

Team-Based Learning Enhances Long-Term Retention and Critical Thinking in an Undergraduate Microbial Physiology Course

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We used team-based learning to improve comprehension and critical thinking of students in an undergraduate microbial metabolism-physiology course. The course used well-known bacterial pathways to highlight themes of energy conservation and biodegradation. Prior to the introduction of team-based learning, student recall of this information was poor and students had difficulty extrapolating information to new organisms. Initially, individual and group quizzes were added to promote problem-solving and critical-thinking skills. This significantly improved student attitudes about the amount of information they learned and whether the instructor promoted critical thinking. However, retention of the material as judged by final examination scores was still poor. In the next year, two challenging projects were added to the course to complement the above themes: (i) postulating a pathway for the metabolism of a substrate by a bacterium, and (ii) modifying the current model for anaerobic sulfate reduction by incorporating recent genetic information. The inclusion of the team projects significantly improved final examination scores compared to the previous year without team projects. Overall, team-based learning with challenging projects improved the students' comprehension and retention of information, critical thinking, and attitudes about the course and focused student-instructor interactions on learning rather than grades.

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Teaching Creativity to Business Students: How Well Are We Doing?

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As calls for enhancing the ability of business students to think creatively and develop innovative goods and services have become universal, researchers in the area of creativity have expressed concerns that the U.S. educational system may not foster creative thinking. The authors' research is based on a sample of 442 undergraduate business students enrolled in marketing classes at two different universities. Students' creativity was assessed using a creativity scale that measured ways of thinking in six different areas. The authors compared creativity scores of different business majors in each of these six dimensions and found that contrary to earlier research findings, students in the quantitative business disciplines of accounting, finance, economics, and information systems outperformed other business majors in some categories of creative thinking. Specific recommendations are presented to include training in a greater variety of dimensions of creative thinking in the business curriculum.

Keywords: business students, creativity, creativity training, personality