

Revolutionizing Creativity: Unleashing the Power of AI in Upper Elementary Art Education

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Abstract—In the dynamic landscape of upper elementary art education, this paper explores new approaches to fostering creativity through the integration of innovative AI applications. The focus is on teaching sixth-grade students to utilize image generation tools, enhancing their overall creative confidence and engagement. Each project contains clearly stated objectives, aiming not only to improve technical skills but also to cultivate a heightened enthusiasm for artistic expression. Introducing these projects not only guides students in the safe use of AI but also encourages critical thinking and problem-solving. As students become more familiar with image generating apps such as Canva’s Magic Media and Adobe Firefly’s Text Effects, they engage in a collaboration between technology and artistry, resulting in projects that are innovative, visually compelling, and conceptually rich. One noteworthy outcome of this integration is the increased excitement among students toward art creation. The ease of using these AI applications saves time that can be dedicated to final projects, making art more accessible and enjoyable. Witnessing the transformation in their work, students gain not only confidence in their technical abilities but also find renewed joy in the artistic process. This paper illuminates how these tools serve as catalysts for unleashing the creative spirit within both teachers and students.

Keywords—art education, Artificial Intelligence (AI), digital arts

I. INTRODUCTION

Although skeptics have long argued how art should be taught and what students should learn, there is often an information gap between what art educators are teaching and what the school community understands about a contemporary art curriculum. For example, the beginning of the COVID-19 pandemic in 2020 caused art education to turn upside down. With students and teachers confined to their homes, teaching art in a traditional manner was no longer possible. It was at that point in time that digital design burst onto the educational scene. Art educators did not receive formal training from school districts; instead, it was like the wild, wild west – everyone reached out to colleagues all over the world seeking help, tutorials, and ideas for virtual art instruction. Private social media groups popped up overnight and educators relied upon each other

to make sense of the new world of teaching art virtually. Even though school districts provided devices such as Chromebooks to students, wi-fi connectivity was an issue. However, through all of those challenges, new ideas and innovative curriculum emerged.

Regardless of the tools we use, Rubin [1, p. 29] noted that the true instrument in the creative process is the individual. Thus, it becomes increasingly important for art educators to recognize and embrace the opportunities Artificial Intelligence (AI) presents for our students. A balanced art and design curriculum can engage and motivate students while providing opportunities for experimentation and play. AI tools such as Canva’s Magic Media and Adobe Firefly’s Text Effects provide quick results based on individual student prompts. Through innovative applications of these technologies, both educators and students can gain confidence in their use of AI to problem solve and think critically about the creative process, ultimately becoming fluent in digital technology. Writing about digitalized art, Hertzmann [2] stated:

“Computers do not create art, people using computers create art. Despite many decades of procedural and computer-generated art, there has never been a computer widely accepted as the author of an artwork. To date, all “computer-generated art” is the result of human invention, software development, tweaking, and other kinds of direct control and authorship.” (p. 20)

While debates surrounding AI’s future in educational settings persist, the incorporation of AI responsibly begins with acknowledging the established role of digital art in art and design curricula. Mazzone and Elgammal [3] suggested, “Since the challenges of Marcel Duchamp’s practice, the art world has also relied on the determination of the artist’s intention, institutional display, and audience acceptance as critical defining steps to decide whether something is or is not *art*” (p. 26). Introducing students to the latest technology related to art and design provides engaging opportunities for students to experiment without relying on individual drawing skills. Initiatives that allow students to explore image generation not only foster a safe introduction to AI but also pave the way for meaningful discussions on its integration within art education. As we navigate this new digital frontier, the synthesis of AI and traditional art education emerges as a harmonious blend, ensuring students are equipped with the skills to thrive in a technologically enriched future.

II. INNOVATIVE AI TOOLS AT WORK

Art educators and students need to be aware of the growing capabilities of AI in design and art education, as it represents a transformative shift in how creative problem-solving is taught [4]. Lee [5] noted that, as of October 2023, Australian-based company, Canva, Inc., reported to have 16 million subscribers. Canva's newest suite launched in 2023, Magic Studio, and has many free design tools for educators and students. Founded about a decade ago, Canva competes with Adobe and both offer free image generation tools for education. While both support rapid image generation and maintain strict rules about the types of images they will create, currently, Canva has more options for design ideation than Adobe.

