

## Pedagogy of Engineering Design and Engineering Graphics

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### BACKGROUND

First year engineering students are generally exposed to subjects in engineering design and engineering graphics and communication. These students could have a firm idea of what engineering discipline they are interested to pursue or on the other hand, they might have vague ideas about various engineering streams on offer in their university. In any of these cases, the subjects of engineering design and graphics could affect the threshold learning outcome on the early stages of a student's life at the university.

### PURPOSE

The purpose of this study is to investigate the effect of teaching engineering design and engineering graphics together or in a separate format to find out an effective method of delivering and achieving learning outcomes for first engineering students.

### DESIGN/METHOD

This longitudinal study was carried out over a period of past 3 years through qualitative and interpretive methodology framework. In the first two years, engineering graphics was taught alongside engineering design, whereas in the third year, the subject of engineering design and engineering graphics were separated, and only engineering graphics and visualisation skills were taught in the unit under investigation in this paper. The method of inquiry into teaching and learning experience of student was through the data gathered from lecturer and tutor interviews and anonymous online surveys of students in consequent years.

### RESULTS

The student feedback and rating from 3 consecutive years is presented and discussed in this paper. The third year, survey results are anticipated to be known by mid-2013, which alongside other qualitative data collected throughout this project, will reveal the effect of teaching engineering graphics versus or with engineering design.

### CONCLUSIONS

So far, the findings from data collected throughout the project showed that a more streamlined approach in teaching engineering design and engineering graphics could yield better results in cementing students' learning objectives. The likely and anticipated conclusion is that a threshold learning outcome could be achieved in an easier way by teaching engineering graphics as a tool separate than engineering design.

### KEYWORDS

Engineering Graphics, Engineering Design, Threshold learning outcome

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