

A COLLISION OF TECHNOLOGY AND ART LEARNING: NEW POSSIBILITIES CREATED

ΒY

INTEGRATING TECHNOLOGICAL TOOLS
INTO ART LEARNING

F O R

CHILDREN AND YOUTH

A THESIS
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THE REQUIEMENTS FOR
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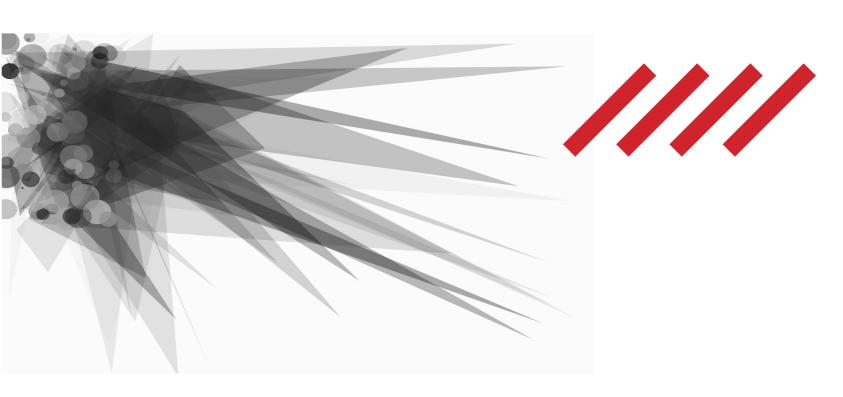
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DEDICATED TO

My mother and father, who support me to learn art and to pursue what I enjoy doing in the future.

My friends who made this journey so enjoyable.

My professors who helped me academically.



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ABSTRACT

This research thesis investigates the integration of technological tools into the curriculum and pedagogy of art education. By focusing explicitly on art education outside of school, it examines how technological tools expand the art learning possibilities for children and youth, enrich their art learning experiences in balance and connection with traditional arts media as well as strengthen engagement for those digital natives. Meanwhile, this research aims to contribute to a current understanding of technology integration into art curriculum and pedagogy for children and youth through literature reviews and research projects using a variety of methodologies, and then to determine what art learning might look like for children and youth where integrated with technological tools. This thesis will be the beginning point for me and extends my curiosity about what innovative art education will look like in the future for the next generation when advanced technology becomes available.

MEMOIR:

MY JOURNEY
OF ART WITH
TECHNOLOGICAL
TOOLS





I started taking art classes in elementary school in China and most art classes were geared towards skill practice-based art learning. I remembered a painting class I took outside the school that taught me to follow constrained instructions in sketching and painting without any choices of experimenting in different art mediums. Those art classes were rigorous and repetitively dull for the children at a young age without any meaningful investigations in art learning. I always wished to plan art courses and art projects that are fun to learn as well as provide creativity and making meanings for the students. Later, my art learning experiences in the U.S. high school were more open-minded and offered me more freedom to experience different art media for my art creations. I enjoyed more meaningful and inquiry-based art learning rather than the restricted learning. However, those creative art making experiences were always limited to the teacher's instructions and boundaries. Based on my art learning experiences, I would like to provide art learning that is creative, fun, and meaningful with different approaches and more possibilities in self-explorations.

During my third year in college. I took an entrepreneurship class to come up with business ideas for a future startup. With my art background and previous self-learning experience. I started brainstorming connections between technology and art education. The inspiration came from a fair amount of my friends who would like to learn art in their free time but never pursued or even started learning art. I believe it is never too late for people of all ages to have the chance to receive art education, and technology is a great way to implement equality in the process. From my previous art learning inspiration, my idea was to use an application to set up an online art education community and construct a new form of a self-paced art learning system that can easily access art classes at anywhere anytime. It was my first-time considering technology as a tool to serve art education to become more accessible, available, and feasible for people. In my opinion, technology could support art education by spreading it widely over the community with the benefits of convenience, affordability, quality, and variety. I think technology integration in art learning may help me achieve my goal in art learning.







I used to think technology would distract from the whole hands-on process of learning art. I considered the direct learning between the instructors and students the most beneficial way for art education. Nonetheless, taking business courses about technology companies and the pandemic experience have changed my perception of art learning. I have gradually noticed technology is playing an essential part in current art education. Those new discoveries offer me the opportunities and willingness to experience art making and art teaching with technology in various ways. One question came to my mind: How can technology support art making for digital natives in different perspectives? I started to do more research and to experience art with technological tools. I tried painting software on the iPad, like procreate, and illustrator. I also researched the current online teaching sources and learned their structure and teaching ways. For example, Skillshare provides fine art and design skill and technique-based teaching workshops from artists and designers. Teachers have the flexibility to choose and conduct the lessons that they would like to teach. and people can select their interested classes (Skillshare, n.d.). This research and experiences assisted me in getting to know more about the current trend of art and art education by utilizing technologies.

Meanwhile, I was curious about how museums continue their art education with families and teens under pandemic circumstances. I looked up the kids' online section from famous museums all over the world. I produced a list with analysis of their online ideas for kids' art education, which included what kinds of tools they used and how they stimulated kids to learn art in the museum setting with the online interaction. I was impressed with what I found from different websites. The one that stands out to me was the kids' website from the Metropolitan Museum of Art (Metmuseum, n.d.). They created a digital cartoon map of the museum as the home page. Children can click on the red and yellow dots to go directly to an artwork information that introduces the details of the artworks

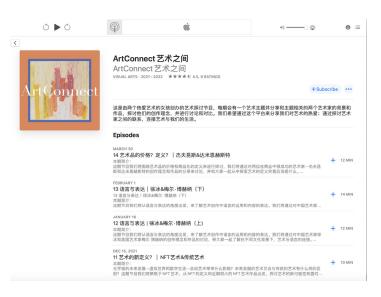


Note. Metkids webpage screenshot Figure 2 Metmuseum

from the museum collection. They tried to engage children in enjoyable, playful, and learning moments with artworks The site also contains a page with an artwork time machine, where children can click on three directory thematic buttons: time period, geography, and big concept, to generate an "art tour" to the matched artworks from the museum in order to have the self-exploratory learning. This combination of art learning, play and inquiry is an effective way for kids to learn when they can not physically go to a museum. Those technology activities make art learning more fun and entertaining than traditional, boring guided tours. Meanwhile, other museums create creative games and lessons that kids can do online, and even cartoon videos of art learning are available for watching. It is fascinating to discover how technology has become the crucial teaching element in this information era.

Furthermore, I started my own art educational podcast a year prior to

pursuing my MA degree. This idea was inspired by my laser eye surgery. I had to rest for months to recover my eyes and tried not to use my eyes too much. I was thinking about what I could do that was still meaningful but not using my eyes. I found out about podcasts and audiobooks, which I can use as leisure and study tools. Every time I listened and thought, why don't I start my own art educational podcast for people? They can access and learn anytime they want and provide accessible art education to more people. There is also a market in China where podcasts are getting more noticed by people. It will be an excellent opportunity to share the art knowledge through the podcast in a casual talk setting and collect experiences working under technology settings. I designed the podcast's logo, name, and contents, and I invited one of my friends to make the podcast together. The podcast is in Mandarin, and every time I will bring up one topic with two artists and their artworks. I enjoy the method that we are teaching the artists and expressing our ideas at the same time. The exciting topic often attracts more listeners to pick our episodes and encourages messages from their reflections.



Note. ArtConnect podcast page Figure 3 ArtConnect艺术之间

Based on all these prior experiences, for this research I wish to explore more about technological tools and their role in art learning. Utilizing different research methods, I would like to understand the ways that art learning with technological tools provides children and youth with enhanced experiences and more possibilities. Meanwhile, I would like to explore the balance and connections between traditional art media and technology. In the future, I hope to see innovative art learning alongside more advanced technological tools.



