The shifting in the media labor market and its impact on the visual communication designers' characteristics

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ABSTRACT

This paper deals with the latest developments in the media labor market for visual communication design and its transformation into an interactive labor market. The shift cleared the urgent need for new generations of digital communication designers, who would have unique characteristics that enable them to meet the new challenges of the labor market. The creation of new methods for interactive advertisements and virtual and augmented reality technologies in conveying news and various topics represents a qualitative leap towards the near future in media design. Which requires developing the capabilities of designers in these areas to comply with future needs in the new interactive labor market. The research used interviews and discussions with groups interested in developing the profession of visual communication design. The study reached to identify the features of the interactive digital labor market, the characteristics that must be available in new visual communication designers, and the interactive relationship between them to draw a framework governing the educational process in visual communication and media design.

Keywords: Interactive Design; Marketing Methods; VR/AR techniques; Media Designers.

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1. Introduction

Graphic design represents a vital area of design, where designers deal with in daily life as in many other areas of design, like accessories, jewelry, clothes, fabrics, furniture, products, ceramics, sculpture, architecture, urban planning, etc. [1]. Graphic design message depends on colors, texts, photos, illustrations, etc. They are all reflected in different products such as logos, icons, posters, packaging, animations, interactive advertisements, motion graphics, and other visual information platforms [2]. The rapid spread of modern digital technologies has a massive impact on changes in design culture, education, and students' skills. In visual communication design, computer programs and their techniques have allowed the new generations of specialized designers to deal with different digital design aspects such as interactive advertisements, 3D animation, motion graphics, VR/AU reality technology, etc. [3]. On the other side, many industrial companies have increased their financial spending on marketing their products and services based on interactive digital methods to increase their annual profits [4]. Therefore, the demand for new digital graphic designers has increased, especially those with the skills and mentality to design compact interactive multimedia and visual communication topics [5]. So, this paper focuses on the steady growth of the digital graphic design fields due to the developments in interactive marketing and its relation to determining the appropriate characteristics of the new generation of designers to meet the labor-market updates.

Previously, the traditional graphic design generally referred to an engraved art of wooden, stone, metal panels, etc., to achieve a printing surface reserving a particular message and obtaining different artistic effects [6]. This definition is summarized as a printed art; historically, it has had several names over time such as: -

- Art of Engraving
- Printed Art
- Printed Design

     - Graphic Art
     - Graphic Design
     - Media Design
     - Communication Design

For a long time, graphic design has been presented to people in different printed means such as newspapers, magazines, books, coins, posters, flyers, cards, logos, symbols, signs, packaging, etc. Recent developments in computer hardware, software, digitization, internet technologies, and applications. [7] The gate now is fully opened to all digital media design relying on the transfer and exchange of digital information through computers, mobiles, tablets, televisions, etc., and other accessories of physical communication components [8].

The digital graphic design relies on quickly transmitting the visual message to people everywhere by using images, illustrations, texts, colors, lines, textures incorporated with different animation techniques, and video effects depending on 2D and 3D design programs by computers [8].

The shifting in demand from printed paper design to electronic media design then to new interactive design creates significant challenges for the designers as they are eager to get involved in the new design era. Such changes and updates in the labor market require compatible designers' skills, resulting from the transformations in the educational systems and curriculum plans. Various interviews and organized discussions have been conducted in this paper to determine the interactive marketing features and the corresponding specifications and skills of the new graphic designers to deal with the urgent labor market updates.

2. Literature review

A study titled "creative methods of e-marketing with augmented reality and their effects on product design," by Mohamed, T., (2019), aimed to examine the role of Augmented Reality (AR) in modern E-Marketing techniques. This will be the dominant product marketing method as it has many benefits such as saving time, effort, money, and being more exciting. The study emphasized the importance of using virtual/augmented reality technologies in the early design phase. It is used in this descriptive and analytical approach to get the results and recommendations [9].

