



*Quest Forward Learning Research Brief*

# Portfolios

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April 2017

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*Quest Forward Academy Santa Rosa, [www.opportunityeducation.org](http://www.opportunityeducation.org), December 2017: A Quest Forward Learning student sharing work with his mentor.*

## Summary

At Opportunity Education we are interested in utilizing portfolios to assess learning and to help students continue to develop their skills, discover their identities, and communicate their strengths and interests to other organizations and potential employers. The purpose of this brief is to synthesize existing research on portfolios, provide examples of their use in education, and highlight best practices that can inform the Quest Forward Learning methodology, products, curriculum, and support.

# Research

## What is a Portfolio?

In educational contexts, a portfolio is a collection of work that allows one to capture, share, and communicate about the learning process (Barrett, 2005, 2007; Barrett & Carney, 2005; Cambridge, 2008, 2010; Cambridge, Fernandez, Kahn, Kirkpatrick, & Smith, 2008 ). As such, it showcases polished work and artifacts, but also reflects the growth and processes involved. Portfolios are created for three main purposes: assessing, continued learning, and marketing (Barrett & Carney, 2005). Digital technology has increased electronic portfolio adoption by facilitating archiving, linking, storytelling, collaborating, and publishing (Barrett, 2007).

## Benefits of Portfolios

There are numerous benefits of using portfolios, particularly in terms of achievement, assessment, and lifelong learning (Cambridge, 2010). These include the following:

### 1 Portfolios are correlated with achievement.

Portfolio use is correlated with higher grades, retention, and graduation rates in higher education (Eynon, Gambino, & Török, 2014).

### 2 Portfolios can be used to effectively assess learning.

- Portfolios are effective formative-assessment tools and provide reliable and valid data on student development and achievement at school (Paulson, Paulson, & Meyer, 1991; Dorn, 2003; Gipps, 1999).

- Documentation of learning is drawn from authentic performances which reflect student's process, development, and skill sets (Chang, Mohammadi, & Regalla, 2016).
- Portfolios can be used to measure learning in specific disciplines and in general areas such as critical thinking (Cambridge, et al., 2008).
- Portfolios can expose understandings and processes otherwise invisible to students and mentors (Chang et al., 2016).

### 3 Portfolios encourage lifelong learning habits.

- Portfolios provide students with opportunities to express themselves and to develop authentic voice and identity (Keune, McKay, Peppler, Chang, & Regalla, 2015).
- Portfolios give students agency and ownership in their learning (Chang et al., 2016).
- Portfolios engage students with audiences beyond the school community (Chang et al., 2016).
- Portfolios can help students develop routines and habits of reflection and self-regulation (Snadden & Thomas, 1998; Yang, 2016).

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**“ We are interested in utilizing portfolios to assess learning and to help students continue to develop their skills.”**

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## Types of Portfolios

There are two types of portfolios: standardized and personalized (Cambridge, 2010; Barrett, 2005; Barrett & Carney, 2005). Standardized portfolios are generally conceived as summative assessments of learning, and personalized portfolios are thought of as formative assessments for learning (Stiggins, 2002; Maki, 2003). Both have their place in learning, but they have distinct forms, purposes, and audiences.

The following table summarizes the characteristics of standardized and personalized portfolios (Barrett, 2005).

<b>Standardized Portfolios</b> <i>“Portfolio as Test”</i>	<b>Personalized Portfolios</b> <i>“Portfolio as Story”</i>
Summative (“of learning”)	Formative (“for learning”)
Generally developed during limited time	Developed on an ongoing basis
Design, organization, and artifacts prescribed by institution	Design, organization, and artifacts chosen by student
Evaluation based on institutional standards (positivist)	Evaluation based on goals determined by student, often negotiated with mentor (constructivist)
Quantitative score used to determine program completion and/or accreditation	Review used to provide feedback on areas for future learning
Students explain how work demonstrates sufficient competency in standards	Students explain how work reflects their identity, interests, learning, and growth
Shared within institution	Shared with audience chosen by student (family, friends, peers, employers, etc.)
Requires extrinsic motivation	Builds intrinsic motivation

In many situations, students may need to compose both a standardized and personalized portfolio. It is recommended that the processes of composing each be kept separate given their distinct purposes and audiences. Particularly, keeping personalized portfolios separate from other assessment tools helps protect student ownership, permitting students to emotionally connect with their work, establish an authentic voice, and use their portfolio as a tool to tell their story and pursue personal learning goals.

