The enchanted ceiling

Exploring Interactions project

Avanika Pradeep Yammiyavar //

Studio Purple
Faculty of Industrial Design Engineering
Delft University of Technology

Design Goal

To reduce the cognitive load of 18-25 year old design students isolated in their rooms and help them relax before they sleep at night.

Interaction Vision

The interaction with my product should feel like drawing a Buddhist Mandala.

Interaction Qualities

relaxing, engaging, calming, absorbing, creative
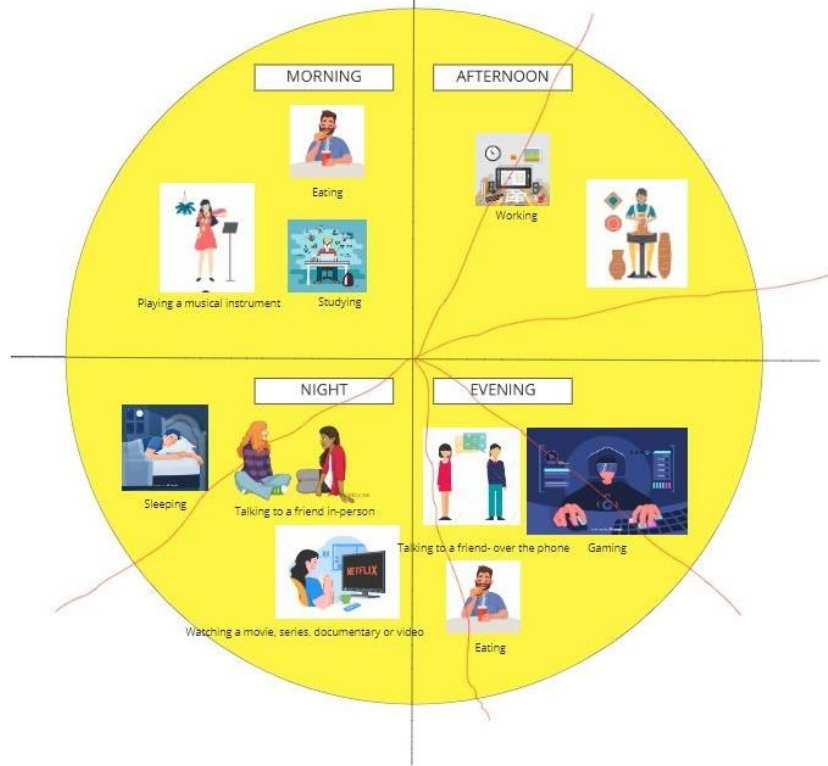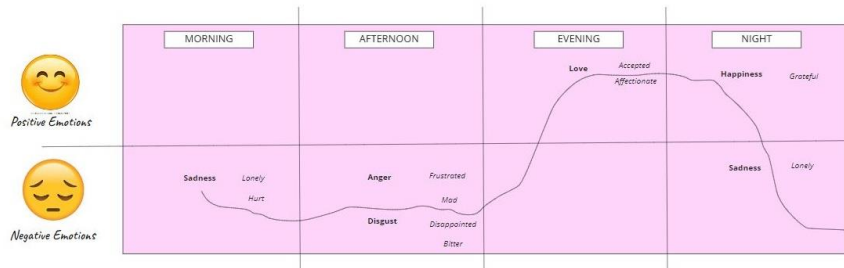
Research Questions

- What did the user's day in isolation look like?

- What did the user feel like during isolation?

- What emotions and experiences did the user go through?

- Is there a relation between the activities they did while in isolation and their moods?

- How did the users engage themselves when bored?

- Do they have any suggestions for a product which would have helped them in their situation?

What did your typical day in isolation LOOK like?

MORNING
- Eating
- Playing a musical instrument
- Studying

AFTERNOON
- Working

NIGHT
- Sleeping
- Talking to a friend in-person
- Talking to a friend- over the phone
- Watching a movie, series, documentary or video

EVENING
- Gaming
- Eating

What did your typical day in isolation FEEL like?

	MORNING	AFTERNOON	EVENING	NIGHT

Positive Emotions — Love, Accepted, Affectionate, Happiness, Grateful

Negative Emotions — Sadness, Lonely, Hurt, Anger, Frustrated, Mad, Disgust, Disappointed, Bitter, Sadness, Lonely

"At a point, I just got done with screens."

"I would feel so tired and low on energy that I would worry about my studies"

"I felt so lonely that I would watch videos and documentaries about new things"

"I felt connected to objects in my room that reminded me of my travel journeys and accomplishments."

"I felt like I was missing out when I saw others on my social media"

