

Studio Project 2

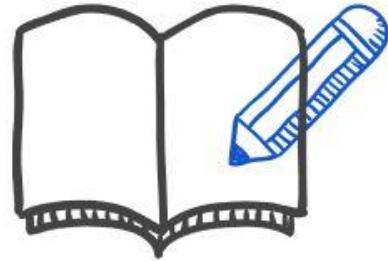
Group 9

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Jinwen 174491Z, Shiying 171436A

Preview

Overview of Topic
Our SMART Product
Aim/Objective & Message
Personas
User Journey
Ideal User Journey
Concept & Art Direction (Design Development)
Final Artwork & Prototype
Design Rationale
Division of Labour

Education



What is Education

OUR PRODUCT

Smartime

A wearable product for people who feel reckless in a private setting.

A product that makes it easier for the teachers to mark math tests and examination papers.

It is more efficient, convenient and reliable.

Functions

- Scans through Math tests and examination papers
- Detect right & wrong answers and workings
- Circle out the errors made
- Provide the right answers and solutions
- Show method marks
- Collates the total marks

How It Works

A camera is installed in the spectacle to detect the legibility of writings and identify mistakes and provide solutions for them.

A microchip is placed at the side of the inner corner of the spectacle.

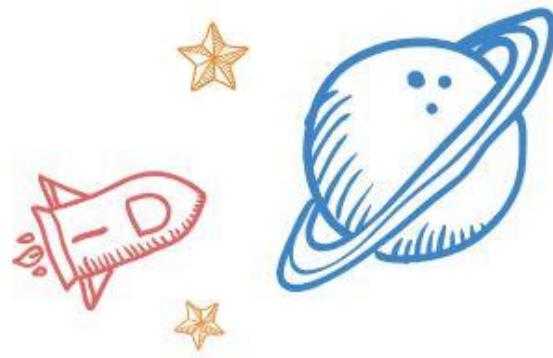
How It Works

Charged by the spectacle case via wireless charging

Activated by a stylus-like pen

The pen: scans & marks the script

The specs: shows the right/wrong answers, solutions & total marks
(appears on the specs' lens.)



Objective & Message

Aim / Objective



- To help with marking scripts efficiently.
- Students are able to get back their script faster to look through their mistakes and correct them as soon as possible.

For e.g.

- *If the students get back their papers weeks after, due to the delayed return of the scripts, they might not have a very clear memory of the questions & might find it harder to understand their mistakes and the solutions given as it seems unfamiliar to them.*



Message

To provide efficient marking device for the teachers.

USP & ESP

UNIQUE SELLING PROPOSITION: Mark fast & efficiently

EMOTIONAL SELLING PROPOSITION: Convenient

BRAND PROMISE

We promise to provide you with a pleasant marking experience.

So that you can provide feedbacks to your students more quickly than before.

Concept & Art Direction



CONCEPT / ART DIRECTION

Black and white.

Minimalistic and aesthetically pleasing.

MOOD BOARD



Persona



NAME: Passionate Ms Peng

AGE: 42

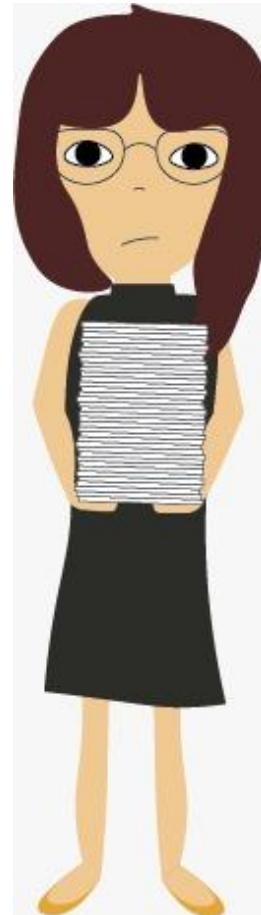
HOBBIES: Gardening

GOOD POINTS:

