Engagement and Assessment Strategies for Undergraduate Psychology

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Teaching vs. Learning

Amy: I taught my dog to whistle.
Betty: Let’s hear it then.
Amy: He can’t whistle.
Betty: I thought you said you taught him to whistle.
Amy: I did. He just didn’t learn it.

(Wiliam, 2011, p. 48)

Formative vs. Summative

• Summative assessment is what many people think of when the term “assessment” is used
  • used to compare individuals
  • used to assign grades

• Formative assessment is used to inform teaching and learning
  • used by teachers to adjust instruction
  • used by students to adjust learning strategies
“Formative assessment is a planned process in which teachers or students use assessment-based evidence to adjust what they are currently doing” (Popham, 2008, p. 6)

Key Components of Formative Assessment

- Planned process
- Assessment-elicited evidence
- Instructional adjustments by teachers
- Learning adjustments by students

(Popham, 2008)

Classroom Assessment Project Cycle

Some Possible Strategies for Promoting Student Engagement and Using Formative Assessment

Angelo & Cross, 1993, p. 35
Make it Real

THE RISE OF fMRI
Use of fMRI has rocketed, and now more studies are looking at connectivity between regions.

<table>
<thead>
<tr>
<th>Publications per year</th>
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<tbody>
<tr>
<td></td>
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<tr>
<td>PET or SPECT</td>
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<tr>
<td>EEG or MEG</td>
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<tr>
<td>MRI</td>
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</table>

fMRI publications by subject:
- Activation
- Connectivity
- Other

fMRI, functional magnetic resonance imaging; PET, positron emission tomography; SPECT, single-photon emission computed tomography; EEG, electroencephalography; MEG, magnetoencephalography.

Data from IS Web of Knowledge.

http://goo.gl/iqTY2
Show The Data
Multitasking is worse than a lie

1

2

Time 1: Alternate writing a letter then a number, record total time

Time 2: Write out sentence, then numbers, record total time

Compare Time 1 to Time 2, which took longer?

Provide Multiple Opportunities to Assess or Demonstrate Understanding
Concept Maps

- can be used for assessing prior knowledge, recall, and understanding
- can be used to assess synthesis
- book/notes based
- empty outline/fill-in
- concept list
- retrieval practice

example of concept map with modification for student “fill-in” as formative assessment strategy

Muddiest Point

- Students submit a statement indicating their “muddiest” point was from the ....
- reading
- homework
- class
- possibly ask student to apply content to other areas
Muddiest Point

- Instructor responds to student submissions
  - in class
  - online
  - video
  - audio

Student-created Media

- videos
- web cams
- portable cameras (e.g., Flip, cell phones)
- iPad, other tablets
- podcasts
- comics

Additional Tools

- Use electronic and online tools for creating assessments, collaboration and creation of documents, presentations, homework, etc.
  - MS Office (comment/review)
    - http://office.microsoft.com
  - Google Docs
    - http://docs.google.com
  - Open Office
    - http://www.openoffice.org

Comic Life 3
http://plasq.com/
The Minute Paper

- At the end of class, students given a few minutes to answer a question
- “What was the most important thing you learned in class today?”
- “What do you still have questions about?”

Angelo & Cross, 1993
Student Response Systems

- No/Low-tech
  - Raise hands or stand up
  - Hold Ups
- High Tech
  - “clickers”
  - Poll Everywhere - http://www.polleverywhere.com
  - Socrative - http://www.socrative.com
  - Celly - http://cel.ly (can be used out of class)

“Thank you” to Sue Frantz!
http://suefrantz.com

Strongly Agree

Disagree

Strongly Disagree

Agree

Front of Room

1-877-GO PAXIS  www.paxtalk.com  info@paxis.org for response cards
Think-Pair-Share

- Pose a question to the class
- Instruct students to
  - Think about their answer individually
  - Pair with a partner to discuss their answers
- Share their answer when called upon
A) Yes, it did!
B) No, it didn’t!
C) Well, maybe.
A pituitary tumor may most likely cause which of the following sensory deficits?

