Assessment without Standardization:
Can General Education Competencies be Assessed
from ePortfolios across the University?

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Can general education competencies be assessed using eportfolios from different platforms and programs? A study of 27 portfolios (11 programs or courses, five platforms) indicates that this is possible. Using the American Association of Universities and College's VALUE rubrics to assess eportfolios from different platforms, constructed for different purposes, showed progressive mastery of skills over the course of the university experience. The study highlighted that demonstrating certain skills such as community engagement, information literacy and integrative learning need artifacts that explicitly address these skills, whereas critical thinking and written communication were more generally represented in the eportfolios regardless of course or program.

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ePortfolios offer the opportunity to assess student mastery of general education competencies as an alternative to using a standardized test. In 2008, the Cincinnati Cohort V of the International Coalition for ePortfolio Research found that eportfolios offered a richer documentation of students' critical thinking than the CLA (Collegiate Learning Assessment) instrument (Hall & Robles, 2011). The problem, however, is that multiple platforms with various purposes and assessment foci exist, and current research into the generalizability of these platforms is lacking. If we adopt eportfolios as a method of assessing student performance, should we have an eclectic approach to eportfolio platforms, or would it be better for university-wide assessment to have an enterprise-wide common platform? With such diversity in eportfolios, are there some types of portfolios that are more successful than others when considering university-wide assessment? We need to answer these questions before determining if eportfolios should be used instead of an established standardized test.

General education competencies are agreed upon, institution-wide competencies that can be realized for any discipline. Banta and Associates (2002) report that general education is often assessed though achievement of learning outcomes in individual courses. Another approach to general education assessment is through standardized tests, such as the Collegiate Learning Assessment (CLA), the Collegiate Assessment of Academic Proficiency (CAAP), or the Measure of Academic Proficiency and Progress (MAPP). In 2011, the University of Cincinnati Cohort V of the International Research Coalition for ePortfolio Research compared the CLA with rubric assessments of student work. They found that the CLA results did not reflect faculty assessments of student writing (Wayne & Robles). They concluded that the standardized tests are not an effective replacement for assessing actual student work for general education assessment. Also rejecting standardized tests, Thompson (2013) outlines how one university collected writing samples with reflections from across the university, and faculty scored them with a rubric to assess general education. Mattingly (2012) outlines how capstone courses have also been used for general education assessment and observes that course embedded assignments can also be used in this way. In an extensive review of general education assessment, Mattingly points out that portfolios are a good way to collect student work over time, but notes that they are time-consuming and complex.

ePortfolios are a natural way to address this complexity. Ring and Ramirez (2012) document their university's effort to use eportfolios for general education assessment. They report that the eportfolios worked well, although a significant challenge was how to deal with the electronic platform of the eportfolio to create and share student work. Students collect pieces of their work, such as writing, videos, or graphics that demonstrate their discipline-specific competencies that may also show their communication and critical thinking skills. Part of the challenge of assessing critical thinking is that faculty may tend to implicitly assess critical thinking as it is integrated with discipline content (e.g. Nicholas & Labig, 2013). Since eportfolios present discipline specific artifacts in

context of one another and in the context of reflection, assessors may be able to get a clearer vision of the discipline-specific realizations of this and other general education outcomes. Penn (2011) identifies the need for research into how we can measure general education competencies through discipline-specific assignments. This pilot study addresses this need as we assess student eportfolios for university general education outcomes within the disciplines of the health fields, humanities, and sciences to see if such an assessment is possible. We followed a model for general education assessment that begins with gathering student work from multiple courses and then a group of faculty score the work based on vetted rubrics (McLawhon & Phillips, 2013).

