Using Mixed Methods to Assess Indirect and Direct Learning Outcomes: Planning, Implementing, and Using Assessment Results

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University College, IUPUI
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Workshop Overview

• University College Structure and Institutional Context
• Assessment Methods
• Planning for Assessment
  – Essential Steps
  – Improving and Proving Program Effectiveness
  – Using Direct and Indirect Learning Measures
  – Using Quantitative and Qualitative Approaches
  – Theoretical Frameworks
• Example of Large-Scale Effort to Assess Learning Directly
• Qualitative Assessment Methods
• Creating a Culture of Evidence
  – Faculty Involvement
  – Using Assessment Results for Planning
  – Mechanisms for Linking Data to Action
IUPUI – First-Year Students

- 2395 first-time, full-time students
  - 1431 (60%) University College admits
  - 964 (40%) Dual admits/Direct School
- 658 (28%) live in campus housing
- Only 31 (1%) 25 years of age or older
- 94% In-State Students or Resident Students
- 60 (3%) International Students
- 256 (11%) African American
- 103 (4%) Latino/a
- 967 (40%) First Generation
- 3.25 Average High School GPA
- 1017 Average SAT score
- 2343 (92%) participate in First-Year Seminars
- 697 (29%) participate in a Themed Learning Community
- 421 (18%) participate in the Summer Bridge Program
  - UC serves about 7000 students
IUPUI

- Indiana University Purdue University Indianapolis (IUPUI)
  - Downtown Indianapolis
  - Public comprehensive four year institution
  - Awards degrees from both Purdue University and Indiana University
  - Over 250 academic programs
  - Doctoral/Research Intensive
  - Enrollment – 30,530
    - Undergraduate – 22,236
    - Graduate – 8,294
University College Structure and Institutional Context
IUPUI – University College

MISSION
University College is the academic unit at IUPUI that provides a common gateway to the academic programs available to entering students. University College coordinates existing university resources and develops new initiatives to promote academic excellence and enhance student persistence. It provides a setting where faculty, staff, and students share in the responsibility for making IUPUI a supportive and challenging environment for learning.

PRINCIPLES
University College will achieve its mission through the…

— Promotion of student learning
— Focus on individual student success
— Establishment of its own traditions and recognition of accomplishments
— Provision of a quality first year experience
— Development of strong connections with the degree-granting units
— Commitment to faculty and staff development
— Creation of a community that values diversity
— Implementation of collaborative governance built on individual responsibility
— Commitment to intentional reflection and assessment
University College - IUPUI

• Provides a common gateway to entering students.
• Promotes academic excellence.
• Supportive and challenging environment for learning.
University College Structure- IUPUI

- Bylaws
- Defines faculty
  - Senior
  - Adjunct
  - Lecturers
University College - IUPUI

• Authority of the Faculty
  – Standards for admission, placement, & academic standing;
  – Curriculum, course content, and examination procedures;
  – Grading, student evaluation, and grading appeals.
  – And more……
University Colleges provide a structure to address the need for a comprehensive approach to entering students.

Commitment to intentional reflection and assessment.
This is achieved by:

– Providing efficiency, effectiveness, and sustainability.

– Facilitating collaborations on and off campus.

– Improving opportunities for grants.
IUPUI – University College

- UC Programs
  - New Student Orientation
  - Summer Bridge Programs
  - Advising and Career Development
  - Pre-College Programs
  - Learning Center – Peer Mentoring
  - Student Support Services
  - Learning Communities
  - First-Year Seminars
  - Critical Inquiry
  - Gateway to Graduation
  - Special Programs for Academic Nurturing (SPAN)
Re-organization into UC structures has facilitated college entry and has increased student success at many institutions.
Essential Features of Successful University College Model

- Collaborations with P-12
- Campus collaborations among all units serving students at entry
- Joint staff, advising and faculty appointments
- Curricular approaches
- Strong academic support services
- Faculty focused
- Assessment
Assessment
Questions:

- What are the goals of your program?
- What are your intended outcomes?

- Program Definition: 1) **Set of educational activities with specific goals:** a system of procedures or activities that has a specific purpose, e.g. to improve student retention, motivation, or learning. 2) **Academic Programs:** lead to certification or a degree.
Goals of Educational Programs

- Enhance student motivation for learning.
- Ensure that students learn content and are able to apply material learned.
- Improve ability to think critically.
- Foster and encourage lifelong learning.
- Improve academic performance.
- Improve retention and graduation rates.
  - Assist students in their learning process and thereby motivate them to remain committed to completing their higher education.
A Few Words about Program Goal Domains

Three domains:

• Cognitive (about knowledge and the development of intellectual skills).

• Affective (the manner in which things are dealt with emotionally).

• Psychomotor (physical movement, coordination, and use of motor skills).

* When developing goals, objectives, or intended outcomes start with the end in mind and identify developmental benchmarks along the way.
• **Assessment** – “Assessment is the systematic collection, review, and use of information about educational programs undertaken for the purpose of improving student learning and development.”

Trudy Banta
Program Evaluation

• Another conception of evaluation is that it investigates and judges the quality or worth of a program, project, or other entity rather than student learning. Under this definition, evaluation is a broader concept than assessment. While assessment focuses on how well student learning goals are achieved, evaluation addresses how well all the major goals of a program are achieved (Suskie, 2009).
Some Purposes of Assessment

- Determine if programs are attaining intended goals and student learning outcomes.
- Determine if students learn content.
- Enable students to assess their own strengths.
- Allow more opportunities to improve teaching and learning.
- Help institution demonstrate accountability or determine worth and value of programs.
- Make data-based decisions.
Formative vs. Summative Assessment

Formative Assessment

• Evaluations intended - by the evaluator - as a basis for improvement (Scriven, 1996).
• Typically conducted during the development or improvement of a program or product and it is conducted, often more than once, for in-house staff of the program with the intent to improve.
• It typically involves qualitative feedback (rather than scores) for both student and teacher that focuses on the details of content and performance.

