

## **Student Learning Outcomes Assessment Workshop**

Tuesday, May 19, 2009, 9:00 am – 3:00 pm

613 Duquesne Union (Break out room: 608 Union)

### **Sponsors**

- Center for Teaching Excellence ([www.duq.edu/cte/](http://www.duq.edu/cte/))
- Academic Learning Outcomes Assessment (ALOA) Committee ([www.aloa.duq.edu](http://www.aloa.duq.edu))

### **Goal**

Leave at end of the day with the following:

1. a draft of an assessment plan for the degree/program you are working on – for you to discuss with faculty colleagues.
2. an outline of your annual report for 2008-2009  
*Both of these documents are due September 1, 2009.*

### **Working groups**

#### **Group 1: Bayer School of Natural & Environmental Sciences, Union 608**

Leaders: Darryl Ozimek (Physics) & Bruce Livengood (Pharmacy)

- |                           |                          |
|---------------------------|--------------------------|
| 1. Frittelli, Simonetta   | Physics                  |
| 2. Gawalt, Ellen          | Chemistry & Biochemistry |
| 3. Jensen-Seaman, Michael | Biological Sciences      |
| 4. Kabala, Stan           | Environmental Sciences   |
| 5. Madura, Jeffrey        | Chemistry & Biochemistry |
| 6. Parsi, Alicia Paterno  | Chemistry & Biochemistry |
| 7. Seadler, Alan          | Biotechnology            |

#### **Group 2: McAnulty College, Music and SLPA, Union 613**

Leader: Laurel Willingham-McLain (CTE)

- |                      |                                       |
|----------------------|---------------------------------------|
| 1. Abbott, Elaine    | Music Therapy                         |
| 2. Archer, Madeline  | Art History                           |
| 3. Forlenza, Michael | Leadership & Professional Advancement |
| 4. Frisch, Mark      | World Literatures                     |
| 5. Magill, Gerald    | Health Care Ethics                    |
| 6. Mayer, Holly      | History                               |
| 7. Michael, Magali   | English                               |
| 8. Simon, Don        | Math/Computer Sciences                |

**Permission is granted to freely share this document.**

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### **SELECTED RESOURCES**

# DUQUESNE UNIVERSITY LEARNING OUTCOMES ASSESSMENT PLAN

<http://www.aloa.duq.edu/assessmentplan.html>

*revised May 2009*

## **Purpose and Principles of Assessment**

Assessment can serve many purposes. These include examining Duquesne's academic programs and the role curriculum, pedagogy, and program structure play in student learning. Assessment findings are useful for

- maintaining high quality programs that are consistent with the University's mission,
- highlighting program and University strengths, and
- identifying areas for strategic change or improvement.

What we learn through assessment helps the institution determine how best to support needed changes. Assessment enables us to evaluate the competence of graduates in terms of both the program's goals and those of the core curriculum and University mission.

Ultimately, the purpose of assessment is to *promote student learning and development*.

The process of outcomes assessment is guided by the following principles:

1. Responsibility and expertise for assessment reside with the faculty in each department or program. Faculty together determine the appropriate assessment plan, and several are involved in implementing the plan.
2. Assessment of student learning flows from the learning goals faculty establish for each program of study. These goals are written in terms of what students are expected to know, be able to do, and value.
3. These learning goals and assessment pertain to all learning environments, including classroom, distance learning, clinical, laboratory, practicum, and service-learning experiences.
4. Assessment methods (i.e., ways of gathering information about student learning) are realistic, manageable, and meaningful within the culture of the particular academic program, department or school. They are informed by the standards relevant to the discipline such as those established by national associations.
5. The usual learning activities in which students engage often provide an appropriate and feasible source of assessment information.
6. The results of assessment are interpreted, communicated, and used constructively to promote future program evaluation and continuous improvement.
7. Faculty regularly reflect upon and improve the assessment process itself.
8. Assessment at the course and program levels is aligned with institutional goals for student learning.

## **Programs to Be Assessed**

All degree granting programs offered by the University will complete assessment plans for student learning outcomes and will submit annual assessment reports by September 1, 2009. Each major or concentration at each degree level will be assessed, e.g. Ph.D in English, M.S. in Computational Mathematics, B.S. in Biology. The core curriculum program and Honors College will also follow this process.

