



**SAL INSTITUTE OF TECHNOLOGY AND ENGINEERING
RESEARCH**

Department of Mechanical Engineering

PRESENTATION SESSION REPORT

On

Problem solving and Ideation workshop

25th December 2020

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Head of Department: Prof. Manish H. Patel

Session Conducted by - Asst. Prof. Ketankumar G Patel

Asst. Prof. Pratik B Patel

As known, Problem solving is all about using logic, as well as imagination, to make sense of a situation and come up with an intelligent solution. In fact, the best problem solvers actively anticipate potential future problem and act to prevent them or to mitigate their effects.

Problem-solving abilities are connected to a number of other skills, including:

- Analytical skills
- Innovative and creative thinking
- A lateral mind set
- Level-headedness
- Initiative
- Resilience (In order to reassess when your idea doesn't work)
- Team working (if problem solving is a team effort)
- Influencing skills (to get colleagues, clients and bosses to adopt your solutions)

Identifying a problem is often the kernel for new business or product idea and, as such, problem solving is an essential ingredient of entrepreneurialism. It is also a key component of good leadership

Ideation is the process where you generate ideas and solutions through sessions such as Sketching, Prototyping, Brainstorming, Brain writing, Worst Possible Idea, and a wealth of other ideation techniques. Ideation is also the third stage in the Design Thinking process. Although many people might have experienced a “brainstorming” session before, it is not easy to facilitate a truly fruitful ideation session. In this article, we'll teach you some processes and guidelines which will help you facilitate and prepare for productive, effective, innovative and fun ideation sessions.

Ideation is often the most exciting stage in a Design Thinking project, because during Ideation, the aim is to generate a large quantity of ideas that the team can then filter and cut down into the best, most practical or most innovative ones in order to inspire new and better design solutions and products.

“Ideation is the mode of the design process in which you concentrate on idea generation. Mentally it represents a process of ‘going wide’ in terms of concepts and outcomes. Ideation provides both the fuel and also the source material for building prototypes and getting innovative solutions into the hands of your users.”

Ideation will help you to,

- Ask the right questions and innovate with a strong focus on your users, their needs, and your insights about them.
- Step beyond the obvious solutions and therefore increase the innovation potential of your solution.
- Bring together perspectives and strengths of your team members.
- Uncover unexpected areas of innovation.
- Create volume and variety in your innovation options.
- Get obvious solutions out of your heads, and drive your team beyond them.

Why do We Need Ideation in Design Thinking?

We'll let Grand Old Man of User Experience, Don Norman, answer this important question in a down-to-earth and very relevant way. Don Norman helps us take one step back and reflect upon why we need to challenge assumptions, ask stupid questions and provoke our current understanding, which is—in fact—what Ideation methods such as Challenge Assumptions, SCAMPER, and Provocations help us do:

“One of my concerns has been design education, where the focus has been centred too much upon craft skills and too little on gaining a deeper understanding of design principles, of human psychology, technology and society. As a result, designers often attempt to solve problems about which they know nothing. I have also come to believe that in such ignorance lies great power: The ability to ask stupid questions. What is a stupid question? It is one which questions the obvious. ‘Duh,’ thinks the audience, ‘this person is clueless.’ Well, guess what, the obvious is often not so obvious. Usually it refers to some

common belief or practice that has been around for so long that it has not been questioned. Once questioned, people stammer to explain: sometimes they fail. It is by questioning the obvious that we make great progress. This is where breakthroughs come from. We need to question the obvious, to reformulate our beliefs, and to redefine existing solutions, approaches, and beliefs. That is design thinking. Ask the stupid question. People who know a lot about a field seldom think to question the fundamentals of their knowledge. People from outside the discipline do question it. Many times their questions simply reveal a lack of knowledge, but that is OK, that is how to acquire the knowledge. And every so often, the question sparks a basic and important reconsideration. Hurrah for Design Thinking.”
– Don Norman, in Rethinking Design Thinking

