Documenting Learning with Digital Portfolios

Portfolios must be part of a purposeful assessment program with clear learning goals.

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Olivia, a sophomore at Ponaganset High School in North Scituate, Rhode Island, sat down last June with two of her teachers in front of her digital portfolio—a multimedia, Web-based collection of her best schoolwork. A menu listing the school’s nine graduation expectations, including Effective Expression, Research Skills, and Critical and Creative Thinking, appeared on her portfolio’s home page. The school’s faculty had worked for a year developing these expectations and aligning them with the state’s standards.

Clicking on the link to Effective Expression, Olivia and her teachers reviewed the list of learning outcomes associated with this expectation, including the ability to express ideas for various purposes and audiences and the ability to use communication skills in each subject area. The screen also contained links to about 20 entries, each showing a sample of Olivia’s work that reflected this graduation expectation.

During the last two years, Olivia had entered diverse work samples into her portfolio, including a sonnet, a solution to an open-ended algebra problem, and an audio file of her flute performance at the school’s winter concert. For each entry, Olivia had written a summary of how her work met one or more of the school’s graduation expectations. Her teachers had assessed each entry using an online rubric and given her feedback, so that Olivia could review her work and the comments from her teachers at any time.

This end-of-year review was a chance to look at the portfolio as a whole. By this time, Olivia’s portfolio contained two to four artifacts for every course. The review focused on a few artifacts that she had selected, each linked to one of three reflective prompts: Where have you done your best work? Where have you grown as a learner? What is your academic plan for next year?

Because Olivia’s teachers had been able to look at and comment on her selected work online before meeting with her in person, they used this meeting to discuss with her what she had done well and what she needed to accomplish during her next two years to meet Ponaganset’s graduation expectations.

Making Digital Portfolios Meaningful

Olivia’s portfolio review is a snapshot of one moment in a well-coordinated digital portfolio assessment program. Digital portfolios are multimedia collections of student work stored and reviewed in digital format. Beginning in 1993, I led a team from the Annenberg Institute for School Reform and the Coalition of Essential Schools, which researched digital portfolios as an assessment tool and identified a set of essential
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questions that schools need to address:

- **Vision:** What skills and content should students master and demonstrate in their portfolios?
- **Purpose:** Why do we collect student work?
- **Audience:** Who are the audiences for portfolios?
- **Assessment:** How do the entries in portfolios reflect the school's assessment vision, and how can we assess the quality of those entries?
- **Technology:** What hardware, software, networking, and technical support will our school need to implement a digital portfolio assessment system?
- **Logistics:** How will students enter their work into digital portfolios?
- **Culture:** Is discussing student work already part of our school culture?

Although the technology of digital portfolios has changed significantly since the initial research, these questions still provide a guide for designing a digital portfolio program. As the leader of a team at Ideas Consulting, when I advise schools on using digital portfolios to enrich assessment of student work, I find that technology is the least important consideration. The essential element is integrating digital portfolios into a larger assessment system with clear learning goals. To do so, schools need to identify the purpose of their portfolios, the kinds of work students should enter into portfolios, and strategies for assessing portfolios.

**What Is the Portfolio's Purpose?**

The purpose of the portfolio drives the content. Digital portfolios can serve many purposes: showcasing students' best products; proving that students have mastered expectations required for graduation; and communicating with parents and other audiences about what students are learning. Ponaganset High School is at the forefront of implementing Rhode Island's "graduation by proficiency" initiative, under which students use their portfolios to show that they are meeting state standards. Starting with the class of 2008, all Ponaganset students will need to demonstrate their mastery of standards through a set of rigorous performance assessments—such as portfolios and senior projects—before they can graduate. The idea is for students to demonstrate that they can meet standards while also showing who they are as individual learners.

Teachers in the elementary schools of Barrington and Bristol-Warren, Rhode Island, use portfolios to communicate better with parents. At a parent conference, the teacher calls up the student's portfolio, which displays samples of the student's work in reading, writing, and math from kindergarten through 5th grade. Because the goal is to show growth over time, the portfolio contains only two or three samples in each subject area for each year.

For the reading component of the portfolios, for example, twice a year teachers videotape each student reading a brief passage and answering comprehension questions posed by another teacher. A 1st grade teacher can use the portfolio to show parents how their child has progressed from struggling with a level 5 text in October to confidently reading a level 1L text in April. Teachers report that the video component enables them to powerfully convey a student's reading skills; just 60 seconds of video footage can provide the starting
What Kinds of Work Should Portfolios Include?

Once a school determines the primary purpose of its portfolios, it can then decide what kinds of artifacts students should include. If the portfolio is meant to document how students are meeting graduation standards, then teachers need to provide opportunities for students to demonstrate their mastery of standards through work that can be digitally displayed. If the school wants to show each student's growth over time, students must arrange portfolio samples in a sequence that shows such progress.

