Exploring the Role of Empathy in a Service-Learning Design Project

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Research Questions

Empathic design has been depicted as the highest form of human-centered design (Zoltowski, Oakes, & Cardella 2012) but there does not yet exist an overall depiction of the empathic design process.

1. How do designers develop an empathic understanding of differently-abled users within a service-learning design course?

2. How do designers utilize user-centric knowledge in the development of a design concept?
Conceptualizing Empathy

• Differs by Mental Process:
  • **Cognitive:** “understanding and predicting someone else’s mental state” (Lawrence et. al 2006 p. 1173)
  • **Affective:** “experiencing an emotion as the result of someone else’s mental state” (Lawrence et. al 2006 p. 1173)

• Differs by Orientation:
  • **Self-oriented:** Imagining one’s self in the other’s shoes
  • **Other-oriented:** Imagine another in his or her own shoes
    (Davis 1983; Stotland 1969)
## Service Learning Data Set

<table>
<thead>
<tr>
<th>#</th>
<th>Video Title</th>
<th>Length</th>
<th>People within the Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Partner Debrief #1</td>
<td>40:57</td>
<td>4 project partners, all students and instructors</td>
</tr>
<tr>
<td>2</td>
<td>Brainstorm Review</td>
<td>59:34</td>
<td>All students, 1 student instructor</td>
</tr>
<tr>
<td>3</td>
<td>Partner Debrief #2</td>
<td>30:56</td>
<td>1 project partner, 3 students, 1 senior instructor</td>
</tr>
<tr>
<td>4</td>
<td>Advisor Debrief #1</td>
<td>11:22</td>
<td>2 instructors</td>
</tr>
<tr>
<td>5</td>
<td>Advisor Debrief #2</td>
<td>11:35</td>
<td>6 students, 2 instructors</td>
</tr>
<tr>
<td>6</td>
<td>Partner Review</td>
<td>19:03</td>
<td>2 project partners, all students, 2 instructors</td>
</tr>
<tr>
<td>7</td>
<td>Advisor Debrief #3</td>
<td>8:53</td>
<td>2 instructors, all students</td>
</tr>
<tr>
<td>8</td>
<td>Final Review</td>
<td>40:10</td>
<td>all students, 2 instructors, 14 assorted faculty, staff, and students</td>
</tr>
</tbody>
</table>
## Methods

Seven-phase synthesis guided by two methods: (a) video data analysis (Powell et al., 2003) and (b) thematic analysis (Braun & Clarke, 2006):

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Familiarize w/ data</td>
</tr>
<tr>
<td>2.</td>
<td>Describe data</td>
</tr>
<tr>
<td>3.</td>
<td>Identify critical events</td>
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<td>4.</td>
<td>Generate codes</td>
</tr>
<tr>
<td>5.</td>
<td>Develop themes</td>
</tr>
<tr>
<td>6.</td>
<td>Organize themes</td>
</tr>
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<td>7.</td>
<td>Compose narrative</td>
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<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Awareness of content of review sessions</td>
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<tr>
<td>2.</td>
<td>Individual memos and collaborative discussions around data</td>
</tr>
<tr>
<td>3.</td>
<td>100+ instances of potential empathy</td>
</tr>
<tr>
<td>4.</td>
<td>12 patterns of empathy used in design process</td>
</tr>
<tr>
<td>5.</td>
<td>4 ways empathy was used in design process</td>
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<tr>
<td>6.</td>
<td>Student designer’s empathic design process</td>
</tr>
<tr>
<td>7.</td>
<td>This paper/presentation</td>
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</tbody>
</table>
How Empathy Was Used

Users

Camp Counselors

Project Partners

Designers

Empathic Understanding of User

User-Centered Criteria

Technical Criteria and Constraints

Concept Generation

Concept Evaluation
Students’ Empathic Design Process

- Users
- Camp Counselors
- Project Partners
- Designers

Direct Observation — Mediating Stakeholder — Empathic Understanding of User

Refine User Suggestions — Synthesize knowledge — Empathic Concern

User-Centered Criteria — Technical Criteria and Constraints

Design for User-Centered Criteria — Integration

Concept Generation

Check with Users, Imagined Use

Concept Evaluation
Direct Observation of Users

Direct Observation

- Users
- Camp Counselors
- Project Partners
- Designers

Empathic Understanding of User
Jia: Normally, we’ll be, I, I consider to help them [the kids in wheelchairs] and they – if the ramp is going up, I saw the kid is holding the back part of the wheelchair just in case they fall down. [Video 2 – 13:00]
Mediating Stakeholder

- Users
- Camp Counselors
- Project Partners
- Designers

Direct Observation

Empathic Understanding of User
Claire: One of the things that they [project partners Todd & Dominic] expressed is that when the kids go down the zip line they [the kids/users] want to have their friends cheering them on and telling them, like go now and having them [their friends] watch. [Video 8 – 11:30]
Projection

- Users
- Camp Counselors
- Project Partners
- Designers

- Direct Observation
- Mediating Stakeholder

Empathic Understanding of User

Projection
Ellie: If I’m down low, do I want to really be able to see the ramp structure above me? Is there something that we could do to the underside of the ramp to kinda hide it or like hang plants from it, or something? Make that interesting to look at, or hide it so it doesn’t feel like you’re on this really long ramp. [Video 2 – 7:00]
Simulation