Summative Assessment

• Seeks to monitor educational outcomes, often for purposes of external accountability.
• Assessment of learning and is contrasted with formative assessment, which is assessment for learning.
• Provides information on the program's efficacy (its ability to do what it was designed to do). For example, did the learners learn what they were supposed to learn after participating in a program using the instructional module.
Focus on Accountability

- Four-Year Graduation Rates
- Degree Completion
- Course Completion
- “Value-Added” Interventions
- Cost-Effectiveness
- Student Learning Outcomes
Good Assessment is Good Research…

• An important question
• An approach to answer the question
• Data collection
• Analysis
• Report

Critical Questions About Programs

• What are programs providing and for whom?
• Are they meeting the needs of students?
• How can the program be improved?
• Is the program improving student learning and other important educational outcomes?
• Where is learning satisfactory?
• Which approaches produce the most learning for which students?
• Do Learning Community structures really improve students’ abilities to integrate their learning experiences and think critically?
• Do program impacts vary across different groups of intended beneficiaries (males, females, undergraduates, first-generation students, Latino students) and over time?
• Are there any unintended effects of the program, either positive or negative?
• Is the program worth the resources it costs?
• Can the changes in outcomes be explained by the program, or are they the result of some other factors occurring simultaneously?
Planning for Assessment
Essential Assessment Planning Steps

- Develop Definitions, Goals, and Plans
- Identify Purpose of Assessment
- Articulate Goals and Understand the Program Theory
- Identify and Involve Stakeholders
- Identify Valid Key Indicators
- Determine Data Collection Procedures
- Determine Research Design and Assessment Methods
- Analyze Data and Produce Reports
- Ensure Use of Results
  - Adopted from Posavac and Carey, 2002; Palomba and Banta, 1999
Classroom Assessment

• Establish goals and student learning outcomes.
• Design assignments.
• Encourage student motivation.
• Design the course.
• Communicate with students about their work.
• Use student classroom work as well as other measures for assessment in departments or general education programs.
  – Barbara E. Walvoord
## Planning for Learning and Assessment

**T.W. Banta**

<table>
<thead>
<tr>
<th>1. What general outcome are you seeking?</th>
<th>2. How would you know it (the outcome) if you saw it? (What will the student know or be able to do?)</th>
<th>3. How will you help students learn it? (in class or out of class)</th>
<th>4. How could you measure each of the desired behaviors listed in #2?</th>
<th>5. What are the assessment findings?</th>
<th>6. What improvements might be based on assessment findings?</th>
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Mixed-Method Approaches

• Allows researchers to:
  – Triangulate findings from multiple sources.
  – Converge or corroborate findings.
  – Strengthen the internal validity of the studies.
  – Create elaborated understandings of complex constructs such as “engagement” or “integrative learning.”
Employ Multiple Methods

1) Direct
   • Projects, papers, tests, observations

2) Indirect
   • Questionnaires, interviews, focus groups
   • Unobtrusive measures
      Syllabi, transcripts
Direct Measures of Student Learning

• Require students to demonstrate their knowledge and skills.

• They provide tangible, visible and self-explanatory evidence of what students have and have not learned as a result of a course, program, or activity (Suskie, 2004, 2009; Palomba and Banta, 1999).

• Examples of direct student learning measures include objective tests, essays, presentations, classroom assignments, and portfolios.
Assessment of Student Work: A Direct Measure of Learning

• “No assessment of knowledge, conceptual understanding, or thinking or performance skills should consist of indirect evidence alone” (Linda Suskie, 2009).
Direct Measure of Peer Mentor Learning

- Research conducted by Peacock & Hansen (2010) at IUPUI.
- Asked student peer mentors to respond to a series of scenarios designed to assess learning directly:
  - **(Leadership)** Recently there has been a great deal of conflict among students in your mentoring sessions. The students simply do not work well in the groups you have organized. Please describe how you would apply what you learned about being a mentor to resolve the conflict and create a positive learning environment.
  
  - **(Problem Solving)** Lately, you have noticed that several of the students you are mentoring do not come to class/mentoring sessions prepared and are not devoting enough time to studying or for course work. Please describe how you would deal effectively with this situation given what you learned in your mentoring techniques course.
  
  - **(Diversity)** Recently you overheard a group of students that you mentor complaining that IUPUI should not allow Arab or Muslim students to study here due to security issues. You have also noticed that the students are rude to a Muslim student that you mentor.

- Low –to – Moderate levels of learning based on rubric ratings. Most likely due to low involvement on web-based writing task.
Use Authentic, Embedded Assessment

- Goal of many undergraduate programs is for students to become lifelong learners by enhancing students’ communication skills, critical thinking, and problem solving abilities.
- With authentic, embedded assessment tasks students are asked to demonstrate what they know and are able to do in meaningful ways.
- Authentic assessment tasks are often multidimensional and require higher levels of cognitive thinking such as problem solving and critical thinking.
- Embedded assessment means that “that opportunities to assess student progress and performance are integrated into the instructional materials and are virtually indistinguishable from the day-to-day classroom activities” (Wilson and Sloane, 2000).
- The end-of-course Research Paper in Biology.
Indirect Measures

- Capture students’ perceptions of their knowledge and skills
- They supplement direct measures of learning by providing information about how and why learning is occurring.
- Students’ perceptions of the extent to which courses and assignments have enhanced their achievement of the stated learning outcomes may be obtained by using the following methods: self-assessment, peer-feedback, end-of-course evaluations, questionnaires, focus groups, or exit interviews.
Indirect Measures Example

- **Themed Learning Community Questionnaire**
  (IUPUI Themed Learning Community Program)
  
  - Designed to collect feedback from students about their experiences in Themed Learning Communities.
  - Feedback used by faculty and instructional teams to improve courses and understand students’ perceptions.