A study titled "Interactive Digital Displays for Outdoor Advertising" by Eken, B. (2017) in the 6th World Conference on Design and Arts". Discussed the term "information Age" and the new communication technologies that enable more unique ways for advertisers to interact differently with customers, how such technologies changed the media environment and methods of communication, where interactive digital displays became more commonly used for outdoor advertisements. The study also explored the impacts of interactive displays for outdoor advertising and how efficiently they engage with customers. By comparing the traditional methods with the new ones, it was clear that there is still a need for complete adaptation by customers, designers, and companies owners to accept the latest interactive display methods easily [10].

A study titled "Trends in Virtual Technologies in Education" by Jorge Martín, Martín, J., Efrén, C., Añorbe, B. (2017) discusses VR technology's role in attracting students to virtual 3D models' world during their study. And how can educational institutions benefit from the presence of virtual technologies in our life? Those are impossible to visualize in physical classrooms, like accessing virtual laboratories, imagining machines, industrial plants, or even medical scenarios. The results focused on the advantages and limitations of using virtual technologies in educational environments through a descriptive method [11].

A study titled "Information Graphics Design Challenges and Workflow Management" by Marco Giardina, M., (2013) discussed the importance of new infographics methods, which may offer an opportunity for media companies to enhance their business processes and increase the value of their actions, based on infographics examples from the New York Times print and online version, this contribution empirically explores the evolution from static to interactive multimedia infographics, the possibilities and design challenges of this journalistic emerging field. In addition to its impact on media companies' activities with technology changes and media-use patterns. The study concluded that delivering infographics is not a fully utilized opportunity for media companies. It is just a successful beginning in the news production process that requires skilled audio/visual designers and revised business models [12].

A study titled "The Impact of New Digital Media on Graphic Designer in Jordan" by AbuShawali, M., M., Peng, Y., Radzi, A., (2013). cleared that graphic design has been affected by technological development, and new digital media for visual communication reflects the graphic designer's role and duties. The study aimed to

identify the required competencies shared by graphic designers into digital media graphic designers in Jordan. Also, shed light on the competency gap between undergraduate graphic design schools and the field of digital graphic design in the labor market [13].

In the previous literature review, some studies examined the role of Augmented Reality (AR) in modern E-Marketing techniques, focused on designing interactive advertisements outdoors, whereas interactive graphics became more spread in different promotion methods. And others addressed the challenges facing graphic designers due to work management. At the same time, others dealt with the effect of digitalization on designers' education in some countries and graphic designers' role in illustration design for digital purposes. Finally, another study dealt with innovative online marketing using virtual reality and its impact on product design. Therefore, it is noticeable that there is a shortage of studies regarding the correlation between the interactive marketing features and the required characteristics of the new graphic designers, which this study seeks to achieve.

3. The theoretical study

3.1. Graphic design as a career

In today's world of design, the term graphic designer became widely used to refer to some careers represented in many designers' jobs such as multimedia designers, digital games designers, video tricks designers, interactive advertising designers, UX designers... etc. [14]. One designer's mission is to create various visual concepts that inspire, inform, and captivate consumers everywhere using different design techniques and software [15]. Also, designers develop different illustrations, websites, applications, other promotional materials, etc. So, they can work in various positions as art experts, interface designers, product and promotion developers, UX designers and digital marketers, etc. And they have to be proficient in using modern software and technologies to be able to compete [16]. According to the American Bureau of Labor market Statistics results, There is a diversity in the distribution of graphic designers and multimedia designers' jobs. However, a high percentage of the designers' work is in the digital design field, and the low rate of them is in traditional careers related to printing work " 6% of graphic designers. 3% of multimedia designers [17]" which confirms that a significant shift in the new fields is consistent with the modern digital era's spirit.