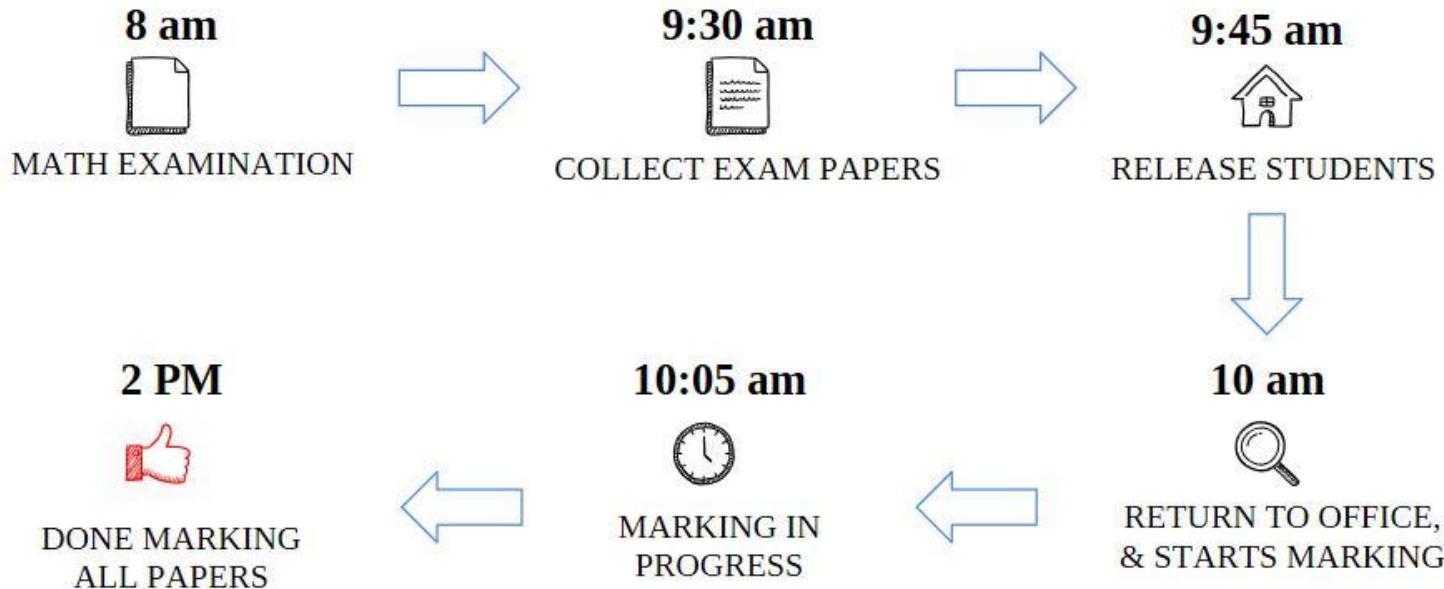
- Experienced in teaching for 20 years
- Passionate in teaching

PAIN POINTS:

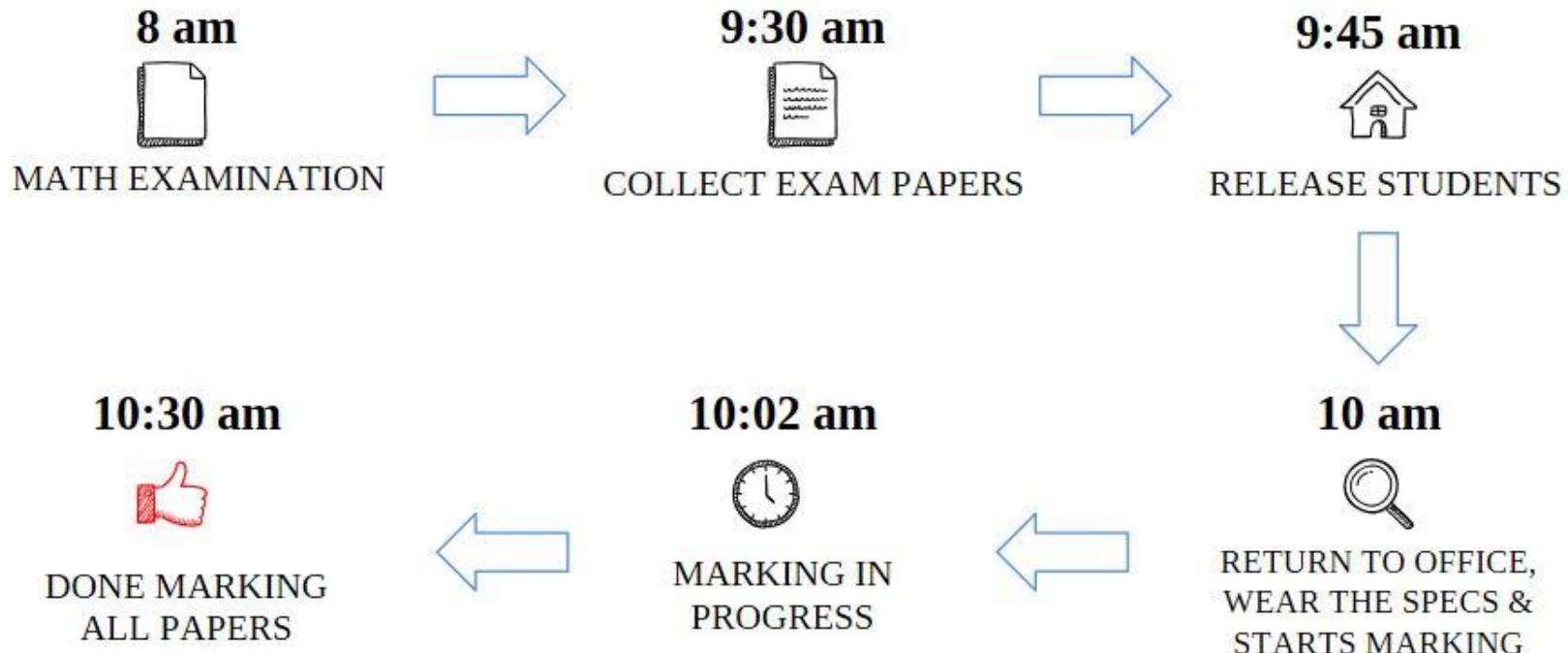
- Spends more time in doing administrative work than planning for a lesson
- Movements not as quick as compared to when she was younger.