- RESEARCH QUESTIONS
- RESEARCH PROJECT & METHODOLOGY
- -SCOPE & LIMITIATIONS

RESEARCH

QUESTIONS









I am beginning this thesis research by examining how technology is integrated into art curriculum and pedagogy for children and youth outside of school in order to gain a better understanding of how art educators provide art education differently than in the past. Additionally, as a result of pandemic influences and the rapid growth of technology, those technological tools will have a significant impact on future art education and will be used to pursue innovative forms of art teaching and learning in the future. As I was wondering through those topics, I tried to determine what different learning experiences look like with technology integration and how technological tools can be used to enhance art learning experiences. The enhanced art learning experiences will be evaluated on the basis of four criteria:

- Play and joy as part of the learning experiences
- Learning from different approaches
- Opening more possibilities
- Freedom of choices for the digital natives

As my generation and younger are digital natives, who have been born into a world where smartphones and tablets are ubiquitous. Integrating technological tools enables students to be collaborative in their art learning and strengthens their sense of engagement during the process. I will also examine how interaction experiences with technological tools affect art learning in order to gain a better understanding of them and to improve the art learning experience.

Meanwhile, I am intrigued with how student-centered learning can be embraced through the integration of technology into art curriculum and pedagogy.

Technology brings new possibilities into art learning that encourages students' autonomy and self-exploration. It also provides opportunities for long distanc

es, variable times, and collaborations, which decentered teachers position in the classroom.

As a result of these areas of interest, my primary research question is: What might art learning look like for children and youth when integrated with technological tools?

Following with three sub questions:

- How to enrich the art learning experiences of children and youth with the balance and connections to traditional art media and technology?
- Does integrating technology into the art lessons expand possibilities for play, joy, and choice/autonomy for children and youth?
- How could technological tools improve art learning experiences for children and youth with strengthened engagement?

Investigating those research questions will help me develop a current understanding of technology integration into younger children's art curriculum and pedagogy. It sparked my interest in the possibility of future creative art education involving more advanced technologies.









RESEACH PROJECT & METHODOLOGY

I conducted four research projects to investigate these research questions. I started with an art-based research that collected possible art education digital tools through an art mapping project. The following research projects were inspired from this mapping project.

The second research project was an informal workshop at the RISD museum where I engaged as a teacher and researcher. During this workshop, students had the opportunity to make collages using both digital and traditional media. The goal of the workshop was to stimulate children's creativity and making skills, and open-up creation possibilities for them, which led them to think of possibilities for 2D artmaking in both physical and digital ways. At the same time, this informal art activity helped me think about students' behavior changes as making art physically and digitally, which demonstrated different impacts on traditional art media and technological art media. The choice-making as they engage in different formats of artmaking was also an important detail that I intended to make observations about. Additionally, I asked some of the participants survey questions as a way to understand their perspectives on the experiences with both digital and physical art learning. This project included planning an art activity, observations in teaching, and the data collected with surveys.

The third research project was a curriculum design investigation for out of school art learning. Based on my art-based research and workshop action research, I conducted an art curriculum for eight to ten year old students, which integrated technology through art investigation, artmaking, collaboration, and experimentation. There were enhanced learning experiences involved in the curriculum to expand possibilities for play, joy, and choice/autonomy for students and build a balance and connection with the traditional art media. This project included art digital tool research, detailed curriculum designs and lesson plans.

The forth research project was the UI/UX design project for art education. I designed an art education application for children and youth, which was an art learning community that provided art and design workshops and artwork review functions from RISD students

and faculties in order to offer current students a convenient art collaboration learning experience. The whole process of UI/UX design project helped me build up a comprehensive investigation of the effects of art learning experiences through technology, especially the possibility of choice and autonomy for children and youth. It also emphasized different engagement in art learning experiences that could be offered to various students from different places.



To ensure a balanced approach to the thesis questions, the investigation employed a mixed methods approach, including three main research methodologies: art-based research, action research, and auto-ethnography. The first method of research is art-based research, which assists me in the preparation of research projects. Art-based research "represents an effort to explore the potentialities of an approach to representation that is rooted in aesthetic considerations and that, when it is at its best, culminates in the creation of something close to a work of art" (Barone & Eisner, 2012, p. 1). I created an artwork piece out of my investigation of digital tools that I gathered throughout the semester. Physical and digital elements are incorporated into the artwork. I acknowledged that:

The contribution of art-based research is not that it leads to claims in propositional form about states of affairs, but that it addresses complex and often subtle interactions and that it provides an image of those interactions in ways that make them no ticeable. (Barone & Eisner, 2012, p. 3)

As I created art pieces, I addressed my inquiry process, research questions, and the purpose of this art mapping project. This artwork not only depicted my narrative experiences as an artist, researcher, and educator, but also served as an interactive piece that allows others to learn about my research into digital tools for art education by scanning the QR codes.

The second research methodology is action research; according to Klein's (2014) writing, "for both novice and experienced art educators, action research can be a path for examining practice and envisioning new ways to teach art" (p.45). Action research was a suitable method to guide me examine the new curriculum and pedagogy with the integration of technological tools. It also supported exploration of the outcome in the new way of teaching at the workshops. The action research stated that "reflection-in-action allows teachers to 'develop personal theories-in-practice' (May, 1997, p. 226), while reflection-on-action involves examining events that have already occurred intending to develop lines of inquiry and action plans" (Klein, S. 2014, p. 44). Engaging in action research strengthened my inquiry in an ongoing process as I incorporated the technological tools in my workshop teaching in the

museum and supported my new curriculum designs. Observations during the workshops will be implemented into my action research. This inquiry into how technological tools can be used to enhance young children's art learning experiences will include the integration of various perspectives. Meanwhile, I continued investigating through my teaching experiences and curriculum designs about the technology integration in art curriculum and pedagogy. "Because of the reflection component that enables a continuous flow of inquiry and pursuit of answers to questions about the practice" (Klein, S. 2014, p. 45), the process of action research enabled me to address and connect my thesis questions more thoroughly. Meanwhile, in the words of Cochran-Smith (2009), "teacher-researchers work in inquiry communities to examine their own assumptions and develop local knowledge by posing questions and gathering data" (p. 40). The workshop and new curriculum designs were based on the research questions from my thesis. Through data collection in action research and curriculum design study, I will thoroughly analyze the responses to my questions.

The third research methodology is an autoethnographic examination of digital natives' art learning experiences with technology tools. According to Yoon (2019), autoethnography "is a hybrid form of writing that amalgamates autobiography with ethnography for various purposes that not only studies oneself, but also provides reflexive and critical insights as social research" (p. 83). My autoethnography was based on my personal experiences with technology, and my research projects with technology. There were reflections by the end of each research project on the changes and differences of technological tools brought to those digital natives as well as reflection into their art learning and making from multiple approaches, such as learning enhancements, new possibilities, and various collaborations, etc. On the basis of autoethnography, which "aims at opening up social possibilities of what my narratives can do" (Yoon, 2019, p.83), I reflected on social impacts of art learning with technological tools through my narrative experiences. Those interactions came through my narrative scope of researching, teaching, and experiencing with technological tools.

The data gathered from these research projects will primarily be qualitative research. Surveys, curriculum designs, UIUX design process, photographs and recordings, artworks, and self-reflection were used to display the data. I collected them during my research and categorized them into stations, which was a journey for me to analyze them for thesis topics and responses to the thesis questions.

SCOPE & LIMITATIONS

However, this research is limited in scope and can only provide a snapshot of a much larger research topic. This is not the end of my research, but rather a starting point for me to begin learning about the integration of technology and art learning. This research began with a broad question and evolved into three sub-questions. Each time I sought answers through my research, more relevant questions emerged. The current research does not address all of the questions, such as new approaches to art education through technology and other future innovations in art education. I intend to continue researching as an artist, researcher, and educator in the future and to delve deeper into the questions presented by my research thesis. Due to influences of the pandemic, the scale of this research is relatively small with one workshop at the RISD Museum and unexecuted curriculum design. Additionally, space and time would be limited by observing a few students and analyzing their impact and results with less time, as opposed to working with a larger group of students and defining broader impacts in a long period of time.

Moreover, there were many circumstances beyond my control, such as the diverse backgrounds of my students in the workshops. In my museum workshops, I would have people of all ages in attendance, but I only focused on the younger kids. Although I acknowledged the children about my research, I did not believe they would understand it, especially in an informal museum workshop setting where people just come and go. There will be an ethical issue about whether the children truly understand that I am doing research with them. Simultaneously, the bias of my own interpretations of technological tools and art learning as well as the bias of conducting art lessons are the limitation for the research as well.

