FORMATIVE ASSESSMENT AND REVIEW STRATEGIES
P.I.E. WORKSHOP
March 23, 2017

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School of Information
By the end of this workshop, participants will be able to

1) Identify a formative assessments that will be most useful to improve feedback for instructors on their teaching and feedback for students on their learning

1) Develop strategies that can be used to promote student metacognition so that students can be more effective at reviewing for summative assessments
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FORMATIVE SUMMATIVE

WHEN THE CHEF TASTES THE SOUP

WHEN THE GUESTS TASTE THE SOUP

FROM STEVE WHEELER’S BLOG “THE AFL TRUTH ABOUT ASSESSMENT”
FORMATIVE ASSESSMENT

➔ Identify when students are ready for you to move on
➔ Reinforce lesson for struggling students
➔ Modify your content or instruction style
➔ Not “Drill Overload”
What are examples of assessment tools you can use in the classroom?
What are examples of assessment tools you can use in the classroom?

- Respond at PollEv.com/anandumu986
- Text ANANDUMU986 to 22333 once to join, then text your message
- Answers to this poll are anonymous
HONE YOUR TEACHING STYLE
“A [purpose of assessments] is to provide teachers and students with feedback. The teachers can use the feedback to revise their classroom practices, and the students can use the feedback to monitor their own learning. This purpose [is called] formative assessment.”

What are your concerns about using formative assessment in your classroom?
● Works best for STEM or enumerated tests
● Works best for face-to-face courses
● Takes away from teaching time
● Too time-consuming to be worthwhile
FACILITATE ACTIVE LEARNING

- discourage straying or lurking behavior
- create a student-centered classroom
- foster a “Community of Practice” (Lave & Wenger, 1996)
A FEW FORMATIVE ASSESSMENT TOOLS:

- Poll Everywhere
- Role Play or Demonstrate
- Break out (Gallery Walks or Field Trips)
<table>
<thead>
<tr>
<th></th>
<th>Needs Improvement</th>
<th>Fair</th>
<th>Good</th>
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<tbody>
<tr>
<td><strong>Main Point</strong> (10 pts)</td>
<td>Attempt to define the issue in the focal paper, but the stated issue is misidentified or poorly supported with evidence from the focal paper.</td>
<td>Attempt to explain the relevance of the paper to the larger scientific community, but is missing evidence and context from the field of marine biology, ecology, and/or evolution to demonstrate relevance.</td>
<td>Some explanation of the relevance of the paper to the larger scientific community, but needs additional evidence from the article or the fields of marine biology, ecology, and/or evolution to demonstrate the relevance.</td>
<td>Clear explanation of the relevance of the paper to the larger scientific community supported with evidence from the article and a clear connection to the field of marine biology, ecology, and/or evolution.</td>
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<td>Methods (10 pts)</td>
<td>Misidentification or failure to identify critical evidence that was collected to answer the issue/question, so it is unclear how the methods are suited to the main point of the focal paper.</td>
<td>Identification of most of the evidence that was collected to answer the question, but may be missing a component necessary to evaluate the issue/question either because of a poor transition or missing content.</td>
<td>Identification of evidence that was collected to answer the question or issue and includes a transition from the main point to the methods, but additional information is needed to help the reader understand why this evidence is well suited to the issue/question.</td>
<td>Identification of evidence that was collected to answer the question or issue. The transition from the main point to the methods helps the reader understand why this evidence is well suited to the issue/question.</td>
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<td>Results (10 pts)</td>
<td>Results are stated, but reader has to make significant effort to understand the results because of organization and/or content.</td>
<td>Results are stated, but are difficult to follow because of unnecessary detail which detracts from the main result or makes it difficult to follow.</td>
<td>Results are stated, but may lack clarity at times because they include unnecessary detail, not enough detail, or because appropriate statistical evidence is missing.</td>
<td>Results are clearly stated and supported by statistical evidence (with appropriate units) and writing focuses on TRENDS.</td>
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Regular Assignment

