

The role of E-learning in developing design courses in art colleges in light of emergency pandemics

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Abstract

In light of the increase in the number of newly established universities that provide advanced methods of learning and the appearance of virtual universities in addition to what has been witnessed in recent years of tremendous digital technology development, and the emergence of emergency environmental risks such as the Corona virus - covid 19, existing universities need to develop their capabilities to keep pace with the new educational systems. And, depending on that, the university teaching methods in general and the interior and architectural design in particular appear to need continuous development to take advantage of the successive developments in electronic communication and information technology to prepare a graduate who meets the requirements of local and international work to support future job opportunities for the graduate.

E-learning is a modern method of learning that employs modern communication mechanisms such as a computer, its networks, and multimedia such as sound and image, graphics and search mechanisms, electronic libraries, as well as Internet portals, to quickly access science and knowledge centers, and see what is new in a timely manner. Which supports the knowledge economy, which is a new branch of economic sciences based mainly on the communication revolution, which exceeds in its size, quality and effects what mankind has previously accomplished in terms of inventions, creations and innovations throughout its history.

To reach this objective, the research deals with the following points:

1. The impact of contemporary technologies on developing design courses in art colleges (digital technology - e-learning - infographic)
2. Presenting a future vision for developing the university curriculum using modern technologies in learning.

The research ends with a set of important and useful findings and recommendations with the use of modern technology methods of learning in Egypt, especially in the field of interior design and architecture, which contribute to achieving the knowledge economy pattern and the sustainable development.

Keywords

covid 19 , Digitalization , E-learning , Infographic , Knowledge Economy .

The research problem :

The lack of university courses, especially in art colleges, during the second and third decade of the 21st century, to benefit from the appropriate digital technology.

The research Objective:

The research aims to:

Presenting a future vision for developing courses by using appropriate modern technologies in learning.

The research importance:

Applying the proposed methodology for learning through appropriate digital technology to confront emergency environmental dangers such as the COVID-19 pandemic, which may impede the educational process and the launch of the knowledge economy pattern .

The research hypotheses:

The close link between relying on appropriate digital technology in developing curricula in the fields of interior design and architecture works to confront the emergency environmental dangers that impede the educational process (such as the Corona pandemic) .

The research limits :

Time limits: during the second and third decade of the twenty-first century.

Spatial limits: analysis of models for art courses, especially interior design and furniture.

Introduction:

When the world began to face a range of critical environmental risks, including the Corona virus -figure(1)- covid 19 pandemic and the spread of the epidemic in many countries of the world, Jaime Saavedra, Director of the Education Sector at the World Bank, announced that the world is witnessing many changes due to the Corona pandemic, noting that the Corona pandemic prompted us to think about the necessity of Using technology in distance education using multiple platforms, stressing that Egypt's experience in distance education was interesting

Therefore, in order to complete the university study process in light of the Corona pandemic, it was necessary for students to present their projects in digital form using appropriate computer programs and the use of the information network. Which achieves the concept of sustainable development in terms of energy savings, using appropriate digital and technological systems- figure(2) , and the preservation of natural resources.



FIGURE 1: SHOWS THE COVID-19 STRAIN

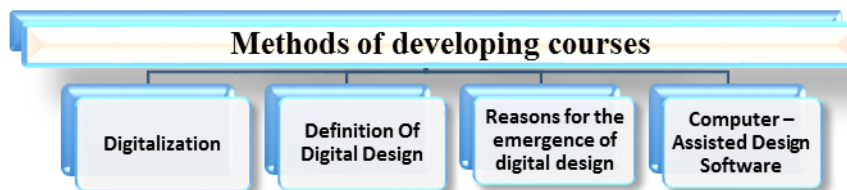


Figure 2 - Shows How To Develop Courses

▪ **Digitalization :**

Digitization is one of the features of today's civilization, and it is the basic step that is necessary for the computer to deal with any kind of information.







