Almost Painless Embedded Assessment

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Why assess? Why use assignments embedded in a course to assess?

Three reasons:
1. To know with better clarity and precision how well students are learning so adjustments and innovations can be made
2. To use creatively already existing student work assignments as evidence and current departmental standards as evaluation criteria
3. To communicate results to and share learning with one’s colleagues and use this information to improve teaching and learning quality.

What will it do for you and your students:
1. Clearly link what you expect them to know and do with how you will evaluate them
2. Allow you to make more creative adjustments to your teaching approaches in response to student performance
3. Create evidence of effective and innovative teaching for use in contract renewal, promotion or applying for new positions.

Assessment in three easy steps:
1. Expectations (Outcomes): What are your and your department’s expectations about what students will learn in terms of knowledge, skills and values? These are your educational outcomes.
2. Assignments and Grades (Evidence and Measurements): What do you (or could you) ask students to do in order to demonstrate that they have met these expectations (direct, indirect measures; qualitative, quantitative methods) and on what explicit criteria do you evaluate them? These represent your evidence and measurements.
3. Feedback and Revision (Evaluation and Improvement): What kind of specific feedback do you give students about their performance and what kind of concrete suggestions do you make to them about future revisions? These are your means of evaluation and improvement (for the students and yourself).

Note: Make the Implicit Explicit…
Making the Implicit Explicit  
(and therefore sharable)

How to get started (and move ahead):

Start with what you already have, what you already know. Imagine your typical grade book. A column of names down the left-hand margin; a row of criteria or assignments across the top; a matrix of scores and grades littered between. What kinds of assignments are listed there? What kinds of marks are recorded there? Are there any patterns that emerge?

Look at the example on the next page. A professor uses a grade sheet to notice that there is a consistently weak aspect of student performance: the research paper. This is a good start, since writing a good research paper is a course expectation. If she has more detailed records of how students did on various aspects of the paper: organization, thesis, use of evidence, strength of argument, etc., she might be able more clearly to pinpoint the source of the problem.

She could also ask and see if other professors have similar issues (which we all usually do over a beer or a cup of coffee). She could ask her students what they find difficult about the assignment (an indirect assessment). She could take this information and then change her approach to teaching the research paper, repeat the analysis on the next terms or terms, and see if there is a result (a process of revision we are all familiar with).

Going further, she could ask her colleagues to save copies of their students’ research papers (they are all probably buried in the e-mail archive or on their hard drives anyway). They could look at their common student work seeking common strengths and weaknesses. They could put their heads together to come up with new, innovative and creative strategies to address their findings. Lastly, they could put their observations, conclusions, and recommendations into a brief report and refer back to it in a year when they gather again to see if their innovations created any significant change in the quality of their students’ work.
Embedded Assessments

Embedded assessments are assignments, activities, or exercises that are done as part of a class, but that are used to provide assessment data about a particular learning outcome. The course instructor and/or other evaluators can evaluate the student work, often using a rubric.

Consider this class:

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Student 1</th>
<th>Student 2</th>
<th>Student 3</th>
<th>Student 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm exam</td>
<td>A</td>
<td>C</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>Research Paper</td>
<td>C</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Final Exam</td>
<td>A</td>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td><strong>Final Grade</strong></td>
<td><strong>A</strong></td>
<td><strong>B</strong></td>
<td><strong>B</strong></td>
<td><strong>B</strong></td>
</tr>
</tbody>
</table>

The final grades in the course show how well the individual students mastered the course material, but they don’t suggest how well the class—as a whole—did on any particular aspect of the course material.

Imagine that the department has a learning outcome that students conduct original research and write a paper discussing their results. By using the second assignment in this class, the department can compile the grades of students completing the assignments and gain data to assess this learning outcome. From the class example listed above, it would be clear that writing a research paper is a weakness of this group of students. The research paper, then, is an embedded assessment that is done as part of the course, but the results of which are pulled from the course and applied to the learning outcomes.

From Minnesota State University Moorhead:
http://www.mnstate.edu/assess/Embedded.htm
Want to go further?

1. First look at three things:
   a. A particular expectation or outcome you have in a course: one of the reasons why they take this course (yours and the department’s)
   b. One kind of assignment and work you ask students to do: discussions, quizzes, exams, presentations, drawings, mixed media, papers, diagrams, etc.
   c. The relationship between these first two: where and how in the work do they show you the accomplishment of the particular expectation (or maybe they don’t)?

2. Now look at three more:
   a. The method and criteria you use to evaluate students’ work: factual accuracy, quality of analysis, creativity of expression, precision of presentation, etc.
   b. The way you communicate that evaluation to them: oral and/or written comments, numeric percentages or scores, letter grades
   c. The relationship between these second two: how do the criteria conform to the expectation and how does the communication of the evaluation lead a student to create better work?

3. Take a few more steps:
   a. Do you know how well your students generally perform on this particular assignment aligned to this expectation or outcome?
   b. Do you know how well your colleagues’ students perform on similar assignments aligned to similar expectations or outcomes?
   c. What have you and/or your colleagues done either to maintain quality or improve student performance based on this information?

4. Get others to join the party:
   a. Organize a group of colleagues who work in the same field and look for the same outcomes
   b. Develop a rubric (descriptions of characteristic performances used to rate student work on one or more criteria) with which to see what strengths and weaknesses of student performance are revealed
   c. Compare this result with your own records and intuitions so you and your colleagues can develop a creative and innovative approach to helping students learn better

Lather, rinse, and repeat as necessary...
Conclusions

This is what *embedded assessment* is all about -- creating a cycle of examination, reflection and action:

1. using course and department expectations and outcomes,
2. evaluating student work both by the individual professor and by a group of colleagues,
3. creating a set of recommendations for change based on the evaluation,
4. making a record of the work done and the conclusions reached,
5. undertaking a re-examination of the issue at a later date.

One last point:

In step three above, you may find that you want to introduce a new kind of assignment or exercise in your course to get a better handle on how well your students are learning a particular expectation or outcome.

There are all sorts of things you can do, from short one-minute papers to check for comprehension or questions, to on-line forums for more informal discussions of topics, to having students collect work in a portfolio and writing a reflection on their learning. The Institute for Excellence in Teaching and Learning has a host of resources for you to explore. Drop on by and talk to Paul. And of course Voc and Doug are always available to talk things over.

See Assessment Handbooks at:
Minnesota State University Moorhead (the basics)
http://www.mnstate.edu/assess/
Skidmore College (more advanced)
http://hudson2.skidmore.edu/administration/assessment/handbook.htm

Other teaching/learning resources:
A tool for student assessment of their learning gains
http://salgsite.org/
Bloom’s taxonomy of intellectual behavior – potential learning outcomes
http://www.officeport.com/edu/blooms.htm
A school of business that does embedded assessments
http://www.huntsman.usu.edu/cob/acct/assessment/embedded.cfm