

OT & Industrial Design: Developing Client-Centered Product Designs to Enhance Occupational Performance & Participation

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Objectives

- **Recognize** the needs and benefits of broadening inter-professional collaborations outside traditional occupational therapy models of teaching, learning, and practice.
- **Identify** components required to create, conduct, and integrate effective inter-professional occupational therapy and industrial design collaboration
- **Describe** outcomes to measure effectiveness at the student, client, and inter-professional levels.

Project Summary

Project Inclusive is a collaboration between the Occupational Therapy (OT) Department at Thomas Jefferson University and the Industrial Design (ID) Department at the University of the Arts in Philadelphia, PA.

Combining disciplines provides OT students with exposure to design thinking, prototyping, and concepts of mass production. ID students learn structured interviewing, understanding of living with a disability, and familiarity of OTPF language and process. Combining OT and ID gives clients innovative opportunities to maximize their function and overall quality of life!

OT/ID partnerships can be small-scale projects (2-3 week toy/game designs based on fictional case stories) or larger-scale projects (6-10 week independent study).

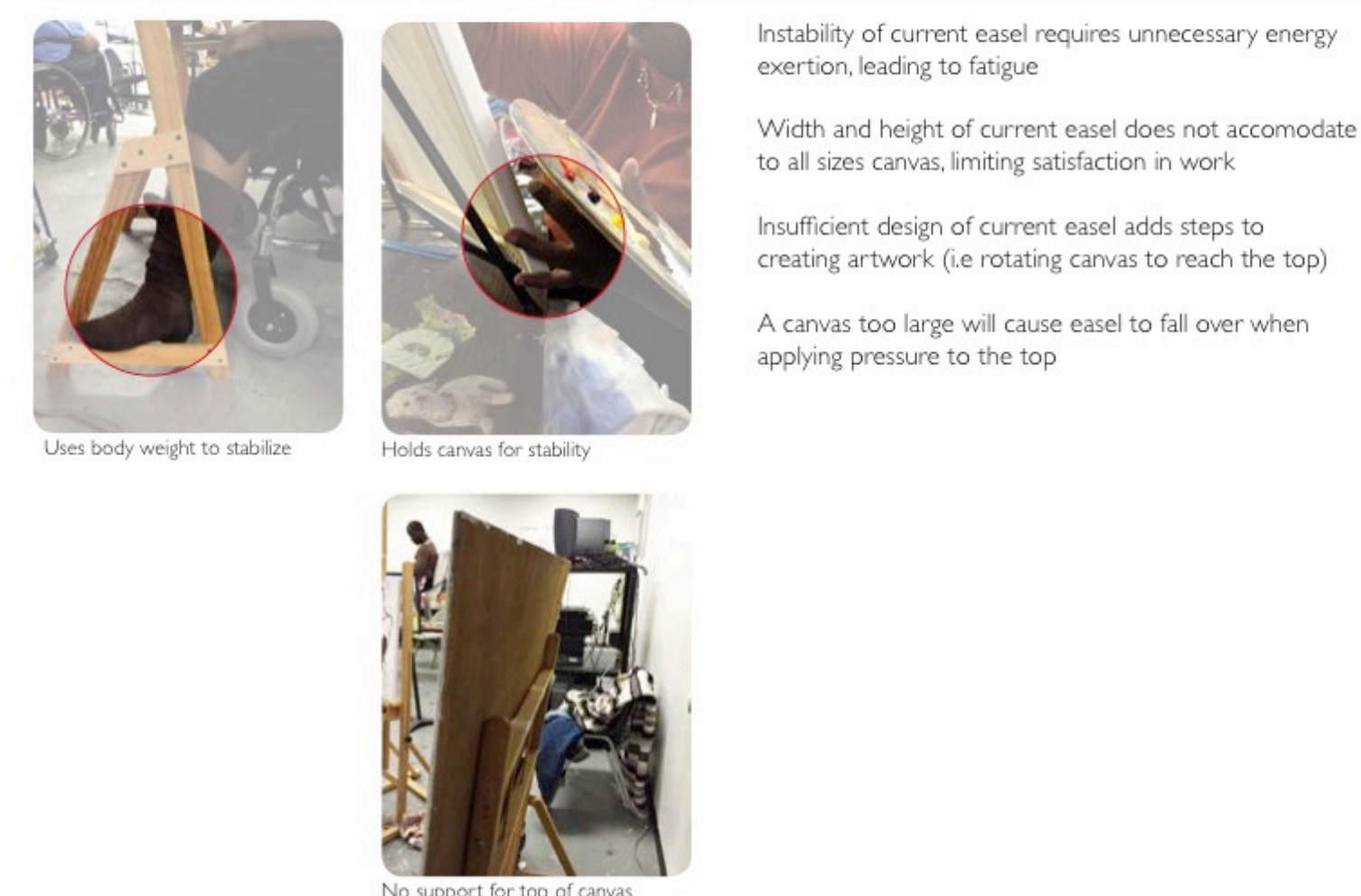
Toy and Game Design Charette
Students are assigned a short pediatric fictional case story based on a disability. An ID student is paired with 7 OT students; the team is given 3 weeks to create a *chunky monkey* toy prototype. In week 3, student teams are given 10 minutes each to present their prototype to the audience “Shark Tank” style.

