Bruno B Berry

Design Portfolio

Education

Georgia Institute of Technology
Masters of Industrial Design, 2019

Carnegie Mellon University
B.S. Mechanical Engineering, 2015

Design Philosophy

Design is a Method of Inquiry

Design is more than creation and building. It is a systematic method of inquiry into the world's probelms, relying on methodical techniques like ethnographic research, journey mapping, and, yes, sketching and modeling to present an argument in physical form. More uniquely, it relies on non-objective modes to uncover not a right solution, but a variety of best possible answers to an issue.

Experience

Expressive Machinery Lab - Georgia Tech
Industrial Designer, May 2018 - May 2019

Georgia Institute of Technology
Graduate Teaching Assistant, 2016 - May 2018

Crestron Electronics
Service Design Engineer, May - Aug 2015

Project Aura
Product Design Intern, May - Aug 2014

1 Data Physicalization

2 Medical Device Redesign

3 Interactive Environment Installation

4 Social Impact & Service Design

5 Interactive Programming Education

Can a new data analysis tool for designers lead to

MORE EFFECTIVE DESIGNS?

Data Physicalization | Master's Thesis

Spring 2018 - Spring 2019, Individual Research Project

Intro

What the f&*k is

Data Physicalization?

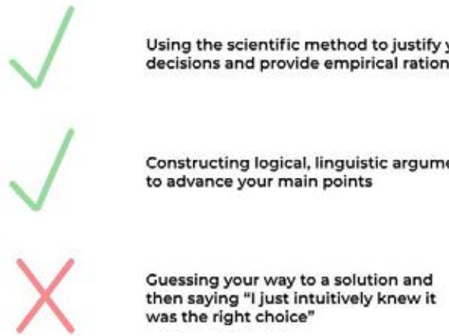
The process of converting abstract data (quantitative or qualitative) into physical form

I'll refer to the output of this process as **Physicalized Data**

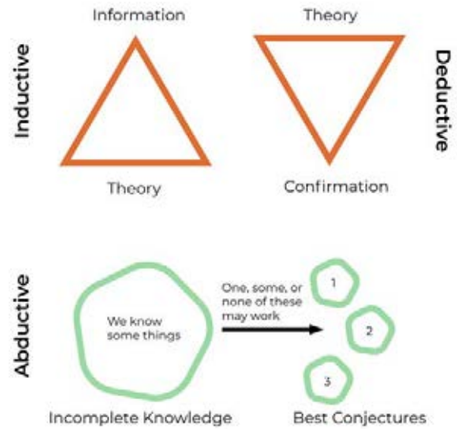
Opportunity

The design process lies at the intersection of intuition, abductive reasoning, and standpoint epistomology. In effect, these modes of rationality afford designers the ability to employ empathy, emotion, guesswork in addition to logical methods. As such, current data analysis tools don't exploit these traits to create more effective solutions.

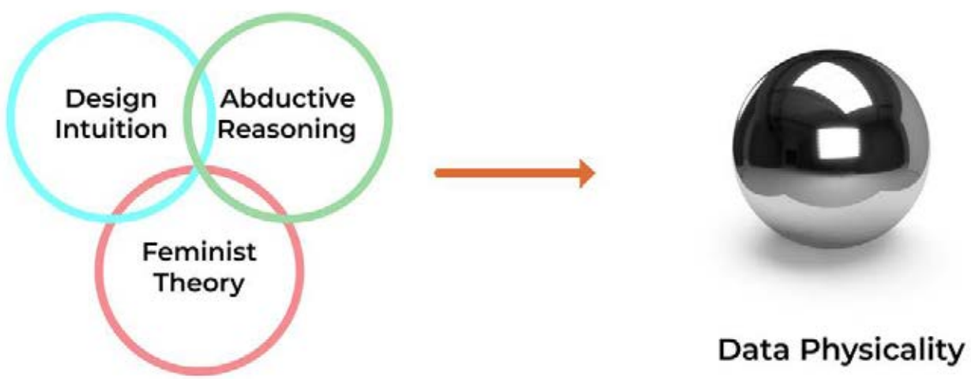
Design Intuition



Abductive Reasoning



Feminist Theory



Discovery

In order to learn about the topic, a literature review and prior art review were conducted. Additionally, expert interviews served to gain nuanced insight into how designers gather and manipulate data for their projects. An online survey got a layman's look at designers and their relationship with data analysis.

Physicalized Data




Expert Interviews

James Snyder
Lead Designer
Atbay

Julie Freeman, PhD
Director
Data as Culture
Art Program

Expert Interviews

GOAL

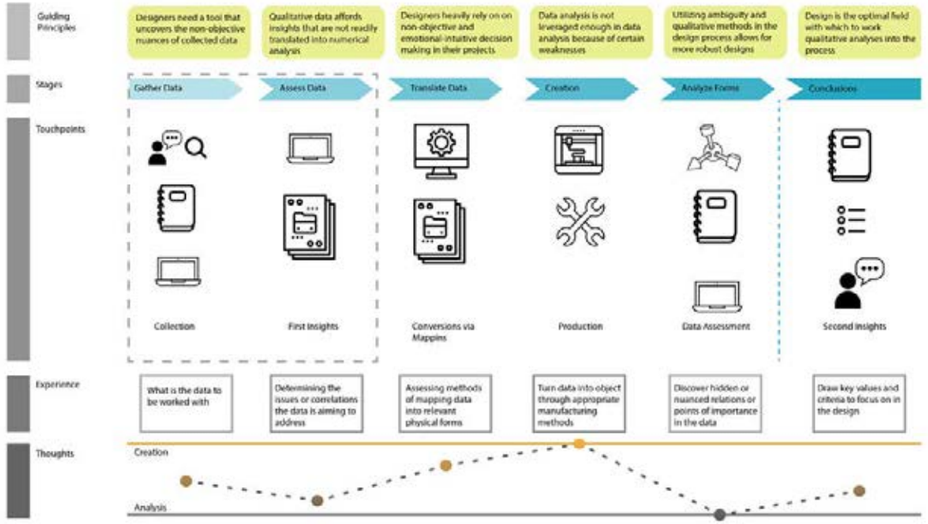
Better understand the current state of data analysis and its role on art and design

Survey

GOAL

Better understand the current relationship designers have with data collection and analysis tools

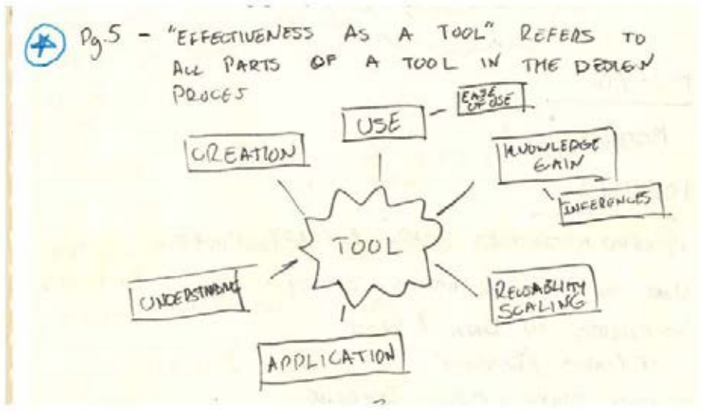
Journey Map



In defining the problem a few key areas became prominent. The use of this tool in the design process, how a tool should be developed, and what aspects of the tool should be measured in the evaluation stage.

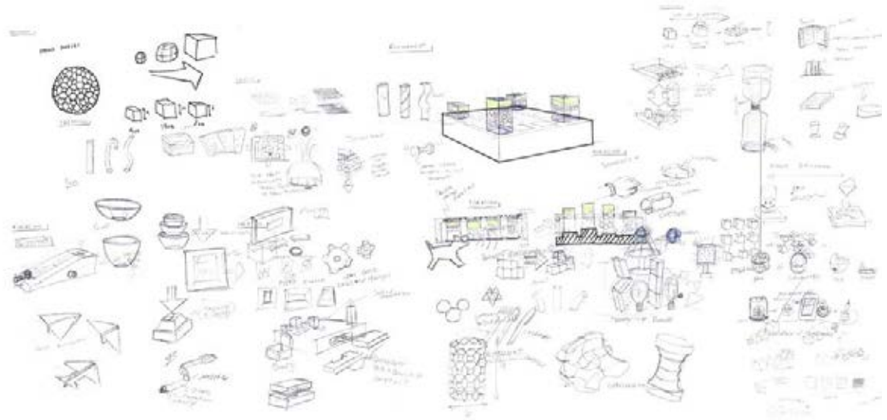
Definition

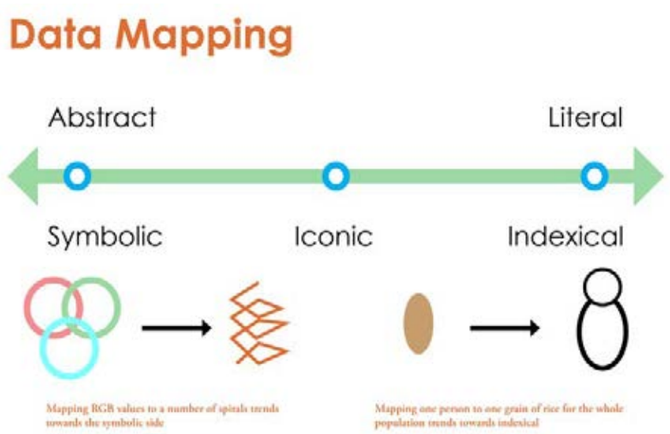
Tool Definition



Key Question

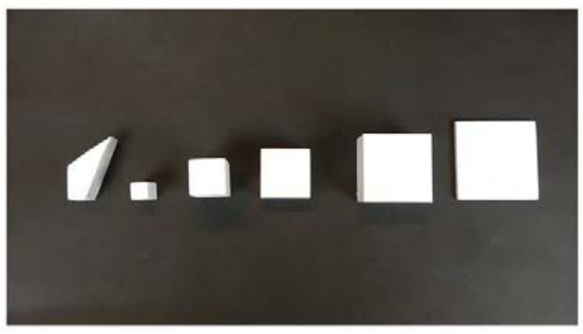
What degree of confidence do designers have in the use of data physicalization to draw design insights?





