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Eliminating Lectures at Robert Wood Johnson Medical School

While lectures have the ability of riveting student attention on a subject for an hour or more—conveying content and even attitudes and approach—their deficiencies may outweigh their strengths.

Among the deficiencies are the inadequacies of lecturers, the distribution of a handout with content similar to the lecture, and the requirement that students attend at a specific time and place that may not be in tune with a student's learning style.

The authors point out that lectures at medical schools are frequently attended by less than 50 percent of the class. They are often recorded or transcribed and distributed by a note-taking service.

As far back as 1984, the Association of American Medical Colleges (AAMC) recommended a major reduction in lecture hours in favor of other forms of learning (e.g., active learning).

In 1986, the Robert Wood Johnson Medical School made an extreme change in its program by implementing the AAMC recommendation to the point that the institution eliminated lectures as a means of communicating course content.

They describe a second-year, first-semester course in pathology in which 50 percent of the time is assigned to self-study. In addition, they provide two mandatory discussion groups, each with 16 students.

One group is in an interactive setting in which the morphologic and pathophysiologic aspects of an assigned topic are discussed. It also includes a journal article presentation by a student of a clinically relevant paper.

The other group is called CaseBase in which there is a three-hour analysis of clinical cases written by faculty focusing on laboratory interpretation, correlation of abnormal laboratory values, pathophysiology, and morphology. Students were required to read their texts from which examination questions were taken.

The implementation of this was most difficult because most students had not seriously read a large textbook before. However, they eventually adopted a productive learning strategy, and in a Liaison Committee on Medical Education study of the medical school, the students singled out the course as a model.

The textbooks were placed on computers in digital form to permit rereading and simultaneous searching of multiple texts. A number of computer-based learning resources also were introduced, which included a variety of self-testing and self-learning tools.

(Trelstad RL and Raskova J. "Eliminating lectures through reading, discussions, and computer-based information and self-assessment." www2.umdnj.edu/chinjweb/independentlearning.htm Department of Pathology and Laboratory Medicine, Robert Wood Johnson Medical School. July 1995.)
Being Selected to a Medical School and What it Takes to Prosper

In an article about getting accepted into highly competitive schools like Harvard University, it is postulated that whatever it takes to get into a so-called elite college and what it takes to prosper there are two separate things.

The author, writing in the *New York Times*, indicated that in 1979 the medical school of the University of Texas Health Science Center at Houston selected 150 first-year students from 800 that were interviewed. Shortly after, the state legislature mandated that class size be increased by 50 students who had to be pulled from the bottom of the original pool and whose grades and MCAT scores were considered to be significantly lower.

However, when these 50 students were tracked, they were indistinguishable from the rest of the class and even from those who were ranked in the top 50. Psychologists explain that it wasn't the qualifications of the students that determined their performance, but it was the four years of the program that was transcendent. Students did well because they were in a good school, not because they were inherently good students. What happened to students after the first week of orientation mattered more than how the admissions office ranked them.

(Headlam B. "Nothing personal." *New York Times Magazine. February 17, 2002; pp. 11-12.)

Student Enrollment and Application to U.S. Allopathic Medical Schools

The number of medical students enrolled in U.S. allopathic medical schools has varied little in the five-year period between 1996 and 2001. In 1996 there were 66,712 students compared to 66,295 in 2001. The number of full-time faculty grew by 8.3 percent in that time period, from 95,568 to 103,553.

Applicants to the schools have diminished from a high of 46,968 in 1996-97 to 37,092 in the 2000-01 cycle. This resulted in a decline in the applicant acceptance ratio from 2.7 to 2.1. The applicant acceptance ratio has been declining steadily in the six-year period since 1996. First-year enrollment in 2000-01 was 16,813 compared to a high of 17,204 in the 1980-1981 academic year. However, the average number of applicants per person has increased from 9.2 in 1980-81 to 11.7 in 2000-01.


eBook Utilized for Anatomy Study

A University of Utah School of Medicine professor is using eBook Reader software to facilitate learning in gross anatomy. The program incorporates all of the original content of the course and adds interactivity.

Students have the opportunity to view and interact with visually accurate representations of graphic-intensive content. They also are afforded the convenience of having access to lecture slides outside the classroom.

In addition, students can access more than 300 radiographs, photographs, and drawings. They can highlight, annotate text, search text, access the Web, and open an interactive dictionary.

Audio cues can be built into the software, such as voice pronunciations of difficult terms.

Quality of In-house Medical School Examinations

A study involving three U.S. medical schools concludes that a well-written examination reflects positively on a course, demonstrating to students that the course director and faculty take the course seriously. However, it appears that the quality of in-house examinations is substantially different from that of standardized national examinations. It is believed that faculty may not have devoted adequate time to preparing examination questions.

In addition, there may be little or no peer review of examination questions. Furthermore, there are few formal faculty development activities devoted to question writing and examination preparation. Finally, examinations are often assembled at the last minute, precluding activities to improve their quality. One question raised was whether the quality of the examination matters or do the best students do well regardless of the examination quality? The authors indicate that while it is possible to write examinations that discriminate student performance in a lecture course, testing knowledge through contextual, vignette, or problem-solving questions requiring reasoning skills is preferable to testing recall of isolated facts. They recommend that faculty who write examination questions should be trained and agree to a format that should or should not be allowed.

Examinations should be prepared well in advance (2-3 weeks) of the examination administration, and a committee should review, critique, and approve the final content and format of the examination.


Art and Diagnostic Observational Skills Study

A Yale Medical School physician preceptor did a randomized controlled study of 90 medical students comparing those taught by a preceptor who focused on the observational component of the physical examination to a group who learned these skills by studying a pre-selected painting. Those who learned the skills by employing art consisting of a portrait of a woman's face had to describe the appearance of the eyes, mouth, and other facial features.

This process was done with the assistance of the Yale Center of British Art with discussions being moderated by the curator of education who used open-ended questions to describe the entire painting. Pretests including photographs of persons with medical disorders was done with the control and test groups and students were graded blindly, given three minutes to write what they observed.

There was also a post test after the learning experience for both groups was completed. Students who learned observational skills through the use of art achieved statistically significant higher scores than those in the control group.

(Dolev JC, Friedlander LK, and Braverman IM. "Use of fine art to enhance visual diagnostic skills." JAMA. 286:9; September 5, 2001.)
Only 13 of a group of 182 medical students denied that they cried during their clinical rotations in a study reported by JAMA last year. Most of those who cried were responding to profound compassion and empathy, while others indicated it was a reflection of frustration and humiliation. The author indicates that most cry because they feel great compassion for a dying or suffering patient or the patient’s family.

Often it is because a patient reminds them of a family member or a loved one. Sometimes the student’s crying is due to a mistake he or she made that could lead to a patient suffering. Medical school faculty who react to a student’s crying is instructive, the author remarks. It offers an opportunity to affect the student’s growth and development as a caring physician. She concludes that by ignoring or suppressing crying due to feelings of care, physicians risk suppressing feelings of care.

(Angeoff NR. “Crying in the curriculum.” JAMA. 286:9; September 5, 2001, pp.1-5.)