ACADEMIC PERFORMANCE COMPARISON OF TABLET PC USERS AND NON-USERS IN MEDICAL STUDENT EDUCATION

Barry G. Timms, Ph.D., Heidi Nickisch Duggan, M.A., Edward Simanton, Ph.D.
Sanford School of Medicine, University of South Dakota, Vermillion, SD, USA

Purpose: Several students chose to use Tablet PCs for their initial year of medical education. This unique mix of Tablet PC users and non-users in the same class offered a unique opportunity to compare admission requirement tests and performance grades between the two groups.

Methods: The introduction of computer-assisted instruction in medical education more than a decade ago was met with caution and skepticism. Over the ensuing years a variety of technologies have been tried and tested. In general, the paradigm has been a faculty-initiated approach. This was certainly the case for the recommendation of digital ink technology in education. Faculty with Tablet PCs gave lectures using pen-based annotations in PowerPoint presentations or provided electronic copies of handout material. The concept of Tablet PC use in medical education was intriguing to many incoming medical students, especially those who had made the decision to purchase a personal computer; however, a non-requirement policy meant that many students were not convinced that the benefits outweighed the expenditure. We provided training sessions for faculty and students with the premise that this technology would be an effective way to supplement standard teaching and learning practices. In 2005, one student decided to purchase a Tablet PC and influenced several others to do the same. A quarter of the first year students used these convertible laptops during class. These students requested all the class material in Tablet PC compatible format (mostly OneNote or PowerPoint files). In addition, their enthusiasm for the benefits of note taking, note sharing, searching of handwritten notes and flash card production has led to a large increase in the number of students in the current year (2006-7) using a convertible notebook. Academic performance was compared between Tablet PC users and non-users for the overall course and by discipline. Admission data (undergraduate GPA and MCAT scores) were also compared between users and non-users.

Results: Based upon early surveys the Tablet PC users indicated that the process of organization and rapid retrieval of information, coupled with wireless access, led to an enhanced learning experience. To determine whether this interactive technology was associated with an improved retention of information, student performance during the first year of medical education was compared between the Tablet PC users and non-users. No statistically significant differences were found between Tablet PC users and non-users. An interesting trend however was noted. While Tablet PC users had slightly higher (non-significant) scores on all portions of the MCAT, they tended to have slightly lower (non-significant) scores in their coursework both as undergraduates and in medical school. Because a strong correlation between the MCAT and academic performance is expected, this interesting trend warrants further study.

Conclusions: Student use of Tablet PCs does not appear to have a significant effect on academic performance during the first year of medical education. Choosing a Tablet PC for study may be more indicative of personality type.

Benefits to participant: Our presentation will provide some interesting observations that resulted from student-initiated versus faculty-initiated implementation of Tablet PC use in medical education.