A. Adobe Firefly Text Effects

To engage students (ages 11–12), it is important to include technology as part of a balanced art and design curricula. The creative process is primarily done first by students in the pre-action of writing prompts. Many artists have created art this way; however, not necessarily use image generation tools. The generative algorithm usually produces images that surprise students allowing for class discussions on which AI results most closely match their original vision [3].

Many art educators have embraced technology and welcomed Adobe Firefly into their classrooms. Park [6, p. 411] noted, “Art practices incorporating emerging technologies provide new possibilities for understanding the post digital world”. As art educators, it is our responsibility to learn how to not only use technology but make technology a viable art-making experiential tool for our students.

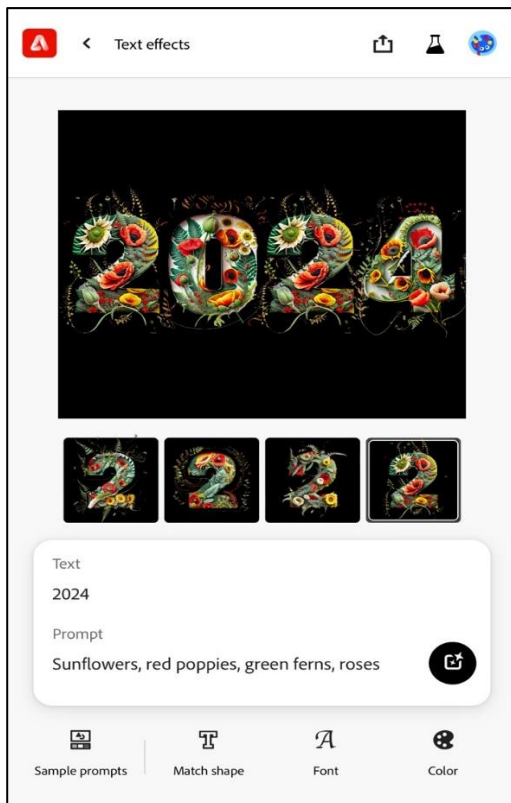


Fig. 1. Teacher example of Adobe Firefly Text Effects using a year.

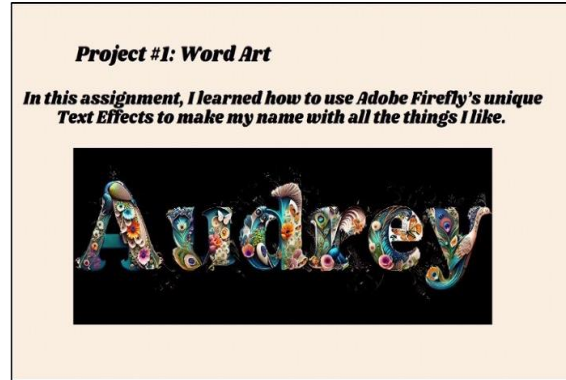


Fig. 2. Student example of Adobe Firefly Text Effects using a year.

An example of an ice-breaker activity during the first day in Art is to introduce students to Adobe Firefly's Text Effects image generator. Students use either their first or last names, or the year in numbers (Figs. 1 and 2). In the prompt box, students list four words that describe their likes, hobbies, animals, favorite places, etc. These four words fill the text and create word art. We discuss different fonts and background colors. Students then download their finished Word Art as their first AI experiment.

Adobe Firefly is an attention-getter for students and provides instant results they either like or revise immediately. I offer opportunities for students to use this for extra credit experiments when they have completed all other assignments. What I have observed in students is an overall joy and confidence boost from having something creative, initiated by them, but collaboratively generated by Adobe.

B. Canva Magic Media

A second highly engaging AI image generation tool is from Canva. For graphic design purposes, I have used Canva as a tool since before the Pandemic but did not introduce it to students until September 2023. Many of the image generation tools are free, with only some requiring a premium account. Students sign in using their school email and have access to Magic Media and can download their results.

