

Create, Connect, Contemplate: Engaging Digital Technology for the Future Art Museum and Curriculum

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Future Art Museum and Curriculum

Hilary Katz and Zachary Winegardner



Figure 1. Participant creating her digital artwork in The Columbus Crossing Borders exhibition, Dublin Arts Council, May 1, 2018. Photo credit: Hilary Katz.

“Technology that is employed in the service of story, imagination, and aesthetic experience can only heighten the rich potential of exhibitions to matter to visitors.”

(Bedford, 2014, p. 122)

Gazing into the future, how can we refocus art and museum curricula to reflect emerging digital technologies while maintaining the value of hands-on making and educator-facilitated practice? Approximately 80% of museumgoers visit without participating in facilitated programs, yet most museum education departments still focus on and prioritize programming (Blake, Smith, & Adame, 2017). As Eisner and Dobbs (1988) stated, “One reason why works of art for many visitors do not function is that they do not know what to make of what they look at” (p. 8). The same level of understanding and engagement that happens through museum tours and programs could happen through digital and analog interpretive experiences, even without an educator present.

With the goal of supplying opportunities for learners to activate the space and reach a profound understanding of art, without relying on human interactions (Anderson et al., 2017; Barrett, 2003; Dodd & Sandell, 2001; Pegno & Farrar, 2017), we—an interactive media designer and museum educator—developed an application called Create, Connect, Contemplate (C3). This article explores how to apply critical theories when developing digital interactives to deepen understanding of art about complex topics, in this case, the refugee experience, as well as encourage empathy and new inquiry.

The Exhibition: The Columbus Crossing Borders Project

We designed C3 for tablet devices to supplement the exhibition, The Columbus Crossing Borders Project, on view during the summer of 2018 at Dublin Arts Council (DAC, Columbus, OH) as part of a three-part exhibition series on *Integration, Immigration, and Identity* (Figure 1). The exhibition consisted of artwork by 34 artists that explored the refugee experience and inspired compassion for refugees. DAC is a small local arts organization that aims to engage and strengthen the community through the arts. Although we expected some public visitors to use the app, we tailored the user experience to school groups that would use the app during unfacilitated portions of field trips. These school groups consisted of international high school students, English language learners, and students from other Columbus metro area public and private schools.

Each work of art in Crossing Borders linked with adjacent paintings, using patterns, materials, and figures to connect one canvas to the next. This technique evoked the experience of “crossing borders” into unfamiliar territory, as refugees do (Figure 2). As the introductory wall label and accompanying documentary explained, the artists had to work together to create their works of art and relinquish control, metaphorically “crossing borders” and honoring refugees’ resilience and strength (Figure 3). Each

artist wrote an extended wall text (lower portion of Figure 2) to explain their artwork, background, and relevant stories. Because the exhibition did not include formal context about refugees, Katz (one of the article’s authors) designed five forms of in-gallery engagement, one of which was this app, to provide information about refugees in Columbus, encourage dialogue, prompt close looking of the works of art, and bolster visitors to contribute diverse perspectives. Although each interpretive activity stood alone, inevitably the combined experience of engaging with all of the activities informed participants’ understanding of refugees and influenced how they interacted with the iPad app.

With C3, participants created digital collages, using image manipulation mechanics from select visuals featured in the Crossing Borders artwork to generate their own story (Figure 4). After completing their digital artwork, participants reflected on their experience by considering the challenges and rewards as they “crossed borders” into unfamiliar territory (in this case, an artwork fabricated by someone else).

Criticality: Theories in Practice

Substantiated by critical multiculturalism, digital craft, and critical play theories, as well as Vygotsky’s zone of proximal development (ZPD), our iPad app created an inclusive interpretive experience to increase engagement with and understanding of The Columbus Crossing Borders Project’s themes about the refugee experience. With these theories, we approached developing our digital app through a critical lens, allowed participants to make deliberate choices, and presented space for reflection. We offered an opportunity to play and make (Flanagan, 2013; McCullough, 1998), promoted deep looking to prompt new inquiry (Villeneuve, 2017; Werner-Avidon, Clearwaters, & Chan, 2017), provided and left room for multiple perspectives (Barrett, 2003; Pegno & Farrar, 2017), encouraged empathy (Anderson et al., 2017), and developed tools for active participation by diminishing barriers for accessing art (Bedford, 2014; Pegno & Farrar, 2017; Simon, 2010).

