The effectiveness of a training program in the field of leather goods design using 3D programs (Rhinoceros 7 program)

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Abstract:

The Rhino program is one of the 3D design programs that can be used in many areas of design in general, due to it containing a wide range of tools that enable the designer to implement the finest details with ease, accuracy and very high quality. The researchers believe that this program is one of the distinctive programs in the field of designing and preparing models of leather goods due to its flexibility in solving problems and reducing errors that may occur during the design process, and helps the designer to produce the largest possible amount of design concepts with the least time and effort, and enables him to preview the design and display it in a three-dimensional form that can be rotated and inspected from all sides, and simulate the materials that can be used in actual implementation, which makes it unnecessary to implement the initial sample.

Significance: The importance of the research is due to the attempt to meet the needs of the labor market in preparing trained cadres from the graduates of the Leather Industries Department who have the necessary capabilities, knowledge and skills that qualify them to keep pace with the rapid technological development in designing and building models of leather goods using 3D programs (Rhinoceros 7 program), benefiting from the proposed vision of the training program in designing and building models of leather goods using 3D programs (Rhinoceros 7 program) in preparing other specialized training programs in the department, which may contribute to raising the level of performance of workers in the field of designing leather goods (women's handbags) using 3D programs (Rhinoceros 7 program), and providing libraries with a specialized study in the field of designing leather goods (women's handbags) using 3D programs (Rhinoceros 7 program).

Objective: The research aims to identify the training needs to build the proposed training program in the field of designing women's handbags using 3D programs, design and prepare a training program in the field of designing leather goods (women's handbags) using 3D programs (Rhinoceros 7 program), measure the effectiveness of the proposed training program in trainees' acquisition of the knowledge included in it, measure the effectiveness of the proposed training program in providing trainees with the skills included in it, and survey trainees' opinions about the proposed training program in designing leather goods (women's handbags) using 3D programs (Rhinoceros 7 program).

Method: The research followed the descriptive analytical approach in determining the training needs to build the proposed training program under study, the quasi-experimental approach using the single experimental group design with the aim of identifying the extent of the influence of the independent variable (the proposed training program) on the dependent variable (cognitive achievement, skill performance, trainees' opinions).

The research results confirmed the success of the training program in achieving its objectives, as the results showed an increase in the level of cognitive achievement and skill performance of the trainees after training through the training program, which confirms its effectiveness, in addition to forming positive opinions of the trainees towards the proposed training program.

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References:

- 1- Abdel Aziz, Heba Reda (2018): "Designing a proposed training site for quality control and measuring its effectiveness", unpublished doctoral dissertation, Faculty of Home Economics, Helwan University.
- 2- Abdel Aziz, Heba Reda and others (2018): "The effectiveness of a proposed training program for quality control in the operation and finishing stages", research published in the Journal of Research in the Fields of Specific Education, Minya University, Issue 17 (Clothing and Textiles), Part 3, pp. 267-293, July, (source).
- 3- Abdel Fattah, Sahar Ahmed and others (2014): "The effectiveness of a training program to implement clothing supplements for second-year secondary school students", research published in the Journal of Home Economics, Volume 24, Issue 2, pp. 45-61, (source).
- 4- Abu Al-Nadr, Ayman Abu Al-Nadr (2017): "Technical Environment for E-Training", Journal of Specific Education and Technology, Faculty of Specific Education, Kafr El-Sheikh University, Issue 1, December, pp. 898-940, (source).
- 5- Abu Musa, Ihab Fadel and Abdel Latif, Asmaa El-Sayed (2014): "The Effectiveness of a Proposed Program (CD) in Drawing and Coloring Surface Textures of Some Different Materials and Their Applications in the Field of Fashion Design" A research published in the Journal of Home Economics, Menoufia University, Volume 12, Issue 1, pp. 353-366.
- 6- Ahmed, Ghada Refaat and Abu Al-Nasr, Shaimaa Saber (2016): "The effect of a proposed training program on the skills of drawing the Collars of children's clothing and preparing them for installations" research published in the Scientific Journal of the Faculty of Specific Education, Volume 3, Issue 8, Part 1, pp. 371-416, October, (source).
- 7- Al-Rashidi, Halima Muhammad and Metwally, Shadia Salah and Basfar, Amal Abdel Qader (2019): "Designing a virtual fashion show using 3D programs", published research in the Journal of Specific Education Research, Faculty of Specific Education, Mansoura University, Issue 55, pp. 71 - 95, (source).
- 8- Al-Shahri, Ajlan bin Muhammad (2019): "Factors affecting the implementation of integrated e-training from the perspective of training officials in government agencies, a field study", research published in the Journal of Educational Sciences, Volume 27, Issue 1, Part 2, January, pp. 438-480, (source)
- 9- Al-Turki, Hoda bint Sultan (2016): "Effectiveness of the Training Program to Teach Girls the Skill of Fashion Design", published research, Science and Arts Journal - Studies and Research - Egypt, Volume 28, Issue 1, pp: 83 - 94, January, (source).
- 10- Attia, Shaimaa Mohamed (2018): "The effectiveness of a training program based on labor market needs in developing fashion design skills among home economics students", research published in the Journal of Research in the Fields of Specific Education, Minia University, Volume 4, Issue 17 (Clothing and Textiles), Vol. 2, pp. 41-124, July, (source).
- 11- Cops., (2018). The ADDIE Model of Instructional Design Fact Sheet, US Department of Justice, Office of Community Oriented Policing Service, (source) (5/2/2019)
- 12- Farag, Fidaa Khaled and Daabas, Rania Mustafa and Salem, Shadia Salah (2017): "A comparative study between the manual method and three-dimensional (3D) programs in drawing the flat model for producing women's pants," International Design Journal, Volume 7, Issue 4, pp: 267-276, October, (source).
- 13- Ghazi, Rania Shawky (2016): "Creating an educational website for designing women's clothing for beginners", International Design Journal, Volume 6, Issue 4, pp. 247-255, October, (source).
- 14- Hamid, Ismail Abdullah (2020): "Basics of computers" 3rd ed., National Book House, Sana'a.
- 15- Hassan, Ashraf Abdel Hakim and Al-Naqeeb, Nisreen Awad and Muhammad, Rania Saad (2017): "Fundamentals of designing women's fashion using computers", 1st ed., Dar Al-Zahraa for Publishing and Distribution.
- 16- https://alrai.com/article/10430982., (source)
- 17- Hwang JY, Hahn KH. A (2017) "case study of 2d/3d cad virtual prototype simulation programs to enhance student performance in student-centered fashion design education". J Textile Eng Fashion Technol.; 3(1):578–584. DOI: 10.15406/jteft.2017.03.00088
- 18- Ibrahim, Shimaa Abdelfatah (2017): "The scientific basics for designing some Leather products and constracting its forms" Unpublished Master's thesis, Faculty of Home Economics, Helwan University.
- 19- Ibrahim, Shimaa Abdelfatah (2022): "A suggested training program for learning handbags design

using computer programs" research published in the International Journal of Design, Volume 12, Issue 1, pp. 353-366, January, (source).

- 20- Mohamed, Sahar Harby and Mohamed, Hoda Abdel Aziz (2013): "The effectiveness of a proposed educational unit in handbag design to develop the knowledge and skills of fourth-year students in the Leather Industries Department" Egyptian Journal of Home Economics, Issue 29, pp: 369-406.
- 21- Salem, Yasmine Fathy (2020): "The effectiveness of an electronic training program for methods of building and adjusting the women's pants model", unpublished master's thesis, Faculty of Home Economics, Helwan University.
- 22- Shahien, Sana Mohammed and others (2021): "Effectiveness of a Training program in Fashion Design by Using Three-Dimensional Design Programs to Develop Graduate' Skills", Scientific Journal of the Faculty of Specific Education, Volume 8, Issue 27, July, Part 1, pp. 237: 294, (source).
- 23- Trivedi, Vishal (2015) "Innovation in computer aided garment designing" International Journal of Recent Research Aspects, December, pp.25-29.

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