

Elevating Creativity: The Rise of Digital Design in Art Education Classrooms

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Abstract

In today's educational landscape, integrating digital design into the art classroom has become an important tool for engaging upper elementary and middle school students. With digital design in the curriculum, students can explore art beyond traditional media and develop essential skills in problem-solving, visual communication, and digital literacy. This paper explores how digital tools such as Google Draw, Canva, and Adobe Express are reshaping the way students approach creativity and artistic expression. These tools not only enhance artistic abilities but promote critical thinking as students manipulate digital elements to create visually compelling art. The interactive nature of digital design captures students' attention, making art more accessible and engaging for those who might otherwise struggle with conventional materials. Through digital design projects, idea generation using AI tools, and student-created digital portfolios, students experience a deeper connection to their work, fostering a sense of pride and accomplishment. This approach to art education equips students with foundational digital skills and encourages self-expression and innovation, preparing them for a future where technology and creativity are seamlessly integrated.

Keywords: art education, design education, digital design, digital portfolios, idea generation

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Introduction

By the time students reach sixth grade, they have an awareness of their ability to draw realistically. If they perceive themselves as unable to draw, the tendency to dismiss—or even to hate—art class may lead to disruptive behavior, poor self-esteem, and the lack of artistic confidence (see Figure 1 as an example). To better engage and inspire students, including digital design with traditional art education can turn their lack of confidence into feeling proud about their accomplishments. “Education has a pivotal role in fostering creativity and creative practices, and thus the skills needed to create new knowledge” (Henriksen et al., 2018, p. 412).

Figure 1

Drawing Made by a Fifth-Grade Student on the First Day in Art Class



Zabora et al. (2023) argued that “digital technology and interactive media challenge traditional notions of creativity, audience, and artist” (p. 300). Art educators need to understand the potential of digital design to build student self-esteem while leading to motivated students. “Cultivating students' innovative thinking can also avoid the phenomenon that students rely too much on computers or are restricted by computer graphic design software” (Han, 2020, p. 3). Giving students a chance to be creative can be one outcome of technology.

Traditional art education includes teaching students about artists, techniques, art history, and major movements in the art world. Visual art curricula can be enhanced through the inclusion of digital design. For example, educators can integrate technology by having students use digital tools to create art inspired by artists they have learned about. “Creativity is closely connected not only with the artistic world and the creation of products but also with science, engineering, innovative thinking and problem-solving” (Henriksen et al., 2018, p. 411). Successful integration of digital art requires an understanding of its possibilities. Dong and Sang (2024) argued that “with the rapid advancement of technology and the increasing prevalence of digital media technology, the role and significance of digital media art design in art education have become increasingly important” (p. 386). Combining digital techniques with traditional techniques helps students understand the different ways art can be created while challenging them to utilize technology in new ways.

If students have access to Chromebooks at school, art educators can teach digital design. There is a growing need for students to understand the many uses of technology, first, and second, to imagine alternatives to traditional art-making methods (Dufva & Dufva, 2019). Simple skill-

builder activities using Google Draw can help students learn how to use basic tools including shape, curve, polyline, fill bucket, custom gradient, and transparency. Once students feel confident navigating these tools, teachers can introduce digital design projects that are more complex and that integrate traditional and contemporary artists. Developing a blended curriculum not only engages students who lack confidence in their drawing ability but allows all students to gain digital design skills necessary in the global workforce.

A Blended Curriculum

When developing a blended curriculum, educators who start with art history can provide rich content for student inspiration. “Artists and art educators increasingly recognize that both traditional and digital techniques have a powerful role to play in broadening our artistic horizons. The challenge lies in determining how to effectively integrate these two sides of the artistic world” (Rocky Mountain College of Art and Design, 2024). In sixth grade social studies, for example, students learn about ancient civilizations, which includes Rome, Greece, India, Egypt, and China. “The international implementation of technologies in educational settings may be a way of grounding creativity in practice or could provide a tangible mechanism for fostering its development” (Henriksen et al., 2018, p. 412). Including digital design with art history allows students to develop confidence in using technology while gaining inspiration from the art of ancient civilizations.

Digital Mosaics

One such blending occurred around the theme of animal mosaics from ancient civilizations. I instructed students to research animals that fit their personality or physical characteristics, as shown in Figures 2 and 3. Using the polyline tool in Google Draw, students created contemporary mosaics. Through this digital design experience, students became familiar not only with the technology tools but the amount of time it takes to create a mosaic. Students received a color print of their finished mosaics.