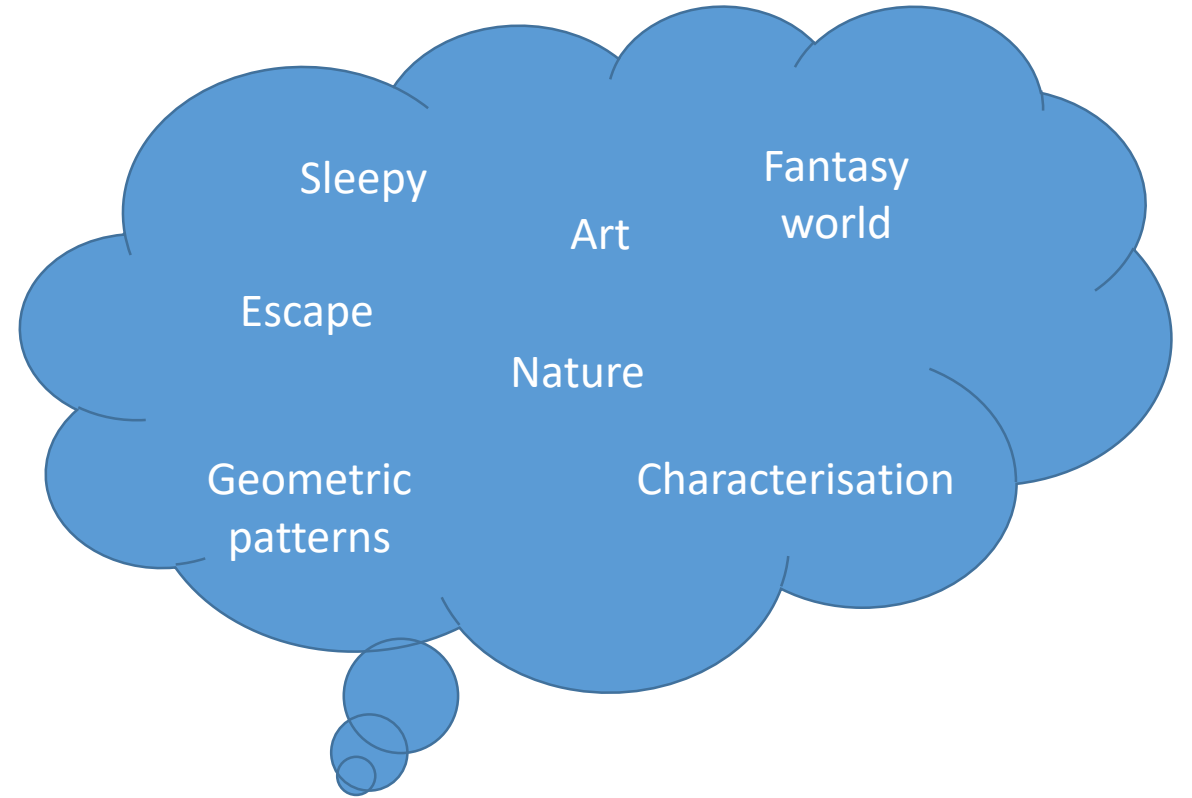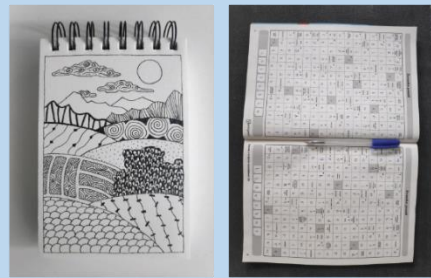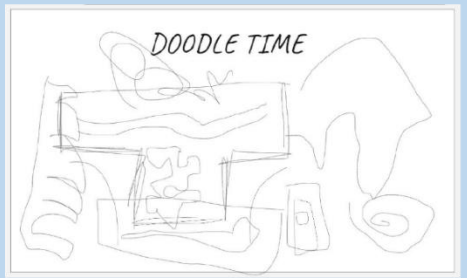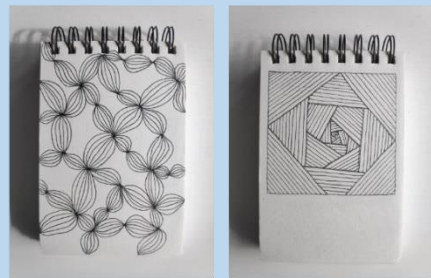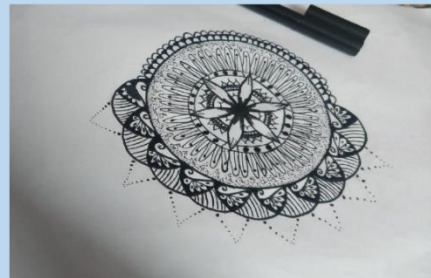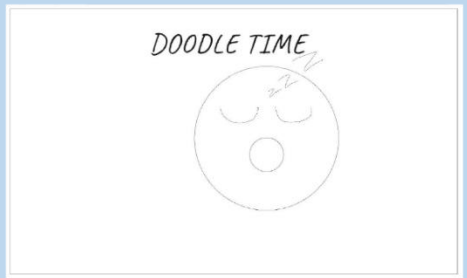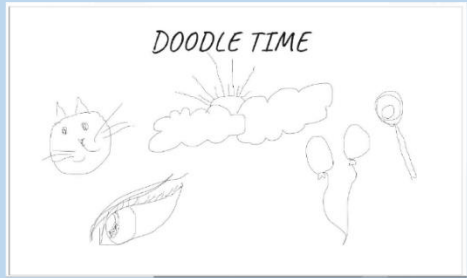"I wish I could build something with my hands in my room."

"A relaxed low-energy consuming activity that distracts me"

Most of the "low" moods reported were during the morning and late at night.

These low moods correlated with moments when users had nothing to do.

Any design intervention needs to be planned for intermittent absorption.

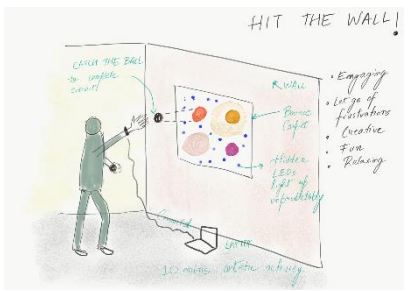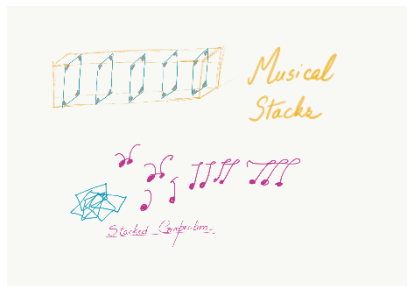|			
Bored	Missing out	Working	Studying
Worried	Support	Tired	Care
Distracted	Lonely	Frustrated	Engage

