



Design Fundamentals as an Adaptive Strategy in Facing AI Dominance

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ABSTRACT

Demonstrate that design fundamentals will always have a crucial role in the study and development of visual communication design amidst the rapid development of artificial intelligence (AI) technology in the practice of visual communication design. This research utilizes a conceptual qualitative combined with comparative visual analysis, fundamental design principles, and studies on the role and limitations of AI in the creative process. The analysis is conducted by comparing the work processes of generative AI and the design processes carried out by human designers, particularly in the aspects of understanding context, determining communication goals, visual decision-making, and forming meaning. The discussion shows that although AI is capable of producing visuals quickly and efficiently, this technology works based on datasets and lacks the empathy, intuition, and contextual awareness that are at the core of design fundamentals. Furthermore, many still believe that AI advancements have the potential to replace designers, but these views tend to place design solely on visual outcomes, rather than on the thinking process and problem-solving. This study concludes that mastering design fundamentals is the key for designers to remain relevant in the AI era, as these fundamentals serve as a framework for thinking that guides the use of AI critically and responsibly, not as a substitute for the role of the designer himself.

Keywords: artificial intelligence, fundamental, concept art, design

INTRODUCTION

The development of artificial intelligence (AI) technology is an innovation that has significantly transformed the creative process, particularly in visual production in the field of visual communication design. The presence of generative

AI technology enables the visual creation process to be carried out more quickly and efficiently than conventional methods. This change not only impacts production speed but also changes the way designers think, explore, and interact with visual media in the context of communication (Kim & Maher, 2021; Henrickson et al., 2024).

Generative AI such as Midjourney, DALL·E, and Claude are beginning to be widely adopted in various creative industry sectors, including illustration, animation, graphic asset creation, and visual concept exploration. These technologies offer ease in generating visual variations, accelerate repetitive technical work, and support the process of gathering references and initial ideas. In practice, AI serves as a tool that can improve work efficiency and expand the possibilities of visual exploration in a relatively short time (Guo et al., 2023; Alotaibi, 2025).

However, the rapid adoption of AI also presents new challenges in design practice. One major issue is the tendency to use AI immediately without adequate understanding of design principles and fundamentals. In visual communication design, design is understood not only as an attractive visual result, but also as a problem-solving process oriented towards communication goals, socio-cultural contexts, and audience needs (Cross, 2018; Dorst, 2019). The use of AI without a strong foundation in fundamentals has the potential to produce designs that are shallow, lacking meaning, and unable to provide effective communication solutions (Sreenivasan, 2024).

Design fundamentals such as visual hierarchy, composition, typography, color, and design thinking play a crucial role as a framework for strategic and contextual visual decision-making. These principles not only serve aesthetic purposes but also assist designers in constructing visual meaning and messages that are relevant to the user's context (Brown, 2019; Norman, 2016). Meanwhile, AI operates based on data patterns and visual probabilities, thus unable to replace the conceptual thinking, empathy, and contextual understanding that are at the heart of visual communication design practice (Kim & Maher, 2021; Ding, 2025).

Therefore, this study offers a novelty by examining the role of design fundamentals as a key strategy for designers to remain relevant amidst the rapid development of AI technology. Unlike previous research that tends to emphasize

the technical aspects or efficiency of AI use, this study focuses on theoretical and conceptual approaches in visual communication design. The aim of this research is to emphasize that mastering design fundamentals not only remains relevant but is also key to utilizing AI critically, strategically, and responsibly in contemporary design practice (Sreenivasan, 2024).

RESEARCH METHOD

This research uses an approach conceptual qualitative combined with comparative visual analysis to examine the fundamental role of design in visual communication design practice in the era of artificial intelligence. This research focuses on understanding how basic design principles contribute to the quality, meaning, and function of visual communication when generative AI technology is used as a visual creation tool. A conceptual approach was chosen because this research does not aim to quantitatively measure the technical performance of AI technology, but rather to analyze the concepts, meanings, and design thinking processes underlying the resulting visual outcomes.

The research object is in the form of environment concept art which is used as a case study. This study compares two types of visuals, namely visual environment concept art produced using Midjourney generative AI and visual environment concept art designed by professional human designer taken from the ArtStation platform. Object selection was done purposely, considering the similarity of the visual theme, namely the lavender field landscape, so that the comparison could focus on differences in design approach, rather than variations in theme or style. The analyzed visuals serve as qualitative data and are used solely as objects of academic study.

