DIGITAL
East
ST LOUIS

An Urban Place-Based
Learning Model

Digital East St. Louis: An Urban Place-Based Learning Model
Overview

Overview

History of the Project

Digital East St. Louis, a three-year, NSF-funded project, engaged participants in grades 6-9 in the creation of a content-rich, digital humanities website about the history and culture of their city. All materials and student-created content can be found at: eaststlouisculture.siue.edu

A collaboration between Southern Illinois University Edwardsville's STEM Center and the IRIS Center for the Digital Humanities, the program encouraged newfound interest in technology among African American participants using a place-based approach to introduce digital tools and methods. The program, which participants knew as "Coding for Community," was an informal learning opportunity. Participants met over a three-year period for five weeks during the summer and for sixteen Saturdays during each school year. Participants learned about their city while gaining valuable technological skills, including:

- Videography
- Video Editing
- Web Design and Development
- Sound Editing
- Podcasting
- Computer Programming
- Metadata Creation

The program averaged fifteen to twenty participants. In addition to a curriculum director and instructional designer, there were generally four to five instructors with backgrounds in secondary education who facilitated lessons. The instructor to participant ratio averaged 1 to 4. Though this level of concentrated attention is not necessary for a successful program, it did ensure that when participants worked in teams they had one dedicated instructor to support their work and provide feedback. The number of instructors also made the program's many field trips easier to coordinate.

The project first met in East St. Louis, IL at a middle school. Because of the place-based approach, situating the program in the city was important. However, the team also had a goal of creating a novel learning experience for participants that helped them escape their identity as middle schoolers and begin to imagine themselves in future STEM careers as their self-efficacy increased. For this reason, as well as access to resources, the program moved primarily to Southern Illinois University Edwardsville, about twenty-five miles from East St. Louis, so participants could begin to imagine themselves as college students.

Place-Based Learning

As the works of cultural geographers like Doreen Massey (2005) and Edward Soja (2010) have explored, places are shaped, defined and informed by the ways people move and interact within them. Every place has a rich history and identity shaped by its inhabitants. In the case of Digital East St. Louis, the urban setting led our participants into considerations of how humans operate in built environments to shape

the city's cultural and environmental histories.

East St. Louis, Illinois, and its surrounding towns are located on what is geologically referred to as the American Bottoms, a flood plain directly across the Mississippi River from St. Louis. Once the fourth largest city in Illinois, East St. Louis was a bustling site of industry and culture, but the city and its school district have suffered from the effects of white flight and deindustrialization. The city's population has decreased from 82,366 in 1950 to 27,066 as of 2010. According to the East St. Louis School District's report card, only 3.4% of students meet or exceed expectations in English Language Arts and Math. The student population is 97.6% African American and 98.9% low income. Jonathan Kozol featured the city's schools in his book *Savage Inequalities* (1991) about the racial and class inequalities in the American education system. In Missouri and Illinois, the city is often stereotyped as a result of its high crime statistics. Despite the economic disparities it faces, the city has a rich cultural history that has largely gone undocumented, especially in the years after 1960. Participants in the program explained repeatedly how important it was to them to be able to tell their city's story from their own perspective.

Place-based education is the study of a place (local or regional) using a pedagogy that emphasizes asking questions, solving real-world problems, and using field work to gather information in a local setting (Smith, 2002; Sobel, 2004; Semken, 2005; Semken & Freeman, 2008; Endreny, 2010). Gruenewald (2003) argued that "place-based pedagogies are needed so that the education of citizens might have some direct bearing on the well-being of the social and ecological places people actually inhabit" (p. 3). Place-based educators promote a pedagogy that "relates directly to student experience of the world, and that improves the quality of life for people and communities (p. 7)."

The Digital East St. Louis team implemented a curriculum, in part, to assess how place-based learning in an urban environment empowers participants to connect to their community while increasing their interest in and engagement with technology. Place-based learning has the potential to contribute to community well-being. Participants reported increasing their knowledge about the community and its history. Anecdotally, participants often shared that they took more pride in their community and relished sharing their own stories about East St. Louis with others who had usually only heard negative opinions about their city and its occupants.

The Digital Humanities

The digital humanities is a theory and methodology that analyzes longstanding research questions in the traditional disciplines of history, literature, philosophy, and language using technology and/or computational methods. Digital humanities research is often interdisciplinary in nature. It can involve the creation of dynamic scholarly archives or the development of new digital tools for analyzing and archiving languages, texts, images, spaces, and historical periods. Practices in the digital humanities interweave theory and method; students who learn about and practice digital humanities methods study how technology interacts with culture as they see their questions take shape in their own work through the creation of podcasts, visualizations of large data sets, digital exhibits of artifacts, digitally edited texts, and content-rich digital maps.

Students engaged in digital humanities projects practice cutting-edge, applied skills to take with them into professional environments. At the same time, because they are studying the humanities, fields grounded in understanding individual identity and experience within a broader cultural context, they learn how culture, race, class, gender, and ability may influence user experiences with technology, and they can take these more complex understandings into account when designing technology.