Design

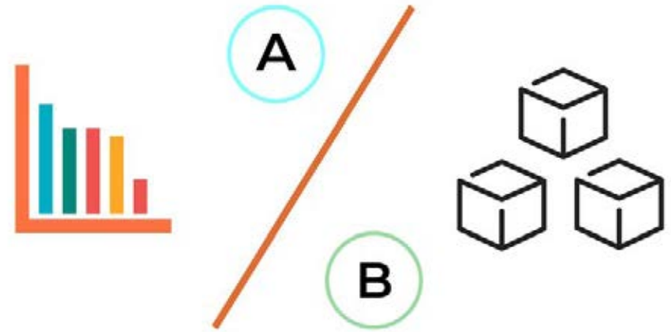
The design adhered to the concept of data mapping; how related the physical form is to the variables the data measured. As such, a simple form was chosen to minimize confusion; a cube.



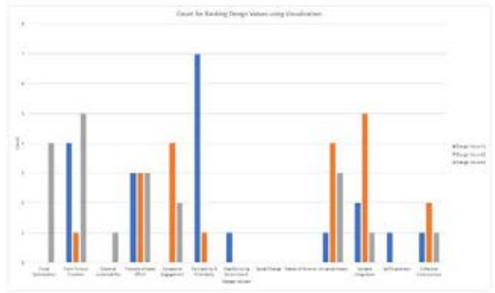
Evaluation

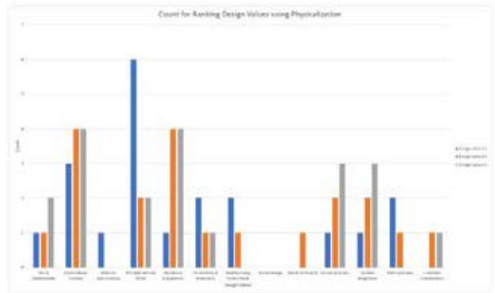
An A/B test was conducted with this new physicalization tool against traditional data visualization techniques. With 20 participants, the sample was large enough to draw meaningful conclusions. Statistical analyses were performed on the data, leading to the suggestion that while this exploratory study yielded no significant results about the benefit of data anlysis, more work should be done.

Testing Design

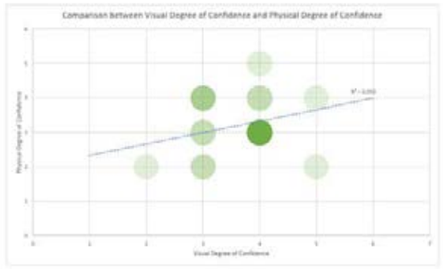


Evaluation Results

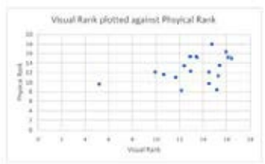


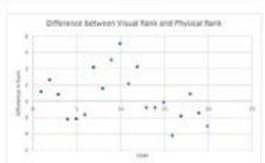


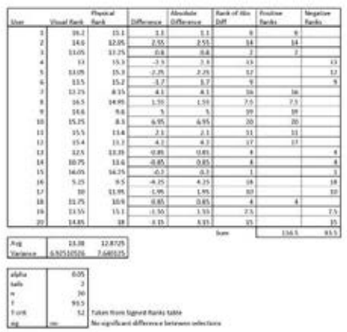
Unequal Variance T-Test Analysis



Wilcoxon Signed-Ranks Test Analysis







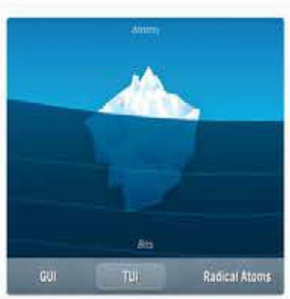
Data Physicality should continue to be explored as a tool for designers

Future Work

Some key areas for future work include creating a taxonomy for data mapping and cataloging the many forms and how they relate to our senses. Additionally, a focus on integrating the tool into the design process as well as digital coupling for real time changes would be strong areas to develop.

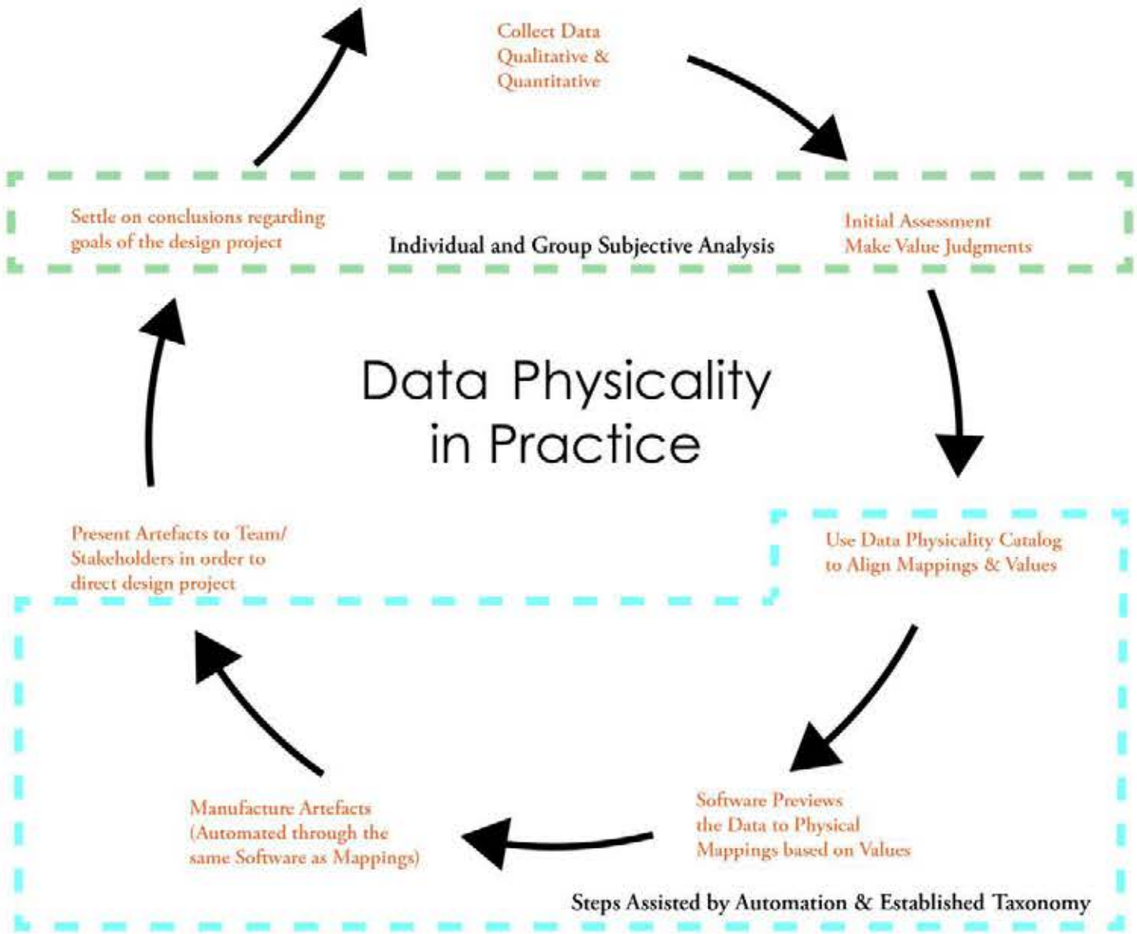
Taxonomy | Cataloging
Integration | Digital Coupling

*A **graphical user interface** only lets us see information and interact with it indirectly, as if we were looking through the surface of the water to interact with the forms below.*



*A **tangible user interface** is like an iceberg: there is a portion of the digital that emerges beyond the surface of the water—into the physical realm—so that we may interact directly with it.*

***Radical Atoms** describes our vision for the future of interaction, in which all digital information has physical manifestation so that we can interact directly with it—as if the iceberg had risen from the depths to reveal its sunken mass.*



Can a portable oxygen concentrator be redesigned to

REDUCE SOCIAL STIGMA?

Philips Respironics

Spring 2017, 3 Months, Partner: Christina Anderson

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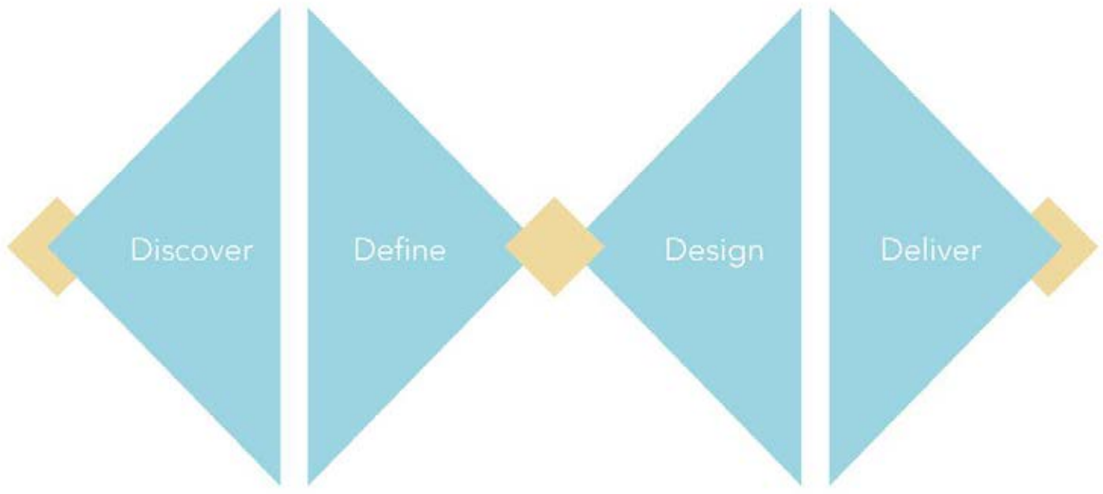
Wearable Healthcare Technology

Philips approached us with an opportunity for a new product; a wearable portable oxygen concentrator (POC) to support users with breathing complications. The key focus during the redesign was to minimize the Simple Go's footprint on the users day to day activities.



