Assessing Student Learning Outcomes

IUPUI Summary Response to ICHE Goal 6

July 2005

Learning Outcomes for all IUPUI Undergraduates

Between 1991 and 1998, IUPUI faculty and staff worked toward a coordinated approach to general education for IUPUI undergraduates in a series of multi-disciplinary committees, day-long retreats, consultant-led workshops, and town hall meetings. This process culminated in 1998 with the adoption by the IUPUI Faculty Council in 1998 of six Principles of Undergraduate Learning (PULs):

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 taught in a set of specified courses offered primarily 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. As such, they define the meaning of an IUPUI baccalaureate degree, regardless of major.

Engaging Learning Opportunities for Students

To ensure that IUPUI students have opportunities to participate in engaging learning experiences that are aligned with expected learning outcomes, IUPUI faculty have developed the template that appears below for initiating and guiding assessment of learning in academic units.

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

Through the combined efforts of faculty and administrative support staff, all IUPUI students should experience each of the following:

1. Prior learning is assessed in mathematics and selectively in foreign languages, chemistry, and other disciplines upon matriculation and students are placed in courses appropriate to their levels of achievement.
2. Students are introduced to the PULs in their First-Year Experience courses and Themed Learning Communities. These courses use active learning pedagogies and proven best teaching and learning practices.
3. Students continue to develop their PUL-related knowledge and skills in coursework, particularly in Gateway courses—those 30 or so introductory courses that account for over 30% of all undergraduate credit hours. Many of these courses have been revised over the past several years to support increased student engagement and success.
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 internships, undergraduate research studies, design projects, or professional licensure exams. Reflection and hands-on experience related to students' chosen fields characterize many of these experiences.
5. Faculty and professional staff use both direct and indirect measures of student learning to improve curriculum, instruction, and assessment processes.

Administrative Structures and Practices that Promote Learning

Annual Reports

Various mechanisms have been established at IUPUI to ensure that the five processes listed above are occurring. First an oversight committee representing each academic unit prepares an annual report on the assessment of student learning using the template illustrated above. The campus report is based on individual reports submitted by each academic unit. The content of the campus report is reviewed by a faculty committee, and suggestions for improvement of approaches to instruction and student support services, as well as assessment methods, are offered.

Surveys

Indirect evidence of student learning is collected annually through surveys administered to representative samples of enrolled undergraduates. The locally-developed *IUPUI Continuing*

Student Survey was administered first in 1995 and annually until 2001 when this survey was moved to a biennial administration to permit use of the *National Survey of Student Engagement (NSSE)* in the alternate years.

Program Review

Comprehensive academic program review provides an additional 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 and review teams are directed to comment on the quality of curricula, methods of instruction, and the evidence of student learning in general education as well as the major field of study.

Performance Indicators

IUPUI has developed performance indicators designed to chart progress on ten institutional goals, including student learning outcomes. Underlying each of the macro-indicators related to teaching and learning is a rich set of sub-indicators based on direct and indirect evidence derived from the sources just described.

Assessment Findings and Responsive Actions

Annual Reports

Direct and indirect sources of evidence of student learning are being used in every school to guide efforts designed to improve curricula, instruction, and student support services. A few examples from the 2005 reports from academic units are summarized below:

School/Department	Source(s) of Evidence	Responsive Improvements
Physical Education & Tourism Management • Physical Education	Student performance in internships and student teaching	Established minimum 2.5 GPA for eligibility for internship or student teaching, along with mandatory advising sessions with faculty.
Social Work	National survey for undergraduates in social work	Additional content in criminal justice and corrections will be added to the curriculum.
Engineering & Technology • Freshman Engineering Program	Project report evaluations, course outcome surveys, and peer evaluations	Changes have been made in project design, instruction in teamwork, and teaching methods for software tools.
SPEA	Performance in capstone courses, surveys, focus groups	A common exit exam is being designed for criminal justice majors and mandatory orientation for students has been instituted for the purpose of conveying curricular and learning outcome expectations.
Herron School of Art	Survey for graduating seniors	A trip to Paris during spring break was designed to increase students' understanding of other cultures.