In addition, there were limitations in the usage of technology; I could only use applications and software, but did not involve more advanced technological tools, such as VR, AR, 3d printing in my action research. As a result, I was unable to provide research that focused on a fully 3D or 4D immersive experience.

STATION1:

RESEARCH INSIDE LITERATURE

TECHNOLOGY DEVELOPMENT AND DIGITAL NATIVES

Nowadays, technology is ubiquitous in our life with rapid developments and dramatic iterations. People have started to depend on technology, and it has become a necessary portion of our lives. Our community environments, no matter the social aspect or cultural aspect, are frequently occupied on the internet. According to Tillander (2011),

In living with contemporary information technologies, more and more people are becoming active participants and co-creators with interfaces -- expanding into the development of tutorials, blogs, wikis, and social bookmarks. These personally meaningful activities emphasize sharing and collaboration through transparent formats. (p.40)

Technologies and online platforms offer us opportunities to share and collaborate in a broader standpoint. The beneficial aspect of technologies can also be applied to art education in teaching, learning, and making. Technology can be an intersection that pushes art education beyond traditional art curriculums and links art education with students' contemporary everyday life. Tillander (2011) suggests this connection can come with the conversion and "creative possible resolves" (p. 40) for the formal education environment. The technology tools defined as "high tech hardware and software" (Salen et al., 2011, p. 80) are utilized to facilitate learning in the virtual, hybrid, or traditional classroom environment. It will create new art learning experiences for students with more possibilities and different approaches. I am interested in exploring what art learning might look like for children and youth when integrated with technological tools and the impacts with technology integration in teaching, learning, and making for them. The children and youth that I would like to engage with technology in their art learning experiences are Generation Z. According to Menano (2017), Generation Z are digital natives that were "born immersed in the complex technological environment" (p. vii). Because of the powerful functions of the internet, digital natives have an "onslaught of materials, videos, and data at their fingertips" (Hunter-Doniger, 2020, p. 38), they spend more time on digital screens,

engaging with social media, and texting than reading the actual books. They are comfortable using web technologies such as Facebook and blogs, participating in creative writing, manipulating, tagging, and communicating online (Ryan, 2010). Therefore, these young people have enough background with utilizing technologies and they would not feel overwhelmed if technology is integrated into their art learning experiences. Rather, I believe that would be an effective connection to their everyday lives and cultural background. As Generation Z enjoy creating and maintaining social networks to share, support, and feel associated with people they have known (Ryan, 2010), technology could be able to enhance their art learning experiences and new possibilities by bringing joy, play and autonomy, enhancing engagement, and creating a balance with traditional art media.

TECHNOLOGY AND ART CURRICULUM + PEDAGOGY

In order to associate the technology with art curriculum and pedagogy, we need to figure out what technology will bring to the class for both art teaching contents and strategies, and the connections between them. Tillander (2011) indicated that

Technologies are viewed as complex, and uniquely grounded in social and cultural contexts with room for creative exploration and context. This requires developing a balance among creative expression, knowledge, and skills. In educational settings, this balance must also include fostering creative development for students across all learning styles, and various social, cultural, and economic barriers. (p.42)

Technology provides more comprehensive creative resources and concepts in art learning. It maintains comprehensiveness in a larger context and takes globalization and multiculturalism into considerations of art learning. Multicultural education is defined as "working with students who are different because of age, gender or sexuality, social and economic class, exceptionality, geographic location, religion, political status, language, ethnicity, and race" (Ballengee-Morris & Stuhr, 2001, p. 8). It is important to include multiculturalism in the art education as to "understand culture and cultural diversity because culture provides

beliefs, values, and the patterns that give meaning and structure to life" (Ballengee-Morris & Stuhr, 2001, p. 6). Technology contributes the opportunity for students to learn art that incorporates "contributions of diverse cultures" (Marshall, & Patricia, 2001) and their own diverse backgrounds. Marshall & Patricia (2001) mentioned that "multimedia technologies promote communication and interactions between diverse groups with the purpose of helping students learn more about content they study in subject areas such as social studies, science, psychology, and even foreign language" (n.p.). The articulation of content diversity can also be applied to art education, such as experiencing art making and learning from different cultural contexts.

Technology not only diversifies the contents of art learning, but it also embraces diversity in social and emotional learning. It provides methodologies that embrace social and emotional learning in different ways with diversity in choice-making. The choice of implementing technology in art learning is as essential as fostering students' creative development. For instance, technology integration in pedagogy can change traditional teacher-directed learning style to pedagogies that are more led by student interests and self-explorations. As an elaboration, Teaching for Artistic Behavior (TAB) is a choice-based method of teaching art education that encourages children to discover new ways of learning (Hunter-Doniger, 2020, p.38). TAB grants students the opportunity to investigate their own interests while working on their art techniques, skills, and ideas, and technology is an effective tool to help art educators achieve it. For example, students can utilize technological tools for research their interests in art projects and use the online platform to document ideas and resources. Thus, dapting technology usage to art learning will enhance freedom of choice in art teaching and learning while increasing students' autonomy throughout the learning process.

TECHNOLOGY ENHANCING ART LEARNING EXPERIENCE

There are various perspectives that technology tools can enhance the art learning experiences. In the general, in terms of enhancing the learning and studying experiences, Salen et al. (2011) said:

"TECHNOLOGY COULD BE ABLE TO ENHANCE THEIR ART LEARNING EXPERIENCES AND NEW POSSIBILITIES BY BRINGING JOY, PLAY AND AUTONOMY, ENHANCING ENGAGEMENT, AND CREATING A BALANCE WITH TRADITIONAL ART MEDIA."

Educational technology is used as a tool to deepen a student's understanding of a particular subject, concept, or skill and to foster communication within the school and beyond. Applications are chosen based on their ability to model or extend the thinking or problem solving that is central to the classroom. At times, technology is used to imitate what is being done in the classroom, thus reinforcing learning and often times allowing students to move further forward to enhance learning. (p. 80)

The skills such as in communication, and problem solving are the outcomes from the integration of the technological tools to students' personal growth in learning. It also improves the classroom learning experiences for students. According to Salen et al. (2011), "the primary educational goal is to integrate technology effectively into the classroom with the purpose of adding breadth and depth to all students' educational experiences" (p.79). This breadth and depth bring students' "new means of demonstrating their understanding...[that] are compelling and assist in the development of skill sets necessary in contemporary professions" (Salen et al., 2011, p. 80). The technology tools will benefit the learning and self-growing process of the students to demonstrate their enhanced experiences. The relationship of technological tools and art will have more skills and benefits in sensibility along with the logic skill set. This concept is shown in Menano's (2017) writing by using Riley (2012)'s words to emphasize the importance of integrating art and technology in education,

(...) there are positive relationships between arts integration and en hanced social and emotional skills, while at the same time encouraging self-exploration through cultural and community awareness. While the hurdles of financing, time and resources will continue to exist for arts integration, the end result of higher test scores, increased deeper learn ing, and enhanced personal skills could prove great enough to afford the risk. (p. vii)

Beside the social and emotional skills that technology can implement into the art learning experiences, technology can also help support self-exploration. There is a strong reinforcement of student autonomy from incorporating technological tools into art teaching with enhanced art learning experiences, which also solved

the problems of "traditional methods of teaching art have not fit easily with the individualistic, connections-driven learning that interactive hypermedia technologies support" (p.44) provided by Prater (2001). Students' autonomy is an important aspect of art learning. According to Hunter-Doniger (2020), "research has shown that learners who have educational autonomy and are in control of the meaning-making process tend to solve problems through intrinsic motivation (Jaquith, 2011)" (p. 38). In accordance with Quinn (2011), it demonstrates how art students can achieve a sense of freedom and autonomy through the use of interactive computer technology in e-learning. Therefore, autonomy is a key component of online education. Meanwhile, the integration of technological tools into art study will have a positive effect on students' learning habits. Using technological tools to "understand and master relevant professional knowledge, and apply the learned professional knowledge to practical design, so that students can change from passive to active learning and enhance their interest in professional learning" (Wang, Zhe & Xing, 2019).