THE ARTISTS HAD TO WORK TOGETHER TO CREATE THEIR WORKS OF ART AND RELINQUISH CONTROL, METAPHORICALLY “CROSSING BORDERS” AND HONORING REFUGEES’ RESILIENCE AND STRENGTH.



Figure 2. *common threads (what hurts one, hurts us all)* by Andrea Fox and *Alien Nation* by Dale Ziemianski (not pictured) connect via netted mesh. Installation View, The Columbus Crossing Borders Project, Columbus Academy, Gahanna, OH, December 10, 2017. Photo credit: Hilary Katz.

Figure 3. Building on the “crossing borders” theme, Osumi painted an alien figure onto her canvas based on Ziemianski’s artwork. B. Osumi. *Untitled* [Digitally manipulated canvas, 2017]. The Columbus Crossing Borders Project, Columbus, OH.

Critical multiculturalism drove the digital technology and made the works of art accessible in new ways. A critical multiculturalism framework identifies, analyzes, and resists each individual’s intersection of race, class, gender, and other systemic inequalities (Kroll, 2008; Steinberg & Kincheloe, 2009). Bhabha (1994) articulated cultural hybridity as essential to understanding refugee identity, which exists in “Third Space.” The exhibition’s “border crossings” refer to this *Third Space* by the works of art existing as neither one artist’s nor another’s. For example, Osumi painted an alien figure onto her canvas based on Ziemianski’s artwork (Figures 2 and 3), while other exhibition artists went as far as painting directly onto each other’s canvases. Using existing artworks to construct a new digital composition, the digital interactive allowed participants to engage in this *in-between* space (Bhabha, 1994) to reach a deeper understanding of the refugee experience.

We also employed digital craft, which enables participants to experiment with and discover new images (McCullough, 1998), and critical play theory, which facilitates inquiry-driven activities without risk (Flanagan, 2013). Building on McCullough’s digital craft theory (1998), digital technologies offer two specific advantages in the context of this research: (1) the impermanence of digital interactions allows for reversibility, and (2) a continuum supports a spectrum of possible interactions primed for discovery and experimentation. Rather than constructing preconceived



visuals, participants discovered varied outcomes through indeterminate play. In critical play theory, play consists of activities that present questions about human life (Flanagan, 2013). We focused on the experimental nature of play with our technology, as participants improvised to explore *Third Space* and made inquiries they may not have previously considered about refugees (Bhabha, 1994; McCullough, 1998).

Moreover, Vygotsky’s ZPD guided our process, as the model poses three areas, or zones, of what a learner can do on their

