

DESIGN THINKING

UNIT 2

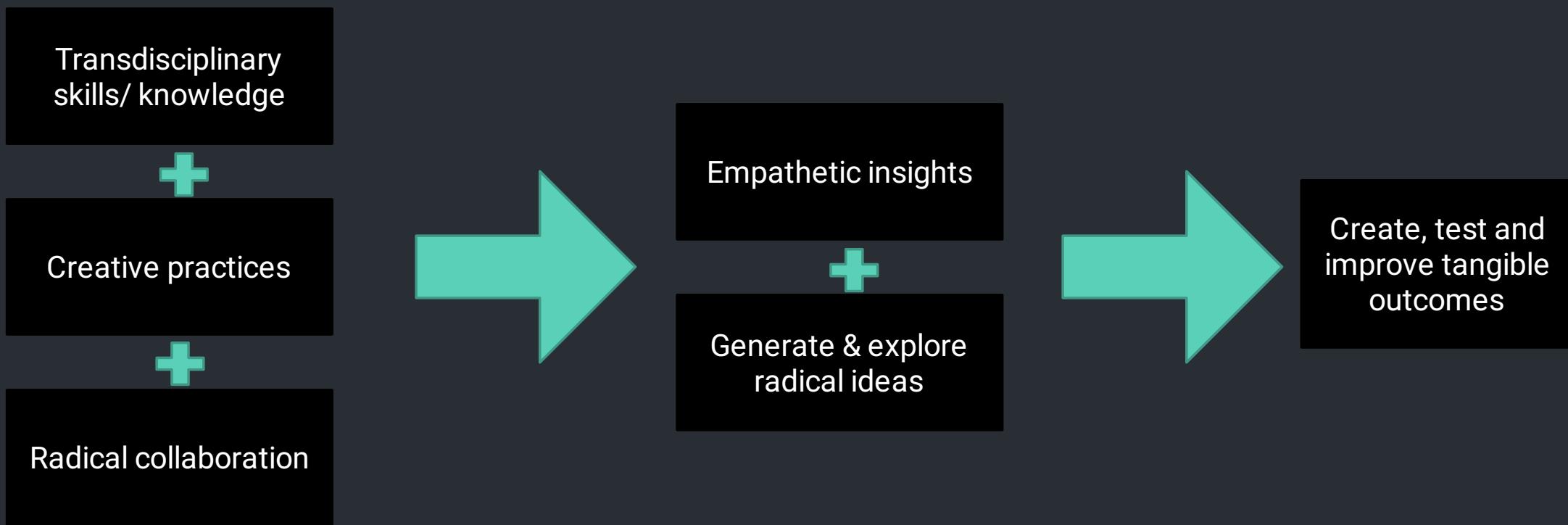
DR. CHRISTINA GRACE,

DEPT. OF EI



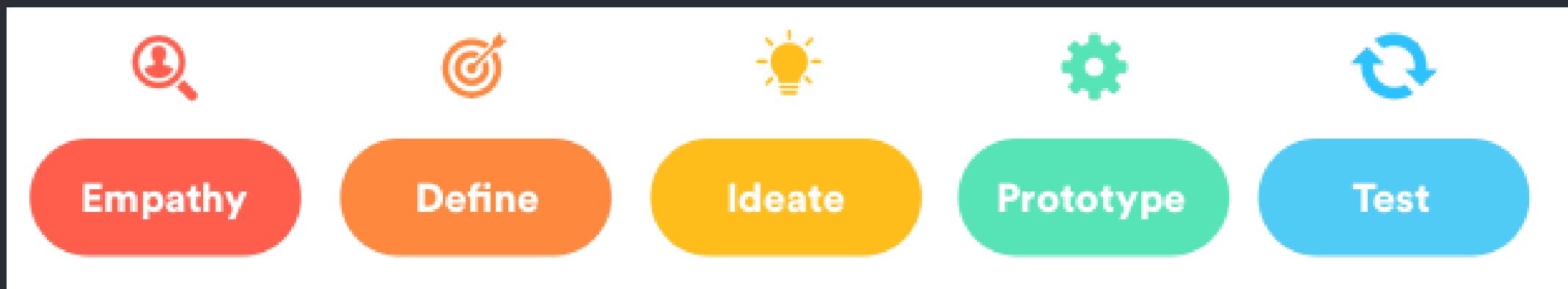
Edit with WPS OFFICE

DESIGN THINKING PROCESS



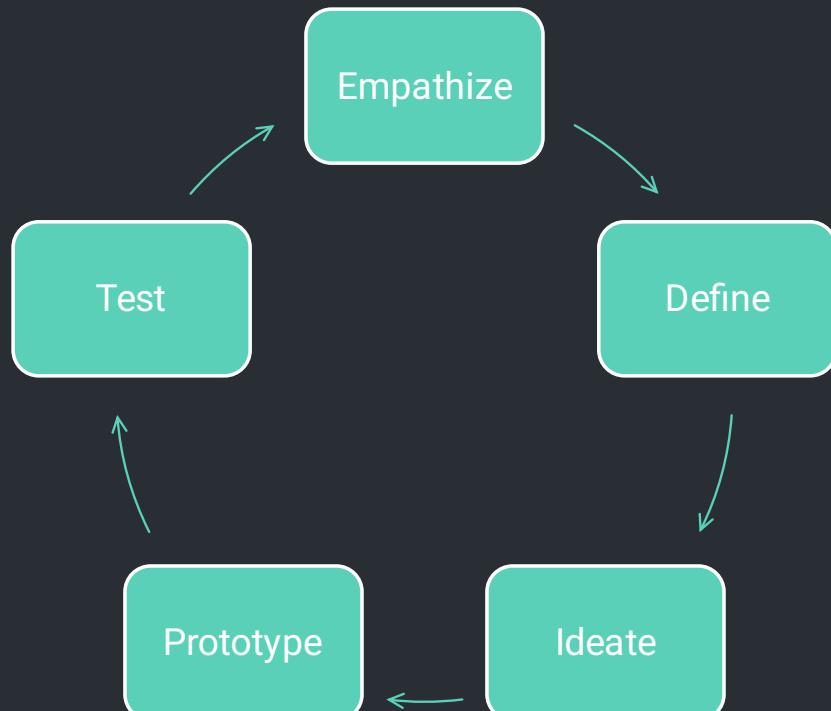
Edit with WPS Office

5 PHASES OF DESIGN THINKING

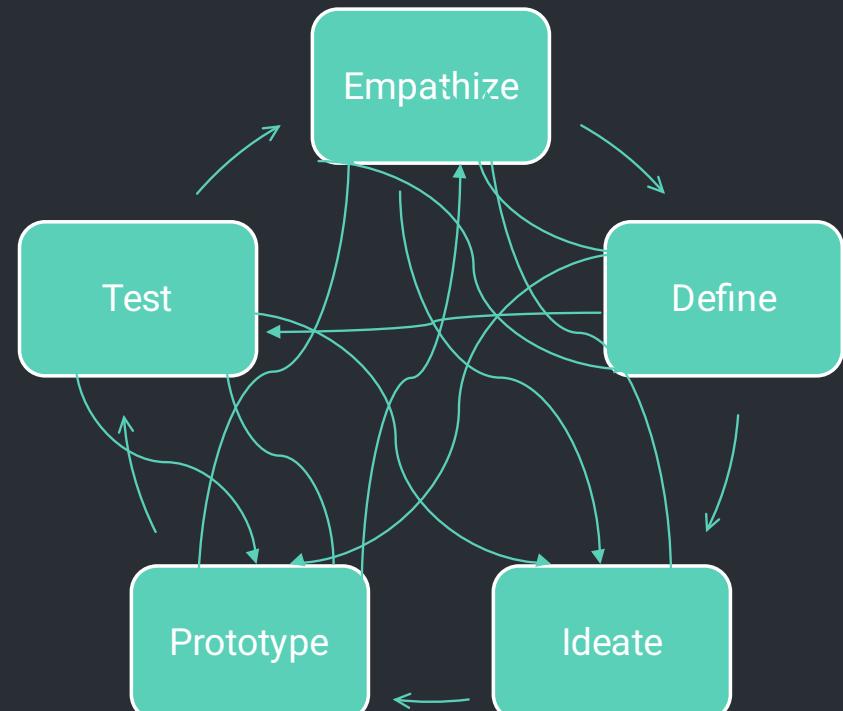


Edit with WPS Office

5 PHASES OF DESIGN THINKING