Please indicate how much your experience in the Themed Learning Community helped you in the following areas:

1. Applied what I learned in one course to another course in my learning community.
2. Understood connections between different disciplines and courses.
3. Became more effective with communicating my thoughts in speaking.
4. Became more effective with communicating my thoughts in writing.
Indirect Measures Examples

**College Student Mentoring Scale (CSMS) Crisp (2009)**

- 25-item questionnaire
- Helps identify developmental support functions that should be provided for students
- *While in college I’ve had someone in my life who…*
  - I admire
  - Helps me work toward achieving my academic aspirations
  - Sets a good example of how to relate to other people
  - Makes me feel like I belong in college

Likert-type items asked on a 5-point response scale ranging from 1=strongly disagree to 5=strongly agree
Indirect Measures Examples

- **Mentor Session Evaluation Questionnaire**
  (Mark Minglin, 2010, Bepko Learning Center IUPUI)
  - Designed to collect feedback from mentees on the quality of their mentoring sessions.
  - Used to improve sessions and understand students’ perceptions.

<table>
<thead>
<tr>
<th>Please rate the following statements:</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>N/A</th>
</tr>
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<tbody>
<tr>
<td>5. My mentor made me feel welcome and at ease.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
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<td>6. My mentor approached our group in a respectful manner.</td>
<td>☐</td>
<td>☐</td>
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<td>7. My mentor conducted him or herself in a professional manner.</td>
<td>☐</td>
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<td>8. My mentor was patient.</td>
<td>☐</td>
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<td>☐</td>
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<td>9. My mentor set a reasonable pace.</td>
<td>☐</td>
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<td>10. My mentor was organized and prepared for each session.</td>
<td>☐</td>
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# Direct Measures

<table>
<thead>
<tr>
<th>Types</th>
<th>Advantages</th>
<th>Disadvantages</th>
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<tbody>
<tr>
<td><strong>Authentic Course-Embedded:</strong></td>
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<tr>
<td>Exams/Tests, Quizzes, Papers, Oral</td>
<td>- Require higher-order cognitive skills and problem solving.</td>
<td>- Time consuming to develop standardized criteria for evaluating (e.g., rubrics).</td>
</tr>
<tr>
<td>Presentations, Group Work, Assignments</td>
<td>- Direct measures are most effective if they are also course-embedded which means the work done by the student is actually work that counts towards a grade.</td>
<td>- Can be difficult to collect and aggregate for a large, public institution.</td>
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<td></td>
<td>- Authentic and part of already existing faculty and student work (not add-on assessment).</td>
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<td>- Increasingly the mandate from accrediting agencies.</td>
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<td><strong>Electronic Portfolios</strong></td>
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<td></td>
<td>- Effective mechanism for collecting and storing student work (authentic direct measures).</td>
<td>- Time consuming to develop standardized criteria for evaluating (e.g., rubrics).</td>
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<td>- Allows for students to reflect on learning experiences.</td>
<td>- Can be difficult to collect and aggregate for a large, public institution.</td>
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<td></td>
<td>- Allows multiple formats (e.g., paper, video, audio).</td>
<td>- Technology can be difficult to develop, use, and navigate.</td>
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<td><strong>Locally Developed Exit Exams</strong></td>
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<td></td>
<td>- Match local goals.</td>
<td>- Difficult to develop valid instruments.</td>
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<td></td>
<td>- Aligned with curriculum.</td>
<td>- Time consuming to develop.</td>
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<td></td>
<td>- Faculty-developed.</td>
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<td></td>
<td>- Development and scoring processes are informative.</td>
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<td><strong>Commercial Standardized Tests (e.g.,</strong></td>
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<tr>
<td>Collegiate Learning Assessment)</td>
<td>- Low time investment.</td>
<td>- Expensive.</td>
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<td></td>
<td>- National norms.</td>
<td>- May not match specific program goals.</td>
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<td>- Students may not be motivated to perform at best ability levels and this can negatively affect reliability and validity.</td>
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<td>- May measure “generalized intelligence” which may not change due to curriculum or classroom experiences.</td>
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</table>
## Indirect Measures

<table>
<thead>
<tr>
<th>Types</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades</td>
<td>- Inexpensive.</td>
<td>- Not standardized</td>
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<tr>
<td></td>
<td>- Relatively easy to aggregate and collect</td>
<td>- Not ideal measure for determining students’ actual knowledge, skills, and abilities.</td>
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<td>- Available for almost all students.</td>
<td>- Grades alone do not indicate if students are able to write well, think critically, problem solve, and apply values and ethics.</td>
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<td>- Good indicator of academic success and progress toward degree.</td>
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<td>- Can be good proxy for student learning.</td>
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<tr>
<td>Surveys and/or Questionnaires</td>
<td>- Inexpensive</td>
<td>- Not a direct measure of learning.</td>
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<td></td>
<td>- Critical to understand what individuals perceive, know, and think of</td>
<td>- Difficult to develop valid instruments.</td>
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<td></td>
<td>programs and services</td>
<td>- Low response rates for large sample, web-based surveys.</td>
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<td>- Acknowledges importance of student (or alumni), faculty, and staff opinions</td>
<td>- Do not involve higher order cognitive processes.</td>
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<td></td>
<td>-- Can provide information about how and why learning is occurring.</td>
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<td></td>
<td>- Statistical relationships, prediction control, description, hypothesis</td>
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<tr>
<td>Interviews (e.g., senior exit</td>
<td>- Comprehensive, holistic, richly descriptive.</td>
<td>- May be intimidating, biasing results.</td>
</tr>
<tr>
<td>interviews)</td>
<td>- Provides in-depth information about students’ learning experiences.</td>
<td>- Time-consuming to conduct and analyze data.</td>
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<td>- Allows individualization and follow-up probes.</td>
<td>- May not be representative.</td>
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<tr>
<td>Focus Group interviews</td>
<td>- Same as interviews</td>
<td>- Same as interviews.</td>
</tr>
<tr>
<td></td>
<td>- Allows more students to be &quot;interviewed&quot; in less time.</td>
<td>- A few students can skew the results if not carefully facilitated.</td>
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Qualitative Assessment

• Brings Awareness Of Program Implementation Differences.

