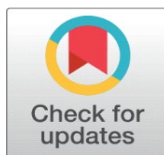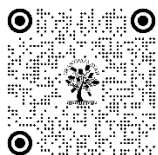# IS ARTIFICIAL INTELLIGENCE KILLING ARTISTIC SKILLS IN DESIGNERS?

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ABSTRACT

Historical evidences show that new technology has cast its influence on the design world through time. Artificial Intelligence (AI) is a new emerging technology which is being explored by many industries including the design industry. Nowadays AI is used for creativity on a larger scale. It is used for aesthetic applications, design trends, game design and other visual media. Development of AI generative tools is considered as most impactful in the field of design. It is inevitable that upcoming technologies will be noticed and used by all types of consumers and therefore anyone can create designs. Thus, trepidation of killing artistic skills in the field of design has become one of the major concerns for the designers. To stay competitive and ready for the global market designers have to use AI and hence 'Collaboration' between technology and artistic skills is indispensible for truly original, qualitative, empathetic and passion driven designs. Since this paper is from designers' point of view it is focused on the consequences of using AI on artistic skills and design industry. It examines the quantitative and qualitative survey with data collection from designers, design educators and design students who know about the use of AI in design and art. The responders from the design fraternity opined that as long as AI does not develop empathy and innovative creativity, design jobs are safe. Symbiosis of humans and their emotional connection with each other will only create captivated designs.

Keywords: Artificial Intelligence, AI, Artistic Skills, Creativity, Design Industry, Empathetic Designs, Technological Development

1. INTRODUCTION

Artificial Intelligence (AI) is the new buzz word in industries all around the world and design industries are not exceptions for it. Designers and developers are conversing about the future impact of AI and how professions are changing due to it. AI is used by students and professional designers. AI has lot of potential to change the design world. Nowdays everyone uses AI efficiently. But the concept of Artificial Intelligence is not new. In 1940s and 1950s some scientists discussed about the creation of artificial brain. The father of AI John McCarthy had coined this term in 1956 at a conference at Dartmouth College. Researchers could not get funding for AI research from 1970s to 1990s What is Artificial Intelligence. (2021). The websites

like Amazon, Google etc. are using AI successfully for more than 10 years. American futurist Dr. Thomas Frey predicted in his TEDx talk that two billion jobs will disappear by 2030 because of computers and will be in transitioning phase with technology CInnovationGlobal. (2013). AI teaches itself some tasks from previous experiences Sas.Com. (2022).

Many designers do not use AI tools but still one can see that virtual reality, augmented reality and artificial intelligence are now overpowering humans in all sectors including design. AI generated tools have unique features which cover every aspect of visualization. For example AI generated tools like Dall-E generate images from text descriptions, Midjourney and Stable Diffusion create new product designs by using provided algorithms, Vizcom translates 2D designs into 3D.

If AI is performing so many chores so easily and if this is a start of robotic evolution then a question comes into mind that what will be the role of designers in future? If each design task will be fully automated with AI; will it be harmful for designers? This paper will try to focus on the consequences of AI in design.

Objectives
- To analyze challenges of using AI for designers
- To analyze strength, weakness, opportunities, and threats of using AI (SWOT Analysis)

2. IMPACT OF AI ON DESIGN INDUSTRY

With the development of machine learning tools and efficiency in techniques one can fear that AI will replace all the designers' jobs. But as mentioned by Miklos Philips, 'Robots are not replacing designers' Miklos (n.d.). They will ease designers' lives. In product design AI can be used efficiently at many levels; including research, 3D rendering, packaging to last stage of production. AI can be used to improve the quality of the product, unique modification at human worker level in industry, mechanical experimentation, and smart manufacturing Matusik (2021). It can also be used for data analysis, assisting the designers or prototyping.

Designers working with AI can create designs faster and cheaper. Multiple prototypes can be created by using the AI as it can analyze the master data in fraction of seconds. A brilliant example is of Nutella Design. AI algorithm created seven million distinct and unique designs for Nutella packaging. All seven million jars with unique packaging design got sold in a month in Italy Aouf (2017). It shows that without compromising on quality AI creates multiple variations in design Italia (2017).

Figure 1

**Figure 1** Italia O. 2017 Nutella Jar Designs Created Through AI
https://www.youtube.com/watch?v=RY-nK4ChLEQ

3. USAGE OF AI IN DESIGN INDUSTRY

Students and professionals both are using AI nowadays. From the massive data of information; AI use very specific data according to commands and products' needs. One of the problems faced by the students and designers is repetitive day to day tasks which need accuracy. AI can help designers in many ways to maintain efficiency in design process and to achieve proper design development. Product localization is another humongous task achieved by AI. It includes creating same information in various languages. Defect finding is also a task which can be done with the help of AI. ChatGPT is one of the new forms of AI used by all to gather information. Below are the examples of information generated through ChatGPT by putting a prompt and AI generated students work Constantine (2022).