Expectation



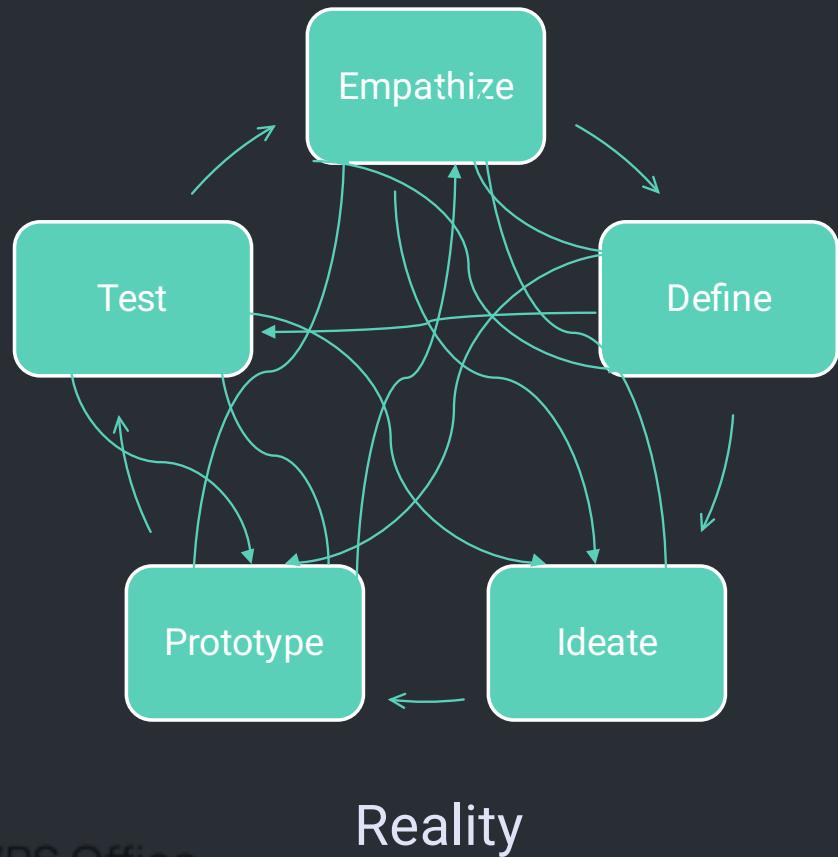
Reality



Edit with WPS Office

5 PHASES OF DESIGN THINKING

- It is natural to jump from one phase to another in a non-linear manner at any time, based on need.
- The term 'phase' suggests a random, cycling quality to the movement between processes.
- Phase – a short period of time during which a person behaves in a particular way.