Original Simply Go

Discover

USER RESEARCH
OXYGEN THERAPY FACTS

15.7 Million Americans

Chronic Obstructive Pulmonary Disease (**COPD**) leading impetus of oxygen therapy

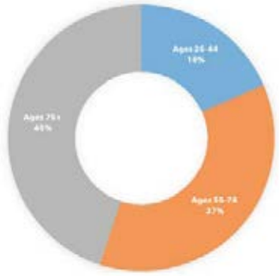
COPD causes **>100,000 deaths per year** making it the 3rd leading cause of death in the U.S.

WOMEN have a higher fatality rate than **MEN**

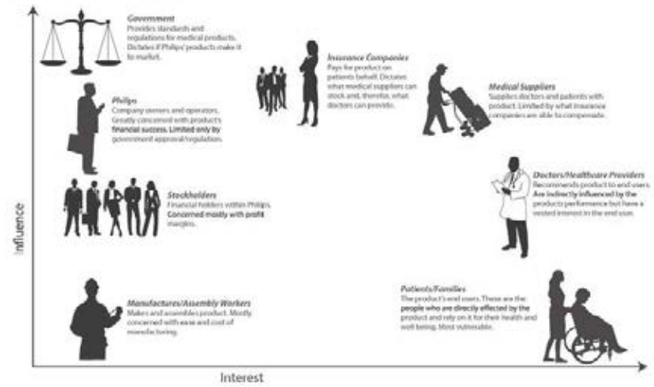
U.S. COPD population distribution:
18% aged 25-44
36.5% aged 55-74
45% aged 75+

15% of all persons with COPD were not lifetime smokers

COPD Age Distribution



STAKEHOLDER ANALYSIS



USER RESEARCH
BEHAVIORS

Ad Hoc Solutions

Lifestyle oxygen therapy customizations

Customized solutions for personal comfort

Removing mobility constraints

Outdoor excursions require more effort

Self conscious about appearance

Distruptive noise in public spaces

55% of patients don't follow the correct oxygen therapy treatments recommendations

40% of users continue smoking during treatment

Availability for emergency use

Cleaner homes for improved air quality

USER RESEARCH
MOTIVATIONS AND NEEDS

Cost benefit

Family and friends

Enhanced mobility/ decreased isolation

Hours of use

Safety

Mobility

Robustness (weight)

Adaptability for life

Travel Regulations

WORKFLOW ANALYSIS

Unboxing

1. Oxygen Concentrator Unit
2. Standard Battery
3. Extended Battery
4. Cannula
5. Backpack
6. AC Adapter
* Accessory Bag
> DC Power Supply (for vehicles)
* Stand-alone Battery Charger

Set Up

Attaching Battery

- Battery is slid on using a groove and latch system.

- **Often easy to misalign battery groove.**

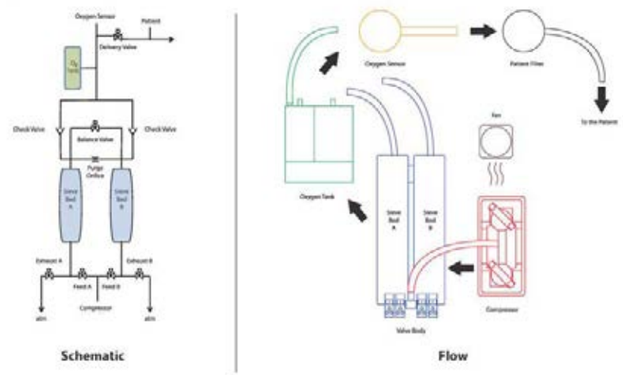
Charging

- Battery can be charged while on the device and operational.

- AC Adapter includes power brick which is rather large.

- **Charger must be attached in one specific orientation.**

OPERATIONAL TECHNOLOGY



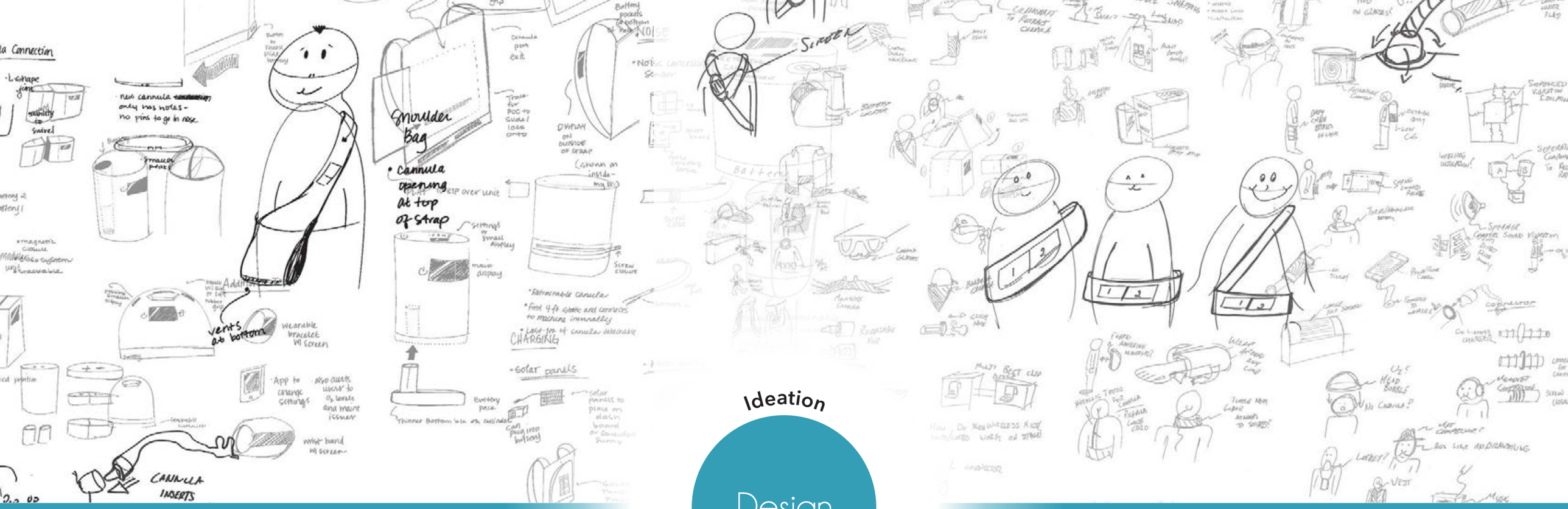
Schematic

Flow

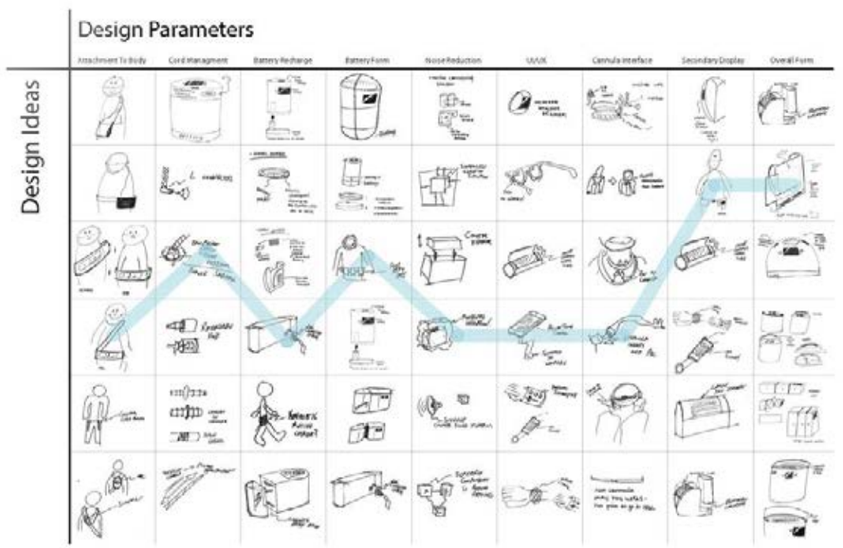
PARALLEL SOLUTIONS

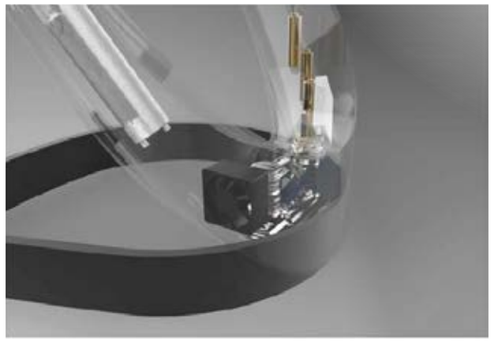
There is an opportunity in the market to develop a wearable version of a Portable Oxygen Concentrator that reduces conspicuousness and avoids impeding daily activities, allowing users a feeling of greater social and physical freedom.

