Successful Design Processes: Some Research Perspectives

Notes and Handouts
Purpose:
Design has long been considered a central activity of engineering. The goal of this classroom presentation is to help engineering students to become more conceptually and metacognitively aware of engineering design processes.

Agenda:
The intended time for this classroom presentation is 60 minutes.

Topics for this workshop include:
- How engineering students and practicing professionals solve engineering problems
- Discuss relevance to ME 495
- Develop and understand design processes

Goals:
1. Give a background of CELT’s Design Research
2. Participants leave with something helpful
ACTIVITY:
In the design process timelines shown above, what similarities and differences do you see between the freshmen and senior engineering students? Do these similarities also involve the quality scores? How so?

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Design Activity Timeline

<table>
<thead>
<tr>
<th>PD: Problem Definition</th>
<th>MOD: Modeling</th>
<th>DEC: Decision</th>
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</thead>
<tbody>
<tr>
<td>GATH: Gathering Information</td>
<td>FEAS: Feasibility</td>
<td>COM: Communication</td>
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<tr>
<td>GEN: Generating Ideas</td>
<td>EVAL: Evaluation</td>
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Senior One (Quality Score = 0.38)

Senior Two (Quality Score = 0.53)

Senior Three (Quality Score = 0.63)

Freshman #1 (Quality Score = 0.37)

Freshman #2 (Quality Score = 0.45)

Freshman #3 (Quality Score = 0.62)
Successful Design Processes: Some Research Perspectives Bibliography


