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Competition Between Designers and Artificial Intelligence: Confrontation or Cooperation

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ABSTRACT

With the rapid rise of social media and the widespread popularity of TikTok particularly among Generation Z users and the platform's growing influence on consumer behavior, this study investigates the impact of TikTok media content on the purchase intention of Gen Z in Ho Chi Minh City. Data were collected through an online survey of 348 respondents and analyzed using Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), and Structural Equation Modeling (SEM). The analysis identified seven key dimensions of TikTok media content that influence purchase intention: informativeness, entertainment, interactivity, personalization, social diffusion, creativity, and product quality. The findings not only confirm the role of TikTok content in shaping Gen Z's purchase intentions but also offer practical insights for businesses aiming to optimize their digital marketing strategies. The results highlight the importance of investing in creative, personalized, and high-quality content while fostering user interaction and content diffusion on the platform.

1. Statement of the problem

Since its public launch in late 2022, ChatGPT has sparked a powerful wave of artificial intelligence applications, spreading across all aspects of life. In Vietnam, graphic designers and illustrators have gradually become accustomed to using AI to support their creative processes. Tools such as Canva AI, DALL·E, Midjourney, Stable Diffusion, and Adobe Sensei not only help reduce design time but can also partially replace the work of artists. This has raised concerns that AI (Artificial Intelligence) might completely eliminate the role of designers in the future.

So, should designers use AI for their creative work, and if so, to what extent in order to maintain the uniqueness and personal touch in their creations? How will artificial intelligence (AI) reshape the field of design and illustration in the future?

To address the questions mentioned above, the author of this article will analyze the impacts of AI on the design and illustration industry, assess the potential of AI to replace humans, and explore the strategies that designers and illustrators employ to maintain their positions.

1.1. Research context

In Vietnam, although artificial intelligence is widely known, the professional application of AI to create impressive artworks remains a significant challenge for artists. In the design and illustration industry, the question of whether to use AI to assist in the creative process is still a controversial issue, with two opposing viewpoints coexisting: one side completely rejects

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it, while the other cautiously supports it. Very few designers and illustrators openly admit to using AI in their creative process.

Recognizing the importance of artificial intelligence as an inevitable trend, universities and colleges offering design and illustration programs have started integrating knowledge and skills related to AI into their curricula. Students have also begun exploring ways to apply AI in their studies and creative projects. Many designers and illustrators are proactively participating in short-term courses on leveraging AI for their work. Additionally, design and creative art companies are increasingly using AI in their real-world projects. These are the positive aspects of AI adoption in design and illustration today.

However, there are still challenges, such as the lack of uniform AI training programs, with each institution teaching differently. Learning resources and tools, especially in Vietnamese, are severely lacking. Some instructors struggle to adapt to the rapid updates in technology, leading to a shortage of highly specialized teaching staff proficient in both graphic design and AI. Furthermore, the cost of using AI learning tools remains quite high, making it less accessible for the majority of Vietnamese instructors and students. The rapid development of AI also requires professionals to continuously update their knowledge and skills.

These opportunities and challenges highlight the urgent need to expand understanding of AI's capabilities and the ability of Vietnamese illustrators and graphic designers to adapt to and leverage AI, addressing the issue of rejecting or collaborating with AI.

1.2. Research objectives

Through the research results, the author aims to analyze the impacts of AI on the design and illustration industry: With the presence of artificial intelligence, will customers undervalue the role of designers? Is it possible that AI could perfectly complete the design process, satisfying all customer requirements? In addition, the author focuses on clarifying the strategies that designers and illustrators can use to work effectively with AI.

1.3. Research methods

This article is conducted using the following research methods: the theoretical research method for document analysis, the survey method using questionnaires (consulting experts' opinions), and the interview method. The theoretical research method is applied to gather information about the current state of AI adoption in illustration design, as well as to evaluate the strengths and weaknesses of AI in graphic and illustration applications. The survey method using questionnaires and the interview method are employed to collect data on the use of AI in design and illustration among Graphic Design students of the Faculty of Information Technology at the University of Economics and Finance.

