

Evaluating Institutional ePortfolio Options: A Process-Driven Approach

by Christine Lampe

HCT Al Ain Women's College

Abstract

ePortfolios can increase learning engagement and continuity between courses, as well as providing evidence of competencies for career development. An institutionally supported ePortfolio system can promote a consistent and transparent process for learners and enable more collaborative development among faculty. It can supply rich data to inform programme development, and evidence of competencies for accreditation. In selecting ePortfolio platforms and tools, care must be taken to ensure that the technologies offer sufficient usability; flexibility in the management and presentation of content; integration with existing technologies; and access to the portfolio for graduates entering the workforce. In this article several key aspects of ePortfolios are highlighted that should be considered in developing an institutional ePortfolio process. A model rubric is identified that could support evaluation of portfolios beyond the programme level. Finally, technical aspects of ePortfolio systems and tools are explored, and possible approaches are suggested.

Keywords: eportfolios, rubric, Tin Can API, VALUE

Introduction

ePortfolios can increase learning engagement and continuity between courses, as well as provide evidence of competencies for career development. Yet at many institutions in this region they remain a niche activity, with little continuity between courses or alignment between programmes. An institutionally supported ePortfolio system can promote a more consistent and transparent process for learners and enable more collaborative development among faculty. It can help academic and career advisors identify students at risk. It can supply rich data to inform programme development, and evidence of competencies for accreditation.

In selecting ePortfolio platforms and tools, however, care must be taken to ensure that the technologies chosen do not create unnecessary barriers to any of the processes they must support. Technical issues to be considered include usability; flexibility in the management and presentation of content; integration with learning management systems (LMS); and access to the portfolio for graduates entering the workforce.

Developing an ePortfolio Process

Developing an ePortfolio process is not simply a matter of installing software and providing technical training

and support. Institutions must establish a process that transcends disciplines and supports the often divergent assumptions and values of the various stakeholders.

In some programmes, portfolios are integral to learning and assessment throughout the curriculum. In others, portfolios may be regarded as an end product, presenting evidence of professional competencies for employment. For some disciplines, the design of the ePortfolio itself is evidence of competencies. For many practitioners, student ownership of the ePortfolio is critical to learner engagement with the process. For others, integration of the ePortfolio as part of the online course is essential. Establishing institutional systems and practices that support these diverse approaches is key to sustainability.

There are benefits for the institution as well. Increasingly, organisations are seeking evidence of learner competencies to evaluate programme effectiveness and promote continuous improvement. Do higher exam results represent improvement in teaching and learning or grade inflation? Do lower scores represent greater rigour or poorer preparation? Are students producing quality work? Test scores alone can't provide that information; properly designed and analysed, institutional portfolios can yield rich analytics that can help identify both

strengths and weaknesses in the curriculum. Rich data can stimulate healthier discourse within and across disciplines than league tables alone, contributing to the development of a “culture of evidence” (Barrett & Wilkerson, 2004) that values the quality of learning over pass rates.

How should ePortfolios be evaluated?

ePortfolios are, by their nature subjective and situated in a particular learning context. As with course or programme assessment of eportfolios, meaningful institutional evaluation depends very much on the objective.

One approach to institutional portfolio assessment is to incorporate the portfolio into the career planning and placement process. In this case the portfolio is evaluated in terms of providing evidence of competencies and strengths, supporting and complementing the student’s CV. Career-orientation is a strong motivation for portfolio development (Tseng & Chen, 2012).

Another approach is to evaluate achievement of graduate learning outcomes for students. In this case, the portfolio can provide evidence, not only of the quality of the individual student’s performance, but also an aggregate ‘report card’ measuring how well programmes are helping learners achieve these aims.

VALUE rubrics

The American Association of Colleges and Schools has taken the idea of standardised rubrics a step further by developing a rubric for ePortfolio assessment built on the existing practices of tertiary institutions across the US (Rhodes, 2008). The resulting rubric, called ‘Valid Assessment of Learning for Undergraduate Education’, or VALUE, is a set of rubrics evaluating fifteen different aspects of portfolios:

Intellectual and Practical Skills

- Inquiry and analysis
- Critical thinking
- Creative thinking
- Written communication
- Oral communication
- Reading
- Quantitative literacy
- Information literacy
- Teamwork
- Problem solving

Personal and Social Responsibility

- Civic knowledge and engagement—local and global
- Intercultural knowledge and competence
- Ethical reasoning
- Foundations and skills for lifelong learning

- Integrative and Applied Learning
(American Association of Colleges and Schools, 2013)

The rubrics are designed for “institutional-level use in evaluating and discussing student learning, not for grading” (American Association of Colleges and Schools, 2013). The rubrics are not prescriptive; rather, rubrics should be selected to match specific institutional learning outcomes. Moreover, the rubrics explicitly recommend that the language of the rubrics be adapted to “the language of individual campuses, disciplines, and even courses” (American Association of Colleges and Schools, 2013).