Figure 2

Sixth-Grade Digital Mosaic, 2023

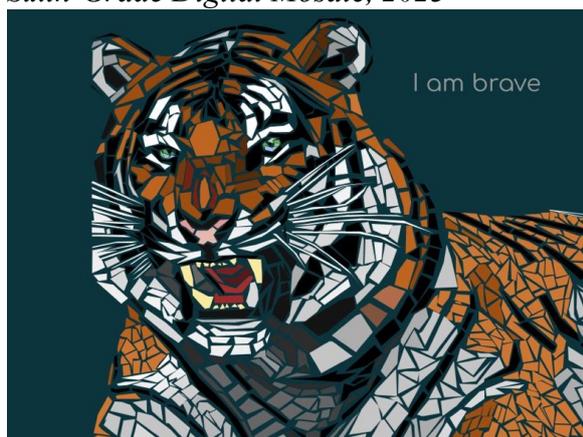
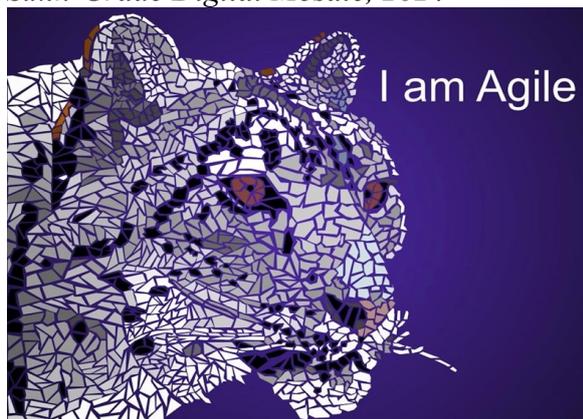


Figure 3*Sixth-Grade Digital Mosaic, 2024***Digital Radial Symmetry**

Radial symmetry is a design technique that can be traced back to ancient civilizations. As stated by Vaia (2025):

Symmetry in art is a principle in design where elements are balanced and mirror each other on either side of a central axis, creating harmony and visual stability. This technique can be seen throughout cultures and art forms—from ancient Egyptian art to contemporary works. Symmetry creates aesthetic appeal and relays a sense of order. Recognizing and using symmetry can help artists and art students understand composition, engage viewers, and elevate creative expression. (para. 1)

By learning symmetry through digital design, students learned what it means to have a center line with shapes flipped to mirror each other. Not only did digital design shorten the amount of time it takes to create a symmetrical design, but the visual impact and detail students created were vastly different than creating radial designs traditionally. (See Figures 4 and 5.) The process of creating these designs started with a circular template that contained lines dividing up the circle into eight slices. Students designed in only one slice and used the zoom tool to work 250% or higher; by zooming it, students created more intricate detailed shapes than working at the “fit” on screen size. Some students chose to use the radial gradient tool to fill the shapes, while other students used the general solid fill bucket.

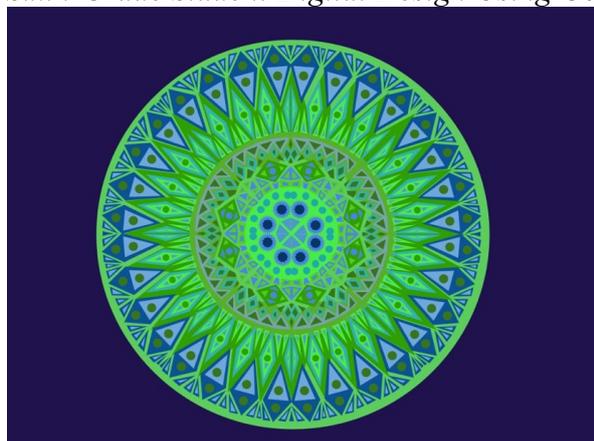
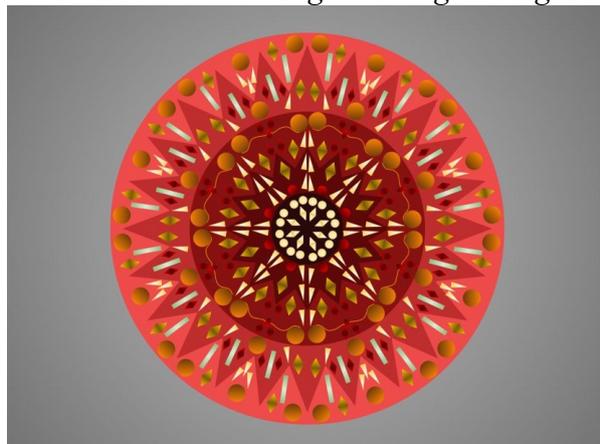
Figure 4*Sixth-Grade Student Digital Design Using Google Draw*

Figure 5

Sixth-Grade Student Digital Design Using the Radial Gradient Tool in Google Draw

**Artist-Inspired Digital Designs**

Introducing contemporary artists as well as artists from the past can inspire students to create digital designs in the manner of these artists while still developing their own creative solutions. Showing students art by famous artists, whether the work was made using paint, fabric, ink-printing, or sculpture, can help students expand their knowledge of art history while learning to use digital design tools. Before students began creating, I shared information about each artist in a slide presentation and sample shapes were made to review basic digital tools.