According to Don Norman, asking stupid questions is not stupid at all. However, Ideation and Design Thinking is not only about challenging assumptions and asking so-called stupid questions. It’s also about going from researching and defining your users and their needs in the Empathise and Define phases and moving on into starting to come up with the right solutions for the users via Ideation methods:

“You ideate in order to transition from identifying problems to creating solutions for your users. Ideation is your chance to combine the understanding you have of the problem space and people you are designing for with your imagination to generate solution concepts. Particularly early in a design project, ideation is about pushing for a widest possible range of ideas from which you can select, not simply finding a single, best solution.”

Get Started in Applying Ideation Methods

Ideation facilitation is a challenging and complex task. It requires experience in understanding and managing teams, people dynamics, adaptability and flexibility and a range of other soft skills, which in reality are really hard to master. Having said that, there's nothing like experience to help you learn the ropes of any field. The best way to learn is to take the theory and techniques you learn from the experts, and then apply and test them in your own context and adapt them to your own needs.

Preparation before the Storm

When we're about to venture into stormy territory, we know we need to prepare for a bumpy ride and take extra provisions so that we come out on the other side and arrive at our destination unscathed. An ideation process such as Brainstorming or Challenging Assumptions is no different. Wandering into a Brainstorm without preparation is asking for trouble. You may inadvertently damage your team's perception of ideation and scar them for future creative activities. You could also damage team cohesion by going into a situation like this and causing team members to fall out with each other due to a brainstorming session gone wrong.

SAL INSTITUTE OF TECHNOLOGY AND ENGINEERING RESEARCH (Mechanical Engineering Department) had organized a Presentation Session on Problem solving and ideation. The same was organized with the view of introducing the students to this knowledge of inspiration, motivation and ideation, innovation methodology, frame work and building on skills and tools, brain storming, identifying problem having business potential, how to conceive idea, what are the best practices and how to build a good team.

