

Observations from Using Two Modes of Teaching Undergraduate Computer Architecture

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Teaching methods, teaching materials, web-based learning, evaluating learning and teaching, online course delivery and management.

ABSTRACT

This paper presents the authors' observations regarding two modes of teaching undergraduate computer architecture [2] conducted at California State University, Chico. Two sections of the course were offered: Section One was taught using a traditional classroom setup, while Section Two was taught in a classroom equipped for distance education. Although Section Two seemed to provide fewer opportunities for in-person, student-professor interaction, the students were given three options to choose how to access the class lectures. Students could (1) attend a live lecture on campus that was simultaneously being archived and broadcast on the Web; (2) attend a live lecture from a remote site via the Web; or (3) view archived class sessions via the Web. Access to live broadcasts or archived sessions was done using *HorizonLive* [1], a web-based teaching, learning, and interactive communications software platform.

Archived lectures were available to all students registered in the course. Since the students in both sections were demographically proportional, the authors' dependent variable was the method of delivery. Using *HorizonLive*'s tracking facilities, which keep track of every single access by each student, the authors were able to collect and analyze frequencies and patterns in accessing the course lectures. The authors also correlated results from student evaluations of the course with the tracking information. The

authors conclude that even though students from Section Two enjoyed the flexibility of keeping up with the lectures at their own pace, the grade for undergraduate students did not reflect their overall satisfaction and time spent online. Students registered for Section Two of the course, on average, received lower grades than the students registered for Section One. The grade distributions are summarized in Figure 1. The grading policy for the computer architecture course was a minimum passing grade of C for undergraduate students and B for graduate students. Thus, 86% of the undergraduate students in Section One completed the course successfully, compared to 23% from Section Two. Alternatively, graduate students' grades were proportional to the time they spent accessing the online lectures: only 1 of the 3 graduate students of Section One passed the course, compared to 4 of the 5 graduate students in Section Two. Students seemed to have learned more of the course material due to the availability of the archived lectures.

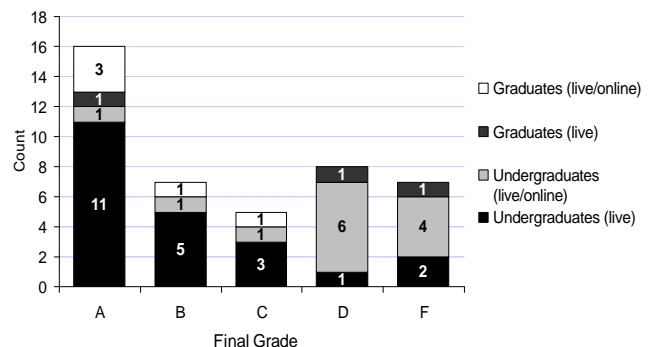


Figure 1. Detail of final grade distribution

Since the sample size of this study is rather small, the statistics may be biased. The data from this study seem to indicate that graduate students benefit more than undergraduates from web-based learning used to promote or enhance the traditional learning environment. Based on this study, the authors conclude that the time students spent accessing online lectures is not a significant factor to their final grades.

ACKNOWLEDGMENTS

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