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# CONNECTED MESSAGES

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Annotations



Connected Messages is a construction kit that lets

youth express personal and communal ideas by designing interactive community murals. The project was launched by the Maker Jawn Initiative across five Free Library branches in Philadelphia, and over 1,000 youth collaborated to create murals from foam boards, markers, and low-cost networking technologies. The murals function as programmable public displays that connect local neighborhoods with online audiences. Messages about love, family, hope, and questions about violence and social justice drawn with colored markers on the mural boxes by community youth are combined with digital messages sent to the boards from the Connected Messages website.

## **The Youth's Public Sphere**

Youth's involvement with civic issues greatly differs from traditional political engagement or activism. Their citizenship involves tactics matched with their skills, motivated by individual interests and a willingness to participate in discussions connected with an audience to have an impact (Soep 2014). The public sphere for civic-minded youth can include social media sites, community spaces, libraries, or makerspaces; where there they connect to each other, find mentorship, and resources for engagement. Connected Messages experiments with new models of citizenship where

youth build their own public sphere. Three tactics employed include: 1) Increasing youth visibility through creating interest-driven content; 2) Connecting youth with each other through technology to reach beyond immediate communities; 3) Integrating learning, making, and civic engagement to create lasting experiences.

## **Maker Culture, Civic Engagement, and Youth**

Many spaces in children's museums, science centers, community organizations, and maker fairs organize activities in which youth making personally relevant designs such as robots, toys, and clothing. While such designs engage youth with science, technology, engineering, and mathematics, they rarely offer community-relevant designs to explore the potential of collectively designed activities that can foster civic engagement. Murals, on the other hand, have a rich tradition of depicting local cultures and historical events through messages, images, and scenes built by individuals or groups who intend to preserve their communities' spirit. They function as public displays and landmarks that transform individual efforts into collective designs and give communal identities to urban environments. Murals, however, are often

conceived as static and permanent representations. They lack the dynamic nature of digital public displays such as media facades or site-specific permanent projections that can be programmed with interactive content. Digital public displays can capture the changing nature of communities and combine the capabilities of permanent displays with real-time participation. As temporary groups and collectives emerge to learn about each other through the social interaction in public places, the dynamic murals become social catalysts. It is within this larger landscape of interactive, participatory, and public displays that the community mural, called Connected Messages, combines the empowering nature of city murals with the dynamic qualities of digital displays.

## **Building Displays, Messages and Communities**

**The project embraces a do-it-yourself approach towards digital mural design as youth build re-programmable, networked public displays from cheap and everyday materials.**

The displays are built pixel-by-pixel from cardboard boxes that include an LED and conductive traces. Participants use blank boxes and decorate them according to different themes with their drawings and writings. The boxes are then arranged on a grid and mounted onto foam boards. The board connects the boxes with each other and makes them individually addressable through a circuit controlled by a microcontroller. Through a wireless connection to the Internet, each board can receive messages from a website since a web user can turn on or off each box. The website features a virtual representation of the mural and web users can send animated messages to the physical murals located in different community locations.

Annotations

Figure 1. Foam board with copper traces (upper left), Electric Imp and a modem (upper right), back of tile boxes with copper connectors (lower left), and tile boxes with designs on board (lower right).

The Connected Messages murals were set up and designed during the summer of 2013 in five Free Library locations in underserved neighborhoods across North and West Philadelphia, communities that have been decimated by poverty (according to the 2011 census, 65.46% of households earning less than \$25,000) and crime (584.66 cases of aggravated assault/100,000 people) with fewer than 2% of adults

employed in professional, scientific, and technical services. Five Maker Mentors led the mural activities, a team that consisted of three men and two women ages 21-31, with backgrounds as working artists and undergraduate students.

Annotations

The screenshot displays the 'Connected Messages' website interface. At the top right, the word 'Annotations' is visible. The main content area features a grid of 40 child-drawn murals, each with a small white box at the bottom containing either 'Light On' or 'Light Off'. The murals depict various themes such as rainbows, families, and community. Below the grid, there are two website navigation sections. The first section, titled 'Latest Updated Murals', lists five mural locations with their last update dates: Kensington (Dec. 11, 2013, 4:08 p.m.), McPherson Square Library (Nov. 14, 2013, 4:49 p.m.), Central Library (Nov. 14, 2013, 4:49 p.m.), Lillian Marrero Library (Nov. 14, 2013, 4:48 p.m.), Cecil B. Moore (Nov. 14, 2013, 4:47 p.m.), and Widener (Aug. 13, 2013, 4:17 p.m.). The second section, titled 'McPherson Square Library', shows a smaller grid of six murals, each with a 'Light On' or 'Light Off' annotation.