Barrett (2005) proposes a system for balancing institutional accountability with student-centered learning in the design of portfolios. The following is a brief summary of the system proposed by Barrett: First, students participate in learning experiences embedded in the curriculum. Then, students archive artifacts and reflections from those learning experiences. The final step is for students to draw from this archive as they create multiple portfolios. Certain artifacts will be required or recommended to fit the guidelines of standardized portfolios, and students make decisions regarding the work they choose for personalized portfolios based on predetermined goals and audiences.



Quest Forward Academy Omaha, [www.opportunityeducation.org](http://www.opportunityeducation.org), 2017: A mentor and student working at Quest Forward Academy Omaha

Barrett stresses that this system will only work properly if both types of portfolios are valued by the implementing institution. Additionally, there should be digital tools in place that make it easy for students to archive, annotate, and access all artifacts they create during learning experiences.

Well-designed portfolios balance institutional accountability and learning, as well as “summative and formative feedback, past with the future, and a checklist of competencies with the holistic story of the student’s development” (Ambrose, Martin, & Page, 2014).

### Portfolio Subcategories

In addition to categorizing portfolios as standardized or personalized, either can be further subcategorized as a best work portfolio or a growth portfolio (Chang et al., 2016). The distinction between these categories is intent. Best work portfolios include a curated collection of artifacts that demonstrate highest levels of learning and are generally shared with audiences bent on achievement, including families, college admissions, and employers (Rolheiser, Bower, & Stevahn, 2000). Growth portfolios, on the other hand, include artifacts that present “evidence of struggle, failure, success, and change” and are meant to help students see their growth and share their progress with others (Rolheiser et al., 2000).

### Conditions for Portfolios

In order to effectively implement and use portfolios, schools must establish conditions that facilitate and value their use. Schools need to establish a culture of evidence. In the case of Quest Forward Learning, “evidence” refers to artifacts and the accompanying rationale behind the artifacts created (Barrett, 2007). Schools need to provide time for students to set up and curate their portfolios. Portfolios can quickly feel like extra, add-on work if they are not built into routines (Zubizarreta, 2009).

Additionally, mentors and students need training about methods and tools for supporting documentation, incorporating portfolios into the classroom routines, and using portfolios to enhance learning. Mentors play an important role as collaborators who help students determine questions of purpose, content, format, and selectivity of portfolios.



## Reflection in Portfolio-Creating

Reflection is a key part of portfolios and ownership of learning (Boud, Keogh, & Walker, 1985). Students need to reflect on both individual artifacts and the story the portfolio tells as a whole (Barrett et al., 2005). As such, reflection should take place throughout the learning process and not just towards the end (Hood, 2017). Intentional scaffolding is needed in order for students to engage in reflection, particularly in metacognitive tasks (Light, 2016). Galván and Rodriguez Illera (2017) found that the most difficult part of the portfolio-creating process for higher education students was reflection. Hood (2017) explains that besides the cognitive difficulty of reflection, some students may be unequipped to manage the risks of both introspection and external reporting that is involved creating a portfolio.

Guiding prompts can help students reflect as they create portfolios (Hood, 2017; Polly, 2017). Prompts will become more complex and less structured as students grow more skillful in reflection (Eynon et al., 2014; Chang et al., 2016), and will vary based on the nature of the portfolio and learning objectives.

### Some potential prompts include the following:

- What have I learned? Why (Zubizarreta, 2009)?
- What artifacts should (did) I include in this portfolio?
- Why is this sufficient evidence for the goal, outcome, or standard (Barrett, 2007)?
- Who is my audience? What is their role and how will they interact with the portfolio (Zubizarreta, 2009; Chang et al., 2016)?
- How should (did) I organize my portfolio to tell a coherent story? What story is told?
- What decisions did I make while I created this artifact/portfolio?
- How did my thinking change during this learning experience?
- How can my learning transfer to other/future learning experiences (Polly, 2017)?

## Student Motivation

There are a few factors that will motivate students to curate their portfolios.

