

Teaching and Learning with Technology: Using HP Tablet PCs and Collaboration- Facilitating Software to Increase Classroom Interaction and Promote Student Learning (2007)

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PROJECT ABSTRACT: Our project focuses on two aspects of the engineering and computer science classroom settings: instructor/student and student/student interaction; and student learning of complex technical information. We have redesigned three courses in the engineering and computer science curricula in order to take advantage of the graphical nature of HP Tablet PCs. By combining HP Tablet PCs with collaboration-facilitating software, the instructors involved in the project have been able to spend less time on lecture and more on interaction and active learning with students.



Impact on Student Learning

In the process of revising their courses for the pedagogical context of HP tablet PCs and collaboration-facilitation software, each faculty member developed a course-specific set of student learning outcomes. These outcomes were then used to create customized assessment tools, such as student and faculty surveys and focus group questions for students and faculty.

One Year Ago – Faculty members wondered, What will students do in class if they aren't furiously writing down notes, formulae, and other content from the class whiteboard?

Today – Now faculty members use class time for interaction with students, to demonstrate complex content, to create rich note content for use for homework and exams. Students annotate classroom materials in meaningful ways, no longer compelled to scribe or concerned that they copied notes wrong.

Assessment Evidence and Evaluation Data – We have collected assessment data for two years on the impact of tablets on student learning and faculty teaching (report available on request).

Impact on Teaching

In David Fisher's Introductory Dynamics class, HP tablet PCs and DyKnow Vision™ software allow students to add notes interactively and do example problems. Using the pen, students can create hand-written notes that are integrated directly onto the professor's lecture slides that appear on the students' screens.

Dr. Fisher also uses Camtasia™ to screen capture both his lecture and his slides. He then posts the recordings to his course website so students can refer to them as they do homework or study for exams.

<http://www.rose-hulman.edu/~fisherds>.

Technology Implementation

Faculty are supported in their efforts by the Office of Institutional Research, Planning and Assessment (managing the assessment of the project) and by the Tablet Technical Support Team (managing the hardware and software). We have used DyKnow Vision™ software for the collaboration facilitation, and Camtasia™.



Keywords: biology, biomedical engineering, chemistry, computer science, electrical engineering, Japanese, mechanical engineering, physics, technical communication

Quick Facts: 9 faculty, 400 students, 16 courses impacted