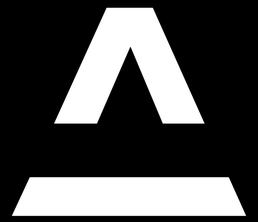

Design Thinking

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tesark.com

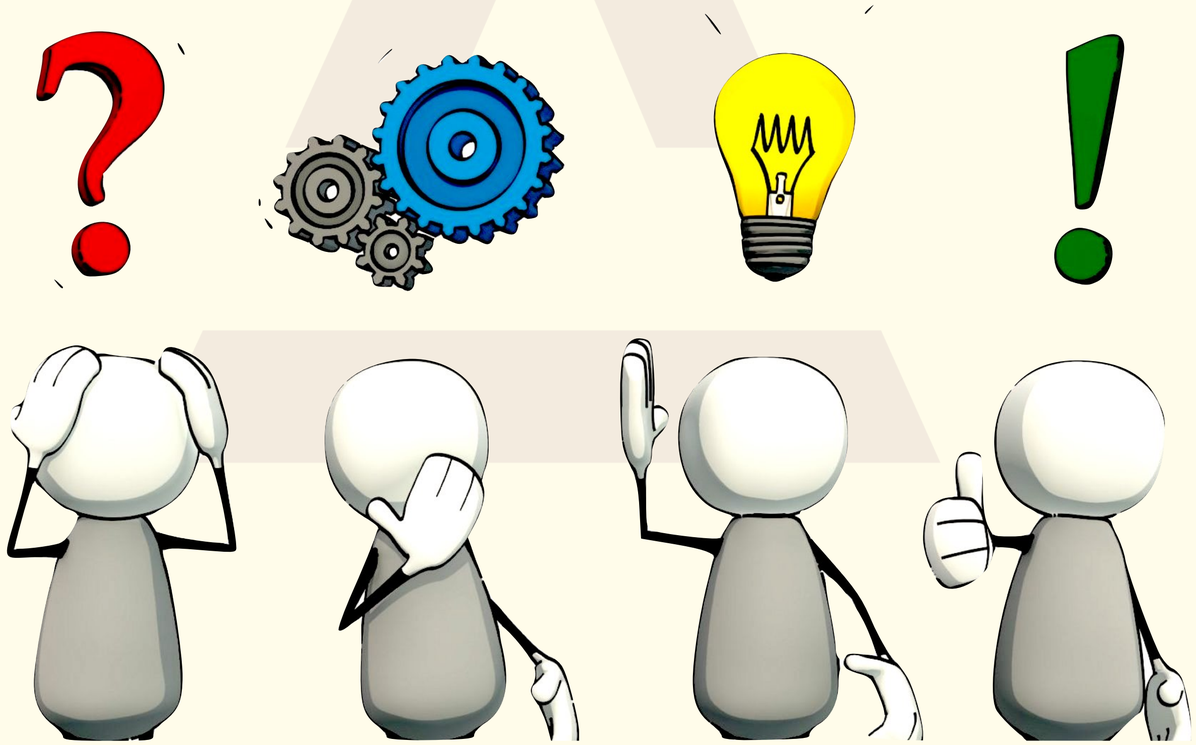
What you can expect

- Amateur Vs Pro
- Thinking about thinking
- What is Design Thinking
  - Its Process
  - Why ?
  - How ?
  - Where ?

No skill is more valuable and harder to come by than the ability to critically think through problems.

And schools don’t teach you a method of thinking, you have to do the work yourself.

Those who do it well get an advantage and those that do it poorly pay a tax.



Amateurs Vs Professionals

Why is it that some people seem to be hugely successful and do so much, while the vast majority of us struggle to walk?

The answer is complicated and likely multifaceted.

One aspect is **mindset**—specifically, the difference between amateurs and professionals.

Most of us are just amateurs.

What's the difference? Actually, there are many differences

The Difference Between Amateurs and Professionals

- Amateurs stop when they achieve something. **Professionals understand that the initial achievement is just the beginning.**
- Amateurs have a goal. **Professionals have a process.**
- Amateurs think they are good at everything. **Professionals understand their circles of competence.**
- Amateurs focus on identifying their weaknesses and improving them. **Professionals focus on their strengths and on finding people who are strong where they are weak.**
- Amateurs think knowledge is power. **Professionals pass on wisdom and advice.**
- Amateurs focus on being right. **Professionals focus on getting the best outcome.**

The Difference Between Amateurs and Professionals

- Amateurs focus on the short term. **Professionals focus on the long term.**
- Amateurs blame others. **Professionals accept responsibility.**
- Amateurs go faster. **Professionals go further.**
- Amateurs go with the first idea that comes into their head. **Professionals realize the first idea is rarely the best idea.**
- Amateurs think reality is what they want to see. **Professionals know reality is what's true.**
- Amateurs think disagreements are threats. **Professionals see them as an opportunity to learn.**