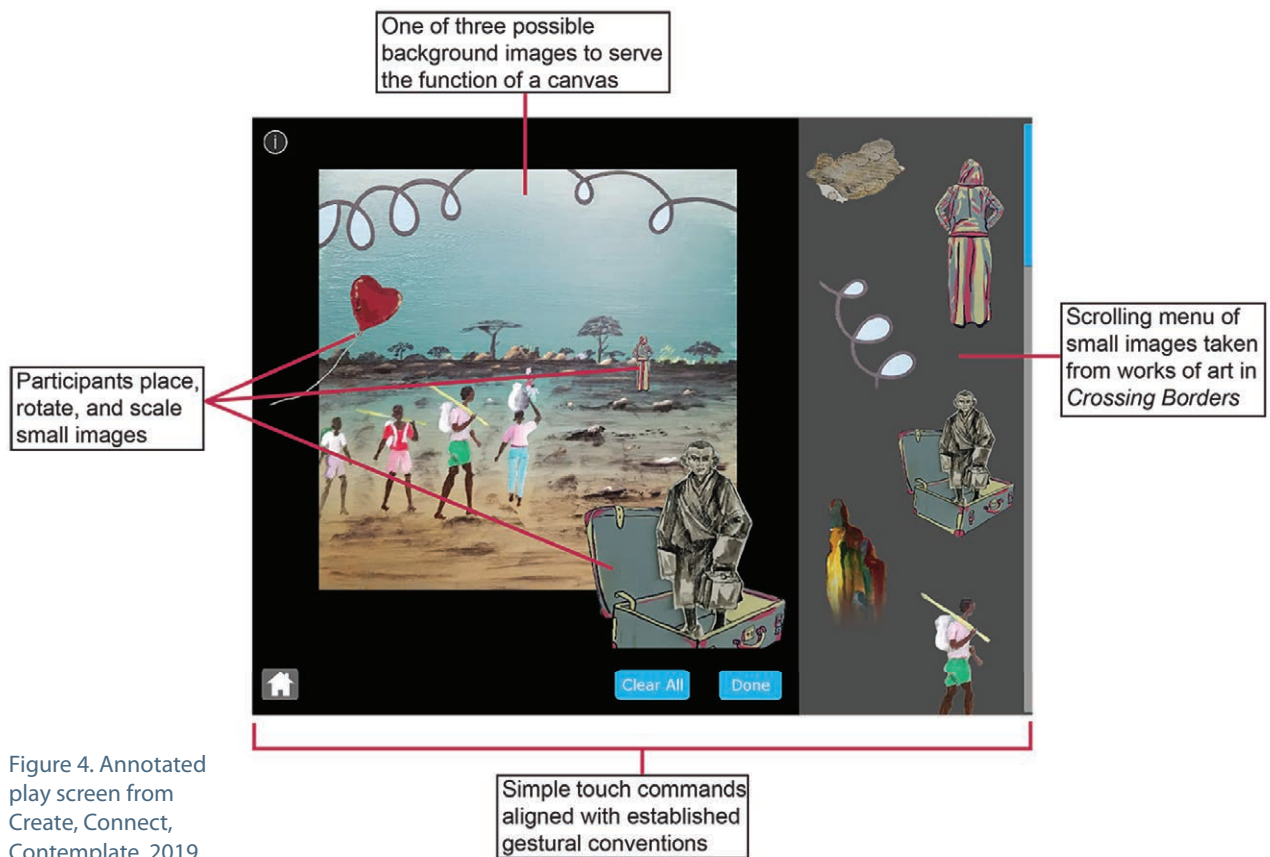


Figure 4. Annotated play screen from Create, Connect, Contemplate, 2019.

own, what a learner can do with help, and what a learner cannot do. The More Knowledgeable Other serves as a helpful entity to move among the different zones and does not have to be a human instructor (McLeod, 2018). Our digital application provided an interpretive experience directly in the gallery space, entrusted participants to take ownership through their own experimental creations, and moved a participant between states of self-guided exploration and explicit information yielded by a digital More Knowledgeable Other (McLeod, 2018) (Figure 5). We scaffolded learning by breaking down the works of art into digestible components to make the digital technology accessible and equitable to a range of participants while supporting them to generate new inquiry. Thus, C3 enables participants to make discoveries initially beyond reach.

The Future: An App to Understand Refugee Art

The interactive had three primary components: instruction (Connection), fabrication (Creation), and reflection (Contemplation). Building on the app's schematic, we will explore these features, how participants responded, and how educators might apply our findings in their classroom or museum.

Connection

The mobile application opens with a three-part series of animated visuals, similar to a tutorial, to instruct participants on what interactions are possible, how to perform them, and why they are included. Upon initial encounter with the application, participants might have a general understanding of refugees

but, through play and experimentation, can experience empathy and a deeper understanding of the refugee experience. The instructional visuals and text serve as a More Knowledgeable Other, helping participants move through the ZPD (McLeod, 2018) (Figure 5). Although it was important to explain how to operate the interactive, we took advantage of intuitive mechanics and integrated deeper concepts into the instruction. For example, the first of three instructional screens focuses on the app's implicit purpose of understanding refugees' resilience by creating a visual narrative through engaging in a similar process of crossing borders. No graphics or text indicate the technical commands necessary to perform the tasks; instead, the instructional video suggests the method and purpose of the interactive, preparing participants immediately for the interactive's broad intention without distractions of how-to details (Figure 6).

We carefully worded and reworded the instructions (as well as the language in the Creation and Contemplation portions), with input from colleagues, to align with our activity goals to deepen understanding of and compassion for refugees and to increase accessibility. We considered multiple narratives, welcomed varied interpretations, deciphered the art without jargon, and even eliminated text (Mayer, 2014; Quinn & Pegno, 2014; Wetterlund, 2013). For example, an animated hand icon demonstrates basic touch commands that control the mechanics (Figure 7). By making these intentional choices, we made the app accessible to English language learners who could contribute and connect to the artworks without experiencing a language barrier (Figure 8).