### These include the following:

- 1 **Ownership.** Barrett (2007) argues that intrinsic motivation for developing and maintaining portfolios is raised only when students have ownership over the content, purpose, and process of the portfolio.
- 2 **Sense of integrity.** Students are more likely to find portfolios meaningful to their learning and lives if the portfolios represent the self and identity that students wish to convey (Cambridge, 2008).
- 3 **Institutional expectations.** If the portfolio is seen as an add-on, or expectations are not clear, they will be overlooked and not taken seriously (Yang, 2016).
- 4 **Ongoing sharing with peers.** Cambridge (2008) found that students were motivated to build their own portfolios when they were able to share progress, as well as give and receive feedback with trusted peers.
- 5 **Audience.** Students are highly motivated when they believe they have an audience that invests time in exploring their portfolios. Many portfolio creators are interested in data surrounding their audience, including the number of visitors, how much time they spent viewing the portfolio, which elements attracted the most attention, etc (Yang, 2016).

## Challenges

There are several challenges in designing and implementing portfolios that should be considered.

These include the following:

- 1 It is difficult to design solutions that address student needs and motivation, as well as institutional needs (Barrett, 2007). Finding a balance between standardized and personalized portfolios is difficult, but essential.
- 2 Students may perceive portfolios as a hoop to jump through, particularly if they are aligned with standards-based competencies (Barrett, 2005; Barrett & Carney, 2005). The value of portfolios to support lifelong learning should not be lost to using portfolios as an assessment tool.
- 3 It is difficult to examine portfolios as a collection of related pieces; however, they should be evaluated as compositions, not just the aggregation of text (Yancey, 2004). A portfolio can feel generic and incohesive if each artifact links only to a standard and lacks connection to larger themes or patterns.
- 4 Digital portfolios require photo and/or video equipment, as well as internet access.
- 5 Zubizarreta (2009) warns against using digital archives as an inexhaustible repository, and instead recommends carefully selecting artifacts to be stored for potential inclusion in portfolios.
- 6 Portfolios are more complex and time-consuming to both create and evaluate than other assessments with clear, objective scoring procedures (Zubizarreta, 2009). Given that portfolios do not lend themselves to objective assessment, it can be difficult to provide students and institutions with quantitative measures of learning.

## Interesting Examples of Portfolios

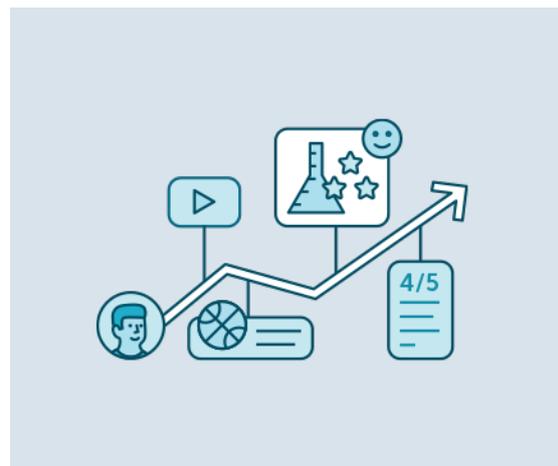
### K-6

K-5 Howe Elementary School. Electronic portfolios are compiled beginning in Pre-K, and artifacts are shared with parents so that they better understand their child's learning. Principal Matt Renwick wrote a teacher-student scenario that illustrates how portfolio routines work at Howe. He also began a Google+ group for educators using portfolios and in April 2017 started requesting exemplary digital portfolios for public showcase.

Liger Learning Center. A highly selective, progressive school in Cambodia that uses portfolios as tools for recording students performance on nontraditional learning tasks.

Portfolio School. Portfolio School has begun to publish some of the artifacts compiled by students ages 5-9.

Elizabeth Forward School District. Students receive badges throughout the year to recognize 57 skills they are working on. As students earn these badges, teachers add them to their portfolios in FreshGrade, a portfolio and assessment platform, so parents can be informed of their progress.



*Fresh Grade, <https://www.freshgrade.com>, August 2017:  
The Portfolio & Assessment Platform that Makes Learning Visible*

## Middle/High School

Francis W. Parker Charter Essential School. For each year of study, students create a Year-End Portfolio that serves as a demonstration and assessment of their learning in each domain. Additionally, to advance to the next division (total of 3 divisions over ~6 years) students compile a Gateway Portfolio that showcases their academic progress and they answer questions before a committee.

