

VIEWS FROM THE SUMMIT

BYU-Idaho Faculty Association

The Spori Summit, a faculty retreat dedicated to sharing and improving pedagogy, is sponsored by the Faculty Association during the Fall and Winter semesters. At each Summit participants are asked to bring one teaching success and one teaching challenge. The following are a few of the successful teaching techniques shared during the Fall 2003 Summit at Quickwater Ranch near Victor, Idaho.

MINUTE CARDS

Kathy Cook—Home and Family Education

This is an idea I learned at a “brown bag lunch.” Students often have questions or comments they would like to have addressed, but they do not communicate them in class. This adaptation of the minute card opens two-way communication in larger classes.

At the end of class students are invited to take a moment to write on a 3x5 card the following items:

- Questions they still have that they would like to have answered
- The most significant thing they learned that day
- Comments they wish to make about the class

At the beginning of the next class, I spend five minutes responding to the questions/comments from the cards.

The students respond well to the minute-card discussion. Often the questions offer a chance to model how to think through a problem. Sometimes the question is turned over to the class, and the students are asked to respond to it. This technique helps open two-way communication.

THE CONCENTRATION GAME

Candy Miller—Department of Business Management

At the beginning of each class each semester, I ask the students to complete the Learning Characteristics Scale that the Reading Center designed. The students then learn if they are Auditory, Visual, or Kinesthetic learners. On the back of the Scale is a list of learning strategies for each type of learner.

One semester a number of students approached me and asked for more in-class discussions catered to the Visual Learner. They felt many of their teachers were not teaching to their preferred learning style. So

I devised this activity for visual learners, and they said it worked. You can use it to help students do any of the following:

- Learn vocabulary
- Apply principles to specific situations
- Determine asset or liability
- Label parts of speech
- Classify writing techniques or biological terms
- Identify characters in the scriptures with principles of the gospel

Set Up

1. Use plastic page protectors and on bright colored paper number (e.g. 1 to 32) twice the number of terms you have or the exact number of matches you would like to make.
2. On the back side of the number in that sheet protector, insert a sheet of paper that has the printed question. Use a large print so all class members can read the question when it is chosen. Put questions on the back of half of the numbers. Put answers on the back of the other half of the numbers.
3. Go early to class and tape them to the white board.
4. Tell the students that the first half of the questions are situations or definitions and the last half are vocabulary terms.
5. Divide the class into two teams.
6. Take turns letting a Team 1 member trying to make a match and then a Team 2 member. (You must determine at the beginning of the game if you allow other team members to help or if the students can use their text or their notes.)
7. If a student successfully makes a match, that student would then have the opportunity to try to make another match in the same turn.
8. Give team points or treats.
9. The teacher has an answer key page with the number of the questions and matching number of corresponding answers. (e.g., question 1 matches answer 29).

You can use this same concept to design a Jeopardy Game, a \$10,000 Pyramid Game, or a Family Feud Game.

REVITALIZING CLASSROOM DISCUSSION

Jennifer King—Department of English

I use this approach often in my classes as one way to discuss an idea or a text. I prepare questions about the idea or text and print each question on a numbered index card. In class we move desks into a circle, leaving

four desks in a quad in the middle. I call for four volunteers to fill the centered desks, declare one of the four the “lead desk” and put the stack of question index cards on it, and then I explain the rules. The occupant of the “lead desk” reads the first question loud enough for everyone in the room to hear, and the four seated at the middle four desks begin discussing the question. Only the people seated in the four desks are allowed to talk. A member of the outside circle can “tag out” a member of the inner circle and take his/her place only after the person in the inner circle has made a comment.

Especially after my encouragement that this activity is much more fun if they keep it moving, many classes will run with it. Some require extra incentive like the formal awarding of participation points. I know of a teacher who put the day’s roll in the middle, and students had to sit in the middle to mark their name for the day.