Besides art learning will become more active, with strong self- exploration and autonomy, technology could also improve the accessibility of art education to students with various backgrounds. According to Forssell's (2019) words, "technology is great at making some tasks more efficient." (n.p.). The functionality of E-learning demonstrates this efficacy. "E-learning is becoming a more viable alternative to traditional face-to-face art education instruction, too, partially because of greater accessibility to more powerful computing technologies and higher bandwidth capabilities for a broader cross-section of the public" (Quinn, 2011, p. 19). When we encountered "some disruptive situation in transitional schooling," (Quinn, 2011, p. 19) e-learning increased accessibility and provided a potential solution for remote locations, such as the Covid-19 pandemic we recently experienced. Another accessible efficiency is that "many students with disabilities face extraordinary challenges, from getting to school to participating in educational activities with non-disabled peers" (Quinn, 2011, p. 19), ensuring educational equity and continuity for learners from diverse backgrounds. For students with physical, visual, severe, and multiple disabilities, assistive technology enables them to express and experience their talents through new modes of communication—the visual and performing arts.

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As Coleman & Cramer (2015) said, "technologies were able to open doors to art education that otherwise were unable to be opened" (p. 7). Not only do technologies enhance the art learning experience, but they also create opportunities for more students to be involved in art learning.

Moreover, through the integration of technology and learning, a collaborative opportunity for art learning and art making will be created. Collaborative learning, according to Laal et al. (2014), is defined as

Learners who work together in cooperative teams achieve higher levels of thoughts, preserve information, and keep knowledge more than learn ers who work individually (Johnson, & Johnson, 1986). Likewise, Samu el Totten, et al. (1991) stated that joint learning and sharing knowledge, give learners the opportunity to discuss about the subject, be responsible about their learning, and therefore lead to create critical thinkers. (p. 4057)

Students will work together to develop art using technology, and the collaborative learning experience will shift away from the instructor-centered and toward the learner-centered. Quinn (2011) for example, described an online art production experience that allowed undergraduates students to interact in an asynchronous and constructivist e-learning environment. Due to the asynchronous (or anytime and anywhere) nature of this process, students had sufficient time to create digital artworks. Meantime, the learnner-centered collaborative learning encourages autonomous learning and try new approaches to problem solving. Technology will encourage this kind of collaboration that "provides students with an opportunity to engage in new ways of knowing and making meaning together as they work" (Quinn, 2011, p. 24). In such different perspectives, technology will aid art education in a variety of ways.

Additionally, technology could support art learning and provide different possible teaching and learning forms. "Technologies are any flexible system—be it an apparatus or a procedure—by which something is created or achieved; they may be used in unexpected ways; and they can take various forms" (Kraehe, 2019, p. 5). Current trends to bring innovation in art learning are Virtual Reality (VR) and Augmented Reality (AR). Clement (2021) defines virtual reality as "a computer technology that creates a simulated environment" (n.p.). Jason Lanier,

president of the VLP company, coined the term in 1980. The term 'virtual' refers to close, whereas 'reality' refers to experience. As virtual reality is fully immersive in a virtual environment, augmented reality will be the virtual objects overlaid on real-world environment (Clement, 2021). Beyond the limitation of traditional learning experiences, those technological tools provide multidimensions to the learning experiences and new perspectives in art learning. Wang et al. (2019) mentions,

When virtual reality technology is introduced into teaching, it will break the previous single rigid teaching method and form a multi-faceted inter action between teachers and students. It also shows another advantage of this technology is the sense of interaction, which enables students to experience and express what they see and think independently and create an environment of independent learning (p. 2).

This newly-art learning integration with advanced technology tools, like VR, will "effectively promote students' learning enthusiasm" (Wang, Zhe & Xing, 2019, p. 1). A multi-dimensional art learning experience that incorporates advanced technology will broaden students' exposure to various approaches to art while also stimulating their creativity and imagination. According to Wang et al. (2019), "using virtual reality technology to construct art design teaching is an important trend of future education development. Art design teaching under virtual reality technology can compress learning activities into molecules or expand perception activities into space" (p.2).

Furthermore, the metaverse will be a future opportunity to provide the innovation of art education that builds up on virtual reality and augmented reality. According to Collins (2008) "The term metaverse was coined by Neal Stephenson, in his 1992 science fiction novel Snow Crash, to describe a persistent, immersive 3D virtual environment in which everything from business to entertainment could be engaged in by any user, anywhere in the world, with access to a terminal" (n.p.). Metaverse learning will be the leading provider of high-quality, interactive, and immersive content through the use of virtual and augmented reality solutions, collaborating with educational and industry partners to develop e-practical digital solutions for a variety of subjects and skills that provide real-world experiences and allow learners to develop skills at their own pace

"TECHNOLOGIES WERE ABLE TO OPEN DOORS TO ART EDUCATION THAT OTHERWISE WERE UNABLE TO BE OPENED" (COLEMAN & CRAMER, 2015, P. 7).

3A

(Metaverse Learning, 2022). Looking forward to the metaverse's support for art education, which will enable realistic learning without any constraints that currently exist.

BALANCE OF USING TECHNOLOGY WITH TRADITIONAL MEDIA

Although there are many advantages that technology can add to art education, I do not believe technology can fully take over our traditional art teaching methods. There should be a balance of how much technology is used in art learning. This balance involves incorporating technology with traditional media and learning methods in order to enrich the art learning experience. As Mayo (2007) mentioned, "art educators have the unique opportunity to integrate studio practice with technology that can help lead the way in teaching with technology and crossing boundaries between real-world materials and digital media" (p.48).

Embracing both technology and hands-on learning and making experiences in art education is crucial to art education. Integrated technology will encourage students to experience making art in a different approach. The richness of the art-making experience is integral to the art education students are expected to receive in the art curriculum. Finding the balance between virtual technology and traditional media learning is necessary because there is not a single way that can replace another completely among those different art experiences. As Mayo (2007) suggests, using technology can be both a powerful visual research tool and also one that pushes students to add their own ideas into pre-existing content:

The Internet not only offers image-searching features in Google[supTM] that can facilitate brainstorming for concepts but also provide refer ence materials for developing imagery. World Wide Web designers often use this technique to find images suited to the style (e.g., 1950s' cars) of their assignment that they then imitate to develop a new image. It is important that images are transformed significantly enough to be distinct from the original research source. (Mayo, 2007, p. 50)

Technology can also be utlized as part peer collaborations in art learning. Using platforms like Miro and Google Classroom to enhance students' art learn

ing engagement and fostering relationships among them. This has been especially apparent during the Covid-19 pandemic when many classes met virtually via Zoom. While technological tools are incorporated into the art curriculums, they will expand the meaning of the original use of tools. Tillander (2011) indicated:

As teachers have become more comfortable and proficient with technol ogy, it is the stage of the invention that offers teachers an opportunity to be creative, subvert original intentions of the programmer, and "repur pose technology" (Floden & Ashburn, 2006) for learning and mean ing-making. (p. 45)

Art educators could grant the new purpose of the technological tools that are specially for the art learning. This "repurposing of technology" will empower digital tools to serve as catalysts for enhancing spaces of artistic learning in pedagogy, curriculum, and making itself. They are valuable tools that offer educators the ability to give students a wider scope during their art learning in a similar description that Tillander (2011) talks about google earth as "more than a map" and is used as "an active engagement by constructing and designing virtual tours linking educational content" (p.45).

Thus, technological tools foster innovation in art learning that can enrich research, student collaborations, and art making experiences. As said by Kraehe (2019),

Art education is a field of practice that is flexible and diverse in its re lationship with technologies old and new. If one understands that tech nologies are not reducible to mere gadgets, then their creative and con nective potential can be more fully and ethically realized in art class rooms, communities, and the broader world. (p. 6)

There is enormous potential as the relationship between technology and traditional media, and there will be abundant impacts on art learning during different settings.



STATION 2:

MAPPING PROJECT

Introduction

To assist myself in becoming more familiar with digital tools, I conducted an art-based research project called the Mapping Project.

This research project was the beginning of my research and has helped me to develop my other research projects.