Define



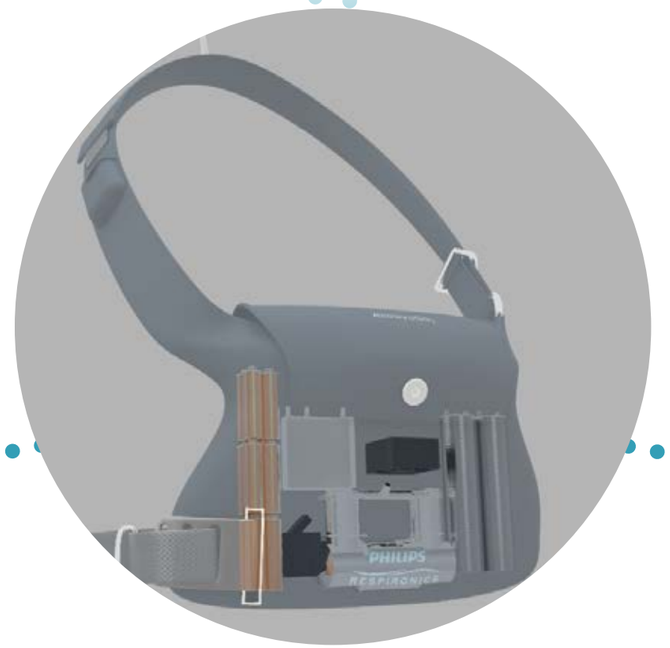
Form Exploration Battery Exploration Cannula Interface User Interaction

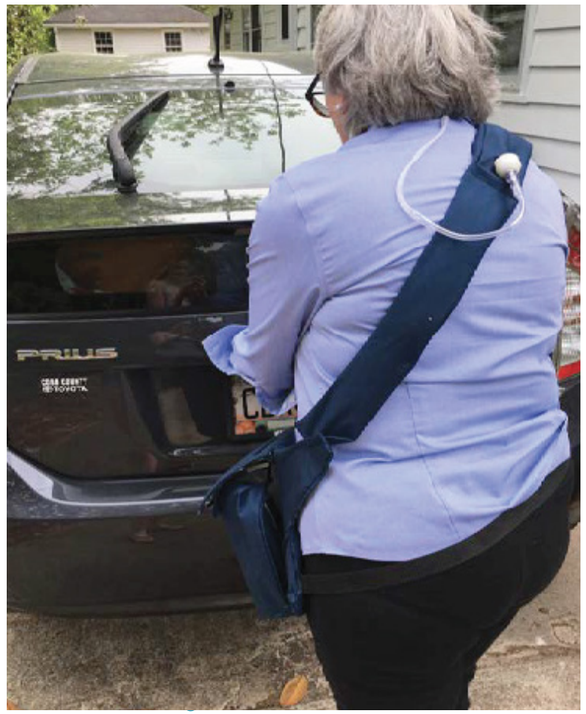


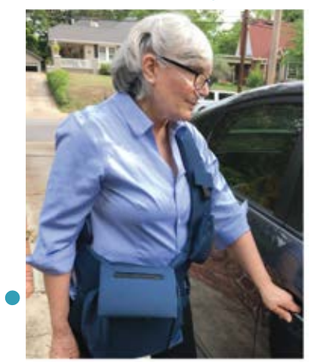


Design

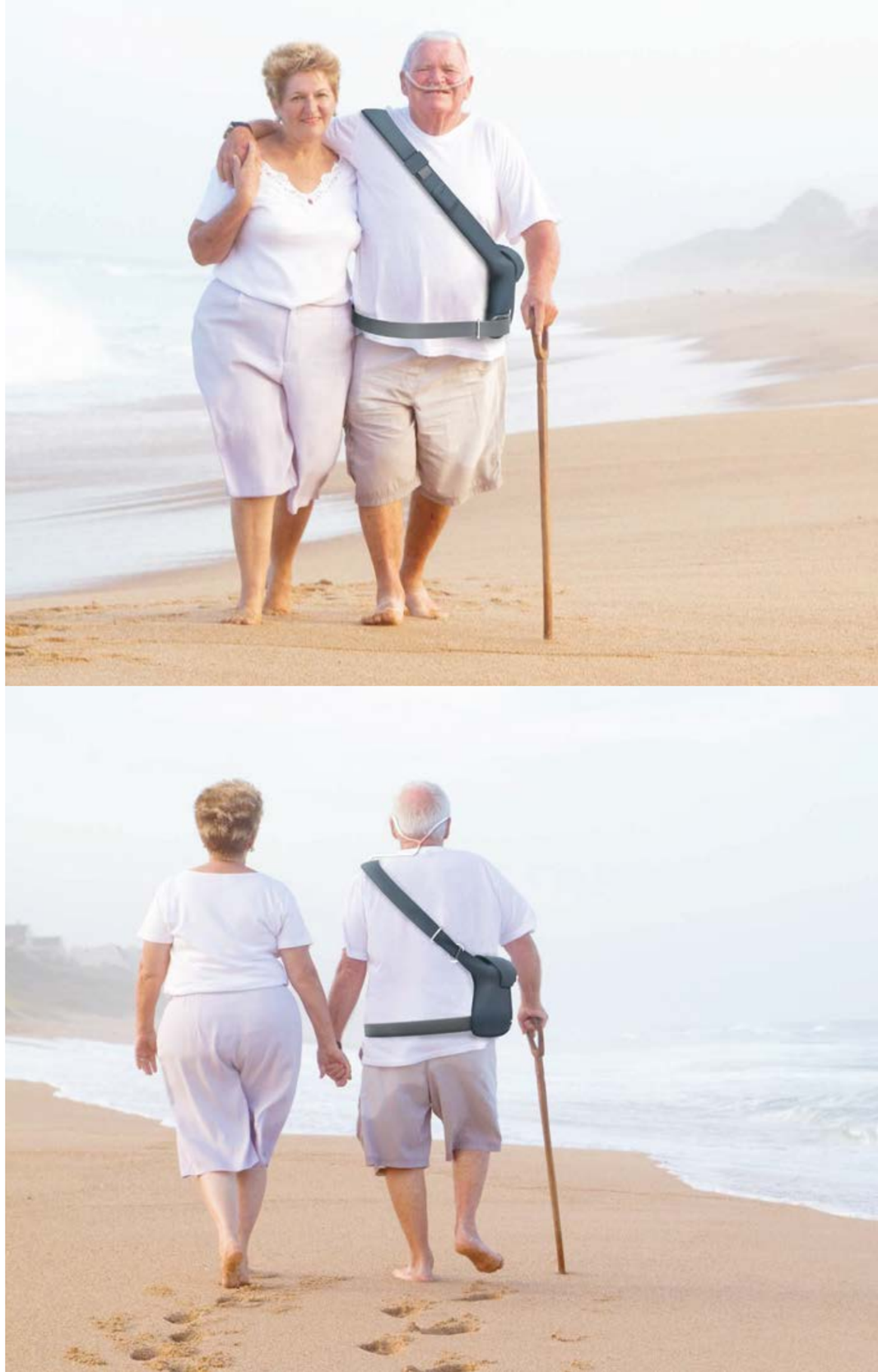
Deliver







Final Product




PHILIPS
RESPIRONICS

How do we teach **EFFECTIVE COMMUNICATION** in sexual relationships?

Sexhibition

Spring 2017, One Semester, Partners: Christina Anderson, Kaylin Broussard, Natalie Salk, Kate Whitney

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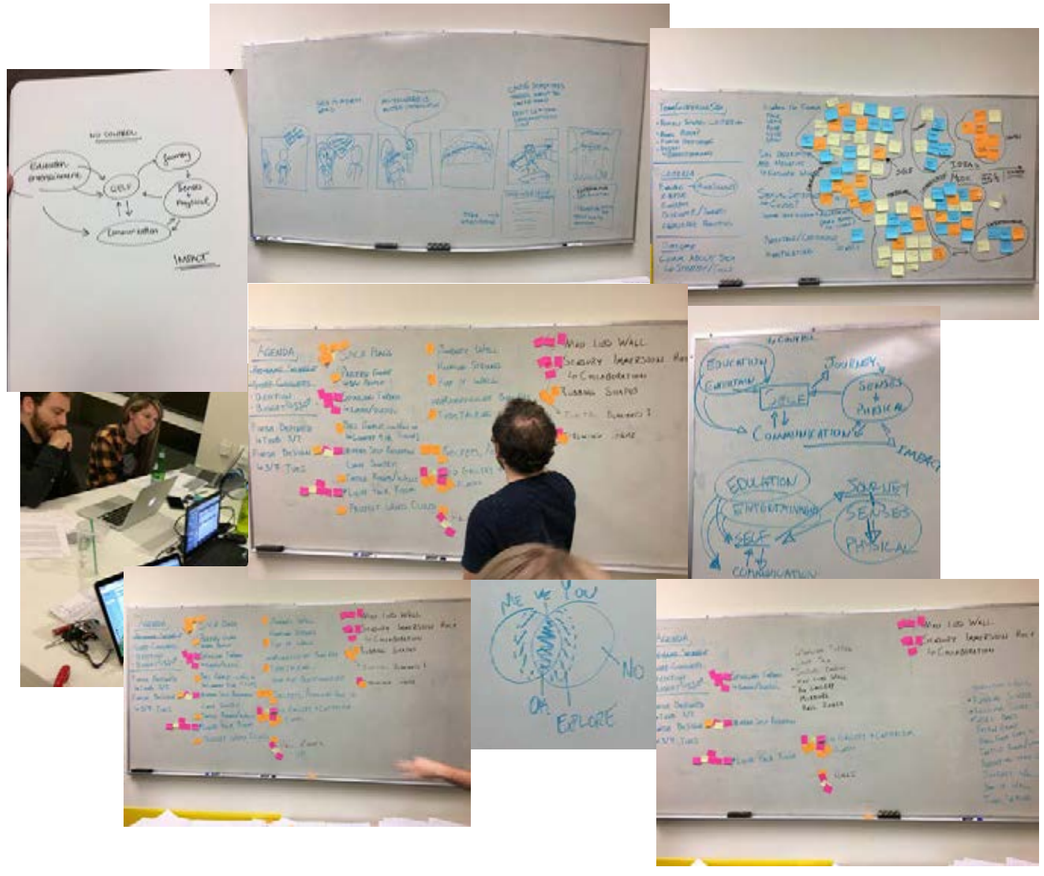
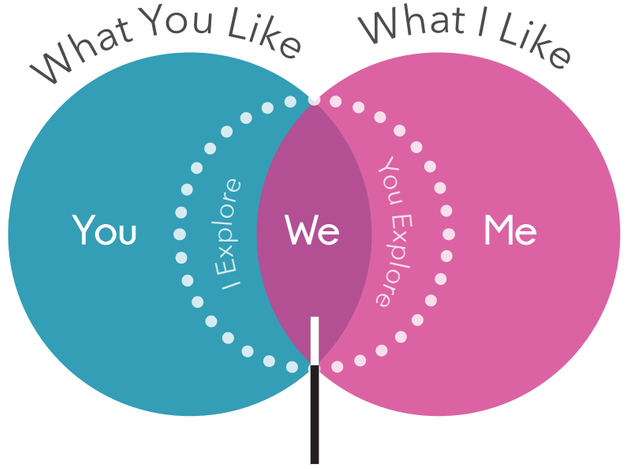
Interactive Learning Tools

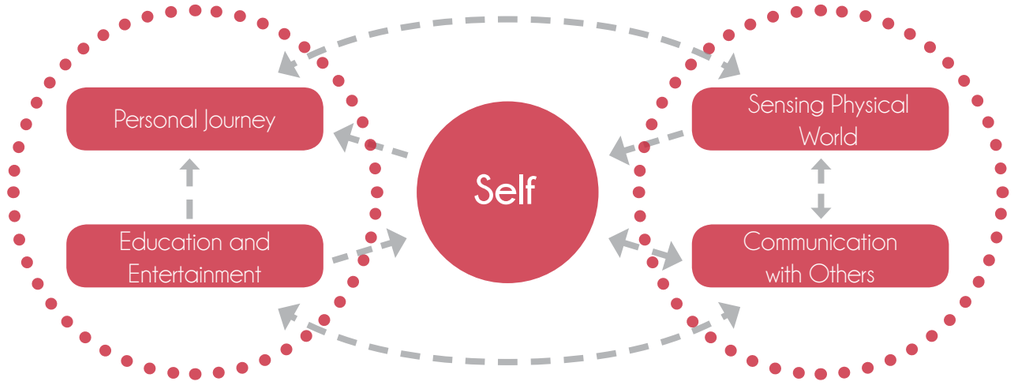
Through a study of sexual communication literature, our team discovered a lack of good communication leads to a lack of sexual satisfaction. To address this issue, we built a four part, interactive, multisensory experience installation to help people learn to be better communicators with their partners.



