AALA

An e-learning platform for a vocational course run by an NGO - Yuva Parivartan

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Interaction design

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अभिकल्प विद्यालय

Introduction

About Yuva Parivartan

Yuva Parivartan is a 20 year old initiative and one of India's largest NGOs which provide **skill based training** to school dropouts.Their vision is create opportunities for school dropouts to help them lead a productive and socially useful lives. Currently they have **67 centres in 18 states** in the country. They are planning to scale their reach to every part of the country by developing an **e-learning platform**, which will help the economically **weaker section** of the society **find livelihood** options.

Objective

The objective of the e-learning platform is to **reach people** in remote areas, provide them **skill based training** and help them find **livelihood** options.

Topic

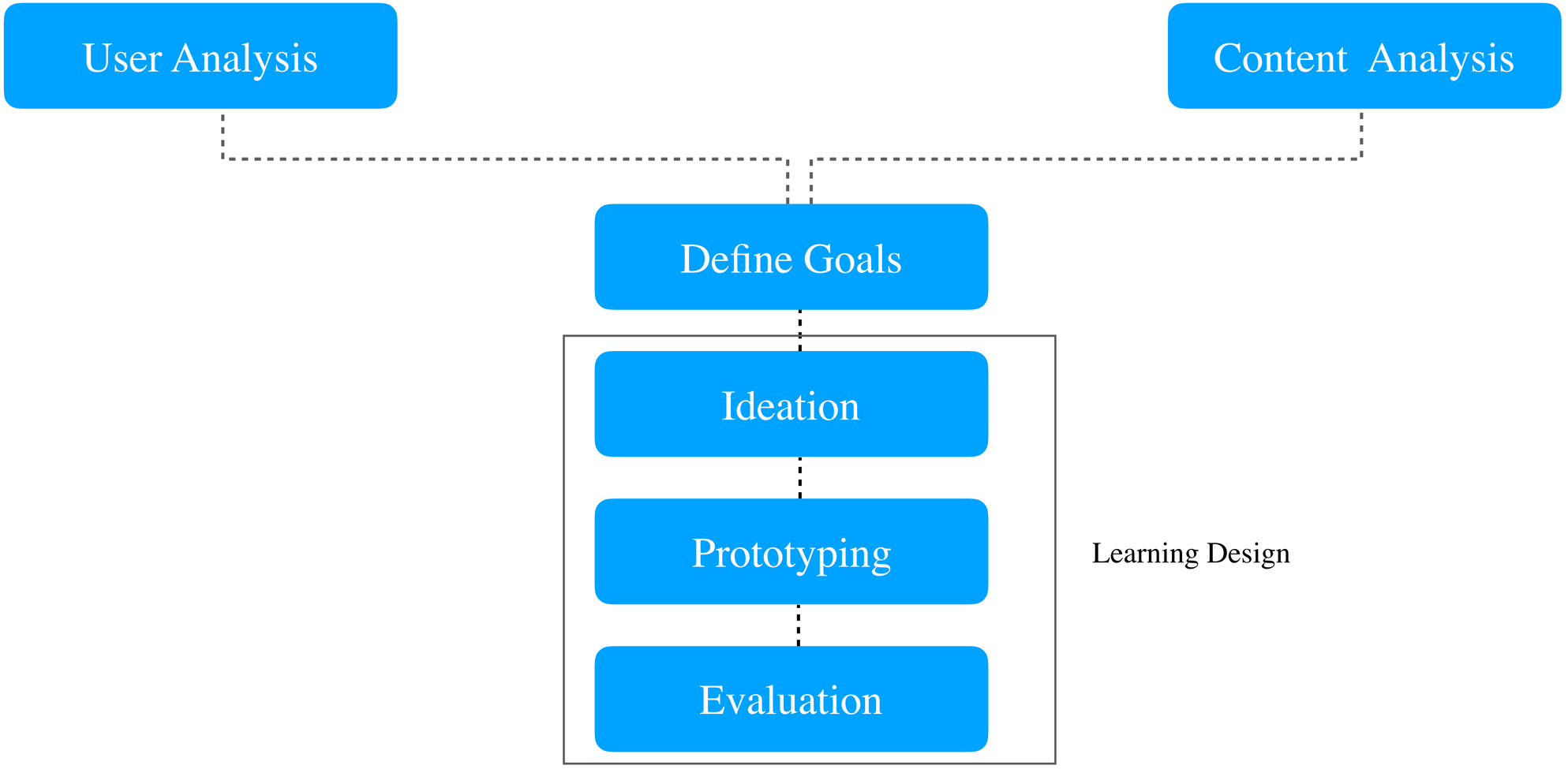
Broad Topic

To design an e-learning platform to provide vocational training to school dropouts**.**

Narrow Topic

To design **course structure** for one of the vocational course ‘Basic Mobile Repairing’ run by NGO Yuva Parivartan.

Plan


User Analysis
Content Analysis
Define Goals
Ideation
Prototyping
Evaluation
Learning Design

Primary Research

Understanding the User

Interviewing the users

- 20+ users
- Villages Usgaon, Palghar,

Key Questions

- demographics?
- course they are undergoing?
- why are they taking the course?
- what are the inspirations behind?
- what are the main challenges faced?
- Will they want to take any other course?

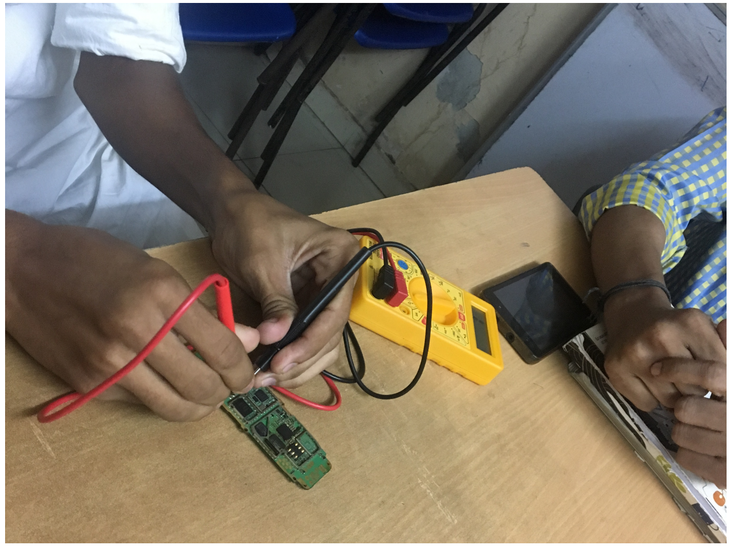
Understanding the User

Interviewing the Teachers

- 5 users
- Yuva Centres Mumbai and Palghar

Key Questions

- How do they decide the limit of content to be delivered?
- How do they structure the course?
- How do they build confidence in students ?
- What are the motivational activities held in class ?
- Methods followed to evaluate the student performance ?



Understanding the User

Attending Classes & Camps

- To understand the class environment, teaching method and user behaviour .

Findings

- Lack of Motivation
- Needs Encouragement
- Lack of Awareness
- Lack of Course options

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Types of Users

User A

Pursuing the course because Family Obligation, No personal motivation

User B

Motivated enough to learn the course but doesn't find time to do so because of his current job

User C

Interested in some course and pursuing some other

User Needs

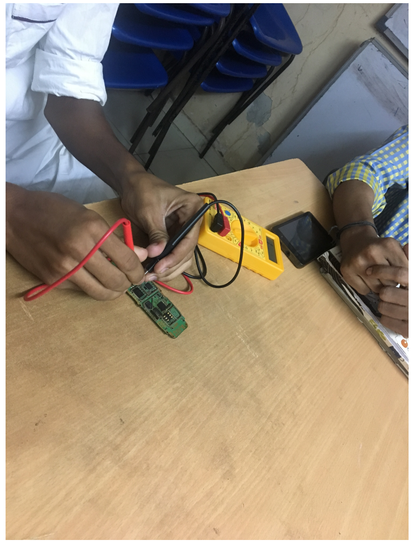
- User wants to **feel confident** that he/she can learn the course.
- User needs **Motivation**.
- Looking for a livelihood option
- **Can't** spend too much time for learning
- A very easy to understand platform

Content Analysis

Method

- Sessions with Mobile Repairer.
- Attending Mobile repair classes.
- Talking to mobile Repair Teacher.
- Learning about Mobile repairing online.



Discovery

The Content of the course is not structured yet.

Redefined Problem Statement

To design the **content structure** and **course** for the Mobile Repairing course.

Secondary Research

Case Studies and Articles

- Why do learners drop out online courses? *By Laura Lynch*
- Case study on evaluating an e-learning course. *By Nicki Nelson*
- 5 Simple Ways to Convert Content into eLearning Material. *By* John Laskaris
- User Usage Model.

Existing e-learning platforms

- Interaction Design Foundation
- Udemy
- Instructables
- Khan Academy
- IFIXIT

Design Goals

Functional Goals

- The platform should help users explore the courses and their area of interest
- It should provide a detailed information about the course.
- Evaluation at each stage is must to ensure user learning.
- Certification should be provided.
- Time and effort required for the course and all other prerequisites.

Usability Goals

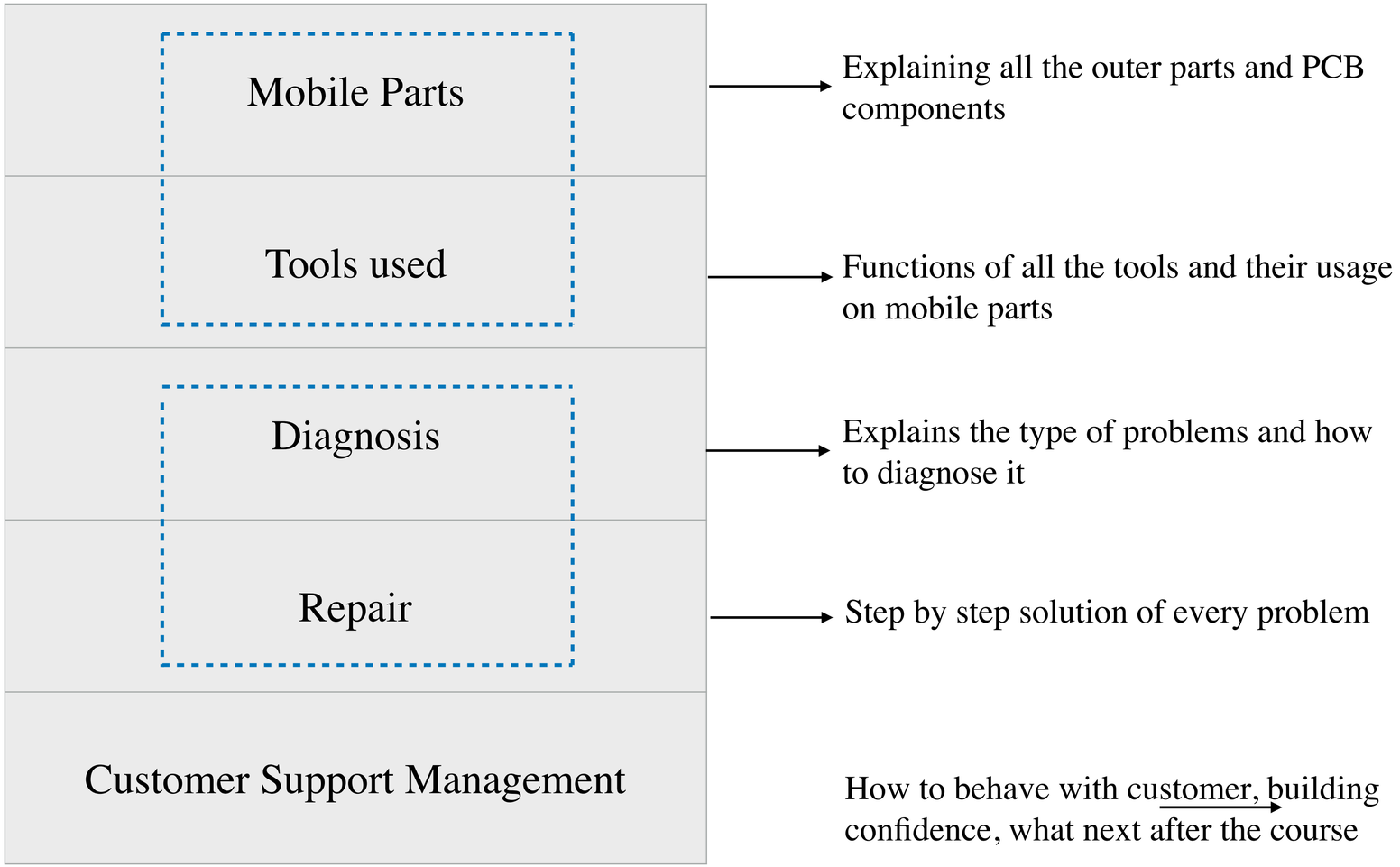
- The navigation of the platform should be very simple to understand.
- User should feel motivated to enrol for the course
- Factors building user Confidence should be involved.
- Immediate feedbacks should be provided so that user does not get lost at any point of time.

