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ORIGINAL

The Role of Digital Design through Multimedia Technology to Achieve Sustainability Technology

El papel del diseño digital a través de la tecnología multimedia para lograr la sostenibilidad tecnológica

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ABSTRACT

Introduction: the potential of digital design and multimedia technologies and their effects on sustainability technology are the two primary topics that frequently define discussions about the digital economy. Accordingly, most companies find it difficult to strike a balance between taking advantage of the opportunities offered by the digital media to promote sustainability technology and avoiding any obstacles that could jeopardize initiatives.
Objective: the main aim of this paper is to explore the role of digital design through multimedia technology to achieve sustainability technology.
Method: a descriptive analytical approach was adopted, and a questionnaire was designed and distributed to the study sample, which consisted of 100 digital media specialists. Then, the questionnaire was analyzed through the SPSS Program.
Results: the results show that there is a significant role of digital design through multimedia technology to achieve sustainability technology in all its dimensions, including environmental, social and economic. This reflects the role of digital design and multimedia technologies in enhancing the competitiveness of companies to achieve sustainability technology in the coming years.
Conclusions: digital design and multimedia technology provide a modern technological infrastructure that contributes to saving time and effort during the design process, as well as energy and money during implementation, and has made the reasons and tools of luxury more diverse in line with budgets and quality and safety requirements.

Keywords: Digital Design; Multimedia Technology; Sustainability Technology.

RESUMEN

Introducción: el potencial del diseño digital y las tecnologías multimedia, así como sus efectos en la tecnología de la sostenibilidad, son dos temas principales que definen con frecuencia los debates sobre la economía digital. Por ello, a la mayoría de las empresas les resulta difícil encontrar el equilibrio entre aprovechar las oportunidades que ofrecen los medios digitales para promover la tecnología de la sostenibilidad y evitar cualquier obstáculo que pueda perjudicar sus iniciativas.
Objetivo: el objetivo principal de este trabajo es explorar el papel del diseño digital a través de la tecnología multimedia para lograr la tecnología de la sostenibilidad.

Método: se adoptó un enfoque analítico descriptivo y se diseñó y distribuyó un cuestionario a la muestra del estudio, compuesta por 100 especialistas en medios digitales. Posteriormente, el cuestionario se analizó mediante el programa SPSS.
Resultados: los resultados muestran que el diseño digital a través de la tecnología multimedia desempeña un papel fundamental para lograr la tecnología de la sostenibilidad en todas sus dimensiones, incluyendo la ambiental, la social y la económica. Esto refleja el papel del diseño digital y las tecnologías multimedia en la mejora de la competitividad de las empresas para lograr la tecnología de la sostenibilidad en los próximos años.
Conclusiones: el diseño digital y la tecnología multimedia proporcionan una infraestructura tecnológica moderna que contribuye a ahorrar tiempo y esfuerzo durante el proceso de diseño, así como energía y dinero durante la implementación, y ha diversificado las razones y herramientas del lujo, adaptándose a los presupuestos y requisitos de calidad y seguridad.

Palabras clave: Diseño Digital; Tecnología Multimedia; Tecnología de Sostenibilidad.

INTRODUCTION

Digital design is the process of creating visual and interactive content for digital interfaces. Unlike print design, digital design is interactive and dynamic, where users can interact with digital elements by clicking, dragging, and dropping. This makes digital design more complex, as it must be both aesthetically pleasing and usable.[1] Digital design has the ability to embody the residential space, simulate reality, distribute space and furniture, express design and represent materials well. The use of digital design has facilitated the ability to control the design and has facilitated the expression of the design idea and its representation in the future. On the other hand, some of these studies considered that digital design provided a fertile environment for design in terms of the possibility of processing, modifying and producing it in a more attractive and clear way.[2] Digital design provides designers with many tools and resources that help them realize their vision and turn it into reality. Digital design helps improve and speed up the design process, as designers can use 3D modeling and engineering drawing programs to visualize and embody ideas in a realistic way before starting the implementation process. In addition, digital design can be used to analyze and evaluate different spaces and determine the best possible solutions to meet clients' needs and improve the user experience.[3]

Technology developed or used with environmental, social, and economic considerations is referred to as sustainability technology, as it aims to reduce the energy and resources needed to produce new products, as well as extend the life of products used within architectural styles, use available resources effectively, and maintain the balance of natural systems.[4] The goals of sustainability technology include the efficient use of resources, protecting the environment, ensuring the balance of ecosystems, combating climate change, increasing social welfare, and sustaining economic growth. Sustainability means following design principles and using materials and techniques that aim to create healthy and comfortable indoor environments, while conserving natural resources and reducing negative environmental impact.[5]