This mapping artwork gathered numerous examples of how to incorporate technology tools into art curriculum and pedagogy that I could apply to my future art teaching practice in the future art learning space. While making this art-based inquiry, I mapped out the possibilities for diverse learning experiences that technology can provide. It demonstrates my narrative perspective on acquiring technology tools through personal use, classroom instruction, peer inspiration and sharing, and lesson planning. I classified the technological tools I used into four stages of integration into art education:

researching, learning, engaging, and creating. The majority of the tools I chose are featured in the videos to demonstrate how they are used. Some are from peers and include my interaction, like the Nearpod and MixCollage, and one is a simple prototype I created for my imagined art tools for my future art education studio, like the XD APP Prototype.

Additionally, after collecting and documenting those instances of technology tool usage. I converted them to QR codes. QR codes are an art interaction tool that I have discovered in recent years in museums and galleries. Correspondingly, I chose QR codes because I wanted to incorporate Human-Computer Interaction (HCI) into the interaction portion of my piece, which also represents the future of technology-influenced art learning. Following that, I printed QR codes and transferred them to Chinese rice paper. Due to the fact that my first art class was Chinese painting, this Chinese rice paper represents my entry point into the world of art.

Note. Image of the mapping project from Dr. Smith Class Figure 4 Mapping Project

Moreover, those QR codes are a representation of the current state of art-based inquiry and future imagination. This transaction establishes a link between my previous art education experience and the present and future. It demonstrates how artmaking, from traditional ancient painting to contemporary technology, has involved contemporary art, which is the dialogue between past and future art education. I created a timeline of the QR codes as I learned and used those tools. It depicts the "in-process" setting in which I planned to gather technological tools and learn how to create more playful, joyful, and engaging art experiences for students.

Furthermore, this artwork is interactive. During the interaction portion, there will be a survey QR code for them to complete as feedback after they "view" and "interact" with this artwork. I chose to make this artwork interactive because art education requires interaction with instructors, peers, materials, and processes. It is critical that I learned at TLAD that both content and engagement in the learning process are necessary components of art education. As I gathered technology tools and transformed them into this artistic mapping project, I was reminded of the a/r/tography that binds my roles as an artist, researcher, and educator. This artwork enables me to investigate the possibilities of teaching with technological tools in the future to support my research and teaching practice. Likewise, it serves as a connecting point for theory and understanding from my artist, researcher, and teacher identities, assisting my inquiry in a continuous pro-

STATION 3:

COLLAGE MAKING WITH TECH

Introduction

During the fall of 2021, I designed and taught a collage making workshop at the RISD Museum. It was a collage art making workshop that uses artworks from the RISD museum to teach about nonobjective art. The goal of collage making was to stimulate children's creativity and open up creation possibilities around digital tools, and led them to consider new possibilities for 2d artmaking in both physical and digital ways. I made observations and conversations with children throughout the workshop to explore possibilities for play, joy, and choice/autonomy created by digital tools. This workshop experience assisted me in further exploring curriculum design with the incorporation of technological tools.

CURRICULUM

RISD MUSEUM

More Events

Open Studio: Collage — Liven it up!

Sunday, November 21 / 1:30-3:30 pm



Using images from the RISD Museum's collection of artworks, create your own collages with digital and physical materials. Open to all ages. Drop-in. Free.

RISD Museum admission is free every Sunday

Note. RISD museum website event Figure 5 Open Studio: Collage -- Liven it up!

Unit Title: Liven it Up!

Unit Concept:

Creatively exploring non-objective art in both physically and digitally Standards Connections:

3-14 years old children at RISD Museum

Lesson Concept

Artists explore collage as the way to make non objective art. They make non objective art as the attemptation to visualize the spiritual

Assignment

This lesson will allow students to investigate non-objective art by creating collages using artworks from the RISD museum. The art collage making activity will stimulate students' creativity and expand their creative potential, prompting them to consider alternate methods of 2d art creation, both physically and digitally.

It will be an informal art exploration activities.

I will discuss what non-objective art is, demonstrate how to build collage, and walk students through a lesson on how to utilize the digital collage application. They will be assigned to one of the stations to begin creating collage and rolate.

Students will select artworks from the RISD Museum collection in order to begin deconstructing and reconstructing the art collage as

Visual References/Precedents



Romare Howard Bearden, Ritual, 1965



Michael Ginsborg, Islamic Motif, 1980



Wassily Kandinsky, orange, 1923

Figure 6 Group of Artwork Refernces

TRYING NEW THINGS

At the starting time, there was no one there. It is always difficult to be the first participant. I tried to make strong eye contact with people and families who were passing by. I finally approached to a family with two boys (written as participants A and B) and introduce them to our collage-making activity. The participant A and B appeared uninterested in the art activity in the beginning. However, I attempted to inform them that we not only havd a physical making activity, but also a digital collage making station. They were drawn in by the digital collage making at the same time, and after a brief attempt to see what the digital collage making looked like, they agreed to come





Note. Children Making Digital Collages Figure 7&8: Collage Workshop

After I showed them how to use the collage app, the participant B seemed very interested in experimenting with different effects on the app for his collage. He only cut out one collage image and began decorating it with various effects. Participant A, on the other hand, enjoyed cutting out different parts of artwork with different organic shapes and layering them together. I asked them if they were having an art class with digital tools in school. They said only the physical hand making, and I asked if they wanted to have the art making with digital tools. They said yes.

More friends and family began to arrive. There was another family with two children(written as participants C and D). The participant D arrived quickly and began to explore various functions that I was unaware of, such as the app's ability to search for the image and different frames, layer cutouts, and so on. When I asked her if she had taken any digital art classes at art school, she said no, but she had learned digital art through online videos and really enjoyed making art digitally at home. Throughout the workshop, participant C was the most quiet and focused. Despite the fact that the theme is nonobjective art making, he attempted to cut a dog head from the artwork, and by using different doodle tools to draw lines and coloring the background with shape stamps, he was able to make them very specific and detailed. I don't want to interrupt his work and tell him he is going in the wrong direction with the theme during this collage making; instead, I would like to give him more freedom to explore the art on his own terms without any interference in ideas. Unfortunately, he threw away his work by accident, but he was not upset. He just started over by cutting out a new dog head. Surprisingly, he was not attempting to recreate the previous, but rather began with new decorations and colors. He was gradually experimenting with different colors and strokes with his hand. He was meticulous with each line he drew, ensuring that they qualified his standard and saved



Note. Children Making Digital Collages Figure 9: Collage Workshop

He stayed at the digital station for a longer period of time, concentrating on making his collage as perfect as possible. He ended up drawing two different colors of wings for this dog. The wings are embellished with pink and green stripes and black crosses on top. Each color is also softly blended with a blue halo and a red flash, which really enlarges the image to work on the details, and the same goes for the ears. The dog was then decorated with hearts all around it. He was very satisfied with his final work.

EXPERIMENTING DIFFERENT CHOICES

Simultaneously, a friend group of two boys (written as participants E and F) arrived. They were absolutely ecstatic as they used their fingers to stretch the cutout as far as possible, well beyond the paper's boundary. They are boisterous and excited about comparing their cutouts to determine who created the larger size. When they discovered the various shape options, participant E immediately grabbed the poop-shaped cutout and exclaimed, "I made a poop!" Participant F overheard and saw this and asked me to show him where to get a poop-shaped cutout and how to make one as well. Then they laugh and discuss how they are going to make more poop and decorate them. I could tell they were having a great time with this. They then discovered the triangle painting tool and asked me to demonstrate how to create triangles of a larger size. They kept discovering new tools and were delighted to learn and play through the collage making process.

Participant C, who was creating the collage of a dog sat beside participants E and F, was actually teaching them how to use various painting tools. participants E and F end up using triangle painting tools that have been covered in poop. Following that, they continue to make physical poop collages.



Note. Children Making Digital Collages Figure 10&11&12: Collage Workshop





COLLAGE MAKING OR "POOP" GAME?

TRADITIONAL VS DIGITAL

Two siblings (written as participants E and F) came in together and began with the physical collage. Participant E was interested in cutting out artwork with blue backgrounds, some in larger shapes and others in tiny triangle shapes. She drew the outline with pencils and attempted to adhere her collage inside the drawing with different shapes she cut out. Participant F began with a single cut-out piece of artwork and worked his way up to developing a drawing from the collage. When I inquired as to what he was creating, Participant F stated that he had no idea but would figure it out as he continued to draw. His final pieces were a variety of geometric shapes in a variety of colors that formed rectangles. Additionally, a black triangle shape emerges from the colorful rectangle.

