

A Digital Approach to Cellular Ultrastructure in Medical Histology: Creation and Implementation of an Interactive Atlas of Electron Microscopy

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ABSTRACT

This study investigated student acceptance of a digital atlas of electron microscopy (EM) in the 2001 medical histology course at the University of Kentucky. The course's set of electron micrographs was digitized and incorporated into an instructional multimedia program using Macromedia™ Authorware 5.2. Student attitudinal survey data was collected prior to digital EM atlas use and again at the end of the semester. Most students (88%) reported using the digital EM atlas for study at home rather than on campus, while only 31% reported using similar learning tools at home prior to medical school. A significantly higher proportion of students used the EM atlas for independent study than they did with prior computer-assisted instruction (CAI). In addition, the reported frequency of CAI use decreased between pre- and post-use surveys. Prior to medical school, 29% of students reported using CAI routinely, while only 6% of students used the digital EM atlas on a routine, weekly basis. Instead, most students (83%) used the digital EM atlas primarily as a review during the week prior to examination. Nevertheless, students were significantly more enthusiastic (more respondents strongly agreed) that their study efficiency and exam performance was increased after using the EM atlas as compared with other CAI they had used. Students' prior histology experience or lack thereof, had no significant effect on their attitudes toward or use of the digital EM atlas.