3.2. New missions of the graphic designers

Recently, there are new missions for visual communication designers; they expanded to include many modern fields that depend on the widespread of computer science, design programs, scriptwriting, VR/AR technologies, etc., [18] some of such new trends can be classified as follows: -

3.2.1. Interactive advertisements design

Unlike traditional advertising, interactive advertising has a two-way communication channel, and it has benefits for the business and clients. It depends on the customer's participation in advertising (as a partner) through tricks, gestures, motions, and other visual effects. The dominant focus is the product itself rather than the company or manufacturer. The interactive advertisement design tells the audience a story to follow such a commercial on their digital screens, computers, mobiles, etc. Such a modern design trend needs a newly qualified designer who can inspire plans for the advertising scenarios and many visual tricks using different design programs [19].

3.2.2. Graphics for video Stories

Many stories are presented in high-quality digital animation on computer screens, televisions, mobiles, etc. However, it depends on the animated characters in a 3D modeling style which requires scriptwriting skills and 3D details design using various visual and auditory effects during the design process [20].

3.2.3. Motion graphics for branding identity

Motion graphics are kinds of animation with text which is a significant component. Essentially, designers use these techniques to demonstrate the animated content as a supporting element to the brands' identity. The goal is to make the viewer realizes some of the subject's abilities and surprises that motion graphics offer as new and noteworthy media.

3.2.4. Interactive games design

Interactive game design has skyrocketed in recent years. Unique and eye-catching interactive games can contain many of the features required for everyday use; it gives everyone imaginative power and funny emotions. For designers, it is one of the most challenging 3D design areas. It requires a high finesse to fully understand the 3D motion and characters' fundamentals, distributed lighting, color, and materials with the changes in the events and scenes.

3.2.5. Advertisements by using augmented reality applications

Augmented reality is considered a new development that is used in product marketing as a new advertising method. Augmented reality is a technology that presents virtual objects in the natural environment to users to provide them with information to achieve complete immersion through various digital applications and devices. [21] Augmented reality applications use the motion graphics of digital footage, text, numbers, 3D geometrical forms, figures, etc., in the presence of music, sounds, and light effects for digital multimedia projects by different devices, as shown in figure (1) [22].

Figure 1. shows the use of different types of augmented reality applications

Expectations indicate that a large percentage of consumers will turn towards purchases using modern technologies such as augmented reality applications.

4. Research methods

The investigative method was used by holding various interviews with graphic students, design educators, designers, employers in different institutions and companies. They were asked multiple questions that revolve around the importance of developing the skills and abilities of graphic design students as futuristic designers to face the tasks of new developments in the interactive labor market in light of contemporary graphic design missions.

4.1. Participants

The number of participating students reached 50 students of mature age and spent a good amount of study. They can express the correct opinions and make decisions on different questions. They were from different countries such as Egypt, UAE, England...etc. So the language of discussions was Arabic and English,
Also, there was a diversity of design educators from graphic and multimedia design departments, freelance and companies' designers, employers, where the total number of participants in the interviews was 120.

4.2. The participants' selection criteria

The decision to select these participants was from graphic and multimedia design students, design educators, designers, and employers; undergoes the fact that they are independently criticizing assessing the design topics, and they will be directly affected by this study's results.

4.3. Research restrictions

Using electronic interviews and discussions, the research's spatial limits crossed the United Arab Emirates to other countries and common disciplines such as graphic design and multimedia design, which enriched the discussions. Then this was reflected in the research results.

4.4. Research instruments

These qualitative, quantitative methods such as interviews, discussions, statistics allow collecting data about the research topic through the different participants' views. Moreover, they did not have any restrictions to express their opinions, whether alone or in groups.

Firstly, the participants were asked to answer the question; **Do you agree that the interactive marketing features require unique skills and characteristics of the graphic designers?** The following Table (1) shows the respondents' percentages of those who agree, agree to some extent, disagree, do not know.

Table 1. clarifies the participants' opinions percentages about the previous question

Participants type	Agree	Agree to some extent	Disagree	Do not know
Students	89%	9%	1%	1%
Design educators	90%	8%	2%	0%
Designers	92%	8%	0%	0%
Employers	93%	6%	1%	0%

The previous table shows that most participants agree and agree to some extent with the situation in the labor market, which requires unique skills and characteristics of graphic designers. A negligible percentage disagree or do not know of that.

