Chapter 10
Professionally Ethical Ways to Harness an Art-Making Generative AI to Support Innovative Instructional Design Work

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ABSTRACT

Instructional designers often pride themselves on using the most cutting-edge commercial authoring and other tools available to achieve their work. Their creations have to meet high technical standards in order to function in a digital environment, in learning management systems, content management systems, on social media, on digital content platforms, and others. In the present moment, generative AI tools enable the making of novel texts and digital visuals, among others. A major extant question is how best to harness generative art-making AIs in instructional design work. In this case, this work explores professionally ethical (and legal) ways to use a generative art-making AIs for ID work, as an innovative approach based on a review of the literature, a year of using several free web-facing art-making generative AIs (CrAIyon, Deep Dream Generator, and others) in open or public beta, and learning from applied instructional design work (over several decades).

1. INTRODUCTION

In the education space, generative AI programs are the subject of much debate given the potential for their use for "deep fakes" (Hebron, n.d., n.p.) and plagiarism, among others. Many can see the potential of such tools for teaching and learning, but they also want to be sure not to contravene copyright or

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promote academic dishonesty. There are also some challenges with learning how generative AIs function and their capabilities. Laws and policies at various levels have not been fully instantiated at present.

In education, instructional designers assess a learning context and design teaching and learning approaches that optimize both. They may write up instructional design (ID) plans. They may design, develop, and deploy digital learning contents (modules, objects, sequences, courses, course sequences, and others). They may select from a range of technologies to enable their work. They may have methods to better understand the target learners (based on empirical information and theories). They have to be aware of the relevant laws, such as involving intellectual property, privacy protections, media law, accessibility, and others.

This work explores how generative art-making AI (from free web-facing tools such as CrAIyon, Deep Dream Generator, and others) may be harnessed into the instructional design space to enable innovation, across a range of practices, in the current liminal moment (with a range of uncertainties). These tools have been released for free public usage in "open" or "public" beta, with some degree of experimental learning by the makers of the respective tools (and some public caveats as to visual outputs).

2. REVIEW OF THE LITERATURE

Artificial intelligence (AI) has been a long-term objective in computer science. There have been three phases of AI development from the 1950s: "Foundation (1950s – 1970s, methods and algorithms), Symbolic (1970s – 1990s, model driven, knowledge-based systems), and ML/DL (1990s – present, data-driven" (Maslic & Kim, 2021, p. 277), with "ML" referring to "machine learning" and "DL" referring to "data learning". A large category of computer programs, in the modern age, emulates human intelligence and are known as "artificial intelligence" (as in non-human and non-animal intelligence, rather that of computational machines). "General" or "strong" AI aims to emulate and build on full human intelligence; "narrow" or "weak" AI aims to focus on limited and dedicated applications of machine intelligence for defined specific aims. Work into AI has been ongoing for decades, from the mid-1950s, at least. AI is a "paradigm" for thinking about a category of technologies (Striuk, Kondratenko, Sidenko, & Vorobyova, Nov. 2020, p. 368). For all the progress, this moment is "at the dawn of AI" even as AI is "acting, almost always invisibly, in nearly all fields of human activity" (Santaella, 2022, p. 43).

2.1 Advances in Artificial Intelligence (AI)

One type that has come to the fore recently involves AI that can create. Benjamin Bloom, in his revised Bloom's Taxonomy of the Cognitive Domain, suggests that creativity is at the pinnacle of the human mind. For generations, humanity has thought of creativity as in the singular human domain, and the sense of computational encroachment on that space has been controversial.

Generative computational creativity (as part of the field of "computational creativity") refers to a category of technologies that can output creative works including "narrative, poetry, ideation, games, analogy, design, etc." (Davis, Hsiao, Popova, & Magerko, 2015, p. 112). Generative systems are those that create "novel, surprising, and valuable creative products" (Davis, Hsiao, Popova, & Magerko, 2015, p. 111). GANs were created by Ian Goodfellow and others at the University of Montreal in 2014 (McCormack, Gifford, & Hutchings, 2019, p. 35). The technologies function autonomously based on studies of human creative processes and outputs, which are then codified into programs and machines.

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