

Goals

By the end of this class you should be able to:

- Describe three parts of a complete statement of goals for a design project
- Use the ten general goal categories
- Develop specific goals for a project
- Describe a basic approach to brainstorming

Alfresco

- New instructions online
 - Logging in
 - Uploading documents
 - Setting up a web directory (Webdav)
- Upload (if you have not already)
 - Resume
 - Ground Rules Memo

Review: Needs Assessment

- Focus on others
user/client/customer (stakeholders)
- Key: General contribution to society/Safety
- Basis for goal development

Three Stages in Problem Definition

1. Overall Project Goal

2. List of sub Goals

General Design Goals

Specific Design Goals

3. Specifications

(Success Criteria)

Putting numbers on the goals

The Keys to Problem Definition

- Take time to Define the Problem
- Focus on Function (not on the product)
e.g. Maintaining Lawns
Space Capsule Reentry Protection
Coffee Problem
- Group processes are usually involved

Techniques for Problem Statement Development

- Statement-Restatement
- Why-Why diagrams
- Revision Method
- Present State - Desired State & Dunker Diagrams
- Benchmarking & Best Practices
- Fresh Eyes
- What is wrong with it?
- (K-T Situation Analysis)

from Voland, Chapter 3

- This is an encyclopedia of techniques.
 - They are all getting at the same thing.
 - Generally you will just use on maybe two
 - All are about equally used
 - Different people tend toward different techniques

- All are designed for
 - forcing you to think through a range of possibilities
 - using with groups
 - work with problem definition for a range of problems - not just design, not just engineering
- Have looked at K-T situation and problem analysis

Trying one: What's wrong with it?

- Coffee Maker - in your group
- Come up with as long a list as possible of what is wrong with it.

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General Design Goals

1. Safety
2. Environmental Protection
3. Public Acceptance
4. Reliability
5. Performance
6. Ease of operation
7. Durability
8. Use of standard parts
9. Minimum cost
10. Minimum maintenance & ease of maintenance

Exercise: Lego Goals

- Handout Goals sheets & Legos
- Ask to describe how they meet goals
- How do they fit?
- What do you see in Duplos?
- Design from standard Parts EG → switch box
- Go on to defining the specific goals for LEGOs

Specific Goals

What specific design goals does this product need to meet?

(Continue to focus on function)

What are the specific Goals of LEGOs?

Brainstorming – Basic Rules

- Separate idea generation and idea evaluation -
 - Initial session on generation
 - Allow identity of idea source to be lost (at least temporarily)
 - Evaluate later (but do it)
- You want stupid/crazy ideas
- Consciously attempt to build on each others ideas
- Relax constraints in idea generation
- Design so everyone speaks
- Leader/facilitator goes last

Brainstorming

- After idea generation and break – come back to evaluate
- May use at several places in design process
 - Overall goal
 - Design idea generation
 - ...
- Brainwriting → A written version of the process.