## **Assessment Plan**

All assessment plans will align with the Dimensions of a Duquesne Education in order to reflect the University mission:

- understanding and knowledge
- intellectual inquiry and communication
- ethical, moral and spiritual development
- diversity and global mindedness
- leadership and service.

A professional accreditation process may serve in lieu of the University assessment process provided that it is linked to the University mission through the Dimensions.

Assessment plans will be completed and maintained within the Office of the Dean of each School of the University. Assessment plans will follow the *Duquesne University Student Learning Outcomes Assessment Plan Guidelines* or those of the relevant professional accrediting body.

## **Annual Reports**

Annual reports are due for each degree by September 1 and will be submitted electronically to [assessment@duq.edu](mailto:assessment@duq.edu). School deans may specify an earlier date for submission of annual reports to their offices. The format for reporting will be the *Annual Report Guidelines: Student Learning Outcomes*. Annual reports will be maintained on a Blackboard site for the purposes of review by Middle States or other accrediting agencies as needed.

## **Resources**

The Academic Learning Outcomes Assessment Committee (ALOA) and the Center for Teaching Excellence will serve as peer resources for developing, implementing, and refining assessment plans and for using results to enhance student learning. ALOA will review degree annual reports to promote sound assessment processes throughout the University.

<http://www.aloa.duq.edu/assessmentplan.html>

# **PREPARING THE ASSESSMENT PLAN**

## **STEP ONE: WRITING LEARNING GOALS (aka Learning Outcomes)**

Student-learning assessment begins with clearly articulated and meaningful learning goals stated in terms of what students will **know, be able to do, or value** as a result of their course of study. Students are the agents of all the verbs in learning goals/outcomes.

Bring faculty together to articulate your program's overall learning goals for students—in the context of your discipline and university. Take time to discuss and come to agreement. Revisit these learning goals every few years to be sure they still capture the essence of your program. This process is central to assessment.

Consider having 5-8 broad program-level goals (unless your accrediting body requires otherwise).

It's easier to assess knowledge and skills than it is to assess values, but that doesn't mean you shouldn't have more ephemeral goals.

Link each goal to one or more of the Dimensions of a Duquesne Education.

Broad goals can be made concrete by stating how students will demonstrate their learning in the context of the program. These more specific statements that look at smaller parts of the curriculum are sometimes called *objectives* (but the term isn't very important...).

Often, goals include the statement of a level of learning you seek for students to attain. This allows you to measure progress toward your goal in a more concrete way (e.g., 90% of students will pass a certain licensure exam, or 95% of students will show evidence of persuasive argumentation style as measured by a standard or rubric faculty members have agreed upon).

Learning assessment requires attention both to outcomes (senior year/post graduation), as well as to the experiences leading to those outcomes.

Consider the developmental level of the students. Will they have a basic knowledge or mastery of a certain area or skill? In what ways and how often will you check student learning along the way and give them feedback (the lower the level, the more frequent this should be).

**Ideas for writing learning goals:**

Bloom et al's taxonomy of *cognitive* outcomes

<b>Know</b>	"Student recalls or recognizes information, ideas, and principles in the approximate form in which they were learned.
<b>Understand</b>	Student translates, comprehends, or interprets information based on prior learning.
<b>Apply</b>	Student selects, transfers, and uses data and principles to complete a problem or task with a minimum of direction.
<b>Analyze</b>	Student distinguishes classifies, and relates the assumptions, hypotheses, evidence, or structure of a statement or question.
<b>Synthesize</b>	Student originates, integrates, and combines ideas into a product, plan or proposal that is new to him or her.
<b>Evaluate</b>	Student appraises, assesses, or critiques on a basis of specific standards and criteria."

Huitt, W. (2004)

For a broader perspective on learning goals, see Fink (2003), **Taxonomy of Significant Learning**

Decide what you want students to get out of the course. Many people take a *content*-centered approach to this task: “I want students to learn about topic X, topic Y, and topic Z.” This is an easy, natural approach but it generally results in an overemphasis on “understand and remember” kinds of learning. These are important. But when teachers take a *learning*-centered approach, they usually identify several additional kinds of significant learning.