INSPIRATION, MOTIVATION AND IDEATION

SAL
EDUCATION



Problem solving

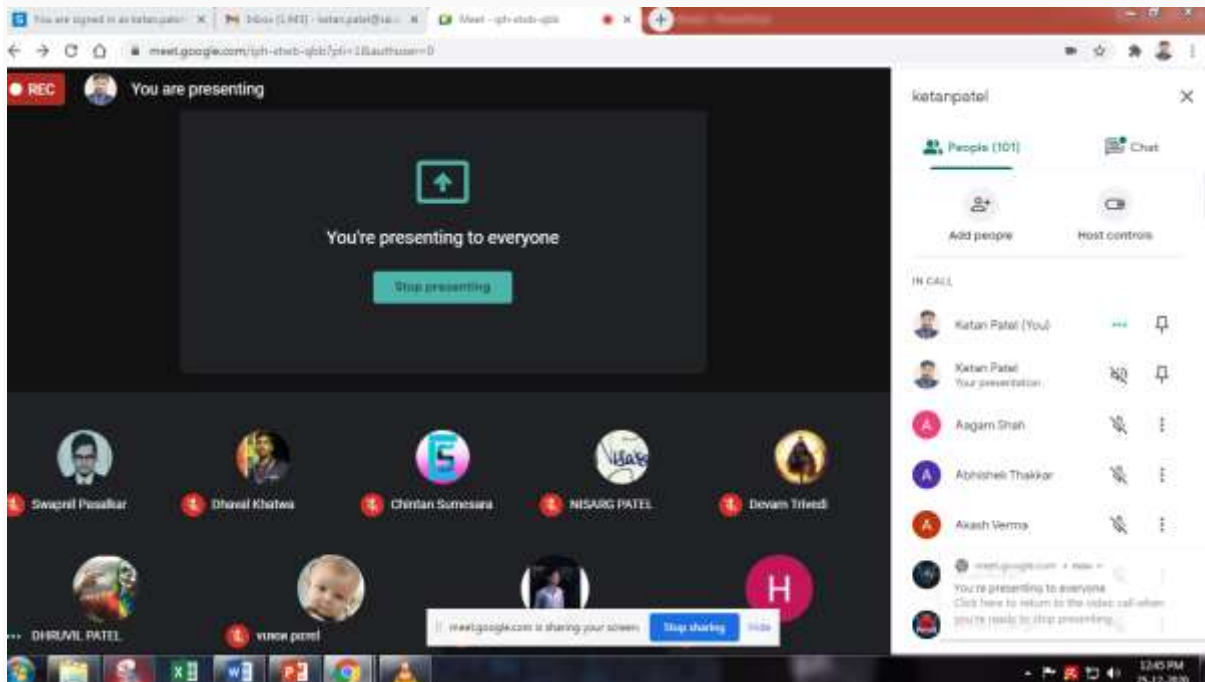
Ideation

Asst. Prof. Ketankumar G Patel

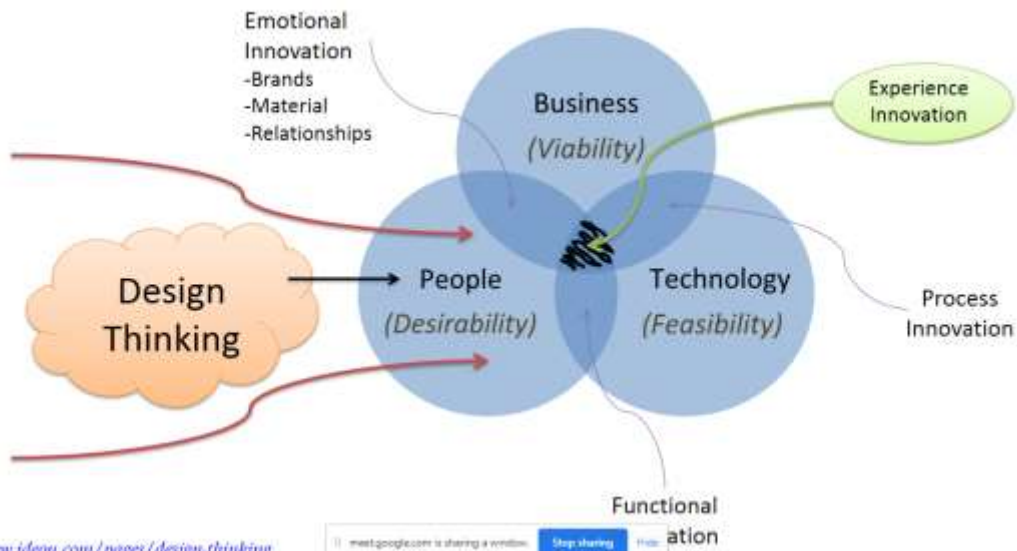
Asst. Prof. Pratik B Patel

The Presentation Session was scheduled on 25th of December 2020 for (B.E.) Mechanical Engineering Department students. The medium for this session was the Online due to the COVID-19 circumstances. Around 100 Students joined for this session on Google meet over the link <https://meet.google.com/iph-xtwb-qbb> The presentation was conducted by Asst. Prof. Ketankumar G Patel and Pratik B Patel at 12:30 on above video Link

The students who actively participated in this presentation session were more than 100 in number and got knowledge about components of Problem solving and ideation. The feedback from the students was overwhelming, when they came to know about this information.



