

Research Methodology

Step 6: Finding your “Ping”
(Creativity and Innovation)

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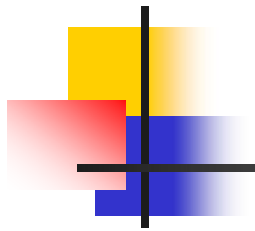


Outlines:

- What is Creativity?
- Creativity Categories
- Creativity Models
- Creativity Forms
- Convergent vs. divergent thinking
- What is Innovation?
- Innovation stages
- Distinguishing creativity and Innovation



What is Creativity?



Ping = Think + Do

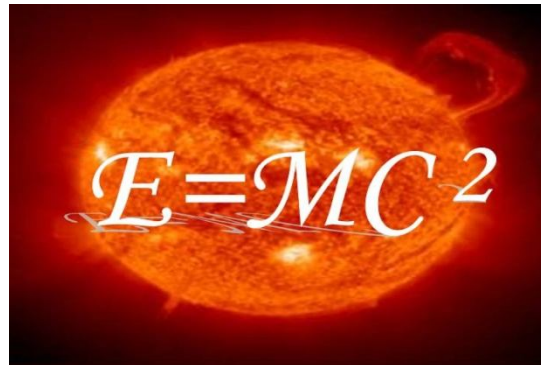
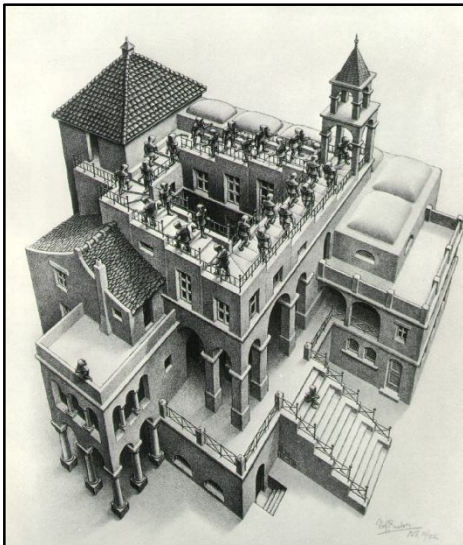




Creativity...

Ability to come up with ideas that are:

new, surprising and valuable



The creative process involves a set of mental operations;
The creative process is a natural process;



Creativity...

- Margaret Boden categorizes creativity into
 - P-creativity
 - H-creativity

P stands for psychological

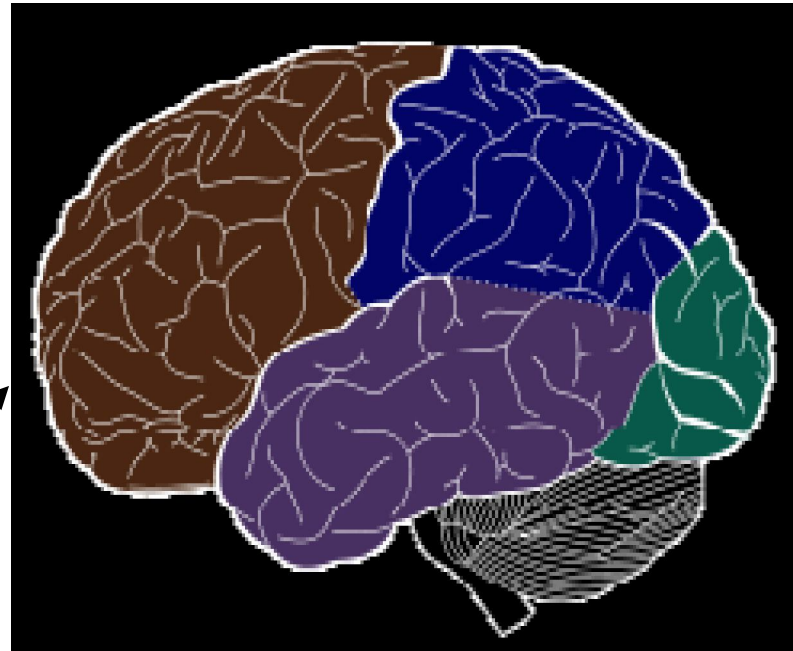
- A novel idea that is new to person who comes up with it.
- Example – student coming up with an idea which is new to him even if it exists in literature

H stands historical

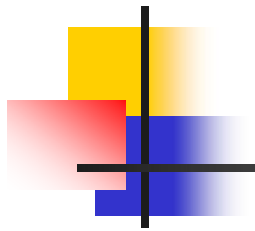
- A novel idea that is new to person who comes up with it and also new to everyone.
- This creativity interests to people like general audience, historians, encyclopedia users etc..