Business	Student and employer surveys, student focus groups. Employer concerns expressed informally and in advisory groups	Changes have been made in career services to tailor services to identified needs. Three new courses for seniors will be offered to increase understanding of values and ethics in business and of corporate governance.
Liberal Arts • Anthropology	Student course evaluations and exit interviews with seniors	A course in applied anthropology is now required of all entering majors and a senior seminar and practicum have been added to provide more opportunities for students to apply their knowledge.
• Communication Studies	Student performance in conducting research	A research methods course is now required.
• English	Student performance and progression	Specific tracks through the curriculum have been developed, each with clear requirements. Faculty specializing in a given track advise majors in that area.
• Geography	Student performance and course evaluations	Active learning has been increased in all classes and more field trips and applied experiences have been added.
• Sociology	Student performance and senior survey	Faculty launched a capstone seminar and revised common final exams in introductory courses.
Science • Computer Science	Student performance and surveys	New curriculum in computer science is now being offered.
• Biology	Student performance in Anatomy 261	New exercises have been added to increase students' time on task.
• Physics	Student performance and surveys	Changes include less lecture and more active learning throughout the curriculum, an additional lab component for one course, and increased emphasis on communication in the capstone.
University College • Summer Bridge Program	GPA and retention data	Data supporting advantages for participants have been used to secure additional support for increasing participation.
• First Year Seminars	GPA and retention data	Data supporting advantages for participants have been used to secure additional support for increasing participation. Several online sections have been developed.
• Critical Inquiry	Instructors' perceptions	More training and support are being provided for instructors.
• Orientation	Surveys for students and parents	Orientation advising was made more interactive and the parent program was revised.
• Advising	Surveys for students and advisors	Advisors have received more information about connecting academic majors with careers.
• Learning Center	Program review by external team	All training for mentors and tutors has been standardized.
• Math Assistance Center	Student participation report	Staff scheduling was changed to match students' needs and publicity will be increased to encourage more students to participate.

IUPU Columbus • Business Division	Student performance on case studies	Diversity segments have been integrated in most courses in order to increase students' understanding of other cultures.
• Education Division	Student performance	More opportunities have been offered for students to write and make oral presentations. and to have field experiences as sophomores.

Surveys

In the 2003 *IUPUI Continuing Student Survey*, 85% of students responding said they were satisfied with their overall academic experience at IUPUI; this figure was just 78% in 1995. Similarly, satisfaction with the quality of instruction has risen from 77% to 82% and satisfaction with the use of technology in the classroom has increased from 59% to 72% over the same period. Satisfaction with advising has risen from 51% to 58% during this time, but even 58% is too low. Efforts to improve advising are underway in most of IUPUI's academic units.

Responses on the most recent administration of the *NSSE* indicate that IUPUI seniors experience larger learning gains than their peers at other urban universities and other doctoral-intensive universities in six areas, including three that are directly related to the Principles of Undergraduate Learning (PULs): thinking critically and analytically, writing clearly and effectively, and speaking clearly and effectively. IUPUI seniors reported lower learning gains than these peer groups on one item related to the PULs—developing a personal code of values and ethics. A faculty Community of Practice is working to promote a broader understanding of the *values and ethics* PUL, including ways to teach and to assess the related abilities more effectively.

Program Review

Responding to recommendations received during the Computer and Information Technology program review, faculty have made several changes that will enhance student learning. An honors program that will require students to pursue an internship, international experience, or community service project, is being developed. In addition, 20% of the CIT courses now are being delivered through asynchronous learning.

In response to recommendations made by the team that reviewed the Department of Sociology, a uniform process for student advising has been implemented, a student mentoring system has been established for students in 100-level courses, and new research opportunities for undergraduates have been created.

The program review for the Department of Geology helped to convince faculty to design a new bachelor's degree in Environmental Science. In addition, a new staff member to assist with the service learning program has been added, laboratory space has been expanded, faculty have created a capstone course, and a new system of assessment has been developed.

The program review in Physical Education has resulted in improved course scheduling and closer articulation with other programs. Content for the freshman learning community has been updated and a minor in athletic training has been discontinued.

Performance Indicators

Two of IUPUI's ten mission-related goals focus directly on student learning. These goals are stated: "support and enhance effective teaching" and "enhance undergraduate student learning." Each year faculty and staff review panels are convened to assess IUPUI's progress in these areas using the following scoring rubrics:

A *green light* indicates that the goal is being achieved at an acceptable level or is clearly heading in the right direction.