Content Design

Learning Design

Content Design

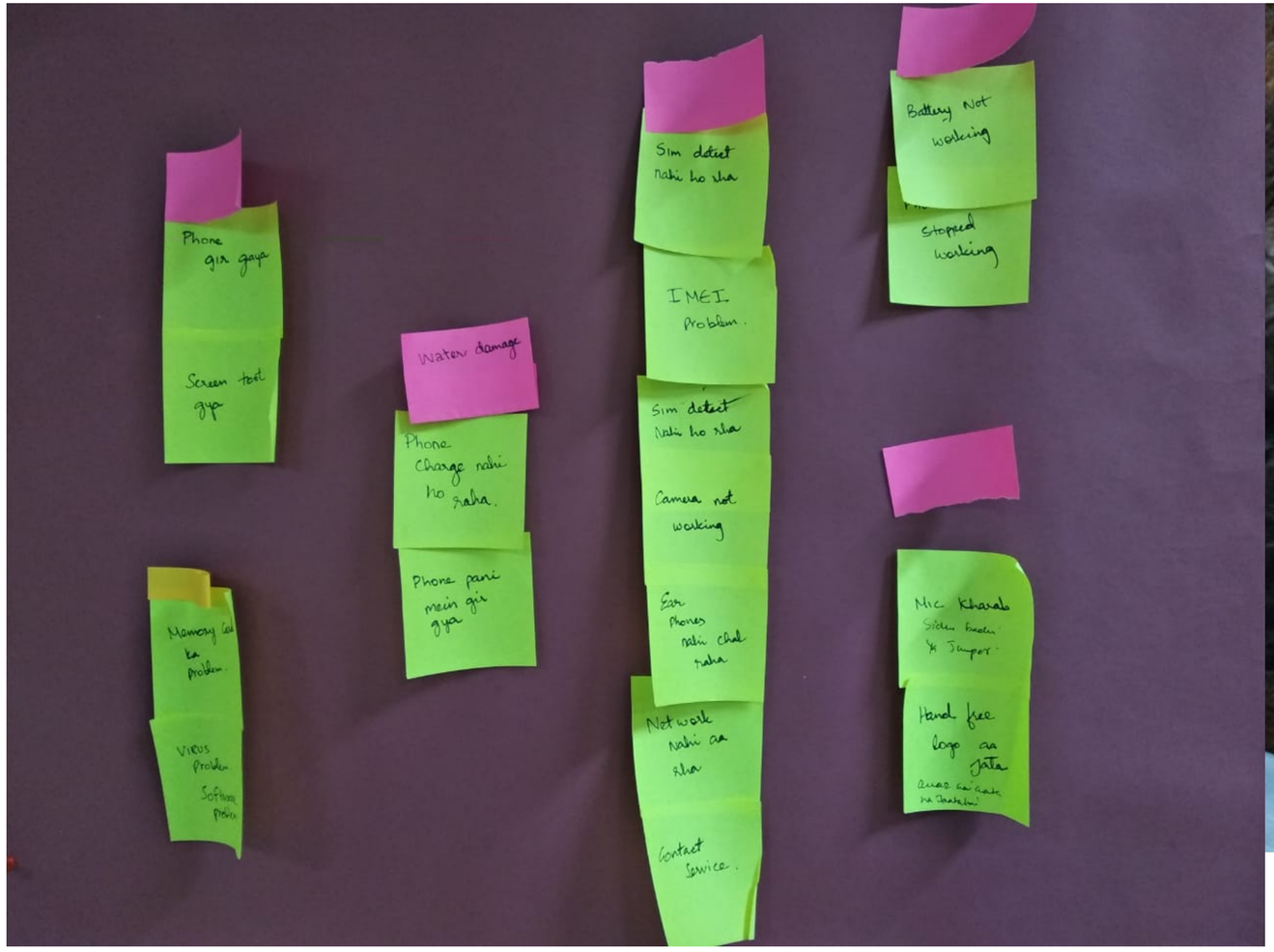
Initial Iteration

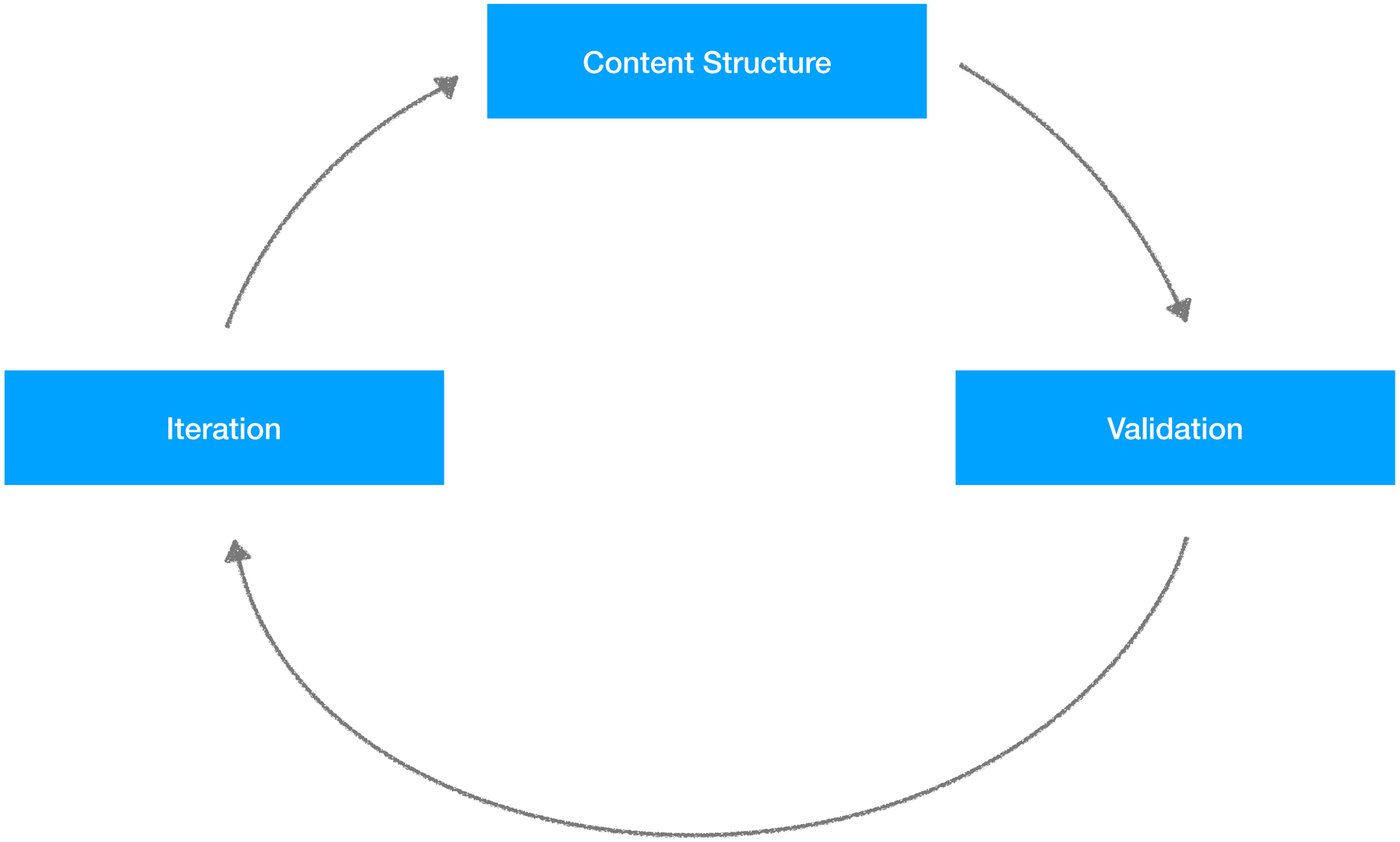


Challenges

- Where to limit the syllabus.
- How much theory should be involved.
- Different terminology used by different people.
- Explaining the types of problems and their solutions.

Card Sorting Experiment




Content Structure
Validation
Iteration

Final Content Structure

- Introduction
- Faults & Repair
- Troubleshooting
- Personal development

Final Iteration

- Introduction
- Faults & Repair
- Troubleshooting
- Personal development

- **Major Types of Mobiles and their technologies.**
  - Featured phones and smart Phones.
  - 3G, 4G compatibility,Apple & Android OS.
  - Functions and services like 3g, 4g, wifi, Hotspot, bluetooth, memory card.
- **Tools Used for mobile repair.**
  - Task specific tools
  - Everyday tools
- **De-assembling and Assembling of phones.**
  - Different mobiles with cautions and warnings
- **Parts of mobile Phones.**
  - Outer parts and PCB and circuits introduction.
- **How to use tools on circuits**

Final Iteration

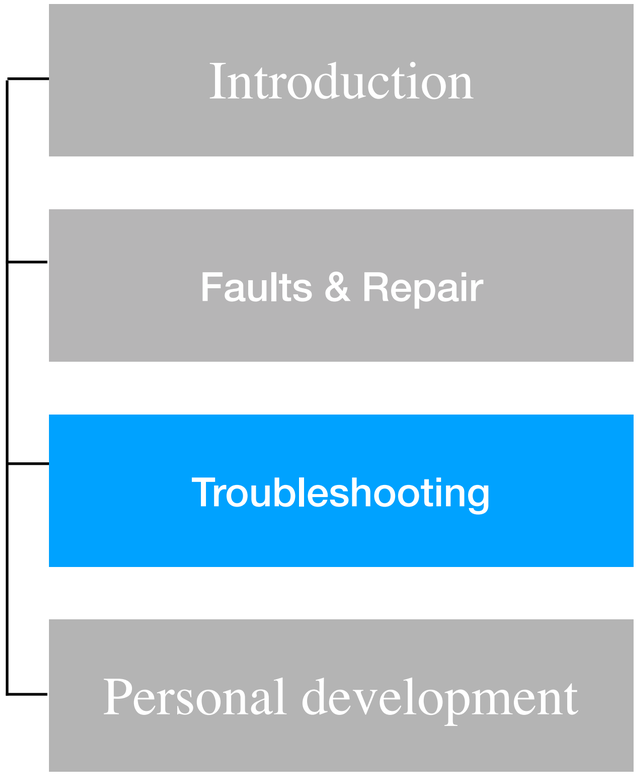
- Introduction
- **Faults & Repair**
- Troubleshooting
- Personal development

- **Audio**
  - Speaker
  - Mic
  - Loudspeaker
- **Camera**
- **Screen**
  - Display
  - Touch
- **Charging**
  - Battery
  - Port

- **Software**
  - Phone hang
  - App Crash
- **Network**
  - Sim
  - Antenna
- **Memory card**

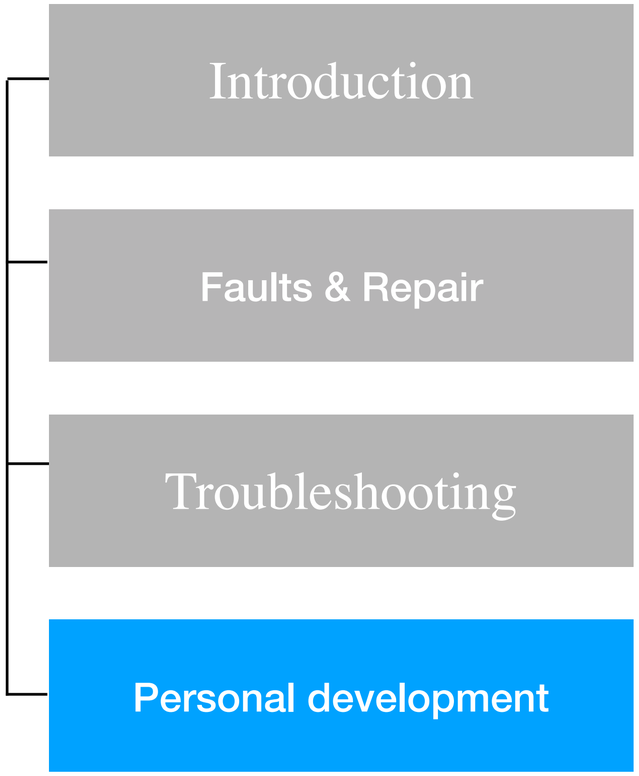
Steps to Repair

Final Iteration



- **Battery Boosting**
  - How to boost battery
  - Settings of DC power supply
- **Mobile hot & cold testing**
  - How to perform
  - Multimeter settings for testing
- **Circuit Testing**
  - How to check the current flow with the help of multimeter
- **Mobile half shorting & full shorting**
  - How it is done and why it is done?

Final Iteration



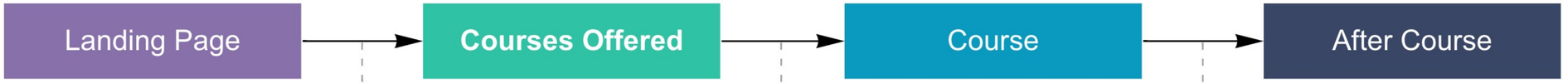
- **Behavioural Etiquettes**
  - Interacting with customer
  - Listening to customer's problem, understanding it and informing about estimated cost and time taken
- **How to begin?**
  - Finding a job
- **Start your own shop**
  - Raw materials needed
  - Investment needed

Learning Design

Ideas for learning Design

- Providing a toolkit for learning.
- Quizzes for terms and component names.
- Providing downloadable Pdf’s for each section.
- Creating curiosity for upcoming chapter.
- When stuck, where next ?
- Gamification of troubleshooting section.
- Warnings and cautions should be highlighted.
- Using analogies while teaching.
- Test and evaluation after each chapter.

User Journey Map



Introduction about Yuva and courses offered.	An introduction to courses where the user can explore diffrent types of courses	When the user registers and starts the course	Rewards and certification after the course is completed

Pain Points

• Navigation of the platfrom as the users are not that techsavvy	• Name/title might not be sufficient to know about the course • Finding courses	• Content Overcrowding • Navigation i.e selecting/skipping chapters • Evaluation - when ? where? • Content clustering i.e balance between text , audio and video	• Connecting to local demands • Providing certification

Introduction about Yuva and courses offered.