1. Loss of taste
2. Loss of hearing
3. Loss of vision
4. Loss of touch

Example of clicker question used in class after reviewing anatomy of visual system using 3D resources

Teach Students about Metacognition and Ways to Improve It

- “thinking about thinking”
- “knowing about knowing”
Metacognition

- Individual’s awareness of understanding of a topic
  - Better students more accurately appraise their mastery of a topic
  - Weaker students tend to overestimate their understanding

Notes About Next Slide

- Information presented here does not personally identify anyone in the class
  - If you see your own estimate/score data point, do not identify yourself out loud or to anyone else in the class
- Information is presented here to only assist you in making adjustments prior to the next exam – not for embarrassment
Which of the following is the MOST important ingredient for successful learning?

1. The intention and desire to learn
2. Paying close attention to the material as you study
3. Learning in a way that matches your personal learning style
4. The time you spend studying
5. What you think about while studying
Group Instructions

- **Group A** - Listen to the list of words, identify if each word you hear is “pleasant.”
- **Group B** - Listen to the list of words, identify if each word you hear is “pleasant.” Do not write anything else down but you will later be asked to recall this list.
- **Group C** - Listen to the list of words, identify if each word you hear contains an “E” or “G.”
- **Group D** - Listen to the list of words, identify if each word you hear contains an “E” or “G.” Do not write anything else down but you will later be asked to recall this list.


Activity

- Everyone hears list of 24 words to perform ratings
- Then asked to turn over their papers and list all words


Three Hypotheses

- If intent to learn is critical, then those who were forewarned about the recall test the two (intentional groups — B & D) should do better than those who were not (the incidental groups — A & C), regardless of level of processing.
- Second, if depth of processing is important, then those who rated the pleasantness of words (the two deep groups — A & B) should recall more than those who did E/G checking (the shallow groups — C & D), regardless if warned about the recall test.
- Third, if both level of processing and intent to learn are important, then the group that did pleasantness ratings and was warned about the recall test (the deep/intentional group — Group B) should do better than the other three conditions.

Which of the following is the MOST important ingredient for successful learning?

1. The intention and desire to learn
2. Paying close attention to the material as you study
3. Learning in a way that matches your personal learning style
4. The time you spend studying
5. What you think about while studying

**Introductory Psychology Metacognition Activity Pre-Post**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>The intention and desire to learn</td>
<td>38%</td>
<td>30%</td>
</tr>
<tr>
<td>Paying close attention to the material as you study</td>
<td>28%</td>
<td>50%</td>
</tr>
<tr>
<td>Learning in a way that matches your personal learning style</td>
<td>91%</td>
<td>9%</td>
</tr>
<tr>
<td>The time you spend studying</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>What you think about while studying</td>
<td>20%</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Behavioral Neuroscience Metacognition Activity Pre-Post**

<table>
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<th>Ingredient</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>The intention and desire to learn</td>
<td>28%</td>
<td>23%</td>
</tr>
<tr>
<td>Paying close attention to the material as you study</td>
<td>17%</td>
<td>42%</td>
</tr>
<tr>
<td>Learning in a way that matches your personal learning style</td>
<td>45%</td>
<td>7%</td>
</tr>
<tr>
<td>The time you spend studying</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>What you think about while studying</td>
<td>29%</td>
<td>7%</td>
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student classroom responses after activity – not perfect but positive movement noted

"How to Get the Most Out of Studying"
by
Dr. Stephen L. Chew
Pre-Post Testing

- print or online study guides
- students complete or submit assessments prior to class period in which material will be addressed
- instructor can modify plan for current or subsequent classes
- data for modifying student learning strategies
  - e.g., difference between completing with open book vs. retrieval practice

Comments?  
Questions?  
Suggestions?

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References and Resources