Participant E intended to experiment with a digital collage. Once the spot became available, she abandoned her physical on-hand collage in favor of the digital version. She was falling in love with the app and discovering how much easier it was for her to

create the collage art. She continued to play with it until the section ended and she was forced to rup up and leave. She also asked her mother to photograph the app, expressing her desire to use it and create more at home. Participant F completed the physical collage and joined her digitally.

He was also taken aback by the variety of shapes used to cut out the artwork and shape them into the umbrella, as well as his ability to control the size of the umbrella to be much larger than the paper and as small as possible. He began enlarging and contracting it as a game he created, which are experiences he will most certainly not have with physical collage making. Additionally, an animation can be played at the end of the phase to demonstrate the layers of the collage, which gets the attention of all participants there.





Figure 13&14: Collage Workshop

 4 8 4 9



Survey Result:

During the workshop I chatted casually with the participants and asked them some questions. Here is a brief summary list of their replies to the three big questions I posed

Survey Questions:

- 1. THE BEST PART OF MAKING A DIGITAL COLLAGE?
- Easy to make shapes
- Easy to experiment art making and undo/redo
- The cutouts/doggie
- Being able to go back and correct
- Be able to cut digitally
- Drawing the triangles on the poop
- Drawing the pop
- 2. WHAT WOULD YOU WANT TO BE DIFFERENT IF YOU CAME TO THE WORKSHOP AGAIN?
- Using image selection
- Have more art samples
- nothing
- 3. WHAT DID YOU LEARN DOING THESE PROJECTS, IF ANYTHING?
- Art is fun
- Have fun
- To explore be patient + have fun
- They are very cool
- Collage comes in different shapes and kinds
- Sometimes it looks boring, but it gets better and better

SOME THOUGHTS...

My work was to demonstrate the app's various tools but not to guide them through the process of creating art. It surprised me that they all naturally explored the app beyond my instructions, experimenting with various functions and creating their collages as a result of their various experiments.

I was not expecting the collage making to be this lengthy, and it is clear they are putting a lot of effort into their works and took time to explore. I was amazed at how quickly those children grasped the app and began exploring its various functions outside of my tutorials. I was also surprised they could create digital art collages in such a short period of time, but they choose to have their attention focused on exploration and are unwilling to leave the station. Rather than creating artworks, some of them are playing with it and having fun creating the app as a toy in their hand. I found out how technology enables them to spend more time creating and experimenting with effects. Because of the do/undo button, they are aware that they can always return to their design later and delete it. The majority of children's digital collages are distinct from their collages, as they discover new/different possibilities provided by the app.

Based on the research of this workshop experience, I would like to keep incorporating digital tools into my new curriculum designs to encourage children and youth to engage in art investigating, artmaking, art experimenting, art collaborating, and art presenting. Art learning will be active in this case, with play, joy, and choice/autonomy.



STATION 4:

CURRICULUM DESIGN

INTRODUCTION:

This curriculum design incorporated both traditional media and technological art making through art investigation, artmaking, collaboration, and experimentation. The lessons would support the children and youth to experiment with both forms in one curriculum, gaining an understanding of the advantages and uniqueness of both traditional media and technological forms. Meanwhile, they have the opportunity throughout the lessons to learn through play, joy, and choice/autonomy.

During the process of designing the lesson, I discovered that technological tools and traditional media can be cohesive and enable enhanced exploration for children and youth. Unfortunately, due to COVID-19, the lessons were not executed with students.

CURRICULUM DESIGN

CURRICULUM TITLE: TELLING MY STORY
AGE LEVEL: 12-14

CURRICULUM SUMMARY:

This is a creative drawing class designed to teach students how to use both physical and digital visual drawing to tell a story. The digital visual drawing will teach students how to create a three-dimensional visual story from a two-dimensional digital platform, which is similar to animation. This lesson will involve four classes, from brainstorming with physical sketches, conducting research, and mastering digital drawing tools, to completing and presenting the final project in class.

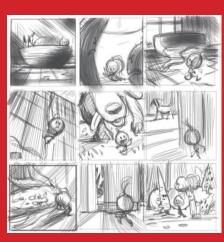
CURRICULUM OBJECTIVE/STUDENT LEARNER OUTCOMES:

Students will be able to use drawing creatively to create a narrative visual story and will learn how to convey messages and expressions through drawing after completing this lesson. By utilizing and mastering the digital tool-mental canvas, students will be able to create their visual stories in three-dimensional and animated, as well as investigate various drawing perspectives and space. Students will gain creative drawing experience through both physical and digital drawing.

VISUAL REFERENCES/PRECEDENTS:



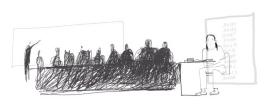
Note. Images from Website
Figure 15 2D Visual Reference by Lisa



Note. Images from Website Figure 16 2D Visual Reference by Larissa Marantz



Note. Image from Mental Canvas Website Figure 17: Mental Canvas



I COULD HIDE MY DYSLEXIA BUT I COULD NOT HIDE ME BEING ASIAN AMERICAN



AWING GAVE ME POWER



TO CONNECT

Note. Images from Mental Canvas WeBsite
Figure 18&19&20 Being Asian American by @carolhsiungof

LESSON PLAN

CLASS SESSIONS

CLASS 01

Brainstorming + Physical Sketch

Motivation: Class begins by displaying visual references and examples. Discussing and defining what visual storytelling is and how to create one.

Exploration: Having the student conduct research on visual story examples that interest them and brainstorming on their own.

Reflection: At the end, a brief discussion will allow students to share their thoughts and ideas.

Important Planning Notes:

- Students check ins
- Discussion period at end

Material Needed:

- Slides(Introduction presentation)
- Paper and pencil
- Ipads with Mental Canvas installed

CLASS 02

Learning Mental Canvas & Research for Final Project

Motivation: Begin with the mental canvas examples and play the mental canvas tut orial videos.

Exploration: Allowing students to experiment with the tools and functions on the mental canvas on their own. Then allow them to conduct research for their projects.

Reflection: A brief discussion at the conclusion to allow students to share their varied experiences with both physical and digital drawing and storytelling.

Important Planning Notes:

- Students check ins
- Tutorials and questions
- Discussion period at end

Material Needed:

- Slides(introducing metal canvas & tutorials)
- Ipads with Mental Canvas installed

CLASS 03

Working Day

Motivation: Beginning with a Q & A session about the difficulties and questions they encountered while creating the visual story drawing on Mental Canvas.

Exploration: Students were encouraged to continue exploring with their own creative story drawing project.

Reflection: A brief discussion will allow students to share their progress at the end.

Important Planning Notes:

- Students check ins
- Q and As
- Discussion period at end

Material Needed:

• Ipads with Mental Canvas installed

CLASS 04

Final Critique + Reflection Share

Motivation: Students will present the final project to the class.

Exploration: Having the student conduct research on visual story examples that interest them and brainstorming on their own.

Reflection: At the end, a brief discussion will allow students to share their thoughts and ideas.

Important Planning Notes:

- Set up the station and visual others work freely
- Discussion about both final works and the experiences
- Talking about self and others

Material Needed:

• Ipads with Mental Canvas installed

DESIGN THOUGHTS...

Based on my experience at the museum workshop with both digital and physical collage making, I discovered that there are ways to combine digital and physical art making experiences. My intention with this curriculum was to define and demonstrate the benefits of balancing traditional media with technological tools that open up possibilities for digital natives (children and youth). It is also an investigation into how technology tools can be used to enrich the art learning experience by combining additional perspectives and layers into art learning.

If the lesson could be taught in the future, I would like to do the observation and conversation with the students to gather more feedback for the research project.



STATION 5:

RISDEDU APP DESIGN



INTRODUCTION:

I collaborated with a classmate to conduct a UI/UX design project called RISDedu during the winter session. We started with research on the potential market and competitors, like Skill-share, and produced hypotheses to develop needs from making personas and storyboards. Then, we mapped out the navigation and finally created different prototypes of the designs. RISDedu assisted me in compiling a comprehensive investigation into the effects of art learning experiences delivered via technology and discovered the strengthened engagement of art learning experiences could provide to diverse students from various locations.