One strength of the rubrics is their range; portfolios may be evaluated using the same standards from their first semester to their last semester by setting targets at ‘benchmark’, ‘milestone’ or ‘capstone’ level (Fig. 1). This feature enables tracking the progression of individual students or whole cohorts from college entry, into their programme of study, and at the transition into career or further study.

FIG. 1 VALUE rubric for information literacy showing Capstone, Milestones and Benchmark criteria (American Association of Colleges and Schools, 2013).

The intent of the rubrics is not to standardise learning or portfolios at the expense of learning or programme-level objectives. On the contrary, they create a starting point for illuminating what is to be considered evidence of the core learning outcomes across the disciplines, contributing to a more rational and transparent “culture of evidence” (Barrett & Wilkerson, 2004).

The VALUE rubrics may be requested from the American Association of Colleges and Schools (see Appendix 1: ePortfolio Resources).

ePortfolio Resources

A wealth of resources and information can be found on the website of The Association for Authentic, Experiential and Evidence-Based Learning (AAEEBL) and the wiki of the Electronic Portfolio Action & Communication (EPAC), two organisations dedicated to developments in ePortfolio practice and technology (see Appendix 1).

Technical Considerations

ePortfolios can be built using a wide range of tools, from standalone ePortfolio systems to web tools, mobile apps

and software; many practitioners use a combination of tools in response to different course objectives or user preferences. Institutional ePortfolio technologies should provide a solid foundation for ePortfolio practice that integrates well with the existing technology infrastructure and provides a channel for consistent assessment and external evaluation, without supplanting existing ePortfolio practices.

The matrix in Appendix 2 is a representative sample of the options available, and tools and features are continuously emerging. EPAC maintains an “Evolving List of ePortfolio Tools” and hosts webinars on ePortfolio technologies jointly with AAEEBL (Electronic Portfolio Action & Communication, 2013; see links, Appendix 1).

Usability

Usability should not be equated to simple ‘ease of use’. ePortfolio systems that offer capabilities such as multiple views and assessment rubrics will generally require a greater learning curve than simpler options that may be suitable for individual courses. In fact, user satisfaction has tended to be based more on utility, robustness and support than relative ease of use (Mu-Yen, Mou-Te Chang, Chia-Chen, Mu-Jung & Jing-Wen, 2012).

Another aspect of usability is personalisation or theming. ePortfolio tools that enable students to change colour schemes and graphic elements, add images and avatars can promote greater engagement with the process.

Media support

The type of media supported by an ePortfolio is critical for the project-based assessment so prevalent in higher education; most systems support a full range of document and multimedia formats via attachments or links (Appendix 2), but vary considerably in how much can be incorporated directly into the ePortfolio. For portfolios showcasing documents or design, this could be an important consideration requiring alternative tools for certain kinds of portfolios. Blog portfolios such as WordPress are particularly adept at showcasing writing and images; ePortfolio systems such as Blackboard, Livetext, Mahara and Pebblepad are effective organisers for project work; while site building tools such as Google sites, PBworks and Weebly can showcase live and collaborative projects (Blackboard, Inc., 2013a; Google, Inc. 2013; Mahara, 2013a; Pebble Learning Ltd., 2013ab; PBwiki, Inc. 2013; Weebly, Inc., 2013).

Some portfolios are more specialised, being excellent at some aspects but weak on others. For example, start-up ePortfolio Pathbrite (2013) has the visual appeal and strong social media integration of Tumblr but lacks a hierarchical page structure, which limits its ability to support project portfolios (Pathbrite, 2013).

Perhaps the most versatile option is the PDF portfolio. Adobe Acrobat software can convert almost anything to PDF, including documents, spreadsheets, presentation slides, websites, blogs, live links, live forms, even embedded video with playback. These documents can be as-

sembled into a single, multipage printable document, and reassembled into portfolios for different purposes (Adobe, Inc., 2013).

