

Digital Portfolios: A Dozen Lessons in a Dozen Years
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NECC 2005: Philadelphia

In 1993, a team at the Coalition of Essential Schools asked a simple question, "How could technology support exhibitions of student work?" The goal was twofold; help students to show how they are meeting high standards of achievement and who they are as individual learners. During the last dozen years, technology has progressed at a rapid pace, and schools are facing many new challenges in assessing what students know and are able to do. Digital portfolios are more viable than ever for learning and assessment. In our work across many different projects, we have learned a number of lessons that we present here as a dozen lessons that resonant across our work and that we hope will inform yours.

1 To get schools started, it helps to think about the big questions, a set of "essential questions." From the first research on digital portfolios, we learned that considering these big issues are pivotal to success:

<i>Vision</i>	<i>What should a student know and be able to do?</i>
<i>Purpose</i>	<i>Why are we collecting the student work?</i>
<i>Audience</i>	<i>Who will be reading the portfolios?</i>
<i>Assessment</i>	<i>What tasks should students perform? How will we know what's good?</i>
<i>Technology</i>	<i>What systems will we need? How is it supported?</i>
<i>Logistics</i>	<i>What resources do we need?</i>
<i>Culture</i>	<i>How do we make the portfolios valued and valuable to a school?</i>

There isn't one "right" answer to these questions; what is important is that the school community has a conversation about what they think about each of these issues. To work out some answers to these questions, teachers need each other, yet they will also benefit from where they diverge in their thinking, so there are individual answers that fit the needs of different teachers, classes and courses. If you are a teacher, you need to recognize that you can't do it alone; at the same time, there is much that you can do alone.

2 Teachers must support the project. While support may come in varying degrees is fine but some support is necessary. A top down initiative gets the ball rolling; however, unless the stakeholders are involved in the design and have a say in the decision-making they will not feel as vested in the project. Like students, teachers can feel disenfranchised and not completely buy in to the project. Leadership, however, can help build that support through consensus. Each portfolio endeavor requires someone to explain the purposes of the project as often as necessary.

3 Portfolios are fundamentally for the students. A good portfolio sounds like the student, is created around his or her own learning goals, and shows growth over time in areas important to the student. Student and school goals are integrated as the student collects and reflects on progress over time. The portfolio is for both formative and summative evaluation. With the contribution of each new sample, the student reviews the previous work and reflects on progress. This often leads to the

student having insight into how he or she can improve. With new goals in mind, the student returns to learning, until the next portfolio entry. The portfolio is also a summative evaluation tool ; gauging how a student measures up against standards. For this, the best entries are rated against the criteria for standards. As the demonstration of what students know and can do, portfolios include reflections by the students on how they did the work, what they think of the pieces in the portfolio, what they think they demonstrate and why they included the piece in the portfolio. These reflections provide the context for the work. They are also evidence that the student has in fact operationalized the assignment; understands the concepts or skills , and can articulate, the purpose of the assignment or learning activity that resulted in the artifact that appears in the portfolio.

4 The portfolio has to fit into how students and teachers work. They must be integrated into instruction to be sustainable. If they are an add-on that teachers or students do not see as important to their learning, they become impatient with the time it takes to collect, select, reflect and present. Consider having students think or talk about what they know about a topic before you begin instruction. Capture these for the portfolio. Then as students learn, have them collect and reflect. At the end of the unit, have students review their initial understanding, reflect on what they have learning, and choose artifacts that reflect their learning. Portfolios gain acceptance quickly when they track high value and high growth (e.g. primary reading). Think about what you can collect using video, audio and pictures that will show the heart of student growth. In pre-schools, jumping, skipping and drawing show dramatic change. In primary, reading and handwriting improve dramatically. In upper elementary, students get much better at comprehension and retelling. In middle school students become narrators of their own stories, often reveling in autobiographies and using technology to capture where and how they live. In high school, students make great advancements in skill in areas such as sports and music, as well as writing and speaking. They often want to use the portfolio as evidence of proficiency for jobs or higher education. College portfolios often demonstrate competency against standards for entry into a profession.

5 It's not about the technology. A portfolio doesn't have to be digital but pictures and video change the whole experience. Students love creating the video. They can often talk about what and how they are learning much better than they can write it, so recording their reflections creates a rich picture of their learning. Audiences love seeing the growth over time that video and pictures capture so well. People often ask, "Do we need to have digital portfolios?" The answer is no, but you will probably want to. Schools that use portfolios intensively year after year find they have trouble managing the paper. Digital portfolios eliminates this problem. The problem of what to keep, what students take home and what gets stored from year to year is also eliminated. With digital portfolios, the digital copy is available to different people at different times, and copies can also be made. To launch digital portfolios, you will need to have an infrastructure in place prior to support implementation. At the very least, you will need cameras, server or web storage, and ready computer access. You will want to develop routines for students to collect, select and reflect using the equipment and systems you have available.

