D'source Project

Open Design School

MoE's Innovation Cell

Jellow Communicator

Design Thinking & Innovation Case Study

Section: C1, Week 1

Design Thinking & Innovation (DT&I)

Section: C1.0
Week 1

Design Thinking & Innovation (DT&I)

Prof. Ravi Poovaiah
IDC School of Design
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DT&I Case Study

C1 Jellow Communicator

Module C1:

C1.1

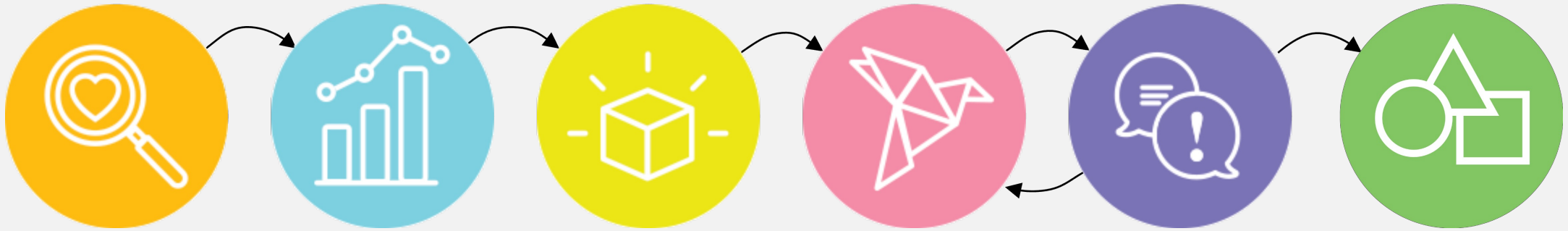
Case Study Project ‘Jellow Communicator’

Giving a Voice to Speak

Welcome to Jellow Basic Communicator

1. Introduction to Jellow
2. Iterative Design Journey so far
3. Jellow's Unique Features
4. Interface Walkthrough
5. Outreach
6. The Road Ahead

Design Thinking & Innovation Process for Jellow:



Phase 1:
- **Research**
- Observe
- Study

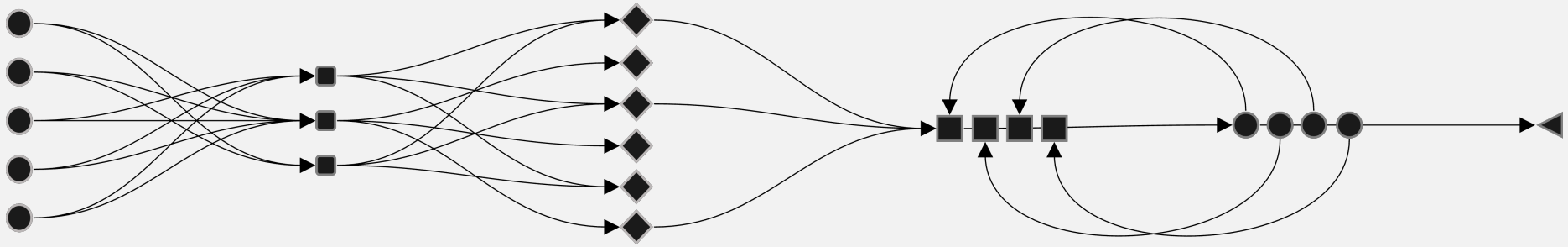
Phase 2:
- **Analyze**
- Understand
- Visualize