2. An Overview of AI in Design and Illustration

2.1. Advances in AI for Design and Illustration

Sam Altman, CEO of OpenAI, once stated: "We believe that putting technology in the hands of users and allowing society and technology to develop in parallel is the only way to manage and leverage the immense value of AI while ensuring safety." This perspective implies that the development of technology is inevitable, and we should harness it to make society better.

Meanwhile, Refik Anadol, a contemporary Turkish artist known for his media art utilizing AI to create complex images and animated videos, observed: "Today, there is a significant difference in work efficiency between those who know how to use AI and those who do not." (Bennet, 2023)

Regarding the capabilities of AI, Brown conluded: "AI can enhance human creativity by providing new sources of inspiration, exploring design possibilities, and offering feedback." (Brown, 2023)

Discussing the application of AI, the book "The Role of Artificial Intelligence in Graphic Design" delves into how AI is being used to automate design tasks, generate new designs, and improve the design process. Moreover, the author helps us explore various AI tools and platforms that designers are using, as well as the new roles designers will assume, the skills they will need, and the challenges they will face in the future. The book provides real-world examples of how AI is being used in different design fields such as graphic design, product design, and architectural design. (Smith, 2022)

So, what exactly is AI that makes it so powerful in the design field? Aditi Jain defines: "Artificial Intelligence (AI) in graphic design refers to the application of machine learning algorithms and natural language processing to support or automate creative processes. AI tools can learn from vast amounts of design data, allowing them to quickly and efficiently generate images, layouts, and graphic elements such as typography and colors." (Jain, 2023)

AI is a broad field of computer science that enables machines to exhibit human-like intelligence. Machine learning is a subset of AI. Besides machine learning, AI also encompasses other branches. Machine learning, computer vision, robotics, and natural language processing (NLP) are AI subfields related to creative activities. Going down one level further, deep learning is a subfield of machine learning, and beneath deep learning is generative AI. This is the technology

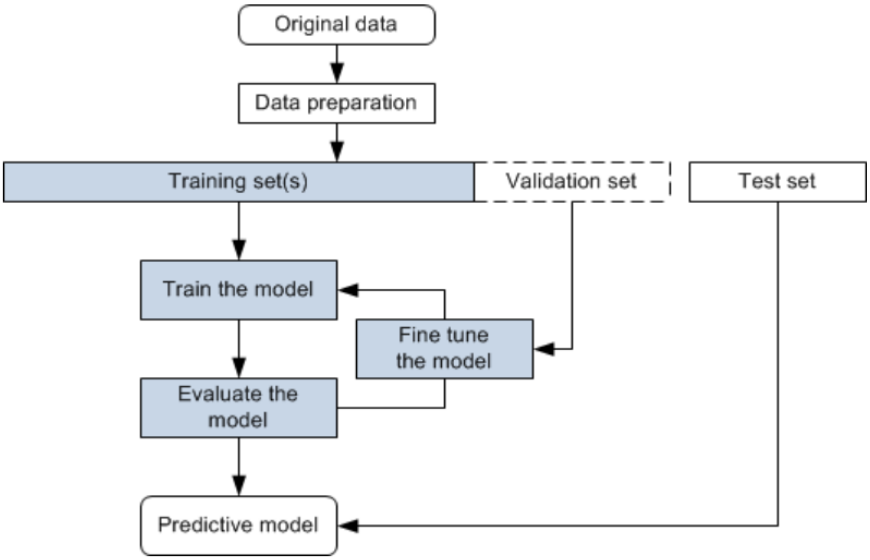

Figure 1. Deep learning workflow diagram

behind applications like DALL·E, Midjourney, Stable Diffusion, Adobe Sensei, and Canva AI, which assist in illustration and design tasks.