Sustainability technology has become a goal sought by most societies, especially in light of the current circumstances (economic, social and environmental), in order to achieve the highest levels of well-being without compromising the rights of future generations.[6] The scientific importance of this paper lies in investigating the role of digital design and multimedia technology in achieving sustainability technology, as well as its vital role as a marketing and awareness tool that society needs. Its practical importance is also evident in the scarcity of research that discusses the role of digital design and multimedia technology in achieving sustainability technology. The production and distribution of used materials contributes to various forms of environmental pollution, while digital design can provide a more environmentally friendly solution than traditional methods of producing clothing. According to the sustainability technology strategy, it has become the responsibility of companies turn to digital designs in line with the current digital revolution.[7] Companies that prioritize sustainability technology build strong relationships with the local communities in which they operate. This relationship can translate into consumer loyalty and trust, leading to increased profits and a competitive advantage. Therefore, many companies support the trend towards involving the digital design tools in sustainability technology, and adopt effective strategies to enhance their social and environmental impact.

This research aims at exploring the role of digital design through multimedia technology to achieve sustainability technology.

Literature Review

Digital design is a combination of text, images, sound, animation and video that communicates information to the viewer in an interactive manner through digital devices and communication. 3D printing technology is

revolutionizing the way furniture and decor are manufactured, giving designers unprecedented freedom to create custom, one-of-a-kind pieces.[8] Using 3D printers, designers can quickly prototype and produce intricate shapes and details that would be difficult or impossible to achieve using traditional manufacturing methods.[9] By embracing digital rendering software, virtual and augmented reality technologies, smart home automation systems, and 3D printing technology, designers can elevate the design process and deliver exceptional results that meet the evolving needs and expectations of clients in the digital age.[10] For instance, The Computer-aided design (CAD) consists of a processor and central memory to execute programs and perform analyses, in addition to a digital system to create graphic models, modify them on the screen, and save them. Taking into account the presence of peripheral units for inputting and outputting information such as a plotter and printer. CAD programs usually contain libraries to facilitate the input and design processes. From this standpoint, modern digital design technology provided a virtual reality mixed with imagination, and has worked to create an environment similar to the virtual reality in which we live by showing things as if they were in their real world.[11] Also, the widely spread improvement of technology force people to revamp their manner regarding to their life fields, consequently, a lot of fields are implementing new technologies in their activities to keep up with changeable technology like artificial intelligence which aim to build machines that can simulate human intelligence among many paths whether it belong to social or economy field.[12]

In general, digital design can be classified according to dimensions into 2D design, 3D design, user interface design, animation, and graphic design. 2D design is based primarily on flat drawing without depth. It focuses on length and width, whether it is a fixed or moving design, so the programs that deal with this category are lighter and easier. 2D design can be converted to 3D by employing the elements of color gradation, lighting and shadows accurately and positively.[13] Graphic design is one of the most present design techniques in the world of commerce and business, where the designer employs design elements, from colors and lines, to texts or illustrations to produce marketing messages, and build a brand that has become urgent for companies and emerging enterprises. [14] Opinion polls indicate that more than 75 % of consumers have emotional connections with the way brands are designed. Hence, graphic designers need more creative practices to prepare professional visual identities and logos that summarize the company's presence and competitive path, and translate an entire story into a symbol.[15] Graphic design patterns include advertising design, publishing and editorial design, packaging design, visual identity designs, and then motion design.[16]

Digital design is a dynamic field that combines technology and creativity. It requires a deep understanding of how users interact with digital interfaces and create interactive experiences that engage and enrich audiences. As we become increasingly reliant on the digital world, digital design continues to develop new ways of communicating and expressing, making it an essential component in shaping our everyday experiences.[17] Digital design provides limitless opportunities for creativity and innovation, as designers can experiment with new techniques and methods and develop unique solutions that meet audience needs in innovative and effective ways.[18] By using their design and technology skills, digital designers can have a significant impact on how we interact with the digital world and shape the future of digital communications.[19] To sum up, digital design is not just a professional field, it is an art and science that contributes to improving and beautifying our digital world, making it a cornerstone of the modern world of technology and creativity. Although there are different types of digital design that require different sets of skills and knowledge, they all share a similar set of basic principles. Designs should be focused on the user experience and create an intuitive and comfortable interaction. Understanding and analyzing the market and audience needs is an integral part of the design process.[20]

