Best Practices for Effective Online Course Design

Center for Teaching Advancement and Assessment Research
Agenda

1. Designing courses using the backward design model
   a. Learning outcomes

2. Determining Acceptable Evidence of Learning
   a. Assessments
   b. Connecting learning goals to assessments

3. Learning Experiences and Instruction
   a. Synchronous lectures
   b. Asynchronous lectures
   c. Engaging students
   d. Clear Communication
Housekeeping

- You have been muted on entry
- When you move your mouse you will see these tools at the bottom and click on the microphone to un-mute yourself
- In large groups I may ask people to raise their hand to be called on - click participant list and hover over your name - click on little hand
Discussion Question

Virtual Meeting Platforms I have used for teaching…

A. Webex
B. GotoMeeting
C. Zoom
D. Google Meet
E. BigBlueButton
F. Skype or Microsoft Teams
Introductions in Voicethread
Course Design Considerations

• Department, discipline, unit

• Students
  • Any prerequisites or prior knowledge
  • Important for career preparation
  • How many students
Backward Course Design

1. Identify desired results
Learning Goals/Objectives

• Learning goals list the content, skills of course
• What students will be able to know and do at end or the attitudes, beliefs, or skills they acquired (student outcomes of course)
Bloom’s Taxonomy of Learning Domains

- Remembering
- Understanding
- Applying
- Analyzing
- Evaluating
- Creating
Bloom’s Taxonomy of Learning Domains

- **Remembering**: = can the student recall or remember the info?
- **Understanding**: = can the student explain ideas or concepts?
- **Applying**: = can the student use the information in a new way?
- **Analyzing**: = can the student distinguish between the different parts?
- **Evaluating**: = can the student justify a stand or decision?
- **Creating**: = can the student create new product or point of view?
Write “Course Learning Goals”

- Consider having goals at different levels of Bloom’s
- Consider if some skill-based or non-cognitive learning outcomes are relevant in online environment
Worksheet

○ What are your learning goals?
○ Select goals from a class and paste (or write) into your worksheet
Discussion Question

Should you modify any of your learning goals for an online learning environment?

A. No, they all work
B. Yes, I might change one or two
C. Yes, I might change many
D. Unsure
What will demonstrate mastery?

- **Evidence of Learning**: work that students must “DO” to demonstrate they achieved the learning goals
- Consider how activities, assignments or assessments can show if student has mastered the learning goals
Designing Assessments

**Formative Assessment**
Is part of the instructional process and focused on supporting improvement

- Quizzes
- Creation of student learning evidence
- Classwork
- Homework
- Exit tickets
- Assists instructor in modifying future class planning based on learner needs

**Summative Assessment**
Used to determine at a particular point in time what students know and do not know

- Final and midterm exams
- Chapter tests
- Scores used for accountability
- State assessments
- SAT or ACT type tests

- ways to assess
- used for student feedback
- assist in future class planning
Formative Assessments: Clicker-type questions

- Kahoot! **
- Poll Everywhere
- iClicker
- Canvas quizzes **
- Video questions **

** Use for synchronous or asynchronous
Playposit Demonstration

- Embed questions, discussions, other links etc. into video- your own, Kaltura or Youtube videos
- Wonderful for lectures and formative assessment
- Integrates with Canvas
- Sample PlayPosit “Bulb”
Team Projects and Assignments

Allow students to choose groups or intentionally set the teams?

- Consider time zones of students
- Keep groups small and odd

Technology options for synchronous team projects:

- Google
- Canvas
- Collaborative projects in Word Online using Box
Summative Assessments

Traditional summative assessments (such as exams) may not work well in online environments

Consider reworking to focus on frequent, lower stakes assessments
Online tools for quizzes, tests

- LMS Quizzes
  - New Canvas Quizzes will actually let you link to objectives!
- Akindi
# Academic Integrity

<table>
<thead>
<tr>
<th>Platform</th>
<th>Benefit</th>
<th>Drawback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnitin</td>
<td>Plagiarism detection for written assignments</td>
<td>None</td>
</tr>
<tr>
<td>Proctortrack</td>
<td>Uses webcams and screen tracking to track student activity</td>
<td>Takes time to review flagged activity and decide if cheating occurred; may not work on certain devices</td>
</tr>
<tr>
<td>ProctorU</td>
<td>Live webcam and screen tracking proctoring</td>
<td>Limited availability, minimum device requirements</td>
</tr>
<tr>
<td>Respondus® Lockdown Browser</td>
<td>Prevents printing, copying, going to another URL, or accessing other applications</td>
<td>Does not work on certain devices; most students have multiple devices</td>
</tr>
<tr>
<td>Virtual Meeting Proctoring</td>
<td>Use virtual meeting platform (Webex, Zoom) to proctor students</td>
<td>Requires constant attention or manual review</td>
</tr>
</tbody>
</table>
If You Choose Proctoring and Lockdown Browsers…