Users

Camp Counselors

Project Partners

Direct Observation

Mediating Stakeholder

Empathic Understanding of User

Designers

Projection, Simulation
Clark: When I think of going in the trees, I wanna be able to see like from the ground up, the whole view. And when we went to the lake yesterday and we were sitting at kinda like the outlook part of the railings I feel like if someone’s sitting [Chase sits down in a chair and holds his hands up in front of his head to show is visual vantage point] in a wheelchair, they may not get the whole experience from the ground up. So maybe having like parts along that are clear so they could actually feel like they could view everything. [Video 2 – 10:20]
**Naomi:** And on Tuesday, we got to interview the campers. So we interviewed ten different campers and we gave them, [showing some paper slips] um – this is just one of the examples. So we would ask them, like what kind of things do you like to do, would you like to be able to in treehouse and then we would like lay out all these different pictures and kind of have like, you know, a point to pick, oh, this would be cool or this would be cool. [Video 6 – 3:30]
Ellie: In terms, of, um, safety, I'm just thinking about this ramp, it sounds like it's gonna need to be over a 100 yards. It's gonna be really long. So we have this really long entryway. In terms of safety, is there a concern if the child would need to be evacuated from the tree house quickly? [Video 1 – 26:50]
Synthesize Empathic Knowledge

- Users
- Camp Counselors
- Project Partners
- Designers

Direct Observation → Empathic Understanding of User

Mediating Stakeholder → Empathic Concern

Projection, Simulation, Immersion

Synthesize knowledge

User-Centered Criteria
Richard: So when we talked with campers and got a lot of their ideas, um, I think most of the ideas actually we got were about activities that they wanted to do in the treehouse. So we wanted to make, um, create a fun environment to the treehouse that encourages building friendships, um, having a nice place they hang out and do fun activities with their friends. [Video 6 – 5:20]
Refine User Knowledge

Refine User Suggestions

Empathic Understanding of User

Direct Observation
Mediating Stakeholder

Synthesize knowledge

User-Centered Criteria

Concept Generation

Empathic Concern

Projection, Simulation, Immersion

Camp Counselors
Project Partners

Designers

Users
Clark: One of the camper’s idea that we actually didn’t think of and love was to have a clear surface that they could go over on the ramp. And most of the campers loved this idea but a couple were kind of hesitant, you know, maybe they had a fear of heights. So one idea that we all kind of came up with was have a challenge by choice. So maybe you could have one part of the ramp that kind of branches off that has, you know, this clear material and they could see down to the ground. [Video 6 – 9:30]
Design for User-Centered Criteria

Users

Camp Counselors

Project Partners

Designers

Direct Observation

Mediating Stakeholder

Projection, Simulation, Immersion

Empathic Understanding of User

Empathic Concern

Refine User Suggestions

Synthesize knowledge

User-Centered Criteria

Design for User-Centered Criteria

Concept Generation
Clark: So after talking with you guys [project partners] and the campers, it seemed one of the main objectives was to get the kiddos off the ground and into the trees and connect more with nature. So just one example here is, um, this is actually illustrating a cheering platform, so they could go into the ramp and then cheer on their fellow campers as they get on the zip line. [Video 6 – 7:30]
Integration

- Users
  - Direct Observation
- Camp Counselors
  - Mediating Stakeholder
  - Empathic Understanding of User
  - Refine User Suggestions
  - Synthesize knowledge
- Project Partners
  - Empathic Concern
- Designers
  - Projection, Simulation, Immersion

- User-Centered Criteria
- Technical Criteria and Constraints
  - Integration
  - Design for User-Centered Criteria
  - Concept Generation
**Sebastian:** We’re gonna be cutting down a lot of trees for this, so my idea was to take those trees and recycle them as railing, um, on the ramps. So that way – and just completely unprocessed, so that way they would actually - when they’re going up, they would be able to touch the trees as they’re going up the ramps. [Video 2 – 12:00]
Check with Users

- Users
- Camp Counselors
- Project Partners
- Designers

- Direct Observation
- Mediating Stakeholder
- Projection, Simulation, Immersion

- Empathic Understanding of User
- Empathic Concern

- Refine User Suggestions
- Synthesize knowledge

- User-Centered Criteria
- Technical Criteria and Constraints

- Design for User-Centered Criteria
- Integration

- Concept Generation
- Check with Users
- Concept Evaluation
Richard: So just one of many ideas we came up with was having a wall in the treehouse on which the campers could, you know, get some paint on their hands and leave their handprint on the treehouse. We thought that’d be a really fun activity and a good way to, you know, interact with the treehouse and make friends. And a lot of the camp counselors and campers loved that idea because it’d be a nice way to leave their mark on the treehouse. [Video 6 – 5:30]
Jordan: I didn't know if it should be like square if the corners are easier for the them to like push off someone told us, that they grab that, and then like they can turn easier, or if it should be a circle. But I didn't know if that would be too like easy to go backwards on. [Video 2 – 6:00]
Students’ Empathic Design Process
Closing Narrative

• Pluralistic synergy
• Role of immersion and empathic environment
• Empathic accuracy is not guaranteed
• Role of non-empathic behaviors and external constraints
• Making empathy explicit
• This is an emergent empathic design process
Thank you!

References