



**RAMAIAH**  
Institute of Technology

# Design Thinking

**(AEC16)**

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## UNIT: IV

- Test Phase:
  - ✓ Embracing Failure
  - ✓ Testing with End Users
  - ✓ Testing without End Users
  - ✓ Iteration.



# Test Phase

## Testing Phase

- ◆ It allows students to gain feedback and insights that may not be possible without testing the prototypes
- ◆ EMBRACING FAILURES
  - ◆ Successful people have failed countless times.
  - ◆ When Steve Jobs was fired, he said 'The heaviness of being successful was replaced by the lightness of being a beginner again, less sure about everything. It freed me to enter one of the most creative periods of my life'.



# Testing Phase: Why test

- ◆ User testing **saves money**: By catching errors and usability issues early on, you ensure that the product you eventually launch is the most bug-free, user-friendly product it can be.
- ◆ User testing reveals **unexpected insights**
- ◆ User testing improves **user satisfaction**: By gathering first-hand user feedback, you can make informed design decisions—improving user satisfaction in the long run.



# Testing Phase: Types

- ◆ Remote vs. in-person testing (Remote user testing offers a less expensive more convenient alternative, but you'll have little to no control over the user's testing environment.)
- ◆ Moderated vs. unmoderated user testing
- ◆ Concept testing: To gauge user's response to the concept
- ◆ A/B testing: To compare two different versions of a design
- ◆ Usability testing: To allow the user to complete a task using the prototype





# Testing Phase: Types

- ◆ **First-click testing:** First-click testing shows you what your users first steps are when they encounter an interface
- ◆ **Tree testing:** you can use tree testing to see how user-friendly it really is.
- ◆ **Surveys:** collecting quantitative data from a large number of users within lesser amount of time.
- ◆ **Beta testing:** test a near-complete product/software/application with end users



# Testing phase: With end users

## Four aspects to consider when testing with users:

- ◆ The prototype
- ◆ Context and scenario
- ◆ Interaction between user and designer
- ◆ Process and method used to observe, capture feedback and reflect

It gives the designer another chance to empathize, learn something new, refine the prototype and bring the focus back to the end user.



# Testing phase: With end users

## Mindset while testing:

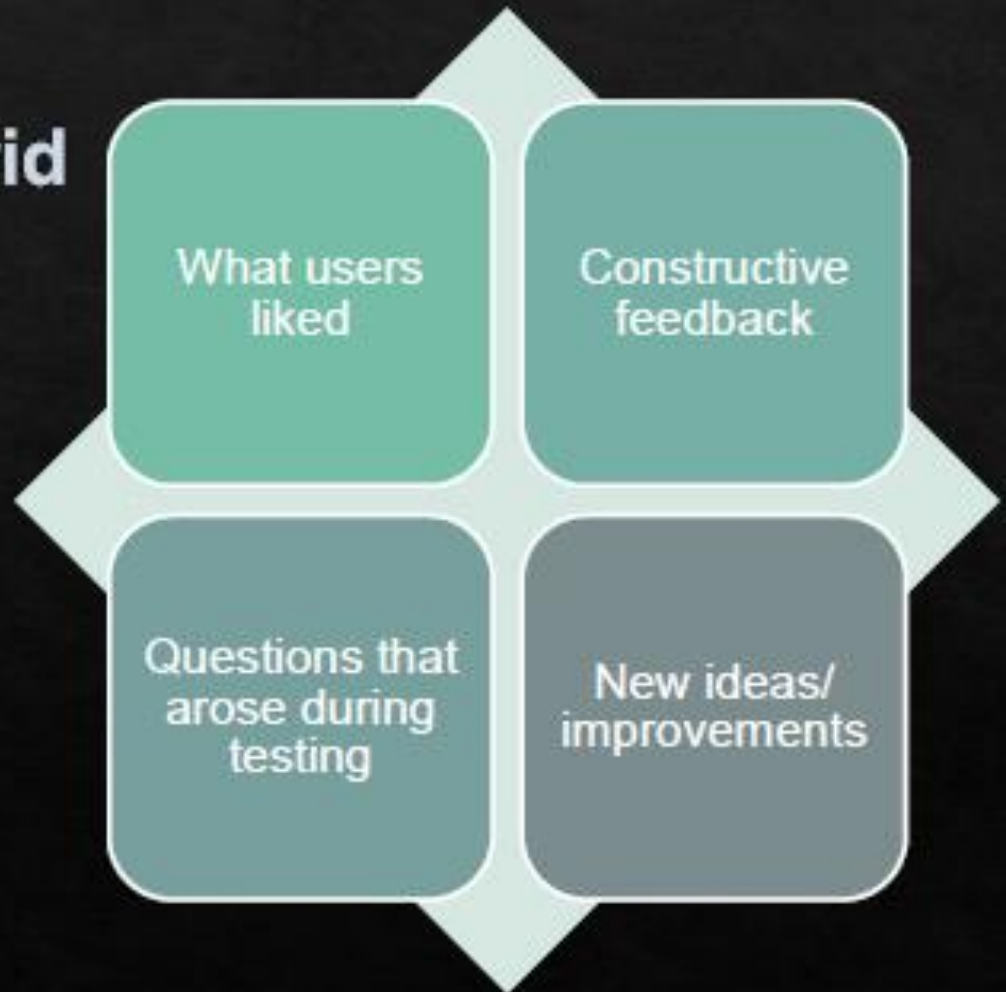
- ◆ Focus on aspects of the prototypes that needs improvement (during prototype phase the designer only thought about making it successful)
- ◆ Do not get defensive during user feedback. Remember to gather as much insight and suggestions from user.
- ◆ Capture the observational findings and user feedback using feedback capture grid.





