

Discussion Topic : Undergraduate Design Syllabi Session

The Switch from Analysis to Design.

by

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The classical teaching approach to problem solving in our current schooling system is the usage of *formulae, recipes or methods* to solve given problems. Normally all the unknowns are given, leaving the student with only the substitution of numbers to obtain the required answer.

Students learn to use this approach, without gaining enough knowledge of the actual problem or acquiring the proper skills to solve similar problems. A "pattern recognition" approach evolves, limiting the thinking of the student. Normally all the unknowns are also given to the student to solve a specific problem.

In design, however, this process is reversed. Suddenly, the student is confronted with the traditional **answers** as given parameters to the problem, with design criteria as basis to the problem. In the design more freedom (within the design specifications and a few other given requirements) in choice exists to solve the specific requirement or need.

The students now come to grips with the reality of design. He or she has to make all the choices and decisions now. Coming to an abrupt halt, they now ask:

" Where do I start? "

Although they have all (or most) of the knowledge required to solve the design problem, they lack the self-confidence and experience to switch from an **analysis mode** of problem solving to a **design mode** of lateral thinking.

Discussion.