Below is a diagram illustrating how deep learning works to produce generative AI:

Above is a diagram of the deep learning process that the author of the article collected from the website theobjects.com. Conventional algorithms are designed to answer a specific question accurately. In contrast, machine learning algorithms, especially deep learning models like the ones illustrated above, are adapted for various types of problems and tasks, such as image editing, layout suggestions, and generating new images based on user prompts. However, whether deep or not, training a model to perform tasks effectively depends heavily on data. Without data, no machine learning algorithm can learn (Workflow and Data Preparation - Dragonfly Software Co.)

Thus, it can be understood that the ability of applications like Canva AI, Gemini, and OpenAI to create and edit images from prompts is thanks to the data preparation step mentioned above. Developers of these applications have fed them with vast amounts of free data from the internet, using it as a training database for AI models. The models can be seen as new applications being researched; once the appropriate data is fed, they go through training, validation, and testing phases to reach the steps of fine-tuning, evaluation, and retraining if the application does not perform (intelligently) as expected. Finally, they proceed to the predictive model stage, predicting more intelligent and advanced levels of generative AI models (Johnson, 2021).

With such a deep learning process, applications in the field of design and illustration today can help designers automate the design process, reducing repetitive tasks such as editing, color matching, or image compositing. In addition, Gemini, Canva AI, and Adobe Sensei also assist in generating creative ideas and suggesting design styles, colors, and layouts based on market trends.

To experiment with AI, the author entered the following prompt into Google's free Gemini application: "Please draw a portrait of a young, dynamic female artist in watercolor, in a fashion illustration style", and received the image below:

Figure 2. Image generated by Gemini AI from writer's prompt

Here is another example of how Vietnamese artists have leveraged the capabilities of AI. In the program "The Heart of Soldiers", young artists collaborated

with AI technology to restore vivid color images of many Vietnamese martyrs and artists based on black-and-white archival photos and memorial portraits provided by families (Thiên Điểu, 2024).

Figure 3. Painter To Ngoc Van (left) and poet Quang Dungwere restored by artists from their portraits

Here are the restored images of painter Tô Ngọc Vân and poet Quang Dũng, two martyrs who sacrificed their lives during the war against the French. These images have been recognized by their friends and families as being very lifelike, closely resembling them during their lifetimes. Without the application of AI technology, restoring faded and stained memorial portraits due to the passage of time would require significant effort and not every artist would possess the skills and delicacy needed to accomplish this. However, with the support of AI, redrawing portraits of those who have passed away has become much easier.

In addition to restoring images, artificial intelligence also transforms information into impressive visual representations.

Figure 4. Artwork by Refik Anadol, rendering of Generative Landscapes: California, Pacific Ocean Dreams, Winds of LA, 2023, Courtesy of Refik Anadol Studio.

The above is the work of Refik Anadol. As one of the pioneers of digital art, he also represents an important evolution in creating with AI. Having worked in residencies at major technology companies such as Google and NVIDIA, Refik Anadol's work shows that AI can collaborate with artists to create new works of art. AI systems can learn from the artist's style and techniques to create works that match their personal style. (Refik Anadol's Mesmerizing Data Paintings Are Captivating Audiences Worldwide, Cohen A., Artsy.net)

The above views and illustrations have shown that: applying AI to design and illustration can help optimize time and costs. At the same time, AI will also help businesses reduce human resources costs and speed up content production. Thus, the possibility of AI replacing part or all of the work of designers is present.

2.2. Comparing the capabilities of AI and Designer

One of the giants in the technology field, billionaire Elon Musk, once made a confusing statement: "The pace of change in technology is happening so fast, beyond our ability to understand. I don't know if this is good or bad." (Jain, 2023)

Elon Musk's statement shows that by the beginning of 2025, what AI can do in all fields has amazed the whole world. To have a deeper look at the advantages and disadvantages in the race between machines and humans, the author of the article consulted the opinions of some experts.