The analysis was conducted using a fundamental design framework as a comparison indicator, which includes composition, visual hierarchy, spatial structure and depth, value and color processing, communication context, and readability of visual messages. Each visual is analyzed based on these indicators to identify how design decisions affect the clarity of meaning, communication function, and the visual's potential as environmental concept art. The results of the analysis are then presented in a comparative table and discussed critically by

linking the visual findings to design theory and related literature, thereby demonstrating the fundamental role of design as an essential framework for strategic and responsible use of AI.

RESULT AND DISCUSSION

Concept art is a form of visual art, both digital and traditional, that serves to visualize the setting, atmosphere, and visual style as an initial guide in the production process, particularly in the gaming, animation, and interactive media industries. Concept art serves not only as an aesthetic illustration, but also as a visual communication tool that bridges conceptual ideas with technical production needs, such as 3D modeling, lighting, and level design (McCloud, 2017; Thomas & Johnston, 2018). Therefore, environment concept art requires clarity of spatial structure, mood, and visual context to serve as an effective blueprint for the subsequent production team.

In this study, the analysis results were obtained through a visual comparison between the lavender field-themed environment concept art generated by the Midjourney generative AI and the environment concept art designed by professional human designers. The comparison was made based on several fundamental aspects of design, including composition, visual hierarchy, spatial depth, value and color management, atmosphere, and clarity of narrative context. The analysis results show that the AI-generated visuals tend to emphasize atmospheric ambiance and a sense of spaciousness through the use of color and fog effects, but have a relatively ambiguous and less functionally defined spatial structure. In contrast, the visuals designed by human designers show a more controlled management of composition and visual hierarchy, with a clear division of foreground, midground, and background, so that the space can be read more systematically as environment concept art.

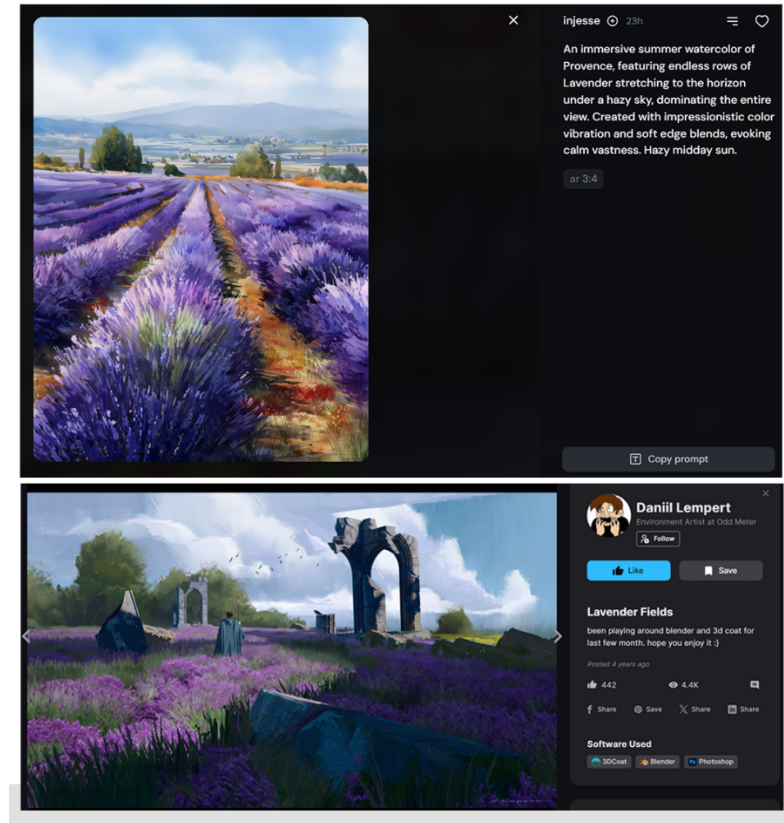


Figure 1. Comparison of environment concept art with a lavender field theme:

(a) AI-generated environment concept art produced using MidJourney.

(b) Human-designed environment concept art.

Source: Injesse (2025); Lempert, Daniil (2021).

From the figure above, we can get a comparison of various visual aspects including environmental concept art which will be examined in more depth in the following table.