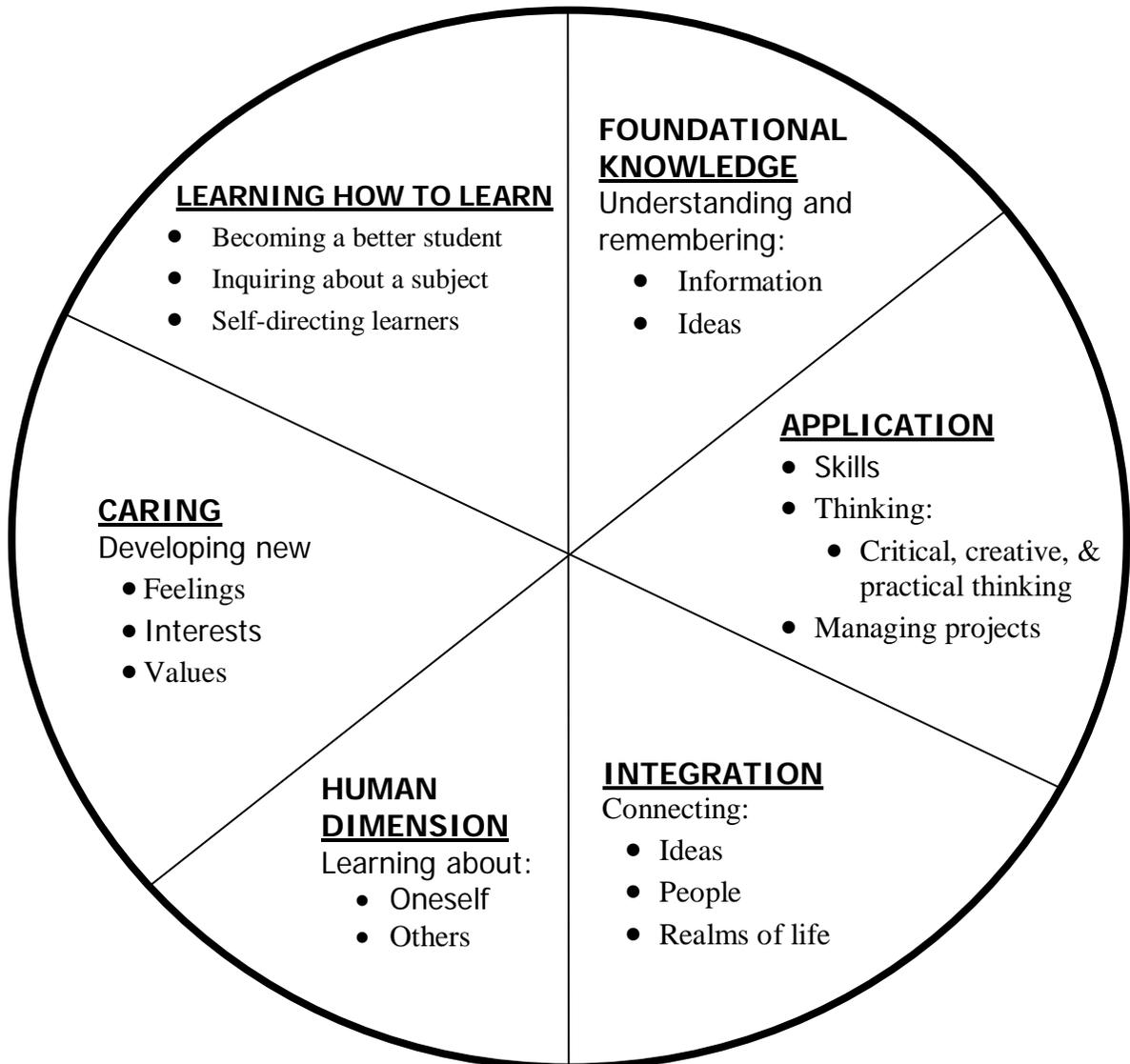
I recommend that teachers ask themselves: “What would I like the impact of this course to be on students, 2-3 years after the course is over? What would distinguish students who have taken this course from students who have not?”

