should have been more similar, since the numbers of students in the two groups compared were close to the same. Quantitatively, the grades show less of an effect than does the gain in learning. This probably reflects the fact that more students did reasonably well on the quizzes (which are based on problem sets and are taken under open-book conditions) and the term papers.

The interpretation of the results is open to some debate. Taken at face value, they suggest that studio methods, at least as implemented under these conditions, are superior to interactive lecturing. One could argue that the size of the class has an effect. Combining the data from the studio classes to make this comparison on roughly equal numbers of students, still results in fewer students in a studio class than in the lecture hall. It is thought that size alone does not account for the difference because in a previous study the dependence of grades on class size was rather feeble (Roy, 2001). However, one could also propose that implementation of the interactive lecture demonstration method was sub-optimal. There are some grounds for believing that is partly correct, since this was a first attempt at interactive lecture demonstration in a lecture hall setting. Some components were not suited for teaching by the demonstration method. It is for this reason that others may take up the challenge and perform further controlled tests of this idea. My own intention is conditioned by duty to my students to try only those ideas that I believe will work to help them learn. From this study, it is not felt that interactive lecture demonstrations, in a lecture hall, are as effective as a full-fledged studio course; for this reason the course will be taught as a studio course in the future.

However, it is worthwhile to make sure the students come to class, by monitoring attendance, and I believe it is effective to include interactive lecture demonstration techniques within the studio setting, as demonstrated by Cummings et al (1999).

**REFERENCES**