An introduction to courses where the user can explore diffrent types of courses

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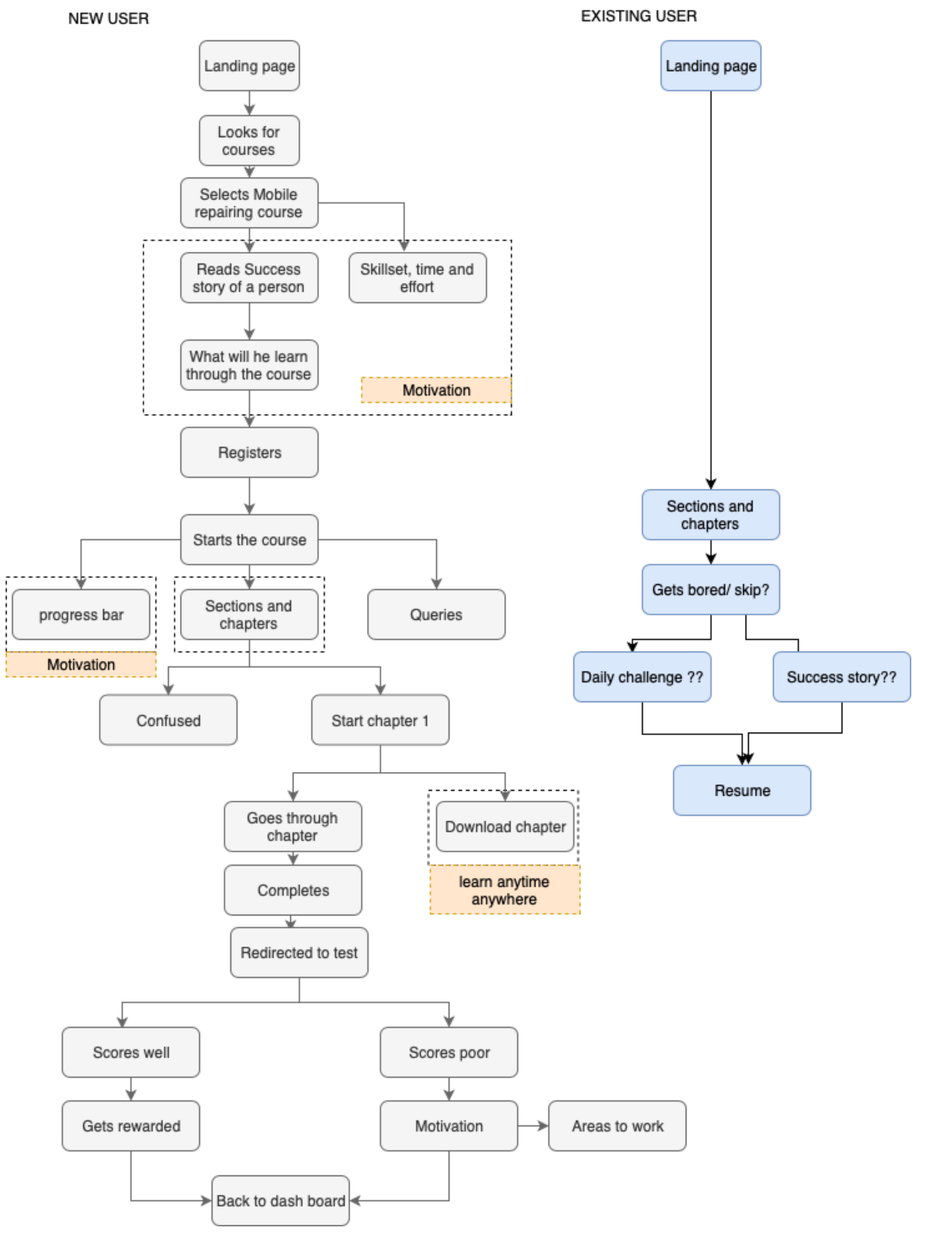
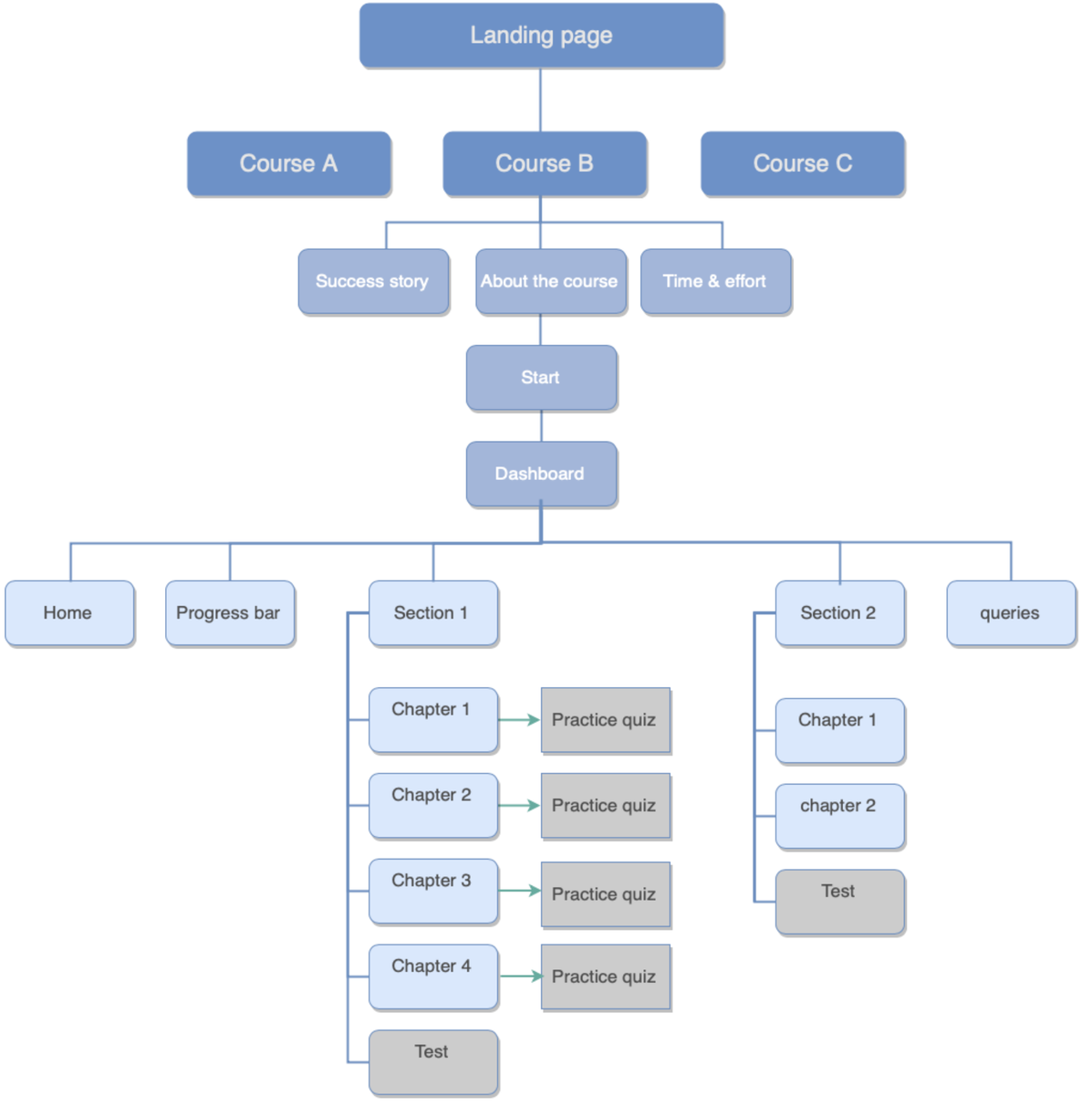
- Connecting to local demands
- Providing certification

User flows


NEW USER
Landing page
Looks for courses
Selects Mobile repairing course
Reads Success story of a person
Skillset, time and effort
What will he learn through the course
Motivation
Registers
Starts the course
progress bar
Motivation
Sections and chapters
Queries
Confused
Start chapter 1
Goes through chapter
Completes
Redirected to test
Download chapter
learn anytime anywhere
Scores well
Gets rewarded
Scores poor
Motivation
Areas to work
Back to dash board
EXISTING USER
Landing page
Sections and chapters
Gets bored/ skip?
Daily challenge ??
Success story??
Resume

Information Architecture

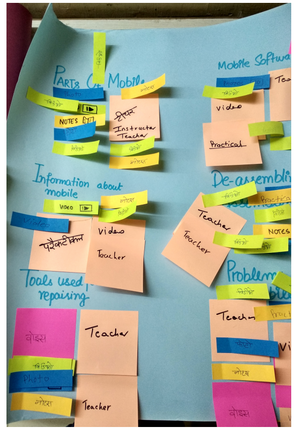

Landing page
Course A
Course B
Course C
Success story
About the course
Time & effort
Start
Dashboard
Home
Progress bar
Section 1
Chapter 1
Practice quiz
Chapter 2
Practice quiz
Chapter 3
Practice quiz
Chapter 4
Practice quiz
Test
Section 2
Chapter 1
chapter 2
Test
queries

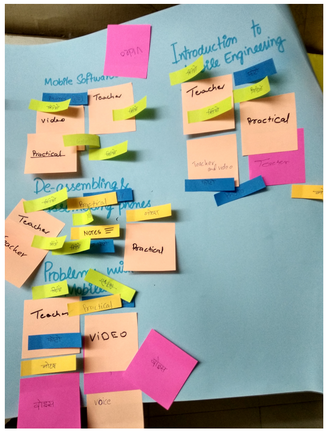
Wire-framing

Content Delivery Medium

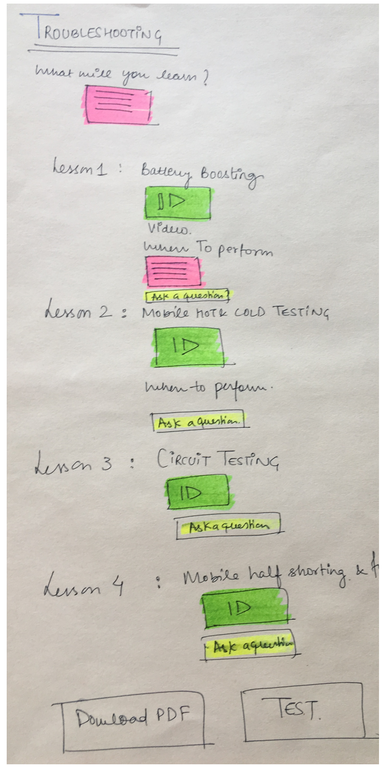
Method

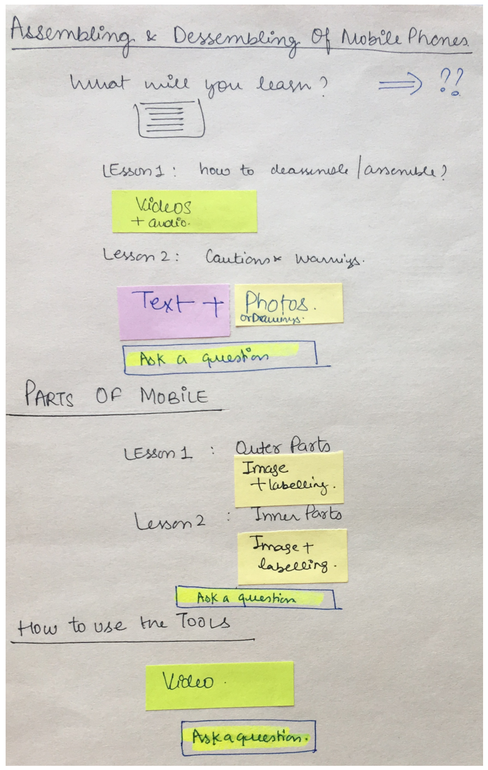
- Experiment with students doing Mobile Repair course.