After students experiment with Adobe Firefly, I introduce Magic Media. Magic Media generates art based on prompts written in a text box and students select from a range of styles (photographic, drawing, painting, 3D, neon, and concept art). I provide three “fill-in-the-blank” statements for students to complete before generating images (Table I). Using this image generation tool allows students to quickly see if their ideas are worth further exploration, if there is an artistic style to incorporate, and if the overall composition communicates their initial ideation.

TABLE I. STATEMENTS FOR STUDENTS TO COMPLETE BEFORE GENERATING IMAGES

Noun	Location	Time of day, season, weather
Animal		
Food		
Transportation		
Ex. Golden Retriever	Lake	Sunset

Once the table is completed, students open Magic Media, which is found in the Apps menu on the left side of the Canva homepage. Once Magic Media opens, students need to select “New” and the format I have students use is Instagram Post Square; however, we are not posting to Instagram, it is simply a format that works well for this experiment. When students write their first prompt, they separate each topic with commas, making sure words are spelled correctly. Before clicking on the generate button, students need to identify with artistic style they will use first and complete the table (Table II) with the correct information.

TABLE II. EXAMPLE OF ONE PROMPT WITH THREE DIFFERENT ARTISTIC STYLES

Prompt	Artistic Style	Yes/No/Possibly	Rationale
Animal	Psychedelic	Yes	Colorful
Animal	Watercolor	No	Not visually strong enough
Animal	Colored pencil	Possibly	Possible with use of more vivid colors

After students complete three different artistic styles for each of their prompts, they will have a total of nine square images. For discussion purposes, I have students put all nine into one square post (Figs. 3 and 4). Students complete a written reflection about their favorite artistic style, providing rationale for their decision.

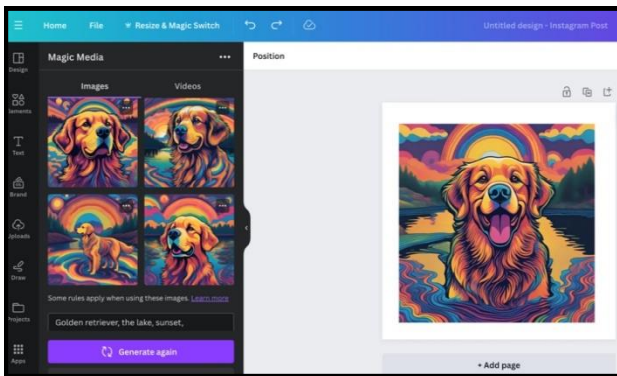


Fig. 3. Example of how an image appears after selecting the artistic style.



Fig. 4. Example of a nine square experiment used for final image decisions.

C. Innovation beyond Magic Media and Text Effects

Engaging students in the digital creative process is not difficult, because students are quite familiar with technology; however, it is critical to have discussions about the role of design, especially AI, in the creative process. In addition to the aforementioned AI apps, both Adobe and Canva continually update their programs. Recently, Canva introduced Cartoonify, Speed Paint, Sketch to Life, AI Image Gen, and Imagen. Of these, AI Image Gen and Imagen have many options for including art history and art techniques. Before introducing any new apps to students, it is imperative for educators to experiment with them, not only to become proficient but to successfully troubleshoot any potential issues.



Fig. 5. Example of a simple prompt using AI Image Gen on Canva.

Briefly noted, AI Image Gen is solely prompt-driven without an opportunity to select an artistic style. The example (Fig. 5) shows an image generated with the following prompt: Yellow bicycle + red bridge + snow. This app could be used an extension after students have experienced Magic Media.

III. USING AI TOOLS

When developing an instructional unit including AI, it is important for art educators to maintain a balanced curriculum that is not an all or nothing approach. I am not suggesting abandoning traditional art curriculum; however, it is critical to include more than just drawing and painting. Mazzone and Elgammal [3, p. 32] stated, “Many artists and art historians resist seeing work created with AI as art because their definition of art is based on the modern artist figure as the sole locus of art creation and creativity”. Thus, including AI can complement traditional teaching of art history or art techniques. Simple AI experiments using Canva’s Imagen image generation tool could serve as a beginner level in upper elementary art education. Students would need to understand different artistic styles or techniques (for example, pop art, impressionism, printmaking). An assignment could include using Imagen

to write a prompt including a specific artistic style (Figs. 6 and 7).