Secondly; **Do you think that the content of current educational programs of graphic design is sufficient to meet the needs of the new labor market?** The following Table 2 shows the respondents' percentages of those who agree, agree to some extent, disagree, do not know.

Table 2. The participants' opinions percentages about the previous question

Participants type	Agree	Agree to some extent	Disagree	Do not know
Students	3%	5%	90%	2%
Design educators	4%	4%	92%	0%
Designers	7%	3%	88%	2%
Employers	10%	5%	60%	25%

In the previous table, the participants emphasized their disagreement and considered the need to develop graphic design education programs to comply with the requirements of the modern labor market.
 The following questions were also asked to the interviewees: -
- What are the traditional digital marketing features?
- What are the modern duties of the digital graphic designer?
- What are the modern duties of the multimedia designer?
- What are the differences between the duties of graphic and multimedia designers?
- What are the similarities between graphic and multimedia designers' characteristics?
- What are the modern methods of advertising marketing for products?
- What are the new features of interactive digital marketing?
- What is the relation between the new graphic designers and the digital interactive marketing features?

- To what extent has the labor market used interactive advertising methods?
- What are the required characteristics of the new generations of digital graphic designers to face interactive marketing developments?
- Can you classify the designers' characteristics according to their priorities for labor market updates?
- What are the changes that will occur in the graphic design education programs?

4.5. Data analysis

The interview is considered as one of the qualitative research methods; it includes asking open questions to the sample members to collect data on a topic. So the participants' answers were analyzed and classified using a statistical system for the answers that need percentages. Previous answers were expressed in tables and graphs during the various discussions.

5. Results and discussions

According to the previous study and interviews, the talks have taken place around the interactive digital marketing features and the required characteristics of the new graphic designers. Some examples of the designers' missions presented in the theoretical study are discussed during the interviews, and to reach the final results, similar results were combined and arranged together, and the discussions led to the following results: -

5.1. The first part of the results and discussions determined the modern interactive marketing features
Whereas interactive marketing is a practice that focuses on the individual customer, his behavior, and preferences, it is considered as a significant shift from the traditional digital campaign to the modern interactive methodology, as shown in Table 3 [23].

Table 3. The features of the traditional digital marketing along with the interactive digital marketing

Traditional digital marketing features	Interactive digital marketing features
Monologue. One-way communication.	Dialogue. Two-way communication
Simple. Small number of components.	Information complexity. Scenarios. Storytelling, etc.
Standard technology.	Advanced technology.
Static. Dynamic advertisements.	Interactive. Virtual, Dynamic advertisements
Common content.	Personalized content.
Linked to time.	Linked to time, place, culture, etc.
Examples: Banners. Websites. Normal advertisements. Web sites, Animations, etc.	Examples: Interactive social media. VR/AU reality applications, Interactive advertisements. Interactive motion graphics, 3D games, products, etc.

Thus, marketers and designers provide customers with interactive content in new features through mutual dialogue, storyboarding, simplified information, synchronization with time, dynamic visual elements, interactive optical illusion, etc. The goal has always been to make the customer more connected to the product and responsive [24]. The discussions and answers revealed that many companies move towards interactive digital marketing methods more than traditional digital marketing. The interviews cleared that; the interactive digital marketing methods have rules and features for the new designers' jobs. These grouped features are explained as follows: -

5.1.1. Interactivity

It uses dynamic content of animation, infographics, video clips, interactive illustrations that allow customers to share and discover more information.…etc. Designers can create interactive advertisements that incorporate mixed media elements in storytelling [25].

5.1.2. Advanced technology

It depends on new styles such as VR/AR technologies to interact with customers.

5.1.3. Personalized content; addresses every detail about the customers' desires and delivers the relevant content for more cooperation with the visual content. The designer is the leading partner with the customer [25].

5.1.4. Information Complexity; needs to gradually deliver explicit content in increments to help the customers understand the product or service. Designers can tell brand stories to customers by providing snippets of information in easy methods that attract them to the content [26].