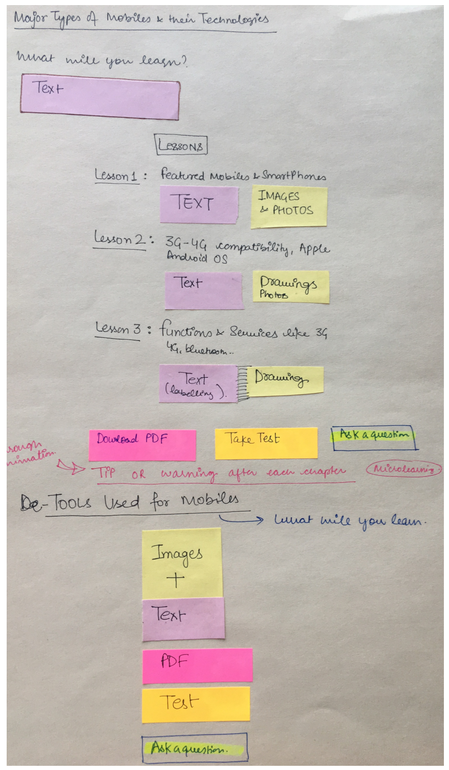


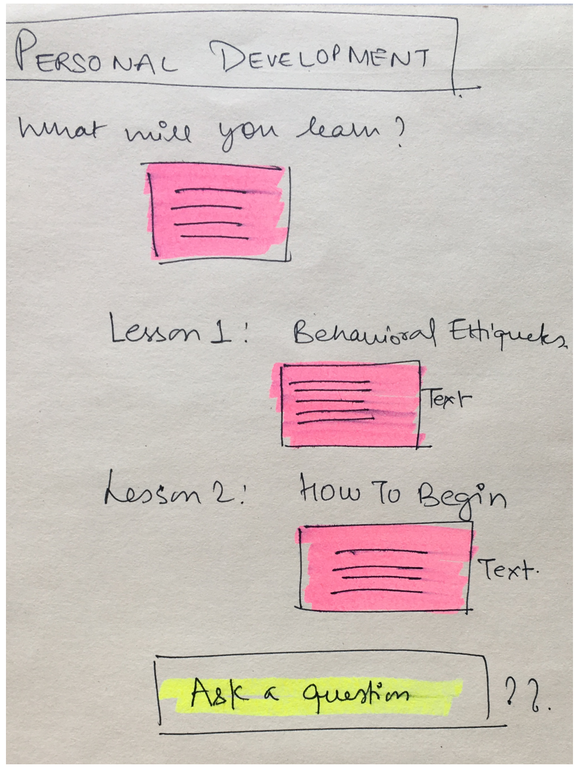


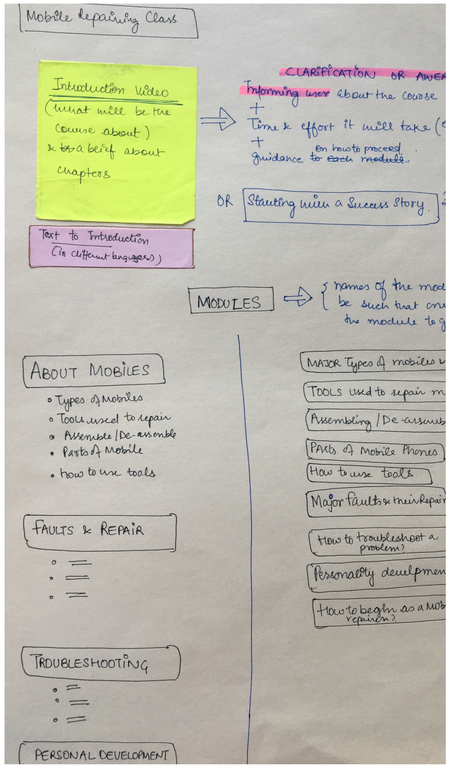
Content Delivery Medium



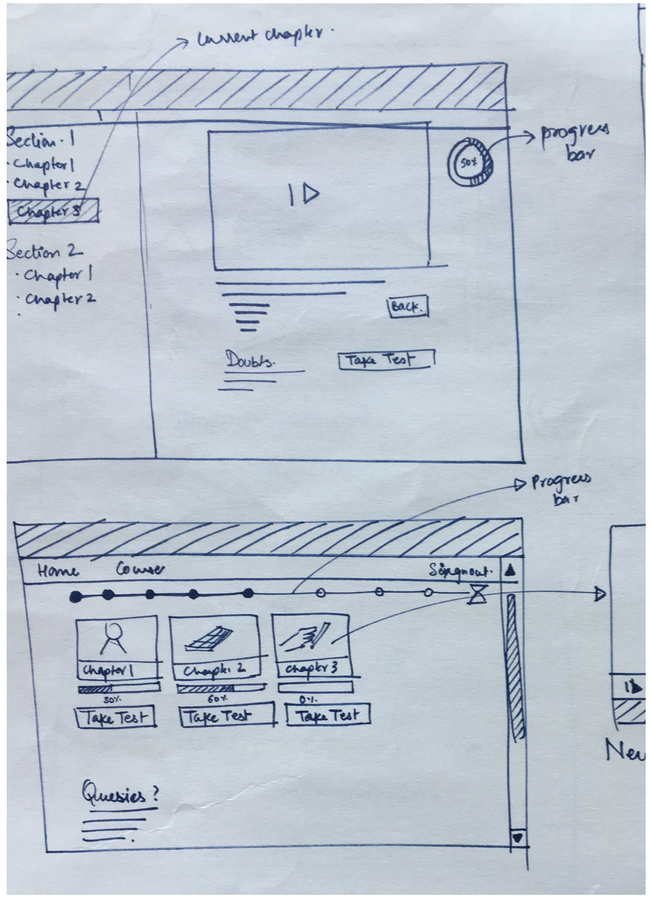


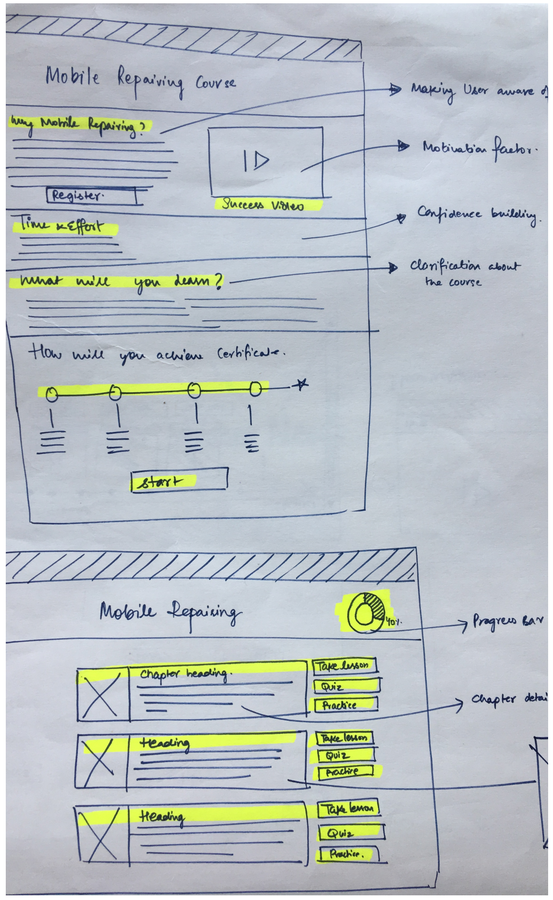


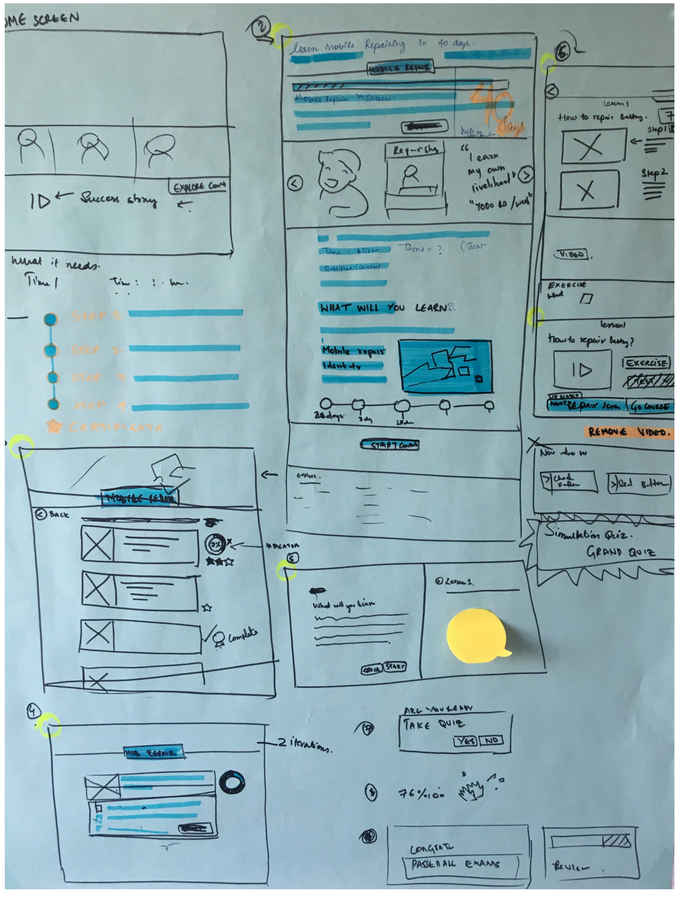


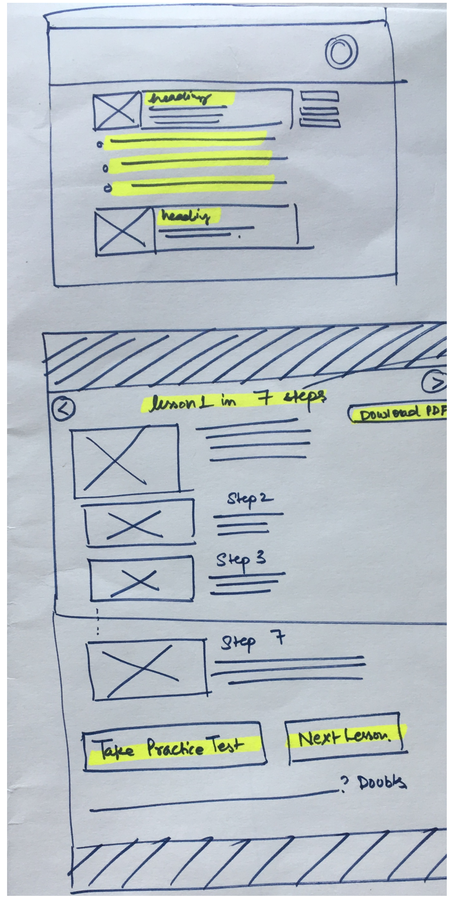


Website Flow explorations









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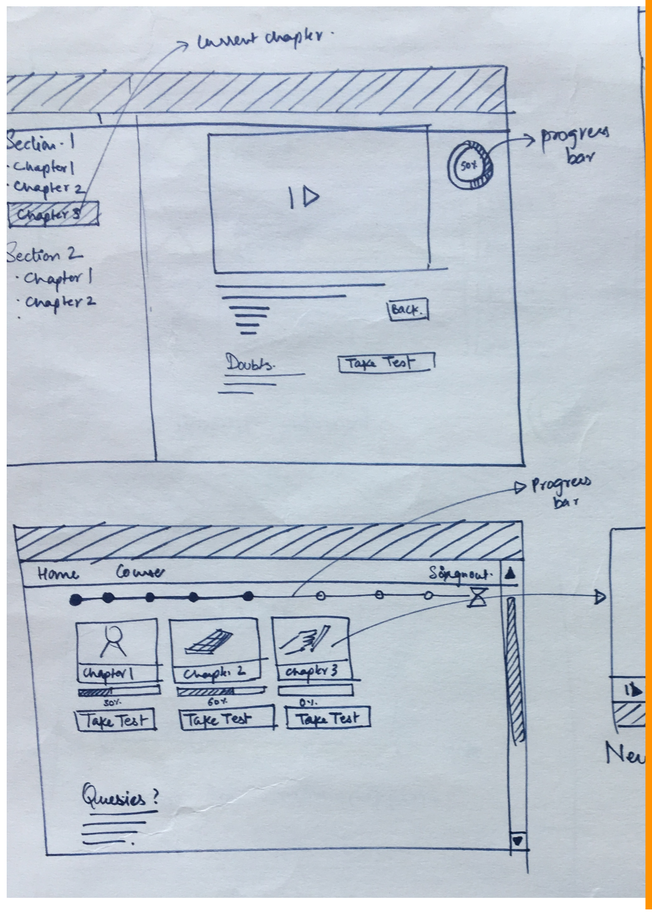
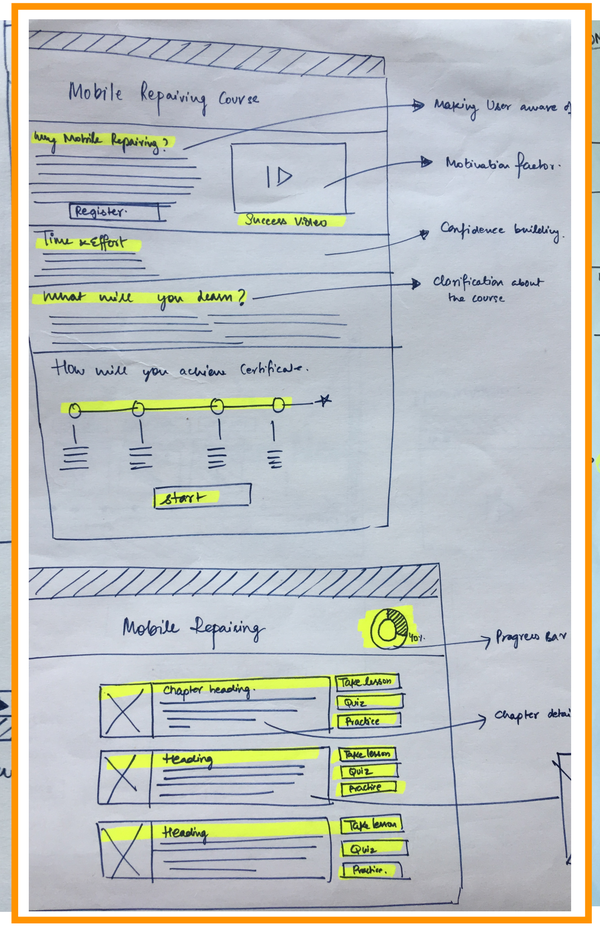
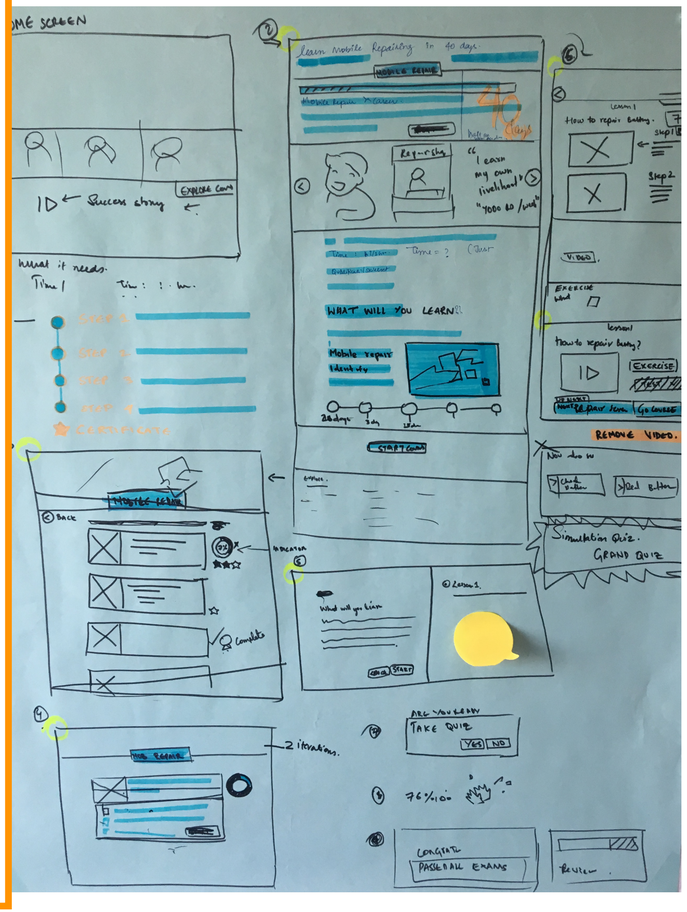
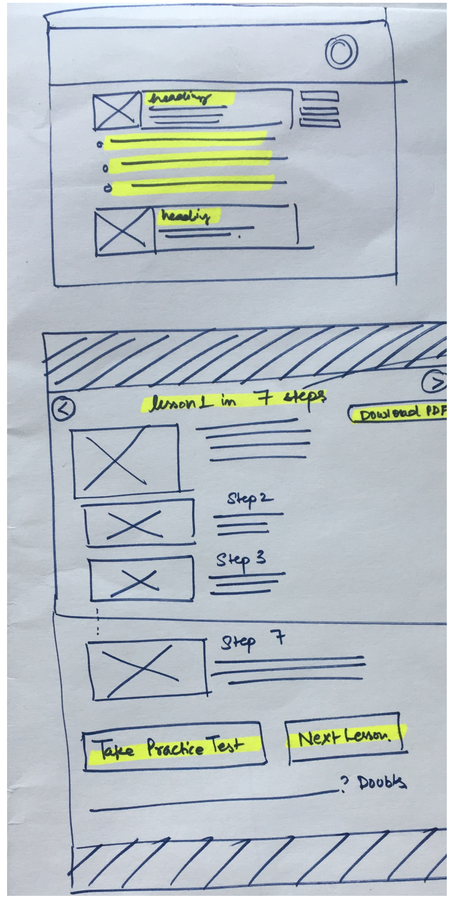
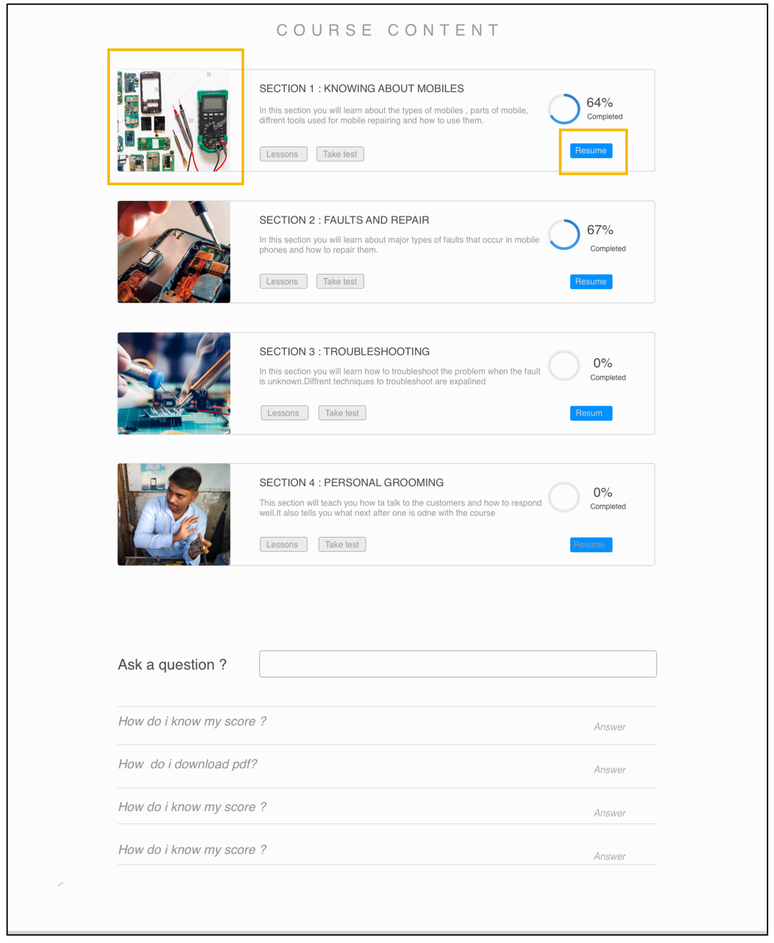