Figure 5. Illustration of the layout of the image combined with AI to find ideas of artist Viet Khoa

Supporting the use of AI, artist Viet Khoa, who often uses AI to help complete his illustrations, said: "AI not only saves time but also expands the scope and depth of creativity." (Thiên Điểu, 2024)

Dr. Le Quang Minh, deputy director of the Institute of Information Technology, Hanoi National University, commented: "AI should only be a supporting tool. If

abused, it will cause users to lose their thinking and forget their ability to find errors." (Ray, 2024)

Video game graphic designer Jason M. Allen, after winning first prize in the digital photography category at the Colorado State Fine Arts Competition, USA, declared: "If AI helps create a surreal blend of Renaissance and Steampunk art styles in my Théâtre D'opéra Spatial, and I make that public, then why oppose AI?" (Bennet, 2023)

Figure 6. The winning photo "Théâtre D'opéra Spatial" of Jason M. Allen

To get the above photo, Jason M. Alle explained that: He had to feed Midjourney with requests such as: create images of three women wearing astronaut helmets, wearing costumes with Victorian-style frilly skirts. Then it took about 900 times to add prompts to adjust details, light, color, to get three satisfactory photos, from which to synthesize one photo. Then he had to use Photoshop to refine, for example, create a head with wavy black hair for the female character in the middle, because Midjourney refused to create a head for her. (Dans, 2022).

The above illustrations help the writer to infer and compare the capabilities of AI and designers in characteristics such as: Speed, creativity, understanding of customer psychology and the ability to adapt, learn new things, summarized as follows:

In terms of speed, AI wins because it can process a series of design images extremely quickly. However, the creativity of designers is often deeper, because people often put their own experiences into their work.

Regarding creativity, AI can only rely on the existing data fed by programmers during the development of the application. Paid applications tend to have richer datasets, making the AI presumably smarter. When prompted with: "Design an advertising poster for the Graphic Design program of the Faculty of Information Technology at the University of Economics and Finance (UEF) for the academic year 2025–2026, with the slogan BE WHO YOU WANT TO BE, Google's free Gemini AI returned the following result:

Figure 7. Poster Generated by the Free Gemini Application Based on the Author's Prompt

It can be seen that: if there is a lack of data, AI will create products with many errors as illustrated in the poster above, because AI creates based on available data. However, thanks to the huge data warehouse that internet users voluntarily (or are forced to) upload every day, AI also suggests many interesting details for designers to take advantage of. In terms of creativity, designers have the advantage of creating more unique and personal images.

In terms of understanding customer psychology, AI is much worse than designers, because it only relies on data, while designers are flexible and have intuitive feelings when contacting and communicating with customers. However, we can also argue the opposite: What would happen if AI was fully loaded with data about customers' desires and expectations, while designers lacked flexibility and could not have the right feelings when communicating?

Finally, the author tried to compare the adaptability between machines and humans. In theory, machines can only learn from past data to adapt, while human capabilities are limitless. However, machines are not biologically limited, they do not get sick, do not age, and are not affected by psychological factors like humans. AI and designers, who wins in adaptability remains an open question.

3. Risks and Potential

To objectively assess the risks of the graphic design industry, illustrating the rise of artificial intelligence, through a survey of 100 students and lecturers of

Graphic Design, Faculty of Information Technology at UEF, the author received the results in Table 1.

Based on the results of the interview survey, the author found that the factors that most affect the risk of designers losing their jobs to AI are the lack of updating new skills, not being proactive in learning and practicing (91%). Next is the factor that customers trust AI's creativity more than designers (81%), the state cannot manage copyright issues (53%) and finally designers deny the role of AI (accounting for 51%).

In addition, the author also assessed the potential factors of the Design and Illustration industry when artificial intelligence rises, below is a survey table also conducted on 100 students and lecturers of Graphic Design, Faculty of Information Technology at UEF.

Based on the survey results, students and lecturers rated the most supportive factor as designers having the ability to train personal AI models (93%), the second factor: Designers having skills in concept, storytelling and branding (88%), the increasing number of free image sharing platforms is the third influential factor (82%), and finally the cost of using suitable AI tools (71%).