According to media dependence theory, reliance on digital media increases when the ability to receive the required information through personal communication sources is limited, i.e. the greater the need for information, the greater the audience's reliance on digital media.[21] In other words, the information provided by digital media changes various forms of audience knowledge, feelings and behaviors, and thus society develops complex and intense reciprocal relationships with digital media.[22] Moreover, the potential for media messages to achieve a wide range of cognitive, emotional and behavioral effects is maximized when digital media systems provide distinctive and basic information services.[23]

Many concepts and definitions of sustainability technology have been mentioned. As[24] defined it as the extent to which it meets the needs of present generations without compromising the ability of future generations to meet their own needs. It has also been defined as an attempt to reduce the conflict that leads to environmental degradation by finding a way to achieve integration between the environment and the economy.[25] Moreover,[26] expanded the definition of sustainability technology to include the rapid transformation of the technological base of industrial civilization, noting that new technologies are needed that are cleaner, more efficient and more resource-saving in order to reduce pollution, help stabilize the climate, and accommodate growth in population and economic activity. It is clear from the concept of sustainability technology that it is a comprehensive development that aims to improve social and economic aspects while adhering to the limits of the environmental system. It thus depends primarily on three conceptual pillars, which are the environmental,

social and economic.[27] In the business world, companies must adapt to rapidly evolving technologies. By relying on sustainability technology, companies are able to digitally adapt to the business environment and transform their internal operations by digitizing their administrative processes.[24]

Environmental sustainability.[26] The idea of environmental sustainability is based on maintaining human activity and work, as this activity and work are considered sources of environmental sustainability. This idea can be achieved by reducing the consumption of environmental resources and limiting their destruction, thus reducing environmental damage.[28] Environmental sustainability at an urban scale is directly linked to climate change and ecosystem health by reducing greenhouse gas emissions, biodiversity, material use, energy productivity, and increasing citizens' ability to cope with environmental challenges.[29]

While social sustainability refers to providing health and safety for the scope of work, caring for the elderly, people with special needs, and the homeless, as it involves promoting healthy social growth through the development of civil society and meeting the needs of the present without compromising the well-being of future generations.[30] The goal is to promote harmony between cultural and social differences, improve people's quality of life, and manage the impact of business on individuals.[31] Social responsibility programs are a long-term investment in sustainability and public well-being. They do more than just improve a company's image or reputation, they also contribute to building a more cohesive and stable society, which in turn reflects positively on the company's performance in the market. When companies invest in health, education and the environment, they are actually creating a more sustainable economic environment, which enhances their long-term growth opportunities.[32]

Finally, economic sustainability means the use, conservation and maintenance of resources in urban development and management, and the generation of long-term value, which must be achieved through the optimal use, recycling and protection of scarce natural resources [26] It relates to practices that support long-term economic growth while preserving environmental assets, maintaining or improving living standards, and enhancing the viability of social institutions.[33] Economic sustainability can be achieved through the spread of green information technology in institutions. Economic sustainability supports the introduction of innovations in both hardware and software in production, manufacturing, business and data sharing, which positively transform efficiency, rationalization and profit maximization.[34]

Research Hypotheses

Based on research aim and objectives, the following hypotheses were formulated in the null form:

H01: There is no statistically significant effect of digital design through multimedia technology on achieving sustainability technology. From the main hypothesis, the following sub-hypotheses were formulated:

H01-1: There is no statistically significant effect of digital design through multimedia technology on achieving environmental sustainability.

H01-2: There is no statistically significant effect of digital design through multimedia technology on achieving social sustainability.

H01-3: There is no statistically significant effect of digital design through multimedia technology on achieving economic sustainability.

METHOD

This study is based on the descriptive analytical approach, by describing the phenomenon of the study topic, and analyzing its data using a questionnaire to study the role of digital design through multimedia technology to achieve sustainability technology. Non-quantitative variables were converted into quantitative variables that can be measured, in order to deal with them in testing hypotheses and stating the results of the study and its recommendations, by subjecting them to the statistical analysis that suits this study. Descriptive research of various types is used to collect data and information using various methods and means: such as observation, interviews, tests, questionnaires, graded scales, and others. The questionnaire was also used as a tool to collect information, which consisted of three sections. They were the role of digital design through multimedia technology to achieve environmental sustainability, the role of digital design through multimedia technology to achieve social sustainability, and the role of digital design through multimedia technology to achieve economic sustainability, with five questions for each section. Accordingly, a five-point Likert scale was used in this study. The questionnaire was designed by referring to a set of previous literature such as.[4,35,36] It was uploaded to Google Form and distributed to the study sample via WhatsApp or email.