MIND MAP

This mind map shows our brainstorming process for developing the app for art education. Based on different topics about functions, goals, features, target audiences, and results, we started the research of different art learning apps for different purposes and finally conducted the direction for our app.

Design Hypothesis:

RISDedu is an art-learning app where you can learn with and from RISD art students and faculty artists. In comparison to other art-learning apps, our app offers unique experiences that encourage children and youth to collaborate with RISD artists while learning through the creative workshops and artwork reviews.

Our app features are free and easy access. Our goal is to educate art and design with our app to help discover one's own strengths, interests, and abilities. To create an art community of various ages and backgrounds.

Functions Result Art Education

Design Drivers:

- Children/Teen
- Art Learning
- Artworks review
- Collaborative community
- Align with RISD
- Affordable and accessible education
- Guidance
- Collaborate with RISD artists while learning through the creative workshops and artwork reviews.

Note. Image from Miro Figure 21 Mind Map for RISDedu

USER PERSONAS & STORY BOARDS

Following the research, we conducted user personas to better understand our different types of users. Based on each persona, we created different story boards to emphasize the solution to pain points and unique features for our app.

STORY BOARD 1

PAIN POINTS

- Limited art education resources
- Difficult to do home Learning and self-learning
- Hard to find the suitable art education materials

SOLUTIONS/FEATURES

- Learning art at home
- Access anywhere at anytime
- Provide valuable art education materials
- Discuss with other art learners
- Customized self-learning experiences



Note. Image from Procreate Figure 22 Story Board by Feifei

USER PERSONA 1

NAME: Jessica AGE: 10 years old

OCCUPATION: Elementary school student

ABOUT: Jessica is a 5th grade student from a small town in Texas, where is not much art education resources. She has seen her friend do art as a hobby and would like to try, but her parents want her to focus more on education. Also really busy with work and doesn't have time to take and from art class. She has tried learning on her own through youtube tutorials, but she was overwhelmed with so many choices and directions.

MOTIVATION: Jessica needs a tool to be able to offer her a clear direction to explore art further and experiment more. It would be beneficial for her to learn and receive feedback from other artists as a growing artist with cheaper cost.

USER PERSONA 2

NAME: Nina

AGE: 16 years old

OCCUPATION: High school student

ABOUT: Nina is a junior in high school from Beijing, China. She is enrolled in art classes at school and enjoys painting in her spare time. She wants to study fine art in college and her dream school is the Rhode Island School of Design. However, her art classes at school were limited and it will be difficult for her to attend summer art classes at RISD. She is eager to receive some useful art workshops that will provide suggestions for her art making and aid in the preparation of her portfolio at home.

MOTIVATION: Nina need help to receive support for her artworks without having to travel to other countries. She also wants to take some art workshops to help her create a diverse portfolio.















STORY BOARD 2



Note. Image from Procreate Figure 23 Story Board by Julia

PAIN POINTS

- Long Distance
- Expensive cost
- Portfolio preparation

SOLUTIONS/FEATURES

- Access anywhere at anytime
- Free cost
- Clear pathway learningProfessional feedback and direction

STORY BOARD 3

PAIN POINTS

- No teaching opportunities
- No financial support

SOLUTIONS/FEATURES

- Learning how to create the workshop
- Uploading videos on the
- Make money to create workshops



Note. Image from Procreate Figure 24 Story Board by Julia

STORY BOARD

USER PERSONA 3

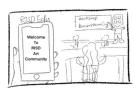
NAME: Hannah Oh AGE: 18 years old

OCCUPATION: RISD student

ABOUT: Hannah is a RISD student. She is very busy and would like a tool to be able to further explore the branches of art in a more accessible way. Meanwhile, she wish to have the opportunity to practice teaching art when she get into the second year. MOTIVATION: Hannah needs a resource that will help her learn more about art with her busy time schedule. She also needs a resource where she can receive feedback from a wide range of people from her school. She wish there is an app can help her to explore more majors and help her choose her major. She also wish to share her art practice in workshops and teaching opportunities.















PAIN POINTS

- No teaching opportunities
- No financial support

SOLUTIONS/FEATURES

- Learning how to create the workshop
- Uploading videos on the
- Make money to create workshops