Through two surveys on factors influencing and supporting the creativity of designers, it can be concluded that leveraging, collaborating with AI and continuously learning will be an inevitable trend for designers to maintain their leading role.

3.1. Limitations of AI in creativity

While AI can produce impressive graphics and illustrations, it has some major weaknesses. When given the prompt: "Draw a watercolor still life consisting of a plaster male bust, a green glass bottle, an apple and a bunch of grapes," Gemini returned the following result:

Figure 8. Color Illustration Generated by the Free Gemini Application Based on the Author's Prompt

AI operates on algorithms and training data, and is incapable of creating outside the box, leading to a lack of deep creative thinking. If you pay attention, you will notice that the chest of the plaster statue is deformed. In addition, the statue is too small in proportion compared to the glass bottle, the apple, and bunch of grapes.

Table 1. Survey results on the factors affecting AI

According to you, what factors affect creativity in the field of Design and illustration when artificial intelligence develops?				
Numerical order	Factors	Affect		
		Many	Few	No affect
1	Designers deny the role of AI	51	25	24
2	Designers lack new skills	91	6	3
3	The state cannot control copyright issues	53	31	16
4	Customers trust AI more than designers	81	8	11

Table 2. Survey results on the factors supporting AI

In your opinion, what factors support creativity in the field of design and illustration as artificial intelligence continues to develop?				
Numerical order	Factors	Support		
		Many	Few	No support
1	The number of free image-sharing platforms is increasingly growing	82	17	1
2	Designers have the ability to train personal AI models	93	5	2
3	Designers possess skills in concept development, storytelling, and branding	88	4	8
4	The cost of using creative AI tools is reasonable	71	24	5

Artist Sterling Hundley, professor of Media Arts at Virginia Commonwealth University, commented: “Artists should find their own voice in the age of artificial intelligence and use best practices, iterative processes, and design systems to create meaningful, impactful works of art.” He emphasized that the work must be the designer’s experience in life, which AI cannot have. (Brown, 2023)

In addition to being creative within the box, AI’s weaknesses also include dependence on input data. Good data is needed to produce good designs. Ultimately, AI is said to be very difficult to replace the human element in creative design, because design is not just about images but also about stories, emotions and connections with customers.

The above analysis shows that: In the field of design and illustration, humans still have the ability to surpass AI.

3.2. The Trend of Integrating AI and Designers

To take advantage of technology, designers are learning how to use AI to improve the efficiency and quality of their work. This makes them less worried about a future where artificial intelligence replaces them.

In the book “AI and the Future of Creative Work: Algorithms and Society”, the authors focus on analyzing how smart technologies are transforming creative activities. The future of creative work will be much more complex than the assumption that AI will replace the work of designers. The designer’s workplace is becoming more complexible, human labor will complement computer technology. New job positions will be created to produce content using technology and developments related to AI to increase productivity. New tools will create and personalize content across multiple platforms, becoming popular as automation of repetitive tasks in the content creation process. The concept of a creative worker will certainly change. People will need to learn to work with machines to increase productivity. In addition, the authors also mention the possibility of humans and robots developing collaborative relationships, developing the science of controlling creativity when machines and artists become co-creators of art. (Bennet, 2023)

The above argument proves that humans will need to work with artificial intelligence. Currently, some methods that designers are using to effectively combine creativity with AI include:

First, they use AI to support initial ideas: AI can create suggested designs, from which designers can adjust in a personalized direction.

Second, they apply AI to optimize the workflow: Automate steps such as photo editing, creating effects, and color testing.

Finally, designers strive to develop specialized skills: They focus on design thinking, try to create exclusive content, and practice good communication skills with customers.

4. Proposed Future Directions: Collaboration

According to Ursula von der Leyen (President of the European Commission): "AI is a huge opportunity - if used responsibly." The application of AI in graphic design brings many benefits, helping artists and designers save time, expand creativity and create unique works. However, it also poses challenges regarding copyright, originality and the role of humans in the creative process. (Kurzweil, 2024).