Templates

Many tools support the development and sharing of templates that help guide students to produce ePortfolios that meet course specifications (see Appendix 2). These can be designed by the course team to ensure consistency, and can include embedded evaluation tools depending on the ePortfolio system.

Evaluation Tools

Whether assessment takes place directly in the ePortfolio system or on an LMS or Gradebook, evaluation tools such as rubrics and dashboards can enable timely, confidential feedback. Some ePortfolio systems, such as Livetext and Pathbrite, have well-developed evaluation tools built into the system (Livetext, 2013; Pathbrite, 2013). Others, such as Google sites, PBworks and Weebly, support embedded forms, which enable the creation of custom evaluation tools (Google, 2013; PBwiki, 2013; Weebly, Inc., 2013).

Integration with LMS

While it is certainly possible to integrate any ePortfolio with any LMS via links, the additional technological barriers this may entail should not be overlooked. Any benefit to be achieved by adding an external ePortfolio system must not be negated by the additional learning curve entailed. For example, Ellis & Kelder (2012) report on the integration of portfolio-based assessment into group assignments that use the PebblePad ePortfolio system in tandem with the university’s LMS created a negative barrier for undergraduates, who felt that the “cognitive load” required by the additional system was “unreasonable” given the 6% weighting for the task (Ellis & Kelder, 2012). For this reason, institutions with established LMS should consider exploiting existing LMS tools or very simple additions for portfolios, rather than requiring students to learn an entire system.

On the other hand, an LMS extension does not always ensure true integration. For instance, Blackboard portfolios can be linked to courses and shared with teachers, classmates and prospective employers; however, evaluation of Blackboard portfolios is no more integrated with course assessment than any other portfolio system; teachers view the portfolios exactly the same way, and analytics cannot be aggregated beyond course level (Blackboard, 2013b).

In some cases, an ePortfolio system designed to integrate seamlessly with a particular LMS system may be preferable. For example, the open source community has developed robust integration between the Mahara ePortfolio system and the Moodle LMS (Mahara, 2012). Livetext, a proprietary system, offers integration with Blackboard and Moodle.

Emerging standards

New technologies are helping to further bridge the gap between systems. For example, Tin Can API is an inter-

operability standard designed to replace SCORM with a "simple and flexible" language that supports rich data collection across a range of web and mobile platforms, even offline (Rustici Software LLC, 2013ab). Fully implemented, this standard promises to capture a wider range of ePortfolio content for programme accreditation and development. At present, most portfolio systems and tools are not Tin Can compliant, but for long-term planning, support for this capability should be considered.

External access

As students progress through higher education, there is an increasing need for external access to their portfolio. For some students this can happen early in their college careers, as they apply for special educational opportunities such as summer programmes or study abroad. For most students, as they reach their final year and begin applying for internships, work experience and employment, access to their portfolio by potential employers becomes increasingly critical.

Most ePortfolio systems accommodate this access using some sort of invitation, permission or token system, while external tools may enable variable levels of control (see Sharing column, Appendix 2). In some cases, external tools may offer public access or links that may be shared or even posted online. While this can make the portfolio more widely accessible, it also increases the possibility of sensitive information such as addresses and telephone numbers being broadcast by a careless recipient.

Migration

Many systems support export to html format, which essentially creates a stand alone website that can be stored on flash memory or web repository, or hosted online. Systems and tools that support html export include Blackboard, Mahara, Google sites and Weebly (see Migration, Appendix 1). Note that these sites do not support importing html pages; these must be individually copied and pasted into these systems in code view, an unfamiliar task for most users.

Some ePortfolios offer an additional interoperability standard called LEAP2A that supports exporting and importing portfolios from one system to another. Both Mahara and Pebblepad support LEAP2A. While this is useful for an institution migrating between LEAP2A-compliant systems or a student transferring institutions, the pool of compliant portfolio systems is rather small.

Portfolios based on blog platforms offer export to xml formats which enable migration between platforms, whether institutionally- or web- hosted. For example, any WordPress service or LMS can import blogs from other WordPress platforms, as well Blogger and Tumblr among others (Edublogs, 2013; Wordpress.com, n.d. b).

Technology Options

The matrix of ePortfolio systems in Appendix 1 reveals a wide range of options, but a little analysis should iden-

tify the best systems for a particular context. Key factors include the presence or absence of an LMS or content management system, budget for licences, availability of technical support, and access to the network and internet.