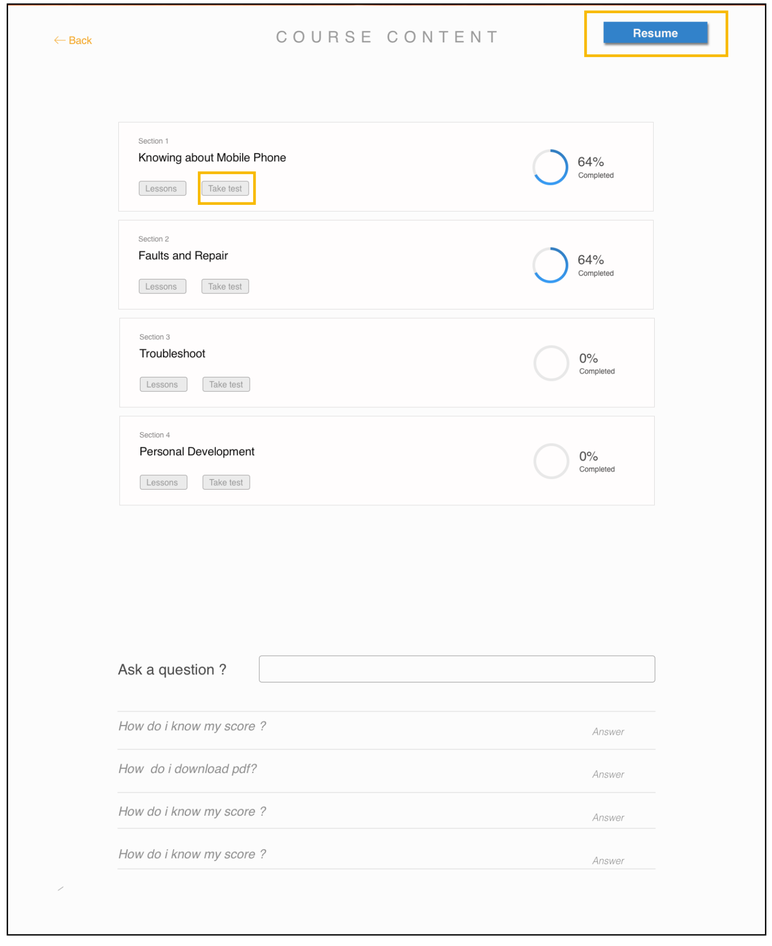




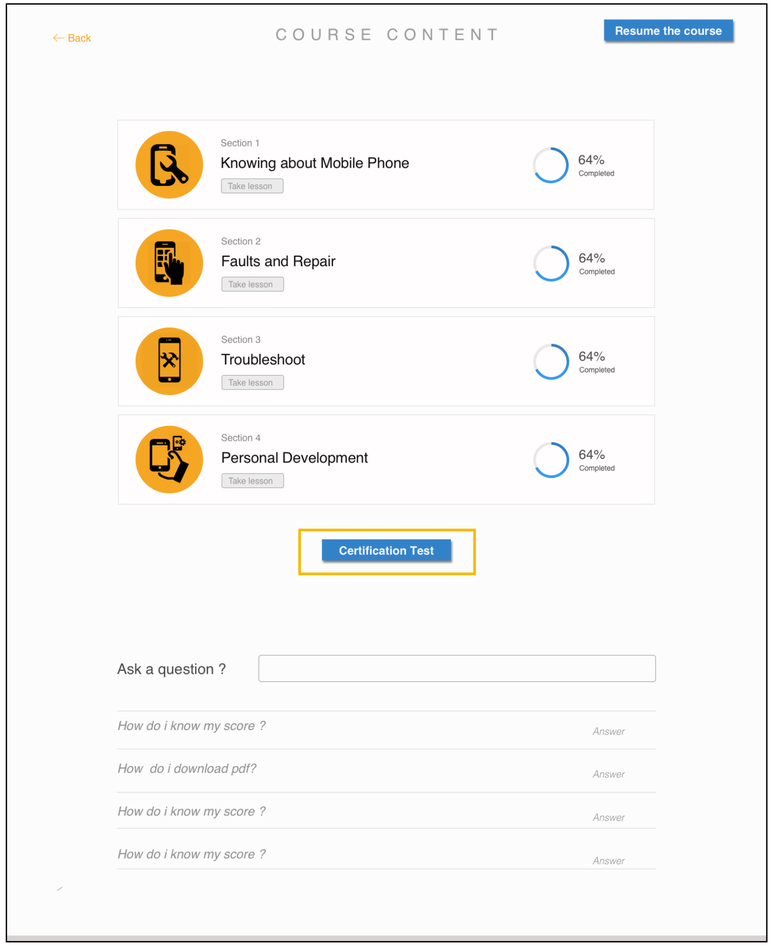
Sections Screen



Iteration 1

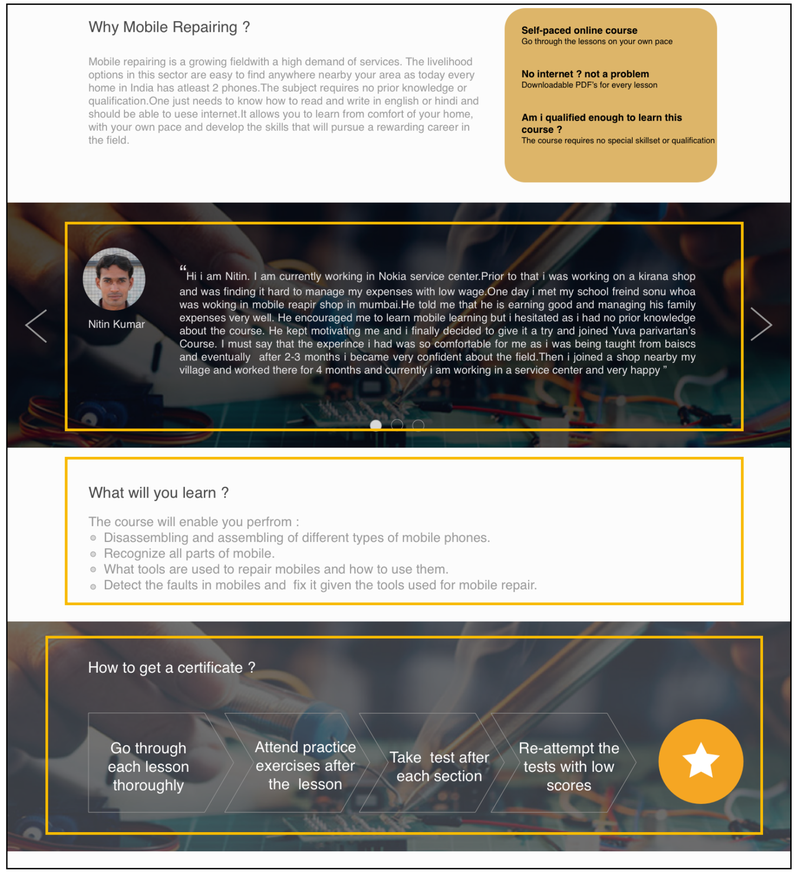


Iteration 2



Iteration 3

Course Home Page



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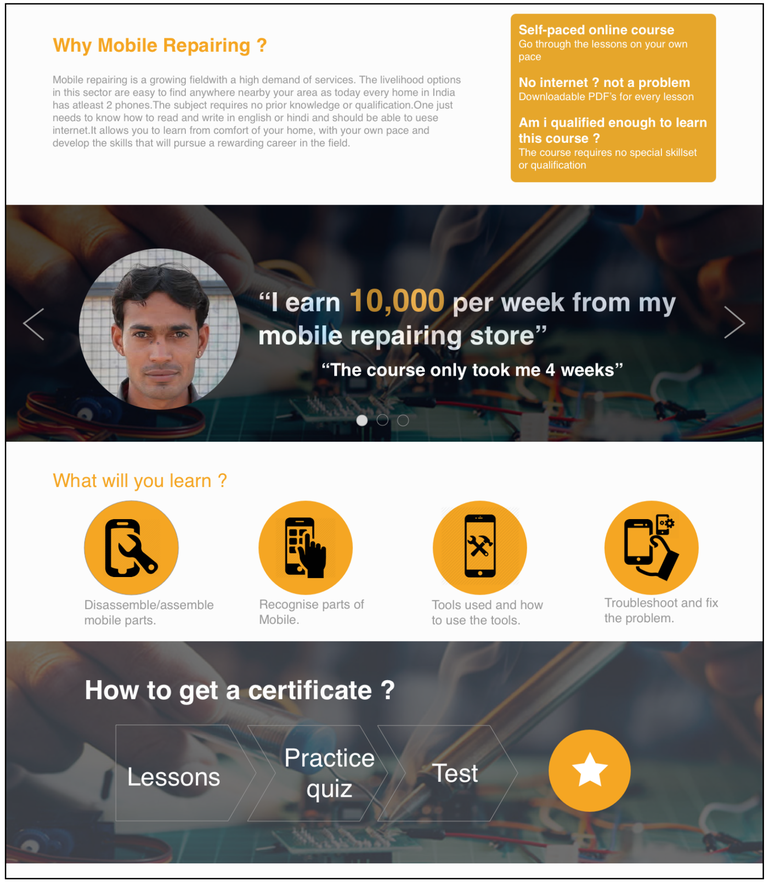


Iteration 2

Lesson Page Iterations

Iteration 1

Iteration 2

Final Prototype

Persona

- Lives in Village Usgaon
- Knows how to read English
- Not comfortable learning in English
- Looking for a livelihood option
- He is interested in mobile repairing but he fears as he thinks he may not skills to learn the course
- Comes to know about platform AALA
- Goes to the platform

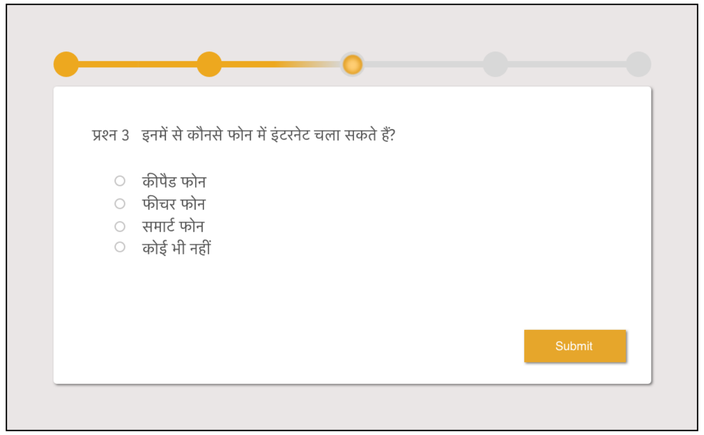
Mukesh, 26yrs

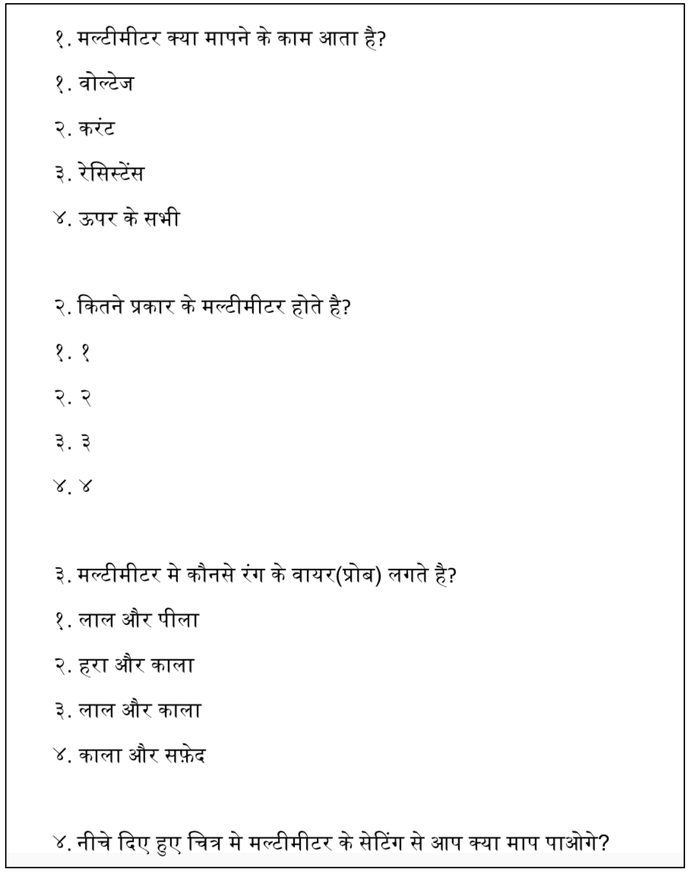
12th dropout

https://launchpad.animaapp.com/0069ZqY

Design Interventions

- Quizzes
- Liberty to user
- Certification Test
- Downloadable PDFs
- Step By Step Tutorials
- Warnings