Edit with WPS Office

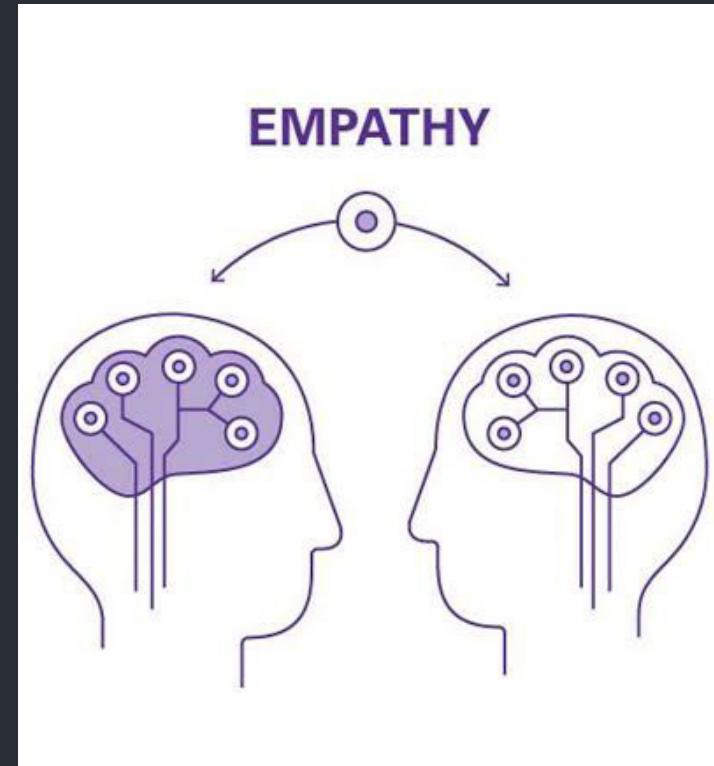
EMPATHIZE PHASE



Edit with WPS Office

EMPATHIZE PHASE

- Students take action to know, understand, synthesize , and share the feelings, values, and experience of the end user.
- Students gain empathy by engaging in interviews, observations, immersive experiences, and research.