5.1.5. Dialogue; uses two-way interaction to allow the customers' participation by using interactive subjects through game design, interactive videos, interactive advertisements, puzzles, etc. These methods provide the customer with a memorable experience.

5.1.6. Linked to time and place; whereas interactive marketing is related to the time, area of the display, and the display process.

The validity of the previous results was confirmed by:-

- Testing the features of interactive digital marketing methods.

- Calculating percentages for every feature according to its strength and ability to influence.

- The previous steps are repeated at all the discussions stages.

Table (4) and figure (2) show the percentages of the interactive digital marketing features based on their importance, determined through the common discussions and the participants' viewpoints. It is observed that information complexity, advanced technology, dialogue, and interactivity come at the top of the new interactive marketing features due to the vast and complex components used for interactive marketing and the amount of information that has to be presented to the public. And the other features follow them in the arrangement.

Table 4. The interactive digital marketing features' percentages

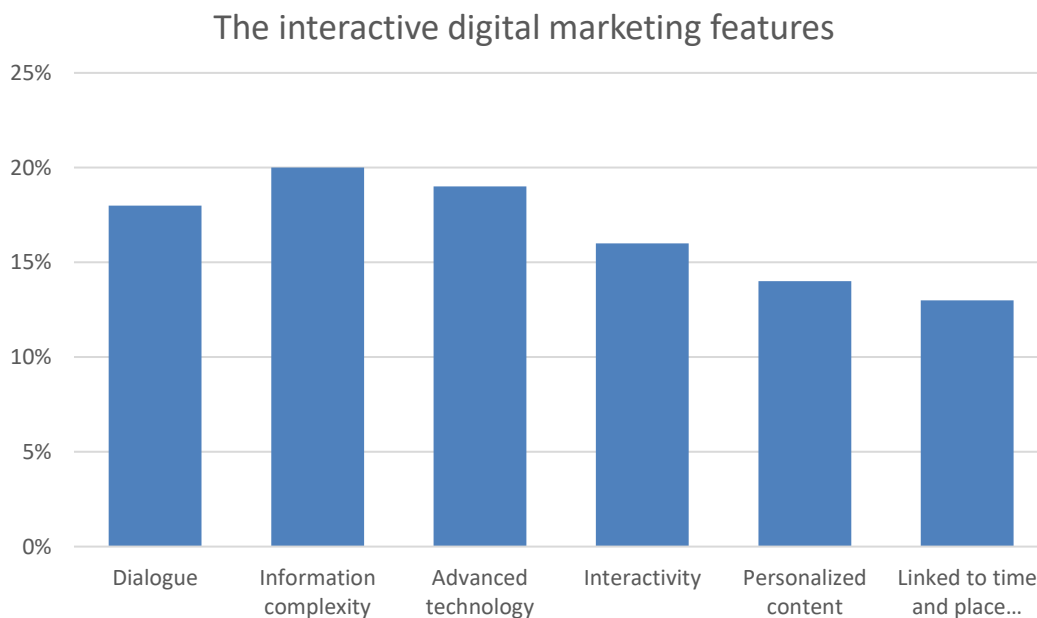| Dialogue	Information complexity	Advanced technology	Interactivity	Personalized content	Linked to time, space, culture.
18%	20%	19%	16%	14%	13%

The interactive digital marketing features

Figure 2. The percentages of the interactive digital marketing features

The second part of the results and discussions was about the critical characteristics of visual communication designers, where education, practice, and experience are essential factors in developing their skills and abilities.

The discussions and answers determined the characteristics of the designers that should they have to be in harmony with the new features of the interactive marketing as follows: -

5.1.3. Analytical skills

New graphic designers must have high analytical abilities to understand their missions from the consumers' perspective and current complicated technological developments to ensure that their ideas convey the spirit of the interactive digital marketing era.

5.1.4. Design by software skills

New graphic designers must possess different design and programming skills using various 2D and 3D programs as well as multiple applications of virtual and augmented reality.