Figure 2
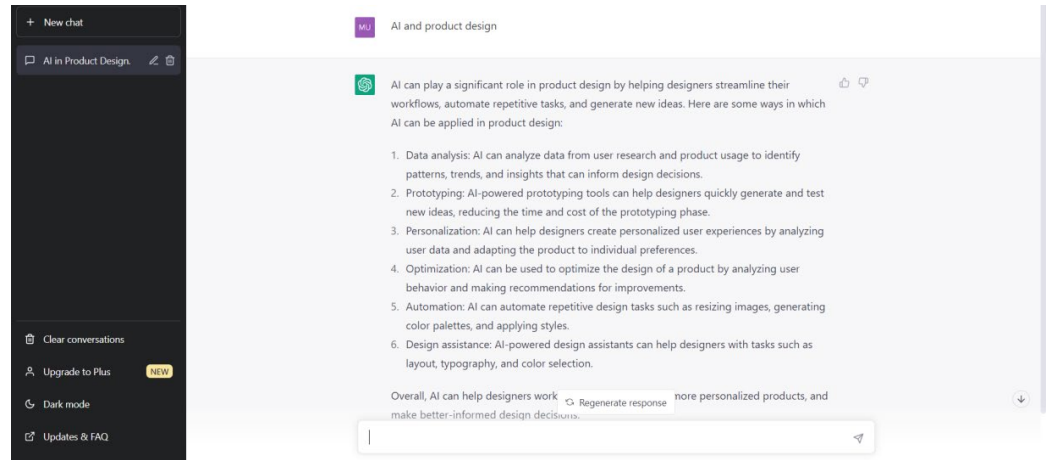
Figure 2 Open AI ChatGPT (Screenshot Taken by Researcher)
https://chat.openai.com/c/568173a3-11f3-42ae-922c-e5ed3c350f75

Figure 3

Figure 3 Noguera 2022 AI Prompting AI for Inspiration, Generated Work
https://www.core77.com/posts/117169/Unexpected-outcomes-when-design-students-use-AI-as-part-of-their-process

4. ROLE OF AI DESIGNER

When AI team needs to present their prototype, demo, visualization of their technology they work with product designer Linden (2019). AI designers try to show all the possibilities with AI for the product/ visuals. By doing the analysis of prototypes, designers decide if the project is worth for further research. Another role of AI designer is to develop AI centered applications. AI designers have to work with engineers for data collection. Designing AI developer's tools is an extra essential task of designer. By doing this; they are reducing the gap between technology and the users. The challenge is that they need to understand the proficiencies of current technology to create unique visual experience and have to update themselves with evolving technologies.

5. METHODS AND FINDINGS

The more AI will learn about what is feasible for humans the more it will be impactful. The survey for this paper has been taken of total 53 designers, design students and design educators to understand the impact of AI in their designs. For data collection questionnaires were provided to the participants to know their current usage of AI, potential usage of AI in their respective job in future and their opinions on positives and negative impacts of AI in design industry. The set of questions were open ended and close ended. The frequency and percentage of positive and negative responses were analyzed. Qualitative analysis was conducted later.

5.1. RESULTS

Survey Analysis of group 1-Designers Sample size- 18

As per the analysis of data designers have mixed opinion about AI. Not all of them use AI in their practice but all of them were aware of AI. One of them thinks that designer can create his/her own gallery of image gallery, prototyping with AI tools. One of the designers is of opinion that if we can use to bridge the gaps in cognition of geriatric to get accustomed to ever evolving technology. AI can help designer to reduce time put for research and ideation. Designers will evolve with AI tools to skip certain process and utilize that time to learn something. AI can assist to solve the problems in design. It can reduce the creative block.

Along with these positive points there is certain negative side also. Some designers think that although AI saves time; it cannot think out of box. Some of them think that AI will take over most of the tedious desk jobs. If designers do not update themselves with time for using AI; it can lead to the loss of jobs in the field of design. One designer also said that wherever there will be automation and AI together; humans will just become a point of monitoring the work done by AI. It can lead to the loss of self-creativity and further to self-motivation to learn new things. According to one designer it creates sameness in designs if we use same keywords/prompts. It will increase the dependency on technology. Also lack of emotional connection with the designs can affect the quality of designs.

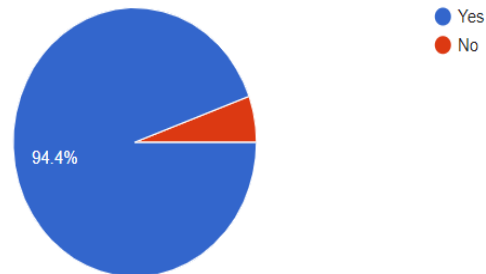**Survey analysis of group 2 – students, Sample size - 36**

Survey shows that almost all students are aware about what is AI.

