

Summary: Improving Undergraduate Computer Instruction: Experiments and Strategies

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Reference: Kalman, H.K. & Ellis, M.L. (2007). Improving undergraduate computer instruction: Experiments and strategies, *AACE Journal*, 15(1), 23-38.

Problem: This journal article discusses alternative teaching strategies for teaching college level introductory computer courses. It addresses not so much the presence of technology in the classroom, but the rapid rate at which computer literacy is increasing from one generation to the next. In contrast, instructors are not only challenged with adapting, but have to face the extreme diversity of skill levels from novice to advanced, within a single classroom. The challenge is to improve the quality of instruction while the diversity of computer literacy in any one class continues to rise. A key component driving this is the fact that students are gaining their computer literacy the same way people learn in the work environment. It is different for everyone and does not rely on a programmed curriculum in a controlled environment where everyone is paced at the same skill level.

Context: This (2007) research is based on data gathered during the past three years from a required introductory computer course taught at two research universities and one comprehensive college. The goal of the course was to introduce students to professional tasks, rather than emphasize mastery of computer application software. Students took the course during their freshman year. The course was taught in a computer equipped classroom with one student per computer. Each course section consisted of 19-24 students. Data included instructor observations, students' informal anecdotal feedback, student evaluations, formal in-class debriefings at midterm and at the end of the semester, and a student skills assessment instrument.

Findings: Results from the computer skills assessment provided the instructor with powerful evidence that each student's skill set was highly variable. Instructors must not only integrate technology into their teaching, they must rethink how they teach and be more concerned with an individual's technical and conceptual competence.

Recommendations: The article recommended implementing the following strategies for teaching;

1. *Flexible attendance:* Students are given options for attending class part, or all of the time.
2. *Alternative instructional resources:* Multiple forms of media are used for individual topics.
3. *Realistic workplace tasks:* Assignments utilize real world learning skills.
4. *Learning teams:* Promotes self-directed learning and cultivates a learning community.

Comments: I agree with all of the recommendations, but most of all with the work place task oriented learning. Often individuals forego a college education in trade for the work place environment because that is where they learn best, with least amount of resistance. Learning is not a crime!