A *yellow light* indicates that the goal is not being achieved at an acceptable level, though it might be improving or declining slightly.

A *red light* indicates that the current status or direction of change is not acceptable.

The data used to evaluate success in the area of supporting and enhancing effective teaching show increasing levels of faculty participation in professional development opportunities related to teaching and learning and a significant increase in the use of technology to improve teaching and learning. *Green lights* have been assigned to the subgoals of "institutional priorities for teaching development and practices" and "development of technology-based and technology-assisted teaching capacities." *Yellow lights* have been assigned to the subgoals of "engaging students in learning about their own and other culture and belief systems" and "use of assessment results to support and enhance effective teaching and student learning and course and curriculum changes."

The data used to evaluate success related to the goal of enhancing undergraduate student learning show that IUPUI is moving toward a more inconclusive, welcoming, learning environment, with assessment efforts on the rise, increases in retention, and improvements in student satisfaction. Student advising, however, is lagging behind, with current student and alumni surveys consistently documenting that this is an area needing improvement. Review panels gave a *green light* to the subgoals "demonstration of students' general education and major-specific learning outcomes," "quality of the learning environment," and "graduates' contributions to their professions and communities, economically, socially, and culturally." A *red light* was assigned to "student academic progress and achievement" to indicate the need for more work to improve advising and retention to graduation.

The Student Electronic Portfolio

Led by the Center on Integrating Learning, the IUPUI student electronic portfolio (ePort) is being designed to provide evidence of both achievement and improvement in each of the PULs as they are learned within the context of the student's major. Authentic evidence of individual student learning, as well as aggregated information about learning at the course, department,

program, and campus levels will be increasingly available as the ePort moves from its pilot phase in fall 2004 to full implementation over the next four to five years.

The implementation of ePort is integrated with several concurrent initiatives, such as the establishment and maintenance of Communities of Practice based on the PULs, Themed Learning Communities, General Studies Curriculum Development, Service Learning/Community Engagement, and Faculty Development. This progress report therefore includes information about these integrative aspects of ePort implementation.

1. **ePort**: In fall 2004, ePort was pilot-tested in nine Themed Learning Communities, involving more than 20 faculty and almost 200 students. A research project comparing students in the ePort pilot with students in Themed Learning Communities not in the ePort pilot produced some promising results. While not largely generalizable due to the small sample size, these early data show that students in the pilot engaged more with their learning (based on a comparison of questions from the NSSE), saw written communication as more important to their learning, revised their writing more frequently, and, despite frustrations with an unstable technological infrastructure, were retained at the same rate. This information provides promising baseline data for ePort in relation to student learning.

   Faculty in the pilot project developed assignments that explicitly integrated the PULs into discipline-specific work so that students might load them into the ePort learning matrix, which is based on the PULs. These assignments are posted on the website of the Center on Integrating Learning (COIL) as resources for other faculty.

   A group of eight members of the IUPUI Senior Academy (emeritus faculty) reviewed 180 student reflections. On a scale of 1-3, most reflections (105) were awarded a 1 (good start, but could be improved), revealing that both students and faculty need support in understanding the role, the potential, and the mechanics of reflective writing about the Principles. Only 22 of the reflections received a 3 (exceeds expectations), while 53 received a 2 (meets expectations). Still, for most students and faculty, this was the first time they had been involved with reflective writing. One significant result of this experience with Senior Academy members arose from their desire to have more interactions with the students, to know more about the contexts in which the reflections were written, and to provide opportunities for students to try again. As a result, we have revised our approach to reviewing reflections, and will situate those reviews directly in the students' academic programs. Supporting that decision is the notion that the PULs should be taught, learned, and assessed in explicit integration with course material, and that faculty should be directly involved with the curricular and pedagogical implications of that integration. While this heralds a significant shift for many faculty, it also will move forward the campus approach to addressing the PULs more comprehensively, and will situate them directly in the overall curriculum of each academic and professional program.