LMS integration

For institutions with an established LMS, integration is an important consideration. A number of ePortfolio systems offer shared logins and direct links with popular LMS (see Appendix 2). Blackboard Portfolios can be accessed from the Blackboard LMS and linked to specific courses. Mahara offers close integration with Moodle. Livetext offers similar integration with Blackboard, Desire2Learn and Moodle. However, in principal, any ePortfolio system can be linked to an LMS for assessment, so other features of the ePortfolio system should also be considered. A key factor in an integrated system is where portfolios are assessed. Most ePortfolio systems must be evaluated externally via the LMS or some other system, requiring some form of submission and archiving of portfolios to maintain a record. Livetext and Pebblepad offer portfolio assessment that can be reported to the student, the LMS gradebook and aggregated for departmental and institutional review. Moreover, these systems offer some archiving functionality so that students need not submit their portfolios as attachments for assessment.

No LMS

If the institution is not using an LMS to manage courses, the ePortfolio system itself may offer sufficient functionality to support additional LMS-type functions. However, if not provided by either the LMS or the ePortfolio system, there must be some way to aggregate assessment data for institutional analysis, such as a course management system or institutional database.

Proprietary or open source

Proprietary systems such as Blackboard, Livetext and Pebblepad offer institutional pricing for robust platforms, continuous improvement and technical support. Open-source systems such as Mahara and Wordpress.org are free to download and install, and tech support is provided by an active development community. However, their success depends on a commitment to open-source development by local technical support; a strong preference 'on the ground' for proprietary systems can create a formidable barrier to implementation and maintenance.

Alternatively, these systems can be hosted by governments, organisations, or businesses. For example, schools in New Zealand have free access to My Portfolio, a web-hosted Mahara ePortfolio system, developed by the Ministry of Education (My Portfolio, n.d.). Edublogs Campus is a popular web-hosted WordPress service for both schools and higher education (Edublogs, 2013; see Appendix 2).

Server or web-hosted

Blackboard, Moodle, Mahara and WordPress are installed and maintained on a local server, requiring technical staff. Livetext is web-hosted; Pebblepad offers both options. Web-hosted systems do not require the same level of local technical support as server-based systems, so they may be a better option if technical support is limited. On the other hand, server-based systems might be a better option if internet access is unreliable or if privacy and security are a critical issue, as is often the case in primary and secondary educational contexts.

Evaluating ePortfolio options

Every ePortfolio option represents a trade-off between different features; some tools are stronger on security and standardisation at the expense of autonomy and flexibility; others are strong on accessibility and mobility but do not support integration with existing technologies or assessment (see Fig. 2).



FIG. 2. Choosing ePortfolio systems and tools requires a trade-off between different features.

Transitional process

One solution that offers some of the benefits of both integrated systems and external tools is a transitional ePortfolio process (Fig. 3). While students are studying at the institution and using the LMS, they use the integrated system. As they enter their final year and begin preparing for employment, they migrate their institutional portfolio to an external tool. This is a natural time to review and select previous coursework as evidence of competencies. An added benefit is that students will be producing their external portfolio using the latest technologies. Moreover, this approach would simplify technical support, as there are fewer systems for teachers and technicians to know.



FIG. 3. Transitional ePortfolio process. Students use integrated portfolios until their senior year, when they transition to external career or professional development portfolios.

However, maintaining an institutionally housed ePortfolio will not be satisfactory for practitioners who believe that

ownership of the ePortfolio is integral to learner engagement in the ePortfolio process; they will require support for alternative approaches.

Complementary processes

One alternative is to establish complementary ePortfolio processes (Fig. 4). In this approach, faculty or students may opt for an external ePortfolio at any point in the student's career, from entry to final year. Some programmes may operate exclusively using external ePortfolios; others may choose them for particular courses; others may leave the choice of internal or external ePortfolio up to individual teachers or even students themselves.



FIG. 4 Complementary ePortfolio process. Students use external or integrated portfolios depending on programme or course objectives; external portfolios submitted or linked to institutional system for assessment.

While this approach maximises learner autonomy and flexibility, care must be taken to integrate these ePortfolios into the institutional evaluation system, for example by uploading or attaching archived ePortfolios to an ePortfolio assessment system on the LMS.

A further complication of complementary processes is the increased burden on technical support. Teachers or technicians may need to become proficient with a range of tools unless policies are developed to limit choice in some way.

