Extra notes re: **Engineering Problem Solving – A case study in Process Oriented Curriculum Design**
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After reviewing the introductory material, including passing around example copies of the FOL text, and discussing our method of using it as a template for building the EPS text, the facilitators did the following:

Invited the teams to self-divide into two teams in order to do the following:
Develop a knowledge table for a curriculum you would like to develop.

The 2 teams chose to develop knowledge tables for:
1. Teamwork – focusing on an introductory biotechnology course
2. Need for using vector math in a statics course for sophomore engineers

Here is what they reported out:

1. Teamwork – focusing on an introductory biotechnology course (small font is from a pre-existing knowledge table for teamwork, Bold font are elements they felt important to add.

Concepts	**Processes (SOPs)**	**Tools**	**Context**	**Way of Being**
Teamwork Skills	Team process methodology	Team roles and Performance criteria	Team of ~~FOL~~ **biotechnology professional characters**	Communicator
Interventions		Tips for delivering a presentation	Profile of a strong team player	Team Player
Communication Skills	Communication methodology	Levels of communicator	Sample recorder's report	Achiever
Conflict Mgt	**Business Etiquette**	Recorder's reports	Sample reflector's report	**Multiculturalist**
Cultural Awareness		Reflector report		**Sensitivity to personality types (e.g. MBTI)**
		Role playing and video scenarios		

Any insights about starting with a table:
1) being a MBTI "S", I like to have something to start with rather than a blank slate
2) This table was dense with jargon (interventions, etc.) – can easily get overwhelmed

2. Teamwork – Vector Math skills for statics course, sophomore engineers

Concepts	**Processes**	**Tools (for modeling)**	**Context**	**Way of Being**

Forces Vectors, etc. (Next step: Need to rethink to address the idea of learning to learn)	Model building to create vector representations.	Modeling software	1. Story of robot in manufacturing that is doing spot-welding 2. Astronaut on the space shuttle fixing a truss system for a robotic	Critical Thinker- using real world objects to make free-body diagrams
	Analysis of vector representation to find solutions	Mathematic software		Designer – changing real objects (from 4 leg stool to 3 leg)
		Mathematical rules		

Insights:

1. Difficult process to develop a knowledge table
2. If you think about what you want in the end (what your professional looks like), and work backwards, then the concepts are not so nebulous.

Insight by Jim Morgan:

- We need to have engineer **role model profiles** as well as student profiles in our EPS text.

Insight by Barbara Williams:

- Activities need to be specifically crafted for level of the student learners. Jim noticed the alarm clock problem solving activity FOL, with unreasonable reliance on reading the directions. This would be unreasonable for this generation, especially for pre-engineering students.