Assessing General Education Outcomes in the Disciplines

IUPUI Response to ICHE Goal 6

July 2004

Development of Learning Goals at IUPUI

(Addresses IU Principles 1, 2)

Prior to 1990, general education at IUPUI was the responsibility of each school and may be characterized generally as a distributive model wherein faculty in each school defined required areas, such as humanities, social sciences, and natural sciences, then specified required and elective courses within each of those areas. In 1991, a Commission on General Education began work on development of a centrally coordinated approach to general education for IUPUI undergraduates. In 1992, the NCA visiting team noted the work of the Commission and encouraged the campus community to identify "desired outcomes for general education...amenable to meaningful assessment."

Over the next several years, general education was discussed in a series of multidisciplinary committees, day-long retreats, consultant-led workshops, and town hall meetings. This process culminated in the adoption by the IUPUI Faculty Council in 1998 of six Principles of Undergraduate Learning (PULs). These principles, which constitute campus-wide student learning outcomes, are:

- 1. **Core Communication and Quantitative Skills** the ability of students to write, read, speak and listen, perform quantitative analysis, and use information resources and technology.
- 2. **Critical Thinking** the ability of students to analyze carefully and logically information and ideas from multiple perspectives.
- 3. **Integration and Application of Knowledge -** the ability of students to use information and concepts from studies in multiple disciplines in their intellectual, professional, and community lives.
- 4. **Intellectual Depth, Breadth, and Adaptiveness -** the ability of students to examine and organize discipline-specific ways of knowing and apply them to specific issues and problems.
- 5. **Understanding Society and Culture** the ability of students to recognize their own cultural traditions and to understand and appreciate the diversity of the human experience, both within the United States and internationally.
- 6. **Values and Ethics** the ability of students to make judgments with respect to individual conduct, citizenship, and aesthetics.

The Principles of Undergraduate Learning underlie a "process approach" to general education at IUPUI that is intended to permeate the entire undergraduate curriculum, rather than being a set of courses or skills developed in specified courses during a student's first two years of college. The PULs constitute a set of common

learning outcomes that provide a shared intellectual foundation across disciplines. Students are expected to improve their levels of competence in these outcomes not only during their first and second years, but throughout the undergraduate curriculum in their respective majors.

In 1992, the position of vice chancellor for planning and institutional improvement (PAII) was established to coordinate approaches to outcomes assessment and program evaluation at IUPUI. In 1993, the Program Review and Assessment Committee (PRAC) was initiated to advise the vice chancellor and provide faculty Initially, this group was composed of two faculty leadership for assessment. representatives from each school enrolling undergraduates; in subsequent years, representatives from the University Library and the division of Student Life and Diversity were added. From 1993 to 1998, PRAC representatives worked within their respective schools to develop explicit statements of student learning outcomes for each major. It was anticipated that faculty then would identify related learning outcomes for each course to ensure that every student had the opportunity to develop the learning outcomes identified for the major. With the adoption of the PULs by the Faculty Council in 1998, PRAC members were charged with the responsibility of leading the process in their schools of integrating the PULs into the learning outcomes for majors and for courses within majors.

Since its founding in 1998, University College has played an essential role in introducing beginning students to the PULs and to the expectation that assessment of learning will be an important component of their education at IUPUI. In 1999, two representatives of University College were added to the PRAC membership.

Ensuring Engaging Learning Opportunities for Students

(Addresses IU Principles 3, 4, 5, 6, 8)

IUPUI faculty and staff have undertaken a range of initiatives to provide all students with opportunities to participate in engaging learning experiences that are aligned with expected learning outcomes. To ensure and document these opportunities, PRAC members developed a template for initiating and guiding assessment in academic units. Now in use for almost a decade, this template is included in each unit's annual assessment report and includes the following contents:

What	How will we	How will	What evidence	What are the	What
general	know this	students learn	can we provide	assessment	improvements
outcome do	outcome when	these things	to demonstrate	findings?	have been
we seek?	we see it?	(in or out of	what students	_	made based
	That is, what	class)?	know and can		on
	will students		do? That is,		assessment
	know and be		how can we		findings?
	able to do upon		assess student		-
	graduation?		learning?		

Units record active learning experiences aligned with desired learning outcomes in the third box shown on the template (i.e., "How will students learn these things, in or out of class?").