Not only is there a need to determine if general education competencies can be effectively measured across discipline-specific assessments, the issue of whether the eportfolio platform matters in gathering quality general education assessment data is still up for debate. There is overwhelming evidence in the literature that eportfolios help students organize their work, understand their competencies, become aware of digital identity, direct themselves as learners, and gain confidence in technology (Chambers & Wiskersham, 2007; Fitch, Reed, Peet & Tolman, 2008; Garrett, MacPhee, & Jackson, 2013; Peet et al., 2011; Wakimoto & Lewis, 2014). One factor that is consistently identified as a challenge is the platform for the eportfolio. Goldsmith (2007) recommends that institutions choose or build a single platform for use, even though there may be the dilemma that users have multiple needs. Some researchers recommend a single platform across the university such that support services can be centralized (Posey et al., 2015). In many realizations of eportfolios, such as at Albert Magnus College (Albert, 2015), Santa Clara University (Bachen, Brewster, & Parker, 2015), and LaGuardia Community College (LaGuardia, 2015), institutions have selected a single platform for the whole institution. Mahara, Digication, and Webfolio are a few of the platforms chosen.

Nevertheless, in recent discussions among the members of the Association for Authentic, Experiential, Evidence-based Learning (http://AAEEBL.org), there is a trend among eportfolio experts to look beyond the platform to the content of the eportfolio and the choices that student authors make to present their work regardless of the software involved in presenting it. Our group would like to test this assertion that the container is less important than the thing contained. Our goal is to test how successful an assessment for common competencies can be using an eclectic sample of eportfolios from a wide array of courses and programs. We hypothesize that student learning will be evident across an institution and can be assessed regardless of the platform used and discipline-specific courses from which student learning is assessed.

Method

The data for this study is a convenience sample of three eportfolios from eight of the courses or programs at our institution, based on availability of portfolios. Using the AAC&U rubrics that most closely aligned with the General Education outcomes specified by our university, we assessed the sample of 24 eportfolios for the UC General Education competencies of information literacy, critical thinking, effective communication, knowledge integration, and social responsibility. Platforms included Evernote, WordPress, Weebly, Wix, and Google Sites. Assignments included source based papers, reflections, personal narratives, graphics, posters, and project reports.

Confidentiality was maintained by having this assessment be for program assessment, having the results reported in the aggregate, assuring that no raters assessed a portfolio from his or her own class, and being diligent

that individual student identity and portfolio URLs be kept confidential. These results are not intended for generalization.

There were six readers, all from programs that use eportfolios. Each reader assessed six to ten portfolios such that each portfolio had at least two readers. At the start of the assessment period, all six readers assessed the same two portfolios and met to discuss ratings at a norming session. Each reader rated portfolios according to the AAC&U VALUE rubrics for Integrative Learning, Civic Engagement, Information Literacy, Written Communication, and Critical Thinking.

For each portfolio, we looked for whether this type of assessment would be possible to conduct and noted qualitatively which general education competencies could be measured for each assignment. If it were possible to assess such a varied sample, then we looked to see if the assessment rating corresponding to a general education competency seemed to indicate mastery in eportfolios for courses taken later in the students' academic career.

Findings

Ease of application of rubrics

In evaluating the multiple portfolios using the five VALUE rubrics, civic engagement and information literacy were the most assignment-specific areas. Therefore, if the assignment did not explicitly require reference to civic engagement or information literacy, it was not possible to assess. In contrast, written communication and critical thinking were more general and thus more consistently possible to assess regardless of the assignment. Integrative learning was often able to be found in the variety of assignments, but would be easier to assess with more focused attention in and across assignments.

Civic engagement

Civic engagement is defined in the VALUE Rubrics, following Ehrlich (2000) as "working to make a difference in the civic life of our communities and developing the combination of knowledge and skills, values and motivation to make that difference." Assessing this disposition required a specific orientation to an activity. In these portfolios, if questions regarding civic engagement were prompted, then the connection would be apparent, but students do not often appear to spontaneously make those connections by themselves. Two programs explicitly ask for students to make these connections, and these students do it well, scoring at the level of 4. Other portfolios were variable, but when the assignment focused on community engagement, the students were clearly able to make these connections. On the other hand, in portfolios where this orientation to topics was not present, students did not make reference to civic engagement. As a result of the lack of consistency of assignments in addressing this skill, the relationship was weak between how long a student had been in an educational program with how proficient the student was in mastering the general education competency.