Recommendations

In reviewing the considerations highlighted above, it is clear that the development of an institutional ePortfolio system is dependent on the aims and the context. Several key factors for successful development can be identified.

First, the value of the ePortfolio to different stakeholders must be understood. The ePortfolio system must support the diverse ways that ePortfolios are used.

Second, institutional objectives for the ePortfolio process should be clarified and common standards identified that can be applied across programmes. These standards can enable comparison of progression across programmes and cohorts, contributing to programme development.

Next, the existing learning environment must be taken into account. The ePortfolio system must fit the local conditions, including established LMS and content management systems; availability of funding; availability of technical support; access to the internet; and mobile usage.

Finally, decisions must be made about where assessment

will take place, and to what extent the system will support transitional or complementary ePortfolio processes.

By considering the needs of all stakeholders and considering the way the system must integrate with existing technologies and processes, an effective institutional portfolio system can be developed for any context.

References

Adobe, Inc. (2013). *Volume Licencing*. Retrieved 9 April 2013 from <http://www.adobe.com/volume-licensing/education.edu.html>.

American Association of Colleges & Universities (2013). VALUE: Valid Assessment of Learning in Undergraduate Education. Retrieved 6 April 2013 from http://www.aacu.org/value/rubrics/index_p.cfm?CFID=60577071&CFTOKEN=51680065

Barrett, H. C., & Wilkerson, J. (2004). Conflicting paradigms in electronic portfolio approaches. Retrieved 1 April 2013, from <http://electronicportfolios.com/systems/paradigms.html>

Blackboard, Inc. (2005). Add portfolios to a course. Retrieved 6 April 2013 from http://library.blackboard.com/docs/r7/70/en_US/instructor/bbas_r7_0_instructor/add_portfolios_to_a_course.htm

Blackboard, Inc. (2013a). Blackboard Mobile. Retrieved 8 April 2013 from <http://www.blackboard.com/Platforms/Mobile/Overview.aspx>

Blackboard (2013b). Outcomes Assessment: Know how to improve. Retrieved 8 April 2013 from <http://www.blackboard.com/Markets/Higher-Education-%281%29/Solutions/Teaching-and-Learning/Outcomes-Assessment.aspx>
brightcookie.com (2012). PortfolioUP! Now available for download. Retrieved 9 April 2013 from <http://www.brightcookie.com/our-services/consulting-additional-services/portfolioup>.

Digication (2013), <http://digication.com>. Retrieved 4 June.

Edublogs (2013). *Edublogs Campus*. Retrieved 2 June from <http://edublogs.org/campus/>

Ellis, L. and Kelder, J.C. (2012). Eportfolios for evidence of individual contribution to group work: A benefit and barrier, *EduLearn12 Proceedings*, 2-4 July 2012, Barcelona, pp. 6760-6766. ISBN 978-84-695-3491-5 [Refereed Conference Paper]

LEAP2A (n.d.). Retrieved 6 April 2013 from <http://www.leapspecs.org/2A/>

Livetext, Inc. (2013). Overview. Retrieved 7 April 2013 from <https://www.livetext.com/overview>.

Mahara (2012). Mahara and Tin Can API. Forums: *Support*. Retrieved 7 April from <https://mahara.org/interaction/forum/topic.php?id=4683>.

Mahara (2013). 4.5. Export. *Mahara user manual*. Retrieved 7 April from <http://manual.mahara.org/en/1.5/portfolio/export.html>

Mu-Yen, C., Mou-Te Chang, F., Chia-Chen, C., Mu-Jung, H.,

& Jing-Wen, C. (2012). Why do Individuals Use e-Portfolios?. *Journal Of Educational Technology & Society*, 15(4), 114-125.

Pathbrite (2013), <http://pathbrite.com>. Retrieved 4 June.

Pebble Learning Ltd (2013a). *PebblePad*. Retrieved 5 April from <http://pebblepad.com>

Pebble Learning Ltd (2013b). *PebblePad Mobile*. Retrieved 9 April from <http://www.pebblepad.co.uk/mobile.asp>

My Portfolio (n.d.), <http://myportfolio.school.nz/>. Retrieved 2 June.

Rhodes, T.L. (2008). 'VALUE: Valid assessment of learning in undergraduate education', *New Directions for Institutional Research*, vol. 2008, no. S1, pp. 59-70 [online], doi: 10.1002/ir.262

Rhodes, T.L., ed.(2010). *Assessing Outcomes and Improving Achievement: Tips and tools for Using Rubrics*. Washington, D.C.: Association of American Colleges & Universities.