6 "Collect, select, reflect and present" is the process of portfolio development and use. Cycling through these activities makes the portfolio part of the learning process

rather than a chore at the end. Portfolios should include decision-making by students. A portfolio holds the byproducts of their learning so you want them to ask the question, "What shows what I know and can do?" This deepens their understanding of what constitutes evidence of learning. They soon realize, for example, that showing the difference between their initial understanding and a final performance of understanding is more powerful than showing only the final performance. Students contend that they learned more when they had to make the decision of what work was appropriate to use as a demonstration of proficiency for a particular practice.

Reflection makes a portfolio different than a collection of work. When students reflect on what, and how they are learning, they add meaning to the work they have produced. They are demonstrating that they know "how they know" rather than just "what they know." These reflections often become the most cherished part of the portfolio since they are such a personal representation of the "thinker" behind the work. You don't need as much in the portfolio as you think you do. A few well-chosen pieces with reflections can show a lot of growth. You will probably always want to include examples of writing three or four times a year. If you are including video, speaking samples in September, January and May can show huge growth. Consider including different kinds of work; lab reports, expository writing, handwriting samples for primary, career aspirations for older students.

7 All portfolio tools are not created equal. You will need to find the tool that will work best in your setting. Some schools, such as High Tech High, ask students to build their own portfolios from scratch as part of the technology curriculum; other schools may find it more useful to use tools that are more "ready-built." Your discussions of the essential questions will guide you in choosing or developing the vessel for your portfolios. The vision, purpose and structure will form the core of the portfolio. You will want a design that explicitly and intuitively supports your vision. In almost all cases, though, customization is critical. The technology needs to fit the way you do things in your school – not the other way around.

8 Implementation takes time. Change does not happen overnight and the implementation of a portfolio project is no exception. Be prepared to nurture the initiative and be flexible to the evolving needs of teachers, students, parents and administrators as they learn through the making and using of portfolios. It is a delightful journey to learn how to tell one's own learning story. It is important to recognize that any portfolio initiative is dynamic and not only should change but must change based on what you learned during implementation and as a result of reflection on the project. However, in order to have the necessary credibility and participant ownership there must be a solid infrastructure in place to support and facilitate project success.

9 The portfolio will stretch how students and teachers work. The portfolio system takes the assessment of student work and elevates its importance. A portfolio isn't about maintaining a reasonable average; it's about actual performance of standards. Therefore, students need to have opportunities to meet standards, and teachers need to respond to the work that students do. Like a good coach, teachers can look at performances in the portfolio, and determine where more emphasis is needed to reach higher levels of achievement. Portfolios shift instruction toward diagnostic, data-driven teaching and learning. While the data in a portfolio is qualitative rather

than quantitative, portfolios can provide a balance to standardized testing. Schools often find it helpful to work with the same rubrics so that there is a common language for discussing the work in the portfolios. On a larger scale, portfolio implementation can affect the entire school program. For example, when a set of portfolios is reviewed by reading specialists, the group may recognize patterns where students need help – and can then establish the appropriate professional development to address that need. Various education decisions, from curriculum to how time is allocated, can and should be reevaluated based on information gained from the portfolios.

10 Feedback is the most important aspect. Students agree that feedback/coaching is a necessary element of developing their portfolios, yet, students in a number of settings tell us that the feedback on their portfolios was missing. Portfolios beg for an audience, particularly of the "critical friend" kind. Students put so much into their portfolios, so many decisions about what to include, so much evaluation into getting each exhibition to be the best it can be, that they crave the feedback that comes from an equally close look by someone they admire. One strategy is to create a formal structure for feedback, such as one-on-one conversations, advisory periods, student-led conferences, panel presentations – even science fair type events where students put their portfolios on display. Students are more likely to put effort into a portfolio if they feel the school is taking the portfolio seriously.

11 Portfolio development is DEFINITELY worth the work. The actual effort involved in assembling a portfolio is often minimal; students can create entries quickly, and schools can focus on projects, activities and assessments that are already in place. By taking a few minutes and adding work to the portfolio, students and teachers can start to create a more complete view of what the student has accomplished, and what the teacher can do to help the student get to the next level. Parents, students, teachers, and administrators can see growth over time and patterns of performance in new ways. In the end, the portfolios are about getting a "richer picture" of each of us – and of all of us. As the excitement grows at seeing actual work, everyone wants to do more, to tell more of the story and to use the portfolios in more ways. Don't try to do it all in the beginning, it will grow through the enthusiasm and creativity of the portfolio makers.

12 The audience matters. Unlike a typical assignment, students recognize that work in a portfolio is for more audiences than the teacher. Knowing that the portfolio is something that can be shown to many different audiences makes students more conscious of what they include, and in turn, they put more effort into the work they put in the portfolio. Because portfolios make student and teacher work more public, there tend to be more projects that require extended effort and creativity, and are more relevant to student interests, local issues and current events. Teachers begin to make adjustments to assignments to make them more authentic, which generates more learning, and more involvement with audiences that are genuinely interested in the work. These 12 lessons represent our collective experience and that of the thousands of students and teachers with whom we have collaborated over the last 12 years. We share them in the hope that you will find them to be touchstones in your

implementation as we have. As we all continue in this work, we hope you will add to these 12 with what you learn along the way.

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