Artistic Manipulation of Design Technologies by Using Digital Pattern in women's clothing

Prof. Sawsan Abdel Latif Rizk Nada

Professor of Clothing Manufacturing Tech, Department of Fashion Design - College of Arts and Design - Qassim University, sa.rizk@qu.edu.sa

Professor of Clothing Manufacturing Tech, Clothing and Textile Department, College of Home Economics Helwan University

Ala Ahmed Youssef Al-Hujairi

Researcher in Fashion Design Department - College of Arts and Design - Qassim University Lecturer in the Department of Fashion and Textile Design - College of Design and Arts - University of Tabuk, aalhujairi@ut.edu.sa

Abstract:

Digital technology has become one of the most important implications of the third millennium that has imposed itself and contributed to the transformation of the work system from a traditional, manual system that relies on human and mental efforts to a digital system for realizing ideas that guarantees accuracy of production and speed of work.

The research aims to artistically address design technologies in women's clothing using digital practices, where the patterns of design technologies (expansions, geometries, pleats, binding and ruffles, cuts, solidification, folds and pleats) were processed and applied with innovative methods (origami folds - three-dimensional shapes - Creating Volume- Architectural Reconstruction) while employing an artistic aesthetic vision in accordance with the foundations and principles of design by digital practice and implementing samples by virtual simulation. The agreement rates of specialists in the field of clothing design and production were measured to evaluate the (constructive, aesthetic) aspect of the design technologies Manipulation by digital patterns in clothing. Women's upper part (blouse - jacket - cardigan - dress), lower part (skirt trousers). The research followed the descriptive analytical approach by identifying the characteristics of design technologies and artistic treatments according to the foundations and principles of design, and the applied study in the artistic treatment of design technologies using Digital patterns.in women's clothing. The research sample consisted of a group of professors specialized in the field of clothing design and production. The research tool was built and its validity and reliability were verified through an arbitration form for the agreement of specialists to evaluate the (structural, aesthetic) aspect of the samples implemented virtually, and to verify the research hypotheses. The results revealed that there are no statistically significant differences at the level of (0.05) between the degrees of the specialists' evaluation of the virtual samples implemented in the structural aspect. There are also statistically significant differences at the level of (0.01) between the degrees of the specialists' evaluation of the virtual samples implemented in the aesthetic aspect. There is a correlation between the (structural) aspect and the (aesthetic) aspect.

Keywords:

Artistic Manipulation, Fashion Design Techniques, Artistic and Visual Visions in Fashion Designs - Digital Patterns.

References:

- 1- Armstrong, H. J. (2010). Pattern Making for Fashion Design (5th). New York: Prentice Hall.
- 2- Ashdown, S. P., Lyman-Clarke, L. M., & Palmer, P. (2007). Sizing In Clothing Developing Effective Sizing Systems For Ready-To-Wear Clothing -12. U.K: Woodhead Publishing Limited.
- 3- Amr Mohamed Hassouna, Had Samir Hafez, and Nani Mohamed Al-Qadi (May, 2022 AD) "Applications of origami art using 3D digital printing technology in the field of fashion design," Journal of Architecture, Arts and Humanities, Volume 7 (Issue 33), pages 349-371.
- 4- Asmaa Ali Ahmed, and Zainab Abdel Hafez Ali (April, 2014 AD) "Introducing designs inspired by optical illusions proposed to treat physical defects suitable for university-level girls," Journal of Specific Education Research Mansoura University, No. 34, pages 447-469.
- 5- Bertola, P., & Teunissen, J. (2018). Fashion4.0.Innovatingfashion industrythroughdigital transformation. Issue.4, pp. 253-269
- 6- Fatima Wissal Sweaed Al-Zanbaqi, and Rania Mustafa Kamel Dabas (April, 2018 AD) "Designing ready-made models for the production of traditional clothing in the Makkah Al-Mukarramah region," International Design Journal, Volume 8 (Issue 2), pages 163-175.
- 7- Gupta, D., & Zakaria, N. (2020). Anthropometry, Apparel Sizing and Design (2 ed.).UK: Woodhead Publishing Limited.
- 8- Hallnäs, L., & Redström, J. (2006). Interaction design: foundations experiments The Swedish School of Textiles, University of Borås. The Textile Research Centre and Interactive institute.
- 9- Hussein, S. A. (2018). optical illusion in fashion design. Journal of the College Of Basic Education, Issue 101, pp. 367–386.
- 10- Hoda Al-Sayed Al-Nabrawi (September, 2021 AD) "Formal formations of space and their innovative role in clothing design," Journal of Architecture and Human Arts, No. 29, pages 449-475.
- 11- Jaffe, H., & Relis, N. (2012). Draping for Fashion Design (5th). USA: Prentice Hall.
- 12- Kennedy, K. (2015). Pattern construction. In Garment Manufacturing Technology. U.K: Woodhead Publishing Series

in Textiles.