Cycle 1: Key insights

Sleepy
Art
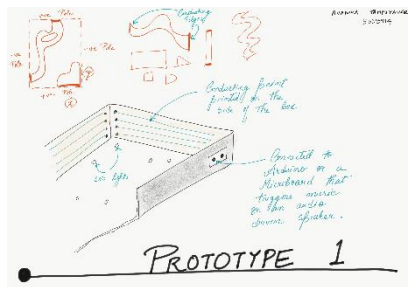Fantasy world
Escape
Nature
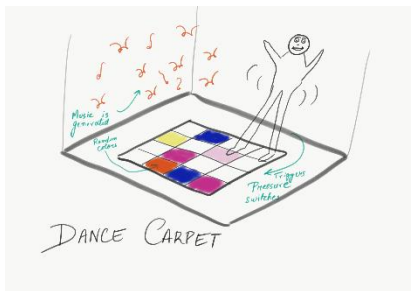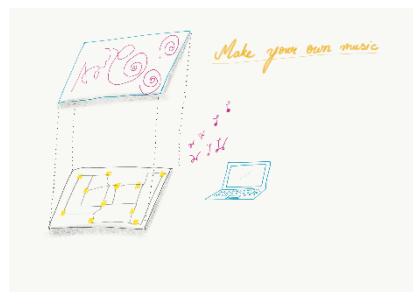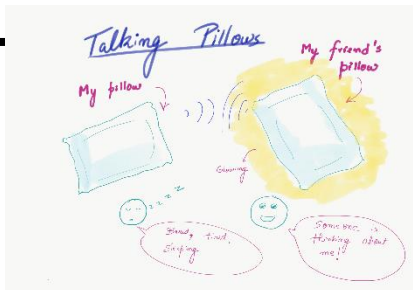Geometric patterns
Characterisation

What was on their mind?