Phase 3:
- **Ideate**
- Explore
- Concepts

Phase 4:
- **Build**
- Mock-up
- Prototype

Phase 5:
- **Test**
- User testing
- Iterate

Phase 6:
- **Implement**
- Produce
- Enterprise

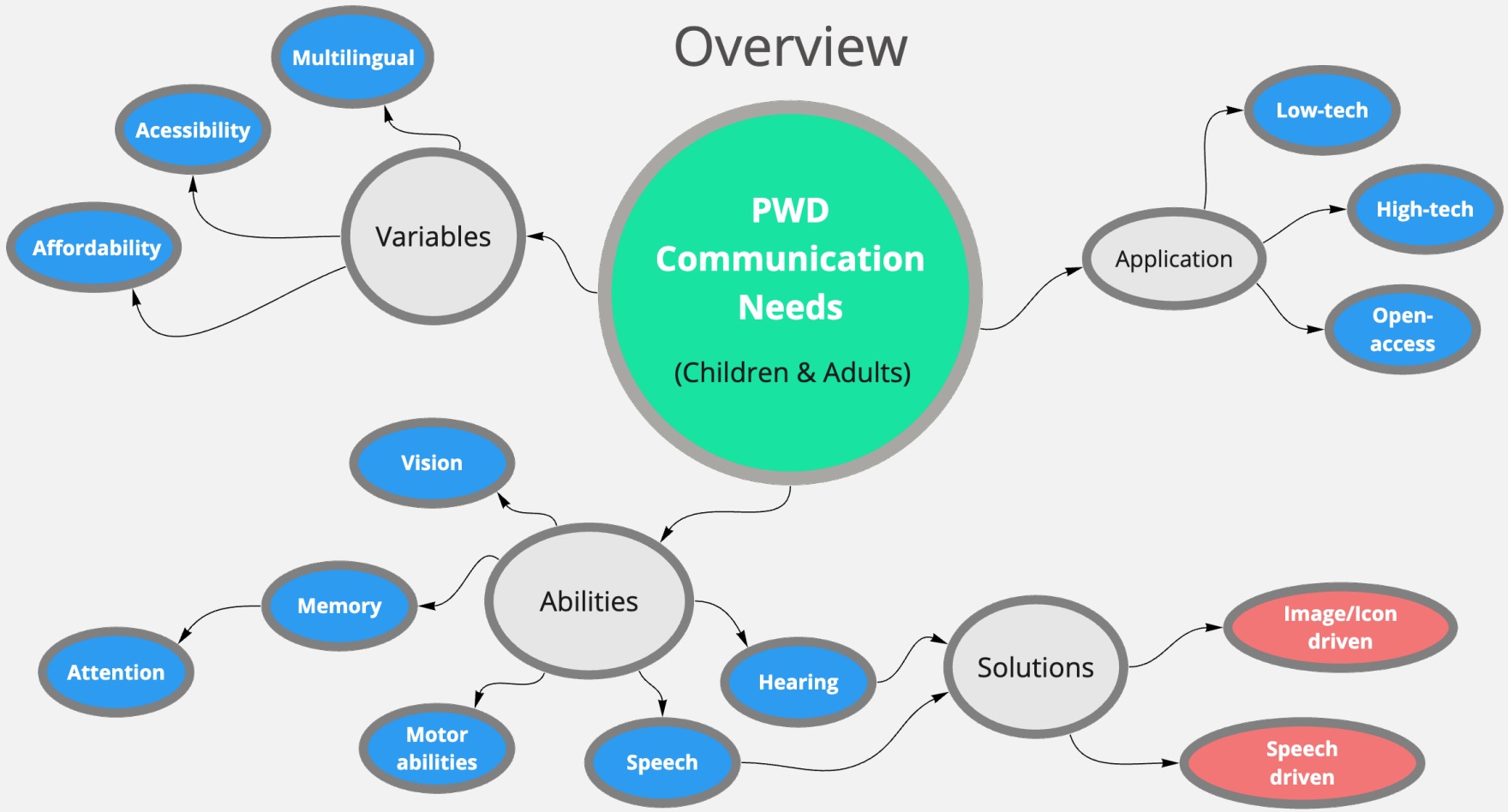


THINK! DESIGN

Research

Jellow Problem Space

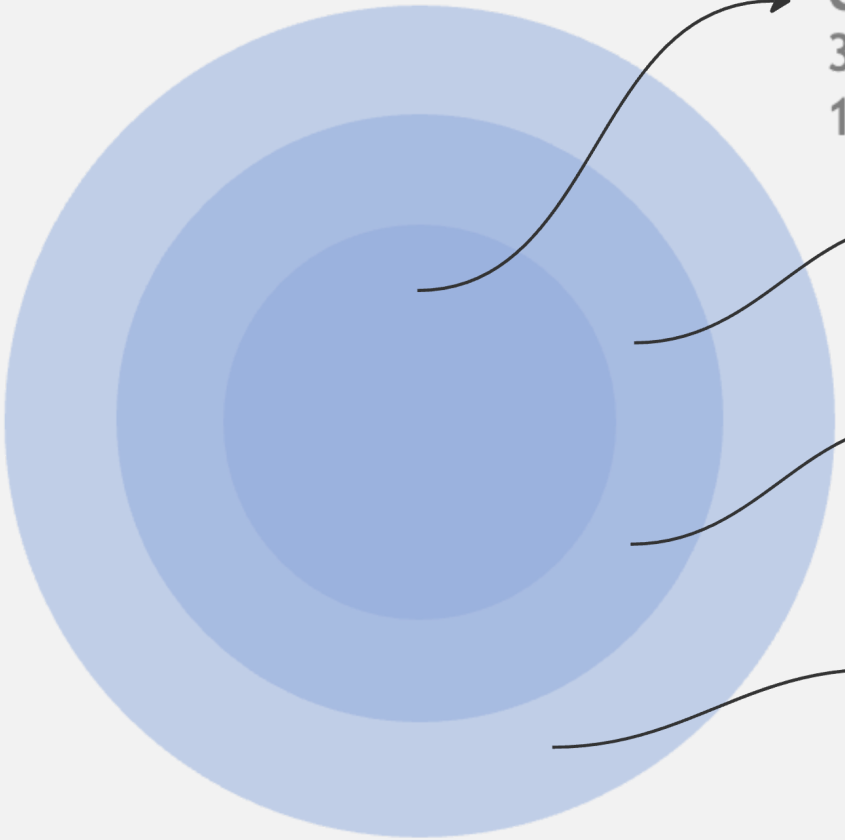
- Mind-map



Users ecosystem

THINK! DESIGN

Research



CHILDREN WITH AAC NEEDS:
30 million children in India
140 million children world wide

PARENTS:
Similar in number as children

HEALTH PROFESSIONALS:
Approximately 10 million health professionals around the world

INSTITUTIONS:
Institutions across the world
National schemes across many countries

The Jellow Universe

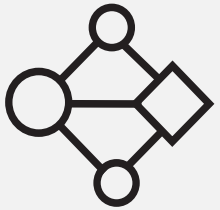
THINK! DESIGN

Research

WORLD:
Worldwide, roughly **140 million children** suffer from communication difficulties.

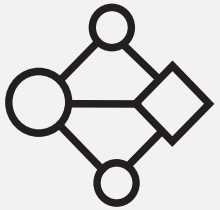
INDIA:
Over **30 million children** in India have some form of communication problems, much of it being due to Cerebral Palsy, Intellectual Disability, Autism and such disabilities.

The **Problem** and Solution:

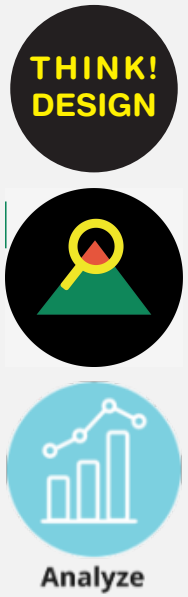


Need for an AAC Communication System
> which is child-friendly
> designed specific to children (3-9 years)
> simple, easy and Intuitive to use
> which is culturally contextual - our food, festival and places
> with access to multiple languages

The Problem and **Solution:**



A **solution** that
> has both low and high tech solutions together INCLUSIVE
> is accessible across all platforms -FLEXIBILITY
> is a complete communication system – VARIATIONS
> is FREE to use

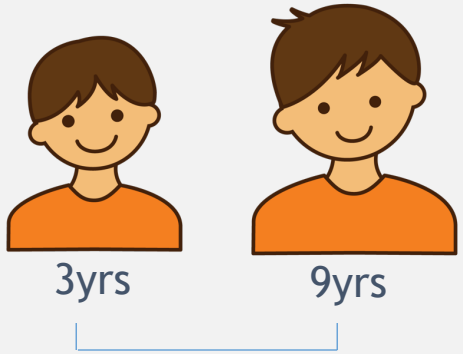


Jellow Communicator:

an aid for children with speech impairments

Uses icons/images to aid communication in children learning to speak or with difficulty with speech and language.