User Journey



Ideal User Journey



NAME: Diligent Dylan

AGE: 10

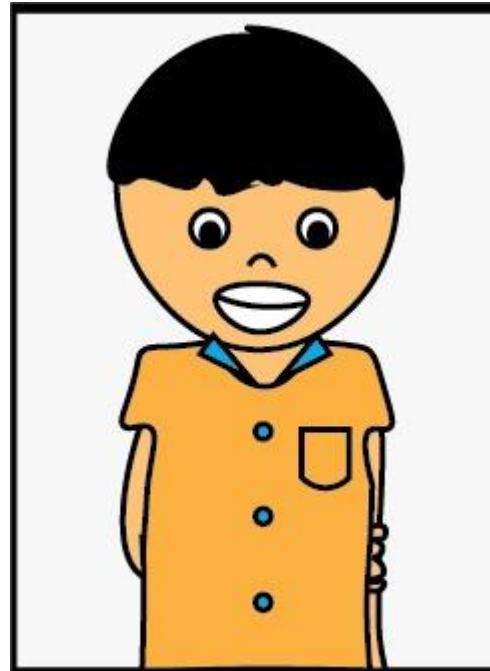
HOBBIES: Swimming

GOOD POINTS:

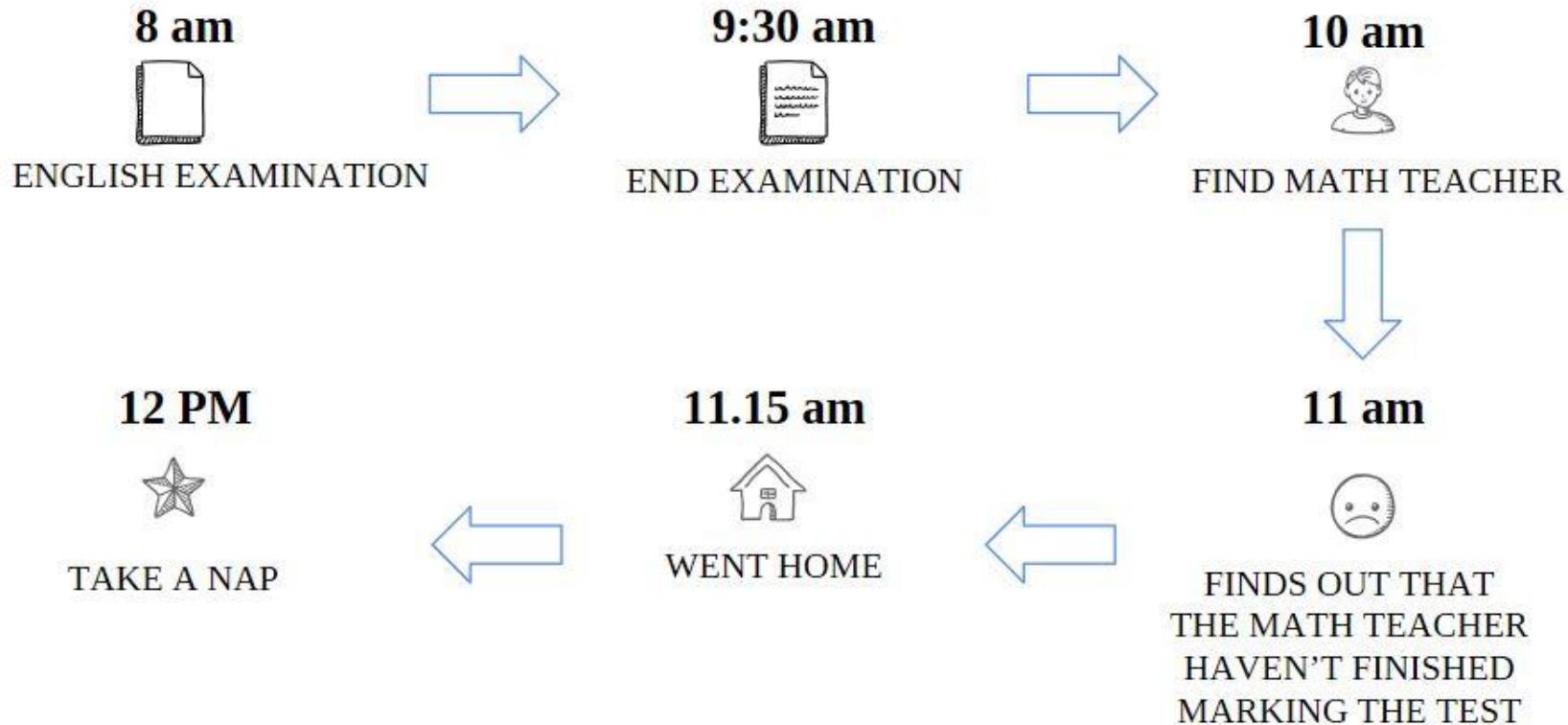