• Provides In-Depth Understanding of Student Responses and Interactions.

• Represents Part of a Long Term Strategy of Formative Evaluation.
Quantitative Assessment

- Conduct quasi-experimental designs employing multivariate analyses of covariance, repeated measures MANCOVAs, and hierarchical regression procedures.
- Conduct analyses to determine program effects on academic performance, retention rates, and DFW rates.
- Describe retention rates and GPAs in defined populations over semesters and years.
- Examine program participants compared to non-participants with regard to GPA and retention while adjusting for academic preparation and background differences.
- Examine predicted vs. actual retention, course grades, and DFW rates.
- Administer student surveys to assess student needs, satisfaction, engagement, program impacts, reasons for leaving, etc.
Limitation

- A noteworthy limitation of these investigations is that students self-select into programs and selection bias may have affected the internal validity of the studies. Thus, the ability to make causal inferences based on the information is limited.

- It is possible that the positive effects of the programs on academic performance are due to the fact that students who decide to enroll may have differed in substantial ways from students who decided not to enroll and these differences (not the programs or courses) may have caused the positive outcomes.

- Although important variables are treated as covariates in the statistical models, it is difficult to adjust for all possible self-selection factors using traditional statistical techniques and when experimental designs using random assignment are not employed.
Take Inventory of Existing Assessment Information

- Grades in courses
- Course exams
- Student surveys
- Faculty surveys
Underlying Theories Guiding Many Educational Programs

❖ Academic integration:
  • The development of a strong affiliation with the college academic environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of an academic nature (e.g., peer tutoring, study groups) (Cabrera, Nora, & Castaneda, 1993).

❖ Social integration:
  • The development of a strong affiliation with the college social environment both in the classroom and outside of class. Includes interactions with faculty, academic staff, and peers but of a social nature (e.g., peer group interactions, informal contact with faculty, involvement in organizations) (Cabrera, Nora, & Castaneda, 1993).
Underlying Theories Guiding Many Educational Programs

- **Academic Self-Efficacy**
  - Students’ evaluation of their competence to successfully execute academic tasks necessary to reach desired outcomes (Zajacova, Lynch, & Espenshade, 2005; Bandura, 1993).

- **Social Learning Theory**
  - “Human behavior can be learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." (Bandura, 1977, p. 22).
Program Theory Example

Summer Success Academy

- Connections with Peers and Faculty
- Intensive Math Instruction
- Intensive Writing Instruction
- Group Work
- Introduction to General Education Outcomes (PULs)
- Introduction to High Impact Practices (RISE)

Create Sense of Belonging, Improve Math & Writing Skills, Build Readiness, Clarify Expectations

- Academic, Math, and Writing Self-Efficacy
- Social Integration
- Academic Integration

Improved Retention and Academic Performance
Measuring Student Learning Directly: Examples
IUPUI Curriculum

• Principles based – no core curriculum.

• **Principles of Undergraduate Learning (PULs)**
  – Core Communication and Quantitative Skills
  – Critical Thinking
  – Integration and Application of Knowledge
  – Intellectual Depth, Breadth, and Adaptiveness
  – Understanding Society and Culture
  – Values and Ethics
PRINCIPLES OF UNDERGRADUATE LEARNING

- PULs
- Approved by Faculty Council May 7, 1998
- Revised 2005 & 2007
- Approved 2007
PRINCIPLES OF UNDERGRADUATE LEARNING

• PULs are essential ingredients of the undergraduate education experience at IUPUI
• Form a conceptual framework for all students’ general education
• But necessarily permeate the curriculum in the major field of study
PRINCIPLES OF UNDERGRADUATE LEARNING

• More specific expectations for IUPUI’s graduates are determined by the faculty in a student’s major field of study

• These expectations speak to what graduates of IUPUI will know and what they will be able to do upon completion of their degree
REACCCREDITATION 2012

• Need to provide evidence that undergraduates are developing the:
  – Knowledge
  – Skills
  – Abilities
  – Embodied in our Principles of Undergraduate Learning (PULs).
General Education (PULs) Assessment

- UC’s role with regard to student learning and the PULS is more general and foundational.

- The collaboration between the UC other academic units for the delivery of special programs, student support, and faculty development related to general education is critical.

- Within the context of UC’s programs, the PULs are introduced and students begin to develop them, but the goal and the ability to measure substantial results over time if often limited due to the fact that students quickly move from University College into the schools that include their major field of study.

- Employ a variety of methods to assess indirect learning outcomes as well direct student learning outcomes in the context of the first-year of college (beginning and intermediate levels of learning outcomes associated with general education outcomes).
General Education (PULs) Assessment

• Student learning outcomes for beginning levels of the PULs in First-Seminars, Mentoring Courses, and Themed Learning Communities with faculty involvement have been specified.

• University College First-Year Seminar course goals, templates, and corresponding syllabi contain statements of expected learning outcomes for students that incorporate the PULs.

• In preparation for the 2012 Accreditation visit UC, faculty members and instructional teams are measuring direct student learning outcomes specified in the PULs in programs and courses (we are employing a course embedded, authentic assessment approach).
ASSIGNMENT OF PUL

• Spring 2009, faculty in every undergraduate department identified for each course one, two, or three PULs emphasized through class activities/assignments.

• Each PUL was assigned a major, moderate, or minor emphasis
### Matrix for Departmental Plan to Evaluate Student Attainment of the PULS

Please select the department from the list below then enter the evaluation semester for each of the courses below. You can view the saved matrix on the front page.