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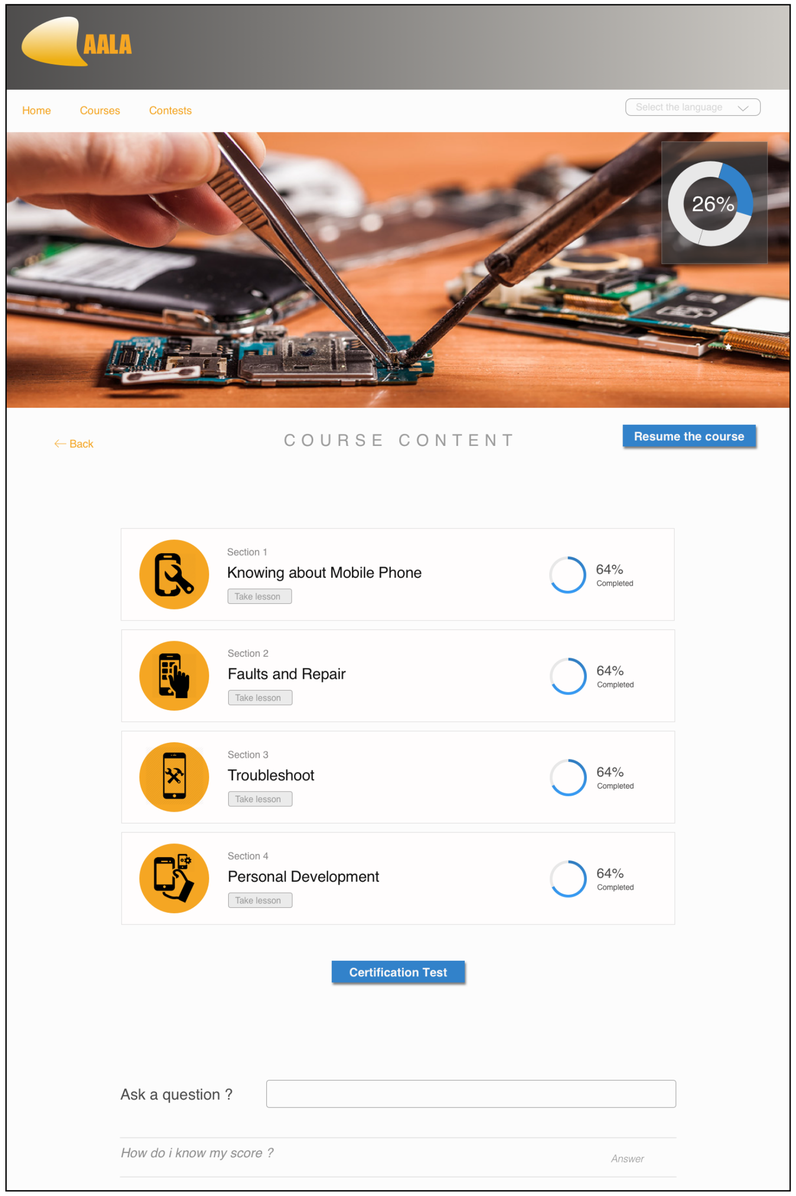

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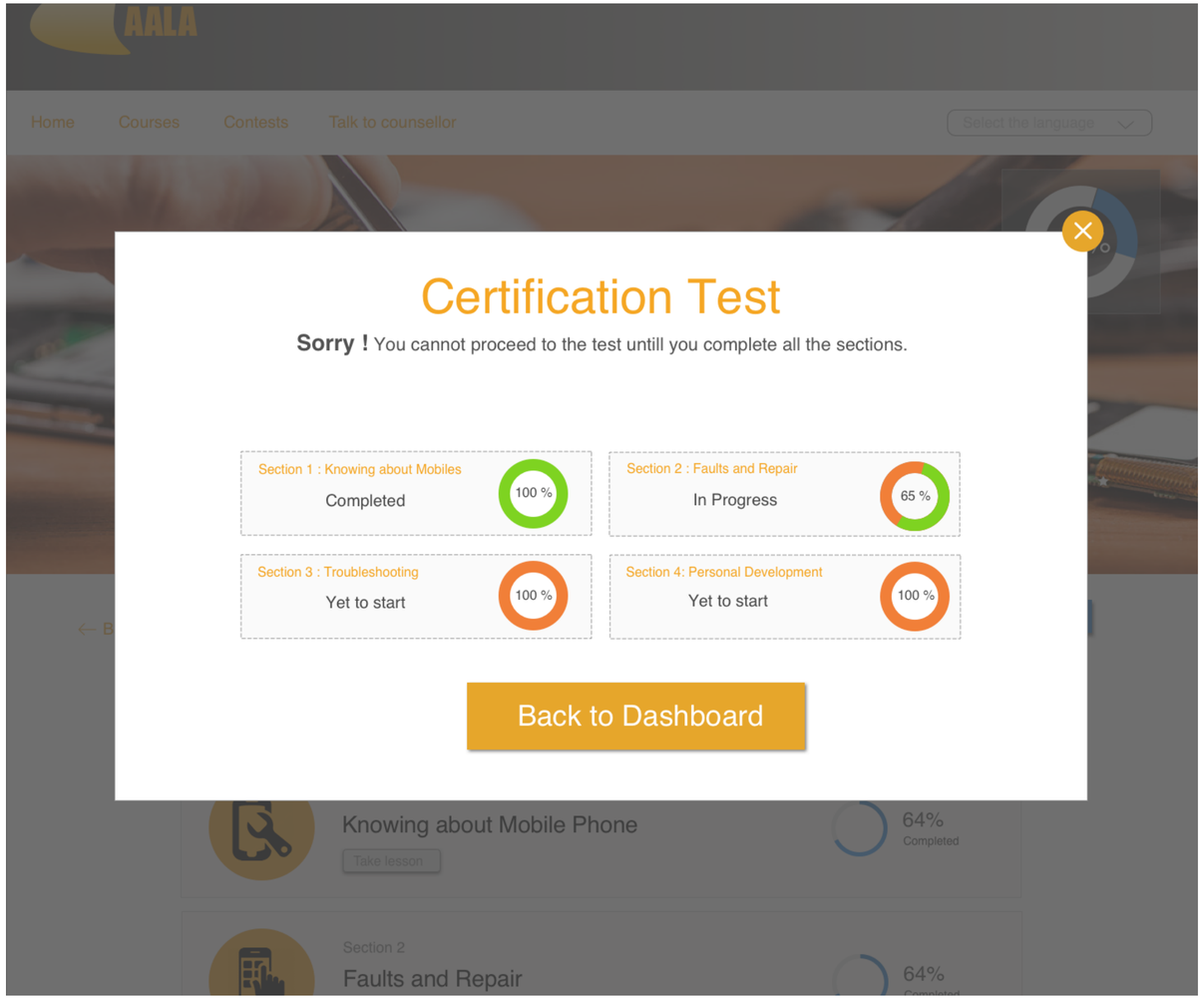

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- Warnings

मोबाइल मरमत के लिए आवयशक उपकरण

उत्पाद विशेषता: सेंसर बंद पथ, माइक्रो कंप्यूटर शून्य क्रॉसिंग ट्रिगरिंग नियंत्रण गर्म, बिजली बड़ी है, एलईडी संख्यात्मक कोड दर्शाता है कि तापमान की ऊंचाई तेज है, तापमान सटीक स्थिर है, हवा के प्रभाव को नहीं छोड़ा गया है, गैर-सीसा सीलिंग को महसूस करता है वास्तव में वास्तव में बंद करो। वायु वर्तमान मात्रा समायोज्य, और हवा की हवा बहुत हवादार है, तापमान नियंत्रण सुविधाजनक है, कई कार्यों को अनुकूलित कर सकते हैं; यह प्रणाली स्वत: ठंडे हवा के काम से लैस है, हीटिंग तत्व जीवन को बढ़ा सकती है और गर्म हवा बंदूक की रक्षा कर सकती है। फ्यूजलेज उत्तम, टिकाऊ है, कलात्मक है। मूल स्थापना आयात का उपयोग करता है न कि हवा के ब्लोअर जीवन को बहुत लंबे समय तक ब्रश करने के लिए, शोर न्यूनतम है, उच्च गुणवत्ता वाले हीटिंग डिवाइस का उपयोग करता है, दक्षता एक ही शक्ति के तहत एक बार बढ़ सकती है, हीटिंग डिवाइस को प्रभावी ढंग से काम करने वाले जीवन को बढ़ा देती है और बचाती है शक्ति का स्रोत। ढाल वाले बॉक्स को रंग बदलने के लिए उड़ाता है, जल्दी से सुविधाजनक है। लाइन बोर्ड को बुलबुला नहीं करने के लिए वेल्ड करता ह।

ये है ब्लोअर , ब्लोअर का दूसरा नाम हॉट गन भी है | हम इसे रेवॉर्क स्टेशन भी कहते है | ये उपकरण फ़ोन में इस निकलने के लिए और उसे वापस अलगाने के लिए काम में लिया जाता है | ब्लोअर से हम IC के कॉम्पोनेन्ट को हटाने या पेस्ट करनेमें यूज़ करते है | ओन करने के लिए हम सामने दिए गए रेड बटन को प्रेस करते है | उसे हम power बटन कहते है उस से डिवाइस में रेड लाइट जल जाती है जिस से हमे मालुम चलता है की डिवाइस On है |

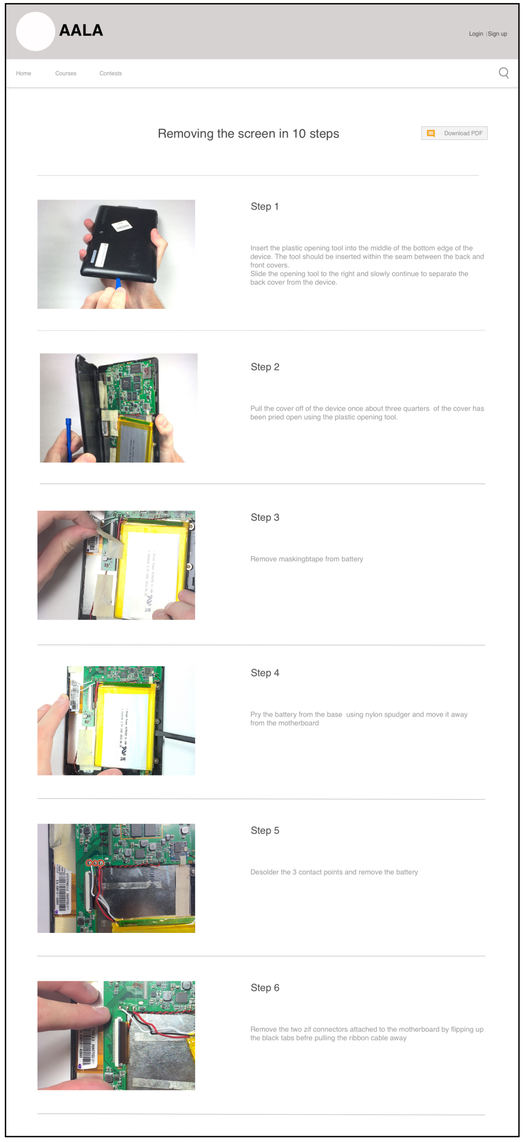
इसमें दो main फीचर्स है | एक है एयर का , दूसरा है हीटर का |

एयर वाले नॉब का frequency हम 300 या 400 के बीच रखते है | शुरू करने के लिए power बटन को switch on करे | झटका मशीन एक आटोमेटिक ब्लोअर है | ब्लोअर को नॉन-फंक्शनल रखने के लिए हम ब्लोअर के नोजल को उसके दिए गए स्टैंड पर रखते है | तब तक ये ब्लोअर ऑफ रहता है | जैसे ही आप उसे उठाएंगे तो कुछ आवाज़ निकलेगा जो बताता है की ब्लोअर शुरू हो गया है |

ऐसा करने पर इसकी एयर की LED on रहेगी और हीटिंग की LED ब्लिंक करेगी | अपने हाथ के सामने ब्लोअर को लेकर उसका हीटिंग अमाउंट चेक कर सकते है. पर बड़ी ही सावधानी बरतनी पड़ेगी | नॉब घुमा कर हीट सेटिंग को मैनेज कर सकते है | उसी प्रकार से अगर आपको लगता है की एयर का फ्लो जयादा है और आपको सिर्फ एक छोटा कॉम्पोनेन्ट निकलना है तो एयर का फ्लो भी काम कर सकते है |

Design Interventions

- Quizzes
- Liberty to user
- Certification Test
- Downloadable PDFs
- Step By Step Tutorials
- Warnings



Design Interventions

- Quizzes
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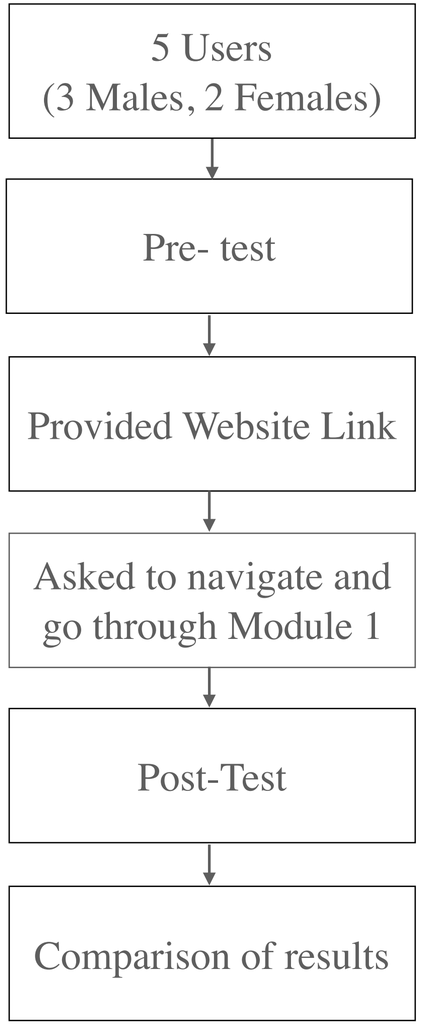
Evaluation

Claims

- Anybody with no prior knowledge about mobile repair after undergoing the course will have conceptual knowledge about Mobile Phones.