- Good at solving Mathematics problems
- Passionate about Mathematics

PAIN POINTS:

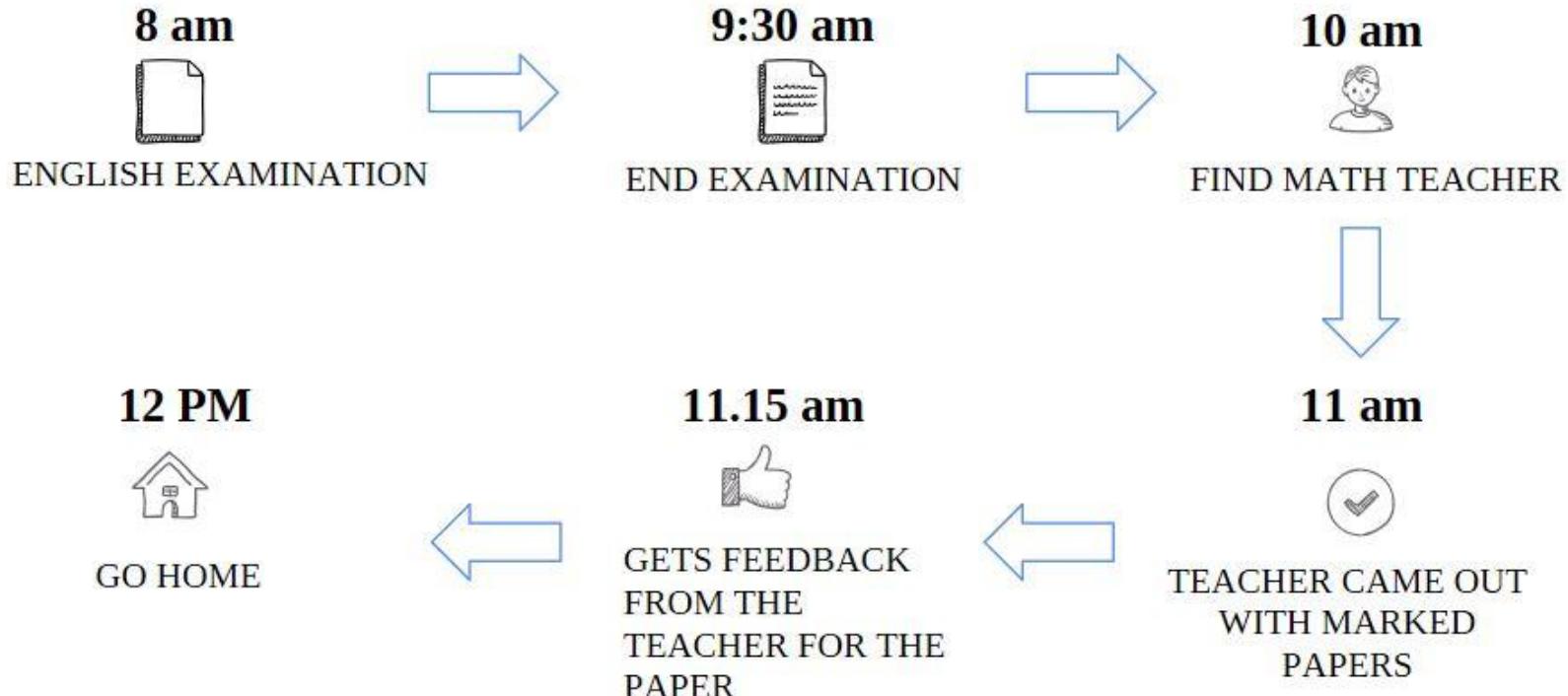
- Always get late feedback from teacher
- Poor memory