When students and teachers think about what students can learn that is truly significant, their answers usually include, but do not focus on, “understand and remember” kinds of learning. More often they emphasize such things as critical thinking, learning how to creatively use knowledge from the course, learning to solve real-world problems, changing the way students think about themselves and others, realizing the importance of life-long learning, etc.

After many years of studying people’s responses to the question of what constitutes significant learning, I have proposed a taxonomy of significant learning. It consists of six major types of significant learning, with a number of subcategories. This taxonomy is shown in Figure 1 (next page). The taxonomy identifies significant kinds of learning that you may want to include as important learning goals for your course [or program].  
(Fink, 2005, p. 8)

Figure 1

## A TAXONOMY OF SIGNIFICANT LEARNING



One important feature of this particular taxonomy is that each kind of learning is *interactive*... This means that each kind of learning can stimulate other kinds of learning. This has major implications for the selection of learning goals for your course [or program]. It may seem intimidating to include all six kinds of significant learning. But the more you can realistically include, the more the goals will support each other—and the more valuable will be your students' learning. (Fink, 2005, pp. 8-9)

### **Examples from Duquesne University**

Because programs vary widely in design and purpose, the learning outcomes will vary across the curriculum. At the program level, learning goals can be broad and multi-faceted. They are often broken down into subsets of knowledge and skills in specific courses.

Examples:

Classics: Students will master grammar and vocabulary in Greek and/or Latin in order to read and comprehend the works of several major authors in the original language, within the context of the relevant historical period.

Nursing: Students will integrate cultural competence in caring for individuals and families of diverse populations.

Theology/Core Curriculum: Students will demonstrate how religion can inform personal, societal, and professional life through study of and reflection on theological sources and questions.

Business (applicable to many fields): Students will communicate effectively in oral and written forms.

## **STEP TWO: SELECTING METHODS FOR COLLECTING EVIDENCE OF LEARNING**

### **When should assessment of learning take place?**

This depends on the questions you and your colleagues have about student learning in your specific context. Generally, it makes sense to conduct some assessment along the way, and some closer to the end.

For example, imagine that you find out that graduates (or near graduates) of your program are not able to apply basic quantitative knowledge in ways foundational to your learning goals. You thought they had learned this in the first two years, because there are two core courses addressing this. You might want to “dip in” midstream and find out what students know and can apply between the 2<sup>nd</sup> and 3<sup>rd</sup> years of the program, using a low stakes diagnostic tool. Additionally, you might analyze your curriculum (see below) and determine which upper level courses require students to use this knowledge. Students have a very hard time making connections from one course to the next. Assessment findings are very helpful to faculty working together to help students make the connections.

This could be the same scenario for evidence of critical thinking, problem solving, writing using the conventions of your field, analyzing art work using the discipline’s accepted standards, and so on.

## Direct and indirect kinds of learning evidence

For each major learning goal, it is helpful to have more than one kind of evidence. The evidence of student learning needs to be reasonable, that is, evidence that faculty can believe in and have time to analyze, and evidence that meets validity and reliability criteria in common sense ways.

**Validity** in short: the method actually does what you want it to do. Examples:

- If you want students to demonstrate their ability to solve complex and messy problems, a multiple choice test would not likely be a valid tool, but a case study or problem-based learning assignment would fit.
- If you want students to demonstrate empathy with patients (through language, tone, gestures), a simulation would be a more valid tool than a written test.
- If you expect students to know how to conduct research using the tools of your field, then they need to have several opportunities to do this with feedback because it is a complicated learning task. It's not a matter testing their knowledge about how to do it, but rather, gathering evidence from actual research projects.

**Reliability** in short: if you gave the same assessment to the same student again the quality of the performance would be fairly stable; and, if different people are rating the student performance, the ratings are comparable to each other. This second part is known as "inter-rater reliability."

**Direct evidence.** Direct evidence lets you examine the quality of actual student performance to determine what students learned and the extent to which students have met the learning goals you established.

Examples: written assignments, performances, presentations, written or oral reflection on the link between theory and practice, case studies or problem-based learning, research and capstone projects, exams, and student publications.

**Indirect evidence.** Indirect methods examine the perspectives of various stakeholders in order to glean insights on the learning process (the how and why, or information about the learning).

