Open Portfolio Project

RESEARCH BRIEF 1

Maker Ed

Creativity Labs

A NETWORKED VISION FOR SHARING AND DOCUMENTING

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What Is an Open Portfolio?

Portfolios have often been described as a collection of artifacts that can be assessed for a variety of educational and professional purposes. Three types of portfolios, namely (1) *traditional portfolios*, (2) *e-portfolios*, and (3) *processfolios*, lead to our current conceptualization of (4) *open portfolios*, which are designed to better support learning in a digitally networked age and are especially important to makers and makerspaces.

Traditional portfolios present a physical sample of one's work (e.g., artwork, images, designs, papers, work samples, and/or other artifacts), compiled over a period of time, often for the purposes of assessing performance or progress, as well as for college entrance or job applications. Given the physical nature of many of the assets included, traditional portfolios can be difficult to share and thus face limitations in today's digital age.

By contrast, an electronic portfolio, or **e-portfolio**, is a collection of electronic evidence assembled and managed by an individual, usually on the web. Such work may include inputted text, electronic files, images, multimedia, blog entries, and hyperlinks. E-portfolios are both demonstrations of the maker's abilities and platforms for self-expression, and, if they are online, they can be maintained and shared dynamically over time. Some e-portfolio applications permit varying degrees of audience access, which can include general posting to social media or more restrictive access to potential employers or admissions committees.

While traditional portfolios and e-portfolios emphasize the showcasing of finished work, **processfolios** are designed to capture both the finished product as well as the process of creation over time. Processfolios present several unique opportunities to heighten learning by making the thinking around the process of creating visible, an important aspect of learning that often goes undocumented when an emphasis is placed solely on finished artifacts.

The shortcomings of these existing approaches to documenting and sharing work lie in their general lack of openness. Over time, many learners will have pieces or whole portfolios of their work that are isolated and inaccessible across learning settings, failing to link learning in school, home, and community. In these cases, learners can become disenfranchised from their work, with artifacts stranded in systems owned by schools or in platforms that do not allow for easy or automatic exporting/migration over time. However, we know that learners achieve best when their learning is reinforced in, and connected across, multiple settings (Ito et al., 2013).

As a result, we conceptualize an **open portfolio** as an openly networked, decentralized, and distributed portfolio system in which the maker maintains control of the content and curation process. The ideal open portfolio platform would be able to share and exchange information (i.e., a highly social, open environment) and be synced across mobile platforms to enable easy upload, capture, and showcase of work, work-in-progress, and processes of making. Open online platforms can make learning resources abundant, accessible, and visible across settings. Open portfolios seek to revisit the utility of portfolios as a central tool for lifelong learning and as a viable alternative to contemporary assessment practices, while leveraging new technologies to help address the shortcomings in prior educational initiatives.

A Brief History of Portfolios

Historically, portfolios have been used by artists and designers as *a tool for professional and academic assessment* (e.g., admission to schools, securing employment, etc.). Portfolio use as an assessment tool has a long and varied history. In the 1980s–90s, portfolios were heralded by education reform movements as an opportunity to shift the learning landscape in ways that gave legitimacy to children's and

teacher's voices and also to reflect both the process and product of learning (García & Pearson, 1994). The literature suggests multiple consistent benefits of portfolios, including a direct impact on learner achievement (Dorn, 2003; Gipps, 1999) and as an effective formative assessment tool (Paulson, Paulson & Meyer, 1991; Ewell, 1991). Portfolios have also been shown to be effectively scaled up to larger group assessments (Beattie, 1992; Beattie, 1994) and can be useful for assessing learning in an effort to affect policy-making decisions (Dorn, 2003; Hamilton, 2003).

A number of programs leveraged the historical precedent of portfolio use in the arts toward a variety of educational aims and are worth noting—such as the International Baccalaureate program, processsfolios as highlighted in the Arts PROPEL project (Gardner, 1989), and the College Board's Advanced Placement art portfolio—and can be found more recently in the work of MIT Media Lab's Build in Progress web-based processfolio (Tseng & Resnick, 2014). While portfolios may be able to scale up, some research literature seems to suggest that portfolio practices function best at the local level within the immediate and contextualized learning environment as potentially dynamic, formative assessment tools (Davis-Soylu, Peppler & Hickey, 2011). Prior attempts at integrating portfolio practice in the classroom sought to transform the educational landscape but, despite their promise, have faced significant hurdles. Some of these hurdles have been economic (considering of the costs of scaling portfolio assessments) and others have been political, including constraints that recent educational policies like No Child Left Behind (NCLB) and the new Common Core State Standards (NCSS) have had on mandated standardized assessment practices, which place severe restrictions on the capacities of school teachers, administrators, and institutions to find the means for incorporating and maintaining portfolio practices.