A variety of resources exist to develop the skills of individual faculty members and groups of faculty and staff in using engaging learning techniques and assessing student learning. The Office for Professional Development (OPD) at IUPUI represents one of the most important of these resources, offering workshops and individual consultations with faculty, and collaborating with other campus units on various initiatives focused on engaging students in learning. For example, in 2000, OPD partnered with University College in launching the Gateway Program, which aimed to improve student learning, success, and retention in large introductory courses. The program combines development experiences for faculty with peer mentoring and smallgroup work for students to expand the use of active learning in these courses and provide students with individualized attention. It has resulted in substantial retention increases for these courses, as well as for the campus as a whole. As a result of these accomplishments, the Gateway Program was awarded an Honorable Mention in 2001 in the annual competition for the Hesburgh Award, which recognizes faculty development efforts that have transformative effects on their institutions.

Efforts to engage IUPUI students actively in learning begin in the freshman learning communities. These communities are explicitly designed to include the use of various active learning pedagogies, to introduce students to the PULs, and, in particular, to encourage the development of critical thinking skills. This fall, IUPUI is introducing Thematic Learning Communities (TLCs), in which cohorts of students will join together in blocks of several courses organized around an interdisciplinary theme, such as the environment, multiculturalism, or career perspectives. These TLCs will include discussions and assignments intended to encourage students to integrate perspectives from several disciplines and courses; as such, they represent yet another attempt to engage students more deeply in learning.

IUPUI's nationally recognized Office of Service Learning (OSL) provides additional opportunities for student engagement in learning through community service related to their studies. Service learning allows students to apply theory to practice, to analyze and help solve real-world problems, and to contribute to the quality of life in community. In addition, OSL offers faculty development programs that help faculty to incorporate service learning into courses across a wide range of disciplines.

Finally, PAII, through its Testing Center, offers the service of assessing prior learning for placement and credit in various disciplines, and through its office of Information Management and Institutional Research, provides annual surveys of enrolled students. These include the National Survey of Student Engagement (NSSE), as well as a a locally designed student satisfaction survey, and an alumni survey. These surveys constitute important indirect measures of learning.

Through the combined efforts of PRAC, PAII, University College, OSL, and OPD, as well as faculty and staff in each school, all IUPUI students should experience each of the following:

- 1. Prior learning is assessed in writing AND mathematics, and selectively in foreign languages, chemistry and other disciplines upon matriculation and students are placed in courses appropriate to their levels of achievement. End-of-course assessments administered in Indiana high schools will be considered in this process as appropriate.
- 2. Students are introduced to the PULs in their freshman Learning Communities through active learning pedagogies and begin immediately to reflect on their learning of the PULs in their other courses.
- 3. Students continue to develop their PUL-related knowledge and skills in coursework, particularly in Gateway courses—whose instructors have participated in intensive faculty development experiences related to engaging students in learning and where students work actively and collaboratively with one another in small group settings.
- 4. Students' PUL-related knowledge and skills are assessed in the courses in which these concepts are taught, with baccalaureate-level skills assessed in capstone courses or in association with other culminating experiences such as design projects or professional licensure exams.
- 5. Faculty and professional staff use both direct and indirect measures of student learning to provide direction for action designed to improve curriculum, instructional approaches, and the process of assessment itself.

Providing Administrative Structures and Practices to Promote Learning

(Addresses IU Principles 7, 8)

Various mechanisms have been established to ensure that the five processes related to general education at IUPUI are occurring. First, the PRAC members representing each academic unit prepare an annual report using the template illustrated above (i.e., What general outcome do we seek? How will we know it/assess it, etc.?), and this report is posted on a Web site (www.planning.iupui.edu). Each year the content of these annual reports is reviewed by a subcommittee of PRAC members and suggestions for improvement of assessment methods or use of findings are offered. Often these suggestions include recommendations for specific developmental experiences, in which case consultation with OPD staff or an external consultant may be arranged for all PRAC members or for a specific group.