The study sample consisted of 100 digital media specialists. Table 1 shows the demographic characteristics of the respondents. As the percentage of males reached 43 %, while the percentage of females reached 57 %. It is clear from the Table 1 that there is a percentage of 36 % whose age is less than 30 years, 27 % whose age is between 31 and 40 years, and 21 % whose age is between 41 and 50 years, while the percentage of ages above 50 years is only 16 %. We note from these percentages that most members of the research sample are from the youth category. Regarding Years of Experience, the results show that the majority of sample members have less

than 5 years of experience, at a rate of 51 %.

Table 1. Summary of demographic characteristics of the respondents (N= 100)

Variable	N (%)
Gender	
Male	43 (43,0%)
Female	57 (57,0%)
Age	
21-30	36 (36,0%)
31-40	27 (27,0%)
41-50	21 (21,0%)
Above 50	16 (16,0%)
Years of Experience	
1-5	51 (51,0%)
6-10	23 (23,0%)
11-15	15 (15,0%)
Above 15	11 (11,0%)

RESULTS

Questionnaire Reliability

This research uses Cronbach's Alpha(α) to ensure the reliability of the research tool, which is one of the basics of scientific research, and the most prominent rules that are of interest to researchers, due to its great impact on the research and its results, and the ability to generalize these results. In order for Cronbach's alpha equation to be applied, all statements or items must measure the dimension or latent factor with the same accuracy, meaning that the average scores on these statements must be equal. This is in addition to the equality of the error variance for the items or phrases that measure the latent factor. It is clear from Table 2 that all study variables achieved a Cronbach's alpha coefficient greater than 0.70, which means they are suitable for statistical analysis. In general, the questionnaire has a high degree of reliability that can be relied upon in the field application of the study.

Table 2. Cronbach's Alpha for the Questionnaire

Scale	Item number	Cronbach's Alpha(%)
Digital Design Through Multimedia Technology - Environmental Sustainability	5	0,816
Digital Design Through Multimedia Technology - Social Sustainability	5	0,793
Digital Design Through Multimedia Technology - Economic Sustainability	5	0,842
Entire Questionnaire	15	0,863

Descriptive Analysis

Descriptive analysis was used to find out the opinions of the study sample regarding the study variables. The results were as follows:

Table 3. Mean and Standard deviation of the role of digital design through multimedia technology to achieve environmental sustainability

No	Item	Mean	SD
1	Digital design through multimedia technology is environmentally friendly.	3,80	1,053
2	Digital design through multimedia technology improve energy efficiency	4,05	1,241
3	Digital design through multimedia technology reduces environmental loss by using insulating materials.	3,98	1,269
4	Digital design through multimedia technology creates a healthy environment.	4,16	,985
5	Digital design through multimedia technology enhances air quality.	4,04	,907
	The Construct as a whole	4,01	1,153

Table 4. Mean and Standard deviation of the role of digital design through multimedia technology to achieve social sustainability

No	Item	Mean	SD
6	Digital design through multimedia technology fosters ethics and social responsibility.	3,75	,973
7	Digital design through multimedia technology considers the social implications.	3,82	,800

8	Digital design through multimedia technology minimizes materials with a low carbon footprint.	3,69	,858
9	Digital design through multimedia technology considers flow and circulation.	3,88	,740
10	Digital design through multimedia technology promotes health and well-being.	3,96	,666
	The Construct as a whole	3,82	,934

Table 5. Mean and Standard deviation of the role of digital design through multimedia technology to achieve economic sustainability

No	Item	Mean	SD
11	Digital design through multimedia technology creates multi-functional spaces.	4,25	,796
12	Digital design through multimedia technology Implement reuse and recycling strategies.	4,27	,827
13	Digital design through multimedia technology utilizes sustainable materials and suppliers.	4,14	,834
14	Digital design through multimedia technology creates less wasteful systems.	4,07	,834
15	Digital design through multimedia technology relies on renewable energy sources.	4,12	,658
	The Construct as a whole	4,17	,849

The tables above show that the role of digital design through multimedia technology in all sustainability technology dimensions achieved high arithmetic averages, ranging between 3,82 and 4,17; which reflects their importance and great impact on sustainability technology. In general, the results show that digital design has the tools and methods that can be employed with high efficiency, which requires digital media specialists to have full knowledge of digital design to reach high levels of sustainability technology. Individually, economic sustainability construct achieved the highest arithmetic mean of 4,16; reflecting the importance of digital design in improving the economic sustainability.

