Moodle mobile app: Five micro-tasks to support active learning in lectures

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Definitions

Active learning is

*anything that involves students in doing things and thinking about the things they are doing*  
(Eison, 2010)

*anything course-related that all students in a class session are called upon to do other than simply watching, listening and taking notes*  
(Felder & Brent, 2009)
Strategies

• The Pause Procedure
  – Lecturer pauses for two minutes when students work in pairs to discuss and rework their notes.

• Think-Pair-Share
  – Lecturer provides information then sets a question. Students note their response in writing, then turn to a partner and share their responses.

• Concept Testing
  – Lecturer poses a question in MCQ format. Students turn to a partner and they work together to reach a common answer.
Benefits

• Increases feedback to students

• Opportunity to think and talk about course material

• Creates personal connections to the material, increasing motivation to learn

• Practice important skills; collaboration, debating

• Builds self-esteem through conversations with other students

• Creates a sense of community in the classroom through interaction
Challenges

• Risk when balancing content coverage and facilitating activities

• Takes time to change teaching approach and develop effective strategies

• Students can be resistant, passive listening can be comfortable, activities can be disruptive
Classroom response web applications
Peer Instruction strategies

• Instruct students to focus on reasons.
  – “Share reasons for your answer with your partner.”
  – “Convince your partner that you’re right.”
  – “If you both agree, you could both be wrong, so discuss anyway

• Individual voting prior to small-group discussion time?
  – Pros: promotes independent thinking, warms students up for peer instruction
  – Cons: takes more time, can ask harder questions if students can work together immediately, some students don’t engage productively when working solo

Derek Bruff, Vanderbilt University
• Polling slides embedded in PowerPoint slideshow
• Handsets collected from Library help desks
• Web-only polling – no dongle or handsets needed
Moodle on a mobile phone

Web browser

iNapier app

Moodle app

- Choice - Economic Growth
  Which topic needs covered again for the exam
- Quiz - Periodic Table
  Check you answer after each question
- Lesson - First Aid
  Make enough correct decisions for a 50% chance of the casualty recovering
#1. Quick poll using *Choice* activity

Standard view in PC/laptop web browser
#1. *Choice* activity reports

**Choice - Economic Growth**

Which topic needs covered again for the exam

Sorry, this activity closed on Monday, 16 January 2017, 1:30 PM and is no longer available

![Bar chart showing responses to the question: Value of exchange rate, Role of productivity, Strength of labour markets, Effect of commodity prices. The Strength of labour markets has the highest response with 5, followed by Role of productivity with 2, and the others with 1.](image)
#2. Reflection using Feedback activity

Standard view in PC/laptop web browser

Feedback - Cultural Appropriation at Halloween

Responses to the question are anonymous

Feedback - Cultural Appropriation at Halloween

To what extent are Halloween costumes stereotyping, discrimination or cultural appropriation?

Submit your answers

Done

"are" aren't area
#2. Feedback activity reporting

## Feedback - Cultural Appropriation at Halloween

**Submitted answers:** 5  
**Questions:** 1

**To what extent are Halloween costumes stereotyping, discrimination or cultural appropriation?**

- If dressed in a sombrero, pancho and a big comical moustache - I'm taking the micky out of myself not Mexicans.
- Dressing in another culture's clothes can be a sign of appreciation, if done properly and respectfully.
- The reason many people find it derogatory is because of the implications and misinformation and who could be harmed by it
- I think cultural appropriation is about power and colonialism.
- I personally feel like we are hyper-sensitive to a lot of things now. I even got flack for dressing up as Jasmine and I'm Middle Eastern!
#3. Concept checking using Quiz activity

Standard view in PC/laptop web browser

Quiz - Periodic Table

Check you answer after each question

Question 1

Across period atomic size decreases due to

Select one:
- a. shielding effect
- b. increase in nuclear force of attraction
- c. decrease in nuclear force of attraction

Check
#3. Concept checking using Quiz activity

Feedback & score for response

Question 1
Incorrect
Mark 0.0 out of 1.0

Across period atomic size decreases due to
Select one:

- a. shielding effect
- b. increase in nuclear force of attraction
- c. decrease in nuclear force of attraction

Incorrect.
The correct answer is: increase in nuclear force of attraction

Submit and finish quiz

Summary of attempt

<table>
<thead>
<tr>
<th>Question</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Incorrect</td>
</tr>
<tr>
<td>2</td>
<td>Correct</td>
</tr>
<tr>
<td>3</td>
<td>Correct</td>
</tr>
</tbody>
</table>

Return to attempt
Submit all and finish
#3. Quiz activity reports

![Diagram of quiz activity reports]

