

# Design Thinking For Software Engineers

## Lab-2

### E-learning platforms fail to keep learners engaged

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#### **Context**

Students, Teachers and working individuals use E-Learning Platforms for:

- Learning new courses
- Assigning courses
- Upskilling for better work opportunities

#### **Target Users**

- Students:
  - Age: 13-24
  - Digital Literacy: medium to high
- Instructors:
  - Age: 35-55
  - Digital Literacy: medium to high
- Corporate Learners:
  - Age: 25-45
  - Digital Literacy: medium to high

#### **Initial Assumptions**

- Lack of proper UI/UX designs.
- Most of the learning contents are long videos and presentations which lack in interactivity to keep the learning platform engaging.
- Few platforms are text-heavy, making it less engaging and people start to divert from the platform.
- Lack of user specific content leading to incompleteness and frustration.

Output:

Assumption Id	Assumption
A1	The findings strongly represent the needs and pain points of the Student demographic, specifically the 18-24 age group.
A2	The necessity for diverse content (short modules/visuals) is a critical, high-priority requirement for improving platform engagement.
A3	User actions like "Skip sections" or using "AI tools to summarise it" are clear behavioural indicators of high cognitive load and time-sensitivity, not just laziness.
A4	The most effective interactive features are those that provide immediate feedback and active engagement rather than passive consumption.
A5	The stated problems (e.g., repetitive formats, confusing navigation) are assumed to be direct, primary causes of user disengagement and course incompleteness.
A6	Respondents possess sufficient technological literacy and access to utilize advanced tools like ChatGPT, which influences their learning behaviours.

## Interview Questions

1. Tell me about the last online course you started but didn't finish. What made you stop?
2. How do you feel when a course has long videos or heavy text content?
3. What usually goes through your mind when the platform is confusing or hard to navigate?
4. What do you actually do when you see long text sections or repetitive lessons?
5. What frustrates you most about current e-learning platforms?
6. If you could change one thing to make online courses more engaging, what would it be?

## Interview Notes and Quotes

Name: Santhosh KV

Age: 45

Occupation: Professor

- Interview Notes:
  - He reported that many students skipped course material and focused mainly on receiving the completion certificate.
  - He expressed feelings of anger and frustration, stating that learners did not understand the importance of the assigned courses.
  - He observed that long, text-heavy sections were skipped most often.
  - He mentioned that identifying suitable and engaging courses for assignment was a difficult and time-consuming process.
  - He felt that current e-learning platforms were not effective at sustaining student attention.
  - He believed platforms prioritized quantity of content over quality of learning experience.
- Quote:
  - "The current e-learning platforms are not capable enough to pull the audience."

Name: Shijith M

Age: 28

Occupation: Working IT professional

- Interview Notes:
  - He reported that high-quality courses were often expensive, while free courses tended to lack quality.
  - He felt frustrated that poor UI/UX reduced his interest in learning.
  - He stated that long, non-interactive videos were annoying mainly because of technical lag.
  - He admitted to skipping long text sections and suggested boredom might lead to incompleteness.
  - He felt animated visuals and more attractive design could improve engagement and reduce dropouts.
  - He rated the need for diverse formats as moderate (3/10) and tolerated repetition when the topic felt new.
- Quote:
  - "Making the platform more visually attractive would reduce dropout"

Name: Redit Santhosh

Age: 14

Occupation: Student

- Interview Notes:
  - He stated that the course visuals were appealing but the explanations were unclear.
  - He felt frustrated and discouraged by timed problem-solving activities for complex equations.
  - He reported feeling sad when he was unable to complete problems within the given time.
  - He noted that the lack of interactivity left his doubts unresolved.
  - He linked unresolved doubts to lower grades and eventually quitting the course.
- Quote:
  - “There was no way to ask doubts.”
  - “My grades went down, so I stopped the course.”

## Empathy Map

Name: Santhosh KV

Age: 45

Occupation: Professor

### Says

Students rush for certificates  
Text-heavy lessons are skipped  
Platforms fail to engage  
Hard to find good courses

### Thinks

Platforms prioritize volume over quality  
Engagement tools are missing  
Students don't value learning

### Does

Assigns online courses  
Tries to curate good ones  
Monitors completion  
Gets frustrated with platforms

### Feels

Angry  
Disappointed  
Concerned about learning outcomes

Name: Ridit Santhosh

Age: 14

Occupation: Student

### Says

Explanations are unclear  
Timers cause stress  
No way to ask doubts  
Quit after grades fell

### Thinks

He isn't fast enough  
Platform doesn't help  
Learning is stressful

### Does

Tries timed problems  
Skips course later  
Quits platform  
Avoids tasks

### Feels

Frustrated  
Sad  
Discouraged  
Anxious

Name: Shijith M

Age: 28

Occupation: Working IT professional

### Says

Good courses are expensive  
Poor UI reduces interest  
Long text is skipped  
Visuals help engagement

### Thinks

Free courses are low quality  
UI matters a lot  
Repetition is okay if useful

### Does

Skips text-heavy parts  
Drops boring courses  
Prefers visuals  
Upskills selectively

### Feels

Frustrated  
Impatient  
Selective

### Validation of Assumptions

Assumption	Validated?	Reason from Interviews
Lack of proper UI/UX designs	Yes	Shijith stated poor UI reduced interest. Santhosh felt platforms failed to hold attention, confusing navigation lowered engagement.