Pittsburgh High School, CA. The school released a collection of student portfolios from Architectural Design and Robotics Technology courses from 2013-14.

The Learning Portfolio Project. Parsons School of Design and Dreamyard Prep School have public student portfolios, as well as a summary of the learning process from a teacher perspective.

The Harbour School, Hong Kong. Starting in seventh grade, students begin to construct digital portfolios that demonstrate their learning. In 9-12 grades, advisors help students prepare portfolios for college.

School Makerspaces. This brief describes the physical spaces and digital platforms of four maker-oriented schools that use portfolios.

NuVu Studio. Students curate portfolios and blog about their progress and process.

Informal Makerspaces. This brief describes extracurricular programs that integrate portfolios into learning experiences.

## Higher Education

Catalyst for Learning. This is a collection of resources and experiences compiled by 24 U.S. four-year and community colleges that have integrated portfolios into their programs of study.

High Tech High. Ed.M. students create public digital portfolios to showcase work throughout their program and capstone.

Stanford P2P. The Portfolio to Professional program helps masters, doctoral, and post-doc students create publicly available professional ePortfolios.

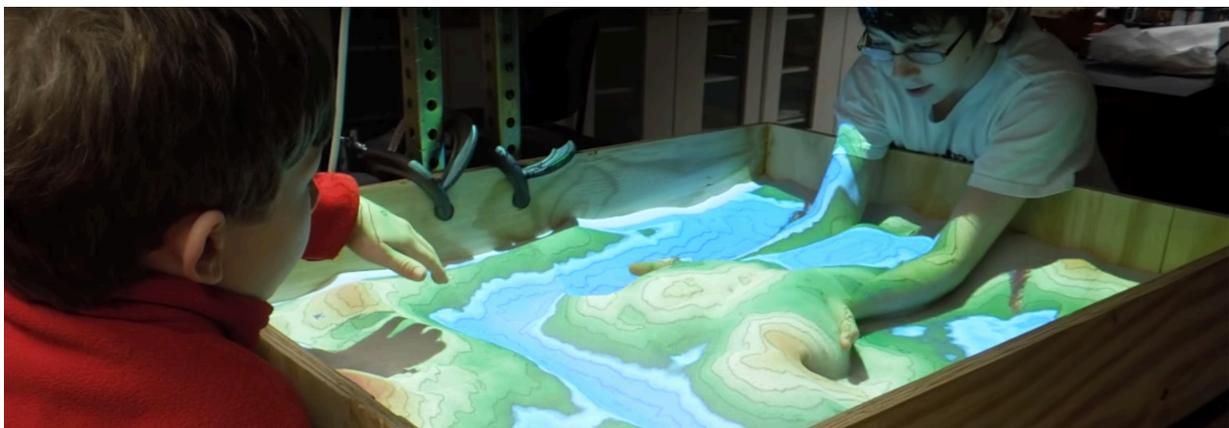
## Digital Portfolio Platforms

Seesaw. An app-based platform and blogging tool that supports a variety of artifacts (pictures, videos, drawings, and notes) and allows students to add audio or written comments to them, as well as share with audiences of their choice.

Pathbrite. Designed for an older cohort of students and professionals, the Pathbrite app supports the above artifacts and others, such as LinkedIn recommendations, badges, and eTranscripts.

Google Apps. Google Drive and Google Sites are often used to compile, publish, and share artifacts.

Build-in-Progress. While this MIT project is no longer active, user projects and documentation are archived and available for public viewing.



*Build in Progress, [buildinprogress.media.mit.edu/home/index.html](http://buildinprogress.media.mit.edu/home/index.html), August 2016: Augmented Reality Sandbox by ckilbane*

