

Implementing Essential Learning Outcomes across a Mid-Sized Public University: Reflections on a Deliberative Process

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Abstract: A mid-sized public university in the United States embarked on an initiative to implement essential learning outcomes (ELOs) across the campus. The implementation plan, informed by the Association of American Colleges and Universities' (AAC&U) Liberal Education and America's Promise (LEAP) initiative, relied on research, pedagogical best practices, faculty and student needs, as well as a strategy that recognized this initiative as an impetus for change. A qualitative study of faculty members and students participating in a pilot implementation revealed that integrating ELOs into academic courses enhanced student metacognitive growth and contributed to their increased proficiency with ELO-related skills.

Key words: Association of American Colleges and Universities (AAC&U), essential learning outcomes, Liberal Education and America's Promise (LEAP), liberal arts education, significant learning experiences

1. Introduction

Like many United States and international institutions of higher education, a mid-sized public university in the United States, with a population of 5,000 to 10,000 students, embarked on an initiative to implement institutional essential learning outcomes (ELOs). Accreditation recommendations; requests from external stakeholders, including students, parents, and employers; and the higher education climate for transparency, assessment, and accountability played roles in this institution's decision to establish institutional outcomes. The Association of American Colleges and Universities' (AAC&U) Liberal Education and America's Promise (LEAP) essential learning outcomes project also informed this initiative. The research on LEAP and AAC&U's assessment project, Valid Assessment of Learning in Undergraduate Education (VALUE), played a significant part in guiding the implementation of ELOs at the mid-sized public university. Additionally, researchers and faculty at the institution reviewed publicly available implementation plans at the following United States institutions:

- Alverno College
- CalPoly San Luis Obispo
- Drexel University
- Guttman Community College of the City University of New York
- Montgomery College

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- Quinnipiac University
- Texas Christian University
- Tulsa Community College
- University of San Diego
- Utah Valley University

The mid-sized, public university's implementation plan borrowed from the documented experiences at these institutions and consulted research related to learning outcomes implementation outside of the United States (Harris, 2009; Barrie, Hughes, Crisp & Bennison, 2012; Tremblay, Lalancette & Roseveare, 2012; Goff et al., 2015; Akbach, Reisberg & Rumbley, 2009; The Centre for Outcomes-Based Education, 2007). In addition, it followed a path that relied on (1) the scholarship of teaching and learning, (2) pedagogical best practices, (3) faculty member and student needs, concerns, learning conventions, and (4) recognition of the comfort level for change among the students, faculty members, administrators, and professional staff at the mid-sized public university.

Although the university established the ELO initiative in response to external calls for accountability and transparency, the initial prompt was less important to the faculty members involved in the process of implementation than how ELOs helped them to set goals for their courses and assignments. ELO alignments helped faculty members communicate goals to students, improve student success achieving course goals, effectively focus their assessments, and assist students to identify and connect their learning across courses, from year to year. As a result, the initiative began with one objective but evolved to address another. This article briefly describes that shift and, in an effort to do so, has three related goals: to report on the progress of a pilot implementation of ELOs across all majors at a public university, to offer a model for other institutions embarking on a similar initiative, and to provide evidence of students' enhanced metacognition and proficiency with ELO-related course content. To accomplish these goals, the article briefly outlines the process of implementing ELOs through a pilot conducted in 2014 and provides analysis of faculty and student reflections on the piloting process and piloting students' learning outcomes.

2. Implementation Overview

Today's students enter institutions of higher education with expectations that the skills and knowledge they acquire will prepare them for the demands of the global world in which they live (Gordon, 2009) and work. Institutions have responded to students' expectations by facilitating faculty members' adoption of new or revised teaching practices to enhance students' learning, engagement and preparedness. This response oftentimes requires administrators, faculty, and professional staff to change teaching and learning practices so that they can promote student proficiency in particular skills and knowledge such as: problem solving, critical thinking, teamwork, information literacy, reflection, and the ability to adapt to changes in the environment (Beachboard, Beachboard & Adkinson, 2011).

