Mar 31st, 9:00 AM - 9:45 AM

Empathy in Experiential Learning: Universal Design Problem Solving

Lilia Gomez-Lanier Dr.
University of Georgia, lglanier@uga.edu

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The Role of Empathy in Experiential Learning: 
A Case Study of Universal Design Problem Solving

2016 SoTL Conference, Savannah, Georgia
Presenter: Dr. Lilia Gomez-Lanier
Assistant Professor, University of Georgia
Definition

• As defined by Merriam-Webster dictionary:
  – **Empathy** is the feeling that you understand and share another person's experiences and emotions
  – **Empathy** is the ability to share someone else's feelings
  
  versus

  – **Sympathy** is the feeling that you care about and are sorry about someone else's trouble
Introduction - Purpose

• Using the concept of universal design problem solving this mixed methods research study explores the role that empathy may have on the experiential learning of interior design students in a residential design studio. Specifically, empathy's role on knowledge acquisition and the application of that knowledge.
Relevance

• According to the U.S. Census Bureau, the elderly population will more than double between now and the year 2050, to 80 million. That means roughly one out of five adults in the U.S. will be over the age of 65.

• Interior designers as designers of the built environment are tasked with improving the overall lives of their clients, specifically safety, health and welfare of clients.
Participants

- Participants were all residential interior design students enrolled in TXMI 4390 Senior Studio, Fall 2015
- Participants were all females
- Of the 11 students enrolled in the class, all students volunteered to be research study participants. However, only 10 completed the surveys.
Methodology

- Research questions for this mixed methods research study were:
  - RQ1 - Does empathy influence the design skills of interior design students?
  - RQ2 – Does empathy influence how interior design students approach designing spaces?
- Quantitative and qualitative data was obtained from:
  - Quantitative phase:
    - Online pre and post design project surveys.
    - The survey “The measurement of attitudes toward disabled persons – Form A” was developed by Harold E. Yuker, J.R. Block and Janet Young. Published in 1970
  - Qualitative phase:
    - Summary of the disability simulation (assignment 1)
    - Observational analysis of completed design project (assignment 2)
Universal Design for Learning (UDL)

- According to the National Center for UDL the purpose of UDL curricula is not simply to help students master a specific body of knowledge or a specific set of skills, but to help them master learning itself.
- The four components of UDL curriculum are: a) goals, b) methods, c) materials, and d) assessments
UDL Curriculum = UDL in Design

Goals/Learning Expectations

Methods/Instructional Procedures

Materials

Assessments

Learn UDL 7 design principles and skills

Lectures/Hands on drawing and experience

Photographic documentation of home, drawings, client interview, experience disability

Surveys, Reflection journals, review of drawings
Course Assignment 1

• Assignment 1 was a hands exercise that simulated a minimum of three disabilities as an introduction to physical disabilities and universal design.
• Students completed Assignment 1, prior to commencing the farmers’ design project, known as assignment 2.
• Student led teams completed assignment 1.
Course Assignment 1

• **Assignment 1 activities completed were:**
  - Open the classroom door to the hall without any assistance. Observe the measurements needed on either side of the door and exit on to the hall.
  - Enter the small computer lab and sit at the table or computer terminal, then exit the room.
  - Enter one of the studios and direct yourself to a table. Use the table for a few minutes.
  - Go out of the studio and proceed to the printer and locker areas.
  - Attempt to purchases an item from the vending machine in the building.
  - Go to the restroom and transfer to the handicap stall using only the grab bars.
  - Go outside the building and down the ramp. After using a portion of the sidewalk re-enter the building going up the ramp.
  - Re-enter the classroom without assistance.
Course Assignment 2

• The University’s Institute of Human Development and Disability (IHDD) provided access to the farmers.
• The farmers’ design project required teams of students to propose home renovation ideas for three distinct disabled Georgia farmers.
• One team of three students was assigned to each farming family, while a fourth team of two students was assigned to farmer 3.
• The assignment consisted of two parts - Part A, a program analysis and Part B, design drawings.
• The design portion had to incorporate the principles of universal design.
Course Assignment 2
Part A - Program Analysis