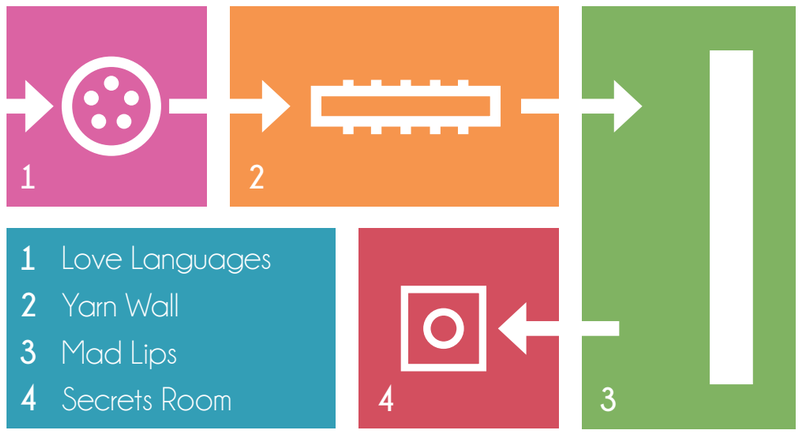
Understanding the Space of Sexual Communication



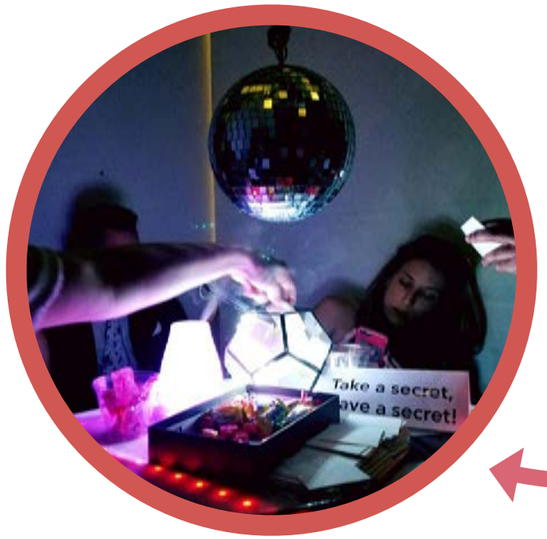
What We Like

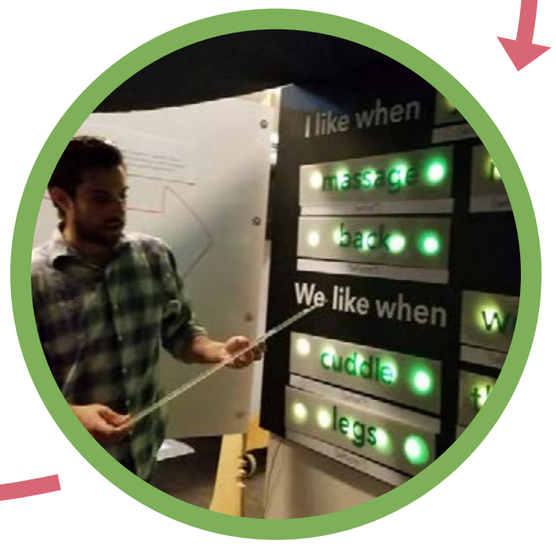


Design

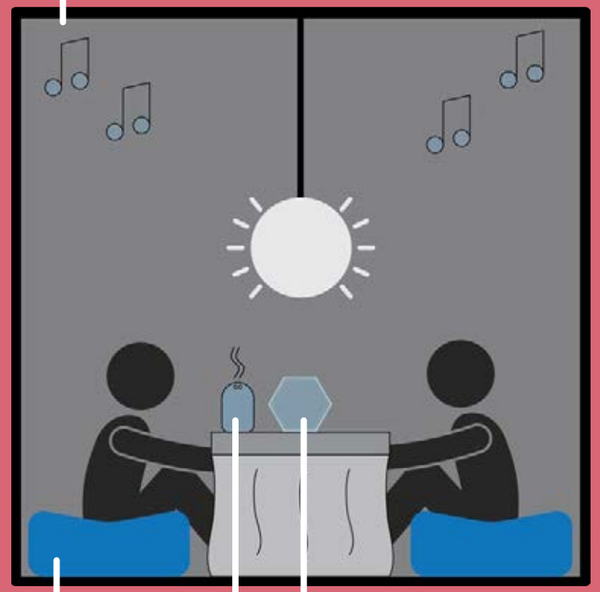


After our research phase and indentification of key target areas to affect, we divided the installation into four components. I then focused on designing and building the Secrets Room, a multisensory, immersive experience where people would feel comfortable talking about the more intimate and personal aspects of sexual activity. This room was perpetually filled during the exhibition.





Relaxing Ambient Sounds



Secrets Jar

Scent Dispenser

Pressure Sensitive Lighting Seats

Deliver


Take a secret,
ave a secret!

Is there a way to

FIGHT GENTRIFICATION

through community empowerment?

Local Collective

Fall 2017, 1 Month, Partner: Shawn L Harris II

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Database Driven Innovation

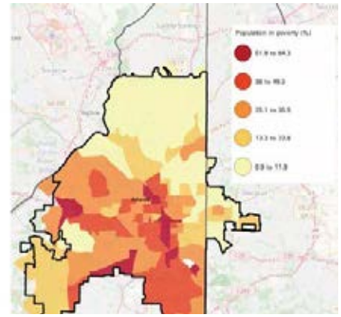
Local Collective is a neighborhood-monitoring platform built on land and development database information, that allows communities to collectively claim and crowdfund the local development in their area, reducing gentrification and forced displacement.