- Experiment with a low stakes assignment or quiz first
- Have an alternative in case of technology issues or students who are flagged by software
- Some students don’t have appropriate technology
- Proctoring technology may not work on every device
Mapping Outcomes to Assessments

- Learning Outcome 1: Team Project
- Learning Outcome 2: Student participation in discussions
- Learning Outcome 3: Paper or submitted

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Cognitive Level</th>
<th>Assessment Type</th>
<th># of Qs</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning outcome 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Learning Activities

- Opportunities when students engage with subject matter of course, practice skills to ensure they will be prepared for assessments
- These are the learning experiences and instruction
- These could overlap with assessments - particularly formative assessment
Connecting to Learning Activities

Learning Goals

1. Content
2. Application
3. Skills
4. Values

Evidence of Learning

- reading
- questions
- discussions
- essays
- projects
- presentations
- performances
- homework
- quizzes
- tests

Learning Activities

- lectures
- readings
- discussions
- essays
- projects
- presentations
- performances
- homework
- quizzes
- tests
How will you present content?

Synchronous Lecture (Students watch live)
- Advantages: Live participation is possible, live Q&A
- Disadvantages: Access challenges for students

Asynchronous Lectures
- Advantages: Pre-recorded content is easier to create, reusable lectures possible, access is more equitable, students can rewatch
- Disadvantages: Participation is more difficult, Q&A is not live
If Giving Synchronous Sessions:

How will holding synchronous sessions help students obtain mastery of learning goals better than the asynchronous option?

Find a way to engage students. Why should they all be present if you aren’t engaging them?

You should still record it for students who aren’t able to attend at the specified time.
## Online Tools for Hosting Synchronous Video

<table>
<thead>
<tr>
<th>Platform</th>
<th>Benefit</th>
<th>Drawback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webex Meetings</td>
<td>Supported by OIT, ease of use</td>
<td>Does not have breakout rooms</td>
</tr>
<tr>
<td>Webex Trainings</td>
<td>Supported by OIT, breakout rooms</td>
<td>Clunky interface, participant audio issues possible</td>
</tr>
<tr>
<td>BigBlueButton</td>
<td>Integrated with LMS, has breakout rooms</td>
<td>Technology glitches for some users</td>
</tr>
<tr>
<td>Microsoft Teams</td>
<td>Supported by OIT, real-time captioning, has breakout rooms</td>
<td>Still in development</td>
</tr>
<tr>
<td>Zoom</td>
<td>Breakout rooms</td>
<td>Security issues, not supported by OIT</td>
</tr>
<tr>
<td>Google Meet</td>
<td>Currently free, real-time captioning</td>
<td>Not supported by OIT</td>
</tr>
</tbody>
</table>
Tips for Making Asynchronous Video

*Video shot in [Prezi Video](https://www.prezi.com)
Summary of Video

Can you adapt other material that is already available? Make them short! 5 to 10 minutes is much better than longer

- Part of a “chunking process”
- Fits with student’s attention process
- Easier to correct your own mistakes

Try to be on video so that you can connect with the students

- Try to make visuals more dynamic since you are not present (consider animations, drawing on screen)
## Tools for Asynchronous Video

<table>
<thead>
<tr>
<th>Platform</th>
<th>Benefit</th>
<th>Drawback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kaltura Capture Space</td>
<td>Video capture and hosting</td>
<td>Supported by OIT, Very little editing</td>
</tr>
<tr>
<td>Webex/BigBlueButton/Zoom</td>
<td>Virtual meetings can be used to capture and host</td>
<td>12 hours to process, does not have editing</td>
</tr>
<tr>
<td>Prezi Video</td>
<td>Combine slides with video, free version available</td>
<td>Paid versions have better features</td>
</tr>
<tr>
<td>Camtasia</td>
<td>Excellent functionality</td>
<td>Not free!</td>
</tr>
<tr>
<td>VoiceThread</td>
<td>Can add video to a slideshow</td>
<td>Long process to create</td>
</tr>
<tr>
<td>PowerPoint with Voiceover</td>
<td>Simple to create</td>
<td>No video</td>
</tr>
<tr>
<td>Loom</td>
<td>Simple to create</td>
<td></td>
</tr>
<tr>
<td>QuickTime + iMovie</td>
<td>Preinstalled, easy to use</td>
<td></td>
</tr>
<tr>
<td>DaVinci Resolve</td>
<td>Free editing software</td>
<td>Does not capture video</td>
</tr>
</tbody>
</table>
Creating Khan Academy Type Videos