▪ **Definition Of Digital Design :**

Refers to the design process (configuration and innovation) that is carried out by the computer (this includes architecture, design of interior spaces, applications and other fields).

▪ **Reasons for the emergence of digital design :**

- Continuous development of computer programs.
- The emergence of a new growing system of information networks.
- The contribution of advanced technology to the development of new industrial and technical systems.

▪ **Computer – Assisted Design Software :**

Program name	Its uses in the field of design and architectural drawing	Program name	Its uses in the field of design and architectural drawing
AutoCAD	It is used to make 2D and 3D graphics 	3D Studio Max	It is used to make 3D graphics 
ARCHI CAD	This program is used to make Virtual Reality 	Revit	A program for 2D and 3D projects, which produces the project's total outputs. 
DATA CAD	It is used for drawing and for preparing project reports 	Sketch UP	Program to make 3D designs quickly and easily. 

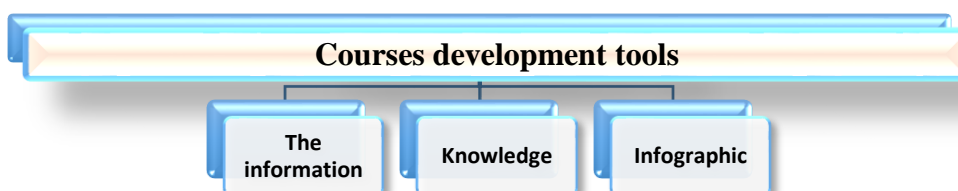


FIGURE 3 – EXPLAINS COURSES DEVELOPMENT TOOLS

• **Information:**

It is the output of data processing, analysis and synthesis, to extract what the data contains to become of value to its users.

▪ **Knowledge:**

It is the understanding, interests and insights that an individual possesses through education and experience, data reflects a set of facts, information is a flow of meaning of data, and knowledge is a stock of information-figure(3)

▪ **Infographic :**

It is the art of converting information and text data into images and graphics-figure(4), in an attempt to transfer complex information or data in an attractive and simplified form to the recipient, making it easier for him to understand and assimilate.



FIGURE 4- AN INFOGRAPHIC FOR INTERIOR DESIGN

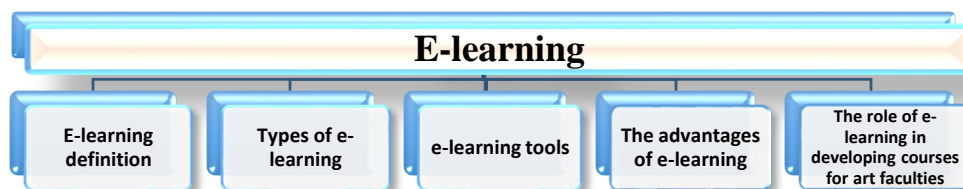








FIGURE 5 - ILLUSTRATING E-LEARNING

<p>E-learning definition</p> 	<p>It is a modern method of learning in which the spatial or temporal dimension is not restricted, in which modern communication mechanisms are employed, as well as Internet portals, and this type of learning is linked to the information revolution-figure(5)</p>					
<p>Types of e-learning</p> 	<p>Synchronous</p>	<p>Asynchronous</p>	<p>e-learning tools</p>	<p>Social Media</p> 	<p>Meeting and conference sites</p> 	<p>E-learning platforms</p> 
<p>The advantages of e-learning</p>	<p>- Online learning meets everyone's needs. - Lectures can be taught any number of times. - Less impact on the environment: Because e-learning is a paperless method, it protects the environment to a large extent, and is considered environmentally friendly education.</p>					

The role of e-learning in developing courses for art faculties

- Universities should adopt the principle of lifelong learning.
- Building new academic courses that meet the needs of society in the light of modern technology developments.
- Drafting courses from regular paper books to electronic books, and using the infographic method to display the academic content.



To face these challenges, it is necessary to be liberated from the traditional courses of learning, as the objective is no longer limited to providing the student with knowledge and facts only, but also to develop his skills and abilities and build his personality to be able to interact with the changes of the times.