Cycle 1: Key insights

Cycle 2- Prototype testing:
Musical Box

# Cycle 2- Prototype testing: Musical Cubes

Concept 1

Concept 2

**Reflection on Design Intentions, Findings and Ideas:**

- The product must be used right at the moment that the user feels low- right before going to bed.
- The focus group must be designers since only they enjoy creative activities.
- An emotional incentive to pick up the product is very important.
- A light, creative activity is what the user needed.
- The Psychology Theory of Flow comes into action and importance through this concept.
- The bed seems to be the strongest context in the period of isolation, as suggested by the Cycle 1 research group and as inferred from the prototyping activities.
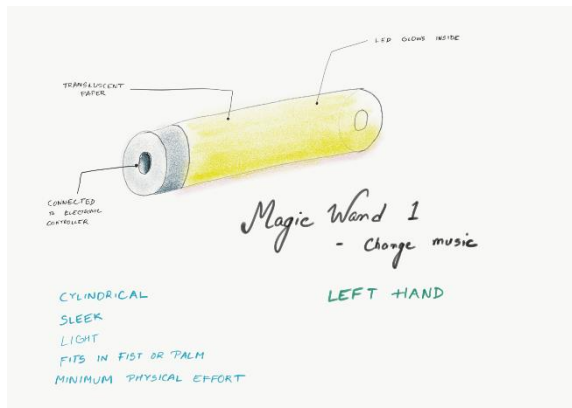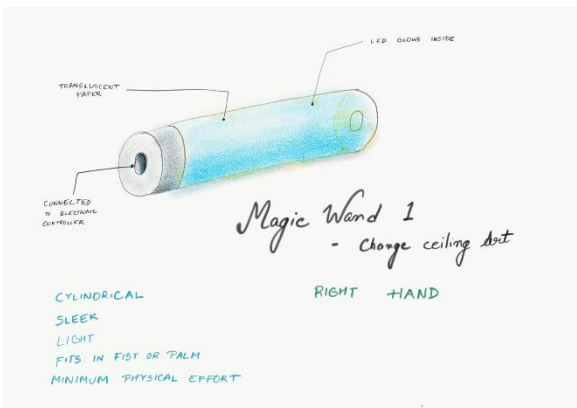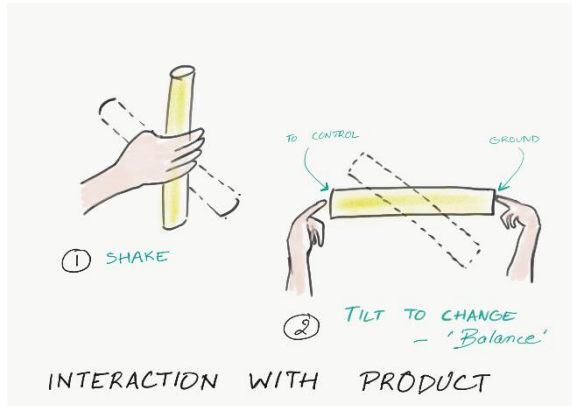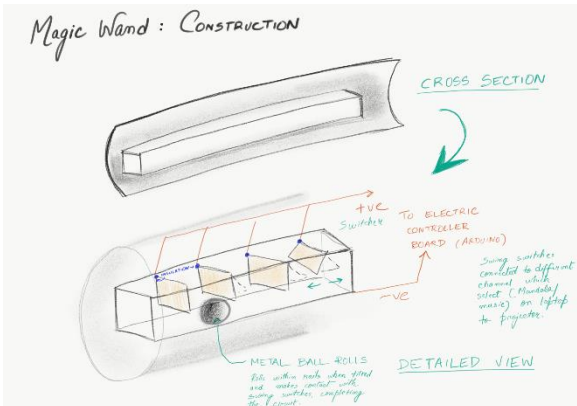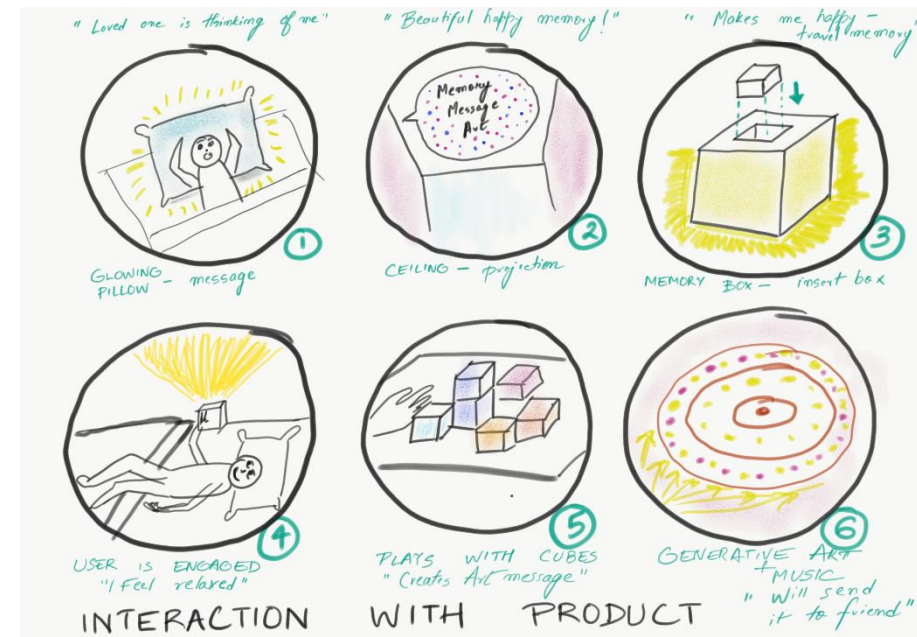
Understanding the touchpoints
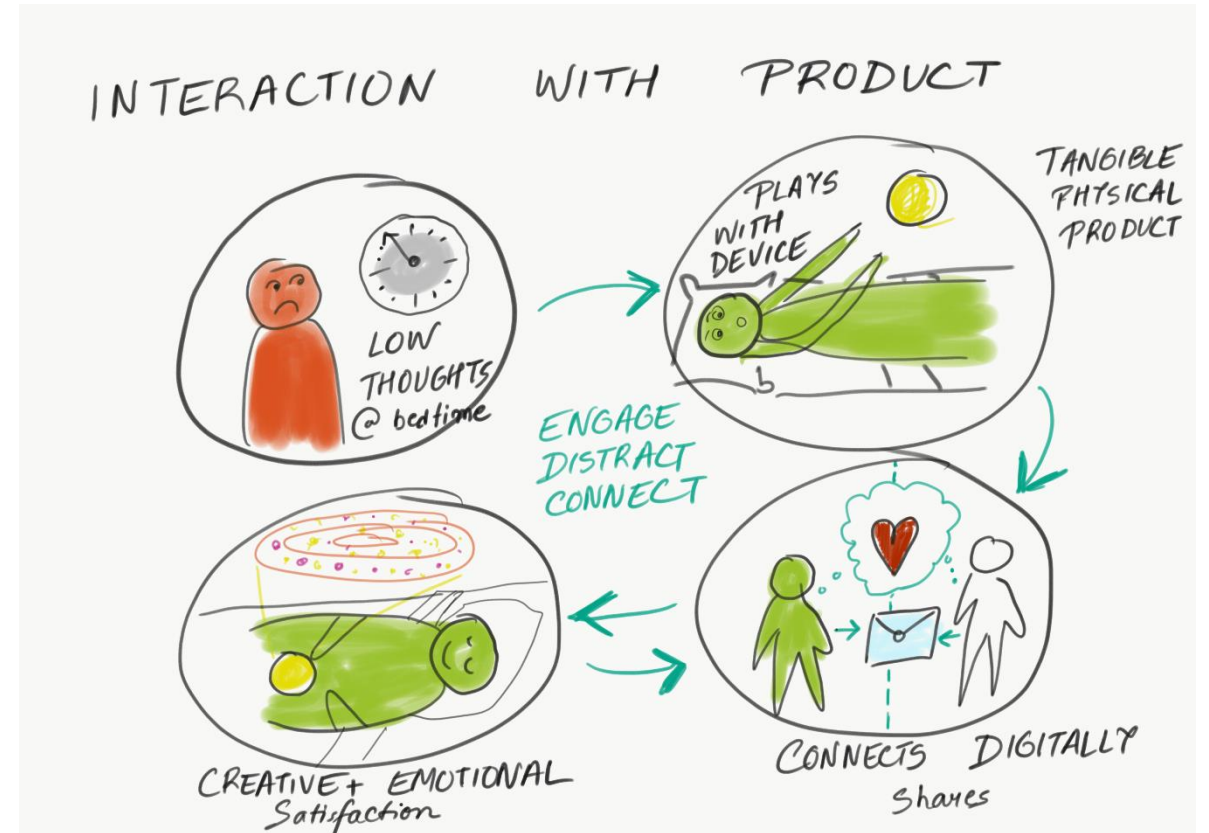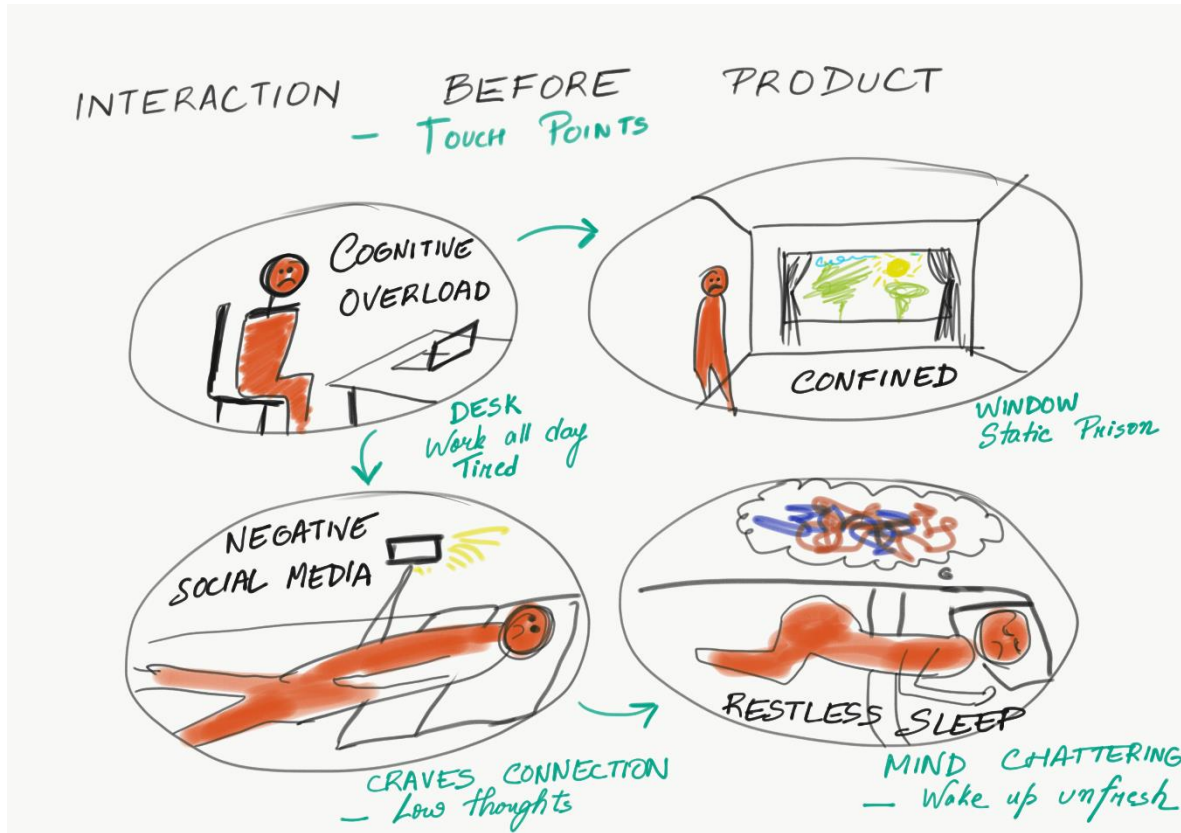
So the concept of interacting with hand gestures is not just a technological gesture for a sensor in a device. It is strongly connected to spirituality, rhythmic discipline to train the mind for relaxation and finally it is based on *Csikszenmihalyi's Flow Theory of Psychology*.
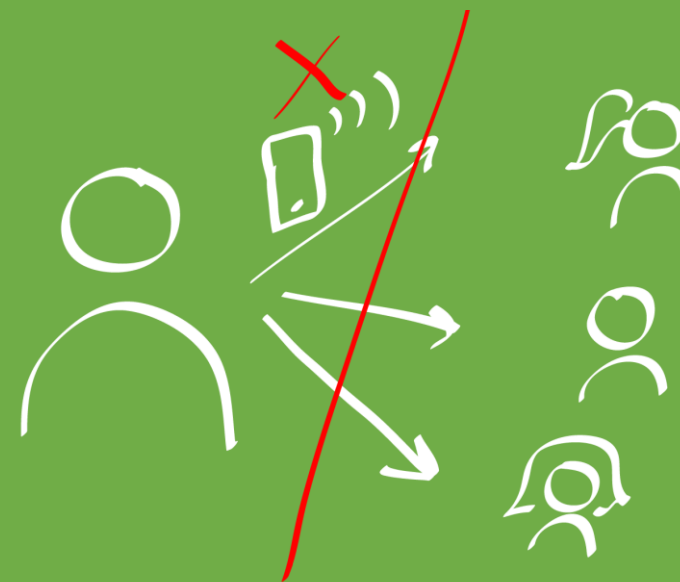
The elephant in the room

