Design Thinking Education
for Healthcare

Translating Information into Ideas, Concepts and Solutions
Write your definition of design thinking on the card provided.

What is design thinking to you?
We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.

Herb Simon
Design Thinking: Definition

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.

Herb Simon

1. Balance data
The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.
Design Thinking: Definition

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.

Herb Simon

1. Balance data
The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.

2. Visual concepts
Produces comprehensive visualizations of future alternatives allowing for interaction and feedback from stakeholders early in the process.
**Design Thinking: Definition**

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.  

Herb Simon

---

1. **Balance data**  
The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.

2. **Visual concepts**  
Produces comprehensive visualizations of future alternatives allowing for interaction and feedback from stakeholders early in the process.

3. **Lower uncertainty**  
Reduces the potential for unintended consequences.
Design Thinking: Definition

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.  

Herb Simon

1. Balance data
The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.

2. Visual concepts
Produces comprehensive visualizations of future alternatives allowing for interaction and feedback from stakeholders early in the process.

3. Lower uncertainty
Reduces the potential for unintended consequences.

4. Coherent relevance
Helps institutions and culture evolve thoughtfully blending continuity and change.
Design Thinking: Definition

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.

Herb Simon

1. **Balance data**
The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.

2. **Visual concepts**
Produces comprehensive visualizations of future alternatives allowing for interaction and feedback from stakeholders early in the process.

3. **Lower uncertainty**
Reduces the potential for unintended consequences.

4. **Coherent relevance**
Helps institutions and culture evolve thoughtfully blending continuity and change.

5. **Long-term profits**
Produces profit for organizations that invest in its use by developing more efficient processes and improved communication between stakeholders.
Design Thinking: Definition

We ask what can we do to change things? That question leads us to design which is the act of changing existing situations into preferred ones.

Herb Simon

1. Balance data
   The appropriate blend of qualitative and quantitative thinking with the goal to produce positive change that responds to the needs of consumers.

2. Visual concepts
   Produces comprehensive visualizations of future alternatives allowing for interaction and feedback from stakeholders early in the process.

3. Lower uncertainty
   Reduces the potential for unintended consequences.

4. Coherent relevance
   Helps institutions and culture evolve thoughtfully blending continuity and change.

5. Long - term profits
   Produces profit for organizations that invest in its use by developing more efficient processes and improved communication between stakeholders.

6. Collaborative
   It is inherently interdisciplinary.
Before the project
Project lead identifies the problem space and collaborates with the LWC on the project brief.

During the 15 week Semester
Research team focuses on obtaining knowledge about the topic, translating insights into concept ideas and refining concepts to meet the needs of the project sponsor.

After the Project
Discuss possible future opportunities regarding the project results.

1. Identify challenge
2. Research understand user
3. Ideate conceptualize
4. Refine test and detail
5. Debrief follow up
Design Studio Process: 1, 2, 3 Device

12 WEEKS PRIOR

1 Identify challenge

15 PROJECT STUDIO

2 Research understand user

3 Ideate conceptualize

4 Refine test and detail

FINAL PRESENTATION

5 Debrief follow up

Agree on project scope, objectives and deliverables.
Design Studio Process: 1, 2, 3 Device

1. Identify challenge
2. Research understand user
3. Ideate conceptualize
4. Refine test and detail
5. Debrief follow up

Map the existing situation.
**Design Studio Process: 1, 2, 3 Device**

1. **12 WEEKS PRIOR**
   - 1 Identify challenge

2. **15 PROJECT STUDIO**
   - 2 Research understand user
   - 3 Ideate conceptualize

3. **FINAL PRESENTATION**
   - 4 Refine test and detail
   - 5 Debrief follow up

Generate ideas to serve the identified needs.
Design Studio Process: 1, 2, 3 Device

12 WEEKS PRIOR

1 Identify challenge

15 PROJECT STUDIO

2 Research understand user
3 Ideate conceptualize
4 Refine test and detail

FINAL PRESENTATION

5 Debrief follow up

Combine, expand, and refine ideas.
Design Studio Process: 1, 2, 3 Device

12 WEEKS PRIOR

1 Identify challenge

15 PROJECT STUDIO

2 Research understand user

3 Ideate conceptualize

4 Refine test and detail

FINAL PRESENTATION

5 Debrief follow up

Assess if results have met deliverables.
Design Studio Process: 1, 2, 3 Device

1. Identify challenge
2. Research understand user
3. Ideate conceptualize
4. Refine test and detail
5. Debrief follow up

12 WEEKS PRIOR

15 PROJECT STUDIO

FINAL PRESENTATION
Activity: Framing Challenge

- Identify team member roles.
- Identify challenges.
- Develop 3 milestones.
UNDERSTANDING DESIGNERS

SECTION 02
Understand The Design Process

uncertainty / patterns / insights  
clarity / focus

Adapted from Central office of Design via Noise Between Stations
http://www.designcouncil.info/mt/red/archives/2006/05/a_better_diagra.html
Understand The Design Process

uncertainty / patterns / insights                           clarity / focus

Strictly scientific process of exploration
Design process of exploration

Adapted from Central office of Design via Noise Between Stations
http://www.designcouncil.info/mt/red/archives/2006/05/a_better_diagra.html
Understand The Design Process

- uncertainty / patterns / insights
- clarity / focus

Research → Ideation → Refinement → Design Solution

Adapted from Central Office of Design via Noise Between Stations
http://www.designcouncil.info/mt/red/archives/2006/05/a_better_diagram.html
Understand: The Design Process
University of Cincinnati: Ecosystem

Section 2: Understanding Designers
Design Disciplines: Product Design

Fashion Design
Fashion designers create dimensional finished garments that may appear on the runway or in retail stores. They are also able to apply their expertise in forecasting trends in other industries.