Comprehensive academic program review provides a second mechanism for ensuring that general education instruction and assessment are occurring according to plan. Peer review of all academic units (and many administrative units) is conducted every seven years on a schedule planned well in advance of the beginning of each review cycle. Attention to including the PULs in instruction as well as to assessing student achievement of the PULs is strongly encouraged in the guidelines for self-study. PAII staff assist units in developing their self-studies by providing data on student progress

and student and alumni satisfaction. Members of external review teams, who come from institutions outside Indiana, from the Indianapolis community, and from other IUPUI departments, are asked specifically to study and comment upon the development and assessment of student learning. Program reviews are used and followed up in extensive and important ways at IUPUI, including a mid-term review of the departmental or school response to the program review, conducted by PRAC members four years after the review. This mid-term review provides an occasion for PRAC members to ask the department chair how student learning of the PULs is being furthered through instruction and assessment and improved continuously.

A third mechanism for ensuring that instruction and assessment related to the PULs is occurring is the appointment of individuals charged specifically with responsibility for assessment. At IUPUI, assessment specialists have been appointed by University College and the Division of Student Life and Diversity, and the search for a similarly qualified individual is underway in the Center on Service and Learning. Two academic deans have appointed associate deans whose titles include assessment. The job descriptions of most other associate deans for academic affairs or undergraduate learning include a specific reference to assessment. Obviously, those charged with the responsibility of advancing assessment are likely to pay more attention to it and work harder to achieve demonstrable outcomes than those who merely are asked to add assessment to an already overloaded list of expectations.

Since 2000, PAII staff have been working to develop performance indicators to track progress on ten goals connected to IUPUI's three mission themes of teaching and learning, research and scholarship, and civic engagement. Several of these indicators are related to accomplishment of generic outcomes, including "student academic progress and achievement," "demonstration of students' general education- and major-specific learning outcomes," and "use of assessment results to support and enhance effective teaching and student learning and course and curriculum changes." Underlying each of these macro-indicators is a rich set of sub-indicators. Annually, a subcommittee of PRAC members is convened to review all the assembled data related to these performance indicators and render judgments on the level of progress the campus has achieved with respect to each. Does the indicator warrant a green light (acceptable level or, at least, headed in the right direction), yellow light (not at an acceptable level, but not declining rapidly; needing remedial action), or red light (current status or direction of change unacceptable; requiring immediate action aimed at improvement)? IUPUI's performance indicators have attracted national attention as well as notice by community stakeholders in Indiana. Continuing review of campus status and progress on these indicators constitutes a fifth mechanism for ensuring that instruction and assessment related to the PULs are occurring according to plan and that warranted improvement actions are being taken.

In connection with the institutional self-study carried out in preparation for IUPUI's decennial NCA review in 2002, a study focused on campus-wide implementation of the PULs was undertaken in 2000. Four senior faculty members were appointed by the Dean of the Faculties to confer with faculty, review syllabi, and

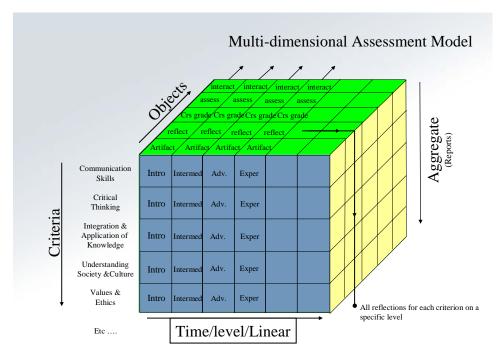
interview deans and/or associate deans in each school to ascertain the extent to which the PULs were being integrated into curricula and assessment activities. The results were quite uneven, ranging from no explicit attention to the PULs in some schools to full integration of the PULs in coursework, curricula, and outcomes assessment in others. Apparently, additional mechanisms were needed to ensure that the process approach to integrating instruction and assessment of general education outcomes in every major was being enacted at IUPUI. Campus leaders decided to develop a system that would provide direct and authentic evidence of achievement and improvement in learning of the PULs in relation to learning in the major. This system has taken the form of an electronic student portfolio.

Development of the Student Electronic Portfolio

(Addresses IU Principle 6)

Led by the director of the Center on Integrating Learning, a unit within OPD, the IUPUI student electronic portfolio (ePort) is designed to provide evidence of both improvement and achievement in each of the Principles of Undergraduate Learning as students progress through the curriculum and their particular major. Authentic evidence of individual student learning, as well as aggregated information of learning at the course, department, program, and campus level will be increasingly available, as the ePort moves from pilot to full implementation over the next four to five years.