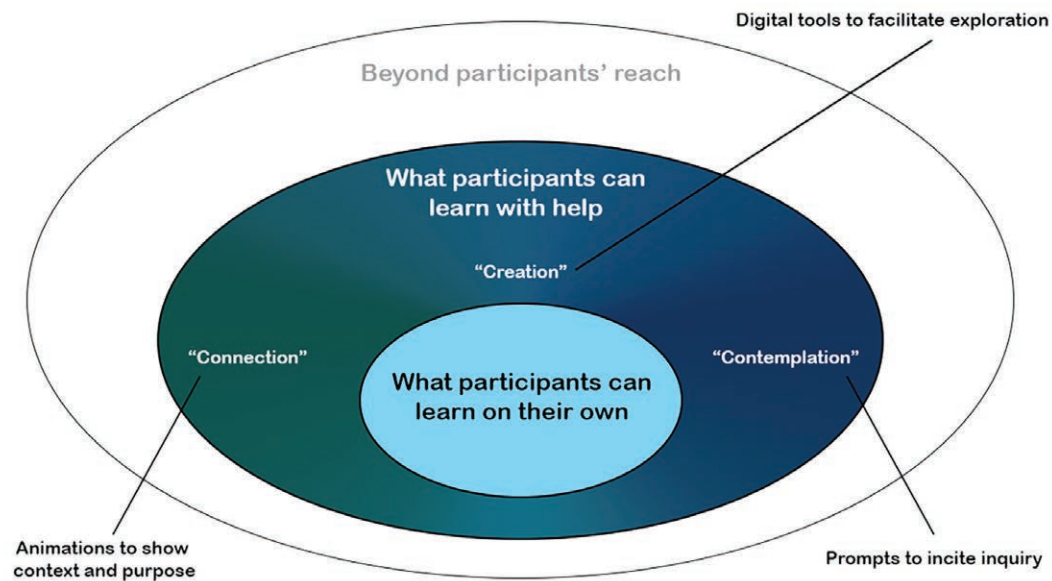


Figure 5. Vygotsky in application. This model visualizes how our application demonstrates Lev Vygotsky's ZPD—what learners can do on their own, can do with help, and is beyond reach, 2019.

In the final portion of the three-part introductory animation, we recommended participants use the exhibition for inspiration, continually refer to the socially engaged exhibition themes, and immerse themselves in the works of art to more deeply understand the refugee experience (Eisner & Dobbs, 1988) (Figure 9).

Creation

The second module in the interactive, Creation, invited participants to generate a new visual narrative by manipulating images selected from works of art in Crossing Borders (Figure 10). In addition to choosing artworks based on aesthetic variation and intrigue, we used a critical multiculturalism framework to present works of art by Crossing Borders artists of varied backgrounds

(in particular, refugees) that would be accessible to participants to tell a new story (Bedford, 2014; Simon, 2010). We designed the Creation portion to be open so participants could freely and organically express themselves and their reactions to the works of art without educators or text influencing their decisions. With retention and practice, the Creation section can transition from a zone of what participants can do with help to a zone in which they can perform on their own (McLeod, 2018) (Figure 5). We provided participants with a reason to engage with the digital technology by promoting an emotional and personal connection and motivating visitors to feel ownership of their making (Simon, 2010; Van Dyke, 2017); in turn, participants felt emboldened to engage and could discover personal connections to refugees. By adding images to the

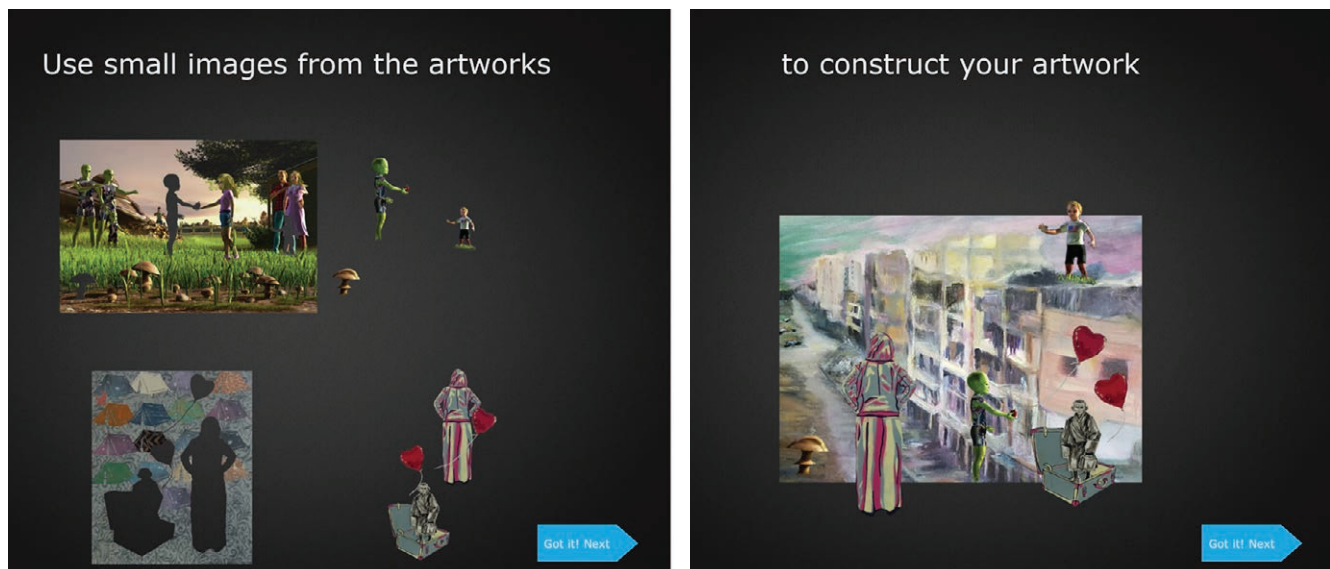
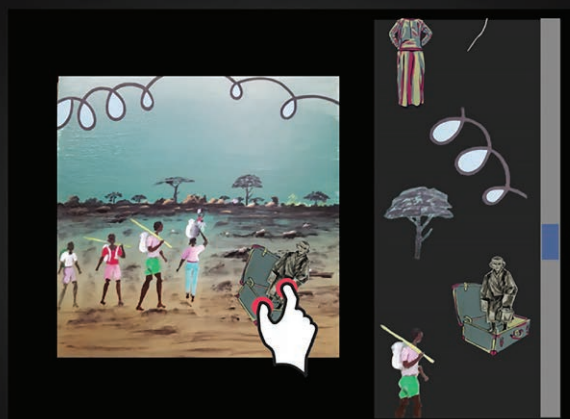


