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Architectural Computing Education

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Introduction

Many papers at previous eCAADe conferences have discussed CAD curricula, but few have questioned the educational objectives of teaching CAD. I wish to use this short paper to discuss not only *what* should be taught but *why* and *how* it should be taught. Topics covered include: styles of teaching and learning; individual or group working; and principles versus practicalities.

Educational Considerations

Students may take a particular course for different reasons. They may have an *intrinsic* interest in the subject itself or, especially in the case of CAD, an *extrinsic* interest, seeing the subject as an aid towards getting a job.

The course itself may adopt different approaches to the subject. Many undergraduate courses adopt what may be called a ”surface approach” to the subject, requiring students to reproduce set material (thus accepting ideas and information passively) and concentrating on assessment requirements (with no reflection on purpose or strategies of learning). The alternative approach (more easily adopted in specialist postgraduate courses) is a ”deep approach”, requiring students to interact critically with the course content and to relate the material to their previous knowledge and experience.

The deep approach may be encouraged through ”active learning” techniques, the most appropriate being *experiential learning* and *learning in groups*. Experiential learning encourages staff to ensure that students reflect on their own experience and previous knowledge, and use it in developing their own personal understanding of the subject matter. Students benefit from the opportunity to work collaboratively, enabling them to discuss ideas with their peers, rather than with staff. Discussions with peers, either about the content or about the process of learning, is particularly valuable in developing understanding.

Conclusions

The whole learning environment needs to be viewed as a *system*. Each aspect of the course should be examined in turn to identify its likely influence on the quality and effectiveness of student learning. This involves looking at the previous knowledge of students entering and their reasons for taking the course, as well as the course provision itself. The effectiveness of a course depends on the interaction between the course objectives, the learning environment provided and the characteristics of the students.