- Users will be able to apply their learning in practical by repairing the Mobile themselves

Experiment 1



Experiment 1

5 Users
(3 Males, 2 Females)

Pre- test

Provided Website Link

Asked to navigate and go through Module 1

Post-Test

Comparison of results

Experiment 1

5 Users
(3 Males, 2 Females)

↓

Pre- test

↓

Provided Website Link

↓

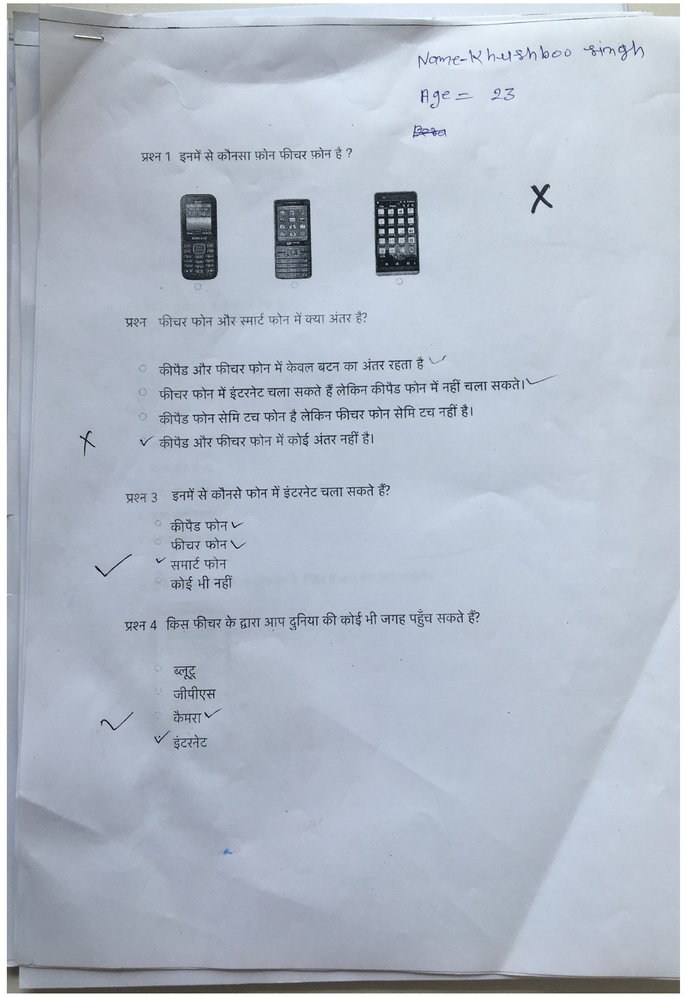
Asked to navigate and go through Module 1

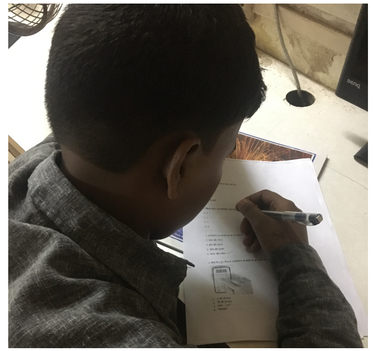
↓

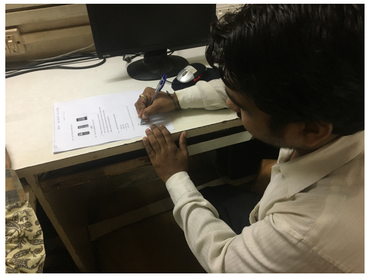
Post-Test

↓

Comparison of results







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Post-Test

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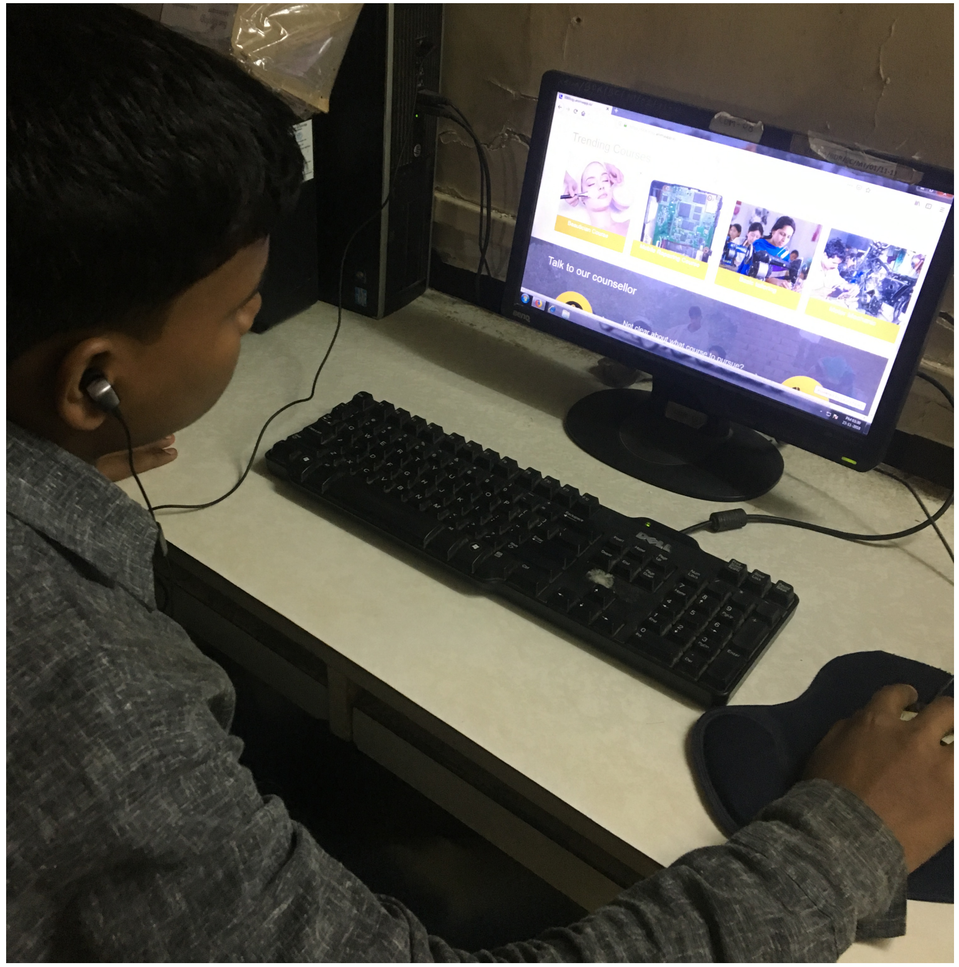

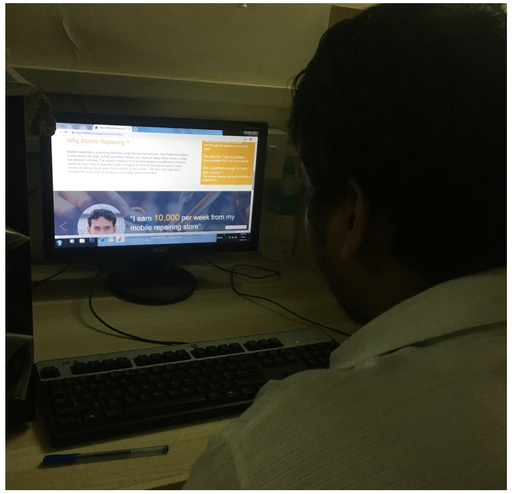

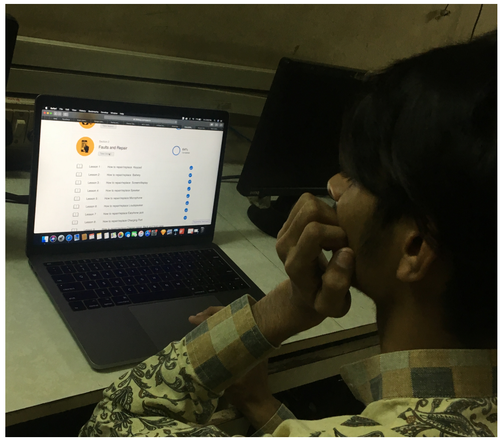

Experiment 1

5 Users
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Pre- test

↓

Provided Website Link

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Asked to go through Module 1

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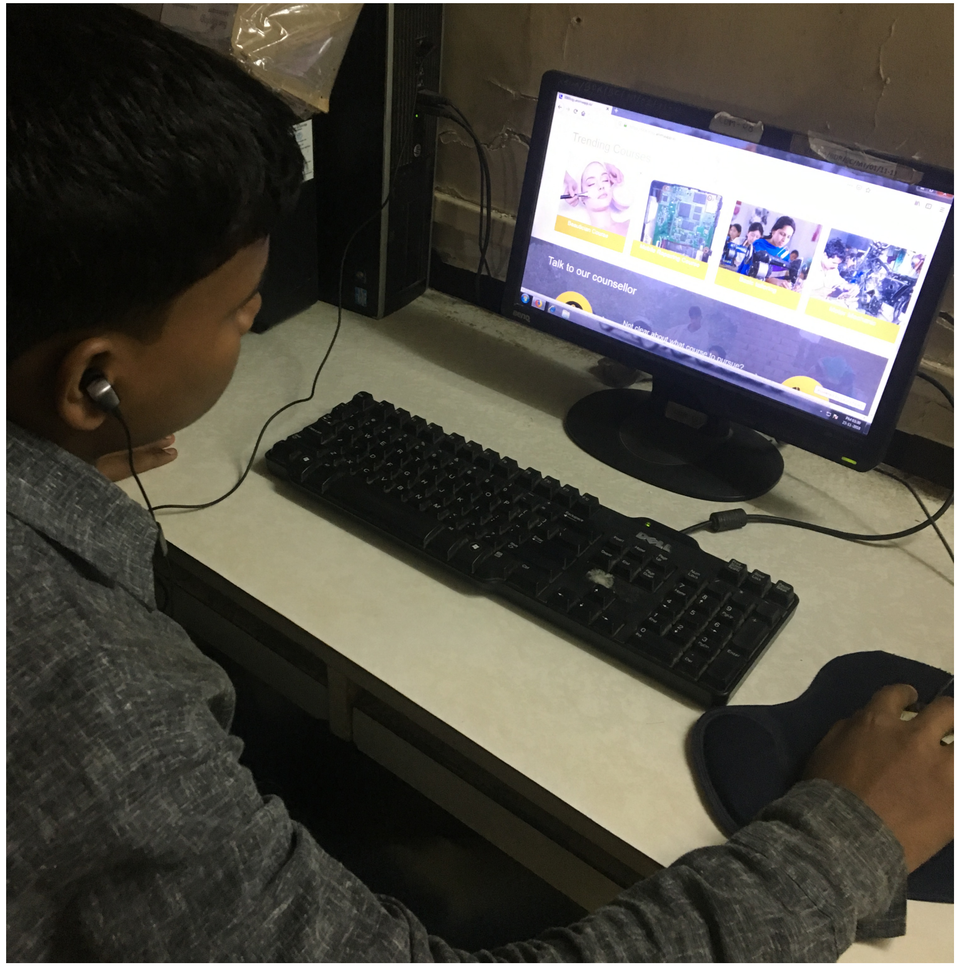
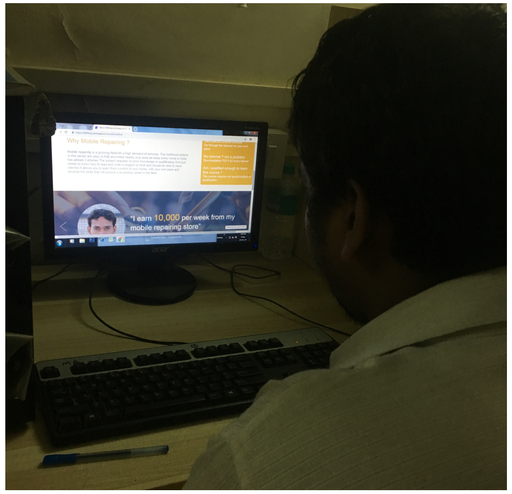
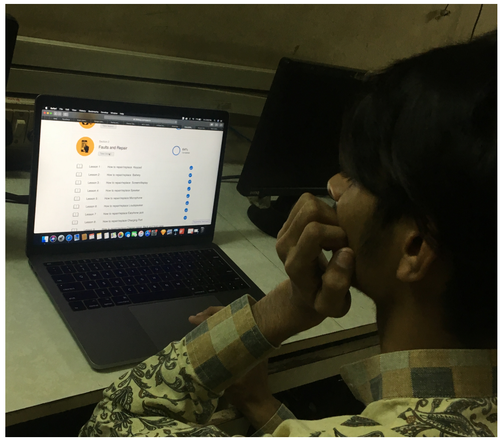
Post-Test

↓

Comparison of results







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Asked to go through
Module 1

↓

Post-Test

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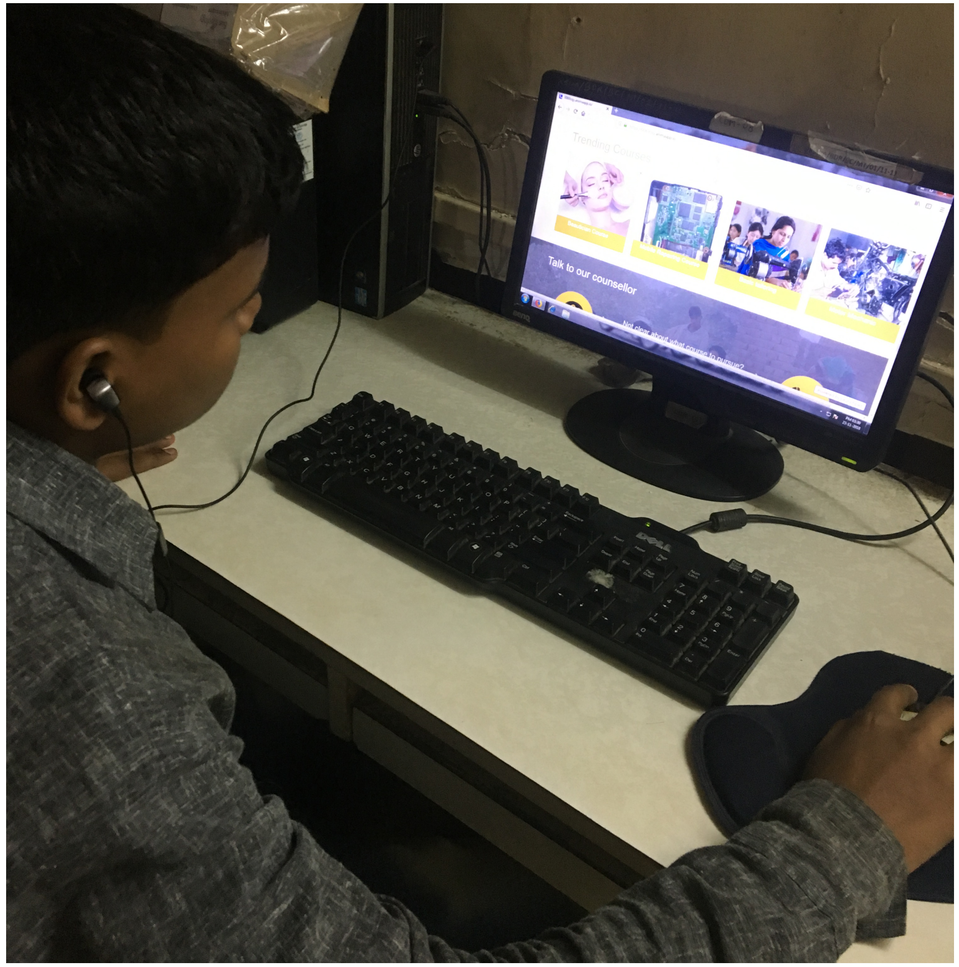
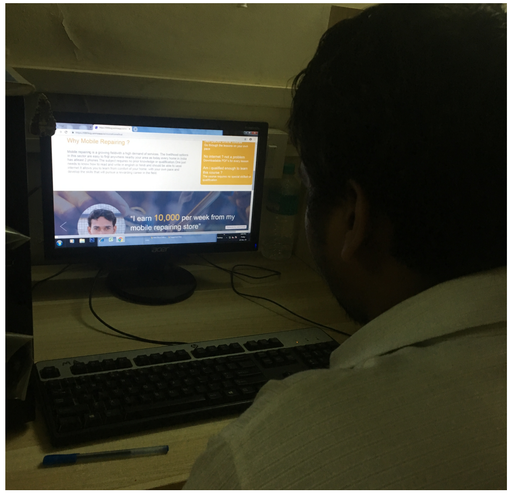
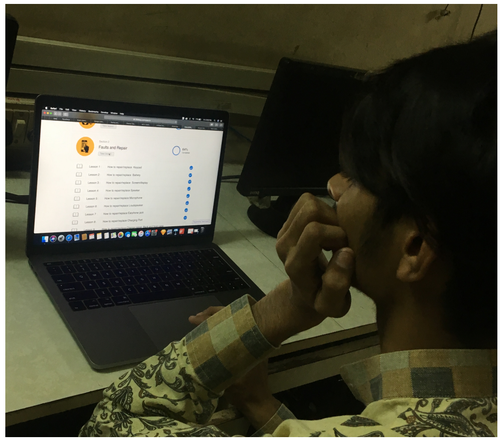
Comparison of results







