Flipping the Classroom
With Screencasts

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Students in medical imaging programs must develop effective problem-solving skills to become successful technologists. Therefore, instructors must deliver highly technical information clearly and ensure that students can apply the facts to solve practical problems in clinical situations. Traditionally, instructors begin by lecturing about a topic that requires students to solve problems. Then, after providing an example, the instructor assigns additional problems for students to solve at home. Students usually are left on their own to figure out the solutions, and if their efforts are not effective, they might not have adequate resources to solve the problems by themselves. Students also might struggle with transferring factual knowledge to real-life problems. Students and instructors might want to spend more time in class working on strategies to solve difficult problems, but time constraints limit the instructor’s ability to stay focused on one content area for a prolonged period. A “flipped” classroom could offer a solution for instructors who want to maximize the use of class time.

The flipped classroom is an inverted approach in which the students’ homework is to view a recording of the lecture, and class time is used for active problem-solving activities with instructor guidance. Flipping the classroom allows instructors to gauge students’ understanding of the concepts and provide further instruction if they identify deficiencies in the students’ knowledge base. Instructors also can assess the types of mistakes students make to help prevent them from developing poor habits. Working together in the classroom allows students to practice solving increasingly difficult problems that vary in context. The flipped classroom is garnering significant attention for its potential to deliver a variety of benefits.

Flipping the Medical Imaging Classroom

The flipped classroom technique can be applied to numerous medical imaging topics requiring student problem-solving skills. The technique begins with an introductory screencast that students are assigned to watch prior to a class meeting. The term screencast refers to the video capture of an entire computer screen while software is in use, usually with accompanying audio narration. The screencast might be a recorded video or a slideshow presentation that introduces a topic and provides examples of the types of problems students might encounter. Instructors should limit the length of the screencast to 15 or 20 minutes to keep the content manageable and maintain students’ attention. Students can access the screencast via e-mail, the school’s course management system (eg, Blackboard, ANGEL, or Moodle), or a Web site, blog, or Web application. Posting the screencast to a course management system allows the instructor to track which students watched the recorded lesson.

Students must understand the importance of viewing the screencast prior to the scheduled class meeting to ensure that they are prepared to solve additional problems under the instructor’s supervision. During class time, students work individually or collaboratively...