Marine Biology "Regular" Assignment

Attached Files:
- 2017 Mar Bio Essay Regular.doc (46.5 KB)
- 2017 Mar Bio Regular Essay Rubric TA Version.docx (137.87 KB)
- Almany et al. 2007 Science fish and marine reserves.pdf (269.937 KB)
- Costello et al. 2008 Catch shares and fisheries.pdf (257.573 KB)

REGULAR Marine Biology Draft

A complete draft must be submitted by April 4 at 2:00PM. To earn full credit for the draft, you must submit a paper on time with a good-faith effort (all elements are fully completed to the best of your abilities). Partial submissions with missing elements will not earn full credit because they detract from the peer review process.

>> View/Complete

REGULAR Marine Biology Draft – PeerMark Assignment 1

Availability: Item is not available. It will be available after Apr 5, 2017 12:01 AM.
Peer reviews must be completed by April 11 at 2:00PM. To earn full credit for the peer review, you must review the 3 papers assigned to you on time with a good-faith effort. Peer reviews that do not meet those criteria detract from the peer review process and will not earn full credit.

>> View/Complete
Goals for Productive Discussions and Nine Talk Moves

Goal: Individual students share, expand and clarify their own thinking

1. Time to Think:
   - Partner Talk
   - Writing as Think Time
   - Wait Time

2. Say More:
   - “Can you say more about that?”
   - “What do you mean by that?”
   - “Can you give an example?”

3. So, Are You Saying...?:
   - “So, let me see if I’ve got what you’re saying. Are you saying...?”
   - (always leaving space for the original student to agree or disagree and say more)

Goal: Students listen carefully to one another

4. Who Can Rephrase or Repeat?
   - “Who can repeat what Javon just said or put it into their own words?”
   - (After a partner talk) “What did your partner say?”

Goal: Students deepen their reasoning

5. Asking for Evidence or Reasoning:
   - “Why do you think that?”
   - “What’s your evidence?”
   - “How did you arrive at that conclusion?”
   - “Is there anything in the text that made you think that?”

6. Challenge or Counterexample:
   - “Does it always work that way?”
   - “How does that idea square with Sonia’s example?”
   - “What if it had been a copper cube instead?”

Goal: Students think with others

7. Agree/Disagree and Why:
   - “Do you agree/disagree? (And why?)”
   - “Are you saying the same thing as Jelena or something different, and if it’s different, how is it different?”
   - “What do people think about what Vannie said?”
   - “Does anyone want to respond to that idea?”

8. Add On:
   - “Who can add onto the idea that Jamal is building?”
   - “Can anyone take that suggestion and push it a little further?”

9. Explaining What Someone Else Means:
   - “Who can explain what Aisha means when she says that?”
   - “Who thinks they could explain in their words why Simon came up with that answer?”
   - “Why do you think he said that?”

Discussion
Exit Ticket

1. Why are flowers and fruits advantageous for angiosperms? Why are these an improvement over having only seeds and pollen?

2. Identify the mode of seed dispersal for the following seeds and explain how its characteristics aid this type of dispersal.

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[Images of seeds and flowers]
1. What’s the advantage of fruits and flowers?

• Exemplary Student response:
  
  Fruits – animals can be the mode for seed dispersal
  Flowers – attract pollinators with colors and scents
  
  These are improvements because with gymnosperms, a lot of pollen has to be produced in hopes of reaching the correct plant by wind. Now animals can assist in pollination.

2. Forcible discharge (in video only)

https://www.youtube.com/watch?v=Nslojj4PzAo
Exit Ticket #1

Which formative assessment strategy do you use or plan to use in your classroom and why?
BREAK
By the end of this workshop, participants will be able to:

1) Identify a formative assessments that will be most useful to improve feedback for instructors on their teaching and feedback for students on their learning.

