Design Thinking in Classroom
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Facilitators:
Monica Arul
maruljay@nd.edu
Graduate Associate, Kaneb Center for Teaching and Learning

G. Alex Ambrose Ph.D.
gambrose@nd.edu
Professor of Practice, Kaneb Center for Teaching & Learning
Concurrent Faculty in the Education, Schooling, and Society Department

*This workshop counts toward your “Striving for Excellence in Teaching” and “Advanced Teaching Scholar” Kaneb Center certificate*
Learning Goals

After successfully completing this workshop participants will be able to:

- experience the design thinking process
- apply the design thinking methodology in a teaching or learning environment
- build a toolkit for using the various design thinking techniques

Workshop Outline

I. Overview of the design thinking process
II. Empathy
III. Define
IV. Ideate
V. Prototype
VI. Test
VII. Application of design thinking in education
Design Thinking Process

**PHASES**

1. **DISCOVERY**
   - Have a challenge. How do I approach it?

2. **INTERPRETATION**
   - I learned something. How do I interpret it?

3. **IDEATION**
   - I see an opportunity. What do I create?

4. **EXPERIMENTATION**
   - I have an idea. How do I build it?

5. **EVOLUTION**
   - I tried something new. How do I evolve it?

**STEPS**

1. **1 DISCOVERY**
   - 1-1 Understand the Challenge
   - 1-2 Prepare Research
   - 1-3 Gather Inspiration

2. **2 INTERPRETATION**
   - 2-1 Tell Stories
   - 2-2 Search for Meaning
   - 2-3 Frame Opportunities

3. **3 IDEATION**
   - 3-1 Generate Ideas
   - 3-2 Refine Ideas

4. **4 EXPERIMENTATION**
   - 4-1 Make Prototypes
   - 4-2 Get Feedback

5. **5 EVOLUTION**
   - 5-1 Track Learnings
   - 5-2 Move Forward

The Design Thinking process oscillates between divergent and convergent thinking modes. It can be helpful to be aware of the mode that corresponds to the design phase you are working through.
Design a personalized dashboard for yourself as student, TA, or instructor in Sakai

Sketch your best idea here
Design a **USEFUL** and **MEANINGFUL** dashboard for your partner. Start by gaining **EMPATHY**

<table>
<thead>
<tr>
<th>What stood out to you? What were you curious about? (*Notes/Sketches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key Insights (*Notes/Sketches)</td>
</tr>
</tbody>
</table>

- Ask your partner as to what they want to see in their dashboard
- Ask questions
- Dig deeper for specific stories

(*Notes/Sketches)
**Articulate your current POINT OF VIEW**

<table>
<thead>
<tr>
<th>Inventory of possible NEEDS</th>
<th>Define a PROBLEM STATEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Things they are trying to do (needs)</td>
<td></td>
</tr>
<tr>
<td>*use verbs</td>
<td></td>
</tr>
<tr>
<td>Ways they want to feel (insights/meaning)</td>
<td></td>
</tr>
<tr>
<td>*make inferences</td>
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</tbody>
</table>

Define a PROBLEM STATEMENT

_______________________________________________

(USER)

NEEDS a way

to ____________________________________________

(USER’S NEEDS)

in a way that makes them FEEL

_______________________________________________

(INSIGHTS/MEANING)

(my problem statement)
Generate alternatives to test

Sketch 3-5 radical ideas to meet your user’s needs
Problem Statement:__________________________________________________________

SHARE your solution and capture FEEDBACK
BUILD your solution
**SHARE your solution and get FEEDBACK**

<table>
<thead>
<tr>
<th>What worked</th>
<th>What could be improved</th>
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</table>

<table>
<thead>
<tr>
<th>Questions</th>
<th>Ideas</th>
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</table>