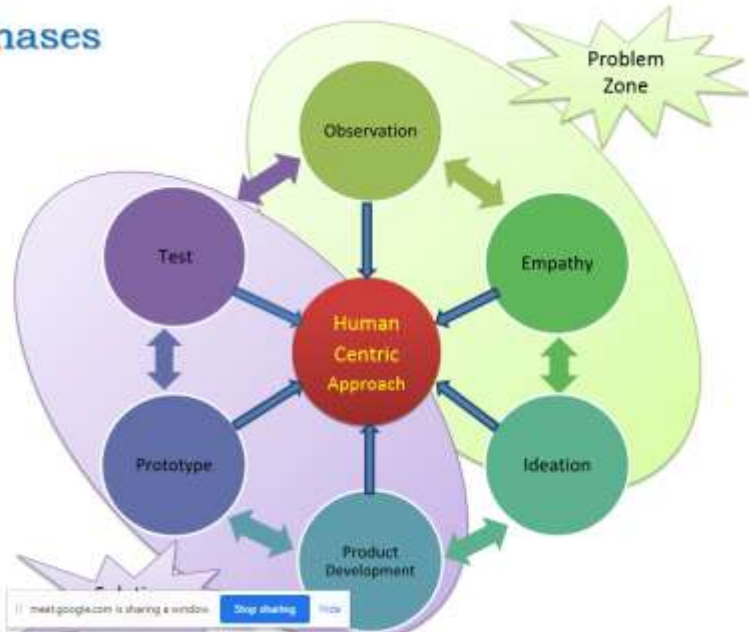
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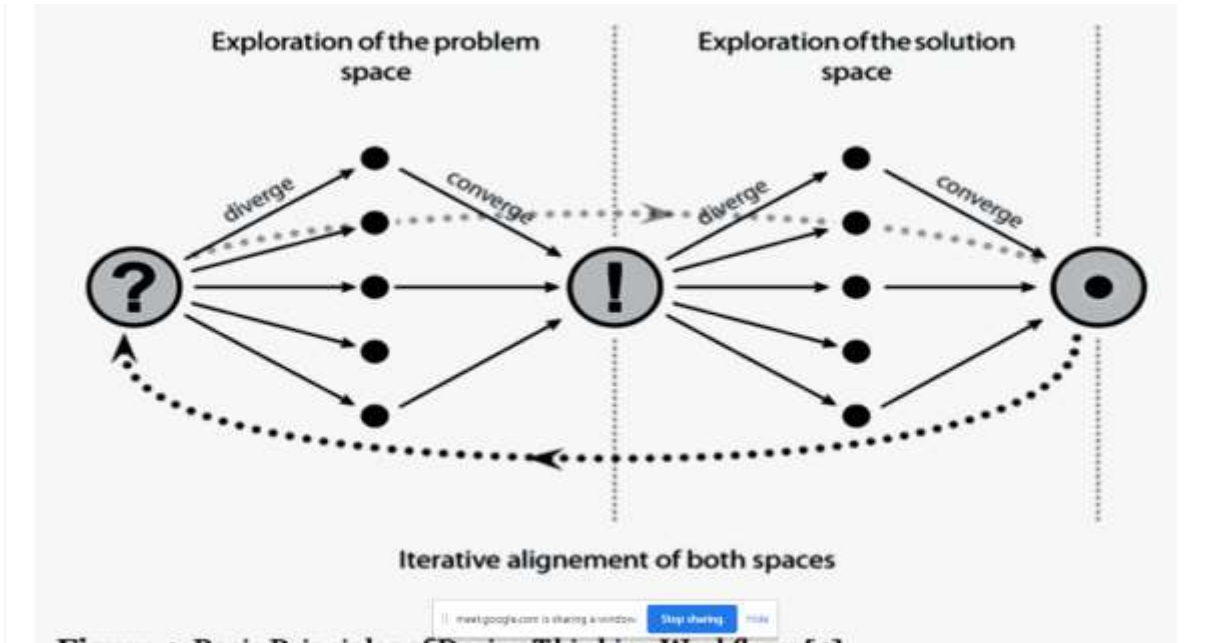


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Design Thinking - Phases





Feel the pain-

GOOD DESIGN COMES FROM THE HEART
NOT FROM THE BRAIN



Innovations..... that take away your pain



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Walkman + Pendrive =
(1979) (2000)

iPod
(2001)

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