   During spring 2005, the ePort learning matrix, based on the PULs, was pilot-tested in five first-year classes and a customized version of the matrix was pilot-tested in the English Capstone. Faculty reviewed the reflections of their students, and, in one

instance, traded classes to review the reflections of each other's students. This seemed to work well, and to bode well for the decision to change the approach to that of reviewing reflections. One notable result from the spring pilot is that 100% of the students in the English Capstone said that ePort should begin in the first year. Another notable result, more in direct keeping with ICHE Goal 6, is that the student reflections in the Capstone Matrix clearly indicated familiarity with and achievement in the PULs.

The technological infrastructure to support the ePort is now stable on an IU server, rather than on a developer's server. This alone will make its use easier for faculty and students. It is embedded in the new Oncourse CL, with which faculty and students are becoming increasingly familiar, again adding to greater ease of use. Finally, we are further refining the learning matrix, developing customizable learning matrices that can be used by each course or each department, and creating a set of templates whereby students may demonstrate their learning for a wider range of purposes.

During fall 2005, it is anticipated that 11 TLCs, 10 Learning Communities, 7 sections of Freshman Composition W131, and 7 sections of Communication Studies R110 will be using ePort, involving nearly 800 students.

2. **Themed Learning Communities** (TLCs): The TLCs combine 2-4 first year courses with a first-year learning experience around a particular theme, and thereby provide an excellent and integrated introduction to the PULs. TLCs are therefore an ideal site for piloting the ePort. As mentioned above, in 2004, nine TLCs piloted the ePort. We are anticipating increased involvement in the ePort for fall 2005.

   The TLCs play an important complementary role to ePort in relation to Goal 6 in that they are an ideal site for students to integrate assignments in several courses for a particular PUL. Therefore they provide an excellent catalyst for student learning of the PULs in a context that is truly integrated within the discipline.

3. **Communities of Practice** (CoPs). To date, five CoPs have been established, one for each of the PULs except for Depth, Breadth, and Adaptiveness of Knowledge. This last one should be established in 2005-06. With a total engagement of around 50 faculty, these Communities are still fledgling. Nonetheless, they have done important work in relation to ICHE Goal 6. They have refined the expectations for learning of the PULs at the introductory and intermediate levels and have developed some sample assignments that explicitly integrate the targeted PUL with discipline-specific concepts and knowledge. The expectations for learning appear in the ePort learning matrix, and the sample assignments provide well-structured opportunities for students to demonstrate their learning of the PULs in ePort.

4. **General Studies**: The curriculum for General Studies is grounded in the Principles of Undergraduate Learning. In spring 2005, General Studies faculty began to develop a three-credit course using ePort to document and assess learning in relation to the PULs. This will be implemented in spring 2006. Since General Studies boasts the largest number of majors on campus, the involvement of this program provides a

significant catalyst for involving more students and more faculty in ePort as a means of documenting student progress and learning in the PULs.

5. **Service Learning/Community Engagement**: Six departments (Sociology; World Languages and Cultures; Communication Studies; Sociology; Visual Communication; and Computer Information Technology) are currently involved with an initiative to integrate service learning and community engagement meaningfully throughout the major. This engagement will be documented through reflections developed by the students in relation to the PULs. These reflections will be posted to the ePort to demonstrate the integration of service learning/community engagement with the PULs and with the major. While this effort is in its preliminary stages, by the end of next year, we should be prepared for significant community engagement in each department.

6. **Faculty Development**: The Center for Teaching and Learning provides several kinds of support for faculty who wish to learn how to use ePort to document progress and achievement in the PULs. The "ePort Airport" is a day-long workshop on the PULs and ePort, and is offered several times a year, as well as being available to individual departments or other campus groups. Individual technological support is provided, as well as a wealth of shorter workshops offered throughout the year. Every workshop involving course development includes sessions on the PULs and information about how to develop assignments that integrate the PULs explicitly with discipline-specific concepts in order to demonstrate progress and achievement on ePort.

The above six initiatives provide a widening network for integrating and supporting the Principles of Undergraduate Learning throughout the campus, as well as increasing faculty engagement with ePort as a means for documenting progress and achievement in the PULs. Taking this intentionally incremental approach will enable faculty to come on board at a comfortable pace, ensuring that their motivation to enhance student learning of the PULs becomes the prime factor in their engagement.