Diagram of the ePort Assessment of Learning Model



Electronic Portfolios: The triple helix of learning, assessment and pedagogy

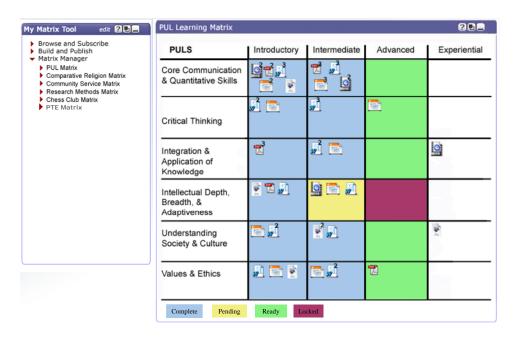
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The diagram above represents how the electronic student portfolio will provide aggregated information about student learning at the individual, course, program, and campus-wide levels.

Every student will have opportunities to provide evidence of learning in each of the Principles of Undergraduate Learning at the Introductory (first 26 credit hours), Intermediate (first 56 credit hours), and Advanced (junior and senior) levels. Additionally, throughout their undergraduate careers, students will be able to upload examples of co-curricular and extra-curricular learning in relation to the Principles of Undergraduate Learning.

Across the top of the cube in the diagram are the possible objects for which aggregated information will be available in relation to each of the Principles at each level. Listed are objects such as artifacts (the actual student work), reflections, course grades, interactions between faculty and students, or advisors and students, or students with clients (depending upon how each program customizes the objects for assessment). However, the basic available documentation of learning for assessment purposes will be artifacts (actual student work, already graded within the academic program) and student reflections on that work in relation to the Principles of Undergraduate Learning, at each of three levels - introductory, intermediate, and advanced.

The learning matrix for each individual student that is illustrated below provides the basis for the aggregated information described above:



Electronic Portfolios: The triple helix of learning, assessment and pedagogy

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Each student uploads artifacts from course work (or from co-curricular and extracurricular learning in the "experiential" cells) into the appropriate cell (each square of the matrix is a cell). When the student has met the campus- or department-determined expectations for learning in each of the cells, he or she writes a reflection, showing how understanding of the Principle has been demonstrated and enhanced by the creation of these artifacts of learning. There are three parts to these reflections: evidence of learning; connection of the evidence to campus/department learning outcomes; and intellectual growth (the articulation of increased understanding).

These reflections are read and assessed by trained readers (initially retired faculty who are members of the Senior Academy) who provide written responses to each student. Readers rate the student's artifacts and reflections on a scale from 1 to 3 and these numbers are aggregated for instantly available assessment information. A 3 indicates that the student has exceeded campus expectations; a 2 indicates that the student has met campus expectations; and a 1 indicates that the student has made a start at meeting campus expectations. While each individual student will receive written comments, these numbered equivalents will be accessible only on an anonymous, aggregated basis.

These student learning outcomes may be aggregated according to any demographic or programmatic variables required, so that, for example, one could learn how conditionally admitted students are performing in relation to quantitative reasoning, or values and ethics. Similarly, one could compare how majors in biology are achieving in "Understanding society and culture" in comparison to philosophy majors. The ability to gather meaningful assessment data on student learning of the Principles of Undergraduate Learning will meet academic and administrative needs and will provide useful information to improve curriculum and pedagogy at IUPUI.

Planning for Improvement

(Addresses IU Principle 8)

The combined efforts of PRAC, PAII, OPD, and University College, as well as faculty and staff in each school have not yet achieved the goal of providing for every IUPUI student the five experiences described on page 4. In particular, we need to determine how to assess the knowledge and skills of our transfer students and to introduce them to the PULs and the ePort. Plans are underway to align the approaches to general education and assessment of related learning undertaken by faculty at IUPUI and at Ivy Tech State College, IUPUI's most important source of transfer students.

Much work remains to be done to implement the technological requirements of the ePort, to pilot-test it with students and faculty, to put in place manageable means of evaluating student work in the portfolios, and then to institutionalize the ePort as a principal means of evaluating student achievement and progress in general education in all majors. Currently, there is no requirement that students in every discipline use the electronic portfolio and no expectation that faculty in every program will make the ePort a requirement for their students. If the students and faculty who try out this new technology succeed, and if their experience is favorable, IUPUI administrators anticipate that acceptance of the ePort as a primary assessment tool will spread throughout the

institution. Our goal is to make completion of an ePort a requirement for every undergraduate by 2010.