Gesture interactions as creative meditative process

How do you do something creative with yourself that distracts you from yourself? :)

"Sleep is the best meditation"
-Dalai Lama

You → Product → Another World

Intrapersonal ... Gesture .... A creative
Interactions   escape !
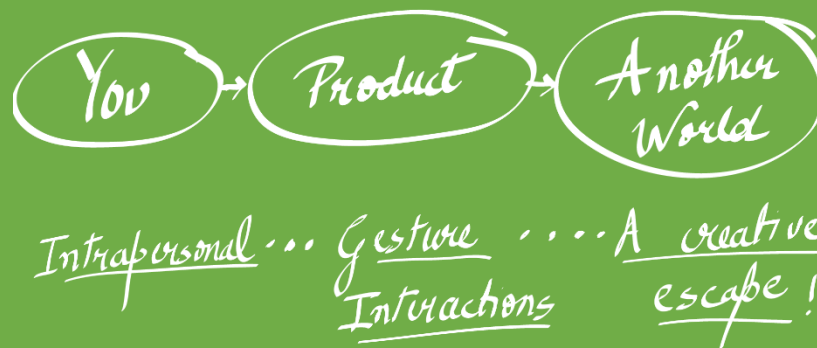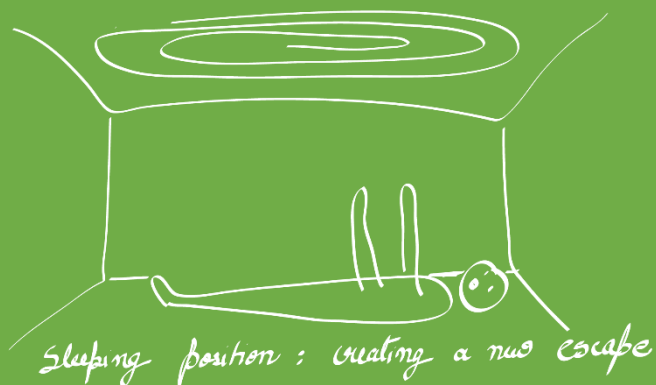
From inter-personal to intra-personal

Sleeping position : creating a new escape

Creative Meditation

Creating an escape from myself...

Storyboard of interactions

1

So many deadlines, online meetings and work to do! I am tired.
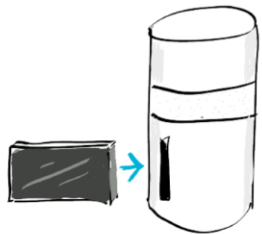
23-year old Design student Aurora is stuck at home in isolation because she came in contact with someone who tested positive for a highly contagious disease. Let us consider that it is COVID-19 and that she has had no real physical contact with anyone for the past 3-4 days. She attends classes online and spends most of her free time (at least what is left of it after she finishes her master's workload for the day) on social media and watching movies. She talks to her parents and a couple of friends daily but she still feels like she is living in a jail.