Information literacy

Information literacy is defined according to the National Forum on Information Literacy (2016) as, "The ability to know when there is a need for information, to be able to identify, locate, evaluate, and effectively and responsibly use and share that information for the problem at hand." Similar to civic engagement, information literacy was difficult to assess if the assignments of the eportfolio did not specify reference to sources. When the

portfolios included writing with reference to sources, then it was possible to assess the portfolio according to these criteria. If assignments did not require reference to sources, it was not possible to apply the rubric. In the portfolios where reference to sources was required, progression through students' academic career at the university was clear. In the first year courses, information literacy was rated at 1 and 2. In the second year courses, the information literacy was rated as 2 to 3, while in the senior year portfolios were rated as 3-4. Regardless of platform or specific assignment, writing assignments that made reference to sources suggested a relationship between how long a student had been in an educational program with how proficient the student was in mastering information literacy.

In the portfolios that did not prompt for assignments that required references, there are none present. In these personal expression oriented portfolios, the artifacts did not include citations or examples of explanations of from where things originate.

Integrative learning

Integrative learning is defined by the AAC&U as, "an understanding and a disposition that a student builds across the curriculum and co-curriculum, from making simple connections among ideas and experiences to synthesizing and transferring learning to new, complex situations within and beyond the campus" (2007-9). Generally portfolios from early career courses were consistently assessed at 1-2 while upper level courses consistently scored at 2-3 when assignments prompted for discussion of integrative learning. The relationship between how long a student had been in an educational program with how proficient the student was in making connections across their college experiences was present among these portfolios. Nevertheless, the inconsistency of assignments that prompted students to discuss integrative learning indicates that there is a need for better assignment directions to demonstrate integrative learning throughout the curriculum. Integrative learning is challenging for students, so they need to be trained to think about making connections even when they are new to the college experience.

Written Communication

The VALUE rubrics define written communication as, "The development and expression of ideas in writing. Written communication involves learning to work in many genres and styles. It can involve working with many different writing technologies, and mixing texts, data, and images. Written communication abilities develop through iterative experiences across the curriculum" (AAC&C, 2007-9). In assessing the writing in the portfolios, sometimes the relationship between how long a student had been in an educational program with how proficient the student was in mastering written communication was not always clear. Assessment ratings were mixed, possibly because the writing tasks became more difficult in higher level courses. In addition, sometimes students may avoid writing courses after their second year, so that progression in skills is not clear.

Grammar and syntax does seem to improve over time. First year students generally scored 2-3 and fourth year and graduate students scored 3-4. However, reflective writing, because it is more informal writing, sometimes seems to have more frequent grammar and syntax errors. Reflective assignments often scored between 2-3 in both second and fourth year eportfolios. Assignments might need to specify the difference between informal reflective writing and formal reflective writing.

Critical Thinking

The VALUE rubric defines critical thinking as, "a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion" (AAC&U, 2007-9). It was possible to assess these elements in many of the portfolios, but this rubric seems to privilege the strategies of argument, and not all artifacts are arguments. In addition, "evidence" is difficult to assess in the context of many of the assignments. In general, first year students scored 1-2 in the "Analysis of Knowledge" criteria while fourth year and graduate students general scored 4. However, there is great variation in second year portfolios and some fourth year portfolios where students either do not have an artifact that can be assessed with the criteria, or they scored between 1 and 3.

If we assess critical thinking according to this definition within the first two years, it is easier to assess in essays that ask for argument. However, if we assess critical thinking in the senior year in a specific discipline, critical thinking will look quite different at this level. This will vary greatly from first year humanities to final year professional practice.

Essential Function of Reflection

In the assessment of these portfolios, reflective pieces were essential for guiding readers in understanding the artifacts and what they mean. If there are no reflective pieces, the reader may not understand why some artifacts are included in the portfolio, particularly when students juxtapose artifacts with no explanation. In many ways, this is a problem with the professor's communication in regards to what should be in the eportfolio. The instructor needs to help students understand that they need to explain why they are creating pieces and how assignments relate to each other.