Helps non-verbal children to communicate and gradually learn to speak - especially those with Autism, Cerebral Palsy, Down's syndrome



Jellow: Journey so far

THINK! DESIGN

Ideate

Jellow 1.0
(2004)

Physical aid

- Physical interactions for communication

Jellow 2.0
(2008)

Jellow on Desktop

- Desktop/browser-based

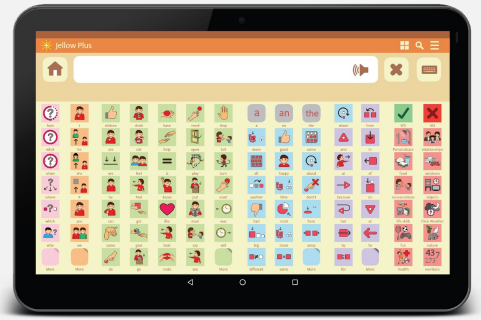
Jellow 3.0...
(2016)

Jellow Basic

- Book/Desktop/Tablet/Mobile

Jellow 4.0...
(2021)

Jellow Plus



- Tablet/Mobile

Icons
- design considerations

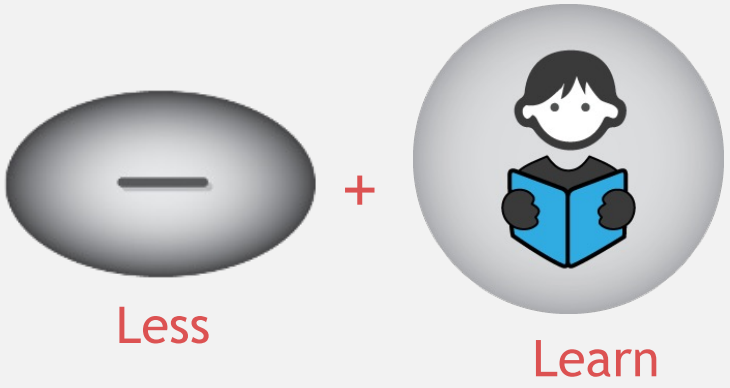
The icons needed to be simple, easy to recognize and cheerful.
These were tested and iteratively designed with feedback from children.

Icons to Speech
- design considerations

THINK! DESIGN

Ideate

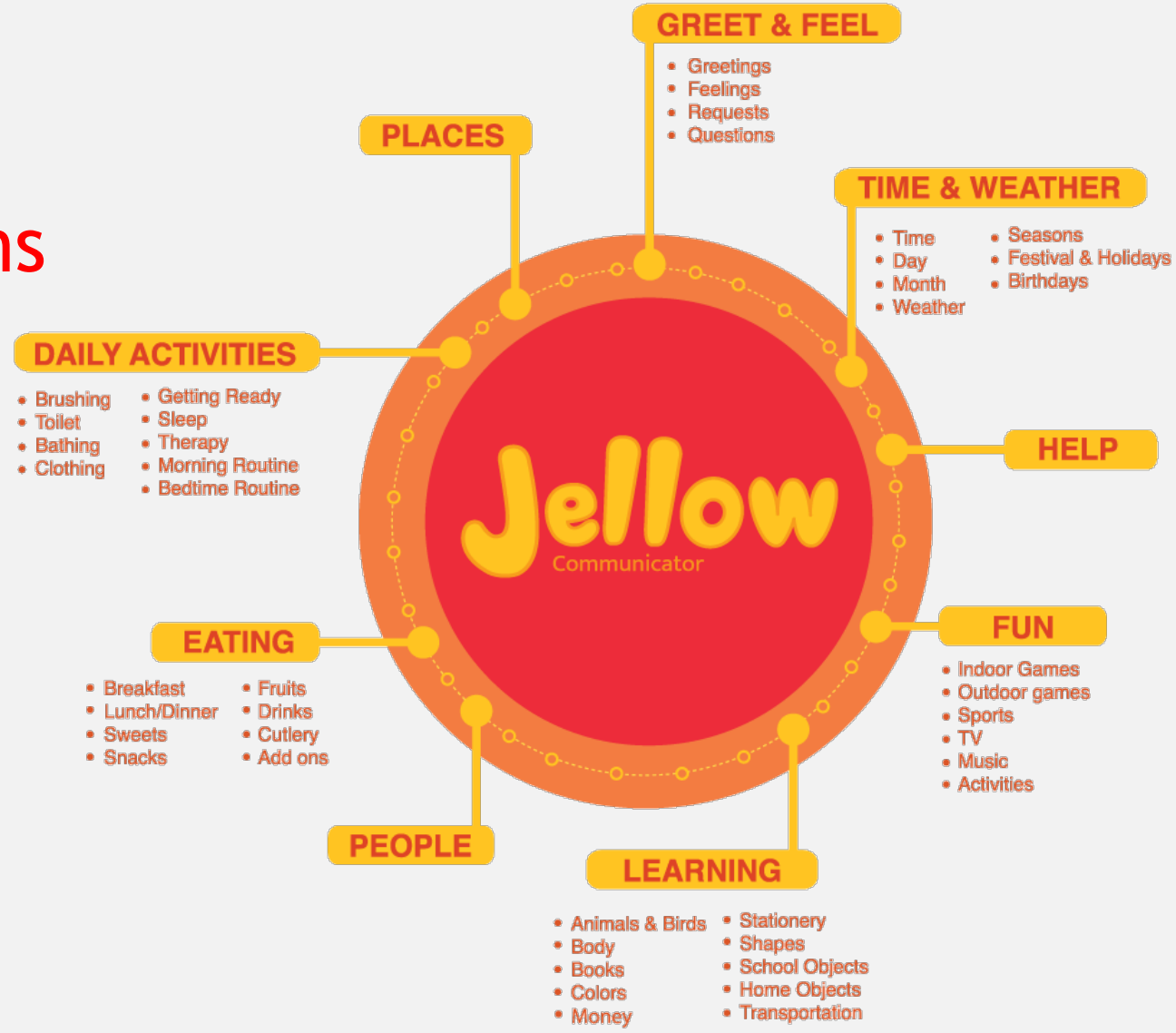
The icons trigger speech and hence ‘Text to Speech’ needed to be of language easy to understand and learn for the child.
These required people translation.
Using TTS means one saved space.