2

Cognitive overload, mind chattering, unable to sleep.

At the end of the day, when Aurora gets into bed and tries to sleep, she finds it difficult to do that. She starts scrolling through her social media feed and watching random videos. She cannot help but feel low. She fears that she is missing out on all the fun things that her friends are doing and that she might actually have the contagious disease. Her thoughts become negative- "Nobody can spend time with me, I am all alone and I need a hug. Will this pandemic never end? Just like the never ending list of deadlines in my courses. I am so tired all the time! I don't want to sleep. :("

3

oooh what's this?!

Suddenly, she realises that a product which her friend had sent her that day as a gift might be able to help her.
Her friend had not told her what it does but all she had said was "surrender your phone to the device!"
Aurora's curiosity has been evoked.

4

INSERTS PHONE
to activate device

She inserts her phone to activate the device. She hears a bell like sound from the device and it asks her to open the cover of the device using its voice assistant.
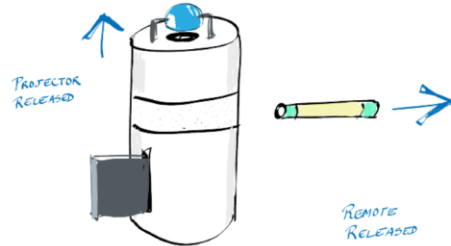
5

PROJECTOR RELEASED

REMOTE RELEASED

She pulls out the remote which starts to glow in mysterious yellow, green, red and blue hues.

The projector is released from the top of the device.

6

To her astonishment, her room's ceiling has a message from the device. It greets her, asks her how her day was, reminds her of all the things she did which made it meaningful and then tells her to relax. It shows her how to do so with the help of hand gestures and then suddenly, the walls and ceiling of her room are filled with wonderful animations from nature, galaxies and art which she manipulates using her fingers. When her arms get tired, she uses the touch screen surface of the remote to do the same. The visuals are in sync with calm, relaxing and soothing music.
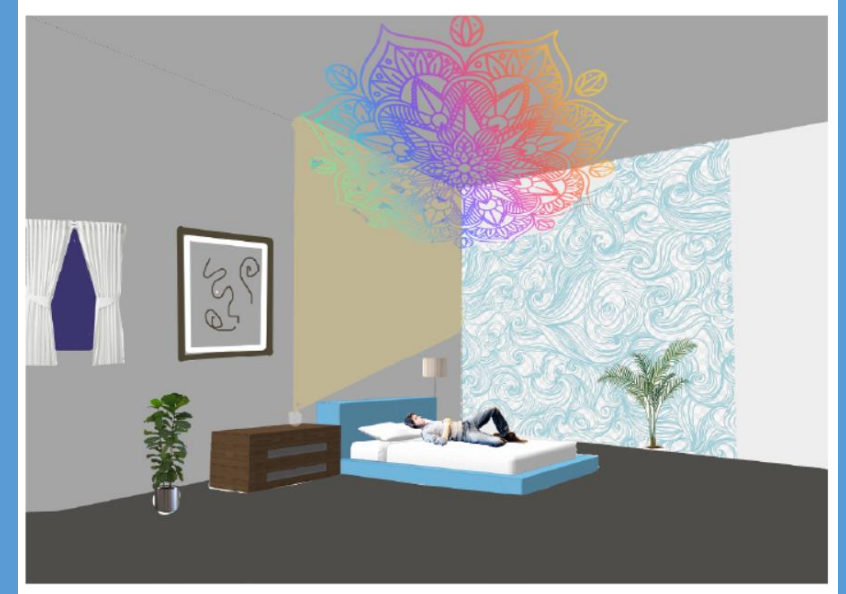
Storyboard of interactions
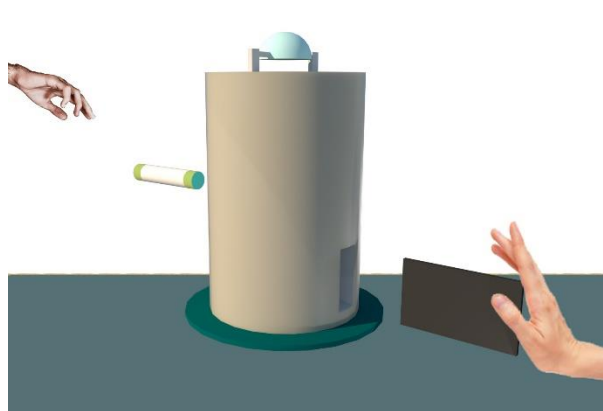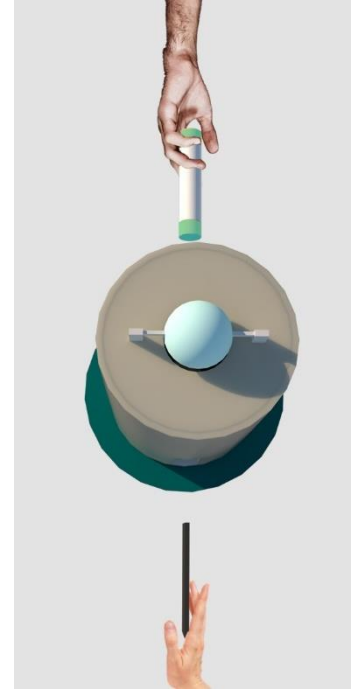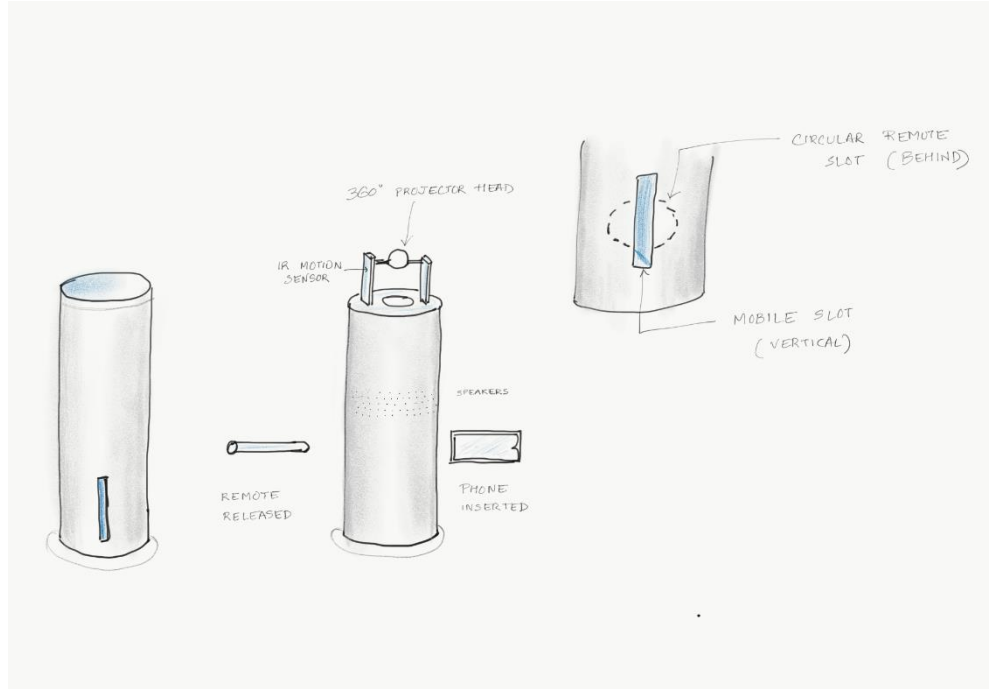
Feels relaxed enough to sleep