User Journey



Ideal User Journey



Design Development



Logo Developments

Smartime

Final Logo



Research

'48 hours? It's longer than that', say teach



The OECD survey found that teachers here spent almost twice the amount of time on marking and administrative work than their peers overseas. Singapore teachers The Straits Times spoke to cited large class sizes - 36 students compared with the global average of 24 - as a reason for this. ST FILE PHOTO

- Teachers spend on average at least 50 hours a week to mark assignments
- They spend more time doing administrative work than actually planning for the lesson

Research

2. THE SOONER THE BETTER

Numerous studies indicate that feedback is most effective when it is given immediately, rather than a few days, weeks, or months down the line.

In one study that looked at [delayed vs. immediate feedback ↗](#), the researchers found that participants who were given immediate feedback showed a significantly larger increase in performance than those who had received delayed feedback.

Another [research project from the University of Minnesota ↗](#) showed that students who received lots of immediate feedback were better able to comprehend the material they had just read.

Research

Table 1

The Mean Gain Scores and SD's for Each Condition on Five Dependent Variables

	Treatment	Delayed Feedback			Immediate Feedback			
		Low	Medium	High	Low	Medium	High	
GRADE Test	Reading Level	<i>M</i>	5.30	1.42	2.30	8.29	7.21	5.86
		<i>SD</i>	4.85	4.00	3.77	4.39	3.17	4.38
	Vocabulary	<i>M</i>	5.00	3.68	.20	7.43	4.07	2.00
		<i>SD</i>	6.11	3.32	3.46	5.94	5.21	4.12
	Curriculum Based Measurement	<i>M</i>	29.97	41.16	24.33	30.24	43.14	30.19
	(unit: WPM)	<i>SD</i>	15.11	14.03	12.55	13.01	24.37	12.72
	Sentence + passage comprehension	<i>M</i>	7.70	4.11	2.80	11.43	10.21	6.71
		<i>SD</i>	6.53	5.18	3.05	4.50	5.32	4.46
STAR Test		<i>M</i>	246.70	412.11	631.70	241.43	416.57	602.14
		<i>SD</i>	62.51	112.22	161.97	81.23	94.37	151.40
		<i>N</i>	10	19	10	7	14	7

Research

Technologies Involved

- **Optical Character Recognition**
- **Augmented Reality**

Research

Optical character recognition

- It is a software that recognizes your handwriting on a written article and digitize it in a fast and efficient way

What is OCR and OCR Technology

Suppose you wanted to digitize a magazine article or a printed contract. You could spend hours retyping and then correcting misprints. Or you could convert all the required materials into digital format in several minutes using a scanner (or a digital camera) and Optical Character Recognition software.

What exactly is meant by OCR?



Research

Augmented reality (AR)

- It is the technology that expands our physical world by adding layers of digital information onto it.
- Unlike Virtual Reality(VR), AR does not create the whole artificial environments to replace real with virtual one.



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Reality Check: The Technology Behind “Pokémon Go”

Research

Wireless Charging

- Wireless charging works by transferring energy from the charger to a receiver in the back of the phone via electromagnetic induction devices such as Samsung S8 and iPhone X are also capable of using it.