Aspect of Analysis	AI-Generated Concept Art (MidJourney)	Human-Designed Concept Art
Composition & Layout	The 3:4 ratio is set by the prompt, applying leading lines using the lavender plant object.	Landscape image based on rule of third composition.
Spatial Depth & Hierarchy	There is a background (wide expanse) and midground (lavender plants lined up) which also serves as a transition to the foreground (the closest lavender plants).	There is a foreground (mounds and piles of rubble), midground (where the characters stand) and background (trees and sky).

Value Structure (Light & Contrast)	The light is visible from above, there is a cast shadow under the lavender and between the plants.	Light appears from the top right, shadows clarify the hierarchical separation where the light leads to the focal point.
Color Strategy & Mood	Using triadic color harmony (purple, orange, blue) and a touch of yellowish green for the foliage, it creates a warm, calm, and relaxing atmosphere.	Using triadic color harmony (purple, green, blue) tends to be cool, thus creating a curious atmosphere.
Atmospheric Perspective	1 point perspective	2 point perspektif
Narrative & Context	Primarily presents a visual depiction of an expansive lavender field without a clearly defined narrative intent.	concept art features a character positioned as the focal point—a soldier depicted exploring ancient ruins—thereby introducing an implicit narrative context within the environment.
Functional Readability (as Concept Art)	The AI generated concept art exhibits inconsistencies and distortions in the silhouette of the lavender plants, particularly in areas with increased depth. These irregularities reduce the clarity of form and weaken the visual readability of the environment as a coherent design reference.	The human-designed concept art maintains a clear and consistent silhouette, allowing the viewer's eye to flow naturally toward the focal point and supporting the functional readability of the environment.
Design Intentionality	The primary intention of the AI-generated visual appears to emphasize aesthetic presentation, focusing on scenic appeal rather than deliberate visual communication or conceptual messaging.	The human-designed concept art conveys intentional meaning through the integration of visual elements, such as the presence of a soldier and ancient ruins, which together suggest an implied narrative and communicate a deeper conceptual message.

Table 1 Comparative analysis of environment concept art.
Source: author's analysis, (2025)

Visual Composition

The difference in compositional approach between AI generated visuals and those created by human designers is evident in the management of visual

hierarchy and focal points (Cross, 2018; Dorst, 2019). In the AI generated results, the spatial division tends to be gradual and even, with the background, a stretch of lavender in the distance, slowly transitioning into the midground and foreground. The repeating pattern of lavender plants simultaneously forms a composition of leading lines that direct the eye toward the horizon (Arnheim, 2016). While this approach creates a sense of spaciousness and immersion, the resulting visual hierarchy is relatively homogeneous, lacking a clear focal point (Lidwell et al., 2015).

In contrast, the environmental concept art designed by Daniil Lempert demonstrates a more contrasting and structured visual hierarchy. The midground area is consciously used as a focal point through the placement of the main character, which is reinforced by the management of light and shadow and the application of the rule of thirds composition (Ocvirk et al., 2018). This strategy allows the eye's line of sight to move directly to the main elements in the visual, thus clarifying the design intention and visual communication function of the concept art (Ware, 2021).

Color Harmony

Both visuals apply the principle of triadic color harmony, but they create distinct moods and visual experiences due to differences in color temperature and narrative intent (Itten, 2016). The AI generated visual uses a combination of purple, orange, and blue, with a predominance of warm hues, creating a relaxed, calm, and soothing atmosphere. This approach aligns with the prompt, which emphasizes a summer landscape and calm vastness, and is effective in instantly setting the mood (Birren, 2016).

Daniil Lempert's work utilizes a combination of purple, green, and blue, with a predominance of cool hues, creating a more somber and intriguing atmosphere. This color strategy not only functions aesthetically but also support the implied narrative context, prompting the audience to question the relationship between the characters and their surroundings (Elliot & Maier, 2014). This difference demonstrates that while AI is capable of producing consistent color

harmonies, human designers tend to use color as a medium to convey more specific emotions and narratives (McCloud, 2017).

Functional Readability

Functional legibility demonstrates significant differences between the generative AI results and the work of human designers. The AI generated visuals exhibit shape inconsistencies in lavender plant elements, particularly as objects move further away from the viewpoint. Shape distortion and fading silhouettes result in a loss of visual clarity, so the object's context isn't always clearly perceived as a consistent representation of the lavender plant (Norman, 2016). This demonstrates AI's limitations in maintaining shape consistency when working with visual data patterns (Manovich, 2018).