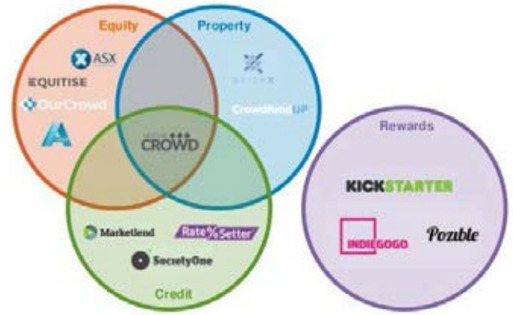
Discovery

Interviews and Community Engagement

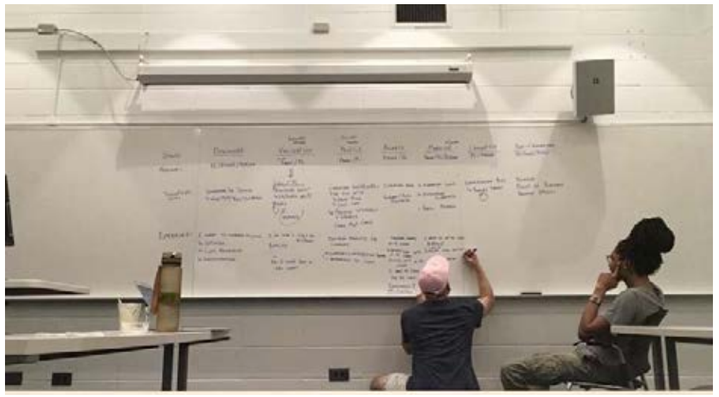
Opportunity Analysis

Use data mapping to improve social infrastructure within communities





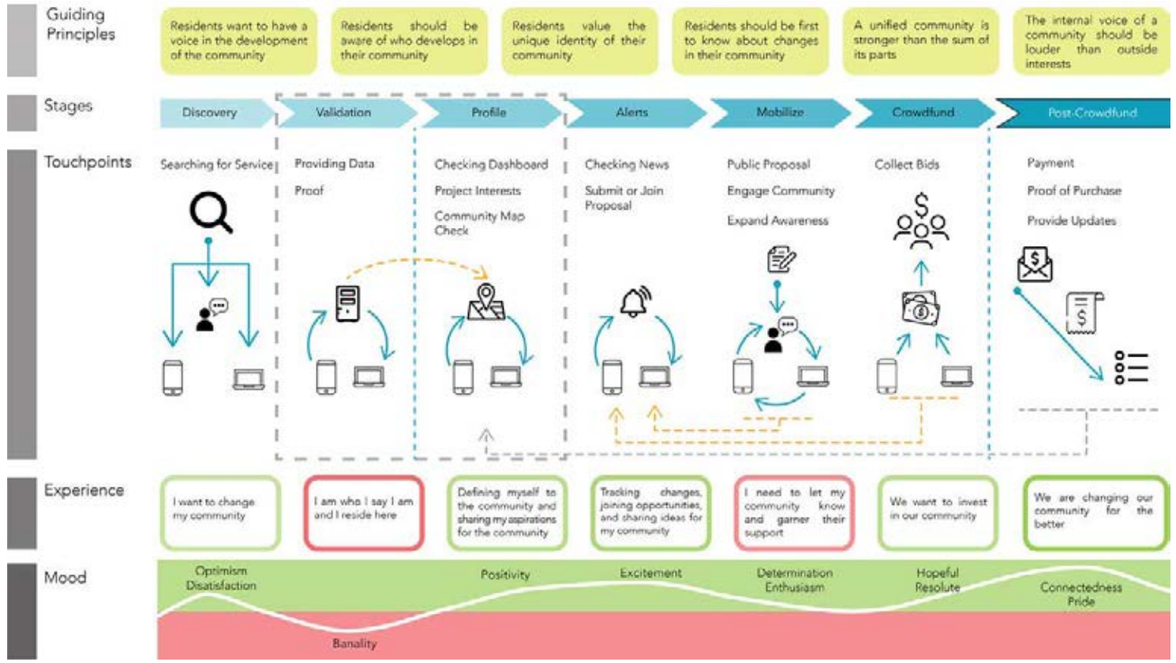
Synthesis



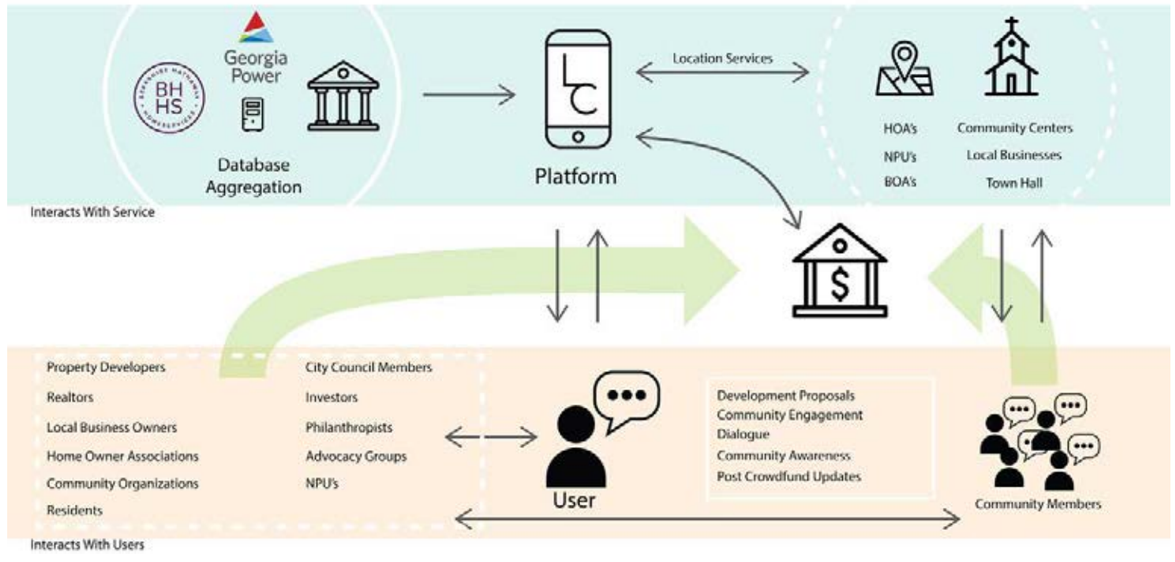
In order to effectively address the sensitive and controversial aspects of gentrification and not attempt to solve a local community's issues for them, we utilized Systems and Journey Maps to find key touchpoints where Local Collective could provide users with the means to make an impact.

In this sense, Local Collective is a vehicle for self empowerment, merely returning the tools of control to locals in an area.

Journey Map



Systems Map

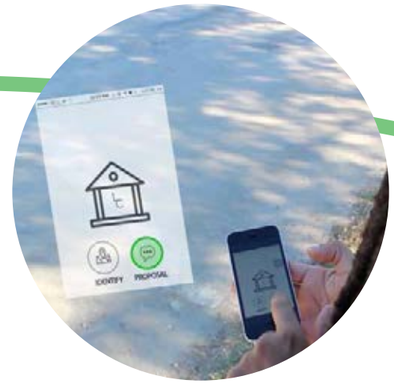


Property Database Information

User Community Data

Discover

Propose



Engage

Implement

Build

Fund

How do we

TEACH CODING FUNDAMENTALS

through interactive, tangible media?

Groove Machine

May 2018 - May 2019, Interdisciplinary Research Project

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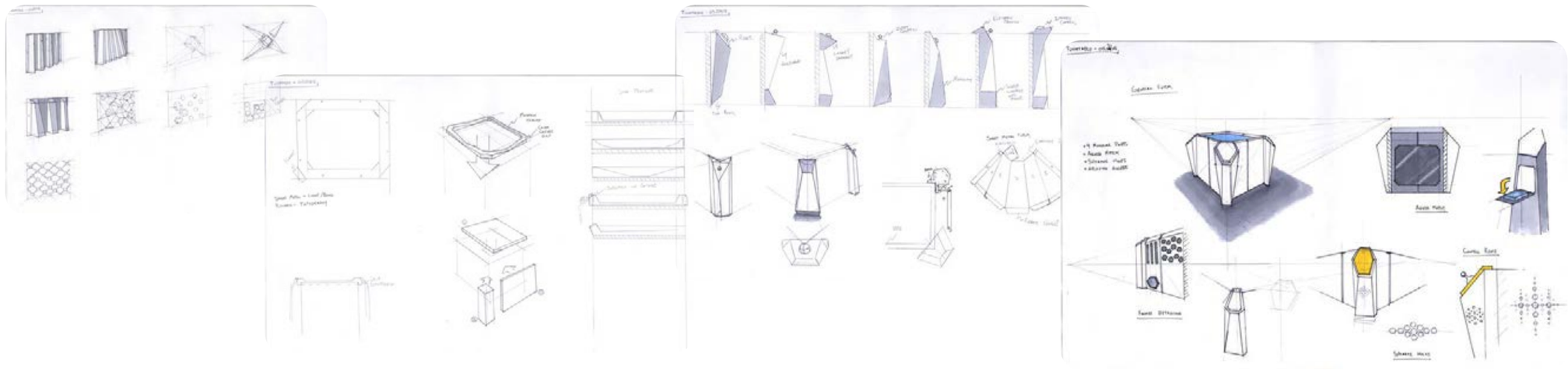
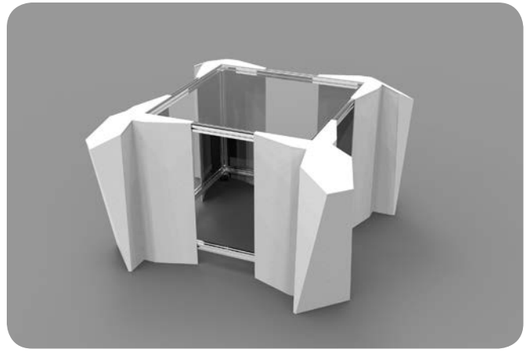
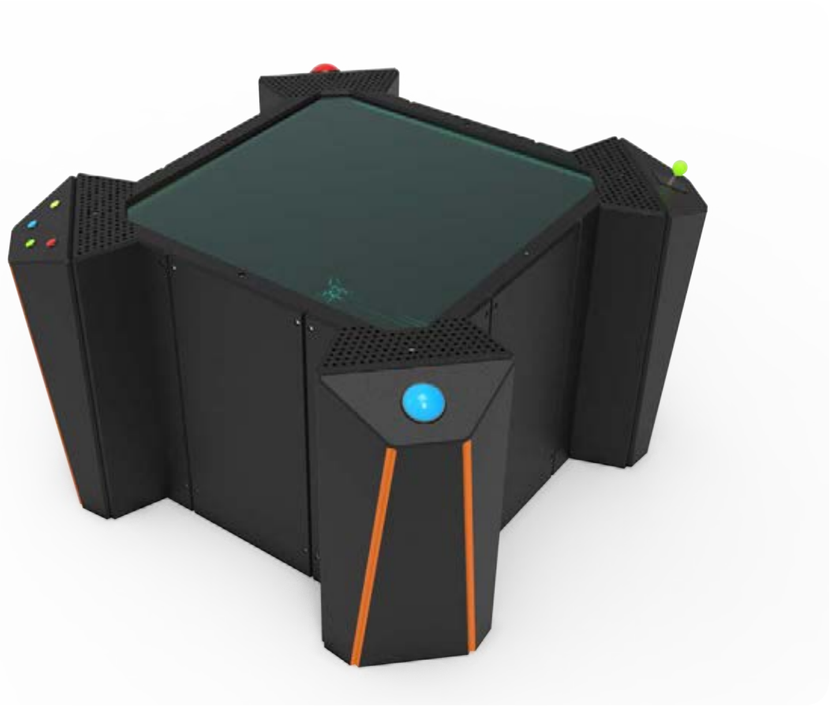
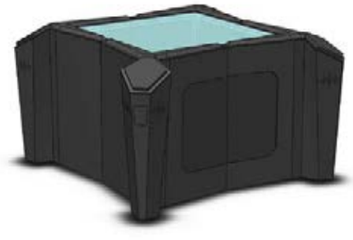
Form Development