The design industry is entering a period of transformation when AI plays an increasingly important role. There are three trends in the world:

First, designers use AI as a creative tool. They train AI with their own GAN (Generative Adversarial Network) to find interesting things. We can imagine a designer discovering a unique design motif, and looking for the best ways to create a layout to implement it. The difference from classic design is that by training their own GAN, designers can create and explore many designs in different eras and spaces, and are not limited to a single place where we live. This also includes integrating AI into design software: Tools like Adobe Firefly or Canva AI (with automated design support tools) are helping designers work more efficiently.

Second, designers work with AI as collaborators. Designers own their own AI tools and fed (train) them with their own designs, layout data, typography, and color schemes so that AI can skillfully simulate layout arrangements for each content, according to the designer's own processing. When composing, designers can coordinate smoothly with AI, data is closely linked through continuously moving brainwave signals and live, instant images, displayed on computer screens. There will be the appearance of the role of "AI-assisted Designer". In this trend, designers not only work manually but also need to know how to operate AI.

Finally, AI will do everything for designers, just need to use the right “prompt” according to the idea. This is the most cost-effective trend, widely used in society, often called the “democratization” of creativity to everyone. Designers need to know how to download and use paid AI applications such as Adobe Photoshop (with AI features such as Neural Filters, Content-Aware Fill.) DALL·E, Midjourney, Stable Diffusion (AI tools for creating images), and Adobe Sensei, Canva AI (with automatic design support tools), and have the skills to create prompts that match the idea, and AI will replace all the design work until the customer is satisfied.

The trend of using AI as a tool or considering AI as a partner requires relatively large financial resources and has not yet been applied in Vietnam. Meanwhile, the trend of AI doing it for you with the advantage of

saving costs is flourishing in many fields. It is very possible that everyone will become a designer with the ability to set prompts well. This will certainly lower the role of designers. Therefore, in order to apply this design trend while still maintaining a key position, designers need to improve their creative thinking skills: Other skills that need to be further developed are the ability to generate ideas, storytelling skills, analytical thinking, and communication with customers. These are the factors that real designers can create clear competitive value with AI applications. In addition, perfecting and deepening specialized skills such as sketching, color coordination, layout, typography, etc. are still very important at this stage. No matter how much artificial intelligence develops, humans must still play a central role in artistic creation and emotional connection.

5. Conclusion

This study aims to answer the question: What are the factors that affect the creative value of designers in the era of artificial intelligence development and should humans adapt, collaborate or completely deny the role of AI in the field of design and illustration?

After analyzing, synthesizing documents and consulting experts, the author of the article concluded that: the competition between designers, illustrators and artificial intelligence is not simply a competition between humans and machines, but rather a process of adaptation and collaboration to conquer customers.

To be able to turn AI into a partner, designers and illustrators need to equip themselves with basic knowledge such as: style, layout, color to help AI support work effectively. It is necessary to fully utilize the potential of technology in the creative process. For example, with repetitive image editing operations, it is advisable to use prompts so that AI can process images smoothly. In addition, artists should proactively follow new trends in art as well as technology, which will support the process of establishing new ideas to create products that suit the tastes and needs of customers. Finally, artists should build a special personal brand for themselves on online platforms. Having a personal brand will help designers draw a unique professional portrait, different from products created by AI. For products with AI support, it is advisable to publicly disclose to customers which part of the work is done by AI. Having a unique but honest brand will also help artists have a strong community of support and create many opportunities for marketing and cooperation with customers.

Along with the trend of international integration in the fields of technology, design and illustration, the fact that Vietnamese designers can apply AI to cooperate, "combine two swords" to create impressive communication products will help the human resources in the graphics industry become more professional and creative. Good human resources will meet the visual communication needs of society, not only within the borders of Vietnam but also expanding globally.

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