# Recommendations

## Recommendations for Quest Forward Learning

### Recommendations for Product Team

- 1 In the near future, support portfolios outside of the Quest! app using an existing tool, such as Google Sites.
- 2 Think of portfolios as storytelling tools of and for learning. Portfolios should not just be a disconnected collection of artifacts. They need to tell a story about who the student is, their skill set, and how they came to develop those skills. Portfolios should help students make broader connections to themes and skills and to tell their story.
- 3 Balance accountability with storytelling. If portfolios become diaries, they miss the mark on the evaluation and assessment needed for the institution. If they sway too far towards assessment, students perceive portfolios as a requirement, which decreases ownership and motivation. We must carefully balance portfolios as tools for both assessment and lifelong learning.
- 4 Include both standardized and personalized portfolios.
  - a. Standardized portfolios might include:
    - 1) artifacts linked to a program's standards and goals
    - 2) artifacts linked to the Quest Forward Learning essential habits or Well Educated Individual document.
  - b. Personalized portfolios should be defined by students based on their specific learning goals. These more public portfolios could align with program standards, the Quest Forward Learning essential habits or Well Educated Individual document, or something else entirely. The goals should be predefined with help from mentors. The personalized portfolios become more important as students progress through Quest Forward Learning and approach graduation.
- 5 Students need access to all their artifacts. This digital archive is constantly growing as students complete quests. The archive should support tags and any other features that will help students later access their artifacts, as well as space for reflections and other notes. This archive is akin to "My Artifacts," as we have previously discussed.
- 6 Students should be able to document and reflect through multiple channels. The archive should support a variety of files, including audio, pictures, video, text, presentations, etc.
- 7 Allow students to add non-Quest Forward artifacts to portfolios. Artifacts should serve as evidence for the goals and standards regardless of whether they were made in a quest or as part of an extracurricular project. This can help personal portfolios more holistically highlight all strengths and interests, not just those emphasized in Quest Forward Learning, as well as facilitate transfer of learning.

- 8 Provide opportunities for students to share both their best work and process. Students often gain more value from the process than the product, but these insights are rarely shared. This is a rich opportunity to support deeper reflection and learning. This may include a blog space that is updated periodically.
- 9 Students should have specific audiences in mind when creating their portfolios. One audience might be their mentors and peers in Quest Forward Learning. The program portfolios can be presented as a way for students to demonstrate their skills and knowledge, but to also help peers and future students learn from their mistakes. This can be more motivating than curating a portfolio simply for assessment reasons. Another audience for the public portfolio might be colleges and employers. The distinction should be clear.
- 10 Students need statistics on who is viewing their portfolio. Students are highly motivated by knowing their portfolio has an audience, as well as other related data (number of visitors, time spent viewing, artifacts viewed, etc.).
- 11 Built-in reflection prompts may be helpful. See examples on page 5.
- 12 Students will always need reminders to document, reflect, and curate. This won't come naturally. The same is true of mentors. If it is cumbersome for students and mentors to save artifacts, reflect upon and organize their portfolios, it's likely that they won't do it.

## Recommendations for Training and Support Team

- 1 Portfolios need to be part of the school's culture and routines. Mentors and administrators will need to know how to create this kind of culture. This can be accomplished through planning, allocating time for working on portfolios, and encouraging students to share portfolios with peers and other audiences.
- 2 Mentors should model how portfolios are used. Mentors need to keep a portfolio and engage in documenting, blogging, reflecting upon their work, and sharing this with students (McKay et al., 2015).
- 3 Mentors need to know how to use portfolios to enhance teaching and learning. This training should include specific strategies and tools for leveraging portfolios in the classroom environment for both feedback and assessment purposes.

## Recommendations for R&E Team

**Assessment plan.** Prior to implementing portfolios, the R&E team should define and develop a plan for assessing learning outcomes, either according to overarching program goals or other standards (Burrell, Miners, Nantz, & Torosyan, 2009).



*Quest Forward Academy Santa Rosa, [www.opportunityeducation.org](http://www.opportunityeducation.org), March 2017: Students working on a quest with guidance from their mentor.*

## Conclusion

There is no single way or right way to assess students, but we do know that the Quest Forward Learning assessment system should be more than an assessment of learning. It should involve activities that help students to practice skills and learn more deeply. Portfolios, embedded performance tasks, and a skills-forward approach will be key to achieving this goal.

As we launch the first Quest Forward Academies we will need to create a shared vision for assessment along with mentors and school leaders. This will drive future efforts and ensure that all the assessment components work together to address student needs.

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Quest Forward Learning consists of a discovery-driven learning methodology, standards project-based curriculum and materials for US high schools, and web and mobile apps for use by teacher and students to access the learning materials.

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