# Testing phase: With end users

## Feedback capture grid





# Testing phase: With end users

## 5 Guidelines:

1. Let users compare alternatives: It is easier to say what you like/ dislike in one comparing it with the other.
2. Show-don't tell: Let the users experience the prototype. Don't over explain.
3. Observe: Don't try to correct or guide the user. Just observe how they use.
4. Ask users to talk through their experience
5. Ask follow up questions



# Testing phase: Without end users

## Think of how you can simulate the test case

- ◆ For regions with hurricane: pouring multiple cups of water through a strainer to simulate heavy rain and high water levels.
- ◆ Blizzard resistant prototypes: Placing them in freezer.



# Testing phase: Iterations

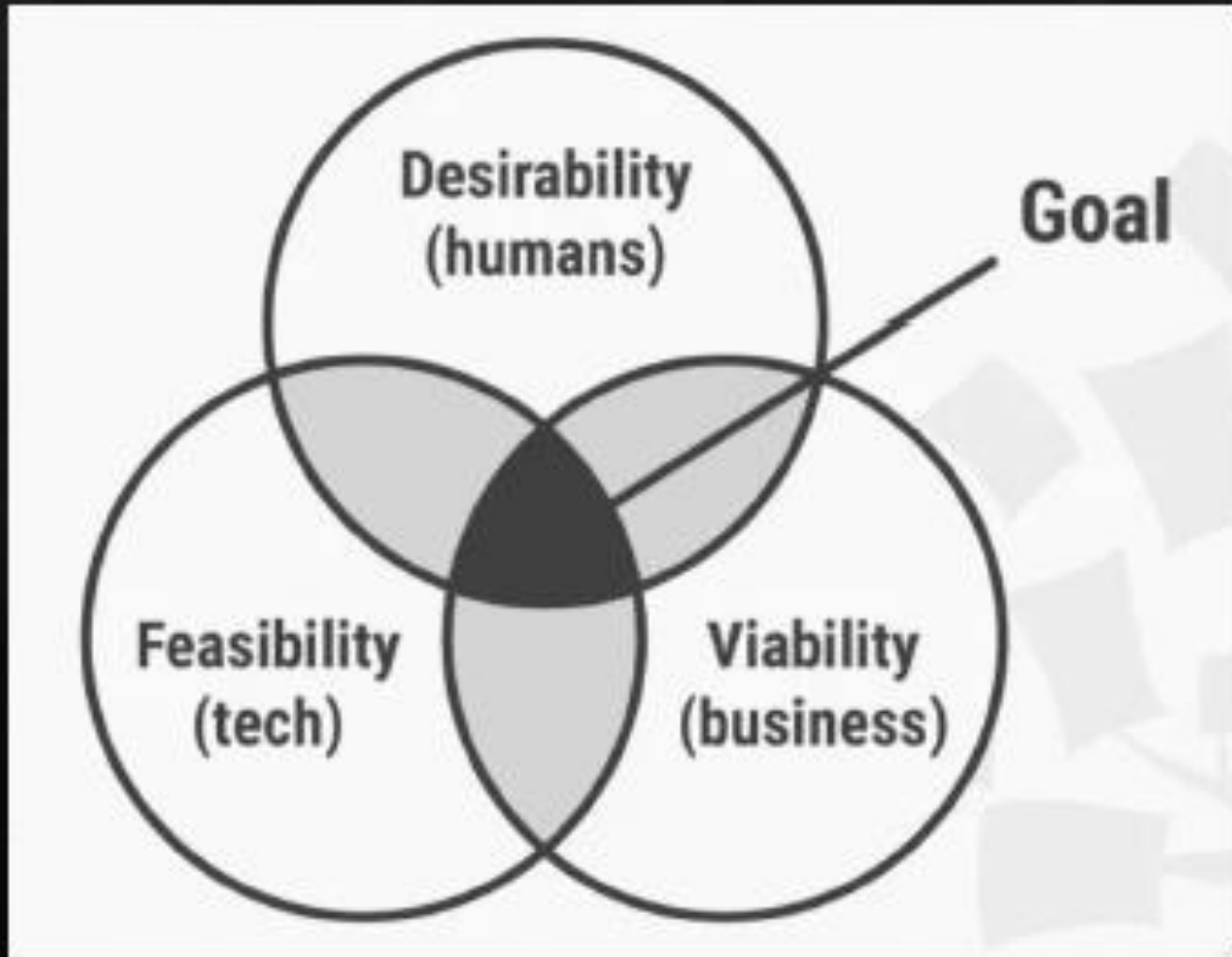
**Iteration in design thinking is the act of repeating a particular action or process**

- ◆ Prototyping and test process are to be repeated to end up in the best solution.
- ◆ Actions are repeated based on a given need. It can be decided which phase has to be repeated and in what order.





# End goal





# In class activity

Write the tests (without end user) that you will conduct for

- Notebooks and pen with erasable ink
- Bag that you had designed for last assignment

## Activity for prototype & testing

Don't make any changes in the card.

