Authentic and Effective Assessment for Online Education

Diana Skrzydlo
About Me

- Diana Skrzydlo, Continuing Lecturer at the University of Waterloo
- 13 years of teaching experience
- Won teaching awards at department, faculty, and university level
- Director of the MActSc program
- Spoken at many conferences about teaching practice, write about teaching on blog
- Enjoyed my trip to Indonesia last year, happy to see you again!
Outline

- Principles of Effective Online Learning
- Creating Connections in Online Teaching
- Diagnostic vs Formative vs Summative Assessment
- Why Students Cheat (and What to Do)
- Authentic and Effective Assessment Techniques
Principles of Effective Online Learning

1. Engagement
2. Assessment
3. ?
Engagement - Creating Connections

- Student-Material Connections
- Student-Instructor Connections
- Student-Student Connections
Types of Assessment

Diagnostic (before learning) - what your students already know, ungraded
Formative (while learning) - goal is student learning, ongoing, graded or ungraded
Summative (after learning) - goal is seeing what they learned, end of term, graded

These types of assessment should build on each other!
Levels of Learning – Bloom’s Taxonomy

**Creating**
- Use information to create something new
- Design, Build, Construct,
- Plan, Produce, Devise, Invent

**Evaluating**
- Critically examine info & make judgements
- Judge, Test, Critique,
- Defend, Criticize

**Analyzing**
- Take info apart & explore relationships
- Categorize, Examine,
- Compare/Contrast, Organize

**Applying**
- Use information in a new (but similar) situation
- Use, Diagram, Make a Chart, Draw, Apply, Solve, Calculate

**Understanding**
- Understanding & making sense out of information
- Interpret, Summarize, Explain, Infer, Paraphrase, Discuss

**Remembering**
- Find or remember information
- List, Find, Name, Identify, Locate,
- Describe, Memorize, Define
## Why Do Students Cheat?

<table>
<thead>
<tr>
<th>Cause</th>
<th>To Address It...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>Provide resources</td>
</tr>
<tr>
<td>Do not see value in assessments</td>
<td>Give meaningful assessments and explain use</td>
</tr>
<tr>
<td>Do not think they can succeed</td>
<td>Make summative assessments similar to formative, have reasonable difficulty</td>
</tr>
<tr>
<td>High stakes</td>
<td>Have more frequent, smaller assessments</td>
</tr>
<tr>
<td>Opportunity</td>
<td>Remove temptation</td>
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<tr>
<td>Norms unclear</td>
<td>Talk to the class about the importance of integrity, remind them of the rules for each assessment</td>
</tr>
</tbody>
</table>
Assessment Principles

- Assessments should be:
  - Authentic – meaningful, not busy-work
  - Aligned with Learning Outcomes – test what you want them to know
  - Achievable – reasonable difficulty: 60% basic, 30% harder, 10% challenge
  - Associated with your course – use specific material from your lecture material, discussion boards, city, news, etc
Assessment Activities

1. Self-Assessment/Practice Questions
2. Discussion Board Posting
3. Peer Learning
4. MS/MC/TF Quizzes
5. Assignments
6. Reflective Writing
7. Open-book Tests
8. Oral Exams
1. Self-Assessment/Practice Questions

- Questions (MC/TF) students can try and get instant feedback
- Could be incorporated into lectures or not
- Ungraded, but similar to questions on graded assessments
- Use existing resources to save time (e.g. GOAL, textbook online resources, adapt existing questions)
- For large classes, works equally well since auto-graded
2. Discussion Board Posting

- Require a certain number of substantive posts/replies
  - Or make it for bonus marks
- Could have students post topics or you could post them
- Rubric for evaluating contributions easily
- Can use for assignment prompts later!
- For large classes, may wish to divide class into smaller discussion groups
3. Peer Learning

- Students learning from each other
- Peer review or collaboration
- Could also grade each other (using peergrade.io, comPAIR)
- Have students create something to teach others (a question on material, a video explaining a topic, etc)
- For large classes, peer grading scales well!
4. MS/MC/TF Quizzes

- Short low-stakes quizzes frequently throughout term
- Serves as the “tour guide” to the course – reinforcing key topics, highlighting important ideas for later
- Can randomize order of options/questions (don’t need a lot!)
- Multi-modal is best (some TF, some MC, some MS, ideally some short answer questions too)
- For large classes, essential since auto-graded
5. Written Assignments

- Allow some choice of questions so students can work on material that is most interesting to them
- Include localized info, refer to something specific from lecture material, discussion board, ask to provide a discussion of current news article, etc
- Could have a multi-stage project – topic proposal, data, draft report, presentation (recorded or synchronous)
- For large classes, allow students to work in pairs/groups
6. Reflective Writing

- Assignment(s) where students reflect on goals for the course and what they have learned

- E.g. Summarize important course concepts in plain language, describe a problem you struggled with but now understand, discuss what made you want to study actuarial science, whether you achieved your goals for the course

- For large classes, use rubric to grade quickly
7. Oral Exams

- Great way to check level of understanding of students and be sure it is their work
- Ask students to define, evaluate, compare, discuss process, or explain their solution to a problem
- For large classes, only use a sample – let students know you will pick n students at random for each assessment and choose a question for them
8. Open-Book Tests

- Specify exactly what resources are allowed
- Short time limit does not help, just adds stress
- Have some questions that are straightforward, some more challenging (60% basic, 30% harder, 10% challenging)
- Make sure you include some questions at higher Bloom’s level
- Allow students to ask questions for clarification privately
- Could randomize questions (different numbers, contexts, order)
- For large classes, could use a combination of MC/TF and written answer
# Assessment Activities Summary

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Stage</th>
<th>Material</th>
<th>Resources</th>
<th>Time to Prep</th>
<th>Time to Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Assessment/ Practice questions</td>
<td>Diagnostic</td>
<td>Basic, common mistakes</td>
<td>GOAL, textbook banks, etc</td>
<td>Medium (or Low if using Quiz q’s)</td>
<td>None (Auto)</td>
</tr>
<tr>
<td>Discussion Board</td>
<td>Diagnostic/ Formative</td>
<td>Opinions</td>
<td>Rubric</td>
<td>Low</td>
<td>Medium (or Low if using rubric)</td>
</tr>
<tr>
<td>Peer Learning</td>
<td>Diagnostic/ Formative</td>
<td>Creating new ideas</td>
<td>peergrade.io, comPAIR</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>MS/MC/TF Quizzes</td>
<td>Formative</td>
<td>All key concepts</td>
<td>Your LMS, existing banks</td>
<td>Medium</td>
<td>None (Auto)</td>
</tr>
<tr>
<td>Written Assignments</td>
<td>Formative</td>
<td>Higher level material/skills</td>
<td>Adapt existing assignments</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Reflective Writing</td>
<td>Formative/ Summative</td>
<td>Personal goals, course concepts</td>
<td>Example &amp; rubric</td>
<td>Low</td>
<td>Medium (or Low if using rubric)</td>
</tr>
<tr>
<td>Oral Exams</td>
<td>Formative/ Summative</td>
<td>Conceptual</td>
<td>Example</td>
<td>Low</td>
<td>High (or Med if using sample)</td>
</tr>
<tr>
<td>Open-Book Tests</td>
<td>Summative</td>
<td>All material</td>
<td>Adapt existing tests</td>
<td>Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>
Key Takeaways

- Create and sustain connections between students through communication and presence
- Use a variety of assessments that are authentic, aligned with learning goals, achievable, and associated with your context
- Employ or adapt existing resources as much as possible to save time
- Good luck – we’re all in this together!