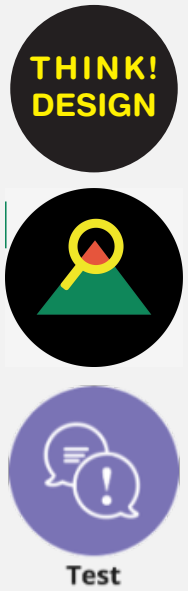
“I don’t want to learn any more”

Icons directory
- design considerations

The Jellow has over 1200 icons and
over 12,000 premade sentences



Design Process



Designed Iteratively with regular feedback from users:

Children

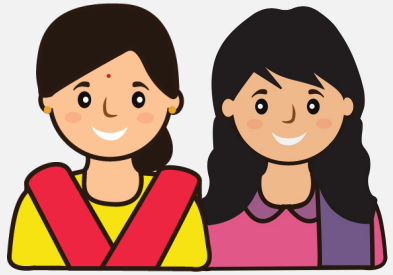
(Icons)

Usability Feedback

- Demonstration +
- Converse + Identify
- Task Completion

Parent, Teacher & Therapist

(Icons + Functions)



Workshop Sessions:

- Demo of Jellow +
- Focus Group Sessions

Active Users

(Interface + Usability)

Analytics and Study:

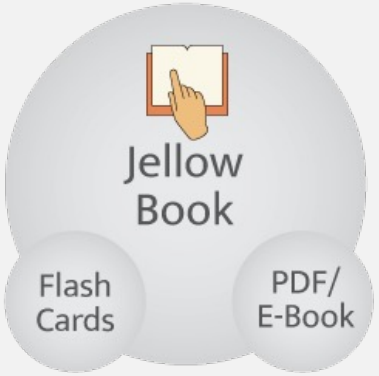
- Longitudinal Study +
- User Data Analytics

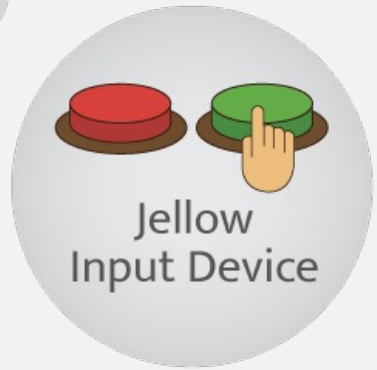
The Solution
- as a system

THINK!
DESIGN

Implement

Jellow is a complete communication system conceived **across the technology spectrum** in the following variations to cater to the needs of a child with a varying range of abilities:



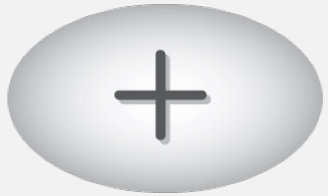


Jellow Interface

Based on Emotional Language Protocol (**ELP**)

Like

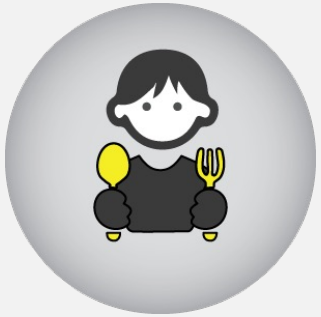
Yes



More

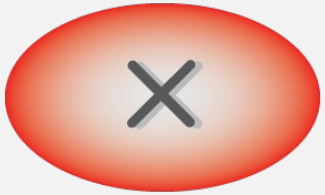
Learn

Play



Eat

Don’t Like



No

Less

THINK!
DESIGN

Jellow Basic

THINK!
DESIGN

Jellow Basic

Unique Features:

Designed for Children

Easy to Use Interface

Child Friendly Icons

Culture Specific Icons

Unique Features . . .

