Activity: Group Quizzes

Activity Type: Small group discussion

Goals:
- TAs will be challenged by difficult lecture material
- TAs will experience how a “surprise” group retake deepens learning
- TAs will be able to successfully give a group quiz of their own making in their discussion

Abstract:

<table>
<thead>
<tr>
<th>Pre-class prep (designing the quiz)</th>
<th>10-60 min</th>
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</thead>
<tbody>
<tr>
<td>First quiz</td>
<td>10 min</td>
</tr>
<tr>
<td>Second “group” quiz</td>
<td>10 min</td>
</tr>
<tr>
<td>Debriefing</td>
<td>10 min</td>
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</tbody>
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Time needed: 30 minutes
Materials needed:
- Enough copies of the “individual” quiz and “notes” quiz for each TA to get one, and enough copies of the “group” quiz for each group of 2-3 to get one. Exam questions should fit on one side of the page, and should be examples of old exam questions that are commonly missed by students. Questions need to be difficult. Time is tight, so limit this quiz to 4-5 questions.
  - “individual” quiz has normal formatting, room for one name
  - “group” quiz has normal formatting, three lines total for student names
  - “notes” quiz has an extra-large right margin and smaller text for the questions to allow students to take notes.
- One quiz answer key for own use

During class:
(10 min) “Welcome to today’s training meeting! For our first half of the meeting I’m going to teach you how to do discussion quizzes. I’ve got a short quiz to give you that covers some material we are going over soon in lecture (or have just gone over in lecture).”
(Start passing out one “individual” quiz to each person)
“So turn yourself so you can’t see your neighbor, and take about one minute per question to answer these. Begin!” (walk around the room and note questions commonly marked wrong)
(As time ends) “Finish up…. Okay, hand in the quizzes, and be sure to write your name on the top.” (flip through the quizzes, note errors).

(10 min) “I can see from your responses that you weren’t all very comfortable with these questions, so now we are going to do a group version of the quiz. You still cannot use your book or notes, but you will get into groups of 2 or three and you will discuss the questions. Get into groups now, and I will pass out a single copy of the quiz for your group to answer.”
(Again, walk around and note how TAs are answering. Note the 2 or 3 still missed. Prep the beginnings of a diagram or Punnett square you might need to solve the problem on the board. If a group finishes early, you can assign them to go to the board to explain a question that they answered correctly.)

(10 min). Good job everyone! A lot of you changed your answers. Can you give me some feedback about what this process of group-quizzing was like for you from the point of view of a “student?”

Leading questions if needed:
- Did the difficulty of the questions make you nervous at first?
- Were you glad to hear you would be taking the quiz again?
- How did this format affect your engagement with the material, or how hard you tried to answer the questions?

(As time permits, go over missed answers. The TAs will very much want these, so schedule accordingly)

The sample quiz has questions that TAs very OFTEN have problems with, specifically which division in meiosis changes ploidy, and the difference between incomplete and co-dominance.

Helpful hints for giving group quizzes:
- The first rule of group quizzes is don’t tell the students it’s a group quiz… until after they have turned in the individual one.
- When you pass out the group quiz to “real” students, tell them their quiz score will be the average of the individual and the group quizzes OR that their score will be the group quiz score (which should be higher).
QUIZ

1) Which of the following is TRUE at the conclusion of meiosis I in humans?
   a. Homologous chromosomes are separated.
   b. The chromosome number per cell is conserved.
   c. Sister chromatids are separated.
   d. Chromosome number falls from 92 to 46
   e. The daughter cells are diploid

2) In cats, black fur color is caused by an X-linked allele; the other allele at this locus causes orange color. The heterozygote is tortoiseshell. What kinds of offspring would you expect from the cross of a black female and an orange male?
   a. Tortoiseshell females; tortoiseshell males
   b. Black females; orange males
   c. Orange females; orange males
   d. Tortoiseshell females; black males
   e. Orange females; black males

3) Pink snapdragon flowers, the result of a cross between red and white flowers, are an example of incomplete dominance because
   a) the red allele is the wild-type
   b) red pigment protein is expressed at low levels
   c) heterozygotes express a pink protein
   d) 50% of the progeny are heterozygotes
   e) both red and white pigments are produced

4) In the following pedigree, Frank has inherited the gene for a sex-linked dominant trait from his mother. Please indicate the individuals who exhibit the phenotype of the trait in the pedigree below by coloring in the appropriate shapes:

   ![Pedigree Diagram]

   Frank
GROUP QUIZ

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   Frank

   [Diagram of the pedigree]
NOTES

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   [Pedigree diagram]
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