The mid-sized public university's ELO initiative began in 2010 with the identification of ten outcomes and the creation of voluntary teams of administrators, faculty and professional staff, each tasked with defining and drafting a learning map for each ELO. Although the Provost prompted the ELO initiative, from the beginning, it involved institution-wide participation. As well, the institution did not adopt the LEAP outcomes; instead, institution-wide collaboration led to a set of outcomes specific to students' learning experiences at the mid-sized

public university. The institution's ten ELOs are: Adapting to Change, Communication Skills, Creativity & Innovation, Critical Thinking, Ethical Reasoning, Global Awareness, Information Literacy & Research Skills, Program Competence, Quantitative Reasoning, and Teamwork & Collaboration. Some of these ELOs overlap with LEAP outcomes, however others, such as Adapting to Change and Program Competence, represent learning outcomes that students have opportunities to acquire at the institution and that participants in the ELO initiative agreed warranted intentional focus and assessment.

Since 2010, the institution has proceeded with the ELO initiative in a gradual, measured way. As a public institution with faculty and staff unions and an active, engaged Faculty Senate, curriculum and faculty workload matters require ongoing consultation and, at times, negotiation with one or both governance bodies. This practice, the deliberative pace, and persistence, all of which enhanced the collaborative character of the ELO initiative, have resulted in increasing commitment to the ELO initiative across the institution. In addition, gradual, deliberative progress has had other benefits. Six members of the institutional community (one administrator, two faculty members, one professional staff member, and two faculty directors) attended AAC&U's 2013 Institute on Integrative Learning and the Departments, specifically to begin mapping out a preliminary plan for ELO implementation. The following fall semester, two AAC&U consultants visited the institution to meet with various populations and stakeholders. This visit resulted in a number of recommendations for moving forward. Among other recommendations, the consultants advised the institution to consider appointing a director for the initiative, convening a steering committee, and outlining plans for an ELO pilot to facilitate the implementation process. The goal of the pilot was two-fold: to determine if full-scale implementation of ELOs across the campus would be possible and to collect sufficient information for mapping out a full-scale implementation plan. The Provost responded to the consultants' requests by creating a new position, Director of Essential Learning Outcomes; the Director's first action was to organize the Essential Learning Outcomes Steering Committee, tasked to design and administer the pilot.

3. Method and Description of the Pilot

With the support of the Provost and the guidance of the ELO Steering Committee, the Chair of the ELO Steering Committee designed and facilitated the pilot. First, the Chair applied for and received approval from the institution's Institutional Review Board to study participating faculty members' and students' reflection data. Secondly, the Chair worked with the Director of Academic Assessment to design ELO rubric templates and to plan assessment guidelines for pilot participants.

3.1 Faculty Participants

The Chair of the ELO Steering Committee recruited faculty participants from among the population of faculty members who had worked on some aspect of the ELO initiative, either they currently served on the ELO Steering Committee or had previously volunteered for a team that defined and mapped one of the institution's ten ELOs. Three of the piloting faculty members fell outside of this population. One faculty member in a pre-professional program intending to adopt an electronic portfolio for assessment saw the pilot as an opportunity to acquire electronic portfolio experience to share with colleagues; a second faculty member who had no exposure to ELOs expressed curiosity about whether and how teaching with ELOs might help focus course assignments on particular learning goals; and a third faculty member in a program with no developed assessment plan hoped participating in the pilot would provide tools for beginning to design a plan.

The Director of Academic Assessment advised the Chair of the ELO Steering Committee to solicit some faculty participants teaching first-year courses so that it would be possible to conduct a longitudinal study, tracking piloting students' ELO outcomes from first-year through to graduation. Consequently, six of the participating faculty members piloted first-year seminars; one piloted two sections of the same course. An additional three faculty members piloted first-year developmental reading and writing courses; two of those were linked sections, populated with students identified as academically at-risk. Three other faculty members piloted major program courses, one of which was at the first-year level but which junior and senior social science majors tend to take as an elective. This diversity in faculty participants led to a diversity in classroom activities and assignments designed for students to develop proficiency with ELOs. For instance, assignments that focused on increasing students' Critical Thinking and Information Literacy & Research Skills ranged from guiding students to produce research papers that involved using databases and analyzing and citing sources (first-year seminar) to facilitating students' engagement in observation exercises and writing of urban ethnographies (introductory Anthropology course) and to supervising students' preparation of materials for a job search (upper-level Management course).