**Department:** Liba -- Museum Studies  
**Author:** Patki, Amol M.

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSE</th>
<th>COURSE TITLE</th>
<th>1a</th>
<th>1b</th>
<th>1c</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td></td>
<td>MSTD-A 403</td>
<td>Introduction to Museum Studies</td>
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<td>MSTD-A 405</td>
<td>Museum Methods</td>
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<td>MSTD-A 408</td>
<td>Museum Internship</td>
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(3=Major Emphasis, 2=Moderate Emphasis, 1=Some Emphasis)

† Source: [http://www.iupui.edu/~fcouncil/documents/PULs.pdf](http://www.iupui.edu/~fcouncil/documents/PULs.pdf)
PILOT TESTING

• Gateway to Graduation Program
  – Spearheaded pilot testing (summer & fall)….collected faculty perceptions
    • Psychology
    • Personal Computer
    • Western Civilization
    • Elementary Composition I
    • Anatomy
    • First-Year Seminars (FYS)
    • +++more
ASSIGNMENT OF PUL

• Psychology
  – Psychology as a Biological Science

➢ Major emphasis >> Intellectual Depth, Breadth and Adaptiveness (PUL # 4)
➢ Moderate emphasis >> Written, Oral, Visual Skills (PUL # 1a)
➢ Some emphasis >> Critical Thinking (PUL # 2)
IUPUI: PUL Rating Form

For each of the 1 or 2 PULs emphasized most (that is, assigned a rating of 3 or 2 by you and your colleagues last spring) in your Summer II or fall semester course, assign an overall rating to each student in your class using the following scale:

3 = Very Effective; 2 = Effective; 1 = Somewhat Effective; 0 = Not Effective

Select No. of Students: **35**

Faculty Member Name: Bethany Neal-Beliveau

Course Title: Psychology as a Biological Science

<table>
<thead>
<tr>
<th>Student</th>
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Submit ratings: Submit
ASSIGNMENT OF PUL

• University College
  – First Year Seminar (FYS) >> U110
    ➢ Major emphasis >> Written, Oral, Visual Skills (PUL # 1a)
ASSESSMENT OF PUL -FYS-

• PUL Rating
  V = Very Effective
  E = Effective
  S = Somewhat Effective
  N = Not Effective

• UCOL U 110
  V = > 94%
  E = 85 - 94%
  S = < 85%
ASSESSMENT OF PUL

• First-Year Seminar (FYS)
  – Six reflective journals
  – HIPAA assignment & quiz
  – Library assignments
  – Research paper outline
  – Research paper
  – Personal Development Plan (PDP)
  – Oral Presentation
  – Mentor Session
# ASSESSMENT OF PUL

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<th>LIB-WEB</th>
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## ASSESSMENT OF PUL

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ASSESSMENT OF PUL
-FYS-

• PUL Rating
  V = Very Effective
  E = Effective
  S = Somewhat Effective
  N = Not Effective

• UCOL U 110
  V = > 94%
  E = 85 - 94%
  S = < 85%
# ASSESSMENT OF PUL -FYE >>U 100-

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<td>E (2)</td>
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</table>
FACULTY PERCEPTIONS -1-

- What kinds of student work formed the basis for your ratings of student effectiveness in learning the PULs you emphasized in your course?
FACULTY PERCEPTIONS

-2-

• Did you use the VALUE rubrics, or another form of rubric, to help you decide how to rate each student on the PULs?
FACULTY PERCEPTIONS

-3-

Did you make up your own explicit definitions for the ratings (very effective=3, effective = 2, somewhat effective=1, and not effective=0) to help you decide how to rate each student on the PULs?
FACULTY PERCEPTIONS

-4-

• What did you find most difficult about assigning the student ratings?
FACULTY PERCEPTIONS

-5-

• Based on your experience, what assistance would be most helpful for the campus to offer as we ask faculty colleagues to begin assigning these student ratings in their own courses in **SPRING 2010**?
UNIVERSITY COLLEGE PLAN

• Spring 2009
• University College courses were assigned using a major, moderate, or minor emphasis.
## Matrix for Departmental Plan to Evaluate Student Attainment of the PULs

<table>
<thead>
<tr>
<th>SEMESTER</th>
<th>COURSE</th>
<th>COURSE TITLE</th>
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<th>1b</th>
<th>1c</th>
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<td>UCOL-U 112</td>
<td>CRITICAL INQUIRY</td>
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<td>INTRODUCTION TO MENTORING</td>
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Last updated on: Oct 28 2009 11:02AM

Reference: [http://planning.ipul.edu/pul_matrix](http://planning.ipul.edu/pul_matrix)
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UNIVERSITY COLLEGE PLAN

- Curriculum Committee determined that **all** courses (U110, U112, U210, U201, U202, U203, & U204)
  
  - **All** sections
  
  - Would be evaluated **every** fall and spring.
FACULTY WERE REQUIRED TO:

• Review the PUL(s) assigned to course

• Determine what student assessments/evaluations best demonstrated the PUL(s) identified for the course.
ASSESSMENT EXAMPLES

- Papers
- Presentation
- Projects
- Exam questions
- Portfolios
- Other
CONCLUSION OF SEMESTER

• Submit final grades
• Submit evaluation of student attainment of PUL(s)

PUL Rating

\[ V = \text{Very Effective} \]
\[ E = \text{Effective} \]
\[ S = \text{Somewhat Effective} \]
\[ N = \text{Not Effective} \]
Principles of Undergraduate Learning
http://www.iupui.edu/PUl

Follow these instructions if you have been identified by your school to complete the PUL evaluation.

Two Options to Access PUL Evaluation
OnCourse: Go to: http://oncourse.iu.edu/
- Select the desired class from the top row of tabs.
- From the left menu bar, select SIS PUL Evaluation. This will open the Evaluation Roster available for this class.

1. PUL Evaluation instructions (Displayed at the top of the PUL Evaluation page):

   * Principles of Undergraduate Learning (PUL) evaluation rosters are available for all undergraduate classes at IUPUI and IUPUC where at least one PUL has been identified for the class.

   * Save as often as needed.