I find that in a class-wide discussion, a few students tend to dominate. This two-circles form of discussion (some call it “the fishbowl”) still leaves a few students opting out, but I find that more students will participate. If the student will take courage to step into the ring, he or she will most certainly say *something*, and that allows the class to hear the perspectives of some of its otherwise more quiet members.

LEARNING NAMES TO CREATE COMMUNITY IN THE CLASSROOM

David L. Ward—Department of English

I use this teaching technique in my writing classes and in my C. S. Lewis classes. (In my writing classes I have 25 students per class. In my Lewis classes I average 36 students per class.) The teaching technique I’ve found essential to working toward genuine community in the classroom is learning student names. I do this by arranging my students alphabetically by first names, a technique I’ve borrowed from Scott Samuelson. By doing this, I’m not the only one who learns the students’ names. My students learn each others’ names as well. This establishes a climate in the classroom in which students feel more disposed to become teachers and learners, sharing their thoughts, responding to thoughts shared by others.

1. Give students 5-7 minutes to arrange themselves alphabetically by first name in an order prearranged by the teacher. (Starting with left side of the room, front of the class etc.)
2. Invite the students to share their names slowly. Go completely around the room without stopping.
3. Tell students that you will ask four or five of the students to repeat their names. At the end of this, you will invite someone in the

- room to repeat these names. (Go over these first five three or four times.)
4. Add to these students, five more students. Choose someone from the class to repeat all ten students' names.
 5. Instruct students that they can give intelligent hints to help the student who is trying to repeat the names. (Example: Brett may say that his name is like a woman's hair clip. Sometimes even dumb clues work: "My name sounds like 'oshua' except it begins with a 'j'.")
 6. Continue throughout the class in this manner, repeating groups of names so you can remember. Allow all students to take a turn.
 7. Invite some students to name the class in reverse order for fun. This is a challenge that students like to accept.
 8. Thereafter, at the beginning of each class, invite two or three students to introduce the class to the class.

Taking time to know student names allows a teacher and the students to refer to each other by name. It gives the teacher the option of calling upon students at will, inviting them to respond to each other's comments, or to initiate the discussion. Without knowing names, the discussions are stilted, pressed, awkward. Students hide behind anonymity. They don't listen as well, knowing that the teacher is less likely to call on them since he or she doesn't know student names. But taking time each class to refresh everyone's memory benefits everyone. Community among class members and teacher is renewed. With this renewal students are more inclined to respond to each other's ideas respectfully, feeling more confident to contribute to the discussion through sharing examples, posing additional possibilities, and asking more thoughtful questions.

ONE TOPIC, THREE DAYS

Steven Christenson—Department of Biology

Originally the students were having difficulty digesting the amount of material that was being presented to them in a single class period. I tried to develop a technique that would allow them to better prepare and more slowly digest the needed material.

At the end of each class period, I take 5-10 minutes to present an introduction to the next topic and give a reading assignment. In conjunction with that assignment, I post a series of study questions on Blackboard to help guide their reading. They then have the day between classes to read and review questions. The beginning of the next class is then devoted to a quiz, a question-and-answer period, or a group discussion on the topic that they are hopefully prepared for. In order to promote self-preparation, I sometimes develop a quiz that typically comes right from the study

guides. In one session it was obvious the students had not prepared well, so I had them arrange themselves into groups and gave them a time limit to help each other with the answers. There was suddenly a great deal of energy and interaction in the class. I also plan the quizzes to cover the major material I think is important. Then as we review the quiz I am covering the topic as well.

I think having the students organized into groups really helps interaction, and allowing them time to think and discuss the topic themselves allows them to become more vocal. I also noticed that there were more questions asked than normal.

PEER INSTRUCTION AND CONCEPTTESTS

Ryan Nielson—Department of Physics

I had a surprising experience with a large introductory physical science course. I noticed that the quizzes over the previous lecture and reading often *generated more interest and questions than the lecture itself*. I began exploring the idea of centering lectures around questions. However, rhetorical questions engage few students. Selecting individual students to answer in class engages only one and frightens many of the rest.