All piloting faculty members were asked to provide opportunities in their courses for students to develop two specific ELOs: Critical Thinking and Information Literacy & Research Skills. Faculty could, of course, provide instruction in one or more additional ELOs. In this pilot, only some faculty members included additional ELOs in their course design. Those who did added one ELO; to support the content in their courses, these faculty members designed intentional learning experiences for students to enhance either Communication Skills, Ethical Reasoning, Global Awareness, or Teamwork & Collaboration ELOs as well as Critical Thinking and Information Literacy & Research Skills.

3.2 Student Participants

Students in designated piloting faculty members' courses were invited to participate in the ELO pilot. Even though their teacher had agreed to participate in the ELO pilot, students' participation was voluntary. Almost all students in designated piloting faculty members' courses signed a consent form, indicating that they elected to participate in the ELO pilot; a small number opted out, primarily because they perceived the pilot would require extra work and, secondarily, because they did not want to compose an electronic portfolio. Students in first-year courses who participated in the ELO pilot completed an embedded assessment at the beginning of the semester, took iSkills, an instrument developed by Educational Testing Service (ETS) to measure information literacy skills, at the end of the semester, and composed electronic portfolios in addition to completing the course work required by their faculty members. The Director of Academic Assessment designed the embedded assessment, modeled on the Collegiate Learning Assessment's CLA in the Classroom instrument, to measure students' baseline critical thinking. Students in the three major program courses did not complete these assessments; they did, however, compose an electronic portfolio. The Director of Academic Assessment planned to use the results of the embedded assessment and of iSkills in the longitudinal study; consequently, it was not necessary for students in other than first-year courses to complete them. All participating students composed an electronic portfolio and wrote a reflection essay for their electronic portfolio.

3.3 Student ELO Self-Perception Pre- and Post-Questionnaires

At the beginning of the piloting semester and, again, at the end of the semester, participating students completed a brief questionnaire. These questionnaires aimed to gather data about students' self-perception of their

ELO proficiency before and after receiving targeted instruction in selected ELOs. Each questionnaire contained ten multiple-choice questions, one for each ELO. Each student was instructed to select one out of the three possible answers for the ten questions that best matched their perceived level of ELO proficiency. The Chair of the ELO Steering Committee visited participating faculty members' courses at the beginning of the piloting semester, distributed, and collected the pre-questionnaires. At the end of the semester, piloting faculty members instructed students in their courses to complete the post-questionnaire.

3.4 Faculty and Student Reflection Prompts

At the end of the piloting semester, faculty members participating in the ELO pilot asked participating students in their courses to write an essay reflecting on their experience in the ELO pilot. Students posted their reflection essays to their electronic portfolios. The student reflection prompt stated:

Please write an essay (250–750 words, 1–3 typed pages) reflecting on your learning of the ELOs you worked on this semester. In your piece of writing, you should identify the ELOs you developed and point out particular course instruction and assignments/exercises/tasks that helped you learn the ELOs and develop your competence. You will want to describe your thought processes as you outlined, drafted, and completed projects; note any assumptions or biases in your work; and explain why you made the choices you did/rejected alternatives. Also, please discuss any ways and situations in which you imagine you might use the ELOs outside of the course and in the future. If you have any comments about using an electronic portfolio to post your work and show what you have learned during the pilot semester, please also share those.

Faculty members participating in the ELO pilot also wrote essays at the end of the piloting semester, reflecting on their experience teaching with ELOs. Similar to the student reflection prompt, the faculty reflection prompt stated:

Please write an essay reflecting on your experience during the pilot semester, working with students to develop particular ELOs. Please include specific mention of struggles, successes, surprises, and difficulties that you had to overcome. In addition, please offer any helpful suggestions about pedagogy with ELOs, integration of ELOs in courses/assignments, or useful tips regarding electronic portfolio use to generate new learning for students. If you have any comments about the ways in which ELOs do/do not facilitate student learning, please also share those.

Faculty members and students were instructed not to put their names or any other identifying information on their essays. All essays were printed and read anonymously.

4. Results and Data Analysis

4.1 Results from Student ELO Self-Perception Pre- and Post-Questionnaires

Two pre-questionnaires and a greater than expected number of post-questionnaires were omitted from this study for a variety of reasons. Students nullified their pre- and post-questionnaires if they selected more than a single answer or left some answers blank. Not all students in every class completed the questionnaires. Ultimately, the sample included 49 matching pre- and post-questionnaires ($N = 49$).