Emotional Language Protocol

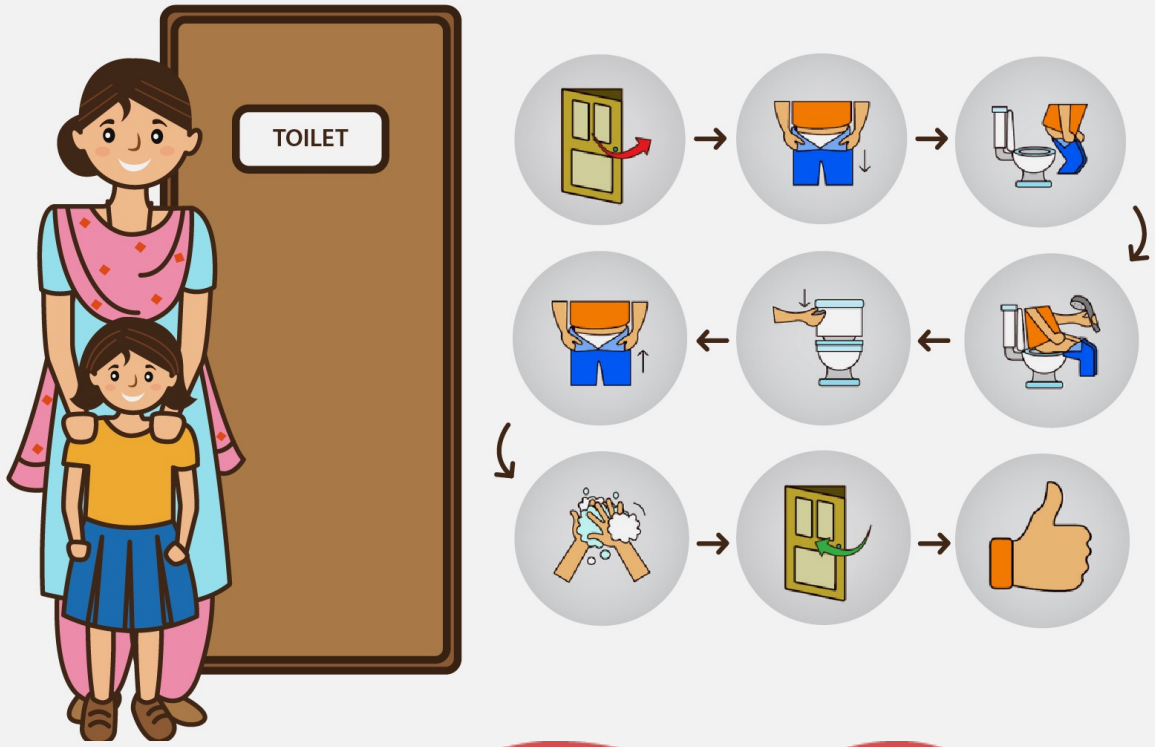
Multiple Languages

Customise your board

Made Accessible

The User - Story One
- parent's point of view

Kavita, the child, learned to use the toilet within 2 weeks with help of Jellow Communicator's sequenced daily activities.

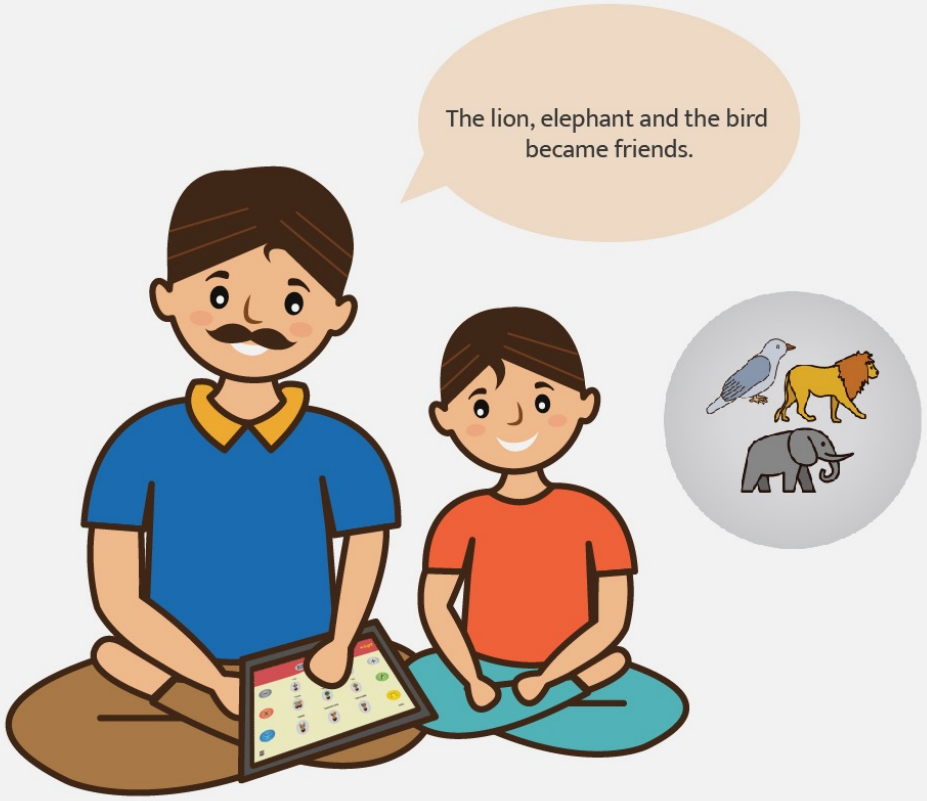


The User - Story Two
- child's point of view

Jonathan, being quadriplegic, has taken to using Jellow to communicate his needs. This he does with a head-mounted pointer.

The User - Story Three
- therapist's point of view

Ismael, a speech therapist, often uses Jellow's child friendly icons as a learning tool to tell stories.



The User - Story Four
- child's point of view

Ankit' s parents reported that he always had to change schools within a few months.

However, this chain stopped after he started using Jellow which gave him confidence and now is in the same school for the past three years.

The User - Story Four
- parents point of view

Shantanu's parents had to travel suddenly out of town and for the first time and they had leave him with the grand parents.
Jellow came to their rescue and they could understand Shantanu's needs without any problem..