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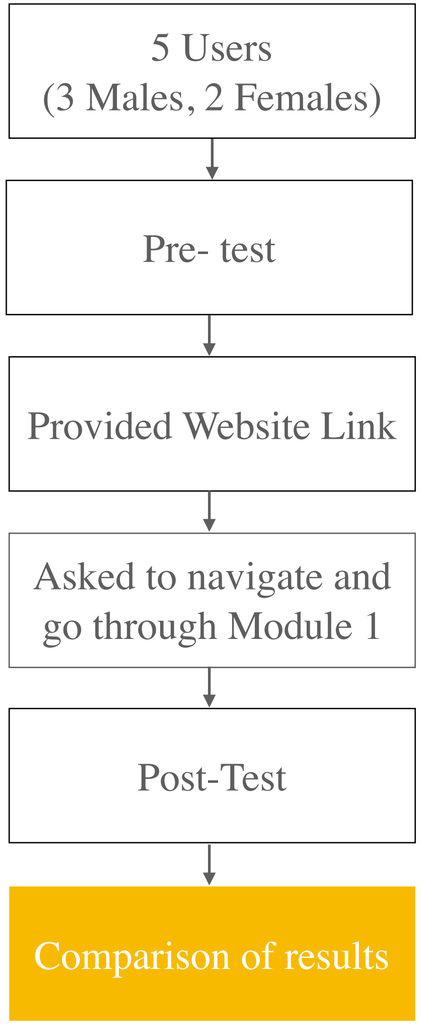
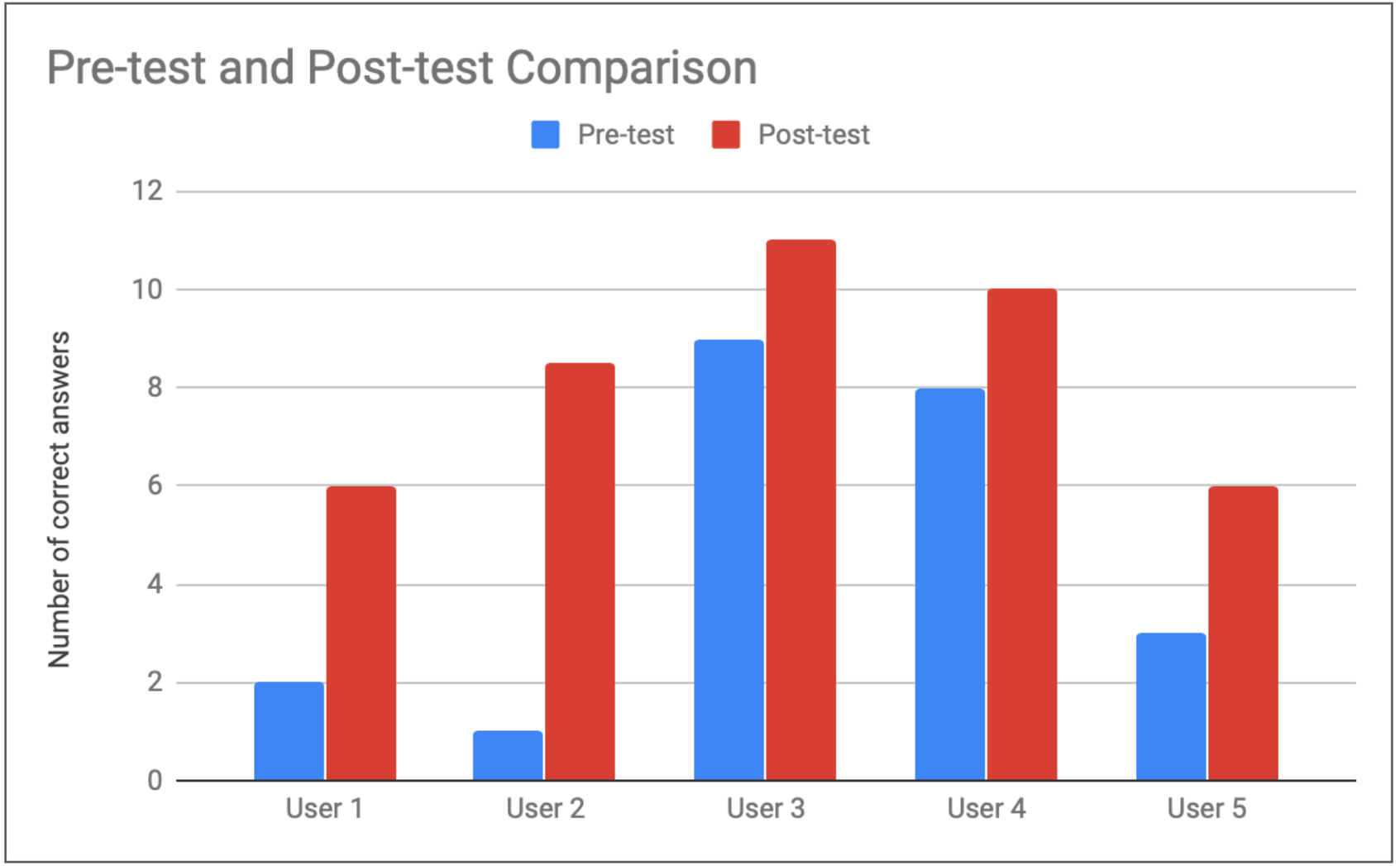


	Khushboo singh		Yedika Bhalekar		Abu Bakar		Mukesh Gupta		Pranay Haresh	
Answer	Pre Test	Post test	Pre Test	Post test	Pre Test	Post test	Pre Test	Post test	Pre Test	Post test
1	0	0	0	1	1	1	0	1	0	0
2	0	1	0	1	1	1	0	0	1	1
3	1	0	0	1	1	1	1	1	1	1
4	1	0	1	0	1	0	1	1	0	1
5	0	0	0	1	1	1	0	1	0	0.5
6	0	0	0	1	0	1	0	0	0	0
7	0	0	0	1	1	1	1	1	0	0
8	0	0	0	0	1	0	1	1	0	0
9	0	1	0	1	0	1	0	0	0	1
10	0	1	0	0	0	1	1	0	0	0
11	0	1	0	1	1	1	1	1	0	0.5
12	0	0.5	0	0	1	1	0	1	0	0
13	0	1	0	0.5	0	1	1	1	0	1
14	0	0.5	0	0	0	0	1	1	1	0
Total Marks	**2**	**6**	**1**	**8.5**	**9**	**11**	**8**	**10**	**3**	**6**
		28.57142857		53.57142857		14.28571429		14.28571429		21.42857143

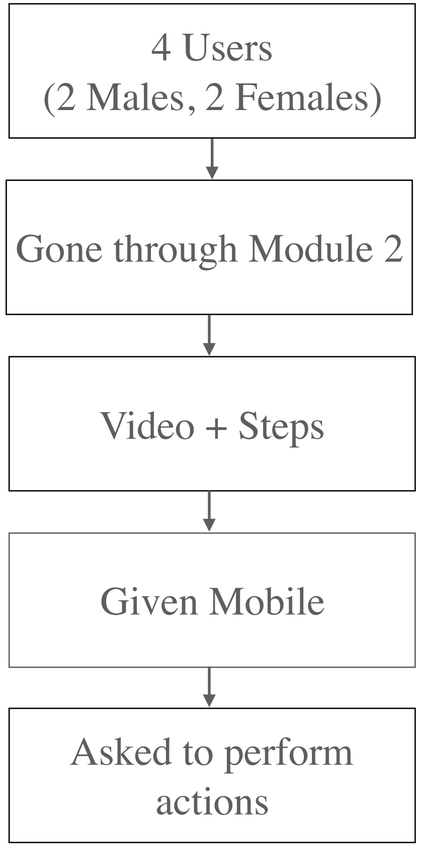
Results


Pre-test and Post-test Comparison
Pre-test
Post-test
Number of correct answers
12
10
8
6
4
2
0
User 1
User 2
User 3
User 4
User 5

Results

- Navigation through the platform
- Findability
- Terminologies Usage
- Content Medium

Experiment 2



Experiment 2

4 Users
(2 Males, 2 Females)

↓

Gone through Module 2

↓

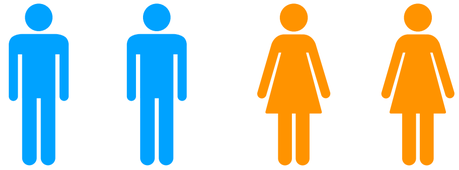
Video + Steps

↓

Given Mobile

↓

Asked to perform actions



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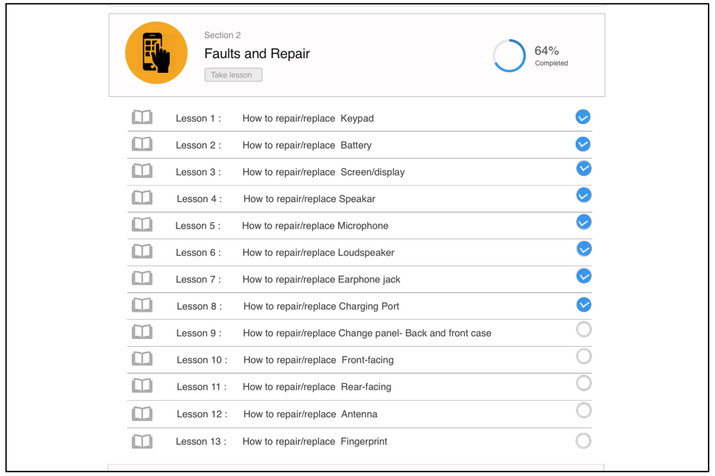

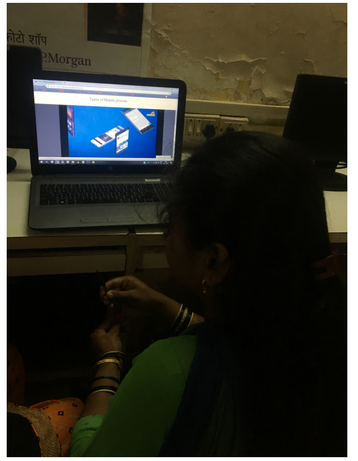

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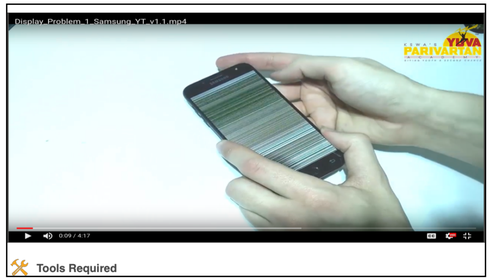

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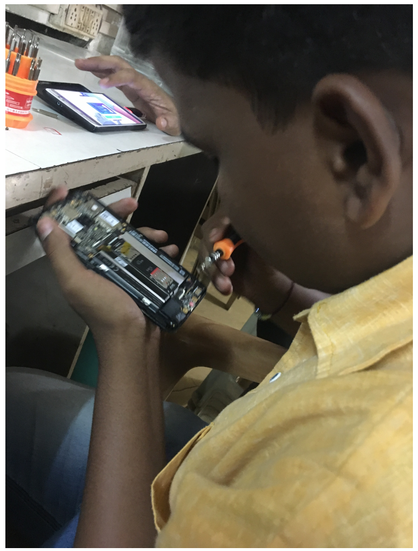

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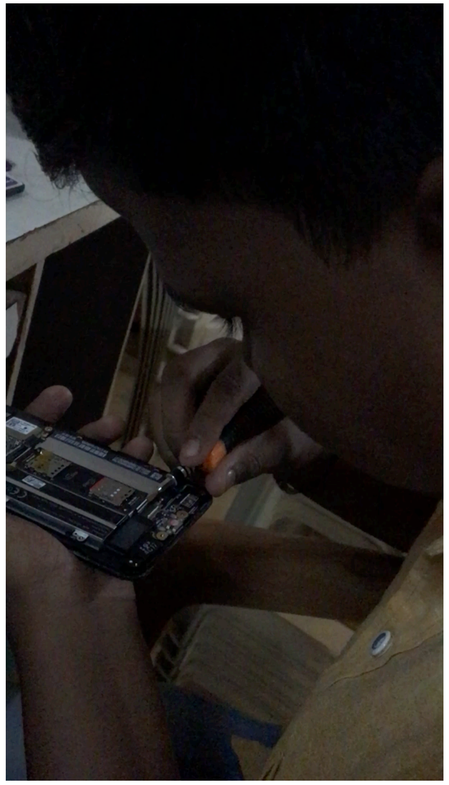

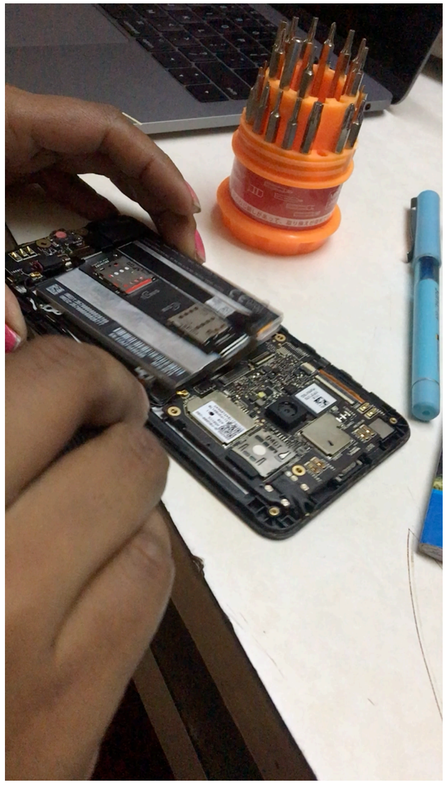

Results

- Videos were preferred than of steps.
- Users were able to perform the practical to a certain extent.
- After a demo or human assistance users were able to perform better.

Conclusion

- The platform was able to deliver the content to the users.
- After a certain point, presence of a physical instructor might help develop the confidence of the users to perform real-time repairs.

Future plan

- Practical sessions
- Certification Exam
- Iterations as per the testing will be made and the product will be delivered to the NGO

Questions?