• Farmer 1 was an amputee, who uses a prosthetic leg and wheelchair to get around.
• Farmer 2 is in the early stages of Parkinson
• Farmer 3 is paralyzed from the waist down and on his left side from a spinal chord injury.
Course Assignment 2
Part A - Program Analysis

• Farmers 1 and 2 were ill and physically unable to meet with students.
• Even though students proposed design ideas for all three homes, they were only able to interview farmer 3 and his wife on their special needs and how the design would improve daily lifestyles and work environments.
• Students physically measured and photographed the existing conditions of Mr. Spears’ home.
• Earlier in the semester the researcher/ instructor and an IHDD representative met with farmers 1, 2 and 3 to discuss the project, interview them and gather building data. This was done because the farmers felt uneasy about having a large group of students meet them initially.
## Quantitative Analysis

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**Green** = Post study survey had a higher mean  
**Yellow** = Post study survey had a lower mean

1. Disabled people are often unfriendly – Post study disagree
2. Disabled people are more emotional than other people – Post study disagree
3. Most disabled persons are more self conscious than other people – Post study neutral moving from agree
4. Disabled people show as much enthusiasm as other people – Post study agree
Quantitative Analysis

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Green = Post study survey had a higher mean. Yellow = Post study survey had a lower mean
11. Severely disabled persons are usually untidy– Post study neutral moving to disagree
15. Disabled persons usually are not as conscientious as physically normal persons – neutral moving to agree
Quantitative Analysis

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Green = Post study survey had a higher mean. Yellow = Post study survey had a lower mean
18. There are more misfits among disabled persons than among non-disabled persons – Post study neutral moving to disagree
19. Most disabled persons do not get discouraged easily – Post study neutral moving to agree
## Quantitative Analysis

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**Green** = Post study survey had a higher mean  
**Yellow** = Post study survey had a lower mean

20. Most disabled persons resent physically normal people – Post study neutral moving to disagree
21. Disabled children should compete with physically normal children– neutral moving to agree
22. Most disabled persons can take care of themselves – neutral moving to agree
23. It would be best if disabled persons would live and work with non-disabled persons – Post study agree moving to neutral
**Quantitative Analysis**

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<td>3.00</td>
<td>5.00</td>
<td>4.100</td>
</tr>
</tbody>
</table>

**Green** = Post study survey had a higher mean.  **Yellow** = Post study survey had a lower mean

25. Disabled people are just as self-confident as other people—agree
27. Physically disabled persons are often less intelligent than non-disabled people—disagree moving to strongly disagree
29. Disabled persons do not want any more sympathy than other people - agree
Qualitative Analysis - Course Assignment 1
Student Comments

• Team 1 student indicated that “only one vending machine had Braille for the blind, however a blind person would have no way of knowing what items are inside the vending machine”.

• Team 1 student indicated that “navigating the stairs going up was easier than going down. Felt less worried about falling going up”.

• Team 1 student indicated that “there where no handicap parking spaces adjacent to the building, so a disabled person would be forced to go down the walkway for a parking space.”
Analysis - Course Assignment 1

TEAM 1 STUDENT BLINDFOLDED NAVIGATING THE FIRST FLOOR

TEAM 1 STUDENT BLINDFOLDED NAVIGATING EXTERIOR STAIRS
Qualitative Analysis - Course Assignment 1
Student Comments

• Team 1 student indicated that “the most challenging aspect of navigating through the restroom was figuring out how to transition from the walk to the toilet seat”.

• Team 1 student indicated that “experiencing hearing and visual impairments at the same time caused me to have issues with disorientation and balance”.

• Team 1 student indicated that “I think people as obstacles pose an equal threat to someone with disabilities than actual physical barriers”.

• Team 1 student indicated that “as interior designers it is our responsibility to make the world a safe place for all people specially for those with disabilities”.

Analysis - Course Assignment 1

Team 2 Student Opening Door

Team 2 Student at Vending Machine
Qualitative Analysis - Course Assignment 1
Student Comments

• Team 2 student indicated that “it was a challenge to open classroom and hallway doors, use the vending machine, enter the restroom and transfer to the handicap stall’s toilet using grab bars”.