Effect of Platform

In general, the platform did not significantly affect the reading of the artifacts when the navigation was clear. In one platform, the navigation was unclear, which made the meaning of the artifacts unclear, although assessment of individual pieces was possible. The navigation of a portfolio is a guide for the reader. The tabs describe what is contained on each page, so the tab titles prepare the reader for the genre of the piece. The tabs also suggest an order of reading that guide the reader through the pieces in the portfolio. Good navigation can make it easy for a reader to read through the eportfolio and understand what part of the author's experience each piece represents. Thus, the pieces are contextualized by the author for the reader.

Completing the assessment of the portfolios was easy because the assessor can access all the pieces in an electronic format, available on multiple devices. The navigation tabs communicate genre and the order of the tabs communicates how the pieces relate to one another. Thus, in an eportfolio, the contextual meaning of each piece is communicated in the way the pieces are presented. In addition, since the eportfolios are online, assessors in different locations have convenient access to the material according to their own schedules. The online nature of eportfolios allows for asynchronous assessment so that teams of assessors may work more efficiently.

While the platforms varied in how navigation could be formatted, the platforms that facilitated easily visible navigation and which allowed drop-down menus best facilitated the assessors reading the eportfolios. An added benefit to the assessors was when the instructors provided sufficient training to students to help them to

construct their eportfolios to best accommodate readers with clear tab titles. Nevertheless, even when the navigation tabs were not clear and the navigation needed to be located under obscure icons, assessors were still able to locate appropriate pieces of work to evaluate, although the lack of clarity did slow progress.

Discussion

In general, using the VALUE Rubrics to assess a range of portfolios from across the university, in different platforms and with a range of assignments, was not only possible but relatively easy. Civic engagement and integrative learning were hard to assess if they were not explicitly addressed by the assignments. It is possible that students are learning to engage in civic engagement and information literacy, but if they are not explicitly asked to do so, it is not immediately clear that this is part of the student's education. Written communication and critical thinking were available across all the portfolios in the written texts. In all cases, progression from early career courses to more advanced courses is clear in the areas that permitted assessment.

Information literacy also seems to be difficult to assess in general areas. The university says this is a priority, but some programs may address this competency with rigor while others do not. If this is a baccalaureate requirement, it may need to be assigned in more than English courses. To be able to accommodate different approaches to information literacy, we might need to redefine it as manipulating media in multiple ways.

The fact that we can see progression in many of the assessments suggests that assessing eportfolios over a student's career could be a valuable way to make student learning visible. It would then be important to consider when general education skills are introduced and then developed. The points of assessment need to be clear so that the rubrics could be applied at each of those points to show progression over a student's career.

Limitations of this study are clearly the small sample size, and the mixing of course based portfolios with capstone portfolios. In order to have a generalizable view of student achievement in general education across the university experience, further research should include a much larger sample of student work. In addition, eportfolios are not uniformly used across the university, so as the usage grows, it would be necessary to assess how much the instructor influences the quality of the eportfolio through his or her instruction. In this sample, both single course eportfolios were assessed as well as eportfolios that included work from multiple courses to create capstone experience portfolios. In the course based portfolios, student work only represents a semester's worth of work while the capstone portfolios represented several courses worth of work. To get a better vision of what eportfolios can offer in general education assessment, future research should compare similar types of portfolios.

Conclusions

Non-standardized eportfolios can show growth over time regardless of platform, format, and (to an extent) assignment. Even in this limited assessment, the ratings showed that students' skills progressed as courses became more advanced, albeit in some skills and not consistently in others. ePortfolio assessment also revealed gaps in general education assessment. Regardless of the year in the program, some portfolios did not include assignments that indicated mastery of general education skills.

Effective portfolios included reflections and clear navigation which guided the reader in understanding the artifacts. ePortfolios are ideal showcases for showing student growth over the course of the educational experience. The act of reflection, of critically reviewing the connections in learning, is a valuable learning experience. The

portfolio, in whatever form or platform, allows the collection of work that allows a student to reflect on connections. Supporting the adoption of eportfolios, in whatever form, would allow for effective general education assessment highlighting change over the course of a student's career. It seems that it may not be necessary for a single platform or standardized assignments as long as the elements of the assessments are part of the assignments in ways that are appropriate for the course content.

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