THINK!
DESIGN

Jellow Basic

Walkthrough

Communicating using Jellow Basic

- 9 Categories

Greetings Category

Daily Activities Category

Daily Activities Category

- Using Toilet

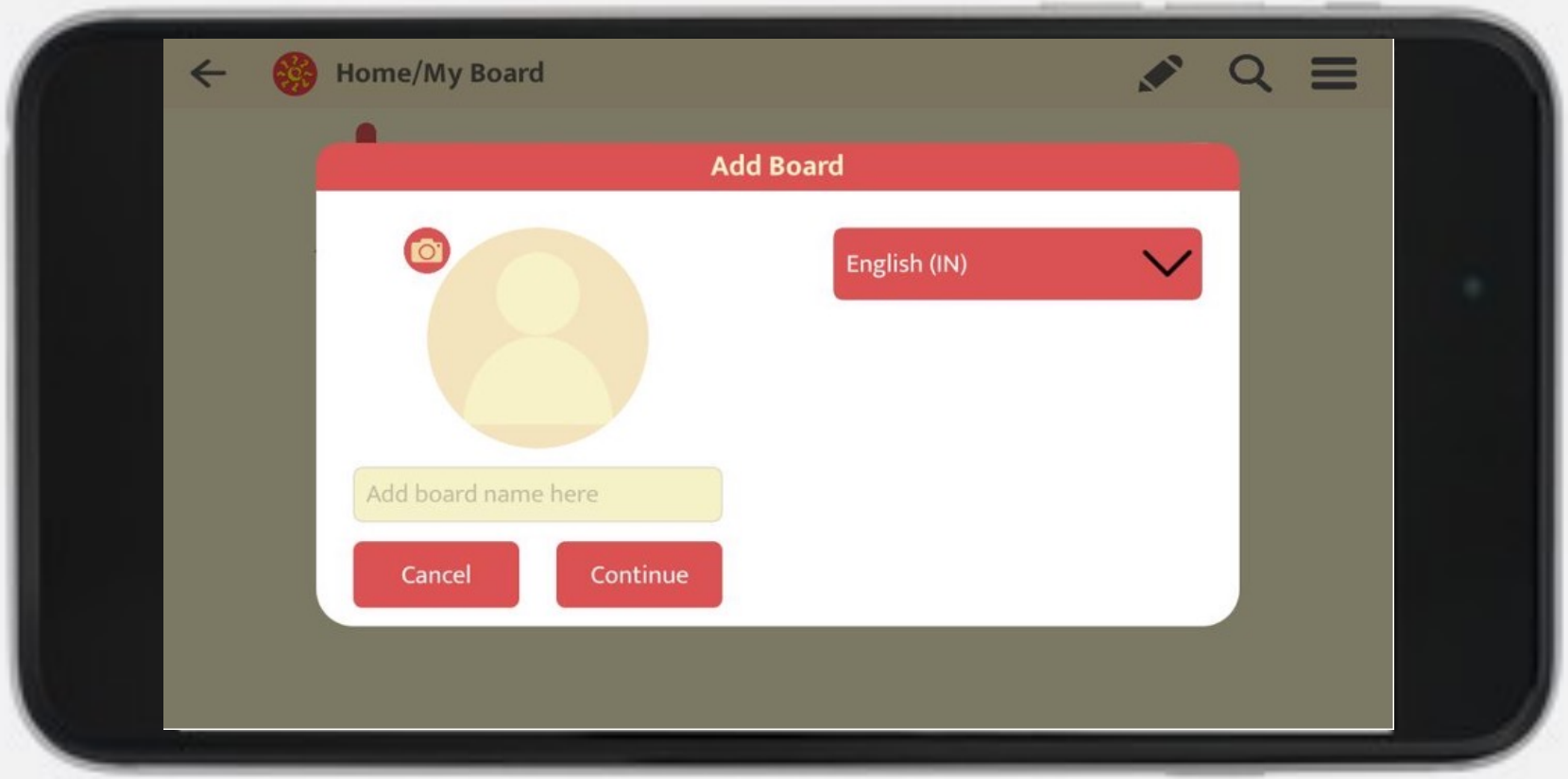
Help Category

Make My Board

- My Board/Home

Make My Board

- select image, text, language, voice



Make My Board

- select image, text, language, voice

Make My Board

- My Board/Eggs and Bread

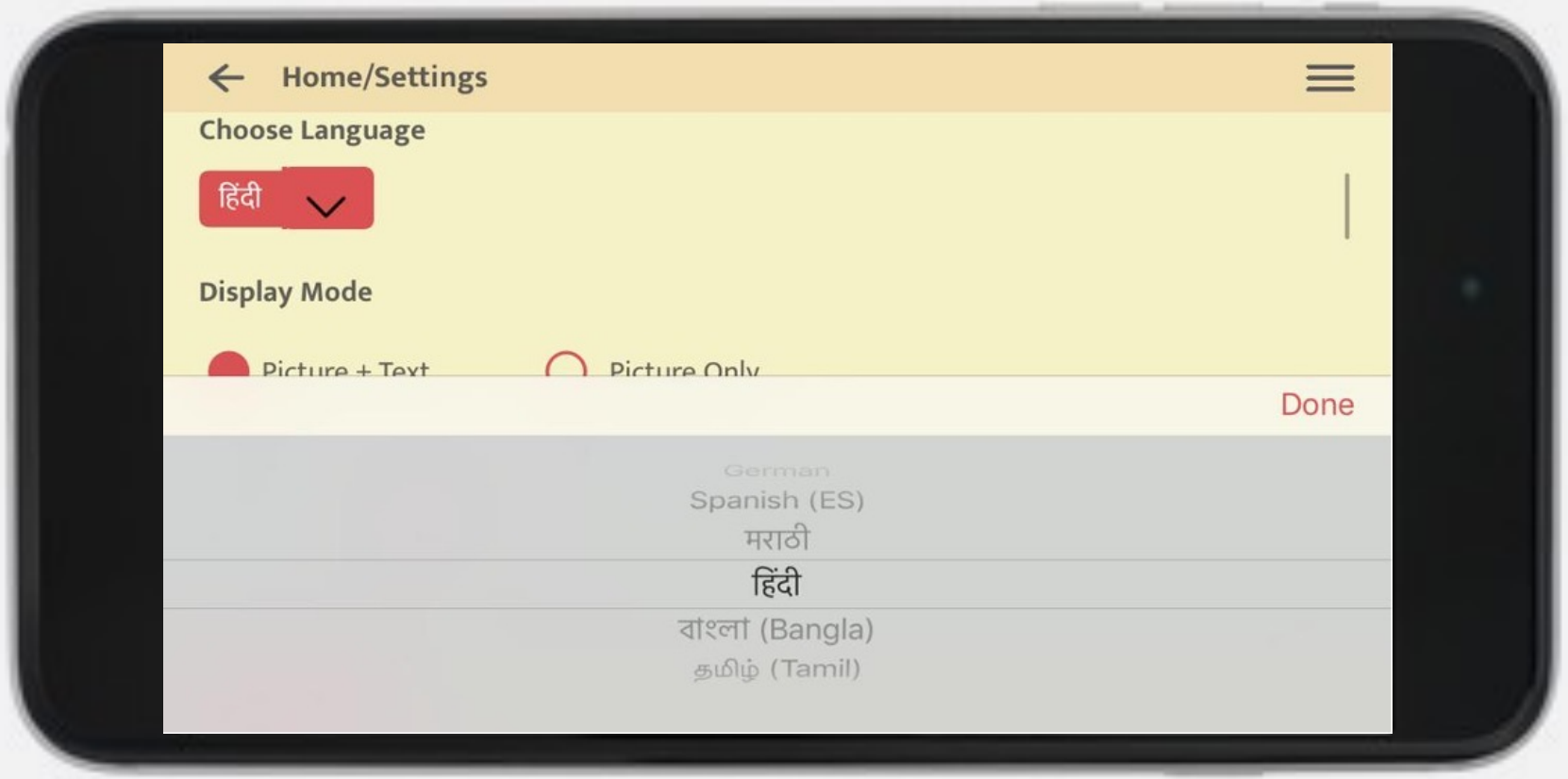
Number of Icons per Screen

- 1, 2, 3, 4, & 9

2 Icons on Screen

Selection of Language

- 13 languages + voices



Home Screen in Hindi Language

Jellow Variations

- as a Social Enterprise

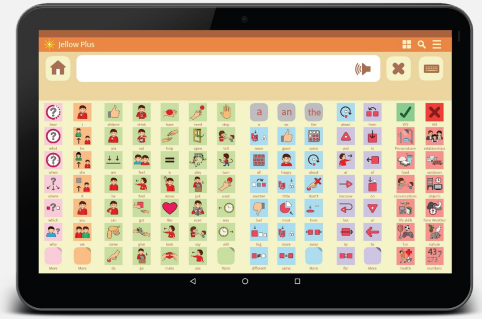
THINK! DESIGN

Implement

Jellow Care

Jellow Talk

Jellow Plus



Jellow Speech