• Team 2 student indicated that “the activities we performed were physically hard to accomplish, but also mentally difficult to accept”.

• Team 2 student indicated that “although I knew this activity would be difficult, there were many challenges and dangers I did not foresee occurring. Never considered the loss of balance we would experience plugging our ears while blind”.

Analysis - Course Assignment 1

TEAM 2 STUDENT ACCESSING RESTROOM STALL

TEAM 2 STUDENT ATTEMPTING TO USE STALL
Qualitative Analysis - Course Assignment 1
Student Comments

• Team 2 student indicated that “we had exceptional difficulty in the restroom. I could not get out of the wheelchair and onto the toilet seat only using grab bars”.

• Team 2 student indicated that “the stall’s purse hook was inaccessible. As a designer I would install two hooks at different heights to accommodate the disabled”.

• Team 2 student indicated that “I felt as though I was an inconvenience to the other person entering the restroom”.

• Team 2 student indicated that “this experience drastically changed my perception of what it is like to be disabled and the challenges that disabled people face on a regular basis”.
Qualitative Analysis - Course Assignment 1
Themes

• Themes:
  – Additional physical effort needed to perform daily tasks.
  – Mental and physical challenges are constant
  – Physical disabilities cause additional physical ailments.
  – Mental stress brought about because of physical disabilities.
  – People act as physical barriers.
  – Interior designers responsible for safe environments.
Design Concept:

The design concept for this residence is “home for a hero”. The client is a veteran who served in the U.S. Army and Air Force for over 20 years. He is a beginning farmer with an enthusiasm for growing organic food. The overall design will provide barrier-free access to the entire residence for the client. Up cycling and re-use of existing materials will be implemented in order to support the client’s sustainable values.
Qualitative Analysis – Design
Farmer 1 Residence

BEFORE FLOOR PLAN – AS BUILT DRAWINGS

PROPOSED FLOOR PLAN

Proposed floor plan is more open and accessible from living room to other areas
Qualitative Analysis – Design
Farmer 1 Residence

**ADAPTABLE UPPER KITCHEN CABINET**

REV-A-SHELF PULL-DOWN SHELF
Item No. RV-5PD-24CRN

- Pull Down Shelving System
- Chrome Plated Shelves
- Gas-assist Mechanism
- Bottom or Side Mount
- Locking Arm Feature
- Reach Top Shelves
- Various Sizes Available
- Weight 23 – 28 lbs.

**ADAPTABLE SHOWER SEAT**
Qualitative Analysis – Design
Farmer 2 Residence

DESIGN CONCEPT

"The only important thing about design is how it relates to people" - Victor Papanek

A home is a very personal environment. How it functions, is used and perceived revolves around the whoever resides within the space. In the re-design of the Koehn's home, the main focus was ease of use and accessibility. By considering the user's habits, preferences and lifestyle, a more accessible space emerged that will enhance the client's day-to-day experiences within the home. ADA standards were upheld and applied to the design in planning for current and future years so no additional modifications will have to be considered down the road.
Floor plan remained relatively unchanged, however the proposed floor finishes allowed for easier wheelchair/ walker movement. Also the toilet fixtures and kitchen/bathroom cabinets were adapted.
<table>
<thead>
<tr>
<th>ELEVATIONS</th>
<th>FINISHES</th>
<th>FIXTURES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kitchen Elevation</strong></td>
<td>Heritage Maple Alamo Wood Salty Floor</td>
<td>Whirlpool Dishwasher</td>
</tr>
<tr>
<td><strong>Bathroom Elevation</strong></td>
<td>Mocha Tan TrafficMaster Low Pile Carpet</td>
<td>Side Mount Bracket</td>
</tr>
<tr>
<td></td>
<td>Ivory White Ovation Porcelain Floor Tile</td>
<td></td>
</tr>
</tbody>
</table>
Master bathroom was increased in size and provided with grab bars, turning radiiuses and easy entry.
Qualitative Analysis – Design
Farmer 3 Residence