Testing the Main Hypothesis (H1)

Table 6. Results of Multiple Regression Analysis – The Role of Digital Design Through Multimedia Technology to Achieve Sustainability Technology

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	326,652	112,605		2,634	0,000
Environmental Sustainability	33,256	45,367	1,542	2,741	0,000
Social Sustainability	27,364	42,563	1,253	2,504	0,000
Economic Sustainability	31,008	50,263	1,320	2,365	0,000
R = 0,693					
R^2 = 0,842					
F = 5,237					
Sig. = 0,000					

Note: ** Correlation is significant at the 0,05 level (2-tailed).

As shown in the table 6, multiple regression analysis was used to explain the role of digital design through multimedia technology to achieve sustainability technology. It is clear that the value of Sig. for all constructs combined is equal to 0,000; which is less than 0,05; which means the rejection of the first hypothesis (H01) that states there is no statistically significant effect of the digital design through multimedia technology on achieving sustainability technology. Individually, the values of Sig for all constructs is lower than 0.05, which indicates the rejection of all sub-hypotheses of the first sub-hypothesis (H01-1, H01-2, and H01-3). In addition, the value of R^2 reached 0,842; which is a high percentage, meaning that digital design through multimedia technology have the ability to achieve the sustainability technology by 84,2 % while the remaining percentage is due to other dimensions.

DISCUSSION

The results showed that digital design through multimedia technology play a critical role in driving progress towards the sustainability technology dimensions by providing unprecedented opportunities for data-driven decision-making, effective resource management, and sustainability technology practices.[37] This results are in line with[6,38,39] Digital design and multimedia technology enable the collection, analysis, and dissemination of vast amounts of sustainability-related data, empower decision-makers with actionable insights, and provide transformative tools to address the complex challenges outlined in the sustainability technology. In conclusion, the emergence of the sustainability technology objectives demonstrates a global recognition of the urgent need for comprehensive and transformative action to address the interconnected challenges facing humanity through the adoption of the goals, as they represent a roadmap for collective action, with a focus on inclusiveness,

equity, and long-term sustainability. The effectiveness of digital design comes from the ability to convey the ideas, visions and meanings contained in the artwork to the recipient using the digital designer's skills, fertile imagination and experience in creating and formulating aesthetic topics and experiences.[40]

Digital design helps in creating consistent logos, colors, and patterns that express the brand's personality. This helps in enhancing brand recognition and increasing trust among the audience. In a world full of information, attracting the attention of users becomes a challenge. This is where digital design comes in to use attractive colors, innovative designs, and visual elements that help in catching the attention. Marketing campaigns supported by strong digital design are more effective in attracting the audience. Professionally designed user interfaces contribute to improving the user experience. Good design can improve ease of navigation, which increases the likelihood of interacting with the content when creating an online store. When the experience is positive, users are more likely to convert into customers.[41]

The design process associated with modern technology and techniques requires the designer to be familiar with the basics of design based on it and take them into consideration during the stages of the design process. The principles of digital design and multimedia technology include clarity of vision, feedback, error prevention constraints, consistency, and configuration or possibility. In addition, digital design can be used to improve communication and interaction between designers and clients, as stakeholders can exchange ideas and feedback easily and effectively via email and other digital platforms. Sustainable digital design refers to the application of environmentally friendly standards that are aligned with their business and integrate them into an overall strategy. They can work on reducing carbon emissions, increasing energy efficiency, switching to renewable energy sources, or finding solutions to many problems that fall within the framework of sustainability technology. Today, a large group of digital media companies are moving towards developing a clear roadmap that combines their sustainability goals with those of digital design and multimedia technology in order to achieve the best innovations.