Jellow Play

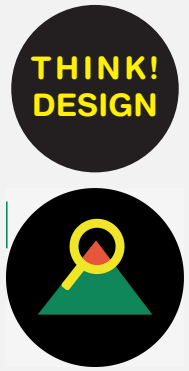
Jellow Communicator embraces the following UN SDG goals:

(a) **SDG goal # 3 on Good Health and Well-being**,

(b) **SDG goal # 4 on Quality Education**, which supports early childhood development, care, and inclusive education and

(c) **SDG goal # 10 on Reduced Inequalities**, which in turn supports ensuring equal opportunity and reduced inequalities of outcome.

Jellow's Name



Jellow

Giving a Voice to Speak

Jellow Basic

Jelly Fish + Jolly Fellow = **Jellow**

THINK!
DESIGN

Jellow Basic

Outreach, Events Networking and Support

Outreach

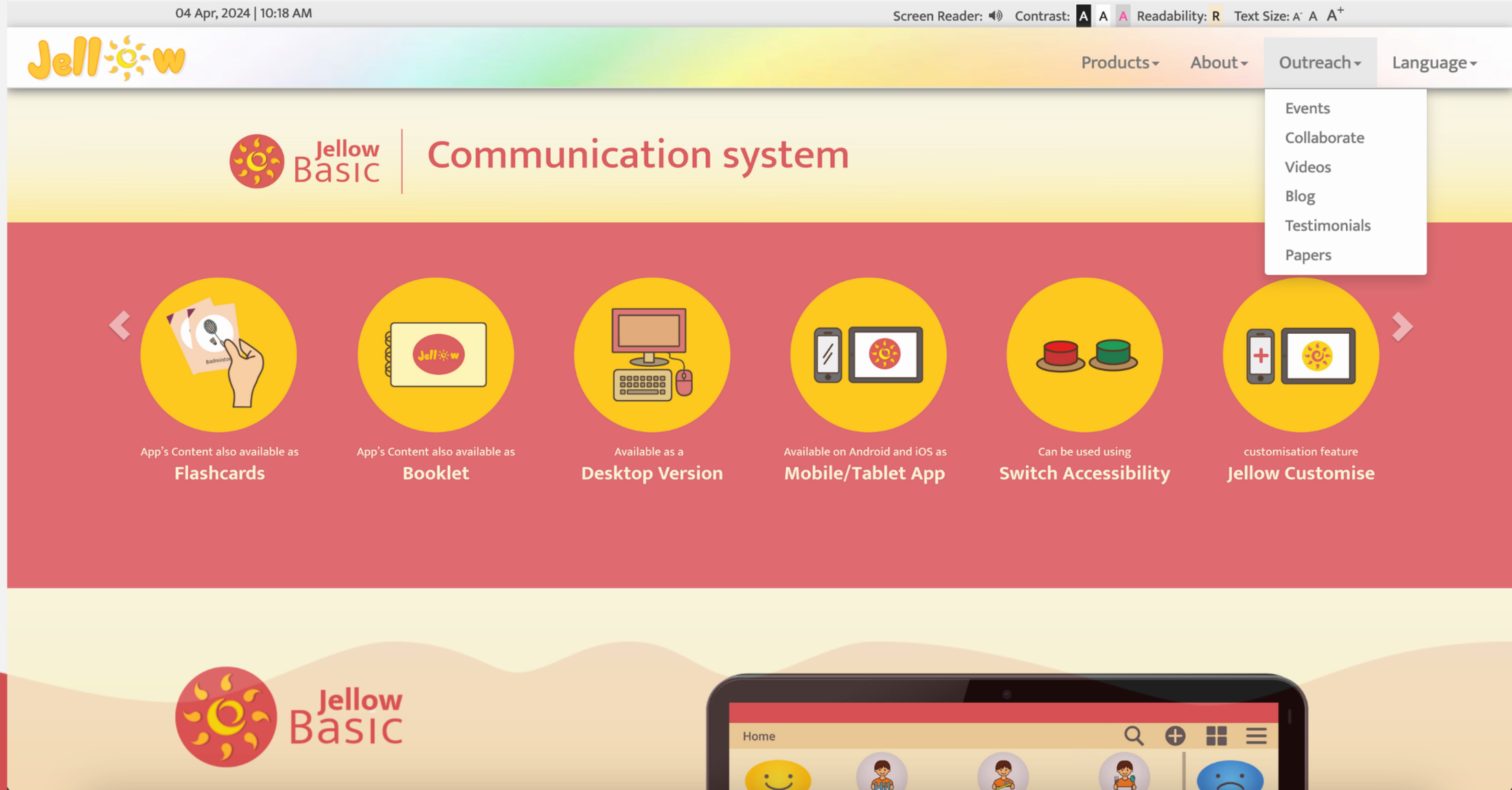




- WORKSHOPS
- CONFERENCES/EXHIBITIONS
- COLLABORATIONS
- DIGITAL MARKETING
- WORD OF MOUTH PUBLICITY
- CREATING SOCIAL NETWORKS