THE SPEARS RESIDENCE

KITCHEN IDEAS

WOLF ADA CABINETS WITH RAISED TOEKICKS

REV A SHELF CABINET INSERTS FOR MR. SPEARS TO BE ABLE TO REACH AND PULL DOWN

PROPOSED SUGGESTIONS

BATH IDEAS

PORCELAIN NO SLIP TILE

NEW SLIDING BARN BATHROOM DOOR

SAFETY GRAB BARS

LIVING ROOM IDEAS

NEW INTERIOR DOOR

SLATE CERAMIC FOOR TILES

NEW EXTERIOR DOORS

WILSON ART LIGHT BEIGE LAMINATE

TERRACOTTA LAMINATE

SW 9166 Drift of Mist Interior / Exterior Location Number 2086-62

SW 9114 Moonmist Interior / Exterior Location Number 123-C1

SW 7042 Shoji White Interior / Exterior Location Number 2086-62
Conclusion

• RQ1 – Does empathy influence the design skills of interior design students?

• Drawings and design concepts indicate that students’ empathy guided them toward designing spaces that are open and easily navigated.
Conclusion

• RQ2 – Does empathy influence how interior design students approach designing spaces?

• The survey responses that did dramatically change indicate that the students gained a greater sensitivity toward disabled persons’.

• The drawings and assignment 1 summaries indicate that students approaches to design were influenced and responsive to the challenges that disabled persons have.
Conclusion

• **RQ2 – Does empathy influence how interior design students approach designing spaces?**

  • Student team 4 comment “This exercise definitely made me appreciate being fully capable. The hardest thing was probably being visually impaired or blind. My personality changed a little which was a big thing I noticed. I was a lot more timid than usual and very cautious. I was able to find my way around slowly but started to think about how it would be if I were in a place I had never been before. That would be a true test.

  • Student team 1 comment “as interior designers it is our responsibility to make the world a safe place for all people specially for those with disabilities”.

  • Student team 2 comment “this experience drastically changed my perception of what it is like to be disabled and the challenges that disabled people face on a regular basis”.

  • Student team 3 comment “as I traveled throughout the halls, I noticed that other students who did not know about the exercise looked at me differently and tended to go the opposite way because I was blocking so much of the hallway and doorways”.
Thank you for your time
References

• American Society of Interior Designers (ASID). [https://www.asid.org/content/design-aging#.Vu7_K_krLcc]

• National Center for Universal Design for Learning. [http://www.udlcenter.org/aboutudl/udlcurriculum]

• U.S. Census Bureau

• [www.census.gov/population/www/pop-profile/elderpop.html] Fact sheet on the elderly population
Survey Questions

1. Disabled people are often unfriendly
2. Disabled people should not have to compete for jobs with physically normal persons
3. Disabled people are more emotional than other people
4. Most disabled persons are more self conscious than other people
5. We should expect just as much from disabled as from non-disabled persons
6. Disabled workers cannot be as successful as other workers
7. Disabled people usually do not make much of a contribution to society
8. Most non-disabled people would not want to marry anyone who is physically disabled
9. Disabled people show as much enthusiasm as other people
10. Disabled persons are usually more sensitive than other people
Survey Questions

11. Severely disabled persons are usually untidy
12. Most disabled people feel that they should be more severe than the one given to the non-disabled
13. The driving test given to a disabled person should be more severe than the one given to the non-disabled
14. Disabled people are really sociable
15. Disabled persons usually are not as conscientious as physically normal persons
16. Severely disabled persons probably worry more about their health than those who have minor disabilities
17. Most disabled persons are not dissatisfied with themselves
18. There are more misfits among disabled persons than among non-disabled persons
Survey Questions

19. Most disabled persons do not get discouraged easily
20. Most disabled persons resent physically normal people
21. Disabled children should compete with physically normal children
22. Most disabled persons can take care of themselves
23. It would be best if disabled persons would live and work with non-disabled persons
24. Most severely disabled people are just as ambitious as physically normal persons
25. Disabled people are just as self-confident as other people
26. Most disabled persons want more affection and praise than other people
27. Physically disabled persons are often less intelligent than non-disabled people
28. Most disabled persons are different from non-disabled
29. Disabled persons do not want any more sympathy than other people
30. The way disabled people act is irritating