The Digital East St. Louis project combined the digital humanities with a place-based approach to interest participants in content first in order to inspire their innovative engagement with digital tools. For instance, as one participant conducted research into the local school district's history, she concluded that a map/timeline combination would be the best visual and interactive approach for demonstrating how the shifting placement of schools in neighborhoods impacts the city's development. After collecting water samples throughout the city, another group decided that a Google My Map could most effectively consider the industrial and governmental factors influencing their results. In this way, participants learned how the content of their projects should shape the technological medium and design they chose to share their findings with others most effectively.

STEM Self-Efficacy and Career Exploration

The program's curriculum was intentionally designed to teach participants twenty-first century skills—including collaboration, flexibility, leadership, critical thinking, creativity, and initiative—while strengthening their STEM self-efficacy and their awareness of STEM career paths. Self-efficacy, the degree of confidence one has in successfully completing a task or achieving a goal, can be affected by one's interpretation of several types of experiences, especially *mastery experiences* (practicing a task and receiving feedback) and *vicarious experiences* (watching others perform a task) (Britner & Pajares, 2006). Curriculum activities offered participants many opportunities for these experiences. Each of the five modules ends with participants working collaboratively in teams to complete a substantial project. They work together to design their project's content and goals, they divide tasks, and they share their progress with one another throughout the process. In this way, they learn how to work independently while also articulating their work clearly to others and shifting their expectations as necessary.

In addition to modeling and practicing forms of collaboration the curriculum introduces participants to careers paths like museum curation, photography, and web development. Lessons in each model teach participants about the best practices used by these professionals. Ultimately participants take on the roles of content and media professionals as they take pictures, shoot documentaries, design websites, and write well-formed metadata.

Because the program's research goals included fostering and measuring STEM self-efficacy, the participants went on several careers-based field trips. They visited a podcasting studio, a web design firm, the St. Louis Public Radio station, the Missouri History Museum, and the Katherine Dunham Museum.

We also had several guests share their work with the group. These visitors included metadata librarians, a photographer, a documentary filmmaker, historians,

literary scholars, anthropologists, and graduate students in environmental studies.

Content

Early on in our program, participants voted on specific aspects of their city's culture they would like to focus on throughout the three-year program. These included: food, the environment, education, music, and sports. More specific themes helped participants focus on broader cultural questions, like: What does it mean to live here? What's unique about East St. Louis? What would an outsider find interesting about where I live?

We have designed this curriculum into modular units so teachers, youth group organizers, and after-school program coordinators can pick and choose activities based on interest. Though the place-based model was a central element of our project design, any topic that gets participants excited about using technology to communicate with others is a useful place to start. For example, two recent uses for the curriculum in different programs have adapted the content to focus on audio remixes of African American poetry, visual remixes of images from the film *Black Panther*, and podcasts about school sports. As a group, we had the most success when participants had freedom to choose topics that mattered to them and decided what methods they would use to share them with broader audiences.

File Management

Collaborative digital projects require responsible file management to ensure that all project team members have access to project files and that files are kept up to date. The Digital East St. Louis project build upon the work of each curriculum module so that participants could continue to use the oral histories and photos from early in the program later when they curated their digital exhibits, for example. As a result, it was essential that the program use a file management system to store files in a way that would be easily accessible to all participants. There are several options for file sharing available.

[Google Drive](#) is free and is integrated into other Google services, such as Gmail, YouTube, and Google My Maps. It is also integrated into Chromebooks, which are common in K-12 environments. Google Drive space is shared between all Google services for a Google account, and the total size available for a Google account is 15 GB. However, any files that take up space on a shared Google Drive folder only take up space for the user who uploaded the file. For example, if someone uploads a 1 GB video file to Google Drive and shares it with others, only that user has 1 GB counted against their limit. Additionally, any Google Drive files, such as Docs, Sheets, or Slides, do not take up storage space. These shared documents also allow users to work on them simultaneously, preventing versions from overwriting each other. It is also possible to purchase additional storage space through a subscription service from Google if necessary.

[Dropbox](#) is also free. Its storage limit is 2 GB, though it does not include other services like Google Drive. One of Dropbox's downsides is that any files shared between users take up space for all users who have access to that file. On advantage to

Dropbox, though, is that users can use Microsoft Word as a built-in program. It can also be integrated into a computer's already established file management system, eliminating the need to login to their online platform. Unlike Google Docs, however, which allows multiple users to edit files simultaneously, only one user can actively edit a Dropbox file at a time. Users can also purchase additional storage for Dropbox through a subscription service if necessary. Both Google Drive and Dropbox offer version history to undo some changes, but they are not a failsafe solution.