Industrial Design
Industrial design is concerned with the appearance and usefulness of manufactured goods.
Design Disciplines: Graphic Design

**Print**

Graphic communication designers give concrete vision to information, ideas, and feelings by utilizing typography, color, images, layout, animation, editing, and digital interfaces.

**Motion**

Motion design approaches film-making and video production with graphic design principles. It creates animations and visual effects.

**Interactive**

Interactive design leverages graphics and technology to create engaging web interfaces with logical and thought out behaviors and actions.
Design Disciplines: Spatial Design

**Architecture**

Architecture is the culturally responsible design and production of buildings that are useful, durable, meaningful, and responsive to their physical and social contexts.

**Interior Design**

Interior Design focuses on the interior spaces of buildings, emphasizing the physical, psychological, and social needs of people at work and leisure.
Activity: Keys to Success
CASE STUDY:
Anesthesia: Induction Project

SECTION 02
Anesthesia: Overview

**Problem Statement:**
Anesthesia and surgery can produce high levels of anxiety for patients and their families.

Anxiety and poor compliances during anesthesia inductions have been associated with many negative outcomes like - emergence delirium, increased reports of post-op pain, maladaptive behaviors at home, and chronic hospital-related anxiety/phobias.

**Deliverable:**
The goal of the project is to create a fun, interactive and sustainable method for providing distraction to children during a time of high fear and anxiety.

**Milestone 1:**
To understand the current induction experiences.

**Milestone 2:**
To ideate actionable opportunities.

**Milestone 3:**
To create sustainable and implementable solutions.
Problem Statement:
Anesthesia and surgery can produce high levels of anxiety for patients and their families.
Anxiety and poor compliances during anesthesia inductions have been associated with many negative outcomes like - emergence delirium, increased reports of post-op pain, maladaptive behaviors at home, and chronic hospital-related anxiety/phobias.

Deliverable:
The goal of the project is to create a fun, interactive and sustainable method for providing distraction to children during a time of high fear and anxiety.

Activators
Clinical Staff
Families
Base & Liberty Campus Induction Nurses
Anna Device
Time Limit

Inhibitors
Time Constraints
Limited Funding
IRB Restrictions
Family Schedules
Technology Restrictions
Infectious Disease Control Standards

Skill Sets
Qualitative Research Methods
Benchmarking and Trend Analysis
Rapid Prototyping
Awareness of Technology
Data Visualization
Empathic Understanding

Super Power
Mind Reading
Time Travel
Unlimited Wealth
Anesthesia Phase 1: Research

Research Questions:
Who are all the stakeholders involved in the process?
What interventions are currently being used for children during the process?
What are the primary moments of stress throughout the induction process?
What does the macro induction journey look like?

Milestone 1:
To understand the current induction experiences.

Scenario Mapping Returning Patient

Based on a child having a poor prior induction experience.
Anesthesia Phase 2: Ideation

Ideation Questions:
What are the micro processes of the induction journey?
How do we change distraction to engagement?
What design opportunities are most engaging and interactive for children, parents, and staff?

Key Points of Stress
There are specific touch points that consistently bring about stress and anxiety for the patients.

Understanding the Process
Breaking down the macro journey into micro processes helped the LWC team understand how an intervention would fit into the clinical induction routine.

Opportunities for Innovation
The micro processes of the journey created opportunities for innovation to occur across the induction process.

Key Touchpoints

<table>
<thead>
<tr>
<th>At Home</th>
<th>Check In</th>
<th>SDS Room</th>
<th>Induction</th>
<th>O.R.</th>
<th>P.A.C.U.</th>
<th>Discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrive at Hospital</td>
<td>Check Vitals</td>
<td>Flavor Choice</td>
<td>Distraction</td>
<td>Check Out</td>
<td>Patient Wakes Up</td>
<td>Transport to Car</td>
</tr>
<tr>
<td>Waiting Room</td>
<td>Patient Prep</td>
<td>Mask Placement</td>
<td></td>
<td>Parents Arrive</td>
<td>Parents Arrive</td>
<td>Leave Hospital</td>
</tr>
<tr>
<td>Check-In Desk</td>
<td>Normalization</td>
<td>Family Interaction</td>
<td></td>
<td>Recovery Time</td>
<td>Recovery Time</td>
<td></td>
</tr>
<tr>
<td>Height &amp; Weight</td>
<td>Family Questions</td>
<td></td>
<td></td>
<td>Family Questions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arrive at Room</td>
<td>Transport</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Milestone 2:
To ideate actionable opportunities.
Anesthesia Phase 3: Refinement

Refinement Questions:
How can solutions be implemented?
Who should we partner with to create solutions?
Who maintains the solutions?
How will the solutions be sustained from a process and economic perspective?

Milestone 3:
To create sustainable and implementable solutions.
Problem Statement:
Anesthesia and surgery can produce high levels of anxiety for patients and their families.

Anxiety and poor compliances during anesthesia inductions have been associated with many negative outcomes like - emergence delirium, increased reports of post-op pain, maladaptive behaviors at home, and chronic hospital-related anxiety/phobias.

Deliverable:
The goal of the project is to create a fun, interactive and sustainable method for providing distraction to children during a time of high fear and anxiety.
Activity: Your Journey

- Clear milestones
- Clear action plans
- Clear time frames
Team Report Out: Next steps

Share your action plan across groups!
Thank you