Figure 6. Connection animation. Follow this link to watch the entire animation and an example of how a participant might interact with the app: <https://tinyurl.com/y62pbpx4>. Create, Connect, Contemplate, 2018.

Design your new artwork and imagine a story for it.



Got it! Next

Figure 7. Gesture commands in Create, Connect, Contemplate, 2018.

existing works of art about the refugee experience, the interactive empowered participants to imbue their own meaning and better understand the theme of refugee resilience presented in the artworks. Accordingly, a participant reflected, “It helped us learn the connections. It helped us [understand] how all the artworks stick together.”

Age, language, setting, and cultural background influenced how participants interacted with the iPad app (Figure 8). To acknowledge the spectrum of participants’ learning styles and abilities, we scaffolded the app to supply clear instructions and constraints to make the museum experience relatable and nonintimidating (Blake et al., 2017; Simon, 2010; Wetterlund, 2013). Early elementary children were able to engage in critical discussions and deeply connect with the exhibition because of the scaffolded interactive. Limiting participants’ options fostered increased ease of use even for people who do not consider themselves artists (Simon, 2010). The digital making did not require technical skills; instead, it encouraged play and experimentation, ensuring the making was accessible to a broad range of people. The reversibility of digital input allowed participants to creatively experiment with possible visuals without worrying about permanence

in their choices (McCullough, 1998). Participants uncovered unexpected forms through experimentation, generating new and unexpected inquiry. For example, a student reflected on what they learned through experimentation: “I feel like an artist. I see that artists really think about what they need to put on to give a story.” Rather than a single flow of knowledge, we left room for and validated participants’ voices through the digital platform and advanced dynamic and multidirectional meanings, yielding the traditional museum authority (Anderson et al., 2017; Bedford, 2014; Pegno & Farrar, 2017; Quinn & Pegno, 2014; Simon, 2010).

Contemplation

The final section of the interactive, Contemplation, explicitly introduced criticality into the experience, in line with DAC’s commitment to critically engage the community with social issues relevant to the region. Participants reflected on their creations’ meanings through a screen featuring their completed artwork and a prompt encouraging them to share and discuss the result (Figure 8). A series of Likert-scale questions fostered reflection for participants while also providing data for evaluation (Figure 11). The Contemplation portion pulled participants deeper into the ZPD by suggesting difficult topics to expand learning in ways in which they may not have engaged on their own, advancing DAC’s mission to foster lifelong learning through the arts (Figure 5).