To introduce students to geometric shape tools, teachers can feature numerous artists. Two who are popular are French artist Sonia Delaunay (1885–1979) and the contemporary American artist Jacob Hashimoto (b. 1973). While these artists are extremely different in their use of materials to create art, both are strong examples of shapes, color, balance, and composition. See Figures 6 and 7 for student work inspired by these artists. Jen Stark (b. 1983), a contemporary American artist, and pop artist, Roy Lichtenstein (1923–1997) also provide elements of design that translated well into digital art, as shown in Figures 8 and 9.

Figure 6

Fifth-Grade Digital Design Inspired by Sonia Delaunay



Figure 7*Fifth-Grade Digital Design Inspired by Jacob Hashimoto***Figure 8***Fifth-Grade Digital Design Inspired by Jen Stark***Figure 9***Fifth-Grade Digital Design Inspired by Roy Lichtenstein*

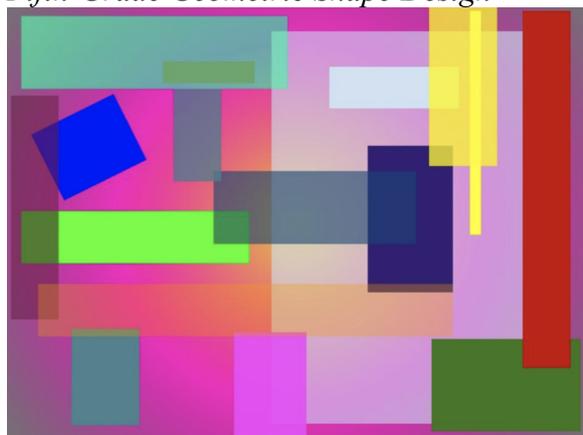
As part of the planning process, a blended curriculum that includes artists, art history, and digital design must incorporate the seven elements and principles of design (balance and alignment, contrast, emphasis, movement, proportion, repetition, and white space). In addition, there are seven elements of art: color, form, line, shape, space, texture, and value. Projects that focus on these elements help students understand the connection between digital design and traditional art. Henriksen et al. (2018) argued that technology cannot solve all problems; rather, it is “a tool that is contingent on how it is used. It can be used to maximize affordances for

creative output or deep learning, or it can simply be a replacement device with shallow uses for learning” (p. 420). Including the elements and principles of designs provides substance for why art educators are incorporating digital design with traditional art curriculum.

The shape menu in Google Drawing tools can introduce students to geometric shapes. These beginner projects can also teach students how to use the fill bucket, including custom colors, as well as using the transparency tool for overlapping, as shown in Figure 10. Many famous abstract art images can be shown for inspiration, such as Helen Frankenthaler, Hilma af Klint, Piet Mondrian, Georgia O’Keeffe, and Mark Rothko.

Figure 10

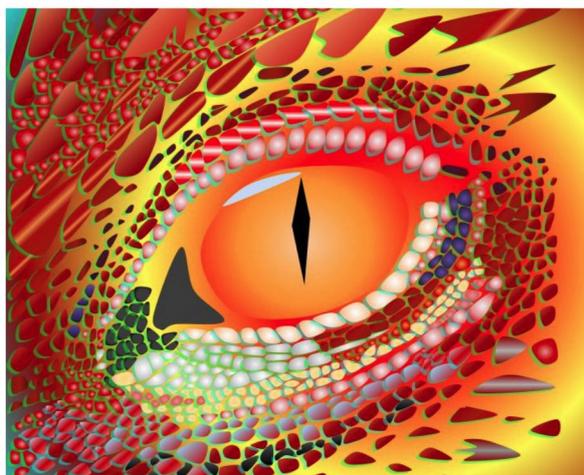
Fifth-Grade Geometric Shape Design



Once students have a solid grasp of the digital tools, more complex projects can be introduced, such as the Gradient Dragon Eye design, as shown in Figure 11. In this assignment, students were required to carefully use the curved line tool, along with radial and linear gradients, and the drop shadow. Sixth-grade students were extremely engaged in this assignment, and they received printed color copies upon completing their work.

