

A Comparison of Learning Outcomes between a Traditional Face-to-Face Lecture-based Teaching Method and an Independent Study Method in a Law and Medicine Course

Nicole Wadsworth, D.O., Wheaton B. Wood, M.D., J.D., Olivia Ojano-Sheehan, PhD, Joanne McMullen, MBA



OHIO
UNIVERSITY



Introduction

How does traditional lecture compare with independent study in delivery of a law and medicine course? To answer this question, we presented the law and medicine curriculum in two different formats –lecture with supporting materials and independent study of the supporting materials only – and compared student satisfaction and student exam performance between the two formats.

Rationale & Literature Review

If outcomes are improved with independent study, we could offer more courses in that format, which would be more economical.

Most studies have documented comparable or superior outcomes from Web-based and self-directed or adult learning as compared to traditional classroom instruction methods. In fact, we were unable to find any study that concluded that traditional lectures produced better educational outcomes than Web-based or adult learning. In light of those studies and the decreasing resources available in medical education, it is important to explore the option of providing the same or better education with fewer resources. By eliminating lectures, the same content can be provided to an unlimited number of learners simultaneously. At the same time, it is important that we measure outcomes from different formats as we make our selection since educational quality is our primary goal.

Some educators, however, argue that lectures are still important. Mary Burgan, in her article *In Defense of Lecturing*, emphasizes the instructor's role in 1) motivating students who are slacking, 2) introducing students to new material, 3) helping students sift through challenging material, and 4) modeling a master learner. Burgan's argument is similar to Svinicki's "cognitive apprenticeship model." In that model, the instructor, or master craftsman "gradually places more and more responsibility for problem solution on learners until eventually the learners can solve the problems on their own. During this transition, the instructor supports the learners' efforts, coaches them with questions and suggestions, and encourages them to think aloud about their solution process."

Methodology

Both groups of students consisted of third year medical students from Ohio University College of Osteopathic Medicine based at O'Bleness Memorial Hospital in Athens, Ohio in consecutive years. They both received the same 9-lecture course and exam from the same instructor. For details about what instruction each group received, please see Table 1.

Table 1.

	Lecture Group	Independent Study Group
Course Year	2005-6	2006-7
Instructor	Wheaton B. Wood, M.D., J.D.	Wheaton B. Wood, M.D., J.D.
Medical School Year	Year 3	Year 3
Number of Students	7	7
Number of Sessions in the Series	9	9
Number of Lectures	9	0
Videotapes of all lectures available?	Yes	Yes
Handouts from all lectures available?	Yes	Yes
Supplemental articles from all lectures available?	Yes	Yes
Date students received all materials	One section monthly for 9 months beginning September 2005	All materials September 8, 2006
Exam Questions Disclosed?	Yes	Yes
Exam Answers Disclosed?	Yes – during lectures and in handouts	Yes – obtained from previous class and in handouts
Exam Format	25 True/False Questions, 1 essay questions, 1 extra credit short answer question	The same 25 True/False Questions as the Lecture Group
Date of exam	May 24, 2006	April 11, 2007 (Cancelled)
Student Satisfaction	Excellent evaluations, praised lectures by word of mouth, expressed disappointment that there would be no lectures in 2006-7	Poor. In March 2007, the students complained that they could not understand the material and requested lectures instead.
Student Performance	All passed. Also demonstrated understanding of the material in the essay and short answer questions	Did not take exam. Students stated that they would have passed the exam through rote memorization without understanding the topic.

Analysis and Discussion

In this case, traditional lectures were more effective and better received by students than independent study. Even if we had administered the exam and the students had performed well, they stated that they would not have learned much since they were focusing on rote memorization of the answers. The students specifically requested lectures to be able to understand the material. In this case at least, instruction by a master teacher could not be replaced.

This result leads to new questions: Is there an optimal mix of lecture and independent study or web-based learning for this course? How much time do students need with the master teacher? As Cook suggested, "Rather than asking 'If', we should ask 'How' and 'When' to use WBL."

Next year, we will explore these questions by offering both independent study/web-based learning and one third the number of traditional lectures given in our original nine lecture course. If we could decrease the number of lectures while maintaining high learning outcomes and student satisfaction, we could conserve resources.

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