

This is the second of three cases of makerspaces using open portfolios. By makerspaces, we mean maker-centered, youth-oriented settings that focus on educational programming. The cases are deeper dives into the key sites of Open Portfolio Project (OPP) Phase 2 work and how each of the sites develops and maintains their portfolio assessment systems. These briefs also examine how each site balances tensions between assumptions about traditional and open portfolios.

> This research brief tells the story of the expansion and evolution of portfolio implementation within a public high school, which infuses maker-centered learning into more and more of its curricula. Portfolio practices must remain meaningful to teachers and students alike, and be leveraged for thoughtful utilization – even throughout administrative changes — while pushing on traditional assumptions where portfolios are focused on writing, curated for one predetermined audience, created within a particular learning space, and representative of the knowledge and skills of individuals only.

Site Overview

Part of the Albemarle County Public School system, Monticello High School (MHS, Figure 1) is named after Thomas Jefferson's plantation home, located close by, in Charlottesville, Virginia. Founded in 1998, MHS is one of three comprehensive public schools in the county that, in addition to core subjects and classes, offers students (grades 9-12) career and technical education (CTE) programs. These programs combine core curricular subjects and hands-on activities related to occupational skills, including television production and digital fabrication. The student body includes a predominant majority of White students (64.4%), 13.0% Latino(a) students, and 12.9% Black students. Of the overall student body, 32.4% are in the reduced meal program.



Figure 1: The entrance of Monticello High School in Charlottesville, VA.



MHS seeks to prepare students for entering professional and academic contexts outside the school with the necessary skills for effective and productive citizenship. As part of this mission, Monticello has facilitated and sustained school-wide portfolios for two years. Teachers from biology to English language arts regularly ask students to work on hands-on creative projects that are then documented in visually rich ways across multiple disciplines. As a traditional public school, Monticello discovered that weaving portfolios into their everyday practices is a challenge, especially as the school encounters obstacles related to administrative change, teacher buy-in, and technological implementation.

Expanding Administration-Driven Portfolios

At MHS, a school-wide portfolio process is housed on Google Sites, which provides every student with a unique URL to an online space that organizes school years and classes into folders. This way, students can store their assignments and projects by subject area throughout the duration of their high school experience. Students use Google documents to store their work, and teachers build portfolio assessment practices based on these tools, including how and at what frequency students should capture their work. In this setup, the portfolio system presents a guiding frame (i.e., organization by subjects) and provides freedom to create a broader range of subject-specific practices.

This system resulted from an administrative and technological revamp from the previous system that Monticello High School had implemented. Though much improved, the act of overhauling the former portfolio system, which was also based on Google Sites but worked with a less centralized identification system, created some confusion among students: some simply forgot to switch their data and logins to the new system, consequently leaving their work stuck in the previous one, and some found themselves concerned about the stability of any technological system, bringing into question the value of their time spent on documenting work and work-in-progress.

Furthermore, with a new administration, it was not yet certain which practices the school would continue to focus on at a school-wide level. To ensure that portfolios overall would continue at MHS, administrators encouraged teachers to develop their own portfolio assessment practices within the technological setup based on Google Sites and Google Docs. As practices evolved, teachers branched out beyond these platforms too.

Below are examples of how the core portfolio system put in place by administrators was effectively augmented by teachers and students, resulting in expanded thinking and shifts in existing assumptions about traditional portfolios.

Expanded Portfolio Practices Driven by Teachers

A key benefit of this organizational change was that it brought about opportunities for exploration by teachers and site-level staff. Comparing practices across subjects shows that teachers employ different portfolio practices within the Google Sites system, whether teacher or class-specific, department-specific, or grade-specific. Opportunities for increased collaboration between teachers also transpired.



One example is a capstone project, which includes interdisciplinary collaboration among teachers while students work to address a self-selected local community challenge (e.g., advocating for nursery school access for working parents by writing letters and making presentations to local government representatives). During the project, students create shared folders within Google Drive to house individual presentations, reports, and illustrations that can be shared with specific people outside of the school. Students are also able to embed all of the files relevant to their project in one personal portfolio.

Another example of a unique practice is part of an English skills class in which a teacher has designed a portfolio process that resembles the building of an interactive resume. Students are asked to select a profession for which to create a portfolio, while making use of different genres and mixed media. During class, the teacher shares a checklist to help guide portfolio development. Each portfolio must include a student-created audio-visual piece related to the profession, a cover letter, and relevant work samples.