Data collected from the student pre- and post-questionnaires showed evidence of increase in students' perceived proficiency with the two required ELOs and, in smaller numbers, with the additional ELOs incorporated into instruction in one or more courses. Students perceived themselves more aware (the lowest level of proficiency) at the beginning of the semester and more skilled (the highest level of proficiency) at the end of the

semester. The post-questionnaire results indicate that all students perceived themselves at either the competent (a middle level of proficiency) or the skilled level for Critical Thinking and Information Literacy & Research Skills. The table below (Figure 1), which shows comparison data from the beginning of the semester to the end of the semester for each of the institution's ten ELOs, demonstrates this finding.

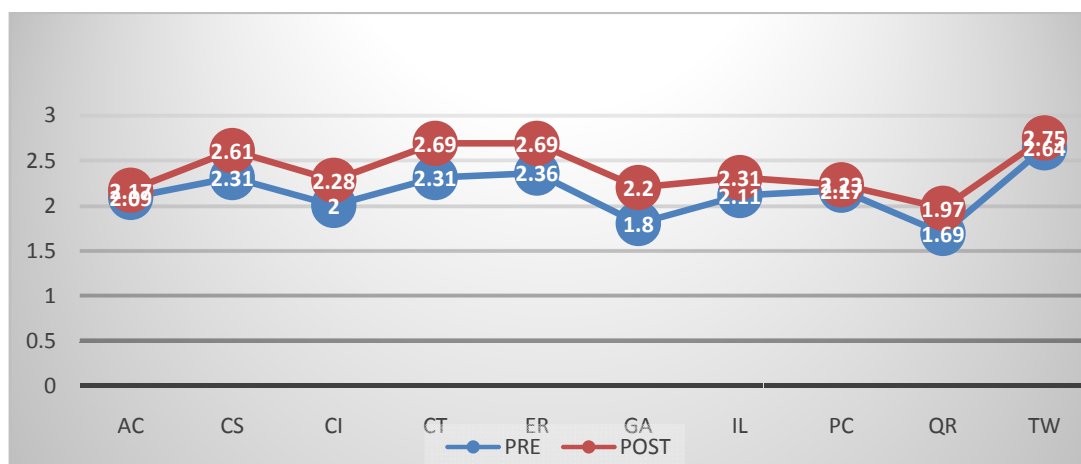


Figure 1 Student Self-Perception of ELO Competence

Comparison of Student Self-perception of Their ELO Competency at the Beginning and the End of the Pilot Semester

Key: AC = Adapting to Change, CS = Communication Skills, CI = Creativity & Innovation, CT = Critical Thinking, ER = Ethical Reasoning, GA = Global Awareness, IL = Information Literacy & Research Skills, PC = Program Competence, QR = Quantitative Reasoning, TW = Teamwork & Collaboration.

Furthermore, findings indicate that overall scores on the post-questionnaire were higher with a mean difference of 0.24. These results show increases in students' perceived ELO proficiency over the course of the pilot. However, it is important to note that the p-value for the post-questionnaire means for five of the ten ELOs was larger than 0.05, which makes it difficult to conclude that a significant difference exists for those post-questionnaire scores. Despite that, the scores show increases in the pre- and post-questionnaire means for all ten ELOs, ranging from 0.09 to 0.4 (Table 1).

Table 1 P-value Significance. Student Self-perception Data from the ELO Pilot

ELO Student Survey (n = 37)	AC		CS		CI		CT		ER		GA		IL		PC		QR		TW	
Pilot (AY14-15)	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	2.09	2.17	2.31	2.61	2.00	2.28	2.31	2.69	2.36	2.69	1.80	2.20	2.11	2.31	2.17	2.23	1.69	1.97	2.64	2.75
DIFF		0.09		0.31		0.28		0.37		0.33		0.40		0.20		0.06		0.28		0.11
	AC		CS		CI		CT		ER		GA		IL		PC		QR		TW	
Mean Diff	0.09		0.31		0.28		0.37		0.33		0.40		0.20		0.06		0.28		0.11	
t	0.53		2.45		1.89		2.72		3.16		2.69		1.31		0.25		2.05		0.81	
P	*0.597309		**0.019546		*0.067087		**0.010181		**0.003228		**0.011116		*0.197891		*0.80365		**0.048315		*0.42192	

4.2 Results from Faculty and Student Reflection Prompts

Each piloting faculty member submitted a reflection essay; as well, 220 students posted reflection essays to

their electronic portfolios. Following qualitative research protocol as described by Braun and Clarke (2006), faculty and student reflection essays were read for themes that addressed the question underlining this ELO pilot project. Using six themes, derived from a previous study relating to pedagogy and ELO implementation (Cydis et al., 2015), the data was coded to identify reference to facilitation, intention, connection, utility, reflection, and awareness of ELOs in the faculty and student reflection essays. After several readings of faculty and student reflections, comments relevant to those six themes were extracted from the reflections as well as comments on teaching with and using electronic portfolios. Functional definitions of the six persistent themes appear in Table 2.