Sample questions indirect methods help answer: What helped the learning process? Where did students experience the most personal growth? What obstacles did students face? What attitudes did community partners or internship supervisors notice students demonstrating in their experiential learning context?

Examples: student self-appraisals of learning; surveys, interviews or focus groups with students, alumni, community partners, internship supervisors, employers of graduates.

Both direct and indirect kinds of methods focus on student learning, and both can draw on qualitative and/or quantitative methodology.

They are not watertight categories, because some assessment methods might incorporate both – e.g., an interview or a written reflection might look at both the student's experience and their understanding of course content and demonstration of skills (e.g., critical thinking, research).



**Would these generally be examples of direct or indirect evidence of learning?**

	<b>Direct Evidence</b>	<b>Indirect Evidence</b>
1. Students reported that they had learned a lot about other cultures in this course.		
2. Students worked enthusiastically in groups.		
3. Students created a portfolio of various types of writing required in the field of xxx. For each piece, they described the purpose and the kind of research required to support it in their field		
4. In their service-learning reflections, students articulated specific ways in which the theory they had learned in class had to be refined to make it apply to the real families they served in the community.		
5. Students remarked that they felt more confident and able to take on complex tasks.		
6. In class discussion, students described an ethical dilemma they had encountered in the community and analyzed it in terms of theoretical concepts from the class.		

### **STEP THREE: CREATING AN ASSESSMENT PLAN TIMELINE**

Like all of assessment, tailor this to your own context. Some tips:

Focus on a few things at a time for as much time as you need to gather a good sample of evidence of student learning. If you have a small number of students, this might require 2-3 years. Use a cyclical approach so that you examine all the learning goals over several years.

How do you choose? Here are some approaches to getting started:

1. Examine what you and your colleagues feel that students learn well in your program, and take a look at what they know/can do/value, and at the processes that got them there. Then, apply what you learn from areas of strength to areas where students have greater struggles in their learning.

**OR**

2. Look at what faculty colleagues are constantly disappointed in: e.g., “students can’t write; students don’t take responsibility for their own learning; they don’t know how to select credible resources for their research; they don’t make connections – they seem to suffer from amnesia as soon as one course is over...”

**OR**

3. Examine what your colleagues in your disciplinary associations are focusing on, the standards/expectations they are highlighting in national conferences. Often, they are attuned to the general needs of the field through research they conduct with employers, graduate schools, and so on.

Plan time for faculty to create assessments, to conduct them, to analyze the findings, interpret/discuss them, communicate them to relevant stakeholders, AND ESPECIALLY to make changes where needed and then check out the impact of these changes later on down the road.

Plan just enough time! Not so much that you don’t get beyond discussion... Set specific goals.

## **SAMPLE PLANS – IN-PROGRESS**

See samples on separate handouts. No model is perfect, and certainly, no one else’s will be a perfect plan for your program, but look at these for ideas.

# **PREPARING THE ANNUAL REPORT**

## **ITEM ONE: ANALYZING AND INTERPRETING THE FINDINGS**

“Briefly describe what you learned from the data you collected on student learning. Link these findings to the outcomes you articulated in your Student Learning Outcomes Assessment Plan. Some findings may address several outcomes, while others may focus on one or two. This depends on your own context and assessment planning- please feel free to explain how this data is useful to your degree program.” (from DU Annual Report Guidelines)

### **Rubrics – a useful tool for analysis**

Rubrics are guides you create to help you be consistent in analyzing student work. At the program level, they can be simpler than what would be needed for a course grade (e.g., does not meet standard for a graduating senior, meets standard, significantly exceeds standard).

**Example**

With your colleagues you would create a simple evaluating tool to be used while viewing presentations, and you would come to agreement (all the best!) on what expectations are appropriate to the developmental level of a student preparing to go on to graduate school, for example. This takes time, including trying out the rubric with a few actual examples and then tweaking it. It might look like this:

<b>Goal: Seniors will be able to give professional presentations of their research</b>	Exceeds expectations	Meets expectations	Does not meet Expectations
Articulates a clear thesis/position on the issue			
Outlines counter-arguments and addresses them in a respectful, academic way (not straw man)			
Demonstrates command of the appropriate terms and concepts			
Cites credible research relevant to the issue and the field of study			
Fields questions from professor and peers and addresses them cogently.			
Etc.			