C3 supplied a tool with which participants could experiment in a personal and creative way to spur more profound meaning-making and inquiry (Van Dyke, 2017). To reach a more

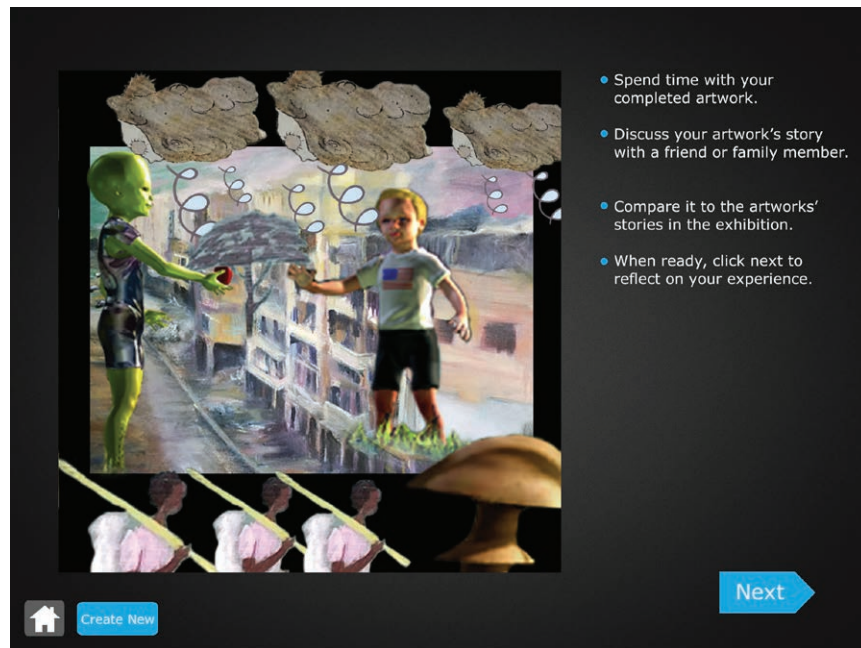


Figure 8. Screenshot of completed C3 artwork by an English language learner from a local international high school. Create, Connect, Contemplate, May 2018.

UPON INITIAL ENCOUNTER WITH THE APPLICATION, PARTICIPANTS MIGHT HAVE A GENERAL UNDERSTANDING OF REFUGEES BUT, THROUGH PLAY AND EXPERIMENTATION, CAN EXPERIENCE EMPATHY AND A DEEPER UNDERSTANDING OF THE REFUGEE EXPERIENCE.

THE DIGITAL MAKING DID NOT REQUIRE TECHNICAL SKILLS; INSTEAD,
IT ENCOURAGED PLAY AND EXPERIMENTATION, ENSURING THE MAKING WAS
ACCESSIBLE TO A BROAD RANGE OF PEOPLE.



Figure 9. C3 in action: participant uses the iPad app to make deeper connections to works of art on view, May 1, 2018. Photo credit: Anna Leeper.

comprehensive perception of the works of art, participants added images to existing artworks, which, as a participant described, “felt really cool because we were adding our own little meaning to their work.” Because C3 fostered deeper looking at the exhibition artworks and had participants make their own artwork using existing ones (a metaphor for crossing borders), it helped participants better understand and empathize with the refugee experience. Participants interacted with the exhibition themes of breaking refugee stereotypes and feeling compassion for refugees when they created their own artwork and accompanying story during this activity, indicating the importance of the app to help visitors think more profoundly about exhibition concepts (Werner-Avidon et al., 2017).

Reflection

Based on survey data (from the Likert-scale questions in the Contemplation section completed by 98 participants, a survey taken by 36 public visitors, and open-ended written reflections

by 40 students) as well as anecdotal and observational evidence, C3 successfully provided participants, through play and experimentation, with ways to develop deeper understandings of the works of art by addressing power, experiencing empathy for refugees, and generating new inquiry.

Participants acknowledged their power over the artists, yet hoped to diminish their power and put it to good use, working within a critical multiculturalism framework to relinquish control (Kroll, 2008; Steinberg & Kincheloe, 2009). As such, 15 of the 40 student respondents reflected on power through empowerment and/or concerns about using their own power to manipulate the works of art. For example, a student explained, “It felt good, like you’re adding to someone’s art and being able to compare with their art.” By adding their own visuals and stories to existing artworks, participants could negotiate traditional roles of power in the museum and reveal how many voices make up our society (Mayer, 2014; Quinn & Pegno, 2014).

Participants built empathy for refugees, as well as the exhibition artists, by understanding more about the refugee journey as they created their digital artwork from existing works of art (Anderson et al., 2017; Bedford, 2014). Reflecting on C3, one participant expressed, “It felt like we were showing a refugee’s story,” indicating how the process of creating a composite artwork enabled them to more intimately understand the refugee experience. Other participants empathized with the artists’ process of constructing the work of art; a participant stated, “I got to learn and feel how they would feel when they made their art.”

