

The Art of Online Course Assessment

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The assessment movement in higher education has progressed to an acceptance of the necessity of dealing with political accountability and economic implications. However, most of us still view these as secondary to the foremost importance of improving student learning. We have shifted from teaching-centered to learning-centered where higher education is producing learning rather than providing instruction. (Angelo, 1999).

Differences in Assessment and Evaluation

There are subtle, gray differences in assessment and evaluation. The Webster Dictionary defines the verb, to assess, as “to determine the value, quality, significance, extent, or worth of.” The Webster Dictionary defines the verb, to evaluate, as “to ascertain the numerical value of; calculate the quality, importance, amount, or value of.” As defined in *New Horizons for Learning's The Building Tool Room: Assessment Terminology: A Glossary of Useful Terms* (2001), assessment is the procedure of observing learning. The process may include describing, collecting, recording, scoring, and interpreting of information in relation to students' learning in an educational setting or context. (New Horizons, 2001). Assessment's purpose is to improve the quality of student learning, not to provide evidence for evaluation of student grades. Assessment's aim is to provide faculty with information on what, how much, and how well students are learning, in order to help them better prepare to succeed both on student grades and in the world beyond the classroom. Assessment is used to determine current understanding and improve subsequent learning. Assessment is a more qualitative description of student performance and understanding related to course objectives. (Derco & Little, 2003)

Evaluation is used to determine mastery of goals and objectives. Evaluation is a more quantitative measure which assigns a number to performance.

Is assessment and/or evaluation an art or a science? The Webster Dictionary defines art as “special skill, knack, cunning; special skill in applying a system of rules to facilitate the performance of certain actions; as opposed to science.” Science is defined as “knowledge, especially of facts or principles, gained by systematic study.” The scientific method is a “research method characterized by the definition of a problem, the gathering of data, and the drafting and empirical testing of the hypotheses.” What are the questions we are attempting to answer? Ehrmann (2004) states that the quest for useful information begins with an exacting search for the right question. Further, he poses that it takes just as much effort to answer a useless question as a useful one.

The term assessment refers to the ART of determining student learning in a given course. When one views the approach as an art, we may consider the following questions: How can the instructor design assessment to bring out the best performance of students? Which perspectives of learning are going to be assessed, cognitive (acquisition of knowledge), behavioral (skill development), or humanistic (values, dispositions, and attitudes)? Will the assessment strategies be learning experiences in themselves? Is the assessment to be formative (providing feedback during learning) or summative (measuring learning at the end of the process)? What are the criteria for judgments of performance (criterion referenced)? How can assessment provide a balance between structure and freedom? Will the assessment be authentic, related to real life situations? Will the assessment be integrated, testing a range of knowledge and skills? How will performance feedback be provided to students? (Faculty of Education & Arts Web Team, 2002).

The term evaluation refers to the SCIENCE of determining student learning in a given course. When the approach is considered a science, one may ask if exams and exam questions are a valid reflection of the course objectives and curriculum? What are the best testing methods to match student abilities and needs? Which cognitive levels are addressed? Are the judgments of performance to be made against peer standards (norm referenced) or correct answers from the course? How can security of evaluation instruments and identification of students be assured? How will grades or test scores be reported to students? Is the use of high stakes testing the

primary factor in passing a course, graduating, or becoming certified?

Characteristics of Assessment

This paper is primarily concerned with assessment rather than evaluation, as described above. Evaluation of online student learning is difficult because of security, identity, and cheating issues. Assessment provides not only less problematic methods of the administration of online assessment but a clearer, more precise picture of student learning.

Authentic assessment means that the tasks or assignments used to assess student learning are either in or related to a real life setting consistent with the course goals.

Performance-based. Demonstration of performance is essential to authentic assessment. Performance based assessment, as an alternative to testing, can demonstrate knowledge, skills development, and attitudes toward course objectives. (RTS, 2003).

Fair assessment provides students equitable opportunities to demonstrate learning. Equitable means that assessment is tailored to individual students depending on their prior knowledge and experiences, cultural differences, cognitive style, etc. (Suskie, 2000).

Most online courses utilize multiple forms of assessment tied to clearly stated objectives and standards. Assessment should not dictate to us; we should make decisions based on our professional judgment as educators, after taking into consideration information from a broad variety of assessments. Using multiple measures does not mean giving numerous multiple-choice tests instead of just a midterm and final. Students learn and demonstrate their learning in many different ways. Some learn best by reading and writing, others through collaboration with peers, others through listening, creating a schema or design, or hands-on practice. (Suskie, 2000).

