EXPLOITING GENERATIVE AI AS A COLLABORATOR TO ENHANCE CREATORS' DISSERTATIONS

Yu-Pei Kuo

Chinese International College, Dhurakij Pundit University, Thailand

ABSTRACT

Corresponding author:
Yu-Pei Kuo
pearjourney@gmail.com

The concept dissertation is a critical and analytical text the author communicates to the public. However, creators may be too subjective and associative in their descriptions, thus losing the ability to effectively communicate with the public. The study aims to enhance public understanding by incorporating moderately objective descriptions to foster a wider acceptance of art and design. Utilizing the text-to-image function of Artificial Intelligence-Generated Content (AIGC), this study explores a method for creators, as artificial intelligence (AI) collaborative partners, to improve the concept dissertation promptly and with faithful simulation feedback based on data. The researcher conducted a practical experiment involving 22 experienced creators in a master's program, well-versed in the art and design field, collecting data on text, generative images, and observational notes, which were then cross analyzed using content analysis and the general inductive approach. The results indicated that the participants practiced writing objectively by generating AI images and providing immediate feedback, fostering reflection and awareness, and encouraging participants to remain objective and explore ways to improve the text. This study reveals that AI is a tool for content generation and a collaborative partner that respects and responds to the participants' creative intent in the learning environment. In the AI collaborative method, the creators controlled the subjective–objective balance with the public by emphasizing the complexities of thinking and inspired expressions. This study enhances the collaborative potential between participants and AI, facilitating rapid exploration and transformation and improving communication between artists and the public.

Keywords: Concept dissertation; AIGC; artificial intelligence-generated content; text-to-image; image-generating creativity

1. INTRODUCTION

Under the influence of brand- and art-oriented thinking, contemporary art and design education strongly emphasize storytelling and emotional resonance in its creation. However, this approach can also leads to over-relying on the text's atmosphere, resulting in a need for more objective descriptions in art and design's conceptual discourse writing. The concept dissertation is a crucial text the creator uses to communicate with the public. However, creators may be too subjective and associative in their descriptions, potentially losing the possibility to communicate with the public effectively. The conceptual discourse is steeped in personal perspectives and feelings and is a valuable part of the creative process and should not be dismissed. Even when the content aims to express individual creativity, it should be clearly articulated to enable meaningful

contributions to academic communication and dissemination. Balancing subjective and objective consensus when introducing and explaining the topic and core thinking is imperative to foster a wider acceptance of conceptual art, particularly in academic writing. This balance is not just a preference; it is a necessary shift in perspective to achieve a comprehensive approach in art and design writing, which should enlighten creators about the importance of this shift.

Natural language processing has recently gained attention for its transformative potential to produce creative writing, artwork, audio, and videos (Lee et al., 2023). Generative computational models have captured public attention for their text-to-image generation capabilities and sparked new debates on the role of technology in learning. Artificial intelligence (AI) is increasingly integrated into curriculum and classroom operations, with the potential to inspire participants in their creative learning journey, revolutionizing how we approach art and design education (Lim et al., 2023). This transformative potential of AI in art and design education is expected to instill a sense of optimism about the future among educators, researcher, and students.

AI's extensive use in education provides various opportunities for teaching and learning (Julien, 2024) and positively impacts art and design education. Because these technologies can potentially transform teaching and learning, understanding how they can further support art and design education and how they are integrated into the educational environment is essential. In creative learning, there are demands to develop models encouraging human–AI mutual enhancement instead of increasing human reliance on AI for further creative generation (Lim et al., 2023).

In this innovative, collaborative study, the researcher aims to enhance public understanding by incorporating somewhat objective descriptions, fostering wider acceptance of art and design.

Utilizing the text-to-image function of Artificial Intelligence-Generated Content (AIGC), this study explores a method for creators to collaborate with AI to improve the concept dissertation. It seeks to leverage the relational dynamics between participants and AI for development in art and design, exploring AI's potential to enhance creative learning. The researcher designed and developed a teaching experiment where the AI stays with the participants in a position similar to that of a peer painter. The study has the following primary objectives:

- The effect of practicing objective descriptions by generating AI images is that the participants receive immediate feedback and reflect on the objectivity of text writing.
- The potential of AI to enhance writing ability for the future of art and design education offers new possibilities and opportunities for creative expression.