H-creativity is an instance of P-creativity

Responsible part of the brain
for creativity...



Frontal lobe

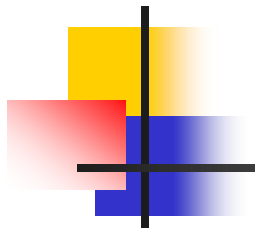


Creativity models...

Wallas model

- **Preparation:** we define the problem, need, or desire, and gather any information the solution or response needs to account for, and set up criteria for verifying the solution's acceptability
- **Incubation:** we step back from the problem and let our minds contemplate and work it through. Like preparation, incubation can last minutes, weeks, even years.

- **Illumination:** ideas arise from the mind to provide the basis of a creative response. These ideas can be pieces of the whole or the whole itself, i.e, seeing the entire concept or entity all at once. Unlike the other stages, illumination is often very brief, involving a tremendous rush of insights within a few minutes or hours
- **Verification:** the final stage, one carries out activities to demonstrate whether or not what emerged in illumination satisfies the need and the criteria defined in the preparation stage.



Creativity forms...

- **Combinational Creativity** (bridge)
- **Exploratory Creativity** (detector, finder)
- **Transformational Creativity** (evolution)



Convergent vs. divergent thinking...

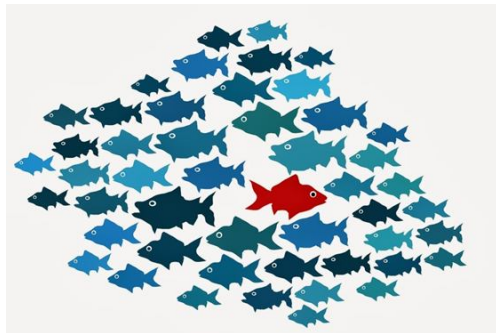
- Convergent thinking involves aiming for a single, correct solution to a problem
- Divergent thinking involves creative generation of multiple answers to a set problem

trial and error
brainstorming
Inspirational questions



Innovation...

the process and outcome of creating something new, which is also of value.



involves the **whole process** from opportunity identification, ideation or invention to development, prototyping, production marketing and sales, while entrepreneurship only needs to involve commercialization



Innovation...

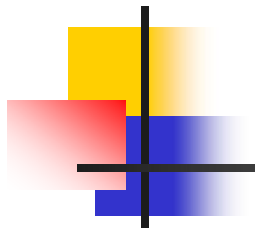
innovation comes about through new combinations made by an entrepreneur, resulting in

- A new answer,
- a new product,
- a new process,
- opening of new market,
- new way of organizing the business
- new sources of supply



Innovation stages...

1. **Basic research** (for general nature laws)
2. **Applied research** (for specific problems)
3. **Development** (design for prototyping)
4. **Engineering** (design for assembly)
5. **Manufacturing** (design for efficiency & quality)
6. **Marketing** (design for acceptance & affordability)
7. **Promotion** (design for diffusion and broadcasting)
8. **Improvement & enhancement** (design for sustainability)