   * All evaluations for Major (and Moderate, if applicable) PUL emphasis must be complete before the PUL roster can be Approved and Submitted to the Registrar.

   * Students who have withdrawn from a class will be listed on the roster but there will be no PUL evaluation options for withdrawn students.

2. Recording Evaluations
   Use: V=Very Effective, E=Effective, S=Somewhat Effective, N=Not Effective

   - Evaluate each student’s learning of the Major PUL emphasized in this class and Moderate PUL if applicable.

   - Use the magnifying glass to view and select the valid evaluation.

3. Save (green button) as often as necessary

4. Approve and Submit (yellow button) to Registrar when your evaluation is complete.

   - PUL evaluations do not display to students nor the greater Indiana University community.

   - Only PUL data aggregated at school and campus levels will be reported.

IUPUI Contact: Office of the Registrar (317) 274-1519 or email iupuirg@iupui.edu

IUPUC Contact: Office of the Registrar (812) 348-7287 or email registrars@iupuc.edu

Updated: 03/02/2005
## Recording Evaluations

### Search Results

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<tr>
<td>E</td>
<td>Effective</td>
</tr>
<tr>
<td>S</td>
<td>Somewhat Effective</td>
</tr>
<tr>
<td>N</td>
<td>Not Effective</td>
</tr>
</tbody>
</table>
Save >>> Approve >>> Submit

- Save (green button) as often as necessary
- Approve and Submit (yellow button) when complete
Qualitative Assessment
Qualitative Assessment

• Qualitative strategies should not be considered merely ancillary components to an assessment process.

• We believe that some of the best assessment strategies are mixed method in design; employing a variety of both qualitative and quantitative strategies that…work with one another.
Effective Strategies and Best Practices

An overview of:

Collection
Analysis
Reporting
Three (3) Main Types of Data Collection

• **In Depth Open-ended Interviews:**
  – Focus Group and Individual Format.

• **Direct Observations:**
  – Student Learning, Teaching, and Stakeholder Meetings.

• **Written Documents:**
  – Open Ended Survey Responses / Examination of Student Work (Patton, 2002).
Individual and Focus Group Interviews

Collaboration with Stakeholders:
  Alignment with Assessment Goals.
  Development of Interview Questions.

Recruiting Participants:
  Monetary Incentive (Student Card Credit).
  Pizza Does Not Work.
  E-mail Newsletter / List-Serv.
Individual and Focus Group Interviews

Training Development
Consider 3rd Party Resources of Support
Consult Literature

Resources Needed
Recording & Transcription Equipment (Low Cost)
Time & Labor (High Cost)

IRB Approval – Human Subjects Research
Great Learning Experience
Graduate or Internship Student
Direct Observation

Activities, Behaviors and Actions (Patton, 2002)

Example 1: Observation of student poster presentations on the PULs at the conclusion of a program.

Example 2: Attending faculty meetings prior to conducting an assessment of faculty roles and responsibilities.

Provides Understanding of Culture and Context
Open Ended Responses

Surveys and Questionnaires:
   End-of-Course Satisfaction Questionnaire.
   Pre / Post Survey Designs.

Most Valued Aspects
Least Valued Aspects
Suggestions for Improvement

Example: Student PULSE Survey – Solicited students’ opinions of effective instructional strategies.

Encourage Completion: “Your Opinions Matter”.
Analysis of Qualitative Data

Collection Complete!

Next Step ➔ Prepare Data Systematically
- RTF Text Files
- Typed Student Responses
- Transcribed Interviews
- Sorted Observation Notes

Support often available from Testing Center, Administrative Assistants, Graduate Students.
Coding Types

**Open Coding** – Data is broken down, conceptualized, and the initial stages of categorization begin.

*What are the most salient themes?*

**Axial Coding** – allows for similarities and relationships among codes to become apparent.

*How are themes connected / dissimilar?*

**Selective Coding** – development of core categories, “the central phenomenon around which all other categories are integrated”. (Strauss & Corbin, 1990)

*Central phenomena? How do they inform assessment?*
Software Assistance

Subjectivity is OK – “In qualitative inquiry the researcher is the instrument” (Patton, 2002).

Software – Organization / Systematic Method.

Atlas.ti: www.atlasti.com
Other Programs: www.eval.org/resources/QDA.htm
ATLAS.ti
ATLAS.ti

Creating a Hermeneutic Unit

Assigning Primary Documents

Discovering relevant passages

Creating code(s) and memos

Visualizing & Writing up results

Exporting data

New text is imported whenever needed

Building theory: Weaving concepts to networks

SPSS PROLOG HTML XML
Methodologically, coding is more than merely indexing data. Coding is simply the procedure of associating code words with selections of data. In ATLAS.ti’s framework, the foundation of “coding” is the association between a quotation and a code.

http://www.atlasti.com/uploads/media/007_basic_coding_EN.m4v
Effective Reporting

Rich Formative Description
Strength and Weakness.

#1 – Include Examples of Actual Student Comments
“This is what students said…”

