

Digital Technology: Use it or Not— One Museum's Guiding Principles

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The Children's Creativity Museum's (CCM) approach to using technology stems from its unique location in San Francisco—blocks from some of the most famous internet companies in the world—and also from its origin as an art and technology studio for underserved youth.

When CCM was founded as “Zeum” in 1998, relatively few low-income children or teenagers had access to computers and other digital media. That has changed, but digital arts continue to be an important part of CCM's identity. Even when Zeum became the Children's Creativity Museum in 2011 (in response to changing neighborhood demographics such as more residential housing, more young families with young children), it did not abandon its core digital arts exhibitions such as the ClayMation Studio and Music Studio. Along with the name change, the museum became more focused on making a long-term impact on the lives of children, realizing that experiential learning and inspiring children to be creative should start at younger ages.

Now, in 2017, as we refine our strategic plan and look ahead to the museum's 20th anniversary, we have become more committed to a targeted embrace of technology and intentional decision-making.

We have developed a few guiding principles to use as a lens for planning exhibitions and educational programming involving digital technology:

Appropriate technology can be used if it taps into a child's imagination and storytelling abilities better than other methods. For example, although they can draw, most five-year-olds do not have the dexterity or writing abilities to capture all of their stories with a pencil and paper. But perhaps their stories can be told through a stop-motion animation digital studio using clay, wire frames, painted backgrounds, a digital camera, off-the-shelf software, facilitated interactions, and guidance about character development and storytelling.

All screens and digital technology should be paired with analog and tangible elements.

To avoid making the screens themselves the focus of museum exhibits or programs, there is always something physical to look at and manipulate nearby. Some examples include:

- **Augmented Reality Sand Box:** A projection of colors onto the sand's surface encourage visitors to interact with and manipulate the material.

- **Sketch Town:** Children create their own buildings and vehicles using paper and markers. These paper creations are then scanned and projected into a digital city. Children can even interact with the buildings on the projection and make them move and spin.

- **Robot Coding:** Children learn to code using tablets, but their main focus is using the code to move real robots and solving directional challenges.

- **Making Video Games:** We've created workshops and drop-in programming around a product called Bloxels. With Bloxels, kids arrange small blocks onto a grid and then import photos of their grids into a video game platform. The physical manipulation of placing the small plastic blocks into a grid pattern precedes anything done with the screen itself. This gives them time to think about character development and storytelling in their own video games rather than just frantically pushing buttons.

Digital products should be available outside the museum. We use off-the-shelf apps and products so that families can continue their experiences at home. In this way, we try to show parents that screen time can be productive, educational, and interactive if used appropriately.

Experiences should last for at least twenty minutes, and may be deep enough for even more extended engagements. Although screen time does need to be limited for children (and adults!), many studies indicate

that “getting in the flow” is an important element for creativity and skill mastery. Thus, all of our experiences aim to be fun yet challenging enough to keep a child's attention.

All activities must have an element of collaboration and/or sharing. For videos and films, we email finished projects home so that family members can review and discuss the stories and the creative process soon after their museum visit. We also encourage sharing with grandparents and on social media to build children's creative confidence. We encourage children to play each other's video games during our workshops. They are also able to share their playable video games with a virtual online community created by Bloxels (in compliance with online child safety laws).

Activities built around screens should most often be situated in separate rooms, allowing parents to choose to avoid them. For example, robot coding, the most tablet-focused activity in the museum, is tucked away on the second floor in a room that used to be a computer lab. While digital technology is used in the first floor galleries, the images are mainly projected onto surfaces and not flat screens (i.e., the sandbox and on the curved SketchTown walls). Surprisingly, in a very tech-savvy city, many parents want to see no screens at all in the museum. They want their children to take a break and play or create in old-fashioned ways.

In addition to these guidelines, we are also paying more attention to how we message what technology we employ in the museum—and why. Through signage and floor staff we aim to help parents become more intentional and strategic in their screen use with their children. Our struggles as a museum—and as a field—to make decisions about how best to use (or avoid) technology is a reflection of the struggles parents and children experience on a daily basis. By sharing our thinking and strategies, we hope to start conversations with the families we serve about how all of us can do our best with our children.

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