<b>Long videos and low interactivity reduce engagement</b>	Yes	Shijith complained about lag and non-interactive videos. the student reported no interactivity to resolve doubts. the professor observed widespread skipping.
<b>Text-heavy content causes disengagement</b>	Yes	Both Santhosh and Shijith noted long text was skipped. Redit preferred visuals and struggled with explanations.
<b>Lack of user-specific content leads to incompleteness and frustration</b>	Partially	Santhosh observed low completion and frustration. Redit quit due to mismatched pacing and timers. personalization was implied but not explicitly stated by all users.

## User Insights

- Learners chase certificates when courses fail to keep them engaged.
- Poor UI/UX causes dropout before users even realize they've disengaged.
- Students quit when they cannot ask questions or clear doubts.
- Timed challenges frustrate learners when pressure replaces support.
- Instructors distrust platforms when they cannot find quality courses easily.
- Users abandon courses when visuals look good but explanations are unclear.
- Free courses lose credibility when quality feels low.

## User Persona

### Person 1



Name: Santhosh KV

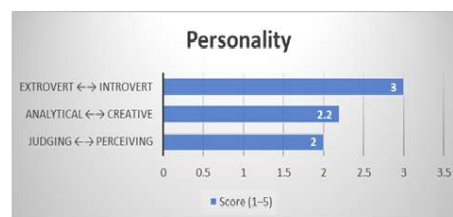
Age: 45

Occupation: Professor

Device: Laptop

- Quote:
  - "The current e-learning platforms are not capable enough to pull the audience."

- Goals:
  - Ensure students actually learn, not just collect certificates
  - Assign high-quality, engaging courses
  - Track student participation and understanding
- Pain Points:
  - Students skipping content
  - Text-heavy lessons
  - Difficulty finding good courses
  - Low engagement across platforms



## Person 2



Name: Shijith M

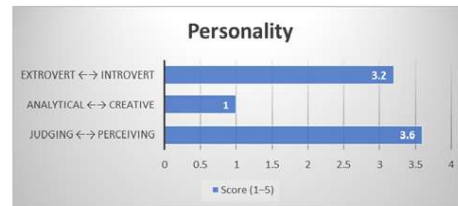
Age: 28

Occupation: Working IT Professional

Device: Laptop

- Quote:
  - “Making the platform more visually attractive would reduce dropout.”

- Goals:
  - Upskill efficiently
  - Learn without wasting time
  - Find affordable, quality courses
- Pain Points:
  - Expensive good courses
  - Poor UI/UX
  - Laggy videos
  - Skips long text



## Person 3



Name: Ridit Santhosh

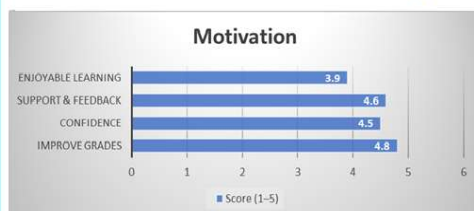
Age: 14

Occupation: School Student

Device: Phone

- Quote:
  - “There was no way to ask doubts.”
  - “My grades went down, so I stopped the course.”

- Goals:
  - Understand math concepts clearly
  - Improve grades
  - Ask doubts while learning
- Pain Points:
  - Unclear explanations
  - Timers causing stress
  - No interactivity
  - Quitting courses



## Software Requirements

Insight	Software Requirement
Learners drop out when courses feel boring or repetitive	Short modules, varied formats, micro-learning
Poor UI/UX reduces motivation quickly	Clean layouts, intuitive navigation, fast loading

Students quit when doubts remain unresolved	Live chat, doubt-clearing forums, AI tutor
Timed tasks discourage weaker learners	Adjustable timers, practice mode
Instructors struggle to find quality courses	Instructor dashboards, rating filters, preview tools
Users skip long text content	Visual explanations, summaries, collapsible sections
Professionals distrust free courses	Quality badges, reviews, sample lessons
Visual polish raises expectations	Clear instruction design, learning objectives

### Reflection And Documentation

1. What surprised you?
  - a. Learners skipped content even when visuals were good. Instructors also struggled to find quality courses.
2. Which assumption was wrong?
  - a. Disengagement wasn't only due to text-heavy content, lack of interactivity, pacing, and stress also mattered.
3. How did empathy change your thinking?
  - a. I realized motivation, confidence and emotional experience drive engagement as much as usability.
4. How will this affect design?
  - a. Design must focus on interactive, bite-sized content, clear instructions, adaptive pacing, doubt resolution and tools for instructors to assign quality courses.