Groove Machine v.1

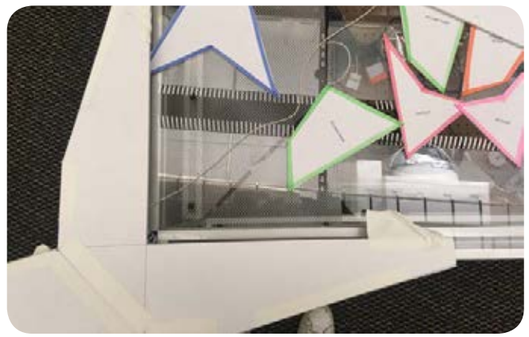








Manufacturing

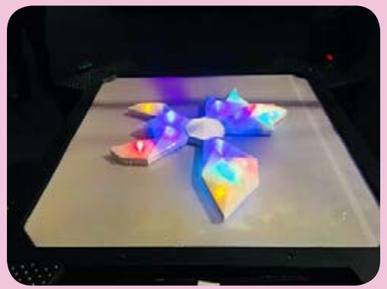







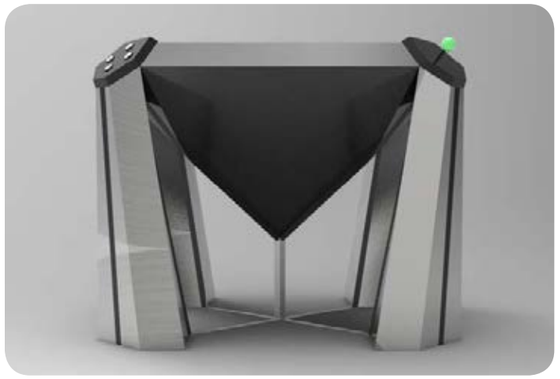


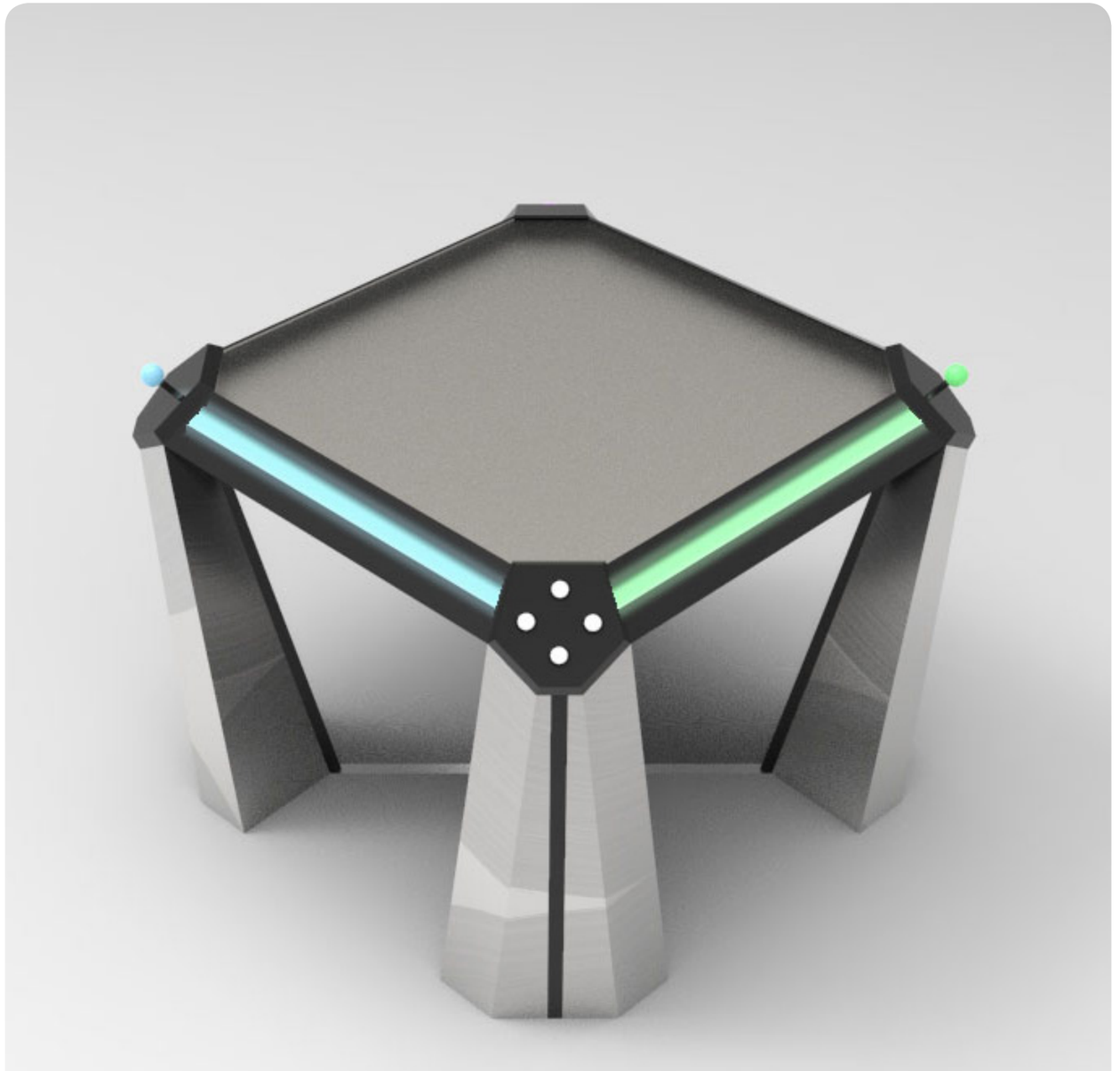

Groove Machine v.1


Development for Permanent Installation

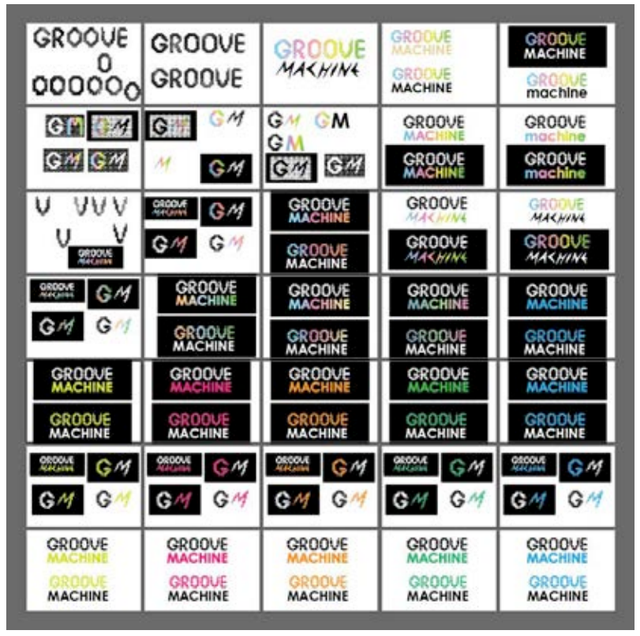
Groove Machine v.2





Visual Design Language

A strong focus on early 2000's music was selected as a base point for the design language. It was learned early on that children often know the music their parents listen to, and since the target population was 10 - 14 year olds, the 2000's were a good time period to select.



GROOVE
MACHINE

GROOVE
MACHINE

GROOVEMACHINE
Style Guide v.01

COLORS

	C: 20 M: 0 Y: 100 K: 0	R: 215 G: 223 B: 15
	C: 0 M: 0 Y: 100 K: 0	R: 236 G: 0 B: 140
	C: 0 M: 100 Y: 150 K: 0	R: 247 G: 148 B: 29
	C: 75 M: 0 Y: 75 K: 0	R: 43 G: 182 B: 115
	C: 75 M: 15 Y: 0 K: 0	R: 39 G: 170 B: 225

STYLING

TYPOGRAPHY

Type

Century Gothic Pro: Regular • *Italic* • **Bold** • ***Bold Italic***

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 !"$%&/()=?@#

Alternate Font - Muli: Regular • *Italic* • **Bold** • ***Bold Italic***

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 !"$%&/()=?@#

Montserrat: Regular - *Italic* - **Bold** - ***Bold Italic***

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 !"$%&/()=?@#

Menlo: Regular • *Italic* • **Bold** • ***Bold Italic***

abcdefghijklmnopqrstuvwxyz
ABCDEFGHIJKLMNOPQRSTUVWXYZ
1234567890 !"$%&/()=?@#

Print Sizing

Captions	6 - 8	Subheaders	14 - 20
Body	9 - 13	Titles	21 - 72

LOGOS

1 PRINT TITLES

Title 72 pt
h1 50 pt
h2 40 pt
h3 34 pt
h4 28 pt
h5 24 pt
h6 21 pt

2 PRINT BODY

Paragraph

Mintesequi id quiatat usciam, utaturemod estrume que seque nobisciaspe eriatur rernam quid quam quo et possitat asse pra qui bearum alicae nonsequiam nobiscium illuptatur?

Small Paragraph

Me maio iundel il ipientem accum siminus porehentis solo eatecati dipis ut autemolor sam que susant ati dunt ilgendunt perovidis nimpor sequaes tectem facipicipsum quo berspicium excepro ex et illiquibus.
Pid quis si alibus et et aut lab ides si aut repe vernatur sed minciae nus ima dit evenimi, am eturis pelique sitat.

Two Column

Me maio iundel il ipientem accum siminus porehentis solo eatecati dipis ut autemolor sam que susant ati dunt ilgendunt perovidis nimpor sequaes tectem facipicipsum quo berspicium excepro ex et illiquibus.

Pid quis si alibus et et aut lab ides si aut repe vernatur sed minciae nus ima dit evenimi, am eturis pelique sitat.
Ficiant lat aut volorum quatecum et voluptat odignim volorione ducid

Quotes & Call Outs

> Vendis minctur quost, quam qui ra pla nones mo quamus, ipsapedis esed modi bererum rate vidus dolorepeles magnihi tatur? Faceaquas nem iliquo quideliquam erum quiatur as es dolesto elestium eos etum exercia tureniminus molorio rrovid ut earciis vollabo nem in nonsequ

3 SIGNAGE

Layout

LOGO
Main Title
Subheader

Body Text. Quid mil maio tetur aut ate cullum, assus, qui odigene soluptae cus magnam fugia dis maio est liquati

Size Guidelines

Viewing Distance	Set Size (pt)
< 75mm (3 in)	24
< 1m (39 in)	48
< 2m (78 in)	100
< 3m (118 in)	148

4 FORMATTING

Backgrounds

Limit to 1 high contrast color

For web use with scrolling headers, use 2 contrasting colors

	C: 0 R: 255	M: 0 G: 255	Y: 0 B: 255	K: 0
	C: 0 R: 230	M: 0 G: 231	Y: 0 B: 232	K: 10
	C: 0 R: 0	M: 0 G: 0	Y: 0 B: 0	K: 100