1) Develop strategies that can be used to promote student metacognition so that students can be more effective at reviewing for summative assessments.
For which task would you work harder?

a. Make an A on the test
b. Teach the material to the class
But I studied for the exam for hours! I re-read my notes 10 times and I know EVERYTHING on the test! I don’t understand why I didn’t do well!
“Students who may be failing our courses miserably are not failing because they are not capable; they are failing because they don’t have strategies to successfully manage the information.”

–Saundra Y. McGuire
Sort the traits as r or K life history strategy

- **Mortality**
  - Variable, unpredictable
  - Constant, predictable

- **Population size**
  - Variable
  - Constant

- **Length of life**
  - Long
  - Short

- **Reproduction**
  - Early reproduction
  - Delayed reproduction

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Bloom’s Taxonomy

Remember
 Recall facts and basic concepts
define, duplicate, list, memorize, repeat, state

Understand
 Explain ideas or concepts
classify, describe, discuss, explain, identify, locate, recognize, report, select, translate

Apply
 Use information in new situations
execute, implement, solve, use, demonstrate, interpret, operate, schedule, sketch

Analyze
 Draw connections among ideas
differentiate, organize, relate, compare, contrast, distinguish, examine, experiment, question, test

Evaluate
 Justify a stand or decision
appraise, argue, defend, judge, select, support, value, critique, weigh

Create
 Produce new or original work
design, assemble, construct, conjecture, develop, formulate, author, investigate
Metacognition: intentional thinking about how you think and learn

Cognition: your thinking activities and processes

- I am figuring out...
- What is the assignment asking me to do?
- It reminds me of...
- What do I already know about this topic?
- I am wondering...
- What are the steps that I need to follow here?
- Where did I get stuck when trying to solve this problem?
What strategies could you use to develop metacognitive skills in your students to help them review material more effectively?
Vertebrates

Chondrichthyes (cartilaginous fishes)
- placoid, tooth-like scales
- no operculum, they need to swim to pass H2O over gills, so most sharks are constantly moving

Osteichthyes (bony fishes)
- ctenoid/cycloid scales
- heavier, rougher tissues
- these have an operculum, can open to allow water to pass over gills

Reptilia (shells)
- swim bladder to regulate buoyancy

Aves (Birds)
- Both have a way to keep warm in the water
- green sea turtles and manatees are both ecologically important for grazing seagrass
- grazing helps prevent shading & prevents disease

Mammalia

Graphic Organizers
OTHER STRATEGIES

● Socrative
● Kahoot!
● Student-Generated Review Sheet
1. Any illegal act involving a computer is a __________
   Answer: Cyber Crime
   Contributor: J.Q.

2. Which of the following is NOT a type of malware?
   a. Virus
   b. Trojan Horse
   c. Rootkit
   d. Worm
   e. Hacker
   Answer: e. Hacker
   Contributor: T.M.

3. “Act only according to that maxim whereby you can at the same time will that it should become a universal law without contradiction” is the first formulation of _______ _______ categorical imperative.
   Answer: Deontological ethics
   Contributor: J.S.

4. Dr. Ho explained that there are three pieces of identification data that can be used to identify someone even if you know nothing else about the person. Cross out the items that do NOT belong in this set of three items.
   a. Party affiliation
   b. Date of birth
   c. Gender
   d. Ethnicity
   e. Zip code
   f. County
   Answer: B., C., and E.
   Contributor: Y.E.
GAMIFY YOUR TEST REVIEW

**Make Your Own Bingo!**

- Make your own bingo cards
- Cards to print and play with friends
- It's quick, easy, and free

**Classroom Jeopardy!**

- States and Capitals
- Basic Math
- Computer Info
- History
- Science

- 10
- 20
- 30
- 40
- 50

**Final Question**
Let’s practice!
1. Go to kahoot.it

2. Enter PIN
   9790697
Create a new kahoot

- Quiz: Introduce, review and reward
- Jumble: Brand NEW game
- Discussion: Initiate and facilitate debate
- Survey: Gather opinion and insight
How will you develop metacognitive skills in your students?

What concerns do you still have about implementing formative assessment or review strategies in your classroom?