

USING MODELS TO TEACH AND LEARN ENGINEERING

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ABSTRACT

One of the biggest problems engineering students are facing is visualization. In fact, visualization skills have been found to correlate highly with successes in engineering, and mathematics in general. In order to help students to develop this skill and make teaching and learning more productive and interesting, I have developed a new teaching strategy based on using models. Experience in using the models shows that:

- 1) Students are able to learn the topic in the most effective and easiest way.
- 2) Students are fully engaged in the learning process.
- 3) Students can gain the knowledge and obtain the skills developed in this "hand on" approach in learning that affects students' ability to absorb knowledge in subsequent courses where good visualization skills are required.
- 4) Using the models makes students feel that engineering is an interesting field to study.

The benefits for teachers are:

- 1) very little (or no) preparation time
- 2) less lecture time
- 3) easy to explain the topic
- 4) test results are incomparable to teaching from a textbook.