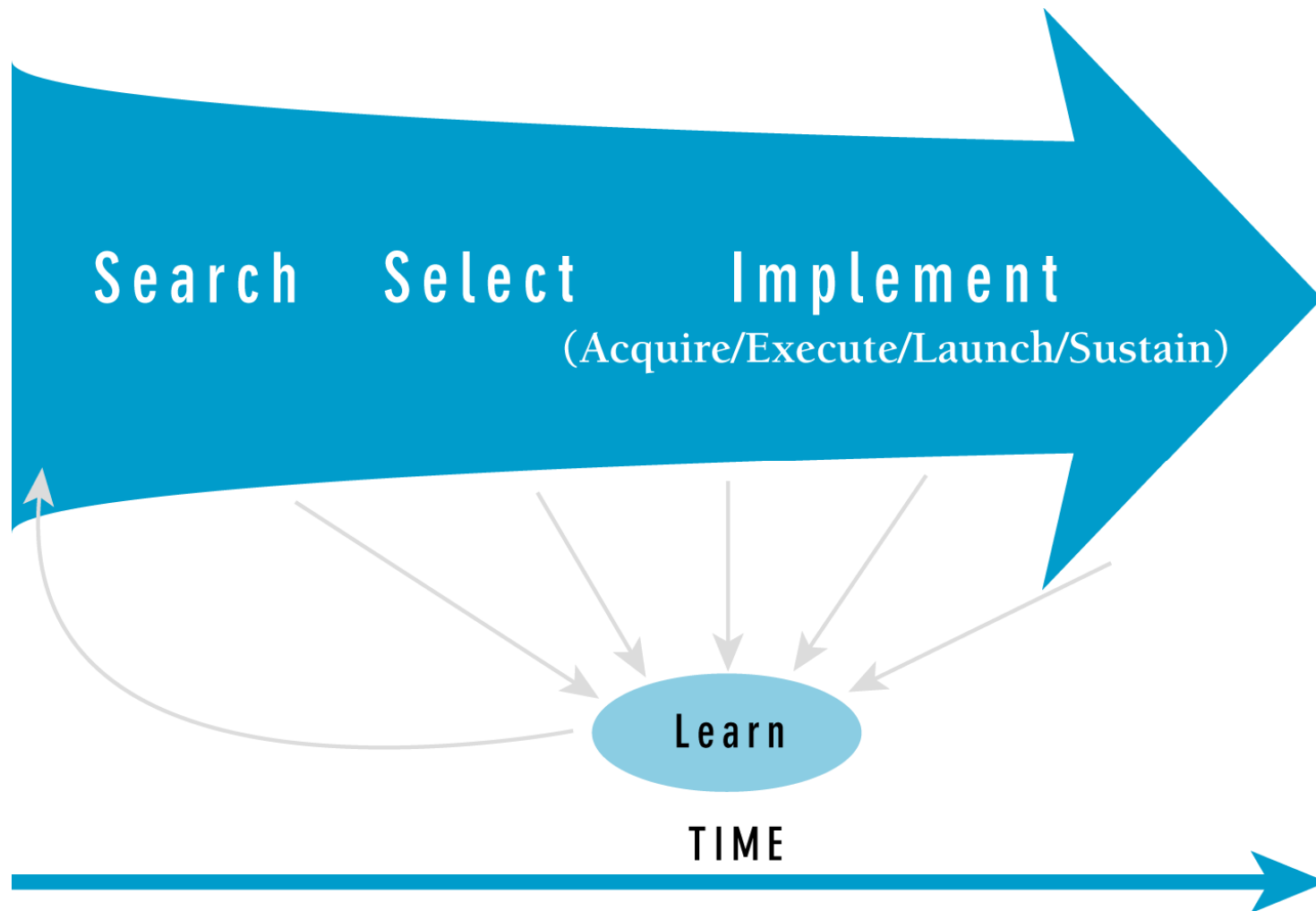


Distinguishing creativity and Innovation...

- Creativity is referred to the act of producing new and novel ideas
- While innovation is referred to the act of producing a new and novel idea and the idea is applied in some specific context
- Creativity is starting point for innovation
- Former necessary but not sufficient for latter