- Decide if using your computer or tablet
- Suggested to use a microphone
- If using computer need *writing surface*
- On iPad use whiteboard app - *Screenchomp*, *ShowMe*, or *Educreations*
- *Nice overview of process on YouTube*
Online Tools for Hosting Asynchronous Video

<table>
<thead>
<tr>
<th>Platform</th>
<th>Benefit</th>
<th>Drawback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Webex</td>
<td>Supported by OIT</td>
<td>Cannot embed, slow processing</td>
</tr>
<tr>
<td>Kaltura MediaSpace</td>
<td>Supported by OIT</td>
<td>Slow processing possible, editing is difficult</td>
</tr>
<tr>
<td>Youtube</td>
<td>Easy to integrate</td>
<td>Security issues</td>
</tr>
<tr>
<td>Canvas or other LMS</td>
<td>Already integrated for students</td>
<td>Space limits</td>
</tr>
</tbody>
</table>
Don’t Reinvent the Wheel

A lot of resources already exist for you to use!

- Linkedin Learning
- Canvas Commons
- YouTube
- Open Educational Resources
Techniques to Engage Students in Online Environments

- Breakout Rooms
- Jigsaws
- Fishbowls
- Polling
- Group Projects
- Concept Maps

https://dcs.rutgers.edu/active-learning/teaching-tools/activities
Online Discussions

Provide guidelines for communications (consider requirements as well as etiquette)
• Example: “Please justify the answer you got”

Give specific directions, along with specific questions or guides

Determine whether you will grade contributions, and how
# Use a Rubric to Grade Discussion

**Online Discussion Forum Rubric**
You've already rated students with this rubric. Any major changes could affect their assessment results.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Ratings</th>
<th>Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appropriate Engagement</strong></td>
<td>2 pts Full Marks</td>
<td>2 pts</td>
</tr>
<tr>
<td></td>
<td>Includes at least one original post and one reply to another student’s post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 pts Partial Credit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Is missing one original post or one reply to another student’s post</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 pts No Marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Did not engage with discussion</td>
<td></td>
</tr>
<tr>
<td><strong>Grammar and syntax</strong></td>
<td>2 pts Full Marks</td>
<td>2 pts</td>
</tr>
<tr>
<td></td>
<td>Posts are written with appropriate grammar and syntax</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 pts Partial Credit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Some grammar and syntax issues obscure meaning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 pts No Marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Major errors in grammar and syntax</td>
<td></td>
</tr>
<tr>
<td><strong>High Quality Engagement</strong></td>
<td>2 pts Full Marks</td>
<td>2 pts</td>
</tr>
<tr>
<td></td>
<td>Engagement was high quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 pts Partial Credit</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Engagement was not always high quality</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0 pts No Marks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low quality engagement</td>
<td></td>
</tr>
</tbody>
</table>

**Total Points: 6**
Online Tools for Communication

- LMS Announcements
  - Text or video!
- LMS Inbox
- Email
- VoiceThread
- Loom (short videos)
- Phone (Google Voice)
- Online office hours
# Clear Communication

- Make course transparent for students
- Explain the purpose of various elements
- Consider giving checklists or other organizer

<table>
<thead>
<tr>
<th>Objective Number</th>
<th>Objective Description</th>
<th>Complete</th>
<th>Proficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Use the power rule to find the derivatives of polynomials and simplify functions in order to use the power rule</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice Problems: Page 191 Q3-15 odd, 19-25 odd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Know and use the derivative of $e^x$ to find derivatives of various functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice Problems: Page 191 Q17,33</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post your response about exponential function on your blog.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Use the product and quotient rules to find the derivatives of a variety of functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice Problems: Page 197 Q3-19 odd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Know and use the derivatives of the 6 trig functions, in conjunction with power, product and quotient rules to find the derivatives of various functions</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice Problems: Page 216 Q1-15 odd</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Find the equation of a tangent line to a curve</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Practice Problems: Page 191 Q39,41; Page 197 Q23,25</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

WebAssign Quiz for Stage 8

STAGE 8 GATEWAY TEST
Examples of Online Courses

• https://distance.uiowa.edu/courses/sample-online-course
Resources

- Syracuse University “Summer Online Course Checklist”
- Vanderbilt University Teaching Center “Understanding by Design”
- Compilation of online tools for content delivery
- ACUE’s Online Teaching Toolkit
Technical Questions?

Questions about Canvas?  [http://canvas.rutgers.edu](http://canvas.rutgers.edu)

Questions about Sakai?  [sakai@rutgers.edu](mailto:sakai@rutgers.edu)

Questions about Proctoring Technology?  [proctoring@docs.rutgers.edu](mailto:proctoring@docs.rutgers.edu)

Questions about other technology?  [help@oit.rutgers.edu](mailto:help@oit.rutgers.edu)