STEM Education Redefined

Dr. Yunfeng (Cindy) Chen, Assistant Professor
Department of Civil Engineering and Construction Management
Contents

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Traditional STEM Education

• Science, Technology, Engineering and Mathematics

• STEM graduate Shortage or STEM graduate flooding?

• How can we better equip and prepare STEM graduates for the workforce?
Research Method and Approach

• Qualitative Study

• Interviews with Students

• Interviews with Industry Practitioners
Developing a Redefined STEM

- Skills with supporting literature, were identified and listed.

- Important skills highlighted through interview were compared with literature.

- The skills were then grouped as the Re-defined STEM: Soft, Technical, Experience and Managerial Skills
## Soft (S) and Technical (T) Skills

<table>
<thead>
<tr>
<th>Skills (Redefined STEM categories)</th>
<th>Students</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Team Work (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Communication (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Empathy (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Analytical Skills (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Continued Learning (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Work Ethic (S)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Knowledge Retention (T)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Technical Writing (T)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Competency (T)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mathematical Skills (T)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
# Experience (E) and Managerial (M) Skills

<table>
<thead>
<tr>
<th>Skills (Redefined STEM categories)</th>
<th>Students</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy (E)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Efficiency (E)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Internships / Coop (E)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Exposure / Roleplay (E)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Problem Solving (E)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Organization Skills (M)</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Time Management (M)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Finance / Accounting (M)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Decision Making (M)</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Business Acumen (M)</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Perceived Training Investment

Student Perception (Annual):
- Direct Cost Investment: $4,687.00
- Hours invested: 105 Hours = $2,790.90
- Total perceived investment = $7,477.90

Industry Expert Perception (Annual):
- Direct Cost Investment: $1,100.00
- Hours invested: 126 Hours = $3,349.08
- Total perceived investment = $4,449.08
Limitations

The study is not comprehensive and is only a preliminary qualitative study. Follow-up quantitative study is ongoing.

The study is limited to the responses from 15 Students and 8 Industry experts.

All respondents were from South Georgia and is a limited demographic in relation to location.
Conduct a **Quantitative study** that will confirm/reject the list of identified skills. The final list of confirmed skills could be used to improve STEM education.

**Traditional STEM** (Science, Technology, Engineering, Mathematics) **should be expanded and improved** to encompass a more comprehensive set of skills such as: Soft, Technical, Experience and Managerial skills.

Increase and Improve **partnerships between Industry and Colleges** to develop curriculum and make STEM students better prepared for Industry needs.


Thank you!

Comments or Questions?

Yunfeng (Cindy) Chen, Ph.D., Assistant Professor
Department of Civil Engineering and Construction Management
Georgia Southern University
Email: ychen@georgiasouthern.edu
Cell Phone: 765-413-3966