Alternatively, others have used portfolios as *a tool for learning and reflection*, creating opportunities for examining the whole of one's work as well as the learning process over time. The value of portfolios as a tool or process for learning and self-reflection has been recognized across a variety of fields. Notably in schools, English Language Arts has incorporated portfolio use with significant success as ways to document work in progress and create points of reflection that may serve as artifacts of learning (García & Pearson, 1994). Similarly, medical education has used portfolios as an effective way for medical students to track their learning and develop habits of practice rooted in reflection (Snadden & Thomas, 1998). Portfolios are now even being adopted within engineering education with a current push by the College Board to develop a new AP Engineering program assessment using portfolios. Others argue that the everyday process of curation itself may function as a reflective process and promote learning. Across these initiatives, portfolios are important for learners to develop their identities through the everyday curation of their artifacts—be it within art, design, writing, engineering, and especially, making.

Today, there is a rising interest in revisiting the value of portfolios because of their richness as an assessment tool (showcasing the whole of the individual as opposed to a flattened test score) and as a viable alternative to the limitations of today's standardized testing. Many lessons on how learning takes place through portfolio use have been learned, and we may be able to leverage the portfolio investigations that have come before. This may help us to better point to the efficacy of portfolios from a policy perspective where portfolio assessment is instead rooted in a philosophy that supports learning and values deeper connections across and through disciplines (Gipps, 1999). New technologies particularly present exciting opportunities to rethink and reshape this landscape.

The Promise of New Digital Tools and Open Portfolios

In comparison to paper-based portfolios, digital portfolios use less storage space, are quicker to share and to receive feedback on, and the likelihood for people to stumble across them is higher. Specifically, everyday social media and digital tools, such as the Flickr mobile application, afford sharing photographs of projects and arranging, rearranging, and browsing through shared sets of images using tagging functions of applications. This can lead to expanded learning spaces as representations that may be personalized to the viewer.

Creating short audio-visual narratives of projects in progress using applications such as Adobe Voice to overlay voice recording with text and digital images, can be a starting point for interlacing short narrative into larger personal or community learning stories. Using free and open tools (e.g. blogs) gives makerspaces the possibility to offer all participants the same starting points for developing portfolios that may be woven across projects and participants.

Digital applications, tools, and platforms that support fast scanning through large amounts of documentation— such as Instructables, the FiftyThree Paper application, and Carbonmade—can be used to support learning and reflection over time. Tools for creating time-lapse video, such as Lapse It and Timelapse, can be used in combination with DIY documentation stations to take pictures of project progression, capturing making and mistakes in situ. Additionally, technology use in the creation of portfolios may allow for a more visible connection across artifacts. This capacity can enhance the pedagogical values of portfolios as a system of reflection, connection, process, identity building, and activation (Kimball, 2005).

Advances in technology are often seen as the means toward allowing portfolios to be more meaningful in the

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21st century. Through this lens, we can push back against the idea that e-portfolios are merely electronic versions of print portfolios and consider that we appropriate them differently as we express ourselves through various media (Yancey, 2004). The digital portfolio can allow individuals to craft representations of themselves in deeper ways through the multiple contexts that can be developed using the variety of media and tools available for constructing digital portfolios.

Conclusions and Recommendations

In our work toward developing effective digital portfolio practices for young makers, we are considering how new technologies afford us to:

Rethink our current standardized assessment practices and reclaim the historic role of portfolios in the assessment process to more holistically represent the abilities of the learner. New digital tools and technologies present new opportunities to rethink current assessment practices and to find more affordable ways of scaling approaches to portfolio assessment.

Conceptualize a more openly networked and decentralied portfolio development that can support both the learner and the learning process over a lifetime. When thinking about developing a portfolio practice, it is important to think about sustainability of the work beyond the (institutional) learning situation that the work was developed within.

Automate the documentation of process and product of making, particularly within maker communities. Making with physical tools and materials presents a burden with regard to capturing the process and product; unlike digital tools, there is no embedded button or opportunity for data to be auto-collected. However, we know that documenting process is particularly important to learning. New hardware, software, and practices are needed to support the type of learning taking place using the various tools available in makerspaces.

Our next research brief will highlight the importance of portfolios in maker communities and at a national selection of makerspaces. We will present the tools and practices used in their documentation and portfolio efforts, as well as the current challenges these sites are tackling in the creation of open portfolios.

Acknowledgements

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