Sketches

Step 1: Define your object

Based on your combination, we ask you to imagine that a possible product that meaningfully links the object to the setting and the person who is going to use it. This object should be something that can be used in the setting and by the person. Then we would like you to write down how your object can serve and, how it does it. As a last step, we want you to draw your object and imagine situations in which the person can use them or how should the person do it?

I will think about a collaboration with...

A wearable product vehicle	for people who feel... insecure uninvolved reduces	in a... setting public private formal
-------------------------------------	---	--

Describe the purpose of this collaboration... why is it empowering?

To assist teachers and students to work more efficient.
To help students to be less careless.

Describe the context...

who uses it? Teachers Students (13 - 17)	where is it being used? School Home
--	---

Sensing capabilities

how can the object sense? by which means?

ca. 10x10:

Describe the qualities of the collaboration in keywords

- 1. Affordance
- 2. Trendy
- 3. Fast
- + Interactive
- + Convenient
- + Water-proof
- + Comfort
- + Washable

Workshop Cards for DESIGNING COLLABORATIONS WITH SMART OBJECTS

Step 2: Specify the collaboration

Group name: Participants name: *Designer, User, Teacher, Student*

Draw your product:

Draw out the collaboration in a storyboard:

Step 1: Define your object

Based on your combination, we ask you to imagine that a possible product that meaningfully links the object, the setting, and the emotional state of the person. How might this object serve the person in this setting and what is the person going to be doing? You are free to imagine any type of situation. Please answer the questions below when you have thought about a product.

I will think about a collaboration with...

A wearable product vehicle	for people who feel... insecure uninvolved reduces	in a... setting public private formal
-------------------------------------	---	--

Describe the purpose of this collaboration... why is it empowering?

To make it easier for teacher to teach tasks or exams paper.

Describe the context...

who uses it? Teachers	where is it being used? School
--------------------------	-----------------------------------

Activation capabilities

how can the object act? by which means?

switch on

Describe the intelligence...

what should the object know? what can the object do?

Know English language
spell correctly
tell time
know what's their mistake
for teacher easier marking

What can the person accomplish the object when needed?

Interactive

Describe the qualities of the collaboration in keywords

- 1. Affordable
- 2. durable
- 3. Interactive
- + water-proof
- + comfort
- + convenient

Workshop Cards for DESIGNING COLLABORATIONS WITH SMART OBJECTS - AT201318 | Diploma in Interaction Design | Studio Project 2

Step 1: Define your object

Based on your combination, we ask you to imagine that a possible product that meaningfully links the object, the setting, and the emotional state of the person. How might this object serve the person in this setting and what is the person going to be doing? You are free to imagine any type of situation. Please answer the questions below when you have thought about a product.

I will think about a collaboration with...

A wearable product vehicle	for people who feel... insecure uninvolved reduces	in a... setting public private formal
-------------------------------------	---	--

Describe the purpose of this collaboration... why is it empowering?

A sensible hat is for people who feel *guilty* in a public setting.

Step 2: Specify the collaboration

Group name: Participants name: *Designer, User, Teacher, Student*

Draw your product:

Draw out the collaboration in a storyboard:

Step 3: Reflect on the collaboration

As a last step, we would like to reflect on the collaboration you have just imagined. We have two questions to guide this reflection. The first question is what the object shouldn't do given the setting and the person's emotional state. As a last step are any other critical issues and considerations you would like to share?

What shouldn't the object do?

Should not make the user slow.
Should not make the user over-eated.

What are the other critical issues and considerations?

