“You cannot solve a problem with the same mind that created it.”

— Albert Einstein

An introduction to

DESIGN THINKING

CTAHR Aquaculture/Aquaponics Conference
“Aquaponics in the Classroom”
Saturday, October 13, 2012
Windward Community College, Hale Akoakoa
WHAT is this about?
WHO is behind this?
WHY are we doing this?
• David Kelley
  • Founder, IDEO
  • Stanford Design School

• Global Challenge: Education

• PROCESS for transformation
2011 Stanford U / DT Hawaii Bootcamp
Converge

Make Choices
Design Thinking Process
How Design Thinking is Different
### How DT is Similar & Different

<table>
<thead>
<tr>
<th><strong>Traditional</strong></th>
<th><strong>Design Thinking</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the right answer?</td>
<td>What is the right question?</td>
</tr>
<tr>
<td>Repeatable, proven processes</td>
<td>Intuitive, responsive practice</td>
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<tr>
<td>Design For</td>
<td><strong>Design With</strong></td>
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<tr>
<td>Think for insight</td>
<td>Build for insight</td>
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<tr>
<td>More talk</td>
<td>More listen</td>
</tr>
<tr>
<td>Stuck inside</td>
<td>Get outside</td>
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<tr>
<td>Data</td>
<td>Stories</td>
</tr>
<tr>
<td>Events</td>
<td>Experiences</td>
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<tr>
<td>Talk about facts</td>
<td>Talk about feelings</td>
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<tr>
<td>Siloed</td>
<td><strong>Collaborative</strong></td>
</tr>
<tr>
<td>Evolutionary (bored)</td>
<td>Revolutionary (inspired)</td>
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Examples of Design Thinking
Testimonial on Design Thinking
The Design Challenge

To enhance the science project experience by expanding outside the science classroom and collaborating with other academic disciplines, community and industry.
Rules of Engagement

• Think like a child
• Defer judgment – NO blocking
• Encourage wild ideas
• Stay on topic
• Quantity over quality
• One conversation at a time
• Be visual
• Build on the ideas of others
Mindset

Human Centered

Bias Toward Action

Radical Collaboration

Culture of Prototyping

Show Don't Tell

Mindful of Process

isisHawaii
the power of one plus one...

designthinking
hawaii

inovigroup
The Empathy Process

Students & Teachers interview Academia & Community/Industry

“What makes a good Science Fair Project?”
Interview 1 from Academia & 1 from Community/Industry

Academia & Community/Industry interview Students & Teachers

“How can we (academia/community/industry) help enhance the Science Fair experience for our students and teachers?”
Interview 1 Student & 1 Teachers
How To Interview

• ASK questions

• LISTEN for their personal stories

• COLLECT information about what they:
  – Say
  – Do
  – Think
  – Feel

• NOTE *key points*, not long sentences
Your Mission:

Start by gaining **empathy**.

<table>
<thead>
<tr>
<th>1 Interview</th>
<th>2 Dig Deeper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notes from your first interview</td>
<td>Notes from your second interview</td>
</tr>
</tbody>
</table>
Reframe the problem.

3 Capture findings

**needs**: things they are trying to do*
*use verbs

**insights**: new learnings about your partner’s feelings/worldview to leverage in your design*
*make inferences from what you heard

4 Define problem statement

[Diagram with placeholders for partner name, user’s need, insight, and statement]

Surprisingly // because // but ... [circle one]
Ideate: generate alternatives to test.

5 Sketch at least 5 radical ways to meet your user’s needs.

write your problem statement above

6 Share your solutions & capture feedback.

Notes

Switch roles & repeat sharing.
Iterate based on feedback.

7 Reflect & generate a new solution.

Sketch your big idea, note details if necessary!
Build and test.

8 Build your solution.

Make something your partner can interact with!

[not here]

9 Share your solution and get feedback.

+ What worked...

What could be improved...

? Questions...

! Ideas...
How To Give Feedback

• I Like ........
• I Wish ........
• What If ........
Share

SHOW DON'T TELL

RADICAL COLLABORATION
Design Thinking Hawaii

Add video from Waipahu
Who is using Design Thinking?

- World Bank
- Japan Science and Technology Agency
- Yale University Biomedical Engineering Department, Mayo Clinic
- Smithsonian Institute
- American Institute of Architects
- Google, HP, IBM
- Deutsche Bank
Examples of how are people using Design Thinking?

• Architecture and Urban Planning
• Master Planning and Visioning
• Facilities Design
• Branding and Product Planning
• Management Innovation
• Strategic Planning
• Technology Development
Design Thinking Is NOT

• A Miracle Cure …. But it really can help!!
• Design … it captures qualities of designers and can help motivate and engage your employees.
• Magic or a Panacea… it is a process to enhance creativity, multi-disciplinary and “out of the box” thinking.
• A Quick Fix … it takes time to implement and should not be forced.
• A Guarantee of Success…it is a complement to improve communication, collaboration and consensus building.
1. Challenge the questions...not the answers...challenge your assumptions
2. Think hard about who...embrace diversity, embrace partners
3. Be user-centered...design with, not for...live your customer's experience
4. Look at analogous environments...
5. Look at extremes...look at lead users, and non-users...even business models
6. Think journey...look at the entire experience
7. Build prototypes...including experiences
8. Think stories not concepts.
9. If in doubt, be open
10. Design everything...including your business model...even non-consumer facing stuff
11. Launch to learn... ship early and be open to feedback
12. and iterate

   Stay optimistic...be enthusiastic!

Twelve ways to add Design Thinking to your Project
“Design Thinking Hawaii”

www.designtinkinghawaii.com