Executive Summaries & Highlight Sections
Remove Participant Names
Directly Share with Stakeholders
Post Online – Living Portfolio of Assessment
<table>
<thead>
<tr>
<th>Contributed to Learning Through...</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
</table>
| Meeting New Friends & Developing Connections | 78  | 13%  | “Good for meeting new friends.”  
                                             |     |      | “Helped with meeting new people.”  
                                             |     |      | “I gained friendships that made college easier.”  
                                             |     |      | “Helped me network myself.”  
                                             |     |      | “It helped me open up and get to know people.”  
                                             |     |      | “Making new friends, and being connected has helped grades.”  
                                             |     |      | “It helped me establish friendships with people in my major.”  
                                             |     |      | “(I) was forced to make connections between classes; I became friends w/ students who shared & countered my viewpoints.”  |
| College Transition Assistance    | 62  | 11%  | “Helped me transition into college.”  
                                             |     |      | “Made transition less stressful.”  
                                             |     |      | “It helped me adapt to college quicker and easier.”  
                                             |     |      | “TLC helped me make the transition to college life.”  
                                             |     |      | “It helped me to get use to college life & what’s expected of me here.”  
                                             |     |      | “My TLC experience contributed to my learning by making the transition from high school to college.”  |
| Developed Critical Thinking Skills | 60  | 10%  | “Helped me think outside of the box.”  
                                             |     |      | “In (-----) I learned how to critical think.”  
                                             |     |      | “Helped me organize my ideas.”  
                                             |     |      | “It made me think more broadly.”  
                                             |     |      | “Worked on fully developing ideas.”  
                                             |     |      | “It gave me the ability to look into topics much deeper.”  
                                             |     |      | “I found a better way to relate myself to my studies.”  |
| Developed Peer Support Network   | 59  | 10%  | “Gave me a group of peers to work with.”  
                                             |     |      | “It helped me find people to bounce ideas off of so that I can find a way to effectively study.”  
                                             |     |      | “Being in three classes with a common group of peers formed a support network.”  
                                             |     |      | “My TLC allowed me to effectively get better grades in my courses by giving me people to rely on when I have a question or problem.”  |
| Became Familiar with Campus (Resources & Navigation) | 59  | 10%  | “It helped me better understand the campus.”  
                                             |     |      | “It helped me by teaching me about campus and resources available.”  
                                             |     |      | “Taught me to use the library.”  
                                             |     |      | “Helped me learn how to use oncourse, onstart...”  
                                             |     |      | “The TLC helped learn what programs (MAC, Beplko, etc) are open to me as a student.”  |
| Helpful – Linked Courses         | 55  | 9%   | “Combining the classes made me realize how things connect.”  
                                             |     |      | “Helped me connect all my classes and learn from each.”  
                                             |     |      | “Many of my papers were connected to three of the same classes. I was focused on improving my papers more.”  
                                             |     |      | “It showed me how learning can be established and integrated with other courses for a better learning experience.”  |
Summer Course Enrollment
Results: Focus Group Interviews with Students

Introduction
The following report details students’ perceptions and opinions of summer course enrollment at IUPUI. These insights were gathered through conducting focus group interviews with students. A variety of topics related to summer course enrollment were discussed including, summer registration plans, academic and social engagement at IUPUI during the summer, and suggestions for making summer courses more attractive to students.

Sample
A total of (n = 36) undergraduate students voluntarily participated in one of six (6) separate focus group interviews. Students were identified for participation if they were a current IUPUI student over the age of 18 years old and had participated in a Themed Learning Community during fall 2009 or 2010. Ten (10) of these students were then randomly selected from each TLC cohort section. Participants’ demographic characteristics (age, gender, and ethnicity) were considered to make certain that a diverse student sample was obtained. Students were solicited for study participation via their IUPUI e-mail address. All students who participated received a $15 JagTag Student Card incentive.

Method
The focus group interviews were part of an Institutional Research Board (IRB) approved study (Exempt Study #: 110200-4903). The interviews were conducted in April, 2011. While the main focus of the group interviews centered on TLC experiences, students were also asked specific questions regarding their summer course experiences and future plans. These interview sections lasted approximately 10 minutes. All participants were asked the same series of questions via the interview protocol. The interviews were audio recorded and transcribed.

Transcribed interview data was subsequently uploaded into ATLAS-TI, a software program that assists in managing qualitative data analysis. A coding process was subsequently employed as the primary means of examination. The coding process allowed for the data to be collapsed into smaller pieces of data, categorized, and considered in new ways. This in turn allowed for more specific thematic categories of discussion to emerge. The results section is organized in a manner that addresses each discussion category individually (Table 2 - 4). Discussion topics, and the thoughts and perceptions contained within them, are supported by numerous

Report created by: Daniel J. Trujillo, M.S., and Michele J. Hansen, Ph.D, Director of University College Assessment
Table 2: Students Reported Reasons for Deciding to Enroll in a Summer Course

<table>
<thead>
<tr>
<th>Reasons for Enrolling</th>
<th>N</th>
<th>%</th>
<th>Examples of Actual Student Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Make Progress “Get Ahead” in Course Work or Major</td>
<td>10</td>
<td>45%</td>
<td>“I want to go for four years - and I don’t want to go for five - so that’s why I’m trying to take some summer courses - to get ahead...”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I feel like I’m doing it because otherwise all of my semesters have like 16-18 credit hours - and if I do some in the summer it will take a little bit away.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“if you enroll for the summer - like 2 electives or something - your program will get finished faster - right. ”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“i just want to get ahead and do like the pre- req classes during the summer because they’re offered anytime. So I have more time during the year to focus more on my major related classes”</td>
</tr>
<tr>
<td>More Relaxed Learning Environment / Perception of Easier Course</td>
<td>6</td>
<td>27%</td>
<td>“I was told that some of the summer classes like Speech and others are easier to do in the summer - maybe they go faster - but it’s more relaxed - just get them out of the way.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“i feel like the best thing I liked about mine was that at the end of the classes teachers would kind of hang out. They would talk to you about what you were confused on in the subject... kind of explain it more to you... So I liked that.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“So you get you get the same work done sooner and usually the teachers are more relaxed - like you don’t have to do as much because it’s a shorter time frame... And so they take out some of their harder stuff and so it can be easier sometimes.”</td>
</tr>
<tr>
<td>On-line Course Opportunities</td>
<td>5</td>
<td>23%</td>
<td>“I’m taking two courses and their both online because I’m from northern Indiana -so I want to go home...”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I’ve done all my summer courses online. Last summer was the first I had done any online and I really liked that because then I could still work and not have to be on campus. Even though I’m living in Indy - it’s more on my own time - the assignment due dates and stuff. So I mean it’s nice to be able to continue working towards your degree while working - but still be able to do it on your time basically...”</td>
</tr>
<tr>
<td>Complete Pre-Requisite Requirements</td>
<td>3</td>
<td>14%</td>
<td>“Yeah to get a head start on like my pre reqs - and stuff that will be in the nursing program - and to work on my minor...”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“I need to get one more class out of the way before I can take I-CORE. And that’s A202 Accounting. So instead of waiting another semester I’d rather get in as early as possible... So I’ll do it - taking accounting in the summer - because I’ll be here anyway working.”</td>
</tr>
<tr>
<td>Fast Pace of Summer Courses</td>
<td>3</td>
<td>14%</td>
<td>“I personally liked the fast pace of it - I mean it’s kind of overwhelming at times - but I liked just going 6 weeks and then you’re done with the class.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>“i actually took three at once. And I really liked just how short it was and really didn’t give me any time to forget anything. So from the beginning of the course - I didn’t have the time to forget what I learned at the beginning - by the time I took the final.”</td>
</tr>
</tbody>
</table>

