Promoting Academic Integrity in Large Online Course Exams without Surveillance Software

Sarah M. Bass, Tara S. Carpenter, John L. Fritz
Why?
Webcams for Testing?

11/12/20 Washington Post

Key Distinctions: Respondus @ UMBC

1. **Respondus 4.0 Test Generation**
2. Is not the same as **Respondus Lockdown Browser** (LDB)
3. Which is not the same as **Respondus Monitor** (webcams for testing).

VP or IT Jack Suess’ **Statement on Use of Respondus LDB & Monitor** (shared at 12/1/20 **Faculty Senate CPC**).
How?
Approach

Instead of "catching" students tempted to cheat on a small set of questions, Carpenter and Bass are overwhelming their “risk vs reward” calculus. So, they might as well study (and learn to apply) key concepts to a large variety of questions.
VoiceThread Demo

- 25-min screencast demo.
- Detailed steps outlined in 10/29/20 DoIT News “Promoting Academic Integrity in Online Testing.”
- See also 12/4/20 GO Chat Podcast: “Shifting Super-sized Courses Online.”
Basics of Online Chemistry
Learning Checkpoint (LCP) Exams
Develop a question bank or pool

Create a large pool or bank of questions that can automatically populate any exam (see up to timecode 4:53 in the [screencast](#), which covers the first three steps in Carpenter’s accompanying spreadsheet).

### Note: These are Blackboard-SPECIFIC screenshots

<table>
<thead>
<tr>
<th>NAME</th>
<th>NUMBER OF QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHS002</td>
<td>80</td>
</tr>
<tr>
<td>IMF003</td>
<td>46</td>
</tr>
<tr>
<td>(Imported) Solubility Practice</td>
<td>38</td>
</tr>
<tr>
<td>ELC003</td>
<td>38</td>
</tr>
<tr>
<td>IMF001</td>
<td>33</td>
</tr>
<tr>
<td>IMF002</td>
<td>32</td>
</tr>
</tbody>
</table>

- Chapters 1 and 2: 21
- CHEM 101 Quiz 1 Pool SU20: 78
- CHEM 101 Quiz 2 Pool SU20: 73
- CHEM 101 Quiz 3 Pool (final version SU20): 141
- CHEM 101 Quiz 4 Pool SU20: 134
- CHEM 101 Quiz 5 Pool SU20: 217
- CHEM 101 SU2020 Unit Question Pool: 478
- CHEM 101 Unit Quizzes Pool: 32
Randomize Students

Create groups (invisible to students), randomly populated for the exam that correspond to an LCP’s four parts, but no one group gets the same sequence of parts (this is step 7 and goes up to time code 11:43 of the screencast).

<table>
<thead>
<tr>
<th>Group #</th>
<th>Part</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>A</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>D</td>
<td>B</td>
<td>A</td>
<td>C</td>
<td></td>
</tr>
</tbody>
</table>

NOTE: If a pledge isn't used then membership + date/time could be used for each group's Part I.

Section A of the test would have following rules:
- Group 1 Part I (membership Group 1 + grade for integrity pledge)
- Group 2 Part IV (membership Group 2 + grade for section D)
- Group 3 Part II (membership Group 3 + grade for section C)
- Group 4 Part III (membership Group 4 + grade for section B)

Section B of the test would have the following rules:
- Group 1 Part IV (membership Group 1 + grade for section C)
- Group 2 Part I (membership Group 2 + grade for integrity pledge)
- Group 3 Part III (membership Group 3 + grade for section A)
- Group 4 Part II (membership Group 4 + grade for section D)

Section C of the test would have the following rules:
- Group 1 Part III (membership Group 1 + grade for section D)
- Group 2 Part II (membership Group 2 + grade for section B)
- Group 3 Part I (membership Group 3 + grade for integrity pledge)
- Group 4 Part IV (membership Group 4 + grade for section A)

Section D of the test would have the following rules:
- Group 1 Part II (membership Group 1 + grade for section A)
- Group 2 Part III (membership Group 2 + grade for section C)
- Group 3 Part IV (membership Group 3 + grade for section B)
- Group 4 Part I (membership Group 4 + grade for integrity pledge)
Make Students Sign Honor Pledge to Access Exam

Adaptive release of content, which is used to require that students “sign” an honor pledge before they can access the rest of the CHEM LCP assessments.

Note: All assessments are “open note” exams.
Lessons Learned

As an Instructor

● Transparency regarding the reason for the strange set-up leads to less backlash from students.

● When given the option, students prefer *dealing with* parts so they have the ability to backtrack questions and better manage their time.

● Working together is almost impossible due to parts, randomization, pools, and timer.

● Use of the Internet is minimal and useless.
  ○ Those who have been caught generally fail the exam even with the use of the Internet.
Lessons Learned

As an IT administrator

- Webcam surveillance approaches to online exams have been fraught.
- I like the focus on encouraging study & integrity vs. “catching” cheating.
- How to scale faculty support for the large question pool/bank approach?
- Intrigued how this approach could complement faculty & student use of an on-campus Testing Center.
Next Steps?

1. Discussing plans to keep online exam approach when UMBC resumes F2F instruction.

2. UMBC currently exploring on-campus “Testing Center” that could proctor exams for up to 50 students at a time.
   a. To serve higher enrollment courses, faculty would need to adopt a similar approach that allows multiple iterations of a test that can be given over a longer period of time (e.g., 3-5 days).

3. Assess if & how online exams reduce cheating
   a. If we find the same percentage of students who pass a F2F course also pass the next course, then we might reasonably assume that the move to remote instruction and online learning at least did no harm.
   b. By contrast, if the successful course-to-course grade "progression" percentage decreased, one could assume that more rampant cheating by students in online course A led to less prepared students in course B.
   c. UMBC has a “Course-to-Course Grade Comparison” report that could help. Example
Thanks & Questions?

Sarah Bass
Lecturer, Chemistry
UMBC
carpent@umbc.edu

Tara Carpenter
Senior Lecturer, Chemistry
UMBC
carpent@umbc.edu

John Fritz
Assoc. VP, Instructional Technology
UMBC
fritz@umbc.edu