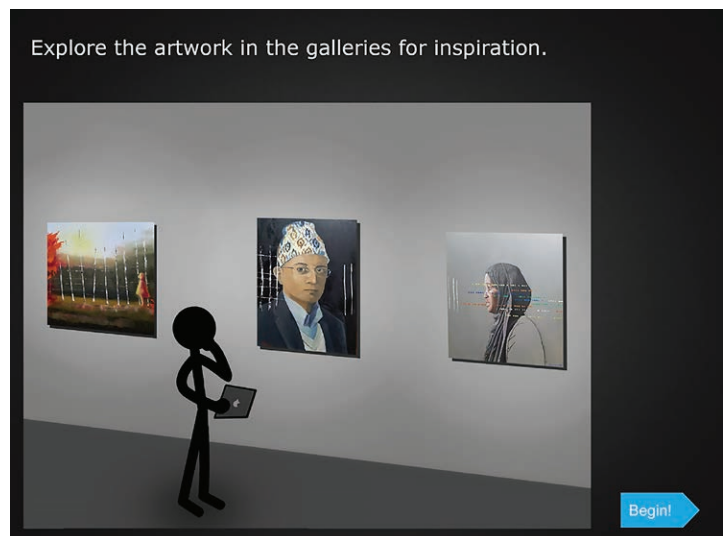


Figure 10. Creating connections to the exhibition through Create, Connect, Contemplate, 2018.

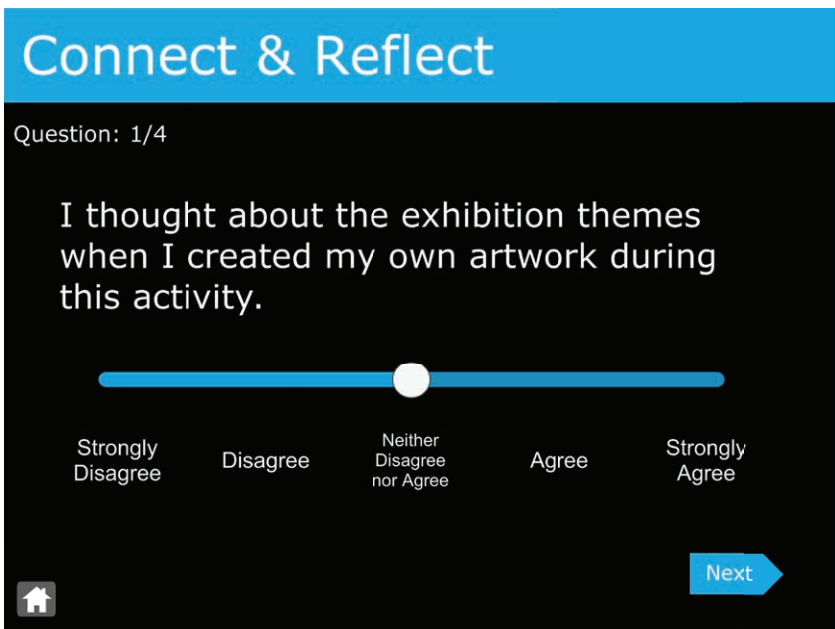


Figure 11. One of four Contemplation reflection questions in Create, Connect, Contemplate, May 2018.

The scaffolded learning tools functioned as a ZPD, assisting participants in reaching new modes of inquiry (McLeod, 2018). This model cycles participants between the processes of learning with and without help (Figure 5). Throughout the interactive, we repeatedly supplied cues for participants to reflect on and connect their own creations to the gallery artworks' themes, allowing them to generate new insights, empathy, and dialogue through play. With a newfound understanding of the refugee experience based on the interpretive experiences and the artwork itself, 75% of survey respondents indicated they wanted to learn more about refugees and possibly take social action. By improving accessibility to bring about new ways of seeing and knowledge, learners can feel more comfortable and empowered to take independent action.

Newfound narratives, unnoticed details, and tangent concepts surfaced through the process of interactively creating new visuals. Building on critical multiculturalism—which increases accessibility, inclusion, and equity—our digital interactive allowed participants to flow between states of play, deep looking, and new inquiry (Figure 12). Each person brought their diverse self to the experience and had a distinct outcome based on their knowledge, experiences, and cultural background. Critical play guided the experience by providing a cyclical opportunity for participants to explore ideas about critical multiculturalism and discover new meaning in existing works of art.