Rustici Software, LLC (2013a). SCORM vs The *Tin Can API*. Tin Can API. Retrieved 6 April 2013 from <http://TinCanapi.com/scorm-vs-the-tin-can-api/>.

Rustici Software, LLC (2013b). What is the Tin Can API? *Tin Can API*. Retrieved 6 April from <http://TinCanapi.com/overview/>.

Wordpress.org (n.d. a). Export, *WordPress.com*. Retrieved 8 April 2013 from <http://en.support.wordpress.com/export/#export-your-content-to-another-blog-or-platform>

Wordpress.org (n.d. b). Import, *WordPress.com*. Retrieved 8 April 2013 from <http://en.support.wordpress.com/import/#importing-content-from-another-platform-or-wordpress-blog>

Image credits

Figs. 2-4 by the author using Microsoft clip art, drawing and chart tools.

Appendix 1: ePortfolio Resources

Electronic Portfolio Action & Communications (EPAC)

epac.pbworks.com

 @epaccop

Evolving List of ePortfolio-related Tools

bit.ly/epactools

The Association for Authentic, Experiential and Evidence-Based Learning (AAEEBPL)

www.aeebl.org

The International Journal of ePortfolio (IJeP)

www.theijep.com

a "double-blind, peer-reviewed, open access journal" published twice a year, in March and September.

VALUE rubrics

www.aacu.org/value/rubrics



Appendix 2: Institutional ePortfolio options

A matrix of representative ePortfolio systems and tools compared in terms of their relative accessibility, usability, and integration with learning management systems, and ownership.

Type & cost	Examples+ LMS integration	LMS integration	Repository	Mobile compatibility	Multiple portfolios or views
LMS component Institutional licence	Blackboard Portfolio	Blackboard LMS single login	hierarchical folders	Android™ BlackBerry® iPad iPhone OS	portfolios
server installation or web hosted Institutional licence	PebblePad	Moodle Blackboard single login	hierarchical folders	Pebblepad Mobile iPhone app	views
web-hosted Institutional licence Free with Google apps	Digications	LMS Google apps single login	20MB/user may purchase additional	Mobile access No apps	portfolios
web-hosted Institutional licence	Livetext	Blackboard Desire2Learn Moodle single login	hierarchical folders	Mobile access No apps	views

Assessment tools,analytics & templates	Media supported	Ownership & Sharing Sustainability Migration
--	pages and posts; embedded images; almost anything via attachment or link	Student manages portfolio access using internal permissions, external passes Student must export portfolio after graduation or a period designated by the institution Export to html (webpages) repository can be exported to desktop or WebDAV
Gateway captures live portfolios for feedback and marking; marked versions may be archived; templates	pages and posts; embedded images; almost anything via attachment or link	Institution-hosted; student manages portfolio access using internal permissions and external passes Student access for 12 months after graduation; must export portfolio after that Export to html (webpages) LEAP2A LTI (IMS)
Integrated assessment rubrics, analytics	pages; navigation; embedded images and video; almost anything via attachment or link	Student manages portfolio access using permissions Student must export portfolio after graduation or a period designated by the institution Export to html (webpages)
Integrated assessment rubrics, analytics, Turnitin	pages and posts; embedded images; almost anything via attachment or link	Student manages ePortfolio access using permissions Student must export portfolio after graduation or a period designated by the institution LEAP2A

Web-hosted free/premium/institutional licence

Examples + LMS integration	Repository	Mobile compatibility	Multiple portfolios or views
Edublogs + Authentication (single login) WordPress service institutional licence starting at 500\$ schools, 1000\$ higher education	10GB/user	mobile Android™ iPad™ app iPhone™ app	page/ post-level privacy settings portfolios
WordPress wordpress.com separate registration and log in	3GB/blog may purchase more		
Google sites sites.google.com Google registration and log in Google Apps (institutional) authentication (single login)	100 MB + Integrated with Google Drive links to documents on WebDAV e.g. Box, Dropbox, Site quota: N/A (quota is tracked at the domain level). Quota per domain: 100GB. Max attachment size: 20MB. Unlimited sites Pages per site: No set limit (see note below)	mobile Android™ iPad™ iPhone™	
PBWorks pbworks.com separate registration and log in	20MB (free account) hierarchical folders + embed/links to content on WebDAV e.g. Box, Dropbox, Google Drive	mobile Android™ iPad™ iPhone™	views or portfolios
Weebly weebly.com separate registration and log in	unlimited storage 5MB file size limit	mobile Android™ iPad™ app iPhone™ app	
Pathbrite Free for teachers 10\$/student/ year separate login	unlimited storage no bandwidth restrictions max upload single file: 100 MB	Mobile Android™ BlackBerry® iPad™ app iPhone™ app	portfolios