Media Downloads

Jellow.org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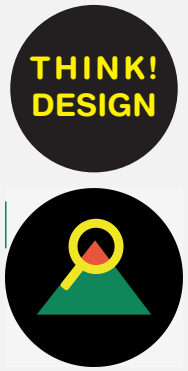
Screen Reader:
Contrast:
Readability:
Text Size:
Jellow
Products
About
Outreach
Language
Events
Collaborate
Videos
Blog
Testimonials
Papers
Jellow Basic
Communication system
App's Content also available as
Flashcards
App's Content also available as
Booklet
Available as a
Desktop Version
Available on Android and iOS as
Mobile/Tablet App
Can be used using
Switch Accessibility
customisation feature
Jellow Customise
Jellow Basic
Home

Future Plans (wish list) for Jellow Basic



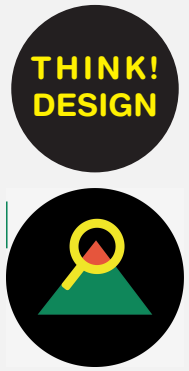
1. Incorporate Schedule

2. Incorporate into Jellow:
   > all major languages in India
   > major languages from around the world

3. AI Enabled to make it smart

4. Include Foundational Learning with Play

Awards


THINK!
DESIGN


unicef
INNOVATION


NATIONAL AWARD 2018
EMPOWERMENT OF PERSONS WITH DISABILITIES


Jellow
wins
mBillionth
South Asia Award
for
'Inclusion and Empowerment'
mBillionth
award south asia

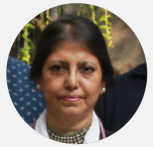

NIPMAN
FOUNDATION
Microsoft
Equal Opportunity
Awards 2018


Microsoft
Design Expo


Digital
Public
Goods
Alliance

The Team

Prof. Ravi Pooviah
Founder Member, IDC School of Design,
IIT Bombay and Ninaad



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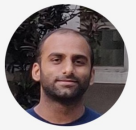

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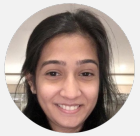
Research Associate

Ms. Sakshi Pal
Research Associate



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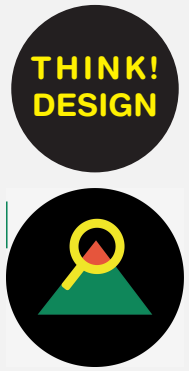
Mr. Saurabh Jain
Software Developer

Mr. Ayaz Azam
Software Developer

Mr. Gautam
Software Developer

In Conclusion



"You can count the number of seeds in an apple
But you can never count the number of apples in the seeds."

Stewart Brand, MIT, Media Lab, USA
Author "Inventing the Future"

www.jellow.org

Thank You

Thanks for Listening

DT&I Case Study
Section: C1
Week 1

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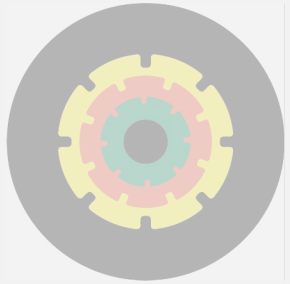
DT&I Course - Week 1:

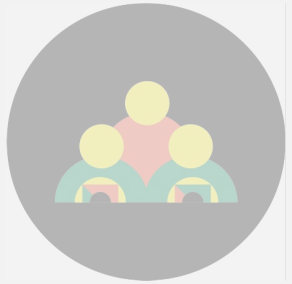
DT&I Process
(20%)

> Structure
> Intro to DT&I



DT&I Tools
(20%)

> Brain Storming Key-words + Sorting + Linking



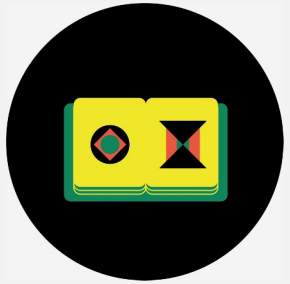
DT&I Project
(50%)

> Select your Topic for DT&I project + Do Brain Storming & Sorting

DT&I Case Study
(10%)

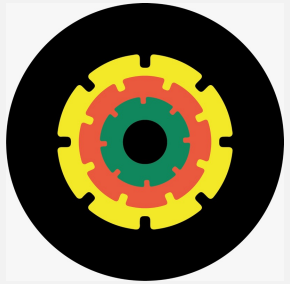
> Case Study Project Jellow

DT&I Course – Week 2:



DT&I Process
(20%)

> What, Who, How
> Models of DT&I



DT&I Tools
(20%)

> Mind-Maps + Affinity Links

DT&I Project
(50%)

> Finalize Topic for DT&I project + Do Mind-Mapping

DT&I Case Study
(10%)

> Case Study Project Smaran

THINK!
DESIGN

Supporting Organizations:

D’source

D’source Project

Open Design School

MoE’s Innovation Cell

Credits:

Presented by:

Prof. Ravi Poovaiah

D'source Project

Open Design School

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Credits:

Camera & Editing:
Santosh Sonawane

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Credits:

Think Design Animation:
Rajiv Sarkar

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Credits:

Graphic Icons:
Shweta Pathare

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Credits:

End Title Music:

C P Narayan

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