5.1.5. Artistic skills

New advertisement methods in interactive marketing require special imaginative artistic skills from the designers that help them create innovative ideas despite various computer programs.

5.1.6. Communication skills

Interactive marketing enables designers to communicate on a large scale with service recipients from customers and good interaction with different work teams within the design and marketing process to achieve accurate information exchange and transmission.

5.1.7. Creative skills

Attractive ideas must adapt to the customers' latest interactive technology, so designers have to develop unique ideas that reflect the times' spirit.

5.1.8. Time-management skills

New graphic designers do their tasks in correlation with time, and each assignment is time-bound, so they must have time control and management.

The various discussions and answers of students, design educators, designers, employers arranged the previous characteristics in percentages according to their priorities in the interactive digital marketing, as shown in table (5) and figure (3).

Table 5. The visual communication designers' skills percentages

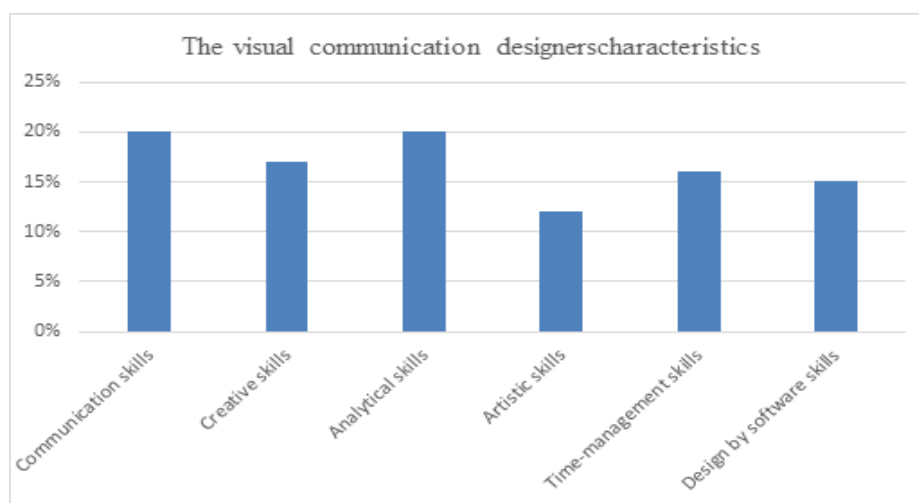| Analytical skills	Design by software skills	Artistic skills	Communication skills	Creative skills	Time-management skills
20%	15%	12%	20%	17%	16%

Figure 3. The percentages of the designers' characteristics according to their importance to the interactive marketing features