Note: Analysis considers students who self-reported enrollment in either a previous or upcoming summer course.

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Creating a Culture of Evidence
Planning, Evaluation, and Improvement at IUPUI

Planning & Budgeting
1. Mission, Vision, Goals developed
2. Unit goals aligned
3. Programs based on assessable goals, with performance indicators
4. Annual reports on web

Assessable Outcomes

Culture Of Evidence

Application of Findings

Implementation
(Everyone on campus implements goals)

Tracking Data Collection Analysis

1. Reporting to internal constituents
2. Demonstrating accountability to external stakeholders
3. Proposing improvement initiatives based on assessment findings
4. Improving assessment methods
   • Web-based data
   • Electronic portfolios

Assessment of prior learning
2. Assessment of learning outcomes
   • In major
   • In general education (based on PULs)
3. Constituent surveys
4. Academic and administrative program reviews
5. Campus performance indicators
6. Management information and analysis
7. Program cost analysis
8. Web-based evaluation tools
9. Course evaluations
10. Program evaluation/action research
11. Institutional accreditation

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Providing Evidence of Student Learning: A Transparency Framework

• The National Institute for Learning Outcomes Assessment (NILOA) Transparency Framework is intended to help institutions evaluate the extent to which they are making evidence of student accomplishment readily accessible and potentially useful and meaningful to various audiences.

• [http://www.learningoutcomeassessment.org/TransparencyFramework.htm](http://www.learningoutcomeassessment.org/TransparencyFramework.htm)

• [http://www.planning.iupui.edu/assessment/](http://www.planning.iupui.edu/assessment/)
Potential Barriers to Assessment

- Limited time to conduct assessment.
- Limited resources for assessment planning and implementation.
- Limited understanding or expertise in assessment.
- Benefits of assessment are not transparent or perceived to be substantial enough to outweigh costs.
- Don’t want to overwhelm the students with completing several surveys and standardized tests.
- Faculty already “assess” in the form of giving grades.
Overcoming Barriers

• Course embedded authentic assessment.
• Faculty workshops, retreats, release time.
• Scholarship of assessment and publications in disciplines.
• External and internal awards and recognition may outweigh some of perceived costs.
• Easy to access tools and templates (e.g., surveys, questionnaires, rubrics, integrative assignments) to help faculty gather evidence of learning outcomes.
• Improvement of student learning and educational attainment.
• Attract students to institution and retain them.
Use Authentic, Embedded Assessment

• Goal of many undergraduate programs is for students to become lifelong learners by enhancing students’ communication skills, critical thinking, and problem solving abilities.
• With authentic, embedded assessment tasks students are asked to demonstrate what they know and are able to do in meaningful ways.
• Authentic assessment tasks are often multidimensional and require higher levels of cognitive thinking such as problem solving and critical thinking.
• Embedded assessment means that “opportunities to assess student progress and performance are integrated into the instructional materials and are virtually indistinguishable from the day-to-day classroom activities” (Wilson & Sloane, 2000).
• The end-of-course Research Paper in Biology.
Creating a Culture of Evidence

• Embed assessment within courses.
• Create learning experiences that are designed to produce key learning outcomes identified for the department’s or school’s graduates.
• Learning results at the course level can flow upward to support program-level assessment and can provide evidence regarding the General Education learning outcomes.
To Foster Use of Results and Faculty Involvement

- Name interdisciplinary committees (develop an advisory committee with faculty members represented).
- Encourage faculty research on mentoring so they can contribute to the scholarship of teaching/learning and publish in their disciplines.
- Read and discuss current literature on learning/assessment.
- Attend conferences together.
- Bring experts to campus.
- Share good practices.
- Work together on learning communities.
Program Review and Assessment Committee (PRAC)

- Composed of representatives of a broad range of academic and support units.
- Establishes guidelines for comprehensive program review for academic and administrative units.
- Provides guidance for student outcomes assessment throughout the institution.
- Provides a forum for the exchange of program review and assessment information and strategies among graduate and undergraduate programs and administrative units.
- This committee, which has faculty leadership, funds small grants that promise innovative approaches or improved practice in assessment.
- Has the responsibility for preparing campus assessment plans and reports that may be required by the Higher Learning Commission of the North Central Association of Colleges and Schools.
Checklist for Effective Assessment Plans

- Includes comprehensive assessment activities to determine if each major objective is attained (student learning outcomes, academic success, attitudes, behaviors, etc.)
- Proposes instruments that are valid, reliable, and aligned with intended student learning outcomes and proposed curricula (e.g., assessment and curricula are carefully aligned).
- Includes direct as well as indirect measures of student learning.
- Includes measures designed to assess cognitive, affective, and social outcomes.
- Includes a combination of quantitative and qualitative methods.
- Employs research designs with acceptable internal validity (e.g., research designs such as pre-post with appropriate comparison groups).
- Uses built-in points of contact with students.
- Contains summative and formative assessment components.
- Involves faculty in assessment planning.
- Contains sustainable assessment procedures.
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References


References