## ITEM TWO: COMMUNICATING AND USING THE FINDINGS

“Describe how you will/or have used the results from your student learning assessment data to improve student learning outcomes through these means:

- make adjustments to your curriculum and/or
- change teaching/learning methodologies and/or
- re-direct use of resources, including budget allocations”

(from DU Annual Report Guidelines)

What assessment findings can you use in recruiting materials? In communication with future employers/graduate programs? What gaps do you need to spend more time analyzing so that you have address them – together, as a faculty.

Who are your stakeholders? Who needs to know what?

**Example of concrete actions** resulting from assessment – from Greg Barnhisel, Director of Writing (Core 101/102 courses)

He emailed this as a summary report on the learning assessment mini grant he had received to examine learning in English Core 101 in 2007. (For the grant, he had written a longer report.)

As you can see, the report shows that we really need to work harder on teaching students when and how to document sources properly. In response, I've increased support for the instructors on how to teach these materials. We've adopted a new writing handbook that does a better job of explaining MLA documentation to students; I undertook a "performance review" of all adjuncts in which I ensured that each of them was including (in the 102 class) a research paper in which students had to select, read, understand, incorporate, and properly document scholarly sources on literary materials; and I'm currently working on devising a "detachable" series of assignments and class activities for 101 that all instructors will use to teach documentation and plagiarism prevention (so that we have a more standard approach). Finally, we have worked hard to better coordinate 101 and the COSC 030 classes in the area of accessing, evaluating, and using online information. Specifically, several instructors now teach in both programs, and one (Ava Cipri) presented to CTE and to the UCOR program faculty on how to teach the "relevance/credibility model" for assessing online information.

He has now been granted more funding by ALOA to examine the learning in the Core 102 course in 2009-2010, and he is incorporating the mentoring of TAs in this process because this experience is very helpful to them as future faculty.

## ASSESSMENT TIPS

### Determining What Learning Assessment Already Exists In Your Program

Find out what evidence you already have about student learning relevant to your overall learning goals. The usual learning activities in which students engage provide an appropriate and feasible source of assessment information. The program or institution may already be collecting data from alumni surveys, exit interviews, licensing exams that could be useful. Often, what is needed are not new kinds of data but rather a more intentional, systematic way of collecting and using the data.

See Walvoord, 2004, pp. 55 – 58 for ideas about conducting an “assessment audit.”

Here are two ways for looking at the existing curriculum to determine what learning experiences (courses, internships, etc.) are designed to provide the experiences and feedback students need to meet the program learning goals. Are there gaps or over-coverage in some areas?

#### Example #1

**Instructions:** Complete this together as a group of faculty teaching in a degree program. Create a “map” to represent where in the program the learning goals/outcomes are introduced, reinforced, and assessed in a comprehensive way. (This same tool can be used in planning a new curriculum.)

#### Key

**I** = Introduced

**R** = Reinforced

**A** = Comprehensive Assessment

Learning Goals	Course Numbers								
	101	110	203	251	275	301	316	410	422
1. Communicate effectively in writing and speech	I		R	R				A	
2. Apply discipline specific theory and principles			I	R		R			A
3. Etc.									

Adapted from Diamond, 1998, *Designing and assessing courses and curricula*, p. 51.

## Example #2

**Instructions to each instructor:** For each course that you taught last year or are teaching in the current year, place a check mark under every goal that you significantly assess in a major exam or project. Leave the other cells blank.

<b>Course #</b>	<b>Learning Goal 1</b> Communicate effectively in writing and speech	<b>Learning Goal 2</b> Apply discipline specific theory and principles	<b>Learning Goal 3</b> Etc.	<b>Learning Goal 4</b>	<b>Learning Goal 5</b>
101					
102					
201					
230					
300					
314					
<i>(and so on)</i>					

From Walvoord, 2004, *Assessment Clear and Simple*, pp. 125-126

## Course-embedded program-level learning assessment

### A rationale for using course-embedded evidence for program assessment

- Assessment is most effective when integrated into daily teaching and learning.
- Motivation is higher so the findings may be more accurate.
- This evidence often already exists. We need to use faculty and students' time well, and not do double work of creating surveys and tests outside of class when it's possible to incorporate assessment into course work.
- It makes the learning goals and teaching methods of each course part of normal faculty discussion, and allows colleagues together to examine practices that otherwise may remain quite private. Note, this is for the good of student learning, not for the purpose of evaluating individual teachers. There is an important difference between faculty making public their teaching assessment and relinquishing control of it (Walvoord & Anderson, 1998, p. 152).

