Module III - DESIGN THINKING

Learning Objective	Learning Outcome
• To introduce and expose the students to the concept of Design Thinking, • To enable them to practice and identify design opportunities through various phases with the help of hands-on activities	• Would have understood the concept of design thinking and its application for problem solving • Would have been exposed to various phases of Design Thinking, getting a deeper understanding of each one of them with real-time activities

About Design Thinking

In most of your sessions in schools, a typical scenario is where a teacher asks the students some questions and students answer these with the aim to give the 'right answer'. There is usually only one right answer and any other input is considered as a wrong one and can bring in some kind of punishment for the students.

The process of Design Thinking (DT) is opposite to this kind of traditional teaching. While teaching DT, students are encouraged to explore real-world problems without easy solutions. They are expected to take charge of their own learning, work together in teams rather than individually and understand that there are no "right answers" to the greatest of challenges/problems.

In simple words - Design Thinking is a method for practical, creative resolution of problems, and creation of solutions. It is a form of solution-based or solution-focused thinking with the intent of producing a much needed/required solution for a problem.

While the approach to teach DT may be different we can find similarities in the way it is practiced. It doesn't differ much from the scientific method which is taught and used in schools under various subjects. Just like a science or a math's problem, DT also begins by stating a hypothesis and then, through various inputs, suggestions, and permutations and combinations that move toward forming a model or theory. The main difference is that inputs/suggestions in a DT process are all aimed towards solving the identified problem or filling the identified gap in a service/model/product etc.

It includes "building up" ideas, with few, or no, limits at a stretch during a brainstorming session. This helps reduce fear of failure in the participant(s)/students and encourages the process of input and participation from all. The outcome of such a brainstorming phase is what we commonly refer to as "thinking out of the box".

For the purposes of tinkering & innovating toward the objectives of ATLs, the DT process can be defined through five distinct stages: empathize, define, ideate, prototype and test.

Within these five stages, problems can be framed, the right questions can be asked, more ideas can be generated, and the best answers can be chosen. These stages are not linear; can occur simultaneously and can be repeated as many times as required.

As you can see that the first three stages mentioned here - EMPATHIZE, DEFINE & IDEATE have been covered in the previous module on Ideation. The reason being that, as first-time users, and audience we wanted to inspire and encourage you to start the thinking process.

Let's take a quick look at each of these stages

EMPATHIZE
Learn about the audience for whom you are designing

DEFINE
Construct a point of view that is based on user needs and insights

IDEATE
Brainstorm and come up with creative solutions

PROTOTYPE
Build a representation of one or more of your ideas to show to others

TEST
Return to your original user group and testing your ideas for feeback

Stage 1: Empathy

Empathy is the ability to put yourself in someone else's shoes to start "seeing" things through his/her eyes.

The objective is to identify problems that others may be facing. The students need to see themselves in the user's shoes and empathize by seeing, thinking and feeling. As a facilitator, you need to guide them in doing so.

Stage 2: Define

Once the students have identified the problem and understood what the others must be facing, they need to clearly define the problem. The Point of View (POV) statement helps transition into the Define stage in Design Thinking. Guide students in understanding the three elements that make up Point of View - the user, need and insight.

Stage 3: Ideate

Using different ideation techniques, help students brainstorm, explore their creative potential and come up with solutions to challenges. Then aid them in identifying the best solution from a pool of ideas.

Stage 4: Prototype

Students now need to validate the ideas generated. Help them trim things down, or marry thoughts and customize. The idea needs to become tangible. Also, you need to prepare students for feedback or suggestions from targeted users as well as for appreciation.

Stage 5: Test

Finally, testing will help determine what works and what does not. It may even land you and the students back at the drawing board! Or if the user likes the solution, then the process of design thinking can end. The best idea goes into execution.

Resources

To get some more inspiration, you may refer to the following:

Brief Description	Resource URL
Design Thinking	https://www.youtube.com/watch?v=a7sEoEvT8l8 https://www.youtube.com/watch?v=qyoZTUGzdGY
Design and Discovery – Full curriculum along with a facilitator's guide to understand the process of Design Thinking and series of DIY activities	http://www.intel.in/content/ dam/www/program/education/ us/en/documents/K12/design-and-discovery/dd-full-curric-ulum-fg.pdf
An Introduction to Design Thinking Process Guide by Stanford University	https://dschool-old.stanford.edu/sandbox/groups/design-resources/wiki/36873/attachments/74b3d/ModeGuide-BOOTCAMP2010L.pdf?sessionID=1b6a96f1e2a50a3b1b-7c3f09e58c40a062d7d553
Design Thinking is a cyclical process that allows you to solve complex problems in a creative way	https://www.youtube.com/watch?v=3sOeSkTUTA0
Design thinking - IDEO Insights	https://www.youtube.com/watch?v=gPqjKOA1qlo
Empathize, Design, Ideate, Prototype, and Test to create something amazing with Design Thinking!	https://www.youtube.com/watch?v=QgLUxZtuXF4&fea-ture=youtu.be
What is Design Thinking?	https://www.youtube.com/watch?v=Ee4CKIPkIik
How to brainstorm - individually/in a group	https://www.youtube.com/watch?v=Cll6AEzXh8c https://www.youtube.com/watch?v=aPnTPK0c53w https://www.youtube.com/watch?v=GLpZ6RZHyoM (resource for teachers)
Complex Systems Design Thinking (How to do it)	https://www.youtube.com/watch?v=WrdSkqRypsg
Design Thinking, How It works? (How to do it)	https://www.youtube.com/watch?v=pXtN4y3O35M&t=18s
Five Rules of Design Thinking (TED Talk) (Why and how to do it)	https://www.youtube.com/watch?v=TAV08bn5uEo&t=23s
Design Thinking with Elementary Students (How to do it)	https://www.youtube.com/watch?v=hvqST2ggvA0
Design Thinking - CEO of IDEO (How and why to do it)	https://www.youtube.com/watch?v=U-hzefHdAMk
Design Thinking, What, why and when? (TED Talk)	https://www.youtube.com/watch?v=Q80wUnju5YA&t=1s
The Launch Cycle: Design Thinking Framework for K-12 Students	https://www.youtube.com/watch?v=LhQWrHQwYTk
Design Thinking Animation	https://www.youtube.com/watch?v=uRtAzzitBmA
All about Learning and Design Thinking	https://www.youtube.com/watch?v=3sOeSkTUTA0
Design Thinking for Kids (Playlist)	https://www.youtube.com/playlist?list=PL6cG1WctJGLB3M-sassl6UPQ4yx_t2GLTG