Figure 4

Figure 4 Pie Chart Analysis for the Question, 'Are you Aware About Artificial Intelligence?'
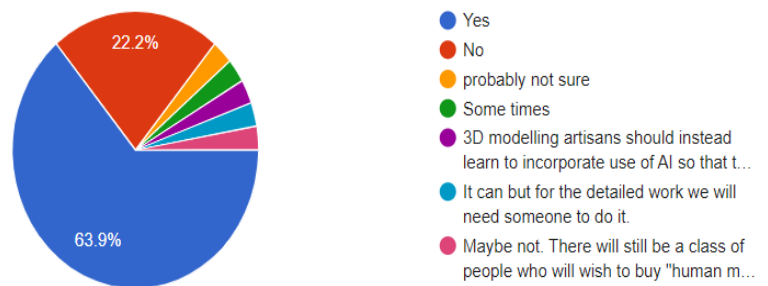
47.2% students use AI in design education. It can be concluded from the survey that most of the students use AI for content writing, generating ideas, inspiration, research, and rendering. They are of the opinion that 3D printer will replace hand skills gradually.

Figure 5

Figure 5 Pie Chart Analysis for the Question, Will AI Generated 3D Models Endanger Career of 3D Modelling Artisans?

Some are of the opinion that sketching will also gradually replaced by AI. Many of them think that we cannot just depend upon AI for design usability testing because it requires human touch. It demands detailed understanding of how human mind works hence, it cannot replace humans. It can speed up the process but cannot give robust solutions. When asked about positive impacts of AI, some of them are of the opinion that AI will save time and problem solving will become easier. Some design students say that AI is useful for better understanding and easy access to references and thus AI is useful for research. Non creative tasks will be replaced by AI and people who do not have technical drawing skills can come up with good ideas. When asked about negative impacts of AI- some are of the opinion that it will make people lazy. Some of the design

students think that AI will replace research and development skills and furthermore AI will possibly develop lack of urge to understand humans.

Survey analysis of group 2 – Designers, Sample size - 16

Survey shows that almost all designers are aware about what is AI. 68.8% designers use AI in industry for their designs. Most of them use AI for product research, rough ideations, creating options, UI inspirations, Mat painting, VFX, illustrations, Mid journey, image generations and data predictions.
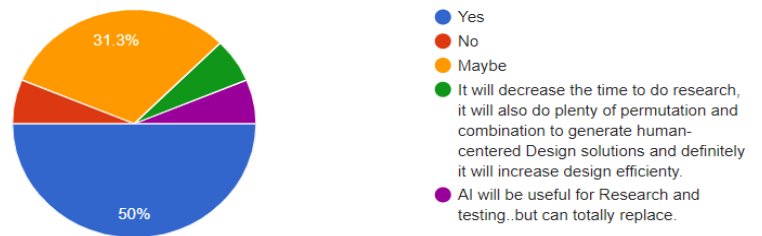
50% of them are of the opinion that design process will be influenced by AI.

Figure 6

Figure 6 Pie Chart Analysis for the Question, 'Do you Think that Design Process (Research, Ideations, Prototype, Testing) Will be Influenced by AI?'

50% of the respondents do not think that sketching skills will become obsolete because of AI.

When asked about product usability testing, some of them are of the opinion that AI is good for predictions but not for testing. For physical testing, AI is not useful but for digital products it is good. AI works within a limit. When asked about positive impact of AI, some of them are of the opinion that menial tasks can be carried out quickly and economically. AI can be useful in creative blocks. Designers can create their own image gallery and AI can save time in research. ChatGPT is really helpful for projects while AI is helpful in visualizing and it can increase efficiency of designers. When asked about negative impact of AI- some designers are of the opinion that same commands can create same designs. Jobs of graphic designers could be in danger. Creative experiences could be lost. Design is for problem solving, AI can assist for that but it cannot read human emotions.

This research in the table is based on 53 participants from designers, design educators and design students.

Table 1

Table 1 Table 1 SWOT Analysis of Impact of AI in Designers' Life			
Strength	**Weakness**	**Opportunities**	**Threats**
AI saves time. AI can be replaced for repetitive tasks where skill and accuracy is needed.	AI cannot empathize with or understand human mind.	Data analysis process will get more complex which can lead to more precise decisions.	AI can kill creativity and urge to gather information.

6. CONCLUSION

One can conclude that two aspects are very important to create a powerful and impactful design: creativity and human empathy. Both of these aspects cannot be taught to machines, given the limitations of machines at the current state. Empathy is a part of emotional intelligence hence teaching these characteristics needs development of communication as a skill and being empathetic with other people. Human designers' jobs are safe until these two qualities evolve in machines. Designers cannot be replaced by AI however designers have to cope up and update themselves with new technologies. They have to be smart and intelligent to give commands and strategists. Symbiosis of humans and their emotional connection with each other will create captivating designs. The fact is designers have to work on choosing the right data to feed in AI. Ultimately machines cannot think out of the filled information. Further research can be done on how to develop commands and strategies with emotional intelligence to use AI effectively.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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