7

Without knowing it, she feels relaxed and slowly drifts off to sleep with her teddy bear. The music keeps playing in the background and after about 20 mins of no activity, the projections and music stop so that Aurora does not have to disturb her sleep to wake up and switch off the device.

The final concept

Concept: the digital interface
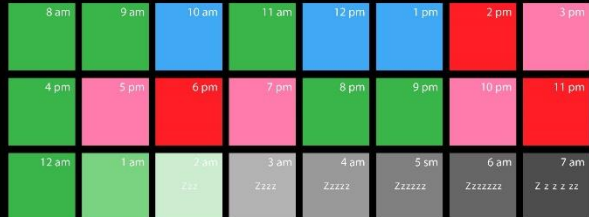
User Testing

User interacts with the product using the prototype to manipulate animations using hand gestures and a remote.
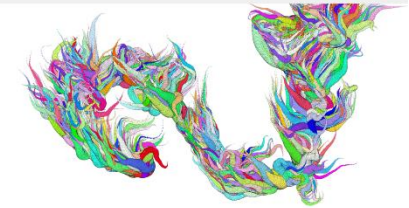
User Evaluation

Preferred Gestures

- Index Finger
- Four fingers closed, thumb open
- Four fingers open, thumb closed
- Fist completely closed
- Two fingers open- index and middle

Pie chart values: 3, 2, 1, 1, 1

User Experience

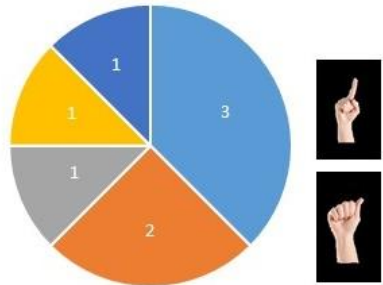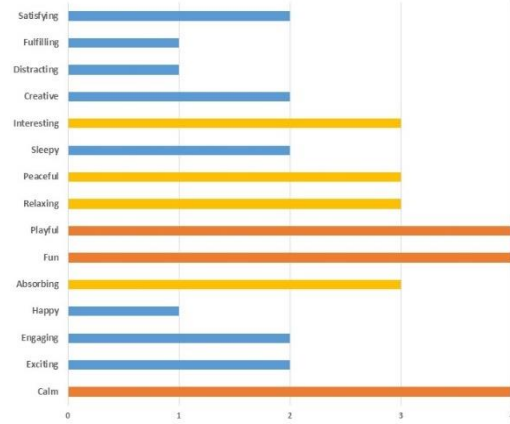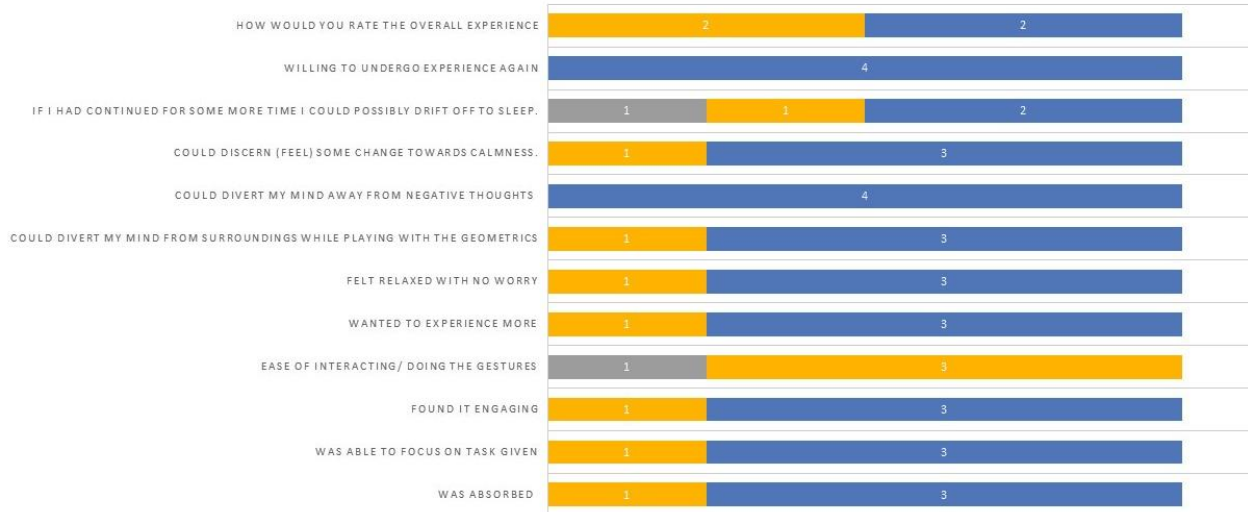| Category	Value
Satisfying	2
Fulfilling	1
Distracting	1
Creative	2
Interesting	3
Sleepy	2
Peaceful	3
Relaxing	3
Playful	4
Fun	4
Absorbing	3
Happy	1
Engaging	2
Exciting	2
Calm	4