For example, Mr. Sangiuliano, a 4th grade mathematics teacher in Barrington, Rhode Island, wanted to show student progress in an area his students found difficult: solving open-ended word problems. He taught students a strategy for dealing with word problems. Students restated the problem in their own words and wrote an "I need to..." statement pinpointing the objective (I need to figure out how many fish were caught), followed by a strategy for approaching the problem (I can make a table showing how many fish each person caught).

To document students' progress at various points during the year, Mr. Sangiuliano recorded each student on video explaining how he or she applied the strategy to a word problem. Videos shot at the beginning of the year showed students needing prompting, with the teacher asking, "What was your 'I need to...' statement?" and helping students realize that there may be more than one workable strategy. Videos from later in the year showed that these 4th graders had internalized the method.

Assembling these video clips into student portfolios enhanced assessment in a few ways. As they watched their child successfully use the same approach to solve problems involving different mathematical operations, parents better understood the strategy used in class. Second, because Mr. Sangiuliano can easily pass these digital clips on to the 5th grade math teacher, work on a common problem-solving strategy can continue beyond his class. Finally, watching themselves on video helped students review and reflect on their own growth.

At the secondary level, portfolio-worthy assignments must be clearly linked to the portfolio's purpose. If the portfolio is a vehicle for demonstrating student progress toward specific standards, then teachers must give plenty of assignments that tap into the skills and knowledge represented by each standard. Teachers should plan together how to align their assignments with the school's overall expectations.

For example, several middle schools and high schools in Rhode Island assign a geometry scavenger hunt. Teachers give students a list of geometric shapes and concepts—such as parallel lines with transversals, similar triangles, or complementary adjacent angles—and direct them to photograph buildings or objects around town that reflect these concepts. When introducing this assignment, teachers explain that the project meets the school's expectations of understanding geometric concepts and being able to communicate mathematically. The assignment could also demonstrate successful time management, skill in using technology to convey an idea, and aesthetic talent in photography.
How Should Schools Assess Portfolios?
Successful schools assess each student's digital portfolio by evaluating both individual entries and the portfolio as a whole. The entire faculty needs to develop common strategies so that students receive consistent feedback.

Develop schoolwide rubrics. As Ponaganset High School developed its learner outcomes, faculty members found that they needed to agree on how to communicate about those expectations. For example, teachers agreed that a graduate should be able to write a good lab report; but what made a lab report "good"? The school's science department created a rubric defining a good lab report as one that includes a clear statement of purpose and hypothesis; data in an easy-to-read format, appropriate to the kind of information collected; and a conclusion that is clear and concise and answers the intent of the purpose. Whether a student takes biology, physics, or chemistry, he or she has guidelines for creating a lab report that meets the school's standard. Ponaganset's teachers created similar rubrics for each of the learner outcomes. Outcomes such as demonstrating "initiative, responsibility, self-discipline, and perseverance" cut across all subject areas.

Include students' self-reflections. Students' reflections on their own work are a crucial part of assessment. Students should include such a reflection for each entry in their digital portfolios and for the portfolio as a whole. Reflections can be inspired by a prompt, such as "How does this entry fulfill the school's expectations?" or "What skills did you use in this project?"

The youngest students can reflect on their performances without writing. During a videotaped reading session, for example, the teacher might ask a student what words he or she found hard, or what strategies were helpful in figuring out new words.

When a student has to defend why an entry in his or her portfolio fulfills a particular learning expectation, the student will more thoroughly understand that expectation. When students make a conceptual link between their work and school standards, those standards become more than an abstract document to hang on the wall. As students look through the portfolio and read over their reflections, they recognize how their skills have grown over time and begin to see where they can go next.

Generate reports. Teachers and students should regularly create reports summarizing the contents and implications of students' portfolios. Digital portfolios offer teachers and students the advantage of creating reports in any number of ways. For example, a Ponaganset High School junior clicks on the link for each graduation expectation in his portfolio and instantly reviews how many entries he has for each expectation, and which expectations he still needs to provide evidence for. An advisor then helps this student plan how to fill in the gaps.

Reports of the class as a whole tell teachers a great deal. When a teacher can click on a button and see how all her students did on a particular rubric, she can determine how to adjust instruction. For example, an elementary teacher might use a report generated by compiling digital portfolio data to examine a class's performance on a writing rubric. She might see that certain students earn consistently low scores on word choice, a finding that would allow her to focus attention on these students.

In the end, the success of a digital portfolio relies on the clarity of a school's learning goals. Although the technology makes it convenient to organize student work and send that work to broader audiences, the effectiveness of the portfolio relies on a far more traditional practice: the ability of students, parents, and teachers to create a common vision.

Author's note: For samples of digital portfolios, visit www.richerpicture.com and www.efoliosminnesota.com (click on Gallery).

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