Assessment tools, analytics & templates	Media supported	Ownership & Sharing Sustainability Migration
templates	pages and posts; embedded images and polls; almost anything via attachment or link; some video and slideshow embedding from approved sources is supported, e.g. Vimeo; additional customisation available as premium service	Student manages portfolio access using privacy settings and/or invitations Student retains blog portfolio after graduation Student may export as xml file which can be imported into other blogs.
templates Rubrics may be constructed as forms—data can be exported as csv; forms may be embedded on pages; multiple portfolio templates can be constructed and shared for different purposes, complete with assessment rubrics	pages and posts; embedded images and polls; almost anything via attachment or link	<p>Student manages portfolio access using privacy settings and/or invitations Student retains blog portfolio after graduation html (webpages) via Data Liberation Front http://www.dataliberation.org/google/sites</p> <p>Student manages portfolio access using privacy settings and/or invitations Depends on the version. Educator-created student portfolios are retained with the course. Students retain student-created portfolios after graduation. Pages export to PDF</p> <p>Student manages portfolio access using privacy settings and/or invitations Student retains portfolios after graduation html (webpages); some features not retained, e.g. blogs</p>
Templates Integrated 'learning map'	strong visual orientation; almost any formats: documents, images, video visual orientation grid/gallery formats only strong social media support no page hierarchy no text-only posting tool	Student manages portfolio access using permissions

Open Source Server Installation (free)

Examples	LMS integration	Repository	Mobile compatibility	Multiple portfolios or views	Assessmen tools, analytics & templates
Mahara mahara.org	Moodle authentication (single login)	hierarchical folders	PortfolioUP app enables content upload to Mahara from Android™ iPad™ iPhone™»	views	templates
WordPress wordpress.org	single login	Y	mobile Android™ iPad™ iPhone™	Pebblepad Mobile iPhone app	N

Software (internet optional)

Type	Example	Repository LMS Integration	Mobile compatibility	Multiple portfolios or views	Assessmen tools
PDF software Institutional and educational licences available	Acrobat Pro adobe.com	requires repository Submit/link/attach from repository	readable on mobile Android™ BlackBerry® iPad™ iPhone™»	portfolios	rubrics may be constructed as forms; multiple forms can be constructed and shared for different purposes, incorporated into individual portfolios; data may be aggregated on SharePoint or other database; portfolio templates may be constructed and shared using a variety of software including Microsoft Word, Microsoft PowerPoint, Pages for iPad, Evernote, Google docs

(Adobe, Inc., 2013; Blackboard, Inc., 2013a; brightcookie.com, 2012; Digication, 2013; Edublogs, 2013; Google, Inc. 2013; LEAP2A (n.d.); Mahara, 2013 ,2012ab; Pathbrite, 2013; Pebble Learning Ltd., 2013ab; PBwiki, Inc. 2013; Weebly, Inc., 2013)

	Media supported	Ownership & Sharing Sustainability Migration
	pages and posts; embedded images; almost anything via attachment or link	Institution hosted; student manages portfolio access using internal permissions and external passes Student must export portfolio after graduation or a period designated by the institution html (webpages) LEAP2A
	pages and posts; embedded images and polls; almost anything via attachment or link; video and slideshow embedding, additional customisation available dependent on institutional server administration	Institution-hosted; student manages portfolio access using internal permissions and external passes Student must export portfolio after graduation or a period designated by the institution Student may export as xml file which can be imported into other blogs.

	Media supported	Ownership & Sharing Sustainability Migration
	portfolios may be constructed in any combination of media, converted to PDF and compiled into a single, multipage, printable document presentation slides (without animation), websites, blogs, live links, live forms, embedded video	Student may retain portfolio on laptop, web repository, flash memory and submit copies to LMS, portfolio system or employer via attachment, upload or link may be kept in both institutional and private repositories PDF is compatible across all platforms