But in the work designed by Daniil Lempert, although distant objects are not rendered in detail, the silhouettes of the lavender plants are kept consistent. This approach allows for object legibility without sacrificing rendering efficiency (Lidwell et al., 2015). This silhouette consistency strengthens the environment concept art's function as a visual blueprint that the production team can use for subsequent development stages (Thomas & Johnston, 2018).

Narrative Context

The most striking difference between the two visuals lies in the narrative context. AI-generated images tend to focus on aesthetically presenting scenery without conveying a clear message or underlying story. These visuals serve as mood illustrations, emphasizing the beauty of the landscape, but lack narrative clues that could be further developed in a production context (Manovich, 2018).

In contrast, Daniil Lempert's work presents an implicit narrative through the presence of a warrior character exploring ancient ruins overgrown with lavender. The combination of character, environment, and visual structure creates powerful world-building potential and opens up opportunities for interpretation regarding the past relationship between the character and the environment (Ryan, 2015). This approach emphasizes the role of concept art not only as a visual

representation but also as a medium for narrative communication during pre-production (McCloud, 2017).

AI as an Ideation Tool in Concept Art Practice

This difference becomes even more apparent in terms of functional legibility and world-building potential. Environment concept art created by human designers not only conveys a visual atmosphere but also conveys an implicit message through the aspects contained within the concept art and utilizes fundamentals effectively to communicate a story. This demonstrates that the application of design fundamentals plays a crucial role in building visual narratives and communication contexts, which are essential for concept art as a production medium. This finding aligns with previous research that asserts that design thinking and understanding context are key elements in visual design practice, which cannot be fully replicated by data-based systems such as AI (Pasquinelli & Joler, 2021).

This doesn't mean that AI-generated visuals lack value or relevance in concept art practice. On the contrary, generative AI's ability to produce harmonious color variations, consistent visual atmospheres, and stylistic explorations in a relatively short time demonstrates AI's potential as an effective tool in the early stages of the creative process. In the context of environmental concept art, AI can be utilized as an ideation tool to help concept artists determine the visual mood, color palette, and atmospheric feel that aligns with the narrative needs or artistic direction of a project.

The use of AI at this stage has the potential to accelerate the process of searching for visual references and exploring moods, which previously required significant time and resources (Lyu et al., 2022). Thus, AI can serve as a catalyst in the creative process, enabling designers to more quickly evaluate various visual possibilities before entering a more structured design phase. However, the effectiveness of AI remains highly dependent on the designer's ability to select, interpret, and further develop the resulting visuals (Hong & Curran, 2019).

The uniqueness of this research lies in its analytical approach, which does not position AI and human designers in a competitive position, but rather

examines the fundamental role of design as a key differentiating factor in visual quality and function (Zhang & Zhou, 2025). Unlike previous studies that have focused largely on the technical efficiency or generative capabilities of AI, this research asserts that without a strong foundation in design fundamentals, AI-generated visuals risk serving only as ambiance illustrations, rather than as functional design communication tools. Thus, the results of this study strengthen the argument that mastering design fundamentals remains key for designers to utilize AI critically, strategically, and relevantly in environmental concept art practices in the era of developing artificial intelligence technology.

CONCLUSION

This research confirms that the development of generative AI technology has brought significant changes to the practice of visual communication design, particularly in the process of creating environmental concept art. AI can accelerate visual production and provide instant exploration of style and atmosphere. However, the analysis shows that this speed and generative capabilities do not automatically guarantee communicative and functional design quality in the context of creative production.

Through a comparative visual analysis of AI-generated environment concept art and the work of human designers, this study found that mastery of design fundamentals such as composition, visual hierarchy, spatial depth, and narrative context plays a crucial role in creating visuals that can be functionally read as production blueprints. While AI visuals tend to emphasize atmospheric aspects and surface aesthetics, the work of human designers demonstrates a more focused visual structure that is relevant to communication needs and subsequent processes in the production pipeline.

These findings reinforce the view that design fundamentals are not being replaced by AI technology, but rather are the primary foundation for the critical and strategic use of AI. AI should be understood as a tool, not a replacement for the designer, where the quality of the design remains highly dependent on the conceptual abilities and fundamental understanding of design (Hertzmann, 2018).

As a result, this research encourages designers and design educational institutions to prioritize mastering design fundamentals while simultaneously integrating AI into the visual exploration and production process. Further research could expand on this study by incorporating more visual samples, experimental approaches, or analyzing the ethical and responsible aspects of design in the use of AI in contemporary design practice.