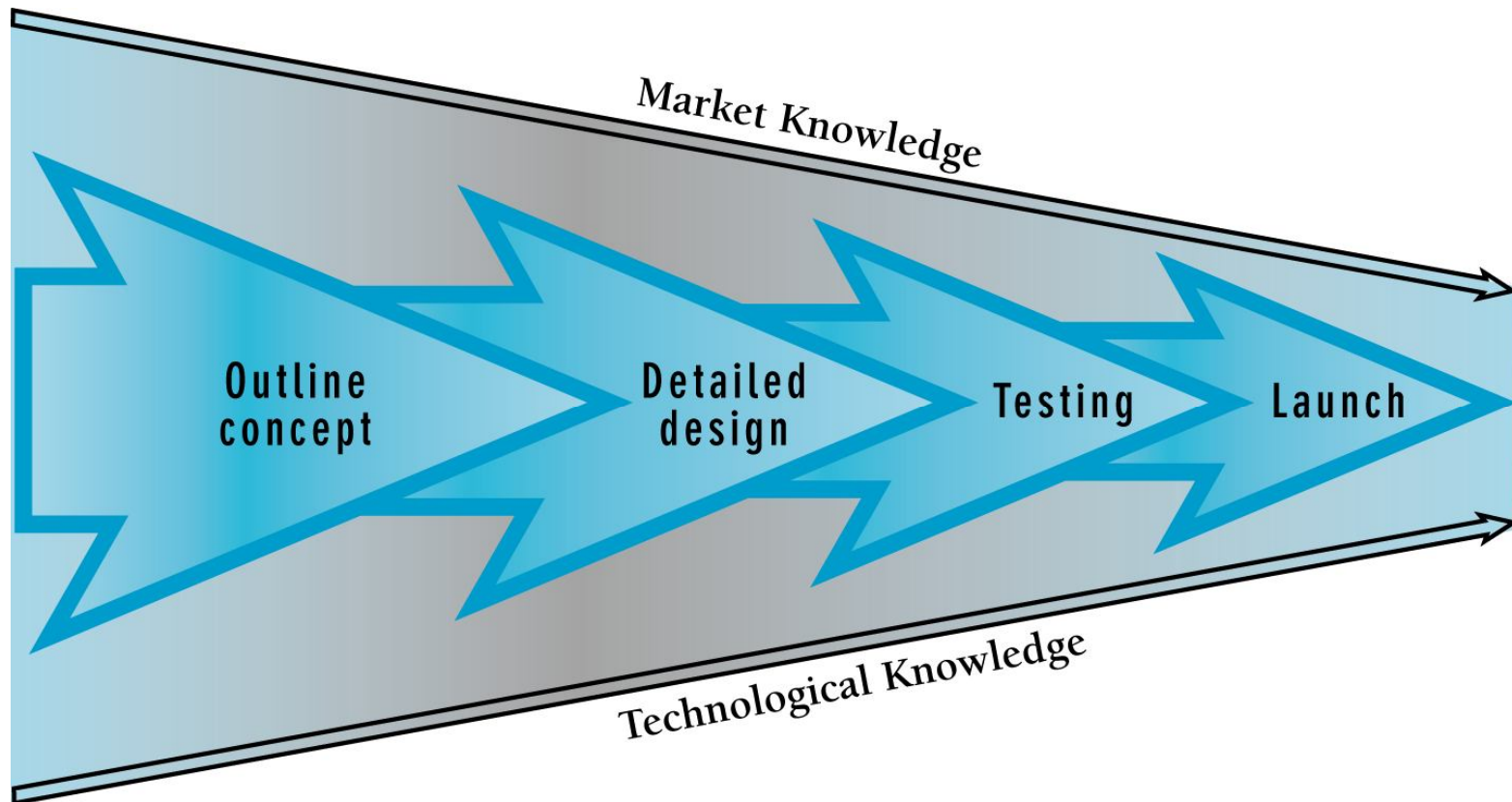


Innovation process from 0 to 100...



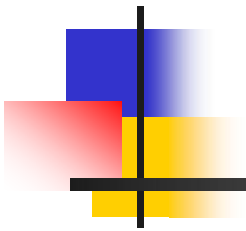


Development Funnel...



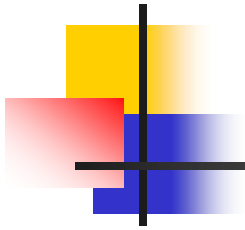
Methodology:

Creativity and Innovation



Next Session :

Step 7: Test and Analysis your research



*"There is no way to get
experience except
through experience."*