In the same class I experimented with a peer instruction technique. The reward was spectacular on my first attempt. The concept was “the direction of the acceleration of gravity.” I abruptly asked the students to explain to their neighbor a concept just discussed three different ways in the lecture. It required an uncomfortable two minutes or more of silence to convince them that I was serious about them talking among themselves.

I was curious about the effect of that first experiment. So, I used the same multiple choice question to test both the “experimental” introductory class and a “control” calculus-based physics class. The introductory physical science students *skunked* the calculus-based physics students. Almost 80 percent of the introductory class answered correctly compared to some 60 percent of the advanced physics students. These were exciting results. Then the novelty wore off. Most of the physical science students again slipped back into a passive silence. How could I enforce participation and thinking?

I found an intriguing alternative at a meeting of the Pacific Northwest Association of College Physics teachers (PNACP). Eric Mazur, a Harvard instructor, was invited to present an idea that merges both peer instruction and interactive quizzing. He begins his class with a quiz over the assigned reading to encourage proper preparation. Then, with lecture and demonstration he presents a foundational concept or topic that is traditionally tough. This is followed by a multiple-choice ConcepTest

question to examine their understanding. *Each student* must respond by entering it into his or her calculator, which are wired to the console, giving immediate feedback. (I have them respond by “playing Olympic judges.” They hold up a card with the number of their answer. Stephen Turcotte is experimenting this term with wands that his students purchase and use for instant responses in class.)

He similarly polls the students’ confidence in the answer. If most have the wrong answer, he lectures or demonstrates from a different tack. Otherwise, they are asked to “convince their neighbors” for two minutes (Peer Instruction). Students are then asked to signal their new answers and confidence. Four to six concepts are handled this way in a 90-minute lecture. He emphasizes that at least some exam questions must be of the same style and on the same subjects for the discussion to remain credible and meaningful for students.

Let me pose an example from my class. We first discuss the difference between velocity and acceleration by concept and math. As a litmus test I propose that one difference is that velocity is easy to see in someone else but *hard to feel*. Acceleration, on the other hand is hard to see in others, but *easy to feel*; acceleration is the part of motion that we sense most easily.

Days later we discuss Newton’s 3rd Law: Every action force has an equal and opposite reaction force acting on another object. After several examples and demonstrations, I post the following pair of overhead or PowerPoint questions and ask the students to vote for the answer they think is right, and then they discuss their answers with their neighbors.

1. Oh no! A little fly heads North at 4.5 mph. It wanders out into the highway. It is hit by a semi truck heading South at 65 mph. Which one *feels* the greatest (magnitude) acceleration?

- A. the fly
- B. the truck
- C. they both have the same acceleration

2. Oh no! A little fly heads North at 4.5 mph. It wanders out into the highway. It is hit by a semi truck heading South at 65 mph. Which one has the greatest (magnitude) force applied to it by the collision?

- A. the fly
- B. the truck
- C. both have the same size force applied to them

By the time we reach the second question, many are confused. This is a considerable improvement over previous years in which they expressed great confidence in the wrong answer for the second question. (The correct answer is C.)

The strength of this method is that it can focus on specific trouble-spots even in large lectures. One can easily imagine that this would be useful in other disciplines, but I have no personal experience with its use outside of physics. However, Robyn Bergstrom and Candyce Miller have applied this approach in some of their courses. ☺

NOTES:

- 1 Mazur, Eric. *Peer Instruction: A User's Manual* (Upper Saddle River, New Jersey: Prentice Hall, 1997). Since I first learned about this, Prentice Hall has published a paperback book by Eric Mazur on the subject. The first 40-50 pages describe the approach, philosophy, and data to support it. The remaining pages contain sample questions and assessments. The library now has a copy.