This study explores the potential of AI technology to enhance creators' writing ability. The collaborative teaching method, combining the purpose of the study with that of AI generation, has tangible implications for improving art and design writing abilities.

2. RELATED WORKS

In designing and implementing the study, the researcher examined the following precedents: the subjective and objective modes applied to creative writing, research on generative AI creativity, and approaches to using AI in art and design education.

2.1 Text in content expression

Art, a timeless medium of self-expression, allows individuals to identify and experience its meanings and aesthetics (Lim et al., 2023). The discourse on art concepts and expressions in dissertations serves as a vital tool for engaging with the public. Writing nurtures a dialogue with readers through a process of thought and analysis. The authors, in turn, present arguments for their positions, better explaining their opinions and the reasons behind them (Bih, 2010; Sinnott-Armstrong, 2018). However, the subjective nature of emotion as self-expression often results in critical text from the creator's viewpoint rather than an objective description from a third-party perspective for the public. The Cambridge Dictionary defines "Objective" and "Subjective" as antonyms. "Objective" refers to something based on facts, while "subjective" is influenced by personal beliefs or feelings (Cambridge University Press, n.d.-b; n.d.-c). "Description" is a noun that conveys what something or someone is like (Cambridge University Press, n.d.-a). Subjectivity represents both a possibility and a limitation (Peshkin, 1988). Vocabulary is often used without objectively and truthfully representing the author's views. However, creators should have a strong sense of meaning and confidence in their texts, as their perspectives are essential to empowering the discourse (Bih, 2010).

The study of visual sentiment analysis utilizes objective textual descriptions of images. However, it suggests extracting and using an objective textual description of images instead of the traditional subjective text provided by users (Ortis et al., 2021).

This study does not advocate for abandoning subjective text in art or design; rather, it promotes balance. It encourages artists to express themselves in their texts while considering the importance of objective descriptions. The researcher also agrees that eliminating subjectivity means the artist will not be a value-free participant observer but an empty-headed observer (Peshkin, 1988). This emphasis on balance informs the audience of the complexities of art and design and inspires them to explore their creative expressions.

2.2 Artificial Intelligence-Generated Content (AIGC)

AIGC is a tool and a transformative force in the creative process. It empowers individuals to express themselves innovatively, such as by creating stunning artwork with simple instructions. This shift in the creative paradigm is a testament to the untapped potential of generative AI in art and self-expression (Lim et al., 2023). The artist and programmer communities, united by a shared fascination with generative AI as an art medium, have long nurtured a spirit of collaboration. Founded on common learning and mutual support, these communities have been instrumental in developing and exploring artistic AI.

Similarly, researchers have been actively exploring how generative AI can serve as a creative support tool for artists, further enriching this collaborative system (Liu & Chilton, 2022). The development of artificial intelligence technologies that generate natural text and realistic images has significantly accelerated. These generative models have produced photorealistic and aesthetic images, facilitated image-to-image translation, created images in various painting styles, enabled speech synthesis, and contributed to poetry and creative writing at an above-human level (Lim et al., 2023).

In education, AI is primarily used to impart knowledge, stimulate comprehension, and enhance intelligence, making it a treasured learning support. It is also instrumental in empowering and inspiring students (Julien, 2024). Due to AI being extensively used in education, it also presents opportunities for teaching and learning. AI has also had an impact on art and design education. In a creative environment, these technologies can transform design thinking and processes and further creativity. Therefore, methods that encourage creators and AI to enhance each other are essential (Julien, 2024; Lim et al., 2023).

2.3 Text as a tool for image-generating creativity

Text-to-image generative models are new and powerful tools for producing visual artwork. In particular, multimodal models excel at creating intricate, abstract, or photorealistic works from simple natural language text instructions (Lee et al., 2023). In an age where computing capabilities are expanding at a breathtaking pace, hundreds of schools of thought in AI image production have emerged in 2023, including Deep Dream Generator, Dall-E, Midjourney, Leonardo AI, and Stable Diffusion. AIGC technology presents unprecedented opportunities and challenges for the future of creation (Lee et al., 2024; Yin et al., 2023). AI text-to-image generation technology relies on deep learning to automatically produce high-quality images using natural language descriptions, leading to an increasing number of people learning how to formulate picture text description prompts effectively.