In general, the proper use of multimedia technology can contribute to achieving sustainable development in different societies in several ways.[42] Multimedia technology is an effective means of disseminating knowledge and information in societies. Images, videos and audio can be used to disseminate information about the challenges facing societies and how to deal with them in a sustainable manner. Multimedia technology can be used to raise awareness about environmental issues and the importance of protecting the environment. Documentaries about climate change can be shown or awareness campaigns can be created using images and videos to promote environmental care and adopt sustainable lifestyles. Additionally, multimedia technology promotes economic development in societies, by promoting small and medium businesses and providing job opportunities. Educational content can be created through multimedia to train young people on the skills required in the labor market. Furthermore, multimedia technology raises awareness of social justice issues and address discrimination and injustice in communities, where content can be created to highlight success stories of individuals facing challenges and motivate communities to promote equality and justice. In short, the proper use of multimedia can contribute to sustainable development by disseminating knowledge and information, promoting environmental awareness, promoting economic development, promoting social justice, and promoting education and skills.

In simple terms, digital sustainability is about using technology in business and economic transactions and everything related to daily business communities that positively impact the environment. However, digital sustainability carries some challenges that may at some point hinder its growth, or may slow its growth at the community level. Although one of the most important business challenges lies in the area of financial and economic issues, companies have faced two other new challenges that are sustainability requirements, as well as the appropriate and immediate use of digital design tools. For this reason, companies must face the challenges of social and environmental aspects and digital transformation in addition to the challenges of sustainable economic profitability to consider these issues as the main challenges in their business model. However, companies need new dynamic capabilities with the changes brought about by the new challenges. These internal capabilities focus on digital sustainability.

The following limitations, which also present potential for further research, apply to the findings of this thesis, as they do to previous studies. First, 100 experts in digital media make up the sample size for this study. It is not possible to extrapolate the findings from this tiny sample size to the full target population. For the research's conclusions to be applicable to the entire population, a sizable sample size would be necessary. To guarantee the representative distribution of the target population or representative groups to which the research's conclusions can be applied or extrapolated, a bigger sample size is necessary. Second, the quantitative approach was solely used in this study to test the hypotheses. Among the drawbacks of quantitative research include the potential for measurement and inspection errors, as well as the researcher's prejudice toward any aspect of the study that could influence the findings. Therefore, the researcher must fully uphold impartiality. Furthermore, the dissemination of the questionnaire revealed problems, especially once it was determined that the intended sample consisted of experts in digital media. It was difficult and took a lot of work on the part

of the researcher to approach experts and beg for their assistance. Other research techniques, such qualitative or case study, can be used to carry out more work. Despite our serious attempts to cover all aspects of the subject, this modest research needs further analysis and study. We hope this attempt has paved the way for others to complete every deficiency and fill every gap.

CONCLUSIONS

The integration of digital design and multimedia technology has led to many exceptional innovations, paving the way for new trends, which has allowed the digital media companies to be more efficient in collecting, analyzing, managing and transferring information than before. It was concluded that digital design has a major role in achieving the sustainability technology in its social, economic, and environmental dimensions. This means that digital technology can be used to enable a sustainable future; through a clear strategy, knowledge and a credible methodology, and most importantly, digital sustainability can drive the acceleration of sustainable development. It contributes to serving society, achieving community development for all individuals, developing infrastructure, achieving economic development, raising the standard of living for thousands of individuals and protecting the environment. This can only be achieved through a comprehensive legal system capable of creating a legislative environment suitable for a sustainable digital future.

This paper argues that digital sustainability is inherently about technological decisions. These can include the choice of software and infrastructure, the data models and methods used, the interface and presentation on multiple digital devices, long-term access and storage of data, as well as ongoing security risks. This is due to the fact that digital design and multimedia technology provide a modern technological infrastructure that contributes to saving time and effort during the design process, as well as energy and money during implementation, and has made the reasons and tools of luxury more diverse in line with budgets and quality and safety requirements. Therefore, the lack of equipment necessary to produce digital and multimedia design works affects the quality of digital media specialists' work and leads to their weakness and inability to achieve sustainable technology.

In light of these conclusions, this paper recommends emphasizing digital design as a tool for expression and simulation of reality by representing reality with its dimensions, measurements, and formations of space and masses. This gives an accurate idea of what can be designed or applied with a high degree of conformity between the digital design and the design output on reality. In addition to the necessity of studying the obstacles facing digital media companies, which limit the access of their designs to the largest possible number of digital design tools. Moreover, decision makers should be aware of technological change, understand it as much as possible, and work to develop technological infrastructure to keep pace with global developments.

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