Table 2 Themes of ELO Integration: Definitions of the Six Persistent Themes Used to Code the Reflection Data Collected from Faculty and Student Participants

As a result of the thematic analysis of participating faculty members' and students' reflections of their ELO pilot experience, six themes (Cydis et al., 2015) were used to code data. Below is a list of the themes (left) with their functional definitions (right), as they emerged through the qualitative analysis.	
Facilitation	Comfort level or knowledge about ELO instruction and the role that teaching plays in supporting student competency with ELOs; the need for faculty to guide or facilitate ELO acquisition in students through planned or incidental lessons.
Intention	Instructors' explicit emphasis on ELOs to support student understanding; among the ways this might occur are repeated presentations of ELOs to students, revisiting ELOs throughout the semester, and providing continuity by discussing the ELOs in the context of course work related to specific course content.
Connection	Instances in which students connect one ELO to either another ELO, track the development or permutations of one ELO intellectually or experientially over time, recognize the continuity or recursiveness in one or more ELO, link concepts in a manner that demonstrates one or more ELOs.
Utility	Mention intended use of one or more ELO; describe preparation/application of the ELO beyond the scope of the classroom/throughout life.
Reflection	Mention ELOs in the context of exploring educational or personal experiences that may lead to new understandings and appreciations, references to the process of reflection on learning ELOs, documentation of that experience.
Awareness	Ability to identify one or more learning experience or life experience that heightens or contributes to recognition of ELO competence/growth.

After references to themes were identified, the Chair of the ELO Steering Committee created two Excel spreadsheets, one to represent the coding of faculty reflections and another to represent the coding of student reflections. Each spreadsheet had columns for the six themes and another for comments about the electronic portfolio. The Chair read the reflections multiple times, and the last time, copied passages and pasted them into appropriate columns.

Figure 2, which compares numbers of faculty and student responses for the six themes, suggests that students benefited from their faculty members' intentional pedagogy and facilitation of their ELO-related learning. In particular, students' reflections revealed large numbers of comments on awareness of learning Critical Thinking and Information Literacy & Research Skills and their grasp of the usefulness of this learning.

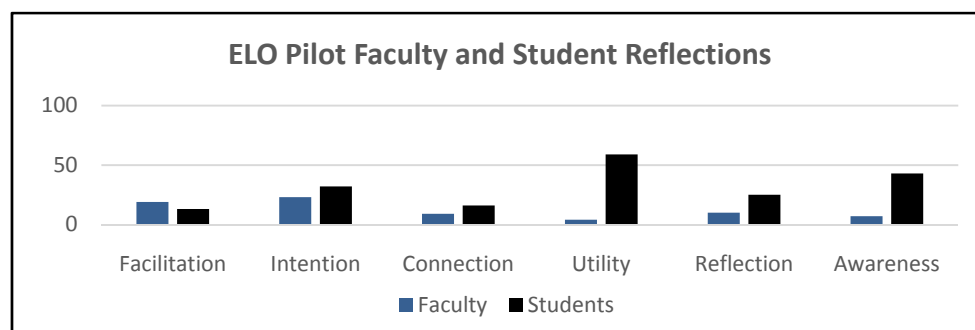


Figure 2 Faculty and Student Reflection Data: Comparison of Faculty and Student Reflection Data from the ELO Pilot

5. Discussion

Despite the relatively small sample size, the ELO questionnaires and reflective statements offer preliminary insights into participating students' abilities to gauge their own learning, a primary goal of the ELO initiative and of the pilot, and suggest that students' metacognitive growth could be reinforced by future implementations and administrations of the questionnaires to a larger sample of students. This pilot also revealed students' increased self-perception of their ELO proficiency that aligned with their faculty members' pedagogical choices. These choices included faculty members' intentional incorporation of ELOs into their pedagogy and facilitation of students' ability to develop ELOs through class discussion, assignments, group projects, service learning, and presentations.