The open-ended nature of the text as an interaction tool is a blessing and a source of inspiration, empowering users to input anything and generate an infinite range of outputs, sparking endless creative possibilities. Users are crucial in the creative process, even when they navigate trial and error when the quality is unsatisfactory. This process can further enhance their creative journey (Liu & Chilton, 2022). The study, "Design Guidelines for Prompt Engineering Text-to-Image Generative Models," uses a rigorous methodology to test two variables: the abstract or concrete nature of the subject and the abstract or figurative nature of the style. The study, aggregated by subject, yielded significant findings. When crossed with different styles, it was observed that the leading subjects were universally concrete across most cultures, indicating that concrete subjects tend to perform better on average. The study also demonstrated that a range of "SUBJECT in the style of STYLE" generations can be achieved quickly and easily with a text-to-image generative framework. Furthermore, the study condensed the findings into design guidelines and results, providing default parameters and methods for end users interacting with text-to-image models (Liu & Chilton, 2022).

As a limitation of AI, models can only learn from the data they are given. If that data contain biased information, the outcomes may also be prejudiced and damaging (Julien, 2024). In contrast, text-to-image applications respond faithfully to input text and generate images for creators to receive factual feedback based on the data, enabling them to rethink and enhance their text expression.

3. RESEARCH DESIGN

3.1 Methods

This study utilizes AIGC text-to-image function to explore a method for creators with AI collaborators to improve the concept dissertation by providing prompt and faithful simulation feedback based on data. The novel approach aims for creators to practice objective descriptions in better communication with the public while integrating AI benefits into art and design education.

This study is underpinned by a robust methodology that incorporates practical action and on-site implementation. A key component of this methodology is the collaboration with AI, allowing participants to practice objective descriptions by generating AI images. Among the various text-to-image AIGC tools, the study focuses on "Midjourney," an advanced and prosperous database text-to-image tool within natural language processing with growing applications across various creator disciplines. Using a practical experiment, the study involved 22 experienced creators in the master's program of Dhurakij Pundit University in Thailand who are well-versed in art and design.

The researcher employed a mixed-methods approach and design to collect Text-to-image content data, which were then analyzed comparatively. The researcher collected data on text, generative images, and observational notes, which were cross analyzed using content analysis and the general inductive approach for category coding to ensure a comprehensive analysis. The resulting theme categories were then extracted for interactive analysis.

Furthermore, given the flexibility of the analysis, there is room for creativity when engaging with the data and exploring tools that may aid the researcher's analytic process. With the increasing adoption of natural language processing in research, AI, such as ChatGPT, can function as a valuable tool, enhancing analysis efficiency of and providing additional insights. ChatGPT can serve as a further analysis team member, contributing through knowledge-building and sensemaking. (Kuo, 2024; Lee et al., 2024).

The researcher used ChatGPT to facilitate sorting out the creators' text content, processing collaborative coding, and drawing the catalogs. The researcher utilizes this study design and assesses the assesses for keeping the objective in art and design writing and the potential of AI technology to enhance participants' writing skills, ensuring thorough and reliable research findings.

3.2 Underlying study experiment settings

Based on the reviews relevant to text modes and AI image generation, the study designed and conducted a creative, exploratory experiment in which AI acts as a collaborative peer in creative writing development. The study comprised two types of sessions: text-to-image creation and outcome evaluation sessions.

3.2.1 Text-to-Image creation session (Round 1)

During this session, participants were shown a short film, "Tiroteo Wearing My Tiroteo Suit," published by theater director Julio Panno on Instagram on September 8, 2022. They were then asked to express what they saw in a text format. The film, a creative piece relying on artist Victoria Ruiz's artwork of "La Piel Sin Sentido Series 01 & 02," is shown in Figure 1 as film screenshots (Panno, 2022). The researcher gave the participants a brief training about where to enter the website and how to provide the prompt to generate only images. Participants input the text individually and compared it to the original film screen image. In the text-to-image creation sessions, three types of data were captured:

- text from the participants that describes the film,
- AI-generated image from the text,
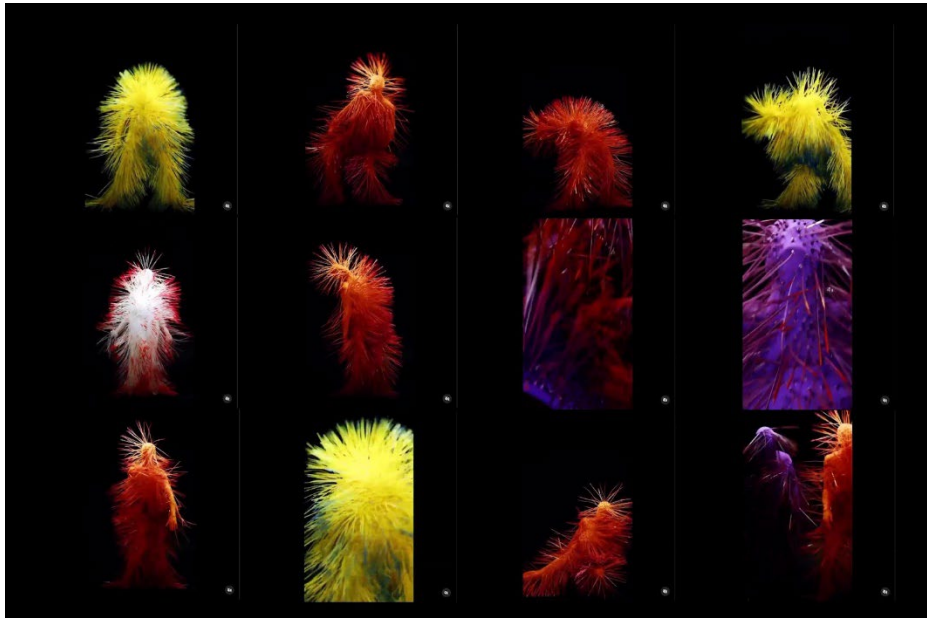- interview notes of the group discussion.

Figure 1: The screenshots of the film (Panno, 2022)

3.2.2 Text-to-Image creation session (Round 2)

In this session, the researcher meticulously combined content analysis principles (Berelson, 1952) and the general inductive approach process (Thomas, 2003, 2006) to create the themes and catalogs by multiple readings. The study follows the general inductive analysis method to establish the underlying assumptions:

- Prepare raw data files in a standard format.
- Conduct a close reading of the text submitted by the participants.
- Identify and define the categories and themes.
- Compare the result and the images.

Additionally, the study also took ChatGPT as a collaborative coder in a new but recognized cooperation (Kuo, 2024). In this session, the themes were derived from the study aims in objective and subjective categories, and the catalogs were derived from multiple readings of the raw data in vivo coding. The categories were created from meaning units or actual phrases used in specific text segments in "musical rhythm," "space scene," "clothing style," "dance movements," and "personal emotion."

3.3 Underlying the study experiment process

This study was executed in three parts: the design of the teaching experiment, the conduct of the teaching experiment, and the reflection.

The study conducted two rounds of text-to-image creation sessions each for the 11 design participants. The 22 creators actively participated in this collaborative endeavor. The first round with 11 participants was conducted in January 2022, and the second round with another 11 participants was conducted in July 2022. The participants' active involvement, marked by their expressiveness as practice, significantly enriched the study process and ensured its practical relevance in an educational setting.

At each session, the study used the same film and AI as the peer painter and followed the process below:

- Former practice: Use a modern dance film to guide participants in describing exercises in the classroom and then mention the objective and subjective description practice as different responses in the discussion.
- Text experiment: Use the same film to guide participants in writing detailed content descriptions.
- Image experiment: Guide the participants in entering their content descriptions using Midjourney to produce AI-generated images.
- Data collection: Collect the participant content description, text-to-image, and interview content.
- Analysis: Following the general induction method, analyze the text by open coding and catalog setting.

4. FINDINGS

4.1 Reflection and revision

Observing participants' reactions in the classroom, a pivotal aspect of this research, underscored the profound impact of the generated images in round 1, emphasizing the crucial role of the audience in this study. They combined the study "Design Guidelines for Prompt Engineering Text-to-Image Generative Models," resulting in a significant exploration of the design guidelines and results to develop tips for users interacting with text-to-image models when selecting the prompt, focusing on subject and style keywords instead of connecting words. Rephrasing using the exact keywords do not significantly affect the quality of the generation. However, style keywords that may be prone to misinterpretation were avoided. When generating for fast iteration, shorter lengths of optimization are sufficient (Liu & Chilton, 2022). Therefore, the researcher made revisions for the round 2 participants. When inputting the text to Midjourney, the researcher gave instructions about being concise during instruction input and using only a few connectives.

