Activity: Top 6 Teaching Myths

Activity Type: Small group discussion

Goal: To stop bad teaching habits before they start

Abstract:

<table>
<thead>
<tr>
<th>Pre-class prep</th>
<th>5 min</th>
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<tbody>
<tr>
<td>Pass out list. Have small groups write out why each is a myth.</td>
<td>5 min</td>
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<td>Discuss misconceptions as a large group.</td>
<td>20 min</td>
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Time needed: 30 minutes
Materials needed: Copies of myth handout. Optional – index cards with question numbers written on them (ex: #1, 3 on one card; #2, 4 on another card).

During class:
(2 min) Hi everyone! I’m glad you are here. Several of you have met with your classes already. Some are just about to. Your Head TAs have ideas for your discussion sections this week. But first, I’m going to talk about some common misconceptions that new discussion leaders have.

Please get into pairs and pick an index card from this stack. I’m going to pass out this list of myths, and you are going to work on the questions indicated on your index card. I want you to talk about why grad students might think this way, what’s wrong with thinking this way, and what should be done instead. Okay? Go ahead and move your chairs around. Here we go.

(5 min) (Walk around groups) Do you have any questions? How is it going? Okay? Have you worked through your questions? Okay, let’s go over your answers.

(20 min) (Write summary word on board as you go along).

1. Okay, the first scenario is powerpoint in discussion. Why is this a problem? What is a better solution?
   Education research has shown over and over that students learn by struggling to fit new information on their current understanding on a topic. Discussion is a supervised place to help them struggle with the material and learn how to learn. Students MUST be forced to talk, argue, draw, write, and problem-solve in order to learn.

2. Next is worksheets and group sizes. I’ve seen this happen – and its opposite – groups of three, but a worksheet with 10 questions. What’s wrong with groups of 10 people? What’s wrong with 10 questions? What’s a good solution?
   The problem with having groups larger than 3 is that the quiet or unsure students will not engage the material, and will be bored or afraid. Small groups prevent hiding. Worksheets with more than 4 questions cannot be covered in 50 minutes if you are asking good, upper-Bloom’s-level questions. A solution is to assign multiple groups the same question, and then have them compare their answers (or vote on the best answer) before going over the answers.
3. This one is more subtle. Why is a crossword puzzle a problem?
   There are actually two reasons. 1) making a crossword puzzle takes a long time, even
   with the online software to help. 2) it keeps the Bloom’s level of learning at a basic
   “knowledge” level and doesn’t force students to think more critically about the concepts.
   If you feel students need the help with vocabulary, consider having them “build” the
   crossword as a discussion activity, where they have to define the vocabulary words
   without using their notes or textbook and turn in the definitions to you.

4. Next is a lack of participation. This can be seen by students not wanting to answer a
   question. But it can also be seen in an unwillingness to form groups, or unwillingness to
   go to the board. What do you think is the real reason why students don’t want to do these
   things? What is a better solution than giving up?
   Students, like the rest of us, are masters at expending the minimum amount of energy
   needed to accomplish the job. Working in groups, or volunteering an answer, or going to
   the board represents extra work and risk of failure. If you feel your activity will result in
   improved learning, than tell the students that is why you are doing it, and then make
   them. I find that telling them, “I can wait until someone answers. We can go long if we
   need to” or “You don’t seem to be part of a group. Which group are you in?” or “Are
   you three a group? Great! Move your desks around so you are actually facing each
   other” are all helpful phrases.

5. Next is grading quizzes while students are working. Why is this a problem?
   If your worksheet questions are of the appropriate difficulty, students will be unable to
   easily answer them. Your presence amongst the groups, encouraging them and giving
   advice, will give them the confidence that they are able to figure out the answer. If you
   aren’t facilitating, then students will get stuck and wander into unrelated conversations
   and you won’t notice. Similarly, you need to watch students when you give a quiz or
   they will be tempted to cheat, or you won’t notice that they are finished.

6. Why are student presentations a problem?
   While grilling students while they present data might be considered a good way to train
   graduate students, it does not help undergraduates learn biology. Remove the fear
   component of student presentations by:
   a. Having students go up to present in pairs
   b. Say supportive things about the parts they get correct and gently fix the parts that
      aren’t
   c. Quiz the audience rather than the presenters. It keeps the audience alert, which is
      another problem with student presentations.

   Note: The answers here assume both you and the TAs are familiar with Bloom’s Levels of
   questions. If this area is not familiar to you, consider this article:

   Crowe et al., 2008 Biology in Bloom: Implementing Bloom's Taxonomy to Enhance Student
   http://www.lifescied.org/cgi/content/full/7/4/368
### Top Six Myths about Teaching Discussions
For each myth, discuss why it is a problem, and what would be a better strategy.

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<thead>
<tr>
<th>Myth</th>
<th>Problem and Strategy</th>
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<tbody>
<tr>
<td>1. I’ve made a very thorough Powerpoint show that covers all the main points of the past three lectures. I’m going to present this in discussion.</td>
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<td>2. I have three questions on my worksheet, and thirty students in my class. Therefore I will make three groups of 10 students.</td>
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<tr>
<td>3. I made a crossword puzzle with all the past week’s vocabulary words. I’m going to use this as an activity in discussion.</td>
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<td>4. I asked my students a question in discussion. Nobody answered. I guess I should stop asking them questions.</td>
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<td>5. I’ve got students working on a good worksheet question. I’ll grade some quizzes while they are busy.</td>
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<td>6. Students need to learn presentation skills. I will assign students to stand at the front of the room and I’ll quiz them on lecture material.</td>
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