Independent Study Course
OT and ID students collaborate 1x week over 6-10 weeks to employ an empathic design framework. The students use structured interviews and iterative discussion coupled with environmental observational research within each client’s work/home environment. With feedback from their client, students identify a design problem causing occupational dysfunction. Teams conduct research, sketch, brainstorm ideas, prototype, and render potential solutions for feedback and input. By the end, teams develop a new product usable or potentially usable by their client to enhance occupational participation.

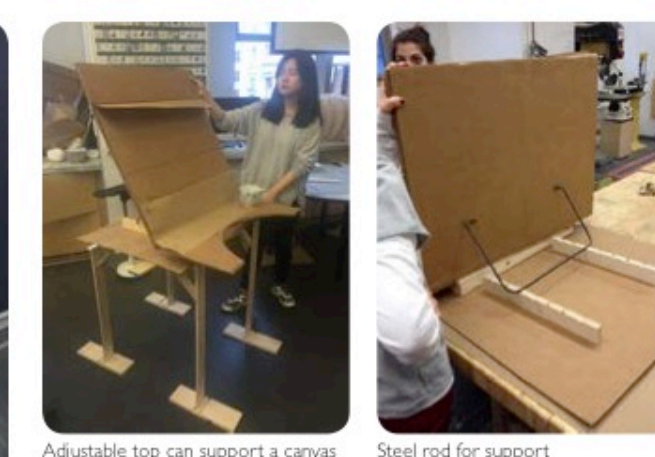
All renderings and photos presented on this poster were created by our students for their final presentations in the course. We graciously thank our students and clients for their hard work and contributions to this poster. V*Sel: Sarah Jamieson & Sarah Sadosky (OT); Hyunhwa Kim & Andi Maddalo (ID); Vi (Client). Simple Stitch: Megan Stromer & Briana Elson (OT); Jude Yao Marks & Lena Feliciano Harrison (ID); Glenda (Client). Michael's Pool Toy: Wes Young (OT), Libby Gephart (OT), Shana Caplan (OT), Katie Storms (OT), Iris Chiu (OT), and Allie Looney (ID). Wii Game Console: Debbie Greenwald (OT), Samantha Kampmeier (OT), Jillian Permar (OT), Michaela Scotten (OT), Hannah Werblin (OT), Allie Ziff (OT), and Diana Smith (ID).

Independent Study Course Sample Project: V-Sel

Client Constraints:



Prototyping:



I like that the V-Sel, I'm going to patent that! I want to be able to get into the easel!
I'm not interested in functionality. I'm interested in usefulness. That sounds great!