After the suggested revisions to streamline the number of words and reduce the use of connectives in the process, the total word count in round 2 was significantly reduced from 1091 in round 1 to 654, and the segmentation number was also reduced, as shown in the data presented in Table 1. Despite the negative trend in the objective ratio, this positive outcome underscores the potential for improvement in text-to-image generative models, as highlighted in the study's Design Guidelines for Prompt Engineering Text-to-Image Generative Models.

Table 1: The comparison of rounds 1 and 2 (Source: Collated from this current study)

Coder	Total word count		Segment number		Objective proportion	
Round	1	2	1	2	1	2
Researcher	1901	654	89	56	75.56%	83.64%
AI			54	42	61.19%	68.75%

The researcher's analysis unveiled an interesting participant aspect worth discussing. Specific sentences were categorized as subjective and objective, revealing a distinctive fusion of emotional and associated perspectives. This categorization was rooted in personal associations, such as related nouns or adjectives used in descriptions. This finding was also apparent in the classification of text paragraphs; participants frequently drew from their experiences to depict a specific image or scene. For example, consider Figure 1, where most descriptions were akin to "a human wearing a long red spiky dress," "dancers wrapped in four colors covered with soft thorns," "a long-haired monster," "the whole body is covered with colorful barbs," "the costume filled with long wadding strips of the same color, each strip uniformly faded from the root," and "the body covered with long strips, which are slightly like spikes." However, some descriptions directly replaced the descriptions with personal associations as follows: "a walking caterpillar," "a human hedgehog in a dress full of red threads," "like corals, sea anemones and other marine creatures," and "a dancer covered in spikes like a sea urchin." Another instance was the description of the scene's space as "the black background reflects the deep sea" instead of the objective "a black screen," "a dark stage," or "a confined dark space."

Before interpreting a text, individuals invariably bring a "preunderstanding"—a set of preconceived notions or biases that shape their interpretation and are influenced by their life experiences, social position, and academic background (Bih, 2010; Gadamer, 1989). The findings responded to and connected the study of empowering self-expression through AI-generated content, which investigated the potential and limitations of AI in reflecting the authors' cognitive processes through creative expression. The focus is on the AI-generated artwork's ability to understand human intent and visually represent emotions based on creativity, aesthetics, novelty, amusement, and depth criteria (Lee et al., 2023). The study also explored the significant limitation of these creative AIs concerning "emotion," highlighting the need to enhance the criteria that humans intuitively use when assessing an artwork's creativity, thereby emphasizing human intuition in this process (Lee et al., 2023). However, the results indicated a preference for images based on the descriptions of the authors' emotions rather than the main events. The study found that images that overrepresent specific elements or stereotypes negatively impact AI alignment (Lee et al., 2023).

It is crucial to emphasize that throughout the multiple readings of the raw data, using "personal associations" in specific category procedures for creating categories was prevalent. This suggests that many objective texts were expressed through personal subjective experiences. While potentially innovative, this approach also requires clarity in the catalog setting, vital for the participants' improvement. The study initially introduced "emotions and feelings" as a collective term. The researcher highlights the need for participants to strive for objectivity, as their inexperience or lack of understanding when describing behavior often leads them

to rely on their background. This marks a departure from writing that purely conveys personal feelings and emotions.

4.2 Confirmation of reliability

The study assessed effectiveness by employing the independent parallel coding method, which involved cross-checking the data results with the findings of two independent coders, ensuring a high level of coding consistency (Thomas, 2003, 2006). Various combinations of subjective, objective text, and text-to-image generated features were also explored to define the themes and catalogs, adding a layer of innovation to the research. As the initial coder, the researcher conducted a thorough analysis and developed a comprehensive set of categories that formed the preliminary findings. The researcher enlisted AI as a cooperative coder in line with our study's proposition of AI-generated cooperation in art and design education. This innovative use of AI affirmed its role in the coding consistency check and demonstrated its unique collaborative capabilities in the study (Kuo, 2024).