Both examples push on assumptions of traditional portfolios. First, portfolios can reach more than one predetermined audience; that assumption is stretched when individual files or projects, as part of a larger student portfolio, are shared with targeted viewers outside of the school, as the portfolio and project simultaneously serve the intended teacher(s). The second example integrates a range of mixed media files into the digital portfolio, pushing on the idea that portfolios are predominantly focused on writing (e.g., the format of the resume shifts from a written list of skills to a place that audio-visually exemplifies concrete experiences or expertise). Combined, the range of portfolio practices widens and challenges the notion that one practice can fit all subjects, classrooms, and projects. The diversity of practices also opens up questions about curating connections across multiple formats.

Sharing Projects Publicly for Private Curation

Although the administrative setup suggests that youth sort, save, and display their work within subject-related folder structures, the underlying data structure introduces interdisciplinary connections and collaborative communities beyond the school walls. Students can share projects publicly and curate them into private portfolios for varying audiences.

Despite using a standard file structure, students have the ability to interconnect subjects and capture work across subject areas by arranging project files into fluid categories in Google Drive. Furthermore, students save videos on external and public storage sites from which they can easily embed their media files into their portfolios. For example, students can share collaboratively created music videos on one student's personal account, credit other collaborators with links to their respective profiles, and from there, embed the videos into their personal portfolio pages. On external pages, the artifacts can receive comments, likes, shares, and be consumed by a large number of people. Some MHS teachers encourage sharing on these external pages, then further disseminate the successes of their students via social media. As people leave comments on youth project pages, social spaces are automatically created where the outside community actively engages (an aspect to be discussed in more detail in subsequent research briefs).



While these practices fall outside the administration-structured portfolio system (i.e., Google Sites and Docs), they are ones developed, within the system, that seem to motivate youth (and their teachers) to continue to capture and share their work throughout their attendance at Monticello High School. In this case, these emergent practices push on traditional portfolio practices that fit within discrete subjects inside the walls of a school, and they expand upon the fact that portfolios can represent the knowledge and skills of not only individuals but also groups and other collaborations.

Capturing Making in Hallways

Traditional portfolios are often connected to or framed within particular learning spaces, but MHS recognizes the increased amount of flexible space needed for making and documenting the process of creating personally and academically meaningful projects. Often, group projects require more space than a single classroom can provide, so teachers utilize the alcove and hallway space between classrooms for making and capturing.

In an English literature course, small groups of students took advantage of the center spaces in an alcove as they made and captured the process of creating Rube Goldberg machines to represent the "Hero's Journey" story archetype (Figure 2). Early on, one small group decided to document their work by creating a video with a smartphone camera, presenting the working of their Rube Goldberg machine in one continuous shot. Throughout the activity, the students traded the camera and materials back and forth. Documentation and making were deeply intertwined as students negotiated how their portfolio piece would present the production or the final run-through of the machine. The overall shorter-term activity, facilitated between classrooms in the school's alcove, drew the attention of other students, who stopped to observe the action.

Figure 2: A small group of students is making a Rube Goldberg machine and documenting the process



Maker Ed

Where larger projects requiring materials and space were integrated into traditional subjects, the documentation of the process required even more room to maneuver, as students had to step far enough away from their project to fully frame it within the photograph or video. Outside of the classroom, the practices were out in the open for teachers and students to see as they passed by. They invited observations and showcased a concrete example of how documentation and portfolios are integrated into school learning, especially important for inspiring uncertain students or teachers.

Discussion

The school-wide portfolio initiative at Monticello High School, withstanding the uncertainties connected to any leadership and portfolio system changes, introduces an opportunity for teachers to design portfolio practices that uniquely combine creative practices with academic content. As students travel across courses and are engaged in creative projects in more than one course, they create an open repository of work that presents practices and a collection of work that are useful across subject areas, even storing their work across different online platforms.

As such, portfolios continue to endure and remain meaningful across the school. They have become adaptable to subject- and teacher-specific practices, as well as practices that make use of tools outside the official technological system. Extending work beyond classroom walls – into actual physical space outside of the classroom – also allows for more community engagement, exemplifying concrete portfolio practices and the integration of documentation and maker-centered learning to other students and teachers.

Together, the diverse yet scaffolded practices at Monticello push on assumptions of traditional portfolios and highlight portfolios as mixedmedia practices that can be curated in different ways for multiple audiences and that can function as lenses into the role of students in and out of the classroom. The MHS portfolio system and practices call us to further consider (1) how teachers can view work across subjects and classrooms if work is stored in different places that are predominantly digital, and (2) how to scaffold the portfolio process for students to identify overarching connections of learned practices. Through these new practices, Monticello is stretching the definition of what an open portfolio might mean.

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