Another option is to use a shared external hard drive. One advantage to this plan is that the program will not have to worry about syncing file changes between users that may be editing the same file at the same time. However, this means that only one person can access the files at a time. External hard drives also offer much larger storage capacity than Google Drive or Dropbox, though you have to make a one-time purchase. As of 2020, a one terabyte external hard drive costs about $50.

Whichever storage option the staff chooses, they should always save backups periodically to another location. It is also important to make sure not to overwrite someone else's changes by uploading a file with the same name.

The project should establish and review best practices for saving and naming files. Each of the tutorials for the program included detailed file naming and saving instructions to make it easy to find files later. When participants go on a field trip wherein they record interviews, take pictures, or shoot video, it is especially important to build in time for them to download their files before they leave for the day.

Software and Equipment

Because it is built around the use of digital tools, the program requires some investment in computer software and equipment. However, the majority of software we used is open source and free to download, and there are many affordable options for equipment. Here is a brief overview of what equipment and software required for each module. For more details, see the introduction to each module.

Oral histories and podcasts require the use of audio recorders, but most smartphones can record high quality audio. We also recommend two free audio recorders. For PCs and Macs, we recommend Audacity, and for Chromebooks, we recommend Sountrap. The module includes tutorials for both platforms

Video documentaries require a video recorder, but as with oral histories and podcasts, many smartphones can record high quality video. The module includes a tutorial for the free video editor Shotcut, but there are many other free video editors available that are listed in the module. Please note that Chromebooks have significant video editing limitations, and the only video editors usable on a Chromebook require a paid subscription.

Walking Tours require the use of Google My Maps for creating interactive maps and GIMP for image editing. Both programs are free to use. Students will also need access to cameras for taking photos for the walking tour.

Both the Research Sites and Digital Exhibits modules require online website builders: WordPress for Research Sites and Omeka for Digital Exhibits. While both are free to use, they require server space. We recommend Reclaim Hosting as an inexpensive option made for educators, and Reclaim Hosting can easily install

WordPress and Omeka.

Module Organization

The Digital East St. Louis program was designed to be cumulative with the goal of maintaining the same group of participants for all three years and assessing outcomes of their work in the program. As a result, from their very first day in the program, participants understood that their work would culminate in a final, collectively produced website of all of their work over the three years. The program used the content management system and digital publishing platform Omeka to house the project they created for each module, and the program culminated in the Fall of 2017, when participants drew upon all of the content they had created over the three-year program to design digital exhibits that told interactive, audio-visual stories about the city.

The curriculum has been designed so educators can choose to integrate it lesson-by-lesson, module-by-module, or as a whole. Each module requires at least fourteen days to complete. A full overview of the curriculum is detailed in the chart below.

Summary of Modules and Lessons

Module	Lessons
1. Oral Histories and Podcasts (14 days)	1.1 Introduction to Oral Histories
	1.2 Open-Ended Questions
	1.3 Audio Recording Scavenger Hunt
	1.4 Recording and Audio Editing Tutorials
	1.5 Developing Interview Skills
	1.6 Conducting Interviews
	1.7 Indexing Oral History Interviews
	1.8 Introducing Podcasts and Choosing Central Questions
	1.9 Research
	1.10 Podcast Story Mapping
	1.11 Creating Podcasts
2. Video Documentaries (14 days)	2.1 Introduction to Video Production
	2.2 Video Recording Scavenger Hunt
	2.3 Location Selection
	2.4 Research
	2.5 Storyboarding
	2.6 Conducting On-Camera Interviews
	2.7 Script Writing
	2.8 Preparing to Shoot
	2.9 Filming
	2.10 Video Editing Tutorials
	2.11 Creating Documentaries
3. Walking Tours (14 days)	3.1 Introduction to Google Maps
	3.2 Evaluating Specialized Maps
	3.3 Create Maps of Home
	3.4 Photo Essays
	3.5 Telling Stories with Images
	3.6 Practicing Photography
	3.7 Researching Locations
	3.8 Taking Photos
	3.9 Image Selection and Editing
	3.10 Creating Digital Walking Tours
4. Research Sites (14 days)	4.1 Environmental Research
	4.2 Humanities Research
	4.3 Archaeological Research
	4.4 Choosing a Topic
	4.5 Introduction to WordPress
	4.6 Introduction to HTML and CSS
	4.7 Web Design Basics
	4.8 Defining Search Terms and Planning Research
	4.9 Writing for the Web
	4.10 Developing Web Content

	4.11 Evaluating Websites and Responding to Feedback
5. Digital Exhibits (14 days)	5.1 Physical Exhibit Curation
	5.2 Evaluating Digital Exhibits
	5.3 Photo Selection and Research
	5.4 Learning about Metadata
	5.5 Adding Items to Omeka
	5.6 Evaluating Metadata
	5.7 Scanning and Making Images Web Ready
	5.8 Web Design
	5.9 Planning Digital Exhibits
	5.10 Creating Digital Exhibits
	5.11 Adding Content to and Finalizing Digital Exhibits