The study used two types of analysis of the experiment's data. The first is content analysis, which utilizes two coders to assess the study's validity by examining the interrater reliability of the evaluation data. To gain insights into the teaching effects of the study participants, the researcher used a general inductive approach to analyze the text transcript and observation data. The text transcript and discussion notes were coded, and the researcher engaged in open coding to identify emerging themes and categories from the data. Furthermore, the study was distinguished by a meticulous comparison of the first-round and second-round data, which was crucial for ensuring the consistency of the findings. The researcher painstakingly sorted the coding results and presented them in Table 2, reinforcing the validity of the study's findings. The coding consistency check was also designed to follow this same rigorous approach. Equations should be numbered serially within parentheses, as shown in Equations (1) and (2).

$$Theme\ proportion\ (\%) = Theme\ number/Segment\ number\ of\ (study + AI) \qquad (1)$$

$$The\ Catalog\ proportion\ (\%) = Catalog\ number/Segment\ number\ of\ (study + AI) \qquad (2)$$

Table 2: The proportion of themes and catalogs (Source: Collated from this current study)

					%
Level	**Catalog**	**Round 1**		**Round2**	
		Researcher	AI	Researcher	AI
Theme	**Subjective**	24.44	38.81	16.36	31.25
	Objective	75.56	61.19	83.64	68.75
Catalog	**Musical rhythm**	12.62	15.31	12.28	16.18
	Space scene	21.36	17.35	15.79	11.76
	Clothing style	20.39	20.41	29.82	26.47
	Dance movements	22.33	15.31	22.81	22.06
	Personal association	15.53	16.33	8.77	7.35
	Personal feeling	7.77	15.31	10.53	16.18

4.3 The observation and interview of the group discussion

During the post-meeting discussion, the participants were initially surprised by the AI generation tool's image generation capabilities. This reaction not only underscored the novelty of AI in art education but also hinted at its potential impact. The participants' feedback highlighted the tool's timely response as a clear benefit, allowing them to explore reflections in the text mode based on a large dataset of public feedback simulations. The text-to-image method by AI proved to be a practical self-learning tool, encouraging exploratory and combinatorial creativity activities.

As the participants delved deeper into the task, they encountered significant challenges. Some attempted to modify the text to better align with the AI's image generation, but their unfamiliarity with the prompt posed a significant hurdle. Their struggle was palpable, and they expressed concerns about Midjourney's unfamiliar interface, which they felt profoundly impacted their learning experience. In light of this, the study suggested that future experiments identify or separate participants who are accustomed to using generative AIs. This could potentially mitigate some of the difficulties experienced during the task.

5. DISCUSSION

5.1 Effect of natural text and prompt text

The study employed a method for evaluating the generative image from the text connection. The images were ordered in Table 3, and the objective and subjective ratio was calculated. This ratio served as an indicator of the intuitive evaluation of the generative image in this study. For example, color was presented intuitively, but the spikes were presented in various forms due to the significant differences in participant text descriptions. A comprehensive analysis of Tables 1 and 3 revealed that the second round's image generation and objective ratio were more concentrated and stable than those in the first round. The ratio of the subjective narrative to the objective narrative corresponded to the generated image, indicating that an objective narrative and a specific word limit can make the image generation more accurate.

Additionally, the researcher's intervention was significant, influencing the study's outcomes by providing participants with valuable guidance on being concise and reducing the use of connectives when inputting text to AIs. This intervention yielded promising results, with a noticeable decrease in the total volume of words and segmentation. The image generated in round two demonstrated a positive shift, with the objective ratio between 60% and 90%. Compared to the first round, this ratio increased from 50% to 100%. Moreover, the researcher's observation of participant responses during implementation, along with texts from rounds one and two, revealed a crucial factor. All participants were non-native English speakers, and this revision significantly influenced the study's findings.

In the absence of specific text suggestions in the first round, the length of content proposed by the participants varied significantly, underscoring the influence of language proficiency on AI image generation and the importance of expertise in language education. The participants' English ability and confidence in their proficiency influenced the output descriptions. However, the researcher's recommendations in round 2 proved transformative. The researcher observed significant changes by advocating for streamlining and focusing on the selection of appropriate words. The participants' text lengths became more consistent, and the output text's subjective and objective proportions aligned more closely with the image generation, which also became more focused. The researcher noted substantial changes by advocating for streamlining and selecting appropriate words. The participants' text lengths became consistent, and the output text's subjective and objective proportions corresponded to more closely to the images generated, becoming more concentrated. This highlights the practical implications of the study's findings for language education, suggesting that by enhancing language proficiency, participants can improve the quality of their AI-generated images. As AI tools evolve, future studies could consider adding more AI tools with multilingual support to ensure that users with varying language proficiencies can effectively engage with generative AI in navigating text-to-image translation processes.

