



Preparing Students for Real World Engagement with End Users

Provost Teaching and Learning Fellows
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Background

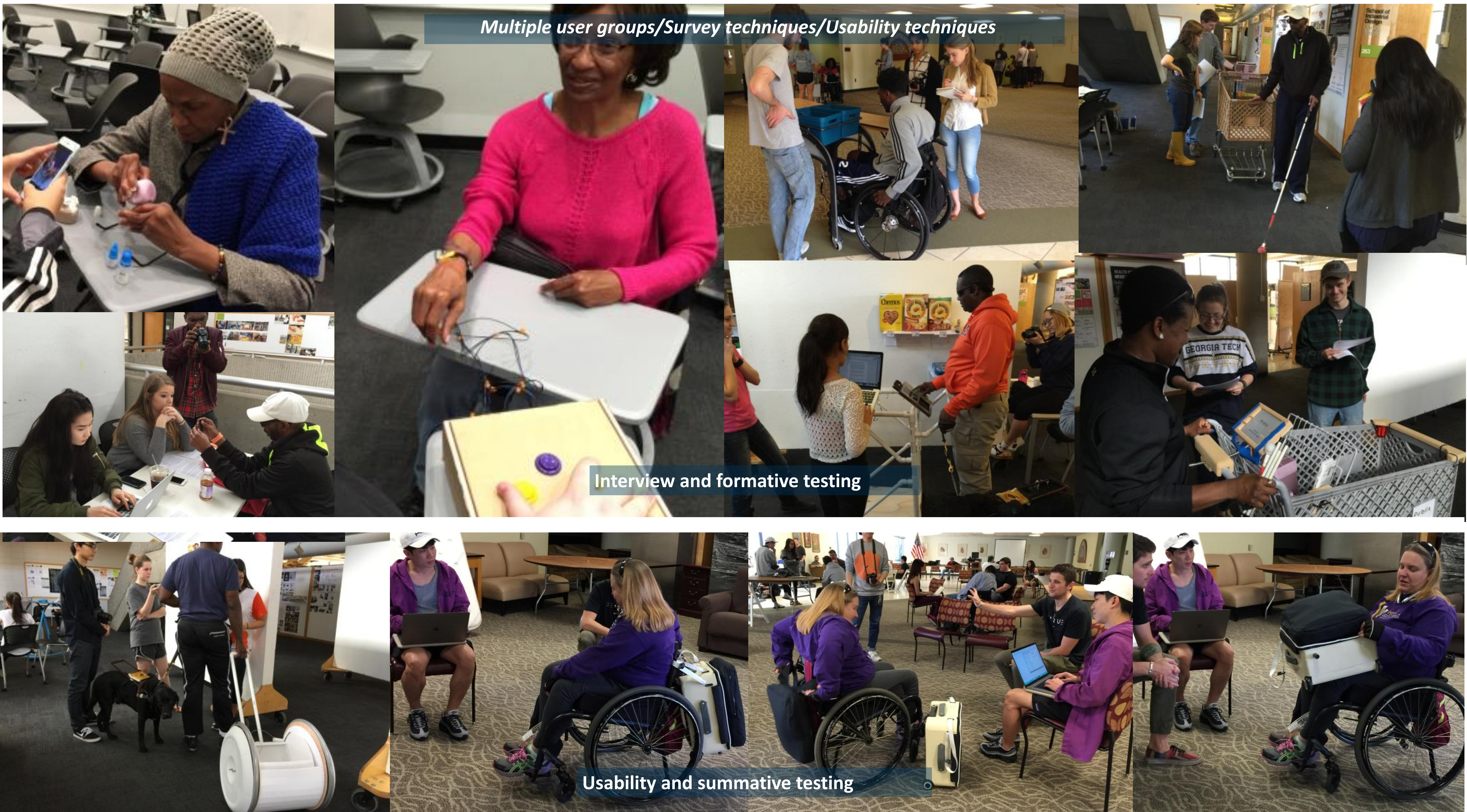
- Introduce sophomore students to
 - Universal Design
 - Assistive Design
- Gain practical experience with both approaches to design
- Interact with potential users
 - User needs and perspectives
 - Testing and Feedback/Input
 - Empathy/Awareness of unfamiliar needs

Method

- Two design projects
- Universal Design (6 weeks)**
 - Teams of 3-4 students
 - Goal: Universal carry on travel bag with mobile/wireless features
 - Target: General public and users with limited mobility
 - Assistive Design (4 weeks)**
 - Students created individual designs
 - Goal: Create a product that solves a problem related to one of two scenarios
 - Go to bookstore, find and buy something
 - Go to cafeteria, select and pay for food
 - Target: Users with limited vision

Method: Project Structure

- Visit/participation from users
 - 3 visits during UD project
 - Needs/problem discussion at beginning
 - Prototype testing input midway through
 - Performance/usability testing at end
 - 2 visits during AT project
 - Initial solutions created based on research/simulation
 - Feedback with users on potential solutions + discussion on shortcomings/differences with their simulated testing
 - Last visit to test final design and walk through the task/environment with users



Multiple user groups/Survey techniques/Usability techniques

Interview and formative testing

Usability and summative testing

Method: Student Survey

- Survey data collected at two points:
 - Between UD and AT project
 - At end of AT project
- Questions focused on:
 - What was learned from each project
 - Perceptions of similarities/differences between UD and AT design (before and after)
 - Identify difficult/easier aspects of each project
- 34 total sophomore ID students

Results

- Most students non-disabled
- Few personally experienced with temporary disability or known/cared for others with a disability
- Most had reasonable initial expectations on effectiveness of simulation
- Results of testing between simulation and with users in actual scenario were almost always different

Outcomes

- Successful outcomes in:
 - Ability to practice/hone engagement/research techniques with real users
 - Encounter unexpected issues that don't arise without user engagement
 - Learn advantages, disadvantages, appropriate use of simulation in design
 - Challenge personal assumptions

Future Suggestions

- Logistics are a challenge, advance planning is required
 - Time/manpower
 - Compensation
 - Mobility vs visually impaired
- Short project timeframes (weeks) mean limited level of finishing for product prototypes. Can affect:
 - Feedback
 - Testing
- Feedback from users may not be objective or critical
 - Feedback from users can tend to be very subjective
 - Above two points can be real world issues as well
- Can be helpful to brief users before meeting students to set expectations and help them to provide more relevant feedback



User Engagement / Focus on needs for many / Universal Design

User Engagement / Simulation vs coping strategies

User Engagement / Simulation vs coping strategies



ONE-HANDED BOTTLE OPENER TWIZIE

User Engagement / Focus on unique tasks / Assistive Technology

Students simulating conditions in the assistive design project related to a missing arm (left) and missing leg (right).