It is observed that analytical skills and communication skills come to the top of the focus to the designers to be in harmony with the information complexity and advanced technology, which are at the top of the new interactive marketing features. In contrast, creative skills, time-management skills, design by software package skills, and artistic skills follow them. Figure 4. also shows the harmonious relationship between interactive marketing features and the corresponding characteristics of digital graphic designers.
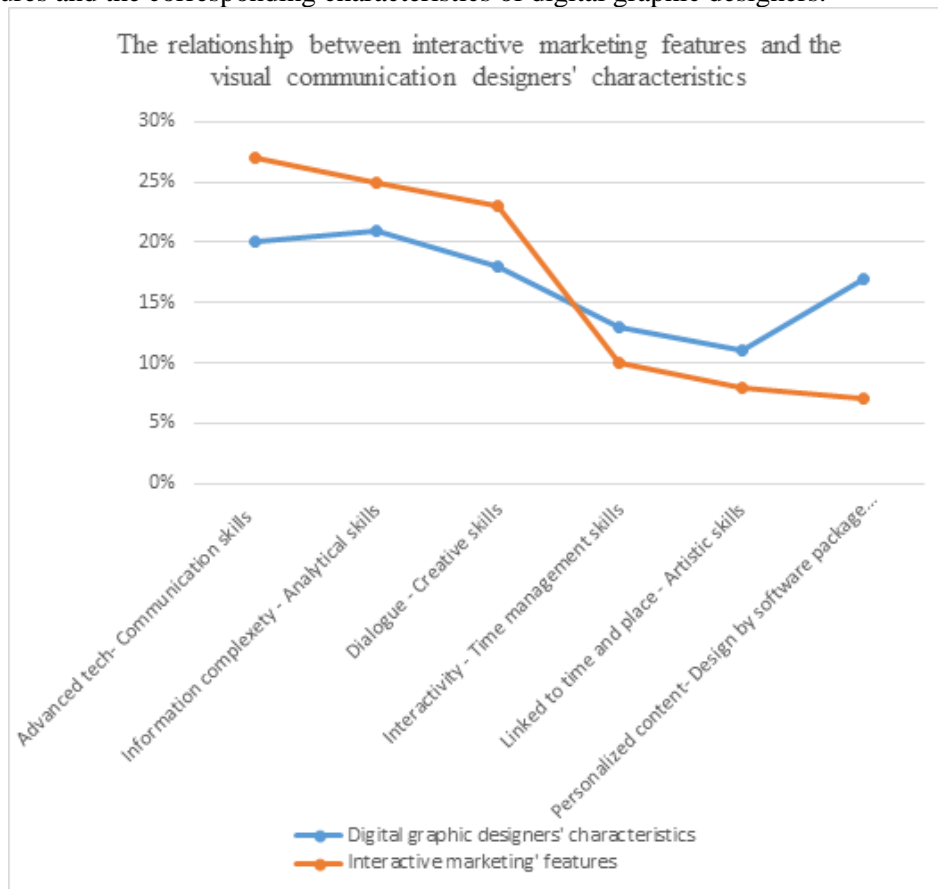

Figure 4. The congruence of interactive marketing features with the visual communication designers ' characteristics

The previous Figure shows the compatibility between different interactive marketing features and the needed characteristics of new visual communication designers. For example, advanced technology and communication skills are close together because new designers will work in large teams, and good communication between them will be significant during the design processes leading to successful and positive contact with the customers. Also, the interactive digital marketing information complexity will need more capabilities of the designers' analytical skills. The dialogue in interactive marketing topics will require more designers' creative skills to imagine the different scenes and motions. The interactivity of digital marketing, which uses the timeline and the diversity of scenes, will depend on the designer's time management skills to control and adjust the storyboarding and scenarios, especially in the interactive advertisements' design.

6. Conclusions

From the previous study, discussions, answers, results, etc., the following conclusions are gained: -
-   The transformation from the digital labor market to the interactive digital labor market is taking place rapidly.
-   New digital graphic designers should have unique characteristics consistent with interactive marketing features.
-   Statistics and graphs have shown a congruent between the interactive digital marketing features and the corresponding characteristics that new designers must have.

- With the increased complexity of interactive digital marketing, it did not become easy to separate between the different design professions involved in the marketing.
- Using interactive methods in marketing requires an integrated team of different design professions such as product, multimedia, graphic design, etc.
- There is a noticeable trend of spreading virtual and augmented reality as one of the leading interactive marketing methods.

According to the previous conclusions, it is recommended the following:
- It is vital to develop graphic design curricula continuously to meet the interactive digital marketing changes.
- It is necessary to merge the careers titles of graphic designer, multimedia designer, digital games designer, advertising designer, etc., under one umbrella, for example, interactive visual communication designer.
- Training the designers to work in large teams because the continual complexity of the interactive labor market increases quickly.
- There should be a common curriculum and continuous training of the designers from different design fields because they work together in teams in various companies, design offices, etc.
- Creating new design areas that combine two or more design specializations (for example, product design with graphic design) to deal with the urgent design topics and technologies.
- It is necessary to involve the product marketing stage as one of the design process's stages to identify the appropriate product marketing method.
- Incorporating education with urgent labor market practices of the graphic designers to improve their expertise.

Declaration of competing interest

The authors declare that they have no any known financial or non-financial competing interests in any material discussed in this paper.

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