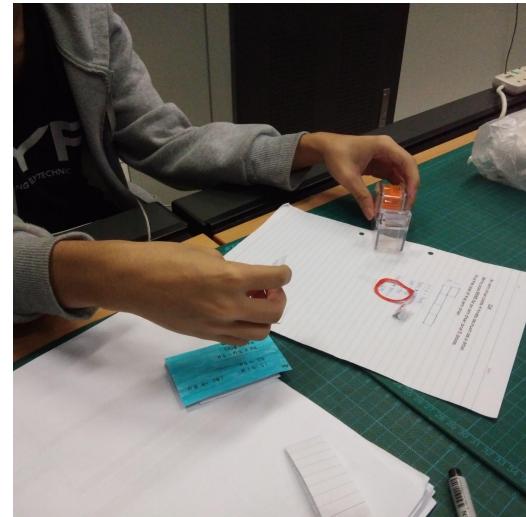
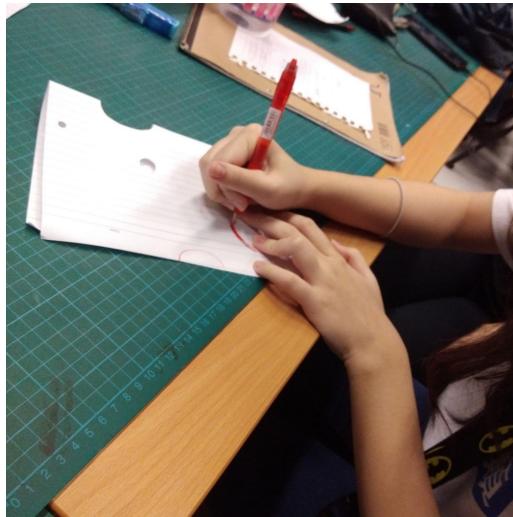
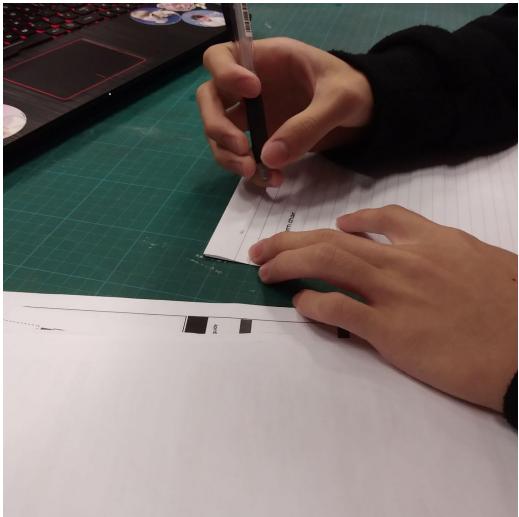
Should be comfortable, not rigid.

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Prototype Making - Spectacle



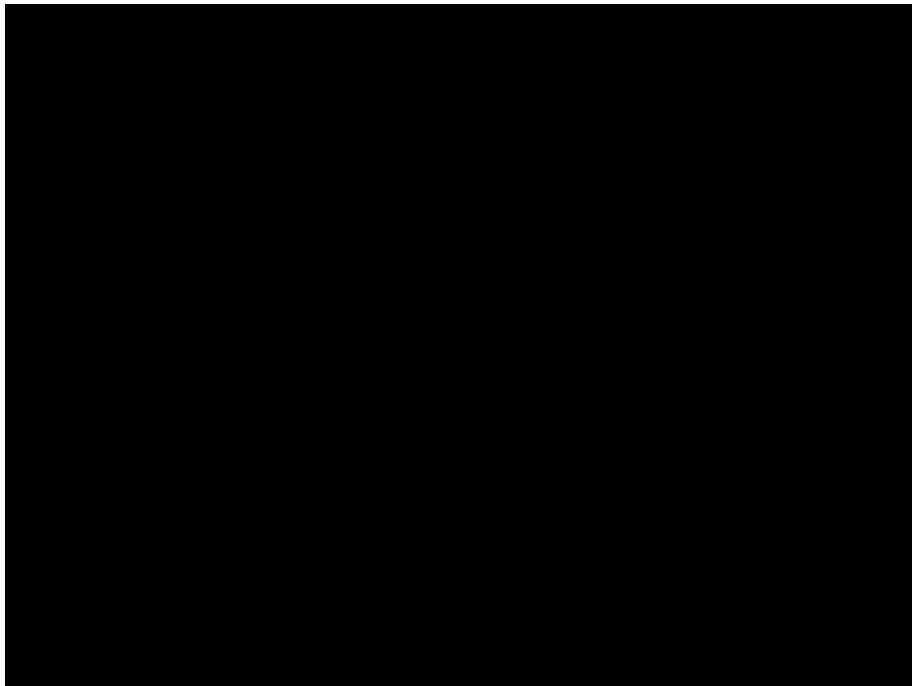
Prototype Making



Prototype Making - Spec Case



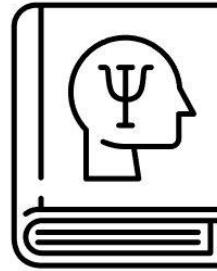
Prototype Making



3D Visualization of final prototype



Psychology Theories



Classical conditioning

- A learning technique associated with the relation between a stimulus and its response.
- In other words, it is a method that involves stimulating a subject's mind to get a particular response from it.