EVALUATION TEST RESULTS

Legend: Not much, Satisfactory, Good, Very Good, Excellent

Question	Good	Very Good	Excellent
HOW WOULD YOU RATE THE OVERALL EXPERIENCE		2	2
WILLING TO UNDERGO EXPERIENCE AGAIN			4
IF I HAD CONTINUED FOR SOME MORE TIME I COULD POSSIBLY DRIFT OFF TO SLEEP.	1	1	2
COULD DISCERN (FEEL) SOME CHANGE TOWARDS CALMNESS.		1	3
COULD DIVERT MY MIND AWAY FROM NEGATIVE THOUGHTS			4
COULD DIVERT MY MIND FROM SURROUNDINGS WHILE PLAYING WITH THE GEOMETRICS		1	3
FELT RELAXED WITH NO WORRY		1	3
WANTED TO EXPERIENCE MORE		1	3
EASE OF INTERACTING/ DOING THE GESTURES	1	3	
FOUND IT ENGAGING		1	3
WAS ABLE TO FOCUS ON TASK GIVEN		1	3
WAS ABSORBED		1	3

COVID-19 rocked the world
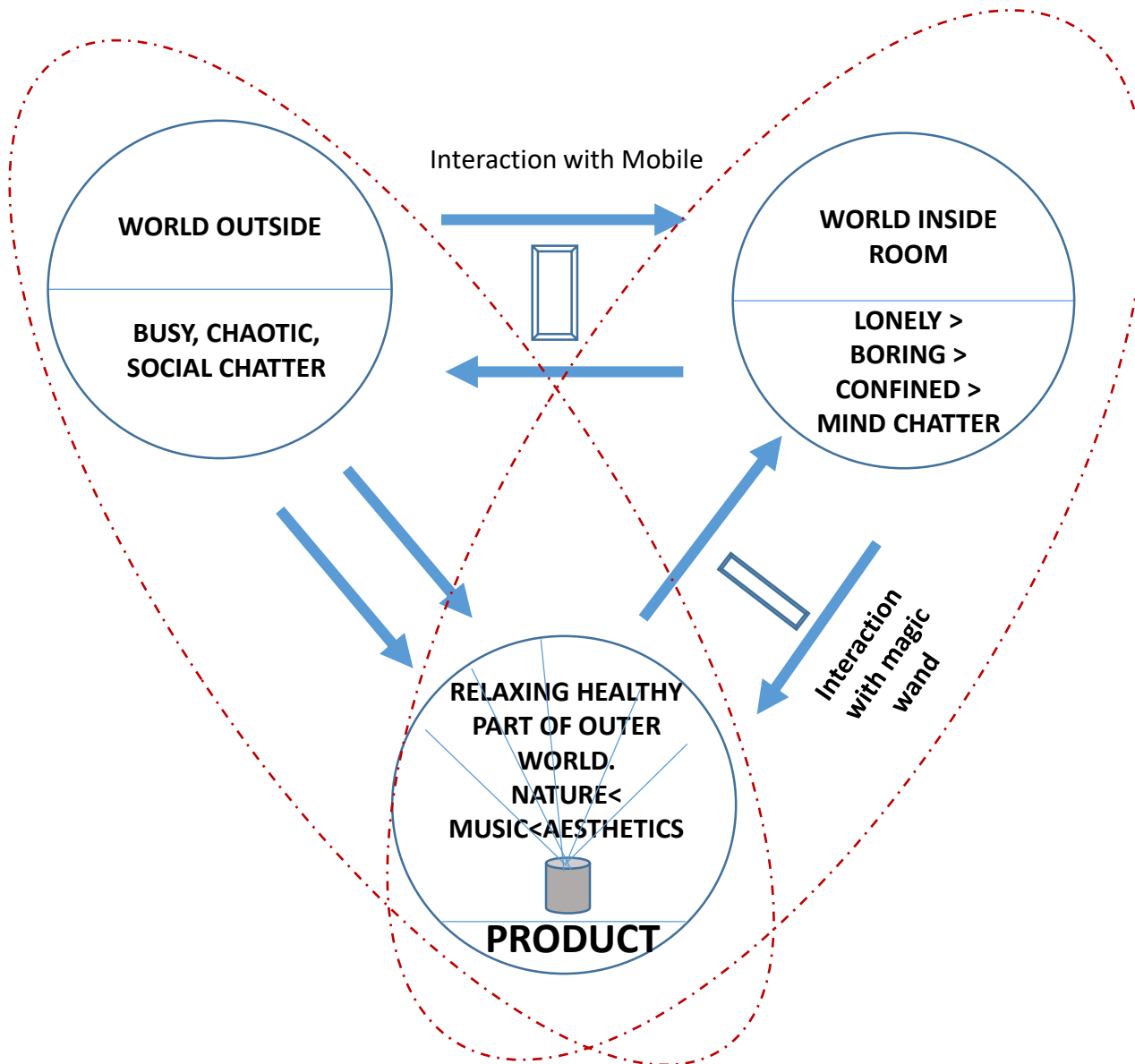
Conclusion: Interaction Diagram

- **Our mobile phones invite the chaotic outside world** after prolonged use throughout the day.

- **The Magic Wand keeps out chaos and social chatter** but brings in Nature, Sounds, Music from the outside world to create a self-controlled, self absorbing, relaxing atmosphere in the small confined space – all towards sleep.

- **Disengaging from that chaos** and finding peace within ourselves is a key part of the interaction.

Thank you! ☺

Questions?