

Effectiveness of digital design thinking and the evolution of digital textile printing technology

Dr. Asmaa Mohamed Nabawy Abdel Meged

Teacher The Higher Institute of Applied Arts - Fifth Compound / Extension of Golf

Heights - Fifth Compound

asmaa4design@yahoo.com

Abstract

Design is changing the language of thought and creativity with changes in technological development, and technological changes and developments have occurred in all fields and through these variables, science and design have been clearly mixed to achieve all humanity, and such developments are what have changed thought and can even change the advertising process.

Development and progress are always associated with technology and digital design is one of the most important examples of this development, as it has a very important role in creating a new spirit of human creativity. And a mediator for expression and realization of ideas, and it can be said that digital technology has become a motive and a guide to thinking and creativity, which has changed the creative process. Technology has created new aesthetic values, for each era has its own tools that the designer uses.

The field of applied arts depends largely on quantitative production, which is not changing because of the digital technology that provides the possibility of individual production with an unlimited number of ideas and in a short time, especially in the field of textile printing design, and the importance of digital design becomes clear by saving time and effort with the possibility of change with high flexibility with Availability of multiple alternatives to provide the best results. And because design and creativity are an integrated process of the designer's creativity and a tool to achieve this creativity. Therefore, the research attempts to discuss digital design thinking as an important prelude before studying digital design and addressing the impact of digitization in the field of textile printing.

Keywords:

digital design, digital design thinking, digital printing

Research problem :

- 1- How to take advantage of the interactive link between the digital technological development of 3D and 4D printing in the field of textile printing.
- 2- How to apply digital design thinking in the digital design of textile printing.

Research importance :

- 1- Take advantage of the development of digital technology in the field of textile printing.
- 2- The lack of studies that are concerned with studying the relationship of digital design thinking to textile printing because of its importance in achieving good design.
- 3- Opening new horizons of creativity and innovation through design and digital manufacturing for the textile printing field.

Research Aims :

- 1- A study of digital design thinking and its relationship to digital design for textile printing.
- 2- Studying digital printing technology.
- 3- Studying the development of digital design as a method of design and implementation.

Research Hypotheses :

The research assumes:

- 1- The digital development witnessed in the field of design and printing has a positive impact on the development and modernization of textile printing
- 2- Digital determinants enrich the creative and innovative aspect of textile printing design.
- 3- Studying digital design thinking as a scientific method that enables the textile designer to reach the optimal design.

Research limits:

Objective limits:

study the digital design thinking and its impact on digital design and tracking the development of digital 3D printing technology.

Time limits:

digital design and digital 3D printing after 2014.

Research Methodology:

The research follows the descriptive approach to track digital design thinking and technological development in textile printing.

The researcher believes that the textile printing designer should link the trends of future markets and digital technology, which is achieved when understanding, studying and applying the concept and method of digital design thinking based on specific foundations and steps that reach the designer in the end to achieve optimal design consistent with future developments in technology and design.

The future is closer than we imagine, and the textile printing designer must identify all the rapid developments that have become closely related to the interests and needs of the consumer. And achieve its requirements, especially since digital technology, which achieves all the requirements, is widely available and developed, while we explore 4D printing, the textile designer must change the ways in which he designs to keep pace with digital technological developments.

Also, by linking the conceptual content of digital design thinking and the educational principles of digital design, it is possible to build important educational content that supports digital design as a concept and as an innovative and different method, and by clarifying the conceptual structure of digital design and the integration and interaction of technological content with it, innovation and experimentation can be achieved perfectly supported by advanced digital technology The 3D and 4D printing.

Research Results:

- 1- The interaction between the designer and digital technology creates a new and innovative technological and design field.
- 2- Studying digital design thinking is an essential and important step to reach the optimal digital design.
- 3- Studying the development of digital technology motivates the textile printing designer for digital creative thinking and understanding the requirements of the future consumer.

Recommendations:

- 1- Interest in studying computer programs as design courses, as well as studying the history of digital design.
- 2- The necessity of paying attention to studying digital design thinking as an important prelude to understanding digital design based on methodology and science.
- 3- The necessity of following the technological developments of digital printing in order to find out its latest developments and benefit from them and to find out the latest developments in digital printing.
- 4- The necessity of studying the consumer, his passion and his needs, because he has become a partner in the design process and production alike.

References:

- Abo hgl, Hanen Ebrahim – Elgabory , Satar Gabar Bakr : Eltasmem Elracamy W Doro Fi Elamara W Elfnon Elislamia Fi Elordon , Gamat Elolom Elislamia Elalamia , Colet Eldrasat Elolya , Oman , Elordon , Dar Elmonzma , ELadad 20 , October, 2017.
- Mostfa , Ahmed Wahed : Elhasbat Fi Elfan W Eltasmem , Selslat Esdarat Necabt Elmosamemen , Elcahra, 2005.
- Mostfa, Abdel Khalek Mostfa : Enekas Elnazrea Elmethalia WEltahdd Elrakamy Ala Elfnon Eltatbikia Elmoasra , Megalt Elemara W Elfnon W Elolom Elensania , Elmogalad Elkhames , Eladad Elrabea W Elashron , Noveber , 2020.
- Emad Sahy, Nomer : Gadel Eltaknia Fi Gamalit Elfan Elracamy , Resalet Magester Gher Manshora , Gamet Babel , Colet Elfnon Elgamela , 2008.
- <http://fac.ksu.edu.sa/laharkan/blog/24711>
- Abel Rahman Elharkan , Lama :El fan Elracami , Colet Eltarbia , Kesm Eltarbia Elfania , Gamet Elmalek Soud .
- 6-CHIU, MAO-LIN : THE JUMP OF DIGITAL DESIGN THINKING, Department of Architecture, National Cheng Kung University, Taiwan , 2006, P.27-36.
- <https://www.semanticscholar.org/paper/THE-JUMP-OF-DIGITAL-DESIGN-THINKING%3A-Overviews-of-Chiu/50fb26749b5827a2ee394f7aa485b7d0d2ef1f42>
- http://papers.cumincad.org/data/works/att/caadria2006_027.content.pdf
- Couchot et Hillaire ; l'art numerique comment la technologie vent au monde de l'art ; Edition Flammarion, Paris , 2003 .
- Bradshaw S, Bowyer A, Haufe P. The intellectual property implications of lowcost 3D printing. ScriptEd , 2010.
- Brown, T., Change by Design: How design thinking transforms organizations and

inspires innovation, NY: HarperCollins, 2009.

Kimbell, L., Rethinking design thinking: Part I. Design and Culture. The Journal of the Design Studies Forum. Vol 23, 2011

Grain E, Unver E. 3D Printed Fashion: A Dual Approach,2016

Levy Pierre. Cyberculture " Rapport au conseil de Europe ",Ed, Odile Jacob, Paris, 1997.

Mckeller , P: Experience and Behaviour , Harmondsworth Penguin Books , 1971.

14-Paul Ardenne; L"age de L"art Contemporain une Histoire des Arts Plastiques a la Fin 20 siècle, Edition du Regard 14, Paris 1997.

Rastislav Žitný, Tibor Szabó, Štefan Balla : Design thinking and digital innovation cooperative project , Proceedings of the 10th International Conference on Applied Informatics Eger, Hungary, January 30–February 1, 2017.

https://www.researchgate.net/publication/328289499_Design_thinking_and_digital_innovation_cooperative_project