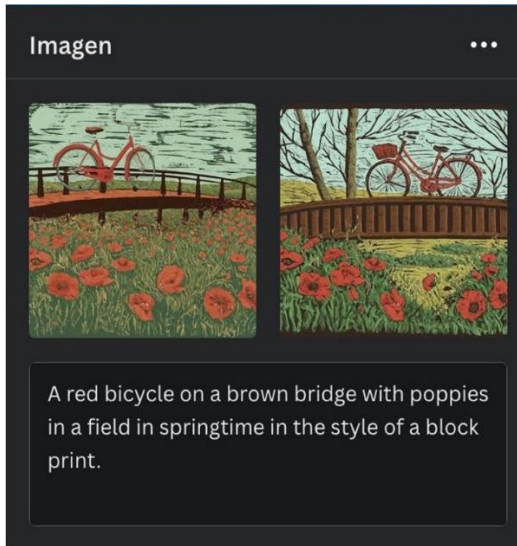


Fig. 6. Example of a prompt including an artistic style.

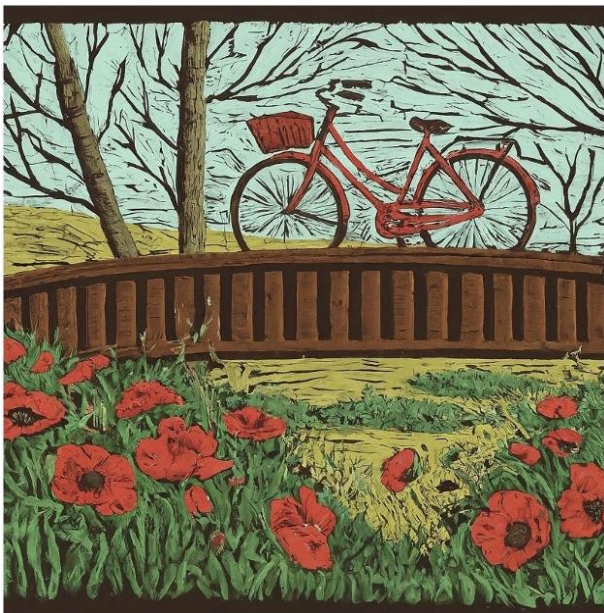


Fig. 7. Detail of the image generated by Imagen.

IV. ASSESSMENT PRACTICES

What is the most meaningful way to assess AI generated art? In my school district, teachers are required to use an online grading system; however, art education does not have a formal system for assessment. As the only art teacher in my building, and the only fifth and sixth grade art teacher in my district, I have developed rubrics based on three elements: (1) project completion/incompletion; (2) completed and submitted on time (unless an excused absence/illness); and (3) exploration of materials as directed (Table III). I include a column for teacher feedback and/or revisions requested. I do not grade based on whether or not I like the finished product. My goal is to be fair and consistent with all students.

TABLE III. SAMPLE PROJECT RUBRIC

Project Complete	Submitted on time	Explored materials as directed	Total	Feedback/ Revision requested
+1 point	+1 point	+2 points	4	Excellent exploration of artistic styles based on your prompts. Variety of images.

An additional component for submitting work could include digital portfolios. There are many online graphic design programs that offer free templates for students to use. Canva does provide a wealth of templates for creating portfolios. Final portfolios can also include space for student reflections and teacher feedback. While digital portfolios are not new to art education, having students submit PDF files of their portfolio to an online grading program is a record of what students have created that parents can easily access (Figs. 8 and 9).



Fig. 8. Example of student digital portfolio template using Canva.



Fig. 9. Example of student digital portfolio template using Canva.

V. INNOVATIVE DESIGN PEDAGOGY

Innovative teaching methods in art education continue to be under the microscope as definitions pertaining to what *needs* to be taught, what *should* be taught, and *how* teachers should teach it are not clearly defined. Fostering innovation within the art classroom cultivates a dynamic learning environment that encourages creativity. Art is inherently a realm of exploration and self-expression, and introducing innovative teaching methods allows students to engage with their creativity in new and exciting ways. Creating meaningful learning experiences for students while building confidence with technology is a goal for art educators. We need to understand the power of artificial intelligence as a tool of engagement, not to be feared or

over-used, but as an ideation tool. Regarding misconceptions about the use of AI, Schneider and Rea [7] pointed to science fiction as being responsible for suggesting to the public that AI is associated with what technologists and researchers would call “artificial general intelligence”, or a machine with the abilities to think freely without specific training, and even displaying emotions. However, by integrating modern tools, techniques, and interdisciplinary approaches, students not only gain technical skills but also develop a broader perspective regarding the role of art in contemporary society.