- 13- Lininger, M. (2015). Pattern Making and Grading Using Gerber's Accumark Pattern Design Softwaer. USA: Pearson Education Publishing, Icn.
- 14- Liua, K., Zengb, X., Bruniaux, P., Taob, X., Yaod, X., Lie, V., & Wangd, J. (2018). 3D Inter Active Garment Pattern-Making Technology. Computer-AidedDesign Journal, Vol.104, pp. 113-124.
- 15- Magda Maamoun Selim, Sarah Ibrahim Mahran, Imad Zayed Massad, and Yasmine Fathi Mohamed (2024) "Designing a digital library for 2D clothing models and their 3D simulation in light of Egypt's Vision 2030," International Journal of Design, Issue 1, pages 219-247.
- 16- Mai Samir Ali (2022) "Fractal Applications in Fashion Design", Journal of Architecture, Arts and Humanities, Volume 7 (Issue 31), pages 459-610
- 17- Mohamed, S. M., El-Newashy, R. F., Bekhet, E. Z., & Mohamed, D. M. (2023). Efficiency of 3D Simulation Software Usage to Fit the Jacket Pattern for Obese Women. Journal of Textiles, Coloration, and Polymer Science, No. 1, pp. 1-9.
- 18- Najwa Shukri Moamen, and Soha Ahmed Abdel Ghaffar (2009), "Deformation on the Mannequin." Cairo: Dar Al-Fikr Al-Arabi.
- 19- Najwa Shukri Moamen, Hanan Nabih Al-Zaftawi, Maryam Ahmed Zayed. (2019) "Seeing a variety on the mannequin with ruffles and pleating techniques for slim figures," Egyptian Journal of Home Economics, pages 1-44.
- 20- Nashwa Muhammad Abdo, and Asmaa Jalal Abu Radi (Yolo, 2020) "Using the Clo 3D program to evaluate the basic flat model of girls in adolescence," Journal of Architecture and Human Arts, No. 22, pages 726-747.
- 21- Naznin, K. N., Tabraz, M., & Sultana, S. (2017). Process & Effective Methods of Pattern Making For the RMG (Readymade- Garment) Sector. IOSR Journal of Research & Method in Education (IOSR-JRME), Vol. 7 (Issue 3 Ver. II), pp. 46-48.
- 22- Paksoy, H., & Yalcin, S. (2005, January 5-7). Architectural inspirations in fashion design. In The 3 rd International Symposium of Interactive Media Design, pp. 1-9.
- 23- Puri, A. (2013). Efficacy of Pattern Making Software in Product Development. International Journal of Advanced Quality Management Vol.1(Issue 1), pp. 21 39.
- 24- Qurashi, W. A. (2021). Fabric Manipulation Techniques With Optical Illusion As Design Solutions For Different Woman's Body Types. International Design Journal, Issue 3, pp. 411 421.
- 25- Radwa Kamal (2013), "The Concept of the Fourth Dimension in Modern Art," Master's thesis, Faculty of Specific Education, Ain Shams University.
- 26- Rasha Wajdi Khalil (October, 2017) "Creating clothing designs with the concept of the fourth dimension for the future school," Scientific Society of Designers, No. 4, pages 57-69.
- 27- Richard Swoger, and Jenny Udall (2020) "Fashion Design Basics", (Sharjah Translation Scholarship Fund) Jabal Amman Publishers.
- 28- Sanaa Marouf Bukhari (2013) "The basic pattern and the functional and decorative design of pennies," Riyadh: Dar Al-Zahra.
- 29- Sarah Abdullah Al-Dosari (2017) "Benefiting from the art of origami in designing on mannequins using different materials," Master's thesis, College of Home Economics, Department of Clothing and Textiles, King Abdulaziz University, Jeddah.
- 30- Sato, S. (2011). Transformational Reconstruction . USA: Center for Pattern Desing.
- 31- Tabraz, M. D. (2017). Importance Of Fashion Cad (Computer Aided Design) Study For Garment Industry In Bangladesh. International Journal Of Scientific & Technology Research, Issue 10, pp. 26-28.
- 32- Vishwas, M. (2013). Role of Computer Aided Design and Engineering in Product Development. International Conference on Advanced Materials, Manufacturing, Management, Thermal science, At Siddaganga Institute of Technology, Tumkur, Tumkur, India.
- 33- Yousry Ahmed Moawad (October, 2016 AD) "Constructive and aesthetic foundations as a source of inspiration in fashion design," Journal of Qualitative Research, pages 196-224.
- 34- Yunchu, Y., Weiyuan , Z., & Cong, S. (2007). Investigating the development of digital patterns for customized appare. International Journal of Clothing Science and Technology, Vol. 19 (No. 3/4), pp. 167-177.
- 35- Wafa Muhammad Samaha, and Noura Hassan Al-Adawi (March, 2021) "Optical illusion and aesthetic dimensions of geometric line and its use when designing women's fashion to hide physical defects" Journal of Architecture, Arts and Humanities, No. 26, pages 558-579.
- 36- Walaa Ali Diab, Suzan Al-Sayed Hegazy, Mona Al-Damanhouri, and Shaima Amer Nassef (2016 AD) "Using new techniques in shaping on mannequins inspired by the art of origami." Egyptian Journal of Home Economics, pages 135-185

Paper History:

Paper received December 9, 2023, Accepted February 12, 2024, Published on line March 1, 2024