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Computer-Aided-Design in the Studio Setting: A Paradigm Shift in Architectural Education

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Introduction

The introduction of the personal computer in 1982 set forth a revolution that will continue to transform the profession of Architecture. Most architectural practices in America have embraced this revolution realizing the potentials of the computer. However, education seems to have been slower accepting the potentials and challenges of computers. Computer technology will change the design studio setting and therefore the fundamental way architects are educated.

The Department of Architecture at Kansas State University has made a commitment to move toward a computer based design studio. In the fall of 1990, discussions began among the faculty to search for the placement of a computer studio within the five year program. Curriculum, staffing, and funding were issues that had to be overcome to make this commitment work. The strategy that was adopted involved placing the computer studio at the fourth year level in phase one. Phase two will progress as more staff are trained on the computer and course work was adapted to accommodate other year levels for a computer based design studios. Funding was a major obstacle. The decision was made to move from a position of being the primary suppliers of computing technology to one of support for student purchased computers. This strategy alleviated the department from maintaining and upgrading the technology. There was great enthusiasm and support from the faculty as a whole for the use of computers in the studio setting. However, the pedagogical impacts of such a change are just beginning to be realized.

The Studio

The studio was initiated in the spring semester 1992 and has been met with much enthusiasm amongst the students. Approximately fifteen students are enrolled each semester and their computers are kept in the studio. A network is used to share files as well as send files to the printer or plotter. The students use AutoCAD v.12 with AME and AEC as the architectural application software. Rendering and animation is explored with 3D Studio v.3. Most students coming into the studio have no experience with any of these software products, but are eager to learn and become extremely competent in a surprisingly short period.

Projects undertaken by the students in the studio have been chosen to take advantage of the computers' ability to manage large amounts of data. Projects have included high rise housing, museums, and religious structures. The strategy for the projects has been to undertake a short project in the beginning of the term that focuses on conventional drawing methods such as plan, section, and elevations. The second project, ten to twelve weeks in duration, focuses on exploring three dimensional modeling and visualisation techniques in the context of design.

Future Impacts

Although the initial studio at the fourth year level has met with much enthusiasm and interest by both the students and faculty, much work still needs to be done to achieve a higher level of integration in the curriculum. The second phase of integration is just beginning to be undertaken.

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