Future Implications

Building on existing critical frameworks as well as museum education and digital technology best practices, Create, Connect, Contemplate presents a model for pushing forward art curriculum. Play and imagination allow visitors to make personal connections, provide their own perspective, discover new insights, and challenge preconceived ideas (Bedford, 2014). To create an accessible digital

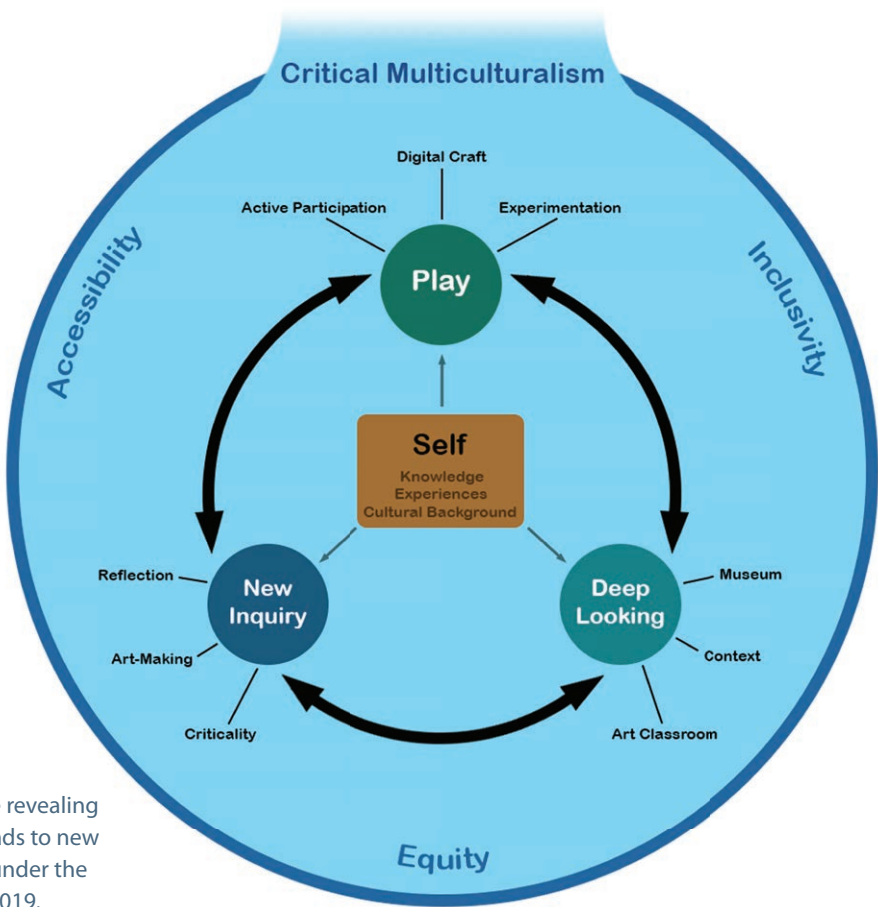


Figure 12. Model for digital interactive revealing how play within the game—which leads to new inquiry and deeper looking—occurs under the umbrella of critical multiculturalism, 2019.

75% OF SURVEY RESPONDENTS INDICATED THEY WANTED TO LEARN MORE ABOUT REFUGEES AND POSSIBLY TAKE SOCIAL ACTION.

tool in a classroom or museum, art educators might consider adopting a critical multiculturalism framework, as it is inclusive to all kinds of learners and mindful of each person's distinct identity. If the goal is a stimulus for social action, this approach can be modified to promote specific calls to action. Whereas we had technical limitations that precluded the museum from publicly displaying the user-generated artworks, we would encourage shareable outcomes in other settings. Saved and displayed outcomes could furnish opportunities for dialogue, increase a sense of community among visitors, and further paths of new inquiry.

Digital technology grounded in critical multiculturalism presents a paradigm for inclusive engagement in any educational, museum, or social justice setting. Dividing the digital technology into three sections—instruction, creation, and reflection—scaffolds learning and accommodates multiple entry points for a variety of learners. In tandem, critical play presents an opportunity to pursue curiosity, while digital craft allows a continuum of possible discoveries. Thus, executed together, participants can understand an exhibition's themes in indefinite ways. To successfully convey

information and engage the public through digital technology, we recommend art educators do the following: (1) select the most appropriate format to suit the institution and, most importantly, the learners' needs and desires, and (2) make the design accessible to a variety of ages, abilities, and backgrounds. Moreover, all texts and images should employ inquiry-based and inclusive language while considering multiple perspectives. Implementing inclusive digital interactives allows schools, museums, and other organizations to galvanize multivocal viewpoints and make spaces relevant to their learners and community. ■

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