For e.g.

- *When the teacher returns the students their examination papers & gives them feedbacks as soon as possible, the students will get used to correcting their mistakes as soon as possible. Even when the teacher doesn't give them any feedback, they'll automatically get back to the teacher.*

Cognitive development of children

- The construction of thought processes, including remembering, problem solving, and decision-making, from childhood through adolescence to adulthood.
- How a person perceives, thinks, and gains understanding of his or her world through the interaction of genetic and learned factors.
- Among the areas of cognitive development are information processing, intelligence , reasoning, language development , and memory.

For e.g.

- *Being in a good learning environment with fast feedbacks from the teachers, the students will have a better memory of what is taught and apply what they learned effectively.*

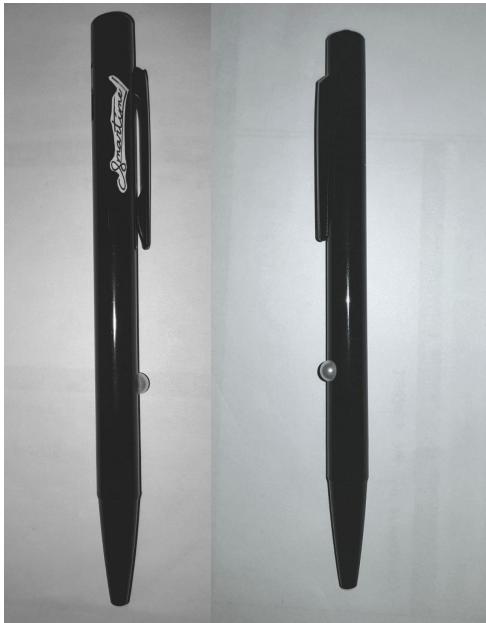
Final Artwork & Prototype



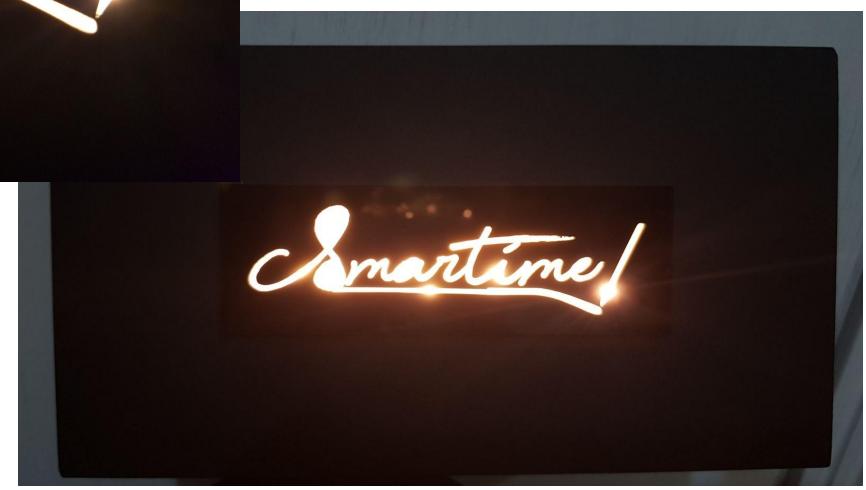
Final Prototype



Final Prototype



Final Prototype



Brochure Mock Up



DESIGN RATIONALE

To lessen the burden of teachers, who spend all day on admin matters, students and also have to spend nights marking scripts.

Hence, we thought of making the spectacle to relieve the teacher's stress and to make teaching more effective by being able to give students their feedbacks as soon as possible.

The spectacle is made with transparent and black acrylic to give off a glossy finish. We chose the colour black because it is a very versatile colour.

The teacher can look at the correct and wrong answers, solutions and total marks through the lens of the spectacle.

The spectacle case is made of cardboard and we painted it black and white to give off a minimalistic feel.

It is wireless and charged by solar energy. The pen is just like an ordinary pen with an extra white button that acts as a scanner to scan text.

DIVISION OF LABOUR

Prototype making - DongHan & Bryan

Presentation slides - Shiying, Jinwen & Donghan

Leaflet - Shiying & Jinwen

Ai - Donghan, Bryan, Jinwen & Shiying

3D visualization - Donghan & Bryan

THANK YOU

CREDITS

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