Currently, the responsibility for teaching and assessing achievement related to the PULs rests with faculty in schools and departments. To assess the current level of integration of PULs in learning outcomes for the major, as well as the extent to which faculty are using assessment of student learning to improve the learning environment, PRAC members were asked to contribute information for Table 1. While it is clear that faculty in the majority of disciplines at IUPUI have integrated the PULs into learning outcomes for the major, have developed strategies for assessing student learning of the PULs, and are using the results of assessment to improve curriculum, instruction, and the broader student experience, some units have just begun to think about these matters. In the years ahead, faculty in all disciplines must be encouraged to complete their cells in the matrix represented in Table 1.

TABLE I

School (with Majors)	Learning Goals for Majors that Encompass PULs are Specified	Multiple Assessment Measures are in Place	Assessment Findings are Used
Allied Health (now Health Professions)	Yes	Clinical experience evaluations Final practical exams National certification exams Employer surveys	Yes All benchmarks for student achievement were met in 2003-04.
Business	Under discussion	Exit surveys of graduates (No direct measures of student learning are yet being reviewed by KSB faculty for purposes of assessing and improving curricula and instruction.)	
IUPU Columbus	Under consideration	Assessment planning	ng will begin in Fall 2004.
Dentistry • Dental Hygiene	Yes	 National Board Exam State and regional licensing exams Student focus groups Student exit surveys Alumni surveys 	Yes
Education	Yes	National PRAXIS exams Locally-developed performance assessments based on national standards Several student surveys Employer survey	Yes In 2004 orientation has been redesigned and follow- up surveys for students who have conferred with advisors have been instituted.
Engineering and Technology • 7 Departments	Yes	 Assignments, lab reports, project reports and presentations, final exams in courses Course learning outcome surveys Capstone project reports Student satisfaction surveys and focus groups Student exit surveys Alumni surveys Employer surveys Industrial Advisory Board appraisals 	Every course has specified outcomes that are mapped to program outcomes. PULs are emphasized. These desired outcomes are shared with students in syllabi and in explicit references in class. Each department sets expectations for percentages of students reaching and exceeding target performances. Data from each student in each course are entered in spreadsheets and faculty spend time studying student strengths and weaknesses within individual courses and across courses in each major. Changes in curricula and instruction are undertaken as warranted.

School (with Majors)	Learning Goals for Majors that Encompass PULs are Specified	Multiple Assessment Measures are in Place	Assessment Findings are Used
Herron • Visual Communications is leading the way for other Herron departments.	Yes	 Assignments, projects, exams in courses Sophomore advancement reviews Artist's statements at sophomore and senior levels Capstone courses and portfolio reviews Student surveys Alumni surveys Internship supervisors' reviews 	Yes Numerous changes have been undertaken to ensure that students understand performance expectations and can attain those.
Informatics a. Health Information Administration	Yes	National certification exam Student surveys Alumni surveys	Yes
b. Informatics	PULs stated in syllabi but not yet explicitly integrated with learning outcomes in the major.	 Course assignments, projects, final exams Student surveys Alumni surveys Advisory board appraisals A student portfolio is being developed. 	Collective evidence of student achievement is not yet collected for faculty analysis in all cases.
c. New Media	PULs stated in syllabi but not yet explicitly integrated with learning outcomes in the major.	 Course assignments, projects, final exams Capstone project and student portfolio Student surveys Alumni surveys Advisory board appraisals 	Collective evidence of student achievement is not yet available for faculty analysis in all cases.
Journalism	Yes	Faculty use rubrics to assess student performance on course assignments including investigative stories, community surveys, and photo essays.	Data across students in a course or across courses have not been studied by faculty collectively to determine warranted improvement actions.
Liberal Arts	Yes	 Several departments are pilot-testing the student ePortfolio All graduating seniors take a survey that includes an essay on each PUL. 	Two years of data on the survey for graduating seniors are being analyzed.
a. Anthropology	Yes	 Assignments, exams, reflective journals, projects Course learning outcome surveys Senior exit interviews 	Yes Major revised to include core courses and capstone course developed.