Designing an Assessment Plan

Creating clearly stated goals and objectives is the critical first step in planning an online course. Correlating these goals and objectives with standards from state or national accrediting organizations is also fundamental to higher education courses. Next, designing student assessment takes precedence over designing instruction itself. Angelo (1999) states that if learning really matters most, then our assessment procedures will help students develop the

skills, dispositions, and knowledge needed to do the following:

- Engage actively — intellectually and emotionally — in their academic work.
- Set and maintain realistically high, personally meaningful expectations and goals.
- Provide, receive, and make use of regular, timely, specific feedback.
- Become explicitly aware of their values, beliefs, preconceptions, and prior learning, and be willing to unlearn when necessary.
- Work in ways that recognize (and stretch) their present learning styles or preferences and levels of development.
- Seek and find connections to and real-world applications of what they're learning.
- Understand and value the criteria, standards, and methods by which they are assessed and evaluated.
- Work regularly and productively with academic staff.
- Work regularly and productively with other students.
- Invest as much engaged time and high-quality effort as possible in academic work.

Lindeman (2000) offers the following protocol for selecting assessment instruments and strategies according to the type of learning objective, knowledge or skill the student is to accomplish. Strategies have been added to the following chart from other sources.

Protocol for Selecting Appropriate Assessment Instruments and Strategies

Objective:

Strategies: Thinking critically and making judgments Discussions

Essays

Reports

Journals

Guided Research Reviews

Chat

Group Critiques

Annotated Bibliography

Guided Analysis Solving problems and developing plans Case Studies

Simulations/Role Play

Team Design Group Critiques

Webquest/Scavenger Hunt

Drill-and-practice Performing procedures and demonstrating techniques Online Activities

Virtual Laboratory Field Experiences

Webquest/Scavenger Hunt Managing and developing oneself Journals

Learning Contracts Field Experiences

Portfolios Accessing and managing information Annotated Bibliography

Guided Analysis

WebQuest/Scavenger Hunt Interviews

Surveys (student conducted) Demonstrating knowledge and understanding Exams
 Reports
 Essays
 Online Activities Annotated Bibliography
 Reviews
 Presentations
 Webcast Designing, creating and performing Projects
 Portfolios Team Design Communicating Discussions
 Reports
 Journals
 Essays
 Oral presentations
 Role Plays
 Debates
 Online activities Reviews
 Chat
 Group Critiques
 Interviews
 Surveys
 Stories
 Team design
 Webcast
Strategies for Online Assessment

The following is an annotated list of assessment strategies for online higher education courses.

Traditional Exams

Traditional exams in higher education are still the dominant evaluation measure. However, if used at all, it should be only a small component of the overall assessment plan. Security and cheating are major concerns in online traditional testing. Alternative testing strategies include the following:

- A large questions pool from which a set number of questions are randomly selected for each student so that no two students are administered the same test.
- Open-book exams allow students to use any sources of reference material. This strategy forces students to interact with the material to search for specific questions. This strategy also allows for higher level questions giving students time to think about their responses.
- Structured yet mixed exams include traditional questions (like multiple choice, true-false, matching, etc.) as well as open-ended free response questions.
- Allow multiple attempts of a test which is posted for one week. This allows students to take the test once, determine incorrect answers, and take the exam again. If this is combined with a large random pool of questions and the open-book strategy, students will interact with all of the course material for the course. (Race, 1995).

Essays: There are two types of essays students may be assigned. One is traditional essays on a given content topic. Essays allow for student individuality and expression, reflection on the

depth of student understanding, and students are used to writing these types of essays. The second type of essay is the reflective essay which provide insights about the student's efforts, progress and achievement in the development of their online course. (Race, 1995).

Reviews: Reviewing books or research articles causes students to interact in depth with the information they review. Reviewing is an active process which involves higher level skills of comparing, contrasting, and evaluating. Assignment might set a tight word limit for the review. (Race, 1995).

Reports: Report writing is a skills relevant to many jobs. The ability to synthesize a convincing , precise report is a very useful tool. Reports can provide students a means to display their talents. They have more freedom than when taking an exam or writing for specific course assignments. (Race, 1995).

Discussion Boards: The ongoing student interaction is a valuable means for students to develop their own understanding of the course objectives and how this knowledge will be applied to the "real world." There are several methods of using online discussion forums. One is threaded discussions where students and the instructor maintain an ongoing discussion of an issue, case study, question, etc. for a specified period of time. Another valuable use of an ongoing discussion forum is the water cooler which is simply a semester-long question and answer forum where students can ask and answer each other questions. Ground rules for conduct and professionalism on the discussion forums is crucial. An assessment rubric stressing quality and knowledge integration of posts rather than length and social comments is the essential link to learning objectives. Brainstorming, the process of generating lots of new ideas, is another benefit of discussion forums. In a brainstorming session the leader poses a problem for which participants suggest solutions. The goal is to produce as many ideas as possible. In brainstorming, no ideas are rejected or criticized. (Edelstein, 2002).