Design and prototype a connector and you can use 10 to 20 pieces of it.

The connector that holds a card castle of four stories height, and of maximum weight (I'll bring erasers to keep as weights) wins.



## You Tube Videos

Netflix design Testing

<https://youtu.be/-Gy8TnoXZf8>

Crash test for an expensive car

<https://youtu.be/EC1P6LBeTEw>

Samsonite Product testing

<https://youtu.be/-hKKYmzDM1M>



# 1. Design Thinking Tools & Methods:

<https://youtu.be/VTExEIJHalk>

# 2. Stanford: Design Thinking Course

<https://www.youtube.com/watch?v=-FzFk3E5nxM>

# 3. What is Design Thinking?

<https://www.youtube.com/watch?v=0V5BwTrQOCs>

# 4. Design Thinking HBR

<https://www.youtube.com/watch?v=z3IbHLfcyWo>

# 5. How it Works?: Design Thinking

<https://www.youtube.com/watch?v=pXtN4y3O35M>

# 6. Design Thinking: Solving Life's Problems

<https://www.youtube.com/watch?v=UQYoWwHg3qA>





# Case studies for Design thinking

1. Amul

<https://youtu.be/nnwqtZiYMxQ>

2. Asian paints

<https://youtu.be/jGT6ob8hV6M>

3. Futuristic farms

<https://youtu.be/KfB2sx9uCkl>

4. Data driven design

<https://youtu.be/Jh5xKbuvMIA>

5. IDEO shopping cart

<https://youtu.be/M66ZU2PClcM>

6. Prototype of smart village

<https://youtu.be/SlhE4--7IEM>



- **References:**
- **David Lee, Design Thinking in the Classroom, Ulysses Press, Korea, 2018**

# Thank You...

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