In their reflections, piloting faculty members associated the value of participating in the ELO pilot with more intentionality and facilitation of course work that aimed to enhance students' level of ELO proficiency. In addition to faculty members' perceptions of students' learning, students' self-perception in relation to all ELOs showed increased proficiency from the beginning to the end of the semester. These initial results revealed several points for consideration with regard to future directions and efforts to further promote ELO implementation at the mid-sized public university. Primarily, the results provided evidence for the value of continuing ELO implementation.

6. Reflections and Lessons Learned

A unique feature of the mid-sized public university's ELO initiative is its focus, for purposes of assessment, on evidence of students' learning as articulated through student self-evaluation and students' degree of demonstrated ownership of their learning. At the mid-sized public university, ELO assessment will, however, take place across the campus, in a number of ways. Program assessment audits and end-of-semester direct assessment by each program's assessment committee, will generate quantitative measures of ELO proficiency. ELO assessment will also occur by faculty teaching individual General Studies' courses as well as major and minor program courses that include course goals and program-specific outcomes that align with ELOs. The mid-sized public university regularly administers the CLA, the National Survey of Student Engagement (NSSE), and iSkills, among other standardized assessment instruments commonly administered to students in United States higher education institutions. Aggregate data collected from these assessments, for particular items that overlap with ELOs, will be compared to results derived from classroom-based measures of student learning. Such direct assessment results can, and will, be triangulated with the results of student self-evaluation data. In fact, direct assessment data collected by the Director of Academic Assessment for a longitudinal study will provide one supplement to the student self-evaluation data.

The ELO Steering Committee also facilitates course and program direct assessment by providing tools for faculty members to gauge students' performance in piloting classes and classes in major and minor programs outside of the ELO pilot, such as: rubrics, some of which it has borrowed from the AAC&U LEAP Initiative; a template for curriculum mapping; and descriptions of model syllabi, assignments, and reflection exercises. Members of the ELO Steering Committee, too, have a role in choosing the institutional electronic portfolio platform and the assessment package for use in curriculum mapping, in individual classes, in major and minor programs, and in institutional assessment practices, including assessment of students' self-evaluations.

At present, the ELO Steering Committee has elected to devote time to creating the student self-evaluation assessment, piloting the self-evaluation task and rubric, and gearing ELO pilot assessment to measuring students' degree of ownership of their learning. This decision follows directly from an intentional decision to create an institutional student self-evaluation assessment that does not overlap or reproduce assessment taking place in courses and programs. This ELO pilot assessment approach most closely compares to assessment of engagement since it aims to capture students' growth as able narrators of their learning over time and across curricular experiences.

The results reported in this article mark the beginning stages of the effort to create such a learning and assessment culture at the mid-sized public university. In this first iteration of the student self-evaluation assessment, the results point out the effectiveness of intentional pedagogy, of a shared vocabulary of teaching goals and learning outcomes, and of permitting students a pivotal place in the identification, description, and evaluation of their learning. As an illustration of this, a first-year student commented in the reflection at the end of the pilot semester that:

ELOs were an important part of the class. Many opportunities to demonstrate the outcomes came along the way. Through the research paper, I had a chance to show my understanding of Information Literacy & Research Skills, which will help me in my future courses.

In addition to confirming the ways in which intentional pedagogy with ELOs reinforces student learning, the findings from the ELO pilot also prompted some necessary revisions to the implementation process. For the ELO pilot, participating faculty members and students wrote reflections at the end of the piloting semester. Since faculty members frequently ask students to write reflections at the end of their classes or as the final step in the process of completing a project, they suggested that the writing students produce for the final electronic portfolio needed a distinct name and task separate from that which they might produce for a class reflection or as a major or minor capstone requirement. The ELO Steering Committee opted to replace "reflection" with "final ELO self-evaluation" in part to denote its distinctiveness but also to indicate the comprehensive nature of the assignment and its gravity, as a document narrating learning throughout all of students' learning experiences. In addition, the ELO Steering Committee drafted the description of the self-evaluation task and created a detailed rubric.

