Feature Book Review

Dynamic Classes and Eager Students

Review of: *Student Engagement Techniques: A Handbook for College Faculty*, by Elizabeth F. Barkley; 2010; 398 pp.; Jossey-Bass (San Francisco); ISBN-13: 978-0-470-28191-8

Reviewed by Laura L. Carruth, Neuroscience Institute, Georgia State University, Atlanta, GA 30303

Walking in to teach your first lecture as a newly minted assistant professor can be an intimidating experience. All eyes are on you, and the facial expressions of the students communicate emotions ranging from interest and excitement to boredom and sleepy disengagement. You know you want to hook your students on the class subject as soon as possible to encourage them to be more responsible for their own learning. One way to increase student engagement and motivation is to make use of a variety of techniques during the semester that encourage active learning. Elizabeth F. Barkley's *Student Engagement Techniques: A Handbook for College Faculty* is a book that professors at all levels of experience in the classroom will find useful. The techniques described in this book are appropriate for all disciplines, on any campus, and Dr. Barkley does an excellent job utilizing examples from a variety of different classes and student ability levels.

Dr. Barkley's intention is to encourage educators to move from the traditional mode ("lecturing" while "students listen," followed by "testing") to a more dynamic, learning-centered approach in the classroom. The goals of this handbook are to foster effective teaching in the college classroom by providing explanations of 50 effective learning activities.

The book is organized into three accessible sections—"A Conceptual Framework for Understanding Student Engagement," followed by "Tips and Strategies," and then "Student Engagement Techniques (SETS)." In part 1, Dr. Barkley introduces the reader to the various techniques by first defining student engagement and how engagement relates to academic success. She provides a conceptual framework

for understanding and exploring student engagement and presents background information for teachers on the interaction of student motivation and active learning as a way to increase student engagement. She also provides a brief description of "What We Know from Neuroscience," which some readers may find is written on a far too elementary level, especially in comparison with the sections of the text focused on ways of empowering students to be partners in their own learning process. Part 2 includes 50 tips and strategies presented to build on the framework laid out in the first chapters of the book, and will be especially useful, since many were derived from the science education literature.

DOI: 10.1187/cbe.12-01-0015

Address correspondence to: Laura L. Carruth (lcarruth@gsu.edu).

© 2012 L. L. Carruth. CBE—Life Sciences Education © 2012 The American Society for Cell Biology. This article is distributed by The American Society for Cell Biology under license from the author(s). It is available to the public under an Attribution-Noncommercial-Share Alike 3.0 Unported Creative Commons License (<http://creativecommons.org/licenses/by-nc-sa/3.0>).

"ASCB®" and "The American Society for Cell Biology®" are registered trademarks of The American Society for Cell Biology.

Several of these tips will have the most impact when reviewed before the semester begins and incorporated into course planning.

Part 3 of the book is a description of SETS. This section is devoted to describing 50 SETS, which are organized into two main categories: “Techniques to Engage Students in Learning Course-Related Knowledge and Skills” and “Techniques for Developing Learner Attitudes, Values, and Self-Awareness.” SETS within either of these areas are further divided into helpful groupings that allow the reader to quickly identify a possible SET for use in the classroom based on the needs of the instructor and students. Some SETS in category I emphasize content knowledge and are excellent for use as reviews or mini-assessments (e.g., the SET on Focused Reading Notes or Team Jeopardy), while others concentrate on critical-thinking skills, writing, problem solving, or performance. Category II SETS are designed to foster positive learning attitudes and values, self-awareness, and study skills in students. For all 50 SETS, essential characteristics are provided that include primary mode (i.e., individual or collaborative), activity focus (i.e., writing, reading, discussing, etc.), duration of activity (single or multiple sessions), and online transferability (low through high, with some SETS designed to be used online). In addition, each SET description includes a purpose, step-by-step instructions, examples from a variety of different disciplines, online implementation, variations and extensions, observations and advice, and key resources.

There are several SETS particularly appropriate for use in higher education science classes. These include using a Background Knowledge Probe to determine the level at which new information needs to be presented. The probes are instructor-generated questionnaires that can be used at the beginning of a course or at any point when new material is presented and are appropriate for use in introductory science classes all the way up to more advanced courses. Artifacts is another science-friendly SET that suggests using models and visual representations of information paired with guiding questions to stimulate student interest in a topic. SETS designed to address analysis and critical thinking include Classify, in which students use features of items (such as specimens or pictures of animals) presented in class to

determine the classification and relatedness of the objects. Students can also identify component parts of an object (i.e., organs of an animal or organelles of a cell) and organize how the parts make the whole and influence classification. Others, like Team Jeopardy, are commonly used in classroom settings, but Dr. Barkley provides useful instructions that facilitate the success of this SET for student review. Team Concept Map is a SET that takes a commonly used educational tool, the concept map as a graphic organizer, and has students build it collaboratively. This is another SET that can be used in science classes of all types and levels. Several figures of sample team concept maps are provided to illustrate possible ways students can work together to organize information.

Six SETS are specifically designed to foster problem solving. Two examples include Think-Aloud-Pair-Problem Solving (TAPPS), in which students partner to take turns problem solving out loud to address both the process and the product, and Send-a-Problem, in which students working in groups are given problems to solve, after which they then send both the problem and the solution on to the next group for analysis and evaluation. Of the 50 SETS described in this handbook, many examples can easily be adapted for a variety of student educational levels.

One area of the book, the section that addresses online implementation, would have been more helpful had it been expanded. In this section, Dr. Barkley does provide some information on how to convert a classroom SET into an online activity, but with new social media options available and more classes involving classroom technology, a greater number of concrete examples would have been appreciated.

This handbook will be useful to educators with any level of experience in the classroom. It can provide guidance to new faculty and ways to refresh a stale course for faculty who want to update or enhance their classroom experiences. While some of the SETS are common sense—and you may be using them already—the help comes from the details about how to use the SETS more effectively and how to extend or vary different activities. Even if you do not have the time to appreciate the theory presented in the first sections of the book, the SET examples alone make this book valuable for novice and experienced educators alike.