Client Input:



"This is something that would aid a lot more people like me."
"Having so much room - just the table space, which is a lost commodity here - it really helps good!"
"You don't have to change table apparatuses - this is good!"

Final Product Rendering:



Goal Attainment Pre to Post:
DECREASED PAIN AND FATIGUE (-2) TO +2
INCREASED PRODUCTIVITY (-1) TO +2

Outcomes/Themes

- **Independent Study Course**
- **OT Post Feedback**
- The course added to knowledge and encouraged critical thinking/reasoning
Strongly Agree: 64%
Agree: 36%
- Freedom in the design studio took getting used to!
- Challenging to locate appropriate reliable/valid assessment tools to capture pre/post outcomes

Independent Study Course Sample Project: Simple Stitch

Client Constraints:



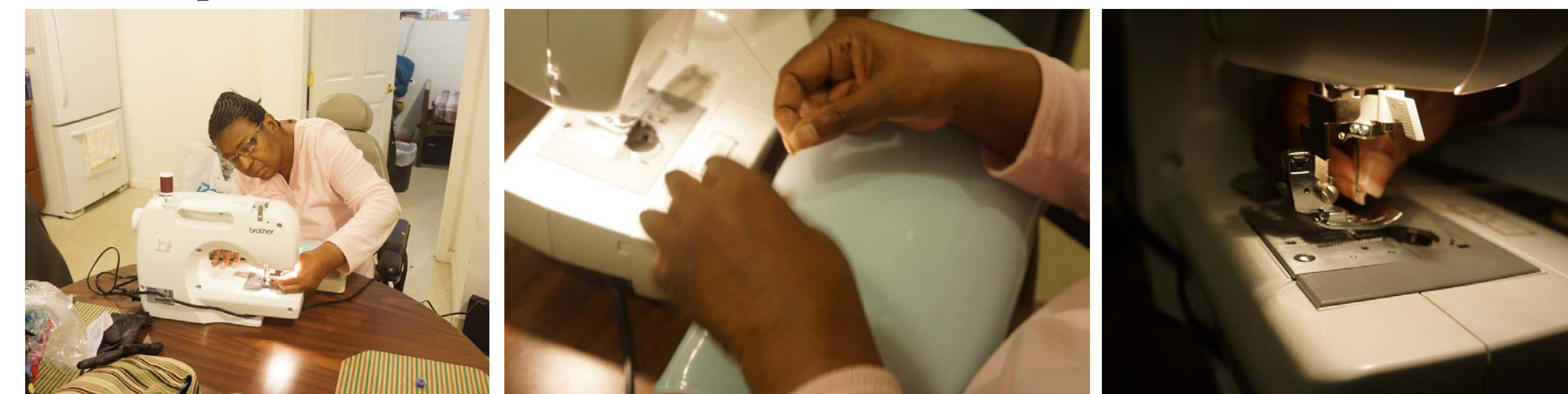
Problem:
Designing a Sewing Machine Pedal that does not require ones feet, and leaves both hands free



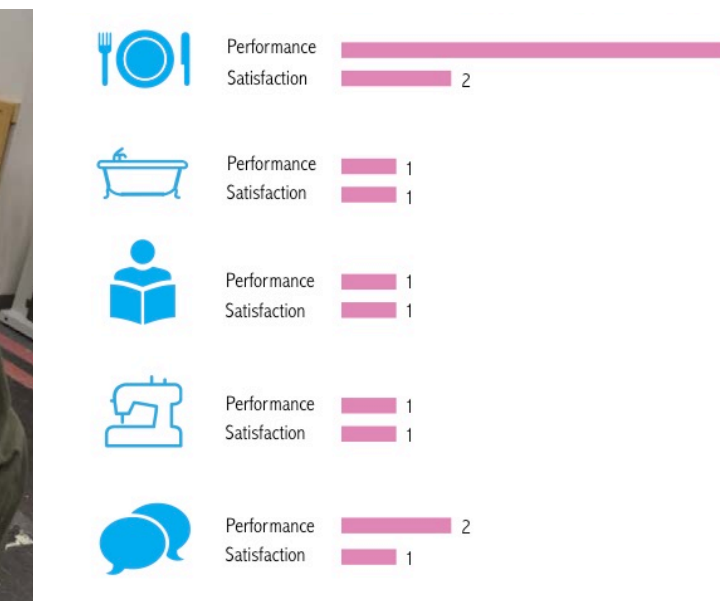
Prototyping:



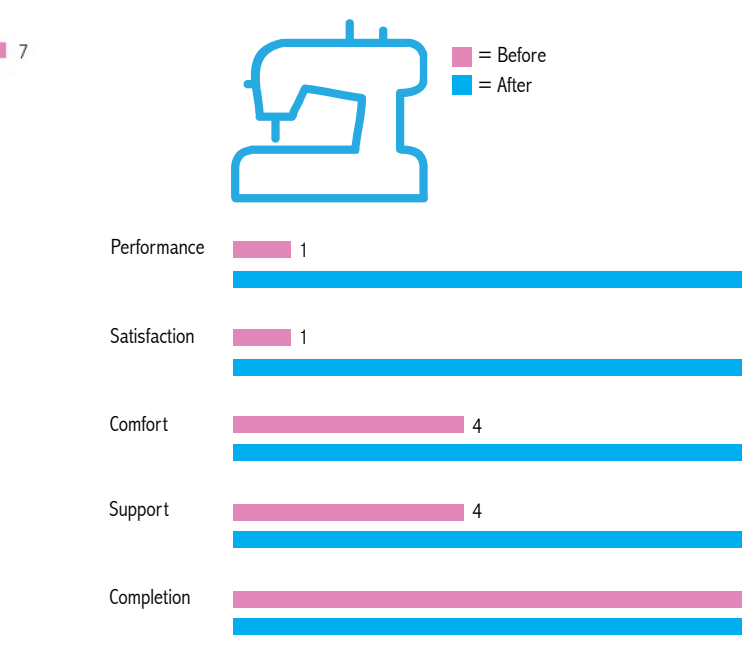
Client Input:



COPM: Pre



COPM: Post



Final Prototype:



Toy and Game Design Charette Sample Projects



1. **Michael** is an 8 y/o male with Duchenne muscular dystrophy (uses power WC for mobility). He and his family live in Florida where they have an in-ground pool in their backyard. Michael spends most of his free time swimming with his siblings & friends in the summer; however, it has become increasingly more difficult for him to be in the water due to fatigue and his parents are worried he now poses a safety risk. Michael does not want to lose this valuable playtime with peers.
Help Michael be able to swim safely with his friends.

2. **Courtney** is a 9 y/o female with mild cerebral palsy. She experiences increased tone bilaterally and uses a rollator walker to ambulate. Her FM movements are slow but WFL, grasp is also tight but WFL. Her grandparents bought her a Wii this past Christmas; she is frustrated that her rollator walker often “gets in the way” and thus prevents her from playing the majority of the sports games effectively. She is adamant that she doesn’t want to sit on the couch to play.
Help Courtney engage in her Wii sport(s) games safely.



- **ID Post Feedback**
- Comfort interacting with individuals with a disability
Pre: Somewhat
Post: Very
- **OT & ID Post Themes**
- Largest logistical barrier: finding/scheduling time to meet
- Duration of project was too short: 8-12 weeks is more realistic
- Need better role delineation: efficiency/direction for completing project deliverables was at times confusing
- **Toy and Game Design Charette**
- **OT Post Themes**
- Loved the design process
- Another realm for OT: larger lens!
- New way to think/look at problems
- **ID Post Themes**
- Learned how to guide a large team of OTs
- Designing for various populations, not just typical clients
- **OT & ID: Post Themes**
- Need > 3 weeks
- Let’s do it again. Sign me up!