Development of a Design Competence Model for Learners of Human Centered Design

Author – Christi Zuber

Aspen Labs/ Coventry University
Development of a Design Competence Model for Learners of Human Centered Design

Christi Dining Zuber, RN, MHA
Aspen Labs and Coventry University
Nice to meet you...

Me:

- Registered Nurse, hospital administrator, business consultant, speaker and published writer on service design and innovation
- 23 years of experience in healthcare, 16 years of experience in service design and innovation creating and leading teams within large healthcare organizations
- PhD research aimed at developing an approach to service design and innovation that is based on the needs of people trying to learn and apply design to lead change in healthcare, education, faith-based organizations and social services.

Innovation Catalyst Program:

- A program run by the Center of Care Innovations, based in Oakland, California, created for healthcare “Catalysts” who champion innovation within their hospitals and clinics.
- The Innovation Catalyst program supports leaders who want to learn human-centered innovation mindsets and methods to help drive different ways of working in their organizations.
- Learning takes place within their own work environment.
- The Innovation Catalyst Program has been in place for 4 years and was awarded a DMI Design Value award in 2015.
Background / Context
Why this is important to me

“My expertise is medicine. We’re part-timers when it comes to innovation. And what we want are things that make us REALLY good part-timers.”

- Physician Leader -
Individual experiences in learning and applying Human-Centered Design for innovation within large organizations

Use of design as a thought process in large organizations (aka “Human Centered Design”)

Empowering individuals to become champions of innovation and change

Overview – PhD research focus
Contribution to knowledge

The literature has discussed the phases of design (Brown, 2009; Liedtka, 2015) and of organizational legitimacy (Carlgren, 2016) on how design thinking, or Human Centered Design, can build innovation capability in an organization (Carlgren, 2014). Studies of students have explored how novice multi-disciplinary teams learn and successfully practice HCD in an academic setting (Siedel and Fixson, 2014) and how experts practice design in consulting settings (Haragon 2012).

There is a gap in the literature in studying the phenomena of novice HCD learners in organizational settings, particularly within healthcare.
Research Methods
An overview of Deweyan inquiry as the foundation*

Doubtful Situation
Institution of the problem
Determination of a problem-solution
Reasoning
Experiment
Warranted Assertion

Theory
Practice
Inquiry

“That was surprising..”
“I need to look into this ..”
“It seems that…”
“If this… then…”
“I’ll try out this…”
“Well, that’s one step closer..”

*image illustration inspired by Stompff, 2012

@czuber  zuberc@uni.coventry.ac.uk
Thematic Analysis

Used to analyze classifications and present themes (patterns) that relate to the data, it utilizes interpretations (Boyatzis, 1998). Codes developed for ideas or themes are then linked to raw data as summary markers for later analysis.

Comparing the relative frequencies or themes of topics allows the researcher to determine the relationships between concepts and compare them with replicated data (Alhojailan, 2012).
Context and Method

Innovation Catalyst Program

“They (the coaches) taught us that there is a teachable, learnable skillset for innovation, and also a level of skill and expertise that we can all aspire to.”

George Su, MD
Associate Professor of Medicine, San Francisco General Hospital
per Innovation Catalyst video interview
## Data Source

### Participants

<table>
<thead>
<tr>
<th>Organizations</th>
<th># learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alameda Health System</td>
<td>3</td>
</tr>
<tr>
<td>Asian Americans for Community Involvement</td>
<td>2</td>
</tr>
<tr>
<td>Central City Concern Clinic</td>
<td>2</td>
</tr>
<tr>
<td>Kaiser Baldwin Park Medical Center</td>
<td>3</td>
</tr>
<tr>
<td>Kaiser Coalition of Unions</td>
<td>3</td>
</tr>
<tr>
<td>Kaiser Garfield Innovation Center</td>
<td>2</td>
</tr>
<tr>
<td>Kaiser Greater Southern Alameda Area Medical Center</td>
<td>2</td>
</tr>
<tr>
<td>Kaiser Los Angeles Medical Center</td>
<td>3</td>
</tr>
<tr>
<td>Kaiser South Bay Clinic</td>
<td>2</td>
</tr>
<tr>
<td>Lifelong Medical Care</td>
<td>2</td>
</tr>
<tr>
<td>Olive View UCLA Medical Center</td>
<td>2</td>
</tr>
<tr>
<td>Oregon Primary Care Association</td>
<td>2</td>
</tr>
<tr>
<td>Petaluma Health Center</td>
<td>2</td>
</tr>
<tr>
<td>Planned Parenthood of Orange County</td>
<td>2</td>
</tr>
<tr>
<td>Planned Parenthood of San Bernardino counties</td>
<td>2</td>
</tr>
<tr>
<td>Rinehart Clinic</td>
<td>2</td>
</tr>
<tr>
<td>Riverside County Health System</td>
<td>3</td>
</tr>
<tr>
<td>San Diego La Maestra Family Clinic</td>
<td>2</td>
</tr>
<tr>
<td>San Francisco Department of Public Health</td>
<td>2</td>
</tr>
<tr>
<td>San Jose Foothill Family Community Clinic</td>
<td>2</td>
</tr>
<tr>
<td>Yakima Valley Farm Workers Clinic</td>
<td>2</td>
</tr>
</tbody>
</table>

### Data Sources

- In person workshops
- Individual coach and catalyst sessions
- Coach peer group calls
- Catalyst peer group calls
- Catalyst learning exchanges

### Data collection

- 41 hours discussions recorded and transcribed; 20 hours observations
- One year in duration
## Participant co-design

### FEEDBACK SESSIONS

| User feedback session showing first prototype shown on Post-It notes in the foreground. | First sketches of learning model developed with Catalyst coaches, demonstrating a shift over time and additional stages added. |

---

---

@czuber  
zuberc@uni.coventry.ac.uk
Inspiration for Model Development

Model images from Dreyfus (1980) and Benner (1982)
Inspiration for Model Development
Model images from Dreyfus (1980) and Benner (1982)

Benner's model of skill acquisition in nursing (copyright Benner 1982)

Design Competence Model (creative commons Zuber 2017)
Addition of contemplation

Application of 5 stages of learning to HCD

Refined categories of skill development

I got in front of some of our leaders and physicians at a meeting and I asked them to draw their experience. They didn't do it. And I realized that I didn't have anything in my bag of tricks after that. I was stuck.

– Catalyst learner at 1 month

I’m feeling a lot better about my own skills now. The other day I took what I’d learned (in a different program) about how and why people resist change, and it made me look at field testing my prototypes differently. Then it wasn’t just about the idea, but the chance for people to experience it and have an opinion that was heard. I could weave those things together as I spoke with them and it gave me a whole new approach. I was like, light bulb!”

– Catalyst learner at 5 months
This study has begun to reframe learning and application of HCD into stages, developed as a design competence model that could potentially be used to create more nuanced learning programmes or learner competency evaluations.

- University to organization transitions
- Learner curriculum
- Team and individual assessments
- Mentoring/coaching guidance
What’s next

Used to adjust IBM’s design program

Being tried as approach to develop curriculum in 2 university settings

Creating tools to make the model more easily used by teams

Interest is there, but too early for understanding impact/output

Open to suggestions about how to further the work