Table 3: The table of text proportion responses to generative images by round 1 and 2 groups
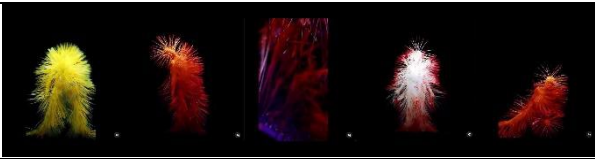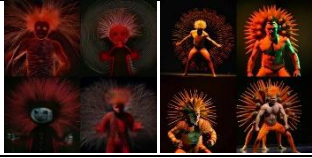(Source: Collated from this current study)

	Round 1	Round 2
Original Image		
Objective	**Round 1**	**Round 2**
100%		
90-99%		
80-90%		

Table 3: The table of text proportion responses to generative images by round 1 and 2 groups
(Source: Collated from this current study) (continued)

Original Image		
Objective	**Round 1**	**Round 2**
70-80%		
60-70%		
50-60%		
Subjective	**Round 1**	**Round 2**

5.2 Effect between text and image

Table 4, a crucial element of the study, presents the text coding results of all participating participants and sequences the frequency of occurrence of the categories. Notably, the first-round participants sequenced their "personal associations" or "personal feelings" more frequently than those in round 2. This trend was particularly pronounced among four participants, who sequenced it the highest among the 11 participants. The researcher revised the second round using the advances to simplify the text and enhance clarity and validity.

However, the second-round participants demonstrated a remarkable ability to adapt. They did not completely disregard personal feelings or associations; instead, they tactfully reduced the frequency, primarily in the middle and later stages of the sequence. This behavior highlights their resilience and adaptability in the research process.

Furthermore, the category sorting in Table 4 was closely examined in conjunction with Table 3, which provides additional context. This comprehensive analysis reveals a consistent pattern, especially when considering the corresponding generated images following the text analysis. Images with an objective ratio of 100%, regardless of whether they come from round 1 or 2, consistently rank personal feelings and associations in the latter stage. However, with an objective ratio of 50%, meaning the subjective ratio is also 50%, the types of images are all concentrated in round 1, with personal feelings and associations ranking at the top. The display of these images is predominantly dark. Conspicuous features, such as colors or spikes, are challenging to highlight in image generation due to the low proportion of descriptions.

Table 4: The table of individual participants' text-to-image response to catalog frequency
(Source: Collated from this current study)

Round	Participants	Image	Catalog frequency
			Note: order by the frequency of average of two coders
1	A		clothing style (2) dance movements (2) space scene (1.5) personal feelings (1) personal associations (0.5) Musical rhythm (0.5)
1	B		personal associations (5.5) space scene (5) dance movements (2.5) clothing style (1.5) personal feelings (1.5) Musical rhythm (1)
1	C		personal associations (2.5) space scene (1.5) Musical rhythm (1) clothing style (1) dance movements (1) personal feelings (0)
1	D		personal feelings (3) space scene (1.5) Musical rhythm (1) clothing style (1) personal associations (0/5) dance movements (0)
1	E		Musical rhythm (3.5) dance movements (3.5) personal feelings (2.5) space scene/clothing style (2) personal associations (0.5)
1	F		Musical rhythm (2) clothing style (2) space scene (1.5) dance movements (1) personal feelings (1) personal associations (0.5)
1	G		personal associations (3.5) dance movements (2) personal feelings (2) Musical rhythm (1) space scene (2) clothing style (1)

Table 4: The table of individual participants' text-to-image response to catalog frequency
(Source: Collated from this current study) (continued)

Round	Participants	Image	Catalog frequency
			Note: order by the frequency of average of two coders
1	H		space scene (2.5) clothing style (2) Musical rhythm (1.5) dance movements (1) personal associations (0) personal feelings (0)
1	I		clothing style (3.5) dance movements (2.5) Musical rhythm (1) space scene (1) personal associations (1) personal feelings (0)
1	J		clothing style (2.5) dance movements (2) personal associations (1.5) Musical rhythm (1.5) space scene (1) personal feelings (0.5)
1	K		clothing style (3) dance movements (1.5) space scene (1) Musical rhythm (0) personal associations (0) personal feelings (0)
2	L		clothing style (3) dance movements (2) personal associations (1) Musical rhythm (1) space scene (0.5) personal feelings (0.5)
2	M		Musical rhythm (1) clothing style (1) dance movements (1) personal feelings (1) personal associations (0.5) space scene (0)
2	N		Musical rhythm (1) space scene (1) clothing style (1) dance movements (1) personal feelings (1) personal associations (0)

