

The impact of technological development on the design of metal furniture suitable for kindergartens via the introduction of interactive games

Prof. Ibrahim Mohammed Ibaid

Professor, Dept. of Furniture & Metal Construction Design, Faculty of Applied Arts, Helwan University

Dr. Yasser Eid Mohamed

Assistant Professor, Dept. of Furniture & Metal Constructions Design,
Faculty of Applied Arts, Helwan University

Nada Naguib Barei Mohamed

Freelance Furniture designer, department of furniture and Metal, Construction Design
Faculty of Applied Arts -Helwan University, Egypt, nadanaguib90@gmail.com

Paper History:

Paper received 6th June 2021, Accepted 26th July 2021, Published 1st of September 2021

Abstract:

Intellectual maturity depends on (perception - comprehension - adaptation) and this is achieved through the process of mutual interaction between the user and the product within the surrounding environment, so the more attractive the product, the more the person approaches it, and this is the first principle of the interactive design in order to achieve a more effective user experience. Interactive design is exciting way for a product to interact with the user, combining everything we know about design and function into one concept. The interactive design achieves some advantages, including ease of use and ability to learn.

The possibility of action; many applications fall under interactive design today. Perhaps the most important of which are applications that use interactive surface technologies in teaching and learning, which gave the educational environment an active interactive dimension that was not available before. so therefore interactive educational games appeared.

And in this context the idea of research came in the framework of integrating interactive games and making use of Its advantages in pieces of metal furniture for the educational environment of the kindergarten; where the study deals with the employment and use of interactive design techniques as an activity and concept in the application, especially the furnishing process for the role of kindergartens in Egypt due to its importance and role in developing the skills of the child's abilities and imparting new knowledge and skills.

Hence the importance of the role of kindergartens in developing children's skills through education through interactive play that is derived from best practices of international standards in children's education, where interactive furniture design can play a pivotal role in it, and thus be able to respond to the inputs that the child does; And it increases his love for exploration and research and increases his dependence on himself and his exploration of the surrounding environment through his senses and learning from them.

Statement of the problem:

- Lack of widespread employment of interactive technologies in furnishing kindergartens in Egypt;
- Neglect of educational and educational institutions to furnish kindergartens in a way that meets the needs of the child at this age, in addition to the lack of interactive aspect in furnishing kindergartens and paying attention to traditional furnishing;
- The lack of flexible, interactive furniture that meets the physiological and psychological needs of children at that age and is compatible with the tremendous technological development.

Research aims:

Through this study one can formulate the research objectives as follows:

- Employing and using modern technologies in designing interactive furniture for kindergartens that meet the different needs of the child at that age.
- Monitoring the difficulties facing the design and furnishing of kindergartens in Egypt and their impact on the various behavior and needs of the child, whether physical or psychological;
- Study the employment of the idea of learning through interactive play and take advantage of its advantages in designing interactive furniture.

Research importance:

The research derives its importance by keeping pace with the use of interactive technological developments in the metal furnishing of kindergarten children through understanding some points, including:

- Developing the design awareness and knowledge of educational institutions.
- Making use of interactive technologies in developing furniture for kindergarten children.
- Developing the educational environment for kindergartens in Egypt by making use of the characteristics and advantages of interactive design techniques in furnishing these institutions.

The methodology of the research:

- The researcher follows the descriptive and analytical approach in monitoring and analyzing how the interactive design is used in furnishing the educational environment for the kindergarten stage in Egypt, and determining the

consequences and expected of this study in furnishing the role of kindergartens.

Results:

The researcher's findings can be determined through the following:

- The use of interactive technologies in the metal furnishing for the educational environment of the Kindergarten
- Achieving the greatest amount of response to auditory, sensory and visual stimuli, making him able to develop his skills and give him the opportunity to learn flexibly.
- Responding to the child's desires and providing comfort and an opportunity to learn through interaction
- Meet the market desires in providing interactive, advanced metal furniture for the kindergarten children, far from the traditional furniture
- The development of education through active participation between the child and the surrounding educational environment by providing interactive metal furniture
- Take advantage of the learning advantages through interactive educational games in an easy way by merging them with the existing piece of furniture.

Keywords:

Interactive games, kindergarten, modern teaching aids, metal furniture

References:

1. Aldrich, C. (2005). *Learning by doing: A comprehensive guide to simulations, computer games, and pedagogy in e-learning and other educational experiences*. San Francisco: CA: Pfeiffer.
2. Almansour. (2003). Presentation of (ESPY 540) course. Supervised by Professor: John Conney.
3. Anderson, J., & Rainie, L. (2012). Gamification and the internet: Experts expect game layers to expand in the future, with positive and negative results. *Games for Health Journal*, 1(4), 299.
4. Gallagher, M. (2011). Entertainment Software Association : ESSENTIAL FACTS ABOUT THE COMPUTER AND VIDEO GAME INDUSTRY 2011, SALES,.
5. Hakulinen, L., Auvinen, T., & Korhonen, A. (2013). Empirical study on the effect of achievement badges in TRAKLA2 online learning environment. In *Proceedings of Learning and Teaching in Computing and Engineering (LaTiCE)*. Conference (pp. 47 -54).
6. Kim, S., Song, K., Lockee, B., & Burton, J. (2018). *Gamification in Learning and Education*. Virginia: Springer.
7. Kumar, B., & Khurana, P. (2012). Gamification in education 'learn computer programming with fun. *International Journal of Computers and Distributed Systems*, 2(1), 46 -53.
8. Zichermann, G., & Linder, J. (2013). *The gamification revolution: How leaders leverage game mechanics to crush the competition*. New York: McGraw Hill.