Margins & Columns

For print media, ensure at least 0.5" margins

For print, use 1 or 2 column structure

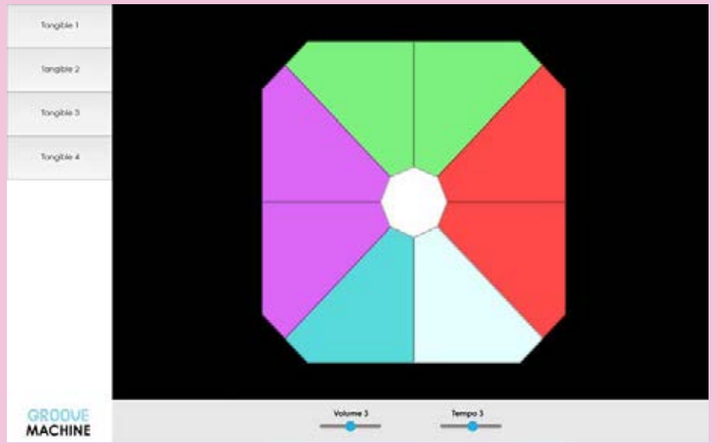
For web use 3 columns to afford flexibility

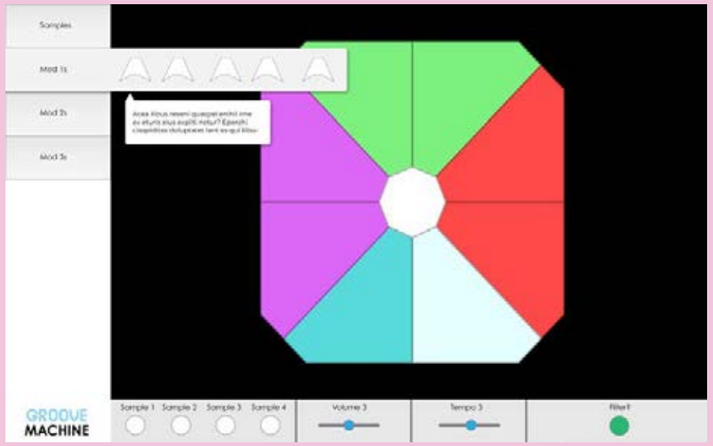
Always left align text, except for two column structure, then use left justified

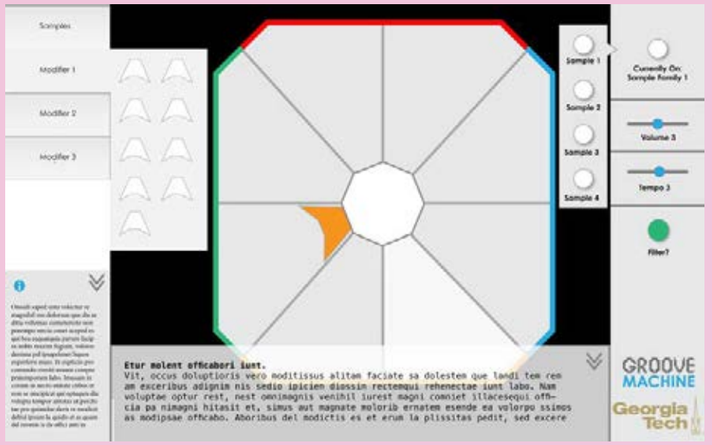
Digital Platform Integration

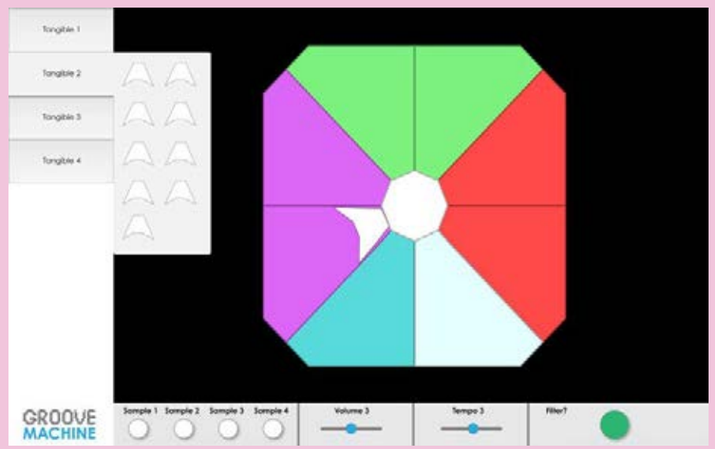
Groove Machine serves as a physical medium learning tool, in contrast to Ear Sketch, a related project which is entirely digital. To bridge the two extremes, a digital version of Groove Machine is being developed. These are the initial design contributions to the digital version.

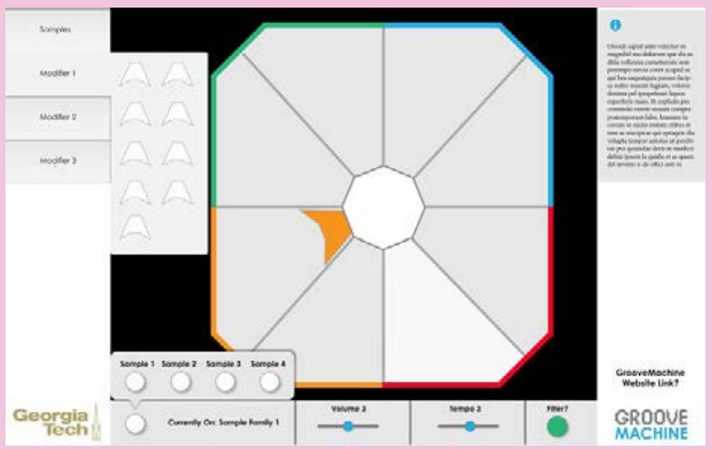
Digital Groove Machine

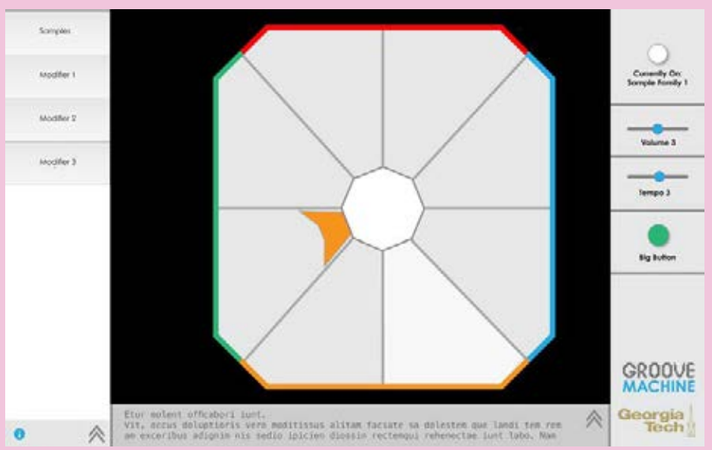


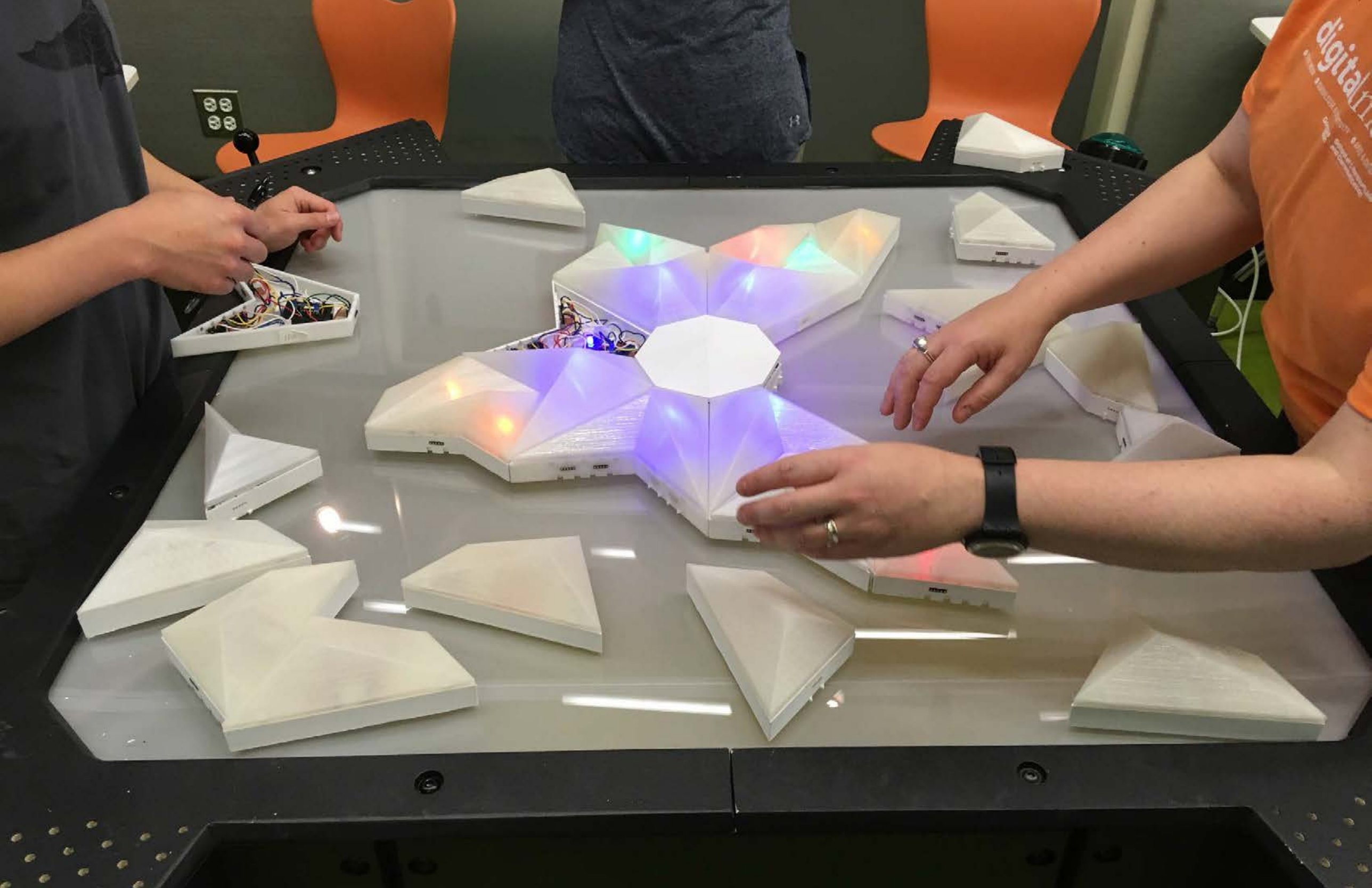












Thank You!

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