Figure 6 - Course Description

<p>Course data (Environmental Studies and Sciences course - -1 College of Applied Arts)</p>	
<p>Code : HUM 003</p>	<p>Course name: Environmental Studies and Sciences-figure(6)</p>

<p>Course objective: At the end of the course, the student should be able to: -2</p>		
<p>Traditional Learning</p>	<p>- Develop the student's imaginative and skill abilities on inspiration, elicit and interact with the regional environment and benefit from them in the furniture design vocabulary.</p>	<p>E-learning</p>
	<p>- Developing the student's imaginative and skill abilities on inspiration, elicit and interact with the regional environment through accessing information sources and obtaining images, videos and research papers via the Internet and benefit from them in furniture design vocabulary.</p>	

The target of teaching the course (target educational outcomes) At the end of the course, the student should be able to -3		
At the end of the course the student should be able to:		
	Traditional Learning	E-learning
A - knowledge and understanding	<ol style="list-style-type: none"> 1. Determines the materials used regionally. 2. It explains the distinguishing features of some regional environments. 	<ol style="list-style-type: none"> 1. Determines the materials used regionally through an interactive learning environment that provides the latest knowledge that is compatible with the developments of the times. 2. Explains the distinctive features of some regional environments through the use of modern communication mechanisms from computers, networks, multimedia, such as sound, image, graphics, search mechanisms, electronic libraries, as well as Internet portals.
B- Mental skills	<ol style="list-style-type: none"> 1. Draw inspiration from the environment in creating a human-appropriate environmental design. 2. Analyze the vocabulary of the surrounding environment. 	<ol style="list-style-type: none"> 1. Draw inspiration from the environment in creating a human-appropriate environmental design through self-direction on learning. 2. Analyzes the vocabulary of the surrounding environment by going beyond the boundaries of the walls and going to a rich environment with multiple scientific sources in quantity, quality and richness.
C-Vocational skills	<ol style="list-style-type: none"> 1. Uses the elements of nature in the design to suit the environment. 	<ol style="list-style-type: none"> 1. Uses the elements of nature in the design in a way that suits the environment to create a dynamic system that is influenced by the latest knowledge in a way that increases the cultural outcome, the breadth of horizons and patterns of thinking, which develops his creativity.
D- General skills	<ol style="list-style-type: none"> 1. Uses the international information network (the Internet) to identify the designer's sources of inspiration from the environment. 	<ol style="list-style-type: none"> 1. uses the international information network (the Internet) to identify the designer's sources of inspiration from the environment through ease of access to the course and transcending the limits of time and place with the possibility of modifying the way scientific content is presented in several ways, visual, audio or read according to the appropriate method for the student.

Accordingly, a Knowledge economy that integrates with digital and technological systems is achieved where The World Bank defines knowledge economies according to four pillars:

1. Institutional structures that provide incentives for entrepreneurship and the use of knowledge
2. Availability of skilled labor and a good education system

3. Access to information and communication technology (ICT) infrastructures
4. A vibrant innovation landscape that includes academia, the private sector, and civil society

Research results:

- Spreading the culture of university course development through electronic and interactive learning and preparing non-traditional courses that provide the greatest amount of good and appropriate learning that matches the capabilities of the learners in terms of flexibility, repetition and explanation
- Paying attention to university courses containing infographics and converting data and information into graphic symbols that attract students and provide information faster and easier.
- The concept of the knowledge economy, which is a new developed economic pattern, is realized through the integration between learning, knowledge and creativity, where knowledge is the cornerstone of it and the most important element of production.
- Contribute to the dedication of the principles of sustainable development and continuous education, which are the basis for the advancement and progress of societies

Recommendations:

Establishing a secure Egyptian higher education platform, in order to raise the university's scientific content for all disciplines, including the field of interior design and architecture, to serve as a basic pillar to bring about a set of strategic changes in the nature of the economic environment to launch the knowledge economy pattern and achieve the principle of sustainable development.

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