Table 4: The table of individual participants' text-to-image response to catalog frequency
(Source: Collated from this current study) (continued)

Round	Participants	Image	Catalog frequency
			Note: order by the frequency of average of two coders
2	O		dance movements (2) Musical rhythm (1) clothing style (1) personal associations (1) personal feelings (0.5) space scene (0)
2	P		clothing style (2) dance movements (1.5) Musical rhythm (1) space scene (1) personal associations (0) personal feelings (0)
2	Q		space scene (2) clothing style (1) personal feelings (1) dance movements (0.5) Musical rhythm (0) personal associations (0)
2	R		clothing style (2) dance movements (1.5) Musical rhythm (1.5) space scene (0.5) personal feelings (0.5) personal associations (0)
2	S		clothing style (2) dance movements (1.5) personal feelings (1) Musical rhythm (1) space scene (1) personal associations (0)
2	T		clothing style (1.5) dance movements (1.5) personal associations (1.5) Musical rhythm (0.5) space scene (0.5) personal feelings (0.5)
2	U		personal feelings (1.5) personal associations (1) space scene (1) clothing style (1) dance movements (0.5) Musical rhythm (0.5)

Table 4: The table of individual participants' text-to-image response to catalog frequency
(Source: Collated from this current study) (continued)

Round	Participants	Image	Catalog frequency
			Note: order by the frequency of average of two coders
2	V		clothing style (2) dance movements (1) space scene (1) personal feelings (1) Musical rhythm (0.5) personal associations (0)

6. CONCLUSION

This study introduced a novel method for leveraging generative AI to facilitate the objective narration of conceptual dissertations, enabling creators to communicate with the public effectively. By integrating emergent practical experiments, the research aimed to strengthen the objective mode in art conceptual writing while examining the role of AI as an immediate peer painter within a series of writing sessions.

Findings indicated that AI's immediate response helped participants maintain objectivity and encouraged deeper cognitive engagement, prompting them to refine their word choices and explore more precise descriptions. As an active collaborator, the text-to-image generative AI functioned as a significant peer painter, providing real-time feedback that simulated public responses based on extensive datasets. This interaction fostered exploratory and combinatorial creativity, positioning AI not just as a content generation tool, but a collaborative partner aligned with participants' creative intentions and learning environments.

Building on insights from the literature and practical experimentation, this study suggests that improved interaction between AI and participants can facilitate rapid creative exploration and transformation, enhancing communication between artists and the public. The study also highlights AI's potential to boost creators' performance, motivation, and engagement, making it an essential tool for creative education and practice.

However, the research also identified key challenges in using AI for art and design education, such as technological familiarity, pedagogical adaptation, and language limitations. To address these challenges, the study provided structured guidance during the second round of experiments, helping participants overcome technological and pedagogical barriers. Future studies may investigate integrating multiple AI systems to support creators who are non-native English speakers or lack proficiency in programming languages.

As AI integration becomes more common in creative workflows, this study offers an alternative approach for incorporating AI into academic communication. The findings provide valuable insights for educators and creators in optimizing AI-human collaboration for more effective artistic and scholarly engagement.

The iteration and evolution of AIGC have significantly accelerated in recent years, presenting opportunities and challenges for academic research. This study was conducted in January and July 2022, followed by an extended period for data processing and analysis. While AI-assisted coding and analysis expedited several aspects of the research, the gap between traditional academic research timelines and the fast-paced development of AI remains substantial.

Although the conclusions drawn from this study remain valid, the state of AIGC development and participants' familiarity with AI had advanced significantly by the time of publication. This ongoing evolution highlights the necessity for future studies to adapt their methodologies, ensuring that research remains relevant and reflects the current technological landscape.

Future research should consider accelerating implementation timelines and incorporating longitudinal studies to track AI adoption and its impact over time. Additionally, as participants become more proficient in AI tools, future studies should adjust their frameworks for changing technological literacy and evolving creative practice.

By recognizing the dynamic nature of AI advancements, researcher can design more responsive and forward-thinking methodologies that harness the full potential of AI in creative disciplines. As AIGC evolves, future research must remain adaptable, ensuring findings remain insightful and practically applicable in an ever-changing technological landscape.

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