

Lab #2: Brainstorming and Team Behavior

October 8th, 2010



Introduction and Background:

This lab has a two-fold purpose:

- 1) It will give you some experience with brainstorming and idea organization techniques.
- 2) It will require to you think about your team's group dynamics and what you might do in situations where your team has a problem and is not functioning at its peak efficiency.

Brainstorming and Idea Organization

Brainstorming is a group technique for generating ideas in a non-threatening atmosphere. It is a creative activity that is an essential part of mechanical engineering design and of problem solving in general. The attributes and goals of brainstorming include the following:

- Generate as many ideas as possible.
- Group members play off each other's ideas.
- A facilitator controls the flow and recording of ideas.
- Generally the group wants to come up with as many ideas as possible. The text lists 30-40 as a good number, but it will depend on the task and the situation.
- All group members are encouraged to participate and come up with ideas.
- Wild ideas are okay – sometimes they lead to a great design or solution
- Do not evaluate or critique the ideas during the brainstorming session.
- Allow for some time after brainstorming for ideas to incubate.
- Output is a team result.

Many techniques have been developed for stimulating creative thought during brainstorming. Refer to sections 4.7 and 6.3 of your text for techniques.

Once a team has completed the brainstorming exercise, the ideas must be organized and evaluated. Sorting and grouping of ideas is often accomplished using an **affinity diagram** (section 4.7, p. 129), in which group members put the ideas into loosely related groupings, then come up with headings for the groupings. Next, the team performs some preliminary concept evaluation to determine which ideas are going to be pursued further and which ideas are going to be abandoned.

Team Behavior

Your team's group dynamics will play a major role in your success in this course and in determining how much fun you have while working on your assignments and projects. An effective team will consist of a group of competent and willing individuals committed to team goals, with team roles properly defined, and well-defined strategies for conflict resolution. Trust, respect, open-mindedness, and good communication are also traits of an effective team. If your team fails to meet one or more of these characteristics, your overall team effectiveness will be impacted. (Chapter 4 of your textbook is

dedicated to team behavior characteristics and strategies). This lab assignment is intended to help you think about how you might overcome some of those team dynamics pitfalls.

Problem Statement:

Imagine that some problem in the future will cause your team to not function ideally. For brainstorming, your problem statement would be stated as follows:

What problems could cause our team to not function at its highest level of efficiency?

Task:

To get at the root cause of the problem, your team is tasked with using brainstorming techniques to generate several ideas on what are some problems that may cause the team to not function at optimum levels. Follow the guidelines for brainstorming. Make sure you record all of your ideas, even the wild ones.

Next, create an affinity diagram to organize your ideas into several groupings. Title the grouping headers in a way that associates all of them. Determine which three issues are the important to your group.

Finally, use brainstorming techniques again and determine solutions for how your group will deal with each of the three most important issues. Although your professor and TA's are here to help your group with any serious problems that arise, we would like you to learn how to figure out how to deal with internal group problems on your own, as a group, since you will be often called upon to do so in the working world. Therefore, although in some instances your solutions may include "talk with professor/TA's about the problem", this should not be your default solution to every problem.

Deliverable and Schedule:

Your team is to submit a lab report of 2-3 pages. Make sure the report is organized into sections and is written up in a narrative (paragraph) format. Label figures and tables. Document the following:

- 1) Your original brainstormed ideas, organized into affinity diagram(s) with grouping header titles. Indicate any ideas that were discarded due to being highly improbable. Show which three issues you considered to be the most important.
- 2) Discuss your strategy to deal with the three most important issues that you believe could affect your team's performance.
- 3) Include a summary of your techniques for brainstorming, including how your group organized itself to perform this task, how you moderated and recorded results, how you organized your ideas, and how you arrived at solutions.

Lab 2 report is due Friday, October 15, 2010. Please submit a hardcopy of the lab report by the beginning of the lab.