Edit with WPS Office

AWARENESS OF BIAS, HAVING PARTNERS

Mention few good aspects and few bad aspects about this design



Edit with WPS Office

AWARENESS OF BIAS, HAVING PARTNERS

Mention few good aspects and few bad aspects about this design

- The bottom tray is very comfortable
- The table tray should have been movable
- Two arm rests might be better
- Is very difficult for left-handed people
- Difficult for heavier people



Edit with WPS Office

AWARENESS OF BIAS, HAVING PARTNERS

<https://youtu.be/JiagUw3P80k>

Check your design solutions for people different from you

Apart from left-handed people, can you think of 5 other categories of people who have different requirements than you?



Edit with WPS Office

INTERVIEWS

Interviewing end users give students the opportunity to directly learn about the user's aspirations, motivations, and attitudes that could be powerful factors to the design of a solution

Interview principles and rules:

- Speak clearly. Introduce yourself and your intent before you start the interview.
- Ask broad and questions and 'why?' questions POLITELY
- Have a conversation instead of a set question answer pattern
- Incite stories
- Listen and don't judge. Don't interrupt
- Take detailed notes



Edit with WPS Office

INTERVIEWS – DESIGNING QUESTIONS

Class Activity: Design questions for understanding the needs of a child pertaining to her room furniture design.

In 3 minutes, I will call out randomly to listen from you.



Edit with WPS Office

INTERVIEWS – IDENTIFYING END USER

Can you identify the **ONE** target user market for the following brands/ products, and mention how you'll approach the market to get interviews:

1. Maggi
2. Iphone
3. Fitbits
4. Filter coffee
5. Walking stick
6. Pendulum clocks
7. White boards
8. Drilling tool



Edit with WPS Office

INTERVIEWS - PRACTICE

Class Activity: Two of you kindly volunteer. One person would be the interviewer, and other the interviewee.

The goal of the interviewer is to understand the user preference/ difficulties pertaining to 'masks'



Edit with WPS Office

INTERVIEWS - PRACTICE

Class Activity: Two of you kindly volunteer. One person would be the interviewer, and other the interviewee.

The goal of the interviewer is to understand the user preference/ difficulties pertaining to 'wrist watch'



Edit with WPS Office

INTERVIEWS – TAKE HOME EXERCISE

Take home Activity:

Interview 3 old people (>70 years of age) about what kind of a mobile phone they would like.

Think and write down the questions.

Conduct the interview and note down your findings.



Edit with WPS Office

OBSERVATIONS

- Observing users in their world gives you the opportunity to empathize with their experience, understand their context, uncover hidden needs and hear their honest and unfettered feedback.
- Observation also requires taking on a beginner's mindset. Ask lots of "why" questions.
- A successful observation looks upon the customer's world with curiosity and records all the details
- Types: a) Controlled observation in lab settings – easy to conduct, analyze and reproduce, b) Naturalistic observation – more reliable, difficult to conduct



Edit with WPS Office

OBSERVATIONS

- What are users actually doing? As opposed to what you expected they might do.
- What routines do users have with the product? How are they integrating it into their lives?
- Ensure you're examining activities in their whole in the flow of their lives, not just the product itself;
- Don't be afraid to get quantitative.



Edit with WPS Office

IMMERSION

Finding the origin of the problem, by getting close to the problem.
The team seeks to dive into the implications of the challenge, studying it from both the company's and user's perspective.

Immersion may be divided into two parts:

Preliminary, when there is first contact with the problem;
In-Depth, when we start to identify the needs and opportunities that will guide the generation of solutions in the following phase of the project, Ideation.