Note. Image from Procreate Figure 25 Story Board by Feifei











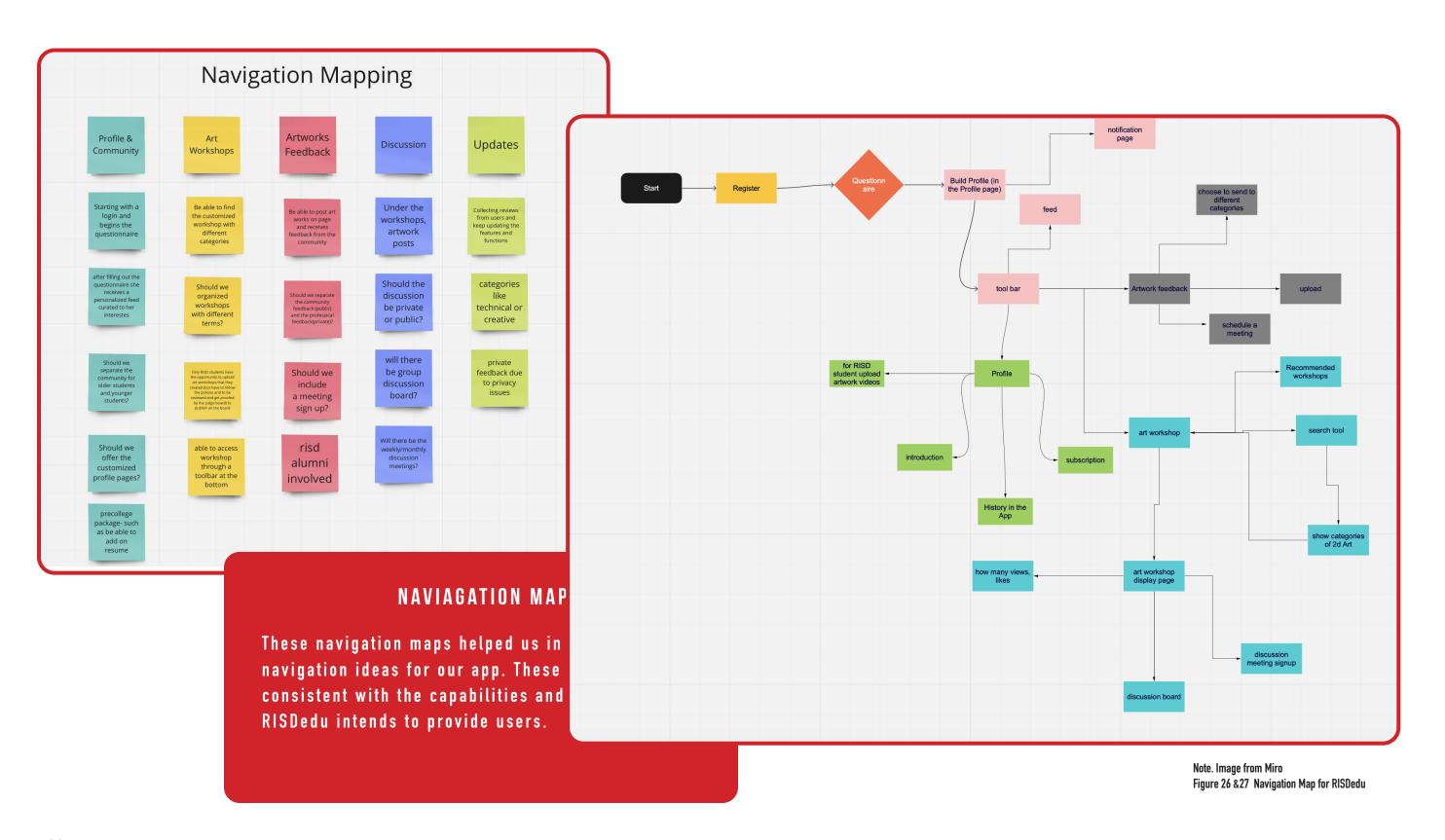








NAVIGATION MAPPINGS



 $6\,8$

LOW FIDELITY PROTOTYPE

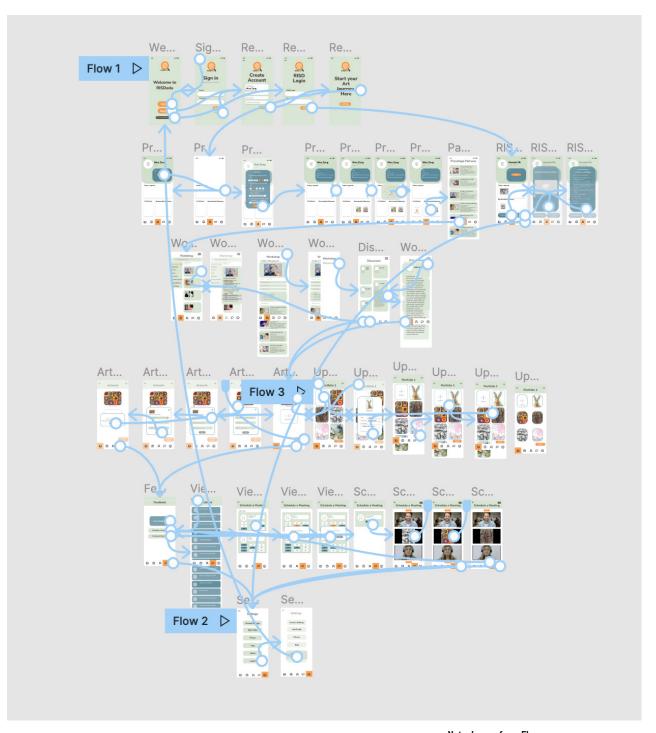
This prototype is a quick and easy way to visualize our design concepts in the tangible and testible version.



Note. Image from Miro Figure 28 Low Fidelity Prototype for RISDedu

FINAL PROTOTYPE

This prototype is the more realistic version, which as close as possible to the ture representation of UI design



Note. Image from Flgma
Figure 29 High Fidelity Prototype for RISDedu

SCAN TO VIEW FINAL PROTOTYPE



DESIGN THOUGHTS...

The motivation for designing this art learning app stems from the inconvenient access to and needs for art education as illustrated in the storyboards. We designed this art learning app following the design processes: research/hypothesis, persona/user stories, scenario/storyboard, low fidelity navigation and skin, and high fidelity prototype to enable improved engagement opportunity and quality access to art education from the art institution RISD. There will be valuable resources for art workshops, as well as feedback and discussion from RISD faculty and alumni. The app will provide convenient art learning experiences that are tailored to each user. This app enables students of all ages and backgrounds to discover their own strengths, interests, and abilities through art and design education and to form an art community.

From designing the app's UI/UX, I learned how critical user experience is to art learning experiences, just as important as the content provided. The user interaction and experiences provided by technology will boost engagement and provide users with more autonomy in art learning. Technology creates new possibilities for art education by allowing for various approaches, times, and locations. There are still a few functionalities that require updating in response to user feedback. I wish to continue developing these concepts, and I hope to bring them to fruition in the future.



CONCLUSION

This research thesis at RISD Teaching + Learning in Art + Design program enables me to examine technological tools in art learning for digital natives from a variety of perspectives. After conducting both literature and project research, I gained the necessary background knowledge and responses to my research questions.



WHAT MIGHT ART LEARNING LOOK LIKE FOR CHILDREN AND YOUTH WHEN INTEGRATED WITH TECHNOLOGICAL TOOLS?

According to my research, integrating technology into art learning will increase those digital natives' access to creative resources and contents and could support a larger scale of globalization and multiculturalism. Additionally, technology could assist them in discovering new possibilities to investigate their own interests while enhancing their art techniques, skills, and ideas. Technological tools facilitate peer collaboration and engagement in art education, and art educators can repurpose technology as a teaching tool to supplement their art instruction. These technological tools will foster children and youth's personal growth in art education and promote autonomy in learning, particularly through online learning experiences. Technological tools, such as applications and software, can assist them in having diverse art learning experiences, including the digital tools I gathered for the mapping project. Also, advanced technologies like virtual reality and augmented reality can provide distinct learning experiences for students with varying learning dimensions and enhanced experiences.

Through the RISD museum workshop, I discovered the relationship and interaction between digital natives (children and youth) and digital tools. The mental canvas and story-telling drawing in curriculum design assisted me in striking a balance between traditional media and technological tools. The autonomy and strengthened engagement made possible by technological tools were recognized through the UI/UX design project. Each of them gives me a new insight about how technology can be used in art education.

HOW TO ENRICH THE ART LEARNING EXPERIENCES OF CHILDREN AND YOUTH WITH THE BALANCE AND CONNECTIONS TO TRADITIONAL ART MEDIA AND TECHNOLOGY?

Both technology and traditional art media would provide young students with unique opportunities and possibilities in art learning. The traditional approach will place a greater emphasis on physical materials and techniques. The usage of technological tools would stimulate young students' interests and they would gain a new perspective on art making. Incorporating technology with traditional media and learning methods would enrich the art learning experience for those who are digital natives. All three of my research projects have a combination of technology and traditional media in some way. The collage workshop was designed to let them experience both physical and digital art making under the same concepts. The curriculum design project used technological tools to let students engage in two distinct media and learn through exploration. I designed the process for them to start from traditional media to technological tools in order to experience the change in perspective and space of painting through technology involvement. The UI/UX design project was designed to use technology as a platform for better engagement with traditional art making. From both literature research and project research, it is important to keep a balance between traditional media and technology rather than have one take priority over the other in order to maximize the art learning experience for students from different angles.

DOES INTEGRATING TECHNOLOGY INTO THE ART LESSONS EXPAND POSSIBILITIES FOR PLAY, JOY, AND CHOICE/AUTONOMY FOR CHILDREN AND YOUTH?

According to RISD museum workshop observations, participants were attracted to new forms of art that experiment with technology. They discovered that there were a variety of artistic expressions that they could experiment with using technological tools. Technology-based artmaking allowed them to play during the creative process. Likewise, they were able to engage in self-exploration through technological tools. For instance, numerous children were able to experiment with the collage tool on the iPad while creating their abstract art collages, and they enjoyed learning about and experimenting with the tools and effects available for art collage creation. Meanwhile, they made choices from among the available options on the collage tool and created their own piece without being distracted by difficulties or instructors. These experiences were rooted strongly in play, joy, and choices. Moreover, the UI/UX design project fostered students' strong autonomy and self-exploration in art learning, as seen by workshop selections and portfolio reviews. Therefore, All of these could demonstrate the possibilities and enhanced art learning experiences made possible by technology.

HOW COULD TECHNOLOGICAL TOOLS IMPROVE ART LEARNING EXPERIENCES FOR CHILDREN AND YOUTH WITH STRENGTHENED ENGAGEMENT?

From literature research, advanced technologies like virtual reality and augmented reality, even the metaverse can provide art learning engagement for students in varying learning dimensions and perspectives. Through my work creating the UI/UX for RISD's art education tools, I discovered that technological tools can truly engage art learning with a wider range of students, including those with various learning backgrounds. Additionally, this collaborative and

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asynchronous learning environment promotes learner-centered art learning experiences. The discussion board fostered collaborative engagement among students from various locations. On this digital platform, every student has the same access and resources, but they can organize their own engagement and interaction with the learning materials. Thus, technological tool could provide an art learning environment that strengthened engagement for children and youth.

END

I would like to express my gratitude for the opportunity provided by TLAD to conduct research into a new category of art practice that I have never encountered before. Not only did I gain knowledge as an art educator, but it also had a potential impact on my art practice as an artist. After this one year of learning and research at TLAD, I would like to continue research into emerging and advanced technologies, collaborations between art and other disciplines, and innovative ways to provide students with new possibilities of art learning experiences.

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APPENDIX

Mapping Project QR Codes



- 2. 3D Draw
- 3. Miro
- 4. Google Jamboard
- 5. GIS Mapping



6. XD APP Prototype



- 8. AR Mini Museum
- 10. Survey

9. Mix Collage

7. Nearpod



Mental Canvas

"Being Asian American" by @carolhsiung Video
https://www.instagram.com/tv/CO--WpCgmtQ/?utm_source=ig_web_copy_link