## DESIGN THINKING IN EDUCATION

<table>
<thead>
<tr>
<th><strong>Curriculum</strong></th>
<th><strong>Spaces</strong></th>
<th><strong>Processes and Tools</strong></th>
<th><strong>Systems</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>How might I develop students to be active seekers of knowledge in subjects that they have little knowledge of?</td>
<td>How might I use my classroom space in different ways to help my students to learn effectively?</td>
<td>How might I incorporate technology as an integrated part of students’ learning experience?</td>
<td>How might we design our campus to serve our students and the neighbouring community?</td>
</tr>
<tr>
<td>How might I engage students in compelling ways around learning modern American history?</td>
<td>How might we design our classroom space to be student-centered?</td>
<td>How might I recruit suitable TAs for my course?</td>
<td>How might we develop tools that help teachers collaborate across our different departments?</td>
</tr>
<tr>
<td>How might I inspire students to engage in concerns of the environment?</td>
<td>How might we create space for grad and undergrad student collaboration?</td>
<td>How might I redesign exams and quizzes so that they truly reflect students’ understanding?</td>
<td>How might we re-envision curriculum for the entire university while providing for individual schools’ differences?</td>
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<tr>
<td>How might we encourage the use of visuals in the curriculum?</td>
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</table>
1) Identify a Challenge

(a) The “How Might We” question

<table>
<thead>
<tr>
<th>Dreams/Things I wish would exist</th>
<th>How might we...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: I wish I could collaborate more with other faculties</td>
<td>Ex: HMW create new tools for faculties to collaborate with each other?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gripes/Things that could be better</th>
<th>How might we...</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: Students are so engaged with technology. But I don’t have enough knowledge about new technology. Things would be better if I knew a way to integrate technology into classroom.</td>
<td>Ex: HMW redesign my instructional methods to engage and support today’s learners?</td>
</tr>
</tbody>
</table>
(b) Values/constraints/gaps

<table>
<thead>
<tr>
<th>End goals (What will I work to produce?)</th>
<th>Constraints (What constraints will I need to manage?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ex: Prototypes I'll try and build</td>
<td>Ex: Needs to fit within my current academic schedule</td>
</tr>
<tr>
<td>A vision document that I'll share with others</td>
<td>Has to be ready for students to try when they return from break</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicators of Success (What measures and indicators will help me know my ideas are successful?)</th>
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<tbody>
<tr>
<td>Ex: Positive feedback I get from students</td>
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<tr>
<td>The department funds further development of the idea</td>
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</table>
(c) Write a brief

Write up a short brief that clarifies the challenge you’d like to address. Capture thoughts on why this is a problem and what the opportunity for design will be.

Ex: With the attention span of students decreasing and increasing competition with the latest technology, more students being added to the classroom every year and the increased chaos doesn’t serve the learning experience. Classroom setup strongly influences learning behavior. There is a big opportunity to redesign my classroom to better address the needs and interests of today’s students.

Challenge Question

Capture the design challenge you’ve decided to work on

Ex: HMW redesign my classroom to better meet the needs of my student?
2) Create a plan

<table>
<thead>
<tr>
<th>Design Plan</th>
<th>Checklist</th>
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<tbody>
<tr>
<td>❑ In a day?</td>
<td>To help me with planning, I will engage:</td>
</tr>
<tr>
<td>❑ In a week or two?</td>
<td>❑</td>
</tr>
<tr>
<td>❑ Spread out over months?</td>
<td>❑</td>
</tr>
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</table>

Sketch your timeline
The workbook “Design Thinking for Educators” (you can download the workbook by clicking this link) will guide you through the five phases of the design thinking process.

**Resources:**

1. [An Introduction to Design Thinking Process Guide](#) by Hasso Plattner Institute of Design at Stanford
2. [Design Thinking for Educators](#) from IDEO, offers language and activities specific to K-12 educators (includes a PDF toolkit for teachers)
3. [Design Thinking Playbook](#) - written and designed by Norman Tran from Stanford d.school
4. [An Educator's guide to design thinking](#) - a collection of curriculum created by the K-12 Lab at the Stanford design school
Notes