REFERENCES

- Atarama-Rojas, T. (2019). Transmedia Storytelling and Construction of Fictional Worlds: Aliados Series as Case Study. *Correspondencias & Análisis*, 9, 37–50. <https://doi.org/10.24265/cian.2019.n9.02>
- Birren, Faber. (2013). *Color psychology and color therapy : a factual study of the influence of color on human life*. Martino Publishing.
- Cross, N. (2023). *Design Thinking*. Bloomsbury Publishing Plc. <https://doi.org/10.5040/9781350305090>
- Dorst, K. (2019). Design beyond Design. *She Ji*, 5(2), 117–127. <https://doi.org/10.1016/j.sheji.2019.05.001>
- Elgammal, A., Liu, B., Elhoseiny, M., & Mazzone, M. (2017). CAN: *Creative Adversarial Networks, Generating “Art” by Learning About Styles and Deviating from Style Norms*.
- Elliot, A. J., & Maier, M. A. (2014). Color Psychology: Effects of Perceiving Color on Psychological Functioning in Humans. *Annual Review of Psychology*, 65(1), 95–120. <https://doi.org/10.1146/annurev-psych-010213-115035>
- Hertzmann, A. (2018). Can Computers Create Art? *Arts*, 7(2), 18. <https://doi.org/10.3390/arts7020018>
- Hong, J.-W., & Curran, N. M. (2019). Artificial Intelligence, Artists, and Art. *ACM Transactions on Multimedia Computing, Communications, and Applications*, 15(2s), 1–16. <https://doi.org/10.1145/3326337>
- Huppertz, D. (2015). Revisiting Herbert Simon’s “Science of Design.” *Design Issues*, 31(2), 29–40. https://doi.org/10.1162/DESI_a_00320
- Lawson, B., & Dorst, K. (2013). *Design Expertise*. Routledge. <https://doi.org/10.4324/978131507204>

- Lidwell, William., Holden, Kritina., & Butler, Jill. (2023). *UNIVERSAL PRINCIPLES of DESIGN*.
- Lubart, T. (2005). How can computers be partners in the creative process: Classification and commentary on the Special Issue. *International Journal of Human-Computer Studies*, 63(4–5), 365–369. <https://doi.org/10.1016/j.ijhcs.2005.04.002>
- Lyu, Y., Wang, X., Lin, R., & Wu, J. (2022). Communication in Human–AI Co-Creation: Perceptual Analysis of Paintings Generated by Text-to-Image System. *Applied Sciences (Switzerland)*, 12(22). <https://doi.org/10.3390/app122211312>
- Manovich, L. (2018). *AI aesthetics*. Strelka Press.
- McCosker, A., & Wilken, R. (2020). *Automating Vision; The Social Impact of the New Camera Consciousness*.
- Norman, D. A. . (2013). *The design of everyday things*. Basic Books.
- Ocvirk, O. G., Stinson, R. E., Wigg, P. R., Bone, R. O., & Cayton, D. L. (2012). *Art Fundamentals: Theory and Practice* (12th ed.). McGraw-Hill Education.
- Pasquinelli, M., & Joler, V. (2021). The Noosphere manifested: AI as instrument of knowledge extractivism. *AI & SOCIETY*, 36(4), 1263–1280. <https://doi.org/10.1007/s00146-020-01097-6>
- Ryan, M.-Laure. (2015). *Narrative as virtual reality 2 : revisiting immersion and interactivity in literature and electronic media*. Johns Hopkins University Press.
- Sreenivasan, A., & Suresh, M. (2024). Design thinking and artificial intelligence: A systematic literature review exploring synergies. *International Journal of Innovation Studies*, 8(3), 297–312. <https://doi.org/10.1016/j.ijis.2024.05.001>
- Thomas, Frank., & Johnston, Ollie. (1981). *Disney animation : the illusion of life*. Abbeville Press.
- Ursini, F.-A. (2017). The Visual Language of Comics. In *Neil Cohn Mutual Images* (Vol. 2). <http://www.mutualimages.orghttp://www.mutualimages-journal.orghttp://www.mutualimages-journal.org>
- Ware, C. (2021). *Information Visualization*. Elsevier. <https://doi.org/10.1016/C2016-0-02395-1>

Zhang, X., & Zhou, Y. (2025). Human-AI Collaboration: Paradigm Shifts in Technology-Mediated Design. *Art Sciences*, 2(2), 1–8.
<https://doi.org/10.70267/AS202502020108>