Figure 2. Connected Messages website interface.

Over 1,000 youth, between ages 6-19 years, participated in Connected Messages activities, their daily participation fluctuating from three to thirty participants. Youth and mentors at each location developed themes for their board around bravery, kindness, acceptance, and anti-bullying based on Lady Gaga's Born Brave Bus Tour, which visited Philadelphia in March 2013. While all of the branches started from Lady Gaga tour themes, different branches personalized their murals according to the interests of their participants to give a true sense of ownership in the project. One library location—embedded within a nonprofit whose mission is to reduce the recidivism of adjudicated African-American youth—created boxes that addressed recent school closings versus new prison construction, their perspectives on the Trayvon Martin trial, and choosing positivity and creative outlets over perpetuating violence. All the completed display boards were gathered for a final celebratory event at the main branch of the Free Library. During the event, local makers from different branches witnessed the boards together, learned about the different topics discussed at each branch and leveraged the opportunity to interact with a larger online community within Philadelphia.



Figure 3. Connected Messages box reflecting on the Trayvon Martin trial.

## Reflections

The Maker Mentors encouraged youth to explore the project themes in self-directed ways that allowed for individualized levels of engagement. At the completion of Connected Messages, five Maker Mentors were interviewed about their experiences with supporting learning, production and expression of community voices, as well as their own learning. Several Mentors recalled that participants described their neighborhoods of North and West Philadelphia in a way that echoed census statistics on drug abuse, violence, and low education: “It was a bit sad to hear their initial responses of not safe, no good.” In response, mentors often shifted the conversation to a more asset-based approach that focused on positive aspects, “One of them wanted to make a box about recycling, not because the community is all that trash-conscious, but because it’s something he wanted to



say he feels is important to making a community healthy.” By challenging a negative, dominant narrative and supporting curiosity, youth exposed personal stories about their communities. One mentor described that the process became organic, “I quickly learned that kid input and project driving needed to be a priority of mine... Informal exploration time allowed me to connect with my kids a bit more.” Another mentor outlined further ways in which youth could have benefitted from being involved in all design aspects of the mural, from making boxes to designing circuits:

"Because it had so many components, you would have kids interested in each of those sides of it. You'd have the kids who were ready to have that conversation, and are ready to really talk about stuff, and then you'd have the kids who are just staring at the board and trying to understand the circuit, and they actually did. It was cool because you'd explain the circuit to one and you'd walk away and you'd be talking to other kids about the message itself, and then you'd turn around and see the one kid who you'd explained the circuit to sketching it out for his friend and explaining it, and that was always [illegible] but it was great to see."

These expansions illustrate how Connected Messages can become a method for not only

connecting youth to their community but also connecting them to making technology and civic engagement.

## **From Digital to Social Building Blocks**

As an experiment in civic engagement, communities created personally meaningful designs reaching broader collective objectives, where personal voice was integral to the whole in Connected Messages. Youths created a collaborative display to discuss and share important, relevant community issues through Connected Messages. Project participants built relationships with others previously unknown to each other. As the makers discussed and shared their opinions about socially relevant themes, and worked towards a collective design, they shared individual experiences in order to build a community with a virtually connected global audience. This maker-oriented approach provided each participant the basic components of both a social-building block—a “message box” that stands for an individual voice next to others—and a digital building block: a “pixel” that can be visually programmed to express a plurality of voices. By integrating the social and digital building blocks, a constructionist pedagogy introduced principles of electrical and computational design not

as abstract technical subjects, but as topics embedded within the very fabric of social connectivity.

These building blocks lay the foundations of a public display of engagement, allowed the youth to claim a public realm for dialogue and expression, and bridged the rich traditions of mural making with networked culture. The Connected Messages kit engages more than 1,000 youths in a new form of youth citizenship personalized by individual skills and interests. It serves as a valid design and learning methodology to construct ad hoc public spheres (as assemblies of digitally connected public displays) in a short period of time (4 weeks) and with a very low material budget (under \$10K US dollars).