How Do I Write the “Best” Multiple-Choice Questions for My Students?

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A Little About Me & Today’s Presentation

Intro to Psychology :: Applied Statistics
A Little About Me

...Now a Little About You

- In what area do you teach?
  
  A. Arts or Humanities
  B. Natural or Social Sciences
  C. Engineering
  D. Education
  E. Other
A. Not at all; I haven’t seen them in action.
B. Not at all; I’ve been exposed to them somewhat.
C. I’ve used them a little bit.
D. I use them a lot.
Others’ Viewpoints:
Intro-Level Students & Multiple-Choice Tests

“Oh, no..we can’t expect that level of thinking.”

“Definitions are all we can expect at an intro level.”

“M-C tests can only really test memorization.”

I remain unconvinced
Learning Goals

1. Identify new approaches to writing higher-level multiple-choice questions

2. Identify ways that clickers and peer instruction can assess and scaffold student thinking

3. Develop an action plan on how to write the “best” multiple-choice questions for your courses
Preparing to Write Questions:
Reflect & Ask Yourself…

1. What *are* my learning objectives?

2. What do I *envision* my students being able to do when they leave my classroom?

3. Do the questions I have *align* with these objectives and my vision?
Preparing to Write Questions: Reflect & Ask Yourself...

How Does This Course Fit in the Bigger Picture of Your Education?
This introductory course was designed in consideration of UD’s General Education Goals for Success and the American Psychological Association (APA) Guidelines for the Psychology Major. I have highlighted the goals that are most tied to the specific course objectives stated below.

- **UD General Education Goals for Success**
  1. Attain effective skills in (a) oral and (b) written communication, (c) quantitative reasoning, and (d) the use of information technology.
  2. **Learn to think critically to solve problems.**
  3. Be able to work and learn both independently and collaboratively.
  4. **Engage questions of ethics and recognize responsibilities to self, community, and society at large.**
  5. Understand the diverse ways of thinking that underlie the search for knowledge in the arts, humanities, sciences and social sciences.
  6. **Develop the intellectual curiosity, confidence, and engagement that will lead to lifelong learning.**
  7. **Develop the ability to integrate academic knowledge with experiences that extend the boundaries of the classroom.**
  8. Expand understanding and appreciation of human creativity and diverse forms of aesthetic and intellectual expression.
  9. Understand the foundations of United States society including the significance of its cultural diversity.
  10. Develop an international perspective in order to live and work effectively in an increasingly global society.

- **APA Guidelines for the Undergraduate Psychology Major**
  1. Knowledge Base in Psychology
  2. **Scientific Inquiry and Critical Thinking**
  3. Ethics & Social Responsibility in a Diverse World
  4. Communication
  5. Professional Development
Preparing to Write Questions:
Reflect & Ask Yourself…

**COURSE OBJECTIVES**

All readings, assignments, and in-class exercises are designed to help your learning of the following goals. By the end of the course, students will be able to:

1. describe and apply the major approaches, theories, and research of the main focal areas of psychology and connect them to students’ everyday lives
2. differentiate between various research methods used in psychological science.
3. interpret psychological research across a broad range of research domains.
4. critically evaluate the strengths and limitations of research designs and research.
When explaining other people’s behaviors, there is a tendency to overemphasize personality and underestimate the situation is referred to as:

A. fundamental attribution error.
B. actor-observer discrepancy.
C. self-serving bias.
D. situational attribution.

Preparing to Write Questions: Reflect & Ask Yourself…

Learning Objectives

Vision for my Students
This is a recent headline from MSNBC.com based off the comments made by the politician, Paul Ryan. What psychological concept does this headline best represent?

A. Fundamental attribution error
B. Actor-Observer discrepancy
C. Self-serving bias
D. Situational attribution
I just told a story about a neurologist who was working with a patient who was unable to form new memories. One day, the neurologist placed a tack in his hand when he shook her hand. The next time he met with the patient, she indicated that she did not know him yet hesitated to shake his hand.

The brain region thought to important for understanding this patient’s reaction is the:

A. cerebellum.
B. amygdala.
C. prefrontal cortex.
D. hippocampus.
One strength of studying individuals like H.M. (from the textbook) and Clive Wearing (from the class video) is that researchers can:

A. use the findings to form theories about the role of certain brain areas for memory storage.

B. generalize from his results to make conclusions about memory acquisition for all adult males.

C. conclude which portions of the brain cause memory acquisition and storage.

D. all of the above
The following questions are based on the scenario presented below:

Refer to the graph below depicting results from a study about childhood maltreatment, the short and long pairings of the 5-HTTLPR gene, and risk for a depressive episode.
1. The results of this study support the perspective of the diathesis-stress model of psychological disorders, which would state that:
   A. we can have predispositions to disorders without developing the disorder.
   B. if stress is sufficiently intense, anyone can develop a disorder.
   C. stress is the primary cause of disorders.

2. Based on this graph, what is the diathesis?
   A. long allele
   B. short allele
   C. childhood maltreatment
   D. major depressive disorder

3. Which group has the GREATEST risk of developing a major depressive episode?
   A. Those with the short allele
   B. Those who experienced severe maltreatment
   C. Those with the short allele and experienced severe maltreatment
   D. Those with the long allele and experienced severe maltreatment
Congratulations! You (Maybe) Have Now Decided to Use Challenging Questions!

“But I only have to recognize words to do well in other classes?”

“Why can’t you just give us definitions like my other classes?”

“I am good at memorizing. It’s not possible to study for application tests like yours.”
Think about your classes where you use M-C exam questions.

What do you primarily use to scaffold their thinking about the content and M-C questions?

A. Lecture
B. Peer Instruction
C. Clickers
D. Homework Assignments
E. Textbook
Scaffolding Students Toward The Challenge

Peer Instruction Model by Eric Mazur
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Scaffolding Students Toward The Challenge

Paul Ryan blames poverty on lack of work ethic in inner cities

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Challenges To Integrating Clickers & Peer Instruction

A. Writing good questions
B. Getting students to engage with the question
C. Getting students to share their answers with the whole class / the same students always share
D. It takes too long for me to learn to do this
E. I have a lot of content to cover – takes too much class time
But the Payoff Can Be So Very Rewarding…

“I appreciate you including the clickers and the media assignments to draw connections. I’m thinking more about the way I think about and study for my other classes.”

“Thank you for making the class so enjoyable and challenging at the same time. I really have learned a lot.”
But the Payoff Can Be So Very Rewarding...

“I have become nerdier...I am constantly bringing up topics from class in conversations with friends or noticing them in TV shows.”
Action Plan!

- Write down how you might implement ideas learned from this presentation
  
  - What is your vision of a student?
  - Reflect on if your current questions align with this vision.
  - How might you develop higher-level questions for your course?
Thank You!

Any questions? aly@udel.edu