**Sample methods for using course-embedded evidence.** In nearly all cases, these methods promote learning in the course itself, and provide insights into the overall program. They all require that faculty come together and discuss their priorities for student learning and the methods they think are best.

1. *Selected Writing Examples* – Where there is no capstone or culminating course, select writing samples from various upper division courses in order to look for evidence of program-wide goals (e.g., professional communication, proper citation, discipline-specific writing and research skills). Remove the student and faculty members' names since this is for the purpose of overall program assessment. (The papers will already have been graded by the individual faculty member for the purposes of the course itself, and often according to different criteria. Clean, unmarked papers should be used). A group of faculty may want to evaluate the sample papers using a rubric they have developed together. It can be simple.

2. *Capstone Courses* – Many programs have a culminating course in which students create a *learning portfolio* or do a *complex project* which may include an *oral presentation*. These are designed as synthesis projects requiring students to demonstrate their learning from throughout the major. In the absence of a capstone course, these assignments could be incorporated into other upper level courses.
3. *Common Exam Items* – Faculty work together to write a common test question or to design tests that serve to provide course-level and program-level evidence of learning at the same time. Or they might write the same type of items to ascertain students' skills (e.g., demanding critical thinking, problem solving). Again, the instructor grades the items for the course grade, and a group of faculty evaluates anonymous items for program assessment.
4. *Reflective Writing or Discussion* – Ask students to reflect on their learning. These questions might take the form of having them examine the knowledge they have acquired, their academic skill development, their personal learning goals and success, or the ways in which they learn best (metacognition). One of Duquesne's McAnulty learning communities incorporated reflective writing into a required journal. Students addressed 6 topics that required them to make connections across the three courses of their learning community. Each faculty member incorporated the journal writing into the course grade, and at the same time, the faculty as a whole could examine the success of their learning community through these reflections.
5. *Questionnaires* – Students may be asked to complete a questionnaire relevant to program-level learning goals. Administering this in class promotes participation, but it must be brief especially if it is not directly tied into the learning goals of that particular course.

## **What's the role of course grades in program-level learning assessment?**

The faculty in many programs vary widely in the quality of work they expect from their students. Many of them don't articulate clearly the quality they are expecting or the criteria by which they are grading. For many, teaching remains private and unexamined. In such cases, course-level grading sadly has little sound information to provide to big picture program-level questions such as: to what extent are our students ready (1) to go on to graduate school, or (2) to think like and behave professionally as a "political scientist," "art historian," "biologist" or "health care ethicist?"

In a program where faculty discuss teaching and learning openly, and they establish shared expectations and criteria, assignment and course grades can be extremely informative. Rubrics are helpful and can have criteria directly tied to program goals.

## **When might a program use an external, standardized exam? Or create an internal exit exam?**

Many faculty mistakenly associate learning assessment only with tests. Tests are just one tool, and often, they are not the best tool.

Where possible, it's a better use of time and money for faculty to incorporate assessment directly into the courses of the curriculum, as discussed above. Rarely do external exams fit your specific curriculum sufficiently well to be worth the high costs. And in most cases, faculty are not expert at, and really don't have the time to create their own program level exams. This is especially true for high-stakes exams that affect graduation. Diagnostic, or low-stakes testing can be done more quickly, because the analysis is used for informing the curriculum, not for making decisions about individual students' futures.

There are exceptions to this. Sometimes a disciplinary organization or a testing service will indeed have a test that is a good enough fit to be worth purchasing, especially if there is fine-tuned analysis that gives insight into students' performance on various aspects of your curriculum (e.g., the Educational Testing Service sells "major field tests" in many fields).