Online Chat: Online chat areas provided by course management systems provide opportunities for real time conversation with students. One strategy for the use of chat forums is for students to role play or debate an authentic problem or situation in the profession. In a role-

playing scenario or debate, the instructor states a goal and assigns learners roles or sides in a debate to achieve that goal. Learners research their roles or sides. They then collaborate via chat, conferencing, discussion, or multi-user domains to play out their roles or debate to achieve the goal. (Horton, 2000).

Group critique: Often people learn more from the comments of their peers than from the lectures of instructors. Group critiques have learners help other learners to refine their work. Group-critique activities take advantage of discussion groups to help learners learn from other learners. In the simplest form of group critique, a learner prepares an individual answer to a question, posts it for other to critique, and then revises it before submitting the final version. (Horton, 2000).

Field Experience or Practical Work: Practical work or learning-by-doing is vital in learning to apply knowledge and theory in a professional setting. When assessment is attached to the field experience, students approach the experience in a more serious manner. Field experience provides an opportunity for collaborate with practitioners, students and university faculty. Assessment measures may incorporate a time log, reflective journal, evaluation of the setting, comparison of two or more settings, essay of skills observed in employees in the setting, or any creative assignment requiring student to observe or apply course knowledge or theory in this practical experience. Assessment may be in the form of practitioner evaluation of the student on a survey or student self-evaluation. (Race, 1995).

Portfolios: A portfolio is a systematic and organized collection of a student's work that exhibits to others the direct evidence of a student's efforts, achievements, and progress over a period of time. The portfolio assignment should include information about the performance criteria, the rubric or criteria for judging merit, and evidence of student self-reflection or evaluation. It should include representative work, providing a documentation of the learner's performance and a basis for evaluation of the student's progress. Portfolios may include a variety of demonstrations of learning and have been gathered in the form of a physical collection of materials, videos, CD-ROMs, reflective journals, etc. Portfolios tell much more about students

since they can reflect a wider range of knowledge, skills, attributes, and dispositions. (Race, 1995).

Presentations: Giving presentations to an audience demonstrates valuable communication skills related to the profession. Presentations usually are conducted with PowerPoint slides and may be given in person or by video. There is no problem with security since it is definitely the student doing the presenting. Students take presentations seriously. Preparation for public speaking usually ensures that their research and preparation are conducted at a deeper level than when writing papers. Students do not want to look unprepared in front of others while reports, essays, or papers are prepared for a private audience of one the instructor. Assessment rubrics should address knowledge content, layout of slideshow, presentation, and references. (Race, 1995).

Interviews: Two types of interviews may be assessed. Faculty may interview students either in person or on the phone to ascertain knowledge and communication skills. Assessment would be the faculty notes or checklist during the interview answering specific pre-designed questions. Students may interview practitioners in the profession. Assessment could be a transcript, report of answers, or report comparing interview responses. (Race, 1995).

Webquests or Scavenger Hunt: Scavenger hunts challenge learners to find their own sources of information on the network. In a scavenger hunt, learners gather scattered bits of knowledge from various Internet and intranet sources. (Horton, 2000).

Surveys: Online surveys conducted by the instructor can reveal information about student knowledge or dispositions at any point in the course. Online surveys conducted by students can assist in action research. (Horton, 2000).

Team Design: The communications capabilities of networks let individuals at separate locations work as a team. Team-design activities use these capabilities so that learners in a class can work as coordinated teams to produce a single design or to solve a single complex problem—no matter where they are. (Horton, 2000).

Stories: Good instructors often tell stories and effective learners frequently remember the

stories better than any other part of the course. Such stories are an indispensable part of much soft-skills training.

If the words and tone of voice of the instructor are essential ingredients in classroom learning—well then you had better find a way to include them in your online training. Probably the most important use of audio is to tell stories.

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Drill and Practice: Drill-and-practice activities build on a simple testing cycle. The system presents a problem, which the learner tries to solve. The system provides feedback on the learner's solution before posing another problem. Then the cycle repeats. (Horton, 2000).

Case Studies: In a case study, learners are given a comprehensive example to study. The case can be a real world event, process, or system. The learner is also given materials that describe or perhaps even simulate the case. After working with these materials, the learner attempts to answer questions about the case or to generalize the principles revealed by the case. (Horton, 2000).

