MOLECULAR BIOLOGY ANIMATIONS AS A SUPPLEMENTAL RESOURCE

Jack D. Thatcher, Ph.D.
West Virginia School of Osteopathic Medicine, Lewisburg, WV, USA

Introduction: Computer animations are becoming more prevalent as textbook inclusions, websites and instructional CDs. How should these be incorporated into courses? At West Virginia School of Osteopathic Medicine a series of animated lessons for molecular biology have been composed as a supplemental resource for genetic courses. They were originally created as visual aids for lectures; however interactive controls and explanatory text have been incorporated, allowing students to use them for personal, self study tutorials. Each animation presents a complete, step by step lesson for a specific topic. The ultimate goal is to develop the animations into an instructional CD that can be generally distributed to higher education schools.

Study: The efficacy of the animations has been demonstrated (Thatcher, *JAOA* 2005; 106:9-14), however the previous study was conducted with subjects before they began their course work, so they had no vested interest in learning the material. Therefore, a follow up study has been conducted to test the animations as a supplemental resource for two ongoing courses, Developmental Genetics and Biochemistry. After taking a pre-test, students were provided with an instructional CD that automatically recorded how much time they devoted to each animation. They were instructed to spend as much or as little time with each animation as they wished. When the courses were over, they took a post test, filled out a questionnaire and turned in their usage log files. The results demonstrate that a substantial proportion of volunteers used the animations, although a comparable number did not. The number that considered the animations helpful was comparable to those who did not. No correlation was evident between time spent with the animations and score improvement. A possible explanation for this is that students spend as much time as they judge necessary to prepare for tests, so although the animations may serve to decrease the time required to master the material, students may not use them to obtain a deeper understanding. Consistent with this suggestion, a substantial proportion of students felt that the animations decreased study time, although a comparable number did not. The general conclusion suggested by this analysis is that the animations are a valuable resource for a substantial proportion of students, but not for everyone. This implies that they are a valuable supplemental resource, but caution should be exercised with efforts to use computer animations to replace traditional resources. Consistent with this interpretation, the majority of the students favored access to all four resources, animations, handouts, lectures, and textbooks.

ePoster: The research data will be displayed along with a laptop running the animations. Attendees will be able to see the interactive features of the animations displaying molecular processes.

Department of Structural Biology, 400 N. Lee St., Lewisburg, WV 24901
JTHATCHER@WVSOM.EDU
(304) 647-6227 (WORK), (304) 645-4859 (FAX)