences between the experimental and control groups in the post-test to measure the effect of fashion design’s dress form draping method in developing creative skills

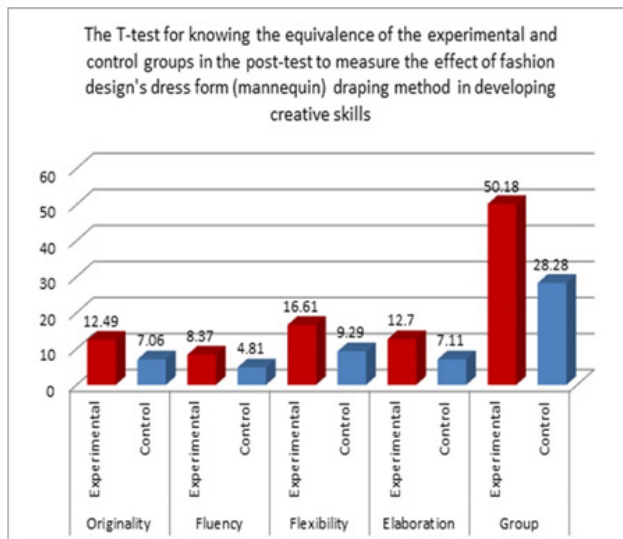


Figure 8. Explains the T-test for knowing the equivalence of the experimental and control groups in the post-test to measure the effect of fashion design’s dress form draping method in developing creative skills.



### Explanation of Figure 8.

- There were statistically significant differences between the experimental and control groups for the skill of originality in the post-test in favour of the experimental group, which reached a T-coefficient of 22.82 at a degree of freedom of 103 and level of significance of 0.00 and is higher than 0.05.
- There were statistically significant differences between the experimental and control groups for the skill of fluency in the post-test in favour of the experimental group, which reached a T-coefficient of 23.27 at a degree of freedom of 103 and level of significance of 0.00 and is higher than 0.05.
- There were statistically significant differences between the experimental and control groups for the skill of flexibility in the post-test in favour of the experimental group, which reached a T-coefficient of 24.01 at a degree of freedom of 103 and level of significance of 0.00 and is higher than 0.05.
- There were statistically significant differences between the experimental and control groups for the skill of elaboration in the post-test in favour of the experimental group, which reached a T-coefficient of 28.35 at a degree of freedom of 103 and level of significance of 0.00 and is higher than 0.05.
- There were statistically significant differences between the experimental and control groups in overall skills in the post-test in favour of the experimental group, which reached a T-coefficient of 25.37 at a degree of freedom of 103 and level of significance of 0.00 and is higher than 0.05.

## 5.2 Discussion

The effect of fashion design's dress form draping method in developing creative skills among the participants of the sample is clear from the results. The participants of the experimental group, upon whom the proposed training course to develop creative thinking was applied, surpassed the participants of the control group, upon whom the traditional method was applied. This confirms the presence of a relationship between fashion design's dress form draping method and developing creative skills. Seemingly, this method has a positive influence in developing creative skills and consequently quality, innovative fashion design. This result is consistent with the results of previously performed studies: The al-Ghamidi study (2011, p.201), the Makresh study (2010), the Al-Hadabi study (2011, p.409-430) and the Al-Qahtani study (2007, p.176). The results of this study are consistent with the previous studies in that the technical performance of fashion design using dress form draping helps in the development of the designer's creative skills, which helps them to implement innovative designs in the field of fashion design. **Recommendations;** Promoting interest in raising the level of creative skills in all curricula of colleges that specialize in the field of fashion design to increase academic proficiency and develop creativity in the designers in innovative fashion design. Presenting continual training sessions and workshops for the community to develop creative skills. Including a fashion design course to develop creative skills in the different educational stages in the Kingdom of Saudi Arabia. Performing more research and studies in the field of creative fashion design.

## References

- Ahmed, Y. M. (2011). *Foundations and rules of fashion design*. Cairo: Alam Al-Kutub.
- Al-Ahmedi, M. M. (2007). Using brainstorming methods in developing creative thinking skills and its effect on written expression among third-grade students. *Risalat Al-Khaleedj Al-Arabi Journal*, 107, 59-93.
- Al-Ghamidi, S. (2011). *The relationship between fashion design methods and developing innovative skills* (Doctoral dissertation). Riyadh: Princess Nourah bint Abdulrahman University.
- Al-Qahtani, A. M. (2007). *A proposed course for teaching colouring and measuring its effect in the field of fashion design* (Master's thesis). Riyadh: College of Home Economics.
- Al Otaibi, D. M. (2002). *The effectiveness of brainstorming strategy in developing the abilities of innovative thinking and academic achievement in science course among the female students of the first intermediate grade in Riyadh city* (Doctoral dissertation). College of Education for Girls in Riyadh.
- Al-Tartouri, M., & Jowayhan, A. (2011). *Encyclopaedia of education and psychological sciences*. Amman: Al-Maktab al-Watani.
- Al-Turki, H., & Al-Ghamidi, S. (2013). Innovation in dress form draping by using different kinds of raw materials. *The Scientific Journal of the Arts and Sciences, Helwan University*, 25(2), 83 - 104.
- Baibars, A. (2003). *The effectiveness of a proposed course to develop creativity in fashion design* (Master's thesis). Egypt: Helwan University, College of Home Economics.
- Cirella, S. (2016). Organizational Variables for Developing Collective reativity in Business: A Case from an Italian Fashion Design Company. 25. 331-343.
- Cirella, S., Canterino, F., Guerci, M., & Abraham, B. (Rami) Shani (2016). Organizational Learning Mechanisms and Creative Climate: Insights from an Italian Fashion Design Company. *Creativity and Innovation Management*, 25, 211–222.
- Haroush, N., & Maaroufi, A. (2017). Academic interest in the process of local development in Algeria , an analytical study of the process through some university theses using the method of design thinking. *Journal of Ijtihad for Legal and Economic Studies / University Center of Tamingst – Algeria*, 12, 117-138.
- Makresh, N. (2010). *Innovation in women's fashion designs inspired by marine nature in the Kingdom of Saudi Arabia* (Master's thesis). Mecca: Umm al-Qura University.
- Sarraj, A. (2010). *Fashion design*. Jeddah: Self-published.
- Shokry, N., & Abdul Ghaffar, S. (2009). *Dress form on the mannequin*. Cairo: Dar al-Fakr al-Arabi.
- Torrance, E. (1965). *Rewarding Creative Behavior* . Ist ed Englewood Cliffs, New Jesay, Prentice-Hall.