Edit with WPS Office

RESEARCH

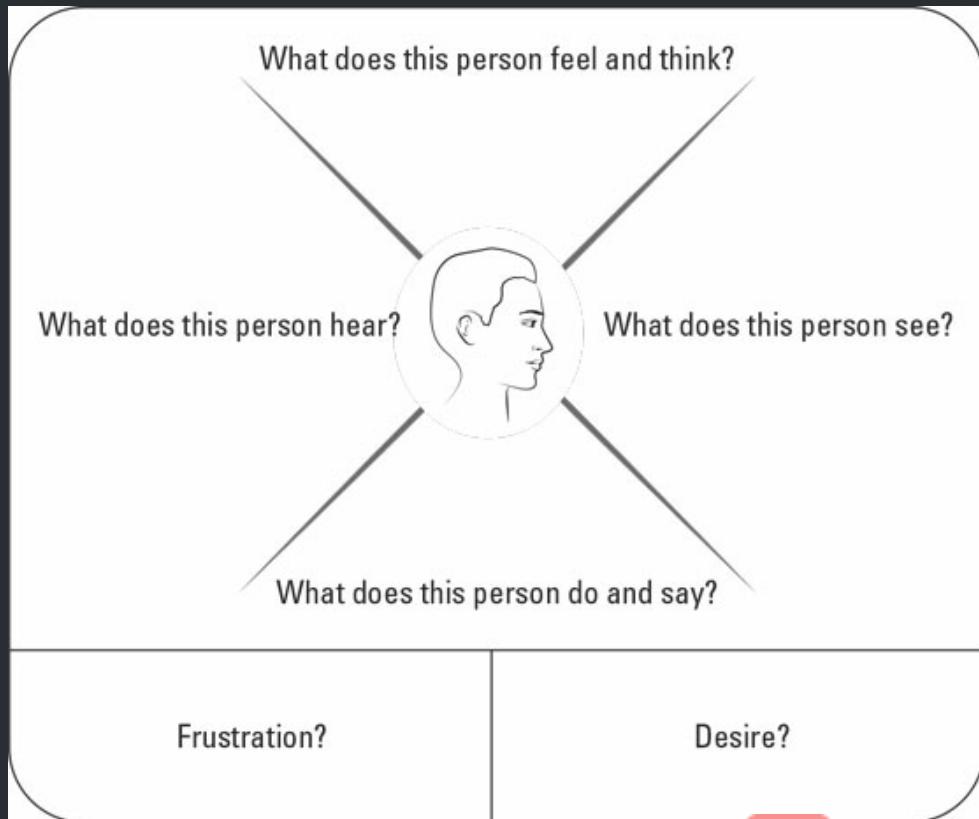
Research is crucial type of empathy work.

- Research will be conducted at all phases. It is important to know what is the research and how to conduct for each phase.
- Research at empathize phase needs to focus on gaining information about the design challenge as well as the users they are designing for.
- Understand the demographic
- Understand the statistics pertaining to the problem tackled by the design



Edit with WPS Office

EMPATHY MAP



Build an empathy map for any design problem that you can think of.



Edit with WPS Office

EMPATHY MAP

It is a graphic organizer that visually displays and classifies the information captured during the empathy work.

1. Who are we empathizing with? – context and role of user
2. What do they need? – pertaining to the product/ service design
3. What do they see? – in physical environment/ outside (that can influence)
4. What do they say? – verbally and body language
5. What do they do? – their routine, and how the design helps
6. What do they hear? – from others/ second hand
7. What do they think and feel? – their frustrations and so on



EMPATHY MAP

Take home activity – Fill (based on your imagination – as currently you can't go and conduct interview) a empathy map for the design of solar panel in the roof of a rural villager.



Edit with WPS Office

PROJECTS

Take home activity: Work on one of the three topics given below

1. How will you design a toll that will help create a solution to a problem at school?
2. How will you as float designers build a model float that celebrates an Indian holiday?
3. How will you as toy lab inventors design a nature-inspired toy for kinder garden students?



Edit with WPS Office

REVIEW OF TAKE HOME ACTIVITIES



Edit with WPS OFFICE

DEFINE PHASE



Edit with WPS Office

DEFINE PHASE

- Students synthesize the information they found in the empathy work to develop a problem statement.
- Problem statement identifies the users, their needs, and any insights that can provide design opportunities



Edit with WPS Office

DEFINE PHASE

- NEEDS: User's emotional or physical necessities and desires that come in form of verbs.
- INSIGHTS: Remarkable realizations that could be leveraged to better respond to a design challenge.