Second, innovative teaching in art education aligns with the demands of a rapidly changing world. As technology continues to advance and globalization becomes increasingly prevalent, students need to adapt to new ways of thinking and problem-solving. Leonard [8, p. 28] stated, “Art education pedagogy, like all matter, is dynamic and constantly changing and becoming anew”. As such, art education research needs to identify best practices for artificial intelligence in the art and design curricula. Innovative art education provides a platform for students to explore diverse mediums, experiment with emerging technologies, and collaborate on projects that mirror real-world challenges. Park [6, p. 414] argued, “Being conscious of how digital technologies affect societal, political, and cultural dimensions of human lives is imperative for future generations who will be inhabiting a society that may be more dependent on technological mediation”. Introducing AI not only prepares students for the demands of the future workforce but also instills a sense of adaptability and resilience.

Lastly, embracing innovation in art education contributes to the holistic development of students. Beyond the acquisition of technical skills, innovative teaching methods promote critical skills such as communication, collaboration, and adaptability. Students learn to approach artistic challenges with an open mind, fostering a growth mindset that extends beyond the art studio into various aspects of their academic and personal lives. In essence, innovative art education becomes a catalyst for nurturing well-rounded individuals who are not only proficient in the arts but also equipped with the skills necessary to navigate an ever-changing world.

VI. DISCUSSION

We live in a society that is increasingly digitalized and the expectations for understanding and easily using various technologies is paramount for our students. In an effort to increase digital fluency, education needs to focus on more than just technical software and programming skills [9]. While further exploration of AI’s role in design and art education can offer exciting new possibilities for exploration, collaboration, and innovation, it is critical for students and instructors to remain mindful of the ethical boundaries and responsibilities that come with this powerful technology [10]. When teaching students how to use various AI tools, it is our responsibility to keep up to date with advancements in technology, issues regarding privacy, and district/state policies for teaching AI. Knochel and Patton [11, p. 27] stated, “Part of our argument for

teaching art students computational thinking is to develop students’ critical awareness regarding the electronic devices and software they use daily”. So, why shy away from its use in art education?

Without doubt we are in the midst of societal and cultural transformations due to the rise globally of AI; how this will affect art and creativity in the long run has yet to be realized [12]. Future research in public education needs to provide standards for ethical use of AI, starting at the kindergarten level. We need to take care of how we include AI due to the inherent vulnerability of children. With AI being its infancy as a tool for use in art education, it is unknown how it might impact students’ lives [13]. However, including AI as a unit in upper elementary art and design curricula not only opens the door for students to explore image generation, but engages and motivates students to experiment more freely without being hindered by an inability to draw.

VII. CONCLUSION

For many, technology has no place in traditional art education, and there is a lot of fear regarding its use due to a lack of understanding. New generative tools are being introduced daily, often hourly; however, these tools should not replace the role of the human artist. In art and design education, including AI as a collaborative experimentation between student and technology is an ideal outcome.

When students were asked to reflect on the creative process after using Canva and Adobe Firefly, their responses were extremely positive. Those who previously lacked confidence in their creative abilities stated they enjoyed art projects more because the AI apps understood their ideas. Students who had confidence in their artistic ability enjoyed the freedom these apps provided—a reprieve from needing to rely on their drawing ability for every assignment. Class discussions included how AI can be a tool for creativity but not the final product.

In conclusion, the overall goal of art education should include design, media arts, and technology so that students can understand that creativity does not stop with drawing and painting. Digital art is part of a broader scope of creativity, where students are the artists and minds behind their work. AI is a valuable tool for sparking creativity in our students. Thus, if art education is to remain relevant, we must do everything in our power to engage students and unleash their creativity through innovative uses of technology.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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