Although the results of the ELO pilot reinforce the aims of the ELO initiative, a few unexpected events in the execution of the ELO pilot have led to retooling some of the ELO implementation procedures. First, when piloting faculty members commented negatively in their reflections about the experience of participating in the ELO pilot, they most often pointed to the need for professional development, specifically training with electronic portfolios (Rhodes, 2011). To make sure that all faculty members received adequate preparation to incorporate ELOs into their courses and pedagogy, the Chair of the ELO Steering Committee created a professional development institute for the summer after the pilot. Forty-five faculty members attended the institute; institute facilitators included administrators, faculty members who served on the ELO Steering Committee, faculty members who participated in the ELO pilot, administrators and faculty members who have relevant expertise, for instance in teaching and learning with electronic portfolios, ELO pedagogy, writing, reflection, or assessment. The institute had a few goals. The first was to familiarize faculty attendees with ELOs. In addition, faculty attendees had a chance to read about and to practice teaching with ELOs and electronic portfolios. A few faculty facilitators shared their experiences as participants in the ELO pilot. As well, faculty attendees had a chance to revise their

syllabi to explain ELOs, to describe students' roles in relation to achieving ELO proficiency, and to add ELO-specific goals to assignments and projects. The Director of Academic Assessment, one of the institute facilitators, introduced attendees to varieties of ELO assessment. Finally, all faculty attendees composed an electronic portfolio, as a way to gain knowledge about working with such a digital tool.

Second, students did not have as prevalent a voice in the piloting process as they might have. Consequently, to involve students more fully in the ELO initiative and to offer students an opportunity to communicate both their understanding of individual ELOs and their grasp of ELOs as useful tools to facilitate learning, the Chair of the ELO Steering Committee decided to host a student focus group at the end of the spring semester, following the ELO pilot. The student focus group provided a space to engage students in conversation about ELOs outside of their classrooms.

Third, in their reflections, piloting faculty members noted students' disinterest in voluntarily continuing to compose ELO electronic portfolios after the piloting semester; if required by a faculty member to do so, however, they would. Students' reflections also revealed students' lack of intrinsic motivation to archive and display their work in an electronic portfolio. Prior to the onset of the ELO pilot, the ELO Steering Committee debated this topic and the feasibility of making the ELO electronic portfolio a graduation requirement. After much deliberation, the ELO Steering Committee voted not to pursue creating an ELO graduation requirement. Instead, the ELO Steering Committee agreed that providing professional development opportunities to educate faculty about the value of and methods for incorporating electronic portfolios into courses and major and minor programs would more persuasively motivate students to compose effective electronic portfolios than would a graduation requirement.

The topic of student motivation, which appeared in both piloting faculty members' and their students' reflections, suggested that without some sort of mandate, students would have little stake in ongoing composition of their ELO electronic portfolios. Faculty members' commitment to ELOs might also level off. Institutional accreditation and standards for accreditation of professional programs frequently align with the institution's ten ELOs; consequently, faculty members involved in those efforts might remain invested in ELOs. Lacking a compelling reason for sustaining ongoing commitment to ELOs, however, a majority of faculty members might perceive institutional outcomes as a layer of assessment and reporting, divorced from the vocabulary and practices of teaching and learning, rather than a dynamic feature of the mid-sized public university's educational culture. However, an important indicator of the growing commitment to this initiative is demonstrated by increased faculty participation in incorporating ELOs into courses and programs. Twelve individual faculty members participated in the ELO pilot, teaching thirteen courses, mostly first-year courses; yet, 52 faculty members, teaching 70 courses in eight major and minor programs committed to incorporating ELOs the year following the pilot, a notable increase.

Finally, possibly one of the most valuable lessons learned from this pilot, it is important to note that although the ELO Steering Committee might like to proceed quickly with full campus implementation, the Committee recognizes the benefits of a deliberative, recursive process. As was the case with the ELO pilot, ongoing implementations open up opportunities to retool after missteps or as a result of learning and assessment. In addition, cumulative data, especially data that reinforces the data collected during the pilot, can guide future directions of the ELO initiative. For instance, data from the reflections received after the ELO pilot prompted revisions to some procedures, including enhanced professional development. This kind of revision does not diminish the worthiness of the ELO initiative. In fact, informed, evidence-driven revision strengthens it. Data

from the ELO pilot revealed the value of ELOs to both faculty members and students, specifically the value of intentional instruction and design of ELO assessment practices that encourage students' self-evaluation, metacognitive growth, and demonstrated ownership of their learning.

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