Edit with WPS Office

DEFINE PHASE: SYNTHESIS

Finding needs and structuring insights

- Note down the observations from empathy work
- Group the observations and give them category titles
- For the findings – identify and associate what causes that behavior
- Structure the insight – Finding + what causes the behavior



Edit with WPS Office

DEFINE PHASE: SYNTHESIS

FINDING	INSIGHT
Community members drive to other locations for food and entertainment	
Community members like to visit places of relaxation during weekends	
Very few Community members have been vaccinated	
Community members are traveling to stay in other locations during covid lockdown	



Edit with WPS Office

DEFINE PHASE: SYNTHESIS

FINDING	INSIGHT
Community members drive to other locations for food and entertainment	Community members drive to other locations for food and entertainment because there are not many options in their area
Community members like to visit places of relaxation during weekends	Community members like to visit places of relaxation during weekends as they are exhausted by work/ travel
Very few Community members have been vaccinated	Very few Community members have been vaccinated because of fear, as there was fake news spreading in the area
Community members are traveling to stay in other locations during covid lockdown	Community members are traveling to stay in other locations during covid lockdown as there are very few hospitals in this area



Edit with WPS Office

DEFINE PHASE: SYNTHESIS

INSIGHT

- Does the insight inspire your students to start designing for the problem?
- Do you have a story that you can use to explain your insight?
- Is your insight interesting, surprising, or new?
- Does the insight have the potential to affect the design?
- Is the insight relevant to the context of the design challenge?



Edit with WPS Office

DEFINE PHASE: SYNTHESIS

Group the observations, and write down the needs.
Then write the findings and structure it to insights.
Do this for any take home activity that you had
done earlier.



Edit with WPS Office

DEFINE PHASE: PROBLEM STATEMENT DEFINITION

ACTIONABLE PROBLEM STATEMENT

“_____ (user) might need a way to
_____ (user's need) that // because // but
_____ (insights).”



Edit with WPS Office

DEFINE PHASE: PROBLEM STATEMENT DEFINITION

- Problem statement is different from the driving question.
- Problem statement is developed by the student designer after gaining understanding of the end users through empathy work/ research on literature.
- Problem statement shouldn't be too specific – as it will lead to fewer options for solution



Edit with WPS Office

DEFINE PHASE: PROBLEM STATEMENT DEFINITION

INSIGHT	PROBLEM STATEMENT
Community members drive to other locations for food and entertainment because there are not many options in their area	
Community members like to visit places of relaxation during weekends as they are exhausted by work/ travel	
Very few Community members have been vaccinated because of fear, as there was fake news spreading in the area	
Community members are traveling to stay in other locations during covid lockdown as there are very few hospitals in this area	



Edit with WPS Office

DEFINE PHASE: PROBLEM STATEMENT DEFINITION

INSIGHT	PROBLEM STATEMENT
Community members drive to other locations for food and entertainment because there are not many options in their area	Residents need a way to access a greater variety of restaurants and entertainments that does not require them to drive to other locations
Community members like to visit places of relaxation during weekends as they are exhausted by work/ travel	Business people and students need a way to rest and relax because of their 8-9 hour everyday work
Very few Community members have been vaccinated because of fear, as there was fake news spreading in the area	Uneducated mobile phone users need to have better news sources about vaccines as there is a lot of fake news spreading
Community members are traveling to stay in other locations during covid lockdown as there are very few hospitals in this area	Residents need primary health care centers that is effectively working during the pandemic as they are scared about the lack of hospitals



Edit with WPS Office

DEFINE PHASE: HOW MIGHT WE

- Modify the problem statement to a 'how might we' question.
- This is a start of the creative process and ignites students to begin taking steps in using their imagination to develop creative solutions.
- The question suggests that the answer is unknown.
- The 'we' suggests collaborative activity.



Edit with WPS Office

DEFINE PHASE: ACTIVITY

Add observations, and find the needs and insights.
Then write two problem statements, then modifying it to 'how
might we' question. (one of it should lead to a hardware design,
one a service design).



Edit with WPS Office

DEFINE PHASE: ACTIVITY

1. Healthcare workers are not getting 3rd dose in time.
2. Many healthcare workers are dying due to the pandemic.
3. The hospitals and the healthcare workers are overwhelmed by the number of patients.
4. The healthcare workers involved in treating cancer/ TB and other diseases don't have patients due to pandemic.
5. When there is lockdown, healthcare workers find it difficult to commute.
6.



Edit with WPS Office

SUMMARY

EMPATHIZE PHASE: Identifying with the user

- Be aware of the bias that you have
- Conduct interviews: Design broad questions, identify the end user, and conduct the interview
- Take down the observations
- Immerse yourself in the problem to identify the root
- Conduct research to gather more information about the design question
- Build an empathy map

DEFINE PHASE: Identifying the need

- Synthesize needs and insights: Group the observation and identify the needs. Structure it with cause of user behavior to get insight.
- Build an actionable problem statement.
- Modify it to 'how might we' question



Edit with WPS Office



QUESTIONS?



Edit with WPS Office