School (with Majors)	Learning Goals for Majors that Encompass PULs are Specified	Multiple Assessment Measures are in Place	Assessment Findings are Used
b. Communication Studies	Yes	Course assignments, exams, projects Student surveys Alumni surveys	Yes Changes made in curriculum and instruction, including more use of technology, are being tracked. In 2003-04 students are better equipped to conduct research as a result of a new requirement for experience in research methods.
c. Economics	Yes	Common final exams in multi-section courses Senior seminar reflection assignment Alumni survey	Yes Inspection of common final scores has been used in evaluating faculty and in replacing some part-time faculty. Now fewer sections have scores well below the department mean.
d. English	Yes	Written assignments, research projects, poster demonstrations, analytical essays, oral presentations, portfolios Capstone course	Yes A new curriculum was instituted in 2002 and an assessment committee is analyzing capstone course performance to determine strengths and weaknesses of the new curriculum.
e. Geography	Yes	Course assignments, tests, projects, oral presentations	Yes. More use of spatial analysis tools in classes is making students more employable. Increasing active learning in classes is helping to increase persistence.
f. History	Yes	 Course assignments, tests, projects Student exit survey Alumni surveys 	No report for 2003-04 filed yet.
g. Philosophy	Yes	Course assignments, tests, papers	No assessment-related changes are documented in 2003-04.
h. Political Science	Yes	 Course exams, papers, critical analyses Capstone course Senior seminar exit interview 	No assessment-related changes are documented in 2003-04.
i. Religious Studies	Yes	Course exams, projects, essays Capstone course	No assessment-related changes are documented in 2003-04.
j. Sociology	Yes	Course exams, essays, projects, oral presentations Capstone experience Survey of graduating seniors	Yes. Instituted a capstone seminar to provide closer supervision of capstone students.

School (with Majors)	Learning Goals for Majors that Encompass PULs are Specified	Multiple Assessment Measures are in Place	Assessment Findings are Used
k. World Languages	Yes	Nationally developed oral proficiency interview Class assignments and exams Portfolios and capstone courses	Yes. Special purpose language and translation courses introduced in all programs, immersion-based teaching internships introduced in Spanish, supervision of capstones increased.
Nursing	Yes	 National licensure exam Clinical performance Capstone evaluation Exit surveys Alumni survey 	Yes Numerous responsive changes in curriculum and instruction undertaken. One result is an increase in the performance of students on the national licensure exam.
Science	Yes	 Senior Reflection Project – graduating seniors write about their experiences with the PULs. Members of the Teaching and Learning Committee apply an assessment rubric to these reflections. Common rubric for evaluating student performance in capstone experiences Graduating senior surveys Each department uses a variety of assessment techniques. 	Yes. Changes have been made by the Geology and Mathematics faculty and current assessment findings are being considered by faculty in other departments.
Social Work	Yes	 Course assignments, reports, papers, videotaped or simulated interviews Peer reviews of students Course learning outcome surveys Student exit survey Alumni survey Employer survey 	Yes. Online courses are being created, class sizes have been reduced, more active learning strategies are being used, and assessment processes are being enhanced.
Physical Education and Tourism Management a. Physical Education	Not evident in 2002-03 report		No report for 2003-04 filed yet.

School (with Majors)	Learning Goals for Majors that Encompass PULs are Specified	Multiple Assessment Measures are in Place	Assessment Findings are Used
b. Tourism, Conventions, and Event Management	Explicit references to PULs not evident in student learning outcomes for the major	Course assignments, case studies, role playing, forecast analysis, group presentations, cost analyses Capstone experience	More online courses are being offered to meet needs of location-bound students, to decrease class size, to enhance active learning. New courses have been created to meet changing industry needs. Now the placement rate for graduates in jobs related to tourism is increasing.
Public and Environmental Affairs	Yes - though these are not yet available on the PRAC Website.	 Capstone course with exams, papers, group projects, debates, oral presentations Focus groups Employer evaluation of internships Practicum report writing Student surveys Employer surveys Alumni surveys 	Collective evidence of student achievement is not yet available for faculty analysis.
University College	Yes	 PULs are introduced in First Year Seminars and students in Fall 2004 will enter information about their proficiency on PULs in the ePort. National Survey of Student Engagement (NSSE) for first-year students 	Yes. Faculty and administrators use assessment findings continuously to improve programs and services for students. Programs that evaluation methods demonstrate are most effective are extended to additional students.