Webcasts: Webcasts use the network to transmit a conventional training event so that many distributed learners can participate fully. The most common format is a lecture or speech followed by questions from learners. The presenter and audience are connected by a chat or conferencing system. Participants may also use screen sharing and whiteboard tools during the session. (Horton, 2000).

Guided Analysis: Guided analysis steps learners through the process of analyzing data. Guided analysis answers one of the most important questions ever asked: "So what?" Guided analysis helps learners to separate useful from useless information and to infer general principles and conclusions from separate, confusing, concrete instances. It teaches learners how to turn data into information and even knowledge. (Horton, 2000).

Guided Research: Guided research teaches learners to conduct research—how to gather,

analyze, and report on information. In a guided-research activity, learners consult various sources of information on a topic and then assemble a report, jump page, or multimedia scrapbook summarizing the topic. (Horton, 2000).

Learning Contracts: Learning contracts may be designed for individual students in a course or independent study courses. Learning contracts must contain the following six elements: personal goal, learning resources, learning strategies, timeline, results, and assessment criteria. (Horton, 2000).

Online Activities: There are many types of online learning activities. A virtual laboratory provides an on-screen simulator or calculator that learners can use to test ideas and observe results. Online tutorials guide learners in acquiring particular skills or knowledge. “Hands-on” activities give learners real work to perform. In an online “hands-on” activity the learner completes a task outside the lesson, such as performing a calculation with an on-screen calculator, designing something on paper, or operating a piece of machinery. The hands-on activity guides learners through the real-life task, provides feedback on their success, and may test what they learned. Learning games let people learn by playing. Online learning games are computer simulations that allow learners to practice a highly interactive task. They provide a model of a real-world system. By repeatedly playing the game, the learner spots and infers principles. (Horton, 2000).

Harris (1998) describes 18 Internet activity frameworks or structures which fall within three genres: interpersonal exchange, information collection and analysis, and problem solving. The interpersonal exchange activities include keypals, global classrooms, electronic appearances, telementoring, question-and-answer activities, and impersonations. The information collection and analysis include information exchanges, database creation, electronic publishing, telefieldtrips, and pooled data analysis. The problem solving activities include information searches, peer feedback activities, parallel problem solving, sequential creations, telepresent problem solving, simulations, and social action projects.

Annotated Bibliography: An annotated bibliography is a list of citations to books,

articles, and documents. Each citation is followed by the annotation, a brief (usually about 150 words) descriptive and evaluative paragraph. The purpose of the annotation is to inform the reader of the relevance, accuracy, and quality of the sources cited. Annotated bibliographies can be assigned with specific purposes in mind such as to locate sources for a particular type of research, procedure, art, method, or theory.

Projects: A project is an complex assignment involving more than one type of activity and/or production. It is limited in duration of time with set goals, objectives, and a defined outcomes. The planning, execution, monitoring, and results of projects can be reported using one or more of a variety of methods such as a written report, slideshow presentation, reflective papers, annotated bibliography, case study, story, and/or products created. There are numerous types of projects students can do to demonstrate learning and performance such as mural construction, a shared service project, or other collaborative or individual effort. Another type project may be technology projects such as databases, spreadsheets, slide shows, create a book with desktop publishing, audio editing, video editing, clay animation, creating websites, or photo editing. Creating a unit of instruction (Instructional Design) is a multi-faceted project with many components.

Measuring Student Performance

Most assessment strategies can be scored with a predetermined scoring rubric. In general a rubric is a scoring guide used in subjective assessments. A rubric implies that a rule defining the criteria of an assessment system is followed in evaluation. A rubric can be an explicit description of performance characteristics corresponding to a point on a rating scale. A scoring rubric makes explicit expected qualities of performance on a rating scale or the definition of a single scoring point on a scale. (New Horizons, 2002).

Another means of measuring performance is student self assessment. This is a process in which a student engages in a systematic review of a performance, usually for the purpose of improving future performance. It may involve comparison with a standard, established criteria. It may involve critiquing one's own work or may be a simple description of the performance. It

involves self-reflection, self-evaluation, and metacognition. (New Horizons, 2002).

Conclusions

Assessment strategies should be selected which match the personality of the course objectives, the students, the instructor, and the institution (in that order). This is a demanding, and somewhat complicated, charge. Offering multiple strategies of assessment, particularly if students are allowed to select activities, allows students a range of strategies through which to demonstrate their respective strengths and weaknesses.

Assurance that learning is not assessment driven is critical. Many say we have far too much assessment and too many decisions are based on high stakes testing. Students are highly intelligent. We owe it to them and ourselves to continue to explore assessment strategies which are compatible with student needs and sound academic practice.

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