**Analysis of responses**

<table>
<thead>
<tr>
<th>Model response</th>
<th>Partial credit</th>
<th>Count</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>shielding effect</td>
<td>0.00%</td>
<td>3</td>
<td>37.50%</td>
</tr>
<tr>
<td>decrease in nuclear force of attraction</td>
<td>0.00%</td>
<td>2</td>
<td>25.00%</td>
</tr>
<tr>
<td>increase in nuclear force of attraction</td>
<td>100.00%</td>
<td>3</td>
<td>37.50%</td>
</tr>
</tbody>
</table>

The 4 groups with the highest average:

1. Group C 67%
2. Group A 67%
3. Group D 33%
4. Group B 33%

Quiz - Periodic Table

- Question 1: Atomic size
  - Attempts: 8
  - Facility index: 37.50%
- Question 2: Elements
  - Attempts: 8
  - Facility index: 50.00%
- Question 3: Reactive
  - Attempts: 8
  - Facility index: 62.50%
#4. Decision making using *Lesson* activity

Standard view in PC/laptop web browser

Lesson - First Aid

Make enough correct decisions for a 50% chance of the casualty recovering.

Lesson - First Aid

You have earned 0 point(s) out of 0 point(s) thus far.

A man is lying on the ground outside an open car door. The car has obviously hit a tree. There is blood on the ground. People are milling about. You take charge of the situation, and call for help from bystanders.

What do you do next?

- Tell someone else to call 999.
- Run to the casualty and do a Rapid Body Survey.
- Check the scene for hazards yourself.
- Run to call 999

Submit

You have earned 0 point(s) out of 0 point(s) thus far.

A man is lying on the ground outside an open car door. The car has obviously hit a tree. There is blood on the ground.
People are milling about. You take charge of the situation, and call for help from bystanders.

What do you do next?

- Run to the casualty and do a Ra...
- Tell someone else to call 999.
- Run to call 999
- Check the scene for hazards yo...

Submit
#4. Decision making using Lesson activity

Feedback & score for response

You have earned 2 point(s) out of 2 point(s) thus far.

Your answer:
Check the scene for hazards yourself. Correct. You determine that the scene is safe, and you can continue.

Next scenario presented

You have earned 6 point(s) out of 12 point(s) thus far.

The bystander goes to call the ambulance. What do you do next?

- Do a Rapid Body Survey ✅
- Take the casualty's skin temper...
- Kneel down and stabilize the ca...
- Take the casualty's radial pulse.

Submit
#4. Decision making using *Lesson* activity

**Finishing screen**

You have earned 13 point(s) out of 22 point(s) thus far.

The ambulance has arrived and there is no more you can do to help the casualty. Have you made enough correct decisions to give the casualty more than a 50% of a full recovery?

**Activity is graded**

Congratulations - end of lesson reached

Your score is 13 (out of 22).

Your current grade is 59.1 out of 100
#4. Lesson activity reports

Lesson - First Aid

**Multichoice: You see a car accident**

**Question:**
A man is lying on the ground outside an open car door. The car has obviously hit a tree. There is blood on the ground. People are milling about. You take charge of the situation, and call for help from bystanders.

**What do you do next?**

**Answer:**
- Run to call 999
  - 12.5% checked this one.
- Tell someone else to call 999.
  - No one checked this.
- Run to the casualty and do a Rapid Body Survey.
  - No one checked this.
- Check the scene for hazards yourself.
  - 87.5% checked this one.

**Class statistics**

**The 4 groups with the highest average:**

1. Group D  93%
2. Group C  80%
3. Group B  45%
4. Group A  32%
#5. Example using *Glossary* activity

Standard view in PC/laptop web browser

**Glossary - Civil Engineering Disasters**

Provide an example and identify the primary cause of failure

**General**
- Concept
- Definition

Contractual

Injaka bridge - unrealistic quoted costs meant substandard materials purchased
#5. **Glossary** activity reports

Construction
Willow Island Cooling Tower - unset concrete and poorly constructed scaffolding

Contractual
Injaka bridge - unrealistic quoted costs meant substandard materials purchased

Design
Tacoma Narrows Bridge was a new design in suspension bridges

Maintenance
Mississippi River bridge - cracking discovered in the cross girders years before the collapse
Preparing for the class

• Design courses with mobile in mind and promote the app from week 1

• Check wi-fi coverage in the classroom

• Place activity in a suitably titled topic near the top of the course page

• Apply date restrictions to open the activity during the class
Links

• Active Learning, Cornell University Centre for Teaching Innovation
  https://www.cte.cornell.edu/teaching-ideas/engaging-students/active-learning.html

• Felder & Brent (2009), Active Learning: An Introduction,

• Jim Eison (2010), “Using Active Learning Instructional Strategies to Create
  Excitement and Enhance Learning”

• Derek Bruff, Director of the Vanderbilt University Center for Teaching
  https://cft.vanderbilt.edu/cft-guides-sub-pages/clickers/