Figure 11

Sixth-Grade Gradient Dragon Eye Digital Design



Idea Generation and Artificial Intelligence

All creativity builds upon ideas and objects that already exist and thus an important element of creativity is not just deep background knowledge of a domain and our previous experiences with it, but also diverse experiences and knowledge of other domains that enrich our understanding of the core area, providing new and unique connections as the basis of creative (novel, effective, and whole) ideas. (Mishra et al., 2023, p. 209)

Including artificial intelligence (AI) in the idea generation or brainstorming phase of a design project can lead to quicker decisions about composition, space, colors, and overall aesthetic appeal. When directed to create a rough draft drawing, many students struggle to achieve what they visualize in their minds. Using AI as a resource to see their ideas without that frustration is not only a time saver but helps students learn other ways to show their creative thinking. In one example, the class responded to a series of questions:

- What images or symbols relate to the idea of peace?
- What animals do we associate with peace?
- What does a peaceful world look like?

Figure 12 shows results using the text-to-image Adobe Express AI tool for a peace poster design. The student's prompt included these words: white doves, rainbows, rivers, flowers, and trees. From the image that Adobe Express created, the student was able to create a peace poster that showed her initial thinking, and with the help of AI, provided a general style for her final painted poster design as shown in Figure 13.

Figure 12

Sixth-Grade Student's AI Prompt Results



Figure 13

Sixth-Grade Student's Final Watercolor Painting of "Peace"



Including AI in art education is a powerful way for students to learn how to understand how to use it as a tool, not a final solution, in the creative process. Creativity expert Dr. Ronald Beghetto (as quoted in Mishra & Henriksen, 2024) stated,

It is important to start with human-generated ideas, and then use GenAI to further analyze and enhance these ideas by identifying strengths, weaknesses, counter arguments, and new viewpoints. This iterative process, moving from human to AI and back to human input, offers a powerful method for enhancing creativity and ensuring a broader perspective. (p. 399)

Students are already engaged in AI, and art educators should provide these experimental opportunities. Black and Chaput (2024) stated, "Art educators should remember that AI, through all its innovation, is not a replacement for human creativity: rather it is useful to augment teacher and student-artistic creative processes" (p. 80).

Assessment

Having students create portfolios showcasing their digital design projects provides a record of their work and consolidates assessment into one final grade. "Student portfolios that document learning over time are not a new concept. For decades, portfolios have been a staple of teachers' writing instruction" (O'Byrne & Hunter-Doniger, 2021, p. 446). However, digital portfolios in upper elementary schools are not widely utilized. With so many online platforms free for educational use, students can create their own portfolio showcasing their digital designs into one design template of their choice, as shown in Figure 14. Each digital assignment was included in these portfolios, and I tasked students with writing a brief explanation of the design process for each project, as shown in Figure 15. Assessing student work by way of digital portfolios provides ample opportunities for feedback between the student and me, allowing for suggestions, revisions, and final student reflections.

Figure 14
Sixth-Grade Student Digital Portfolio Covers Designed Using Canva



Figure 15 (a, b, c)
Example of Part of a Student Digital Portfolio Designed Using Canva



Conclusion

Developing a blended art curriculum that includes both traditional techniques and digital design is one way to engage students in upper elementary art education. "Digital art is the marker of

our time, the basic aesthetic and cultural form that unites the intimate and the common” (Zabora et al., 2023, p. 304). Adding technology to the creative process not only inspires students to experiment more freely but may even lead to a future career in the field of design. As stated by Mishra et al. (2023):

Creativity, learning and technology all exist within the complex tapestry of human life, culture, and society. So does the phenomenon of education, which, as an innately human and designed system, is interconnected to the rest of human activity and society. This is a broader sociocultural view of creativity, learning, and technology, and their effects on education, recognizing that whether certain technologies are used in the classroom they still influence education, by changing the “ground rules” of the broader context for education. (p. 209)

Digital design is here to stay, and as art educators, we must embrace all that it has to offer our students. “While creativity has become a core issue for twenty-first century teaching and learning, it is still not clear what this means for the field of education—in policy, and therefore in practice,” (Henriksen et al., 2018, p. 420). If we can become experts in design, our students will benefit. “For teachers specifically, instrumental basic digital skills can function as a foundation for successful teaching with digital technology” (Lohr et al., 2024). Infusing digital design into traditional art education levels the playing field between students who may lack confidence in their drawing skills but who may flourish in the digital world.

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