Some schools at Duquesne use a test designed by their own faculty. For example, the School of Pharmacy is piloting a series of integrated pharmacy assessments (Bruce Livengood) that require students to synthesize basic science and clinical practice in a way that no one course can do. The School of Business has been using a test at the end of the sophomore year to diagnose student learning following the business core courses and in preparation for students to enter their major (Bill Spangler).

## **SELECTED RESOURCES**

Most books are available for loan from the CTE collection, and are searchable through Gumberg Library DUCAT. Some are available for purchase on the CTE recommended reading shelves of the campus Barnes & Noble.

American Association of Higher Education. (December 1992). Nine principles of good practice for assessing student learning. *Assessment Forum*. The AAHE no longer exists, but this document is available in many places, including <http://www.buffalostate.edu/offices/assessment/aahe.htm>.

Diamond, R. M. (1998). *Designing and assessing courses and curricula: A practical guide*. San Francisco: Jossey-Bass. Diamond integrates assessment into the course and curriculum design process. Chapter 5, "Linking Goals, Courses, and Curricula" addresses the topic of the workshop directly. Many assessment authors have adapted Diamond's chart (p. 51); it's a tool for systematically examining each program goal by noting the courses in which it is introduced, used, further developed & comprehensively assessed.

Fink, L. D. (2005). *Self-directed guide to designing courses for significant learning*. <http://finkconsulting.info/files/Fink2005SelfDirectedGuideToCourseDesign.doc>. This workbook introduces all the key ideas from the 2003 book and then has a worksheet for users to apply that idea to one of their own courses.

- Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. San Francisco: Jossey-Bass. Commonly, faculty have relied on Bloom's taxonomy of cognitive learning goals. Fink has created a new taxonomy which includes six primary areas: foundational knowledge, application, integration, human dimension, caring, and learning how to learn. See particularly pages 74-81 on how to formulate learning goals.
- Huba, M. E., & Freed, J. E. (2000). *Learner-centered assessment on college campuses: Shifting the focus from teaching to learning*. Boston: Allyn and Bacon. A thorough handbook written by faculty for faculty who seek to integrate a learner-centered assessment approach into their teaching. Useful charts, practical examples from various institutions, and helpful teaching/assessment ideas. Useful both for course and program level.
- Huitt, W. (2004). Bloom et al.'s taxonomy of the cognitive domain. *Educational Psychology Interactive*. Valdosta, GA: Valdosta State University. Retrieved May 16, 2009, from <http://chiron.valdosta.edu/whuitt/col/cogsys/bloom.html>. Provides a brief overview of the taxonomy of cognitive learning outcomes, with examples.
- Maki, P. (2004). *Assessing for learning: Building a sustainable commitment across the institution*. American Association for Higher Education & Stylus: Sterling, VA. Provides a useful framework from an institutional perspective. Helpful worksheets and charts.
- Stassen, M. (2001). *Program-based review and program assessment*. Office of Academic Planning and Assessment, University of Massachusetts at Amherst. [http://www.umass.edu/oapa/assessment/program\\_based.pdf](http://www.umass.edu/oapa/assessment/program_based.pdf) Faculty find this book to be clear and extremely useful in understanding assessment. It's brief, simple and practical, with examples to demonstrate each component of assessment planning. Available online in its entirety.
- Suskie, L. (2009). *Assessing student learning: A common sense guide (2<sup>nd</sup> Ed.)*. San Francisco: Jossey-Bass. This valuable resource has four parts: understanding assessment, planning for assessment success, the assessment toolbox, and understanding and using assessment results.
- Walvoord, B. E. (2004). *Assessment clear and simple*. San Francisco: Jossey-Bass. This is an immensely practical book, filled with examples, templates, and permission to copy freely (with citation) for professional development purposes. It includes sections addressed to institution-wide planners, those responsible for assessing student learning in departments and programs, as well as those assessing general education.
- Walvoord, B. E., & Anderson, V. J. (1998). *Effective grading: A tool for learning and assessment*. San Francisco: Jossey-Bass. See especially Chapter 11, "Strengthening departmental and institutional assessment" which explores "how the grading process can be used as the basis of departmental and general education assessment (p. 149)." Many of the tools these authors illustrate can be used at both the course and program levels, but in different ways. There is a lengthy discussion and many examples of rubrics.