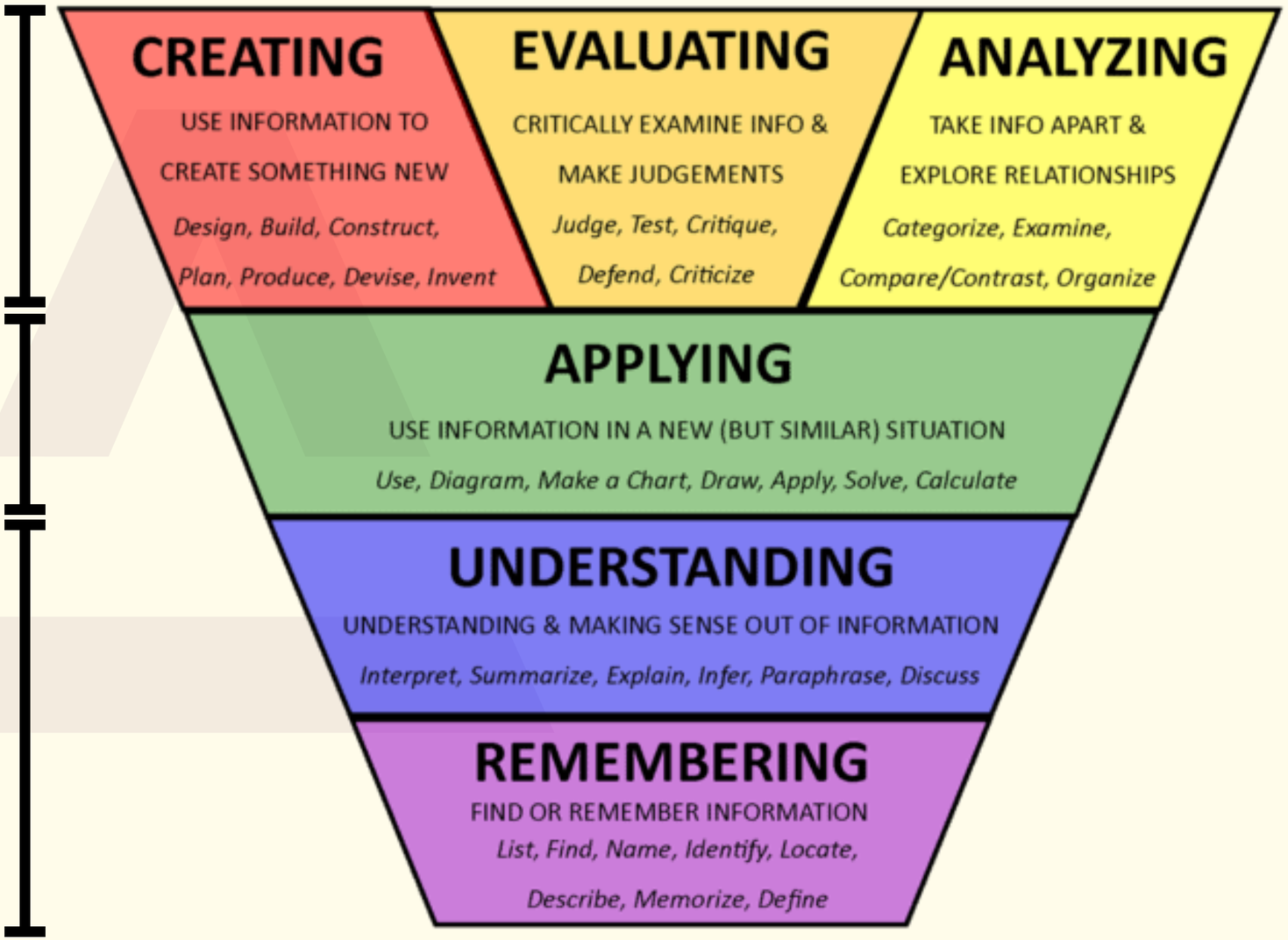
Thinking about thinking

- So one effective thing you can do if you want to think better is **to become better at probing other people's thinking**.
- Ask questions. Simple ones are better. "**Why**" is the best.
- If you ask that three or four times you get to a place where you're going to understand more and you'll be able to tell who really knows what they are talking about.
- Another thing you can do is to slow down. Make sure you give yourself time to think.

Higher thinking skill
(Entrepreneur , Startup, Product developer)

High thinking skill
(Job, IT Professional, Analyst)

Lower-level thinking skill
(Primary and Secondary Schools, Colleges)



Learning How To Think

- Learning how to think really means continuously learning.
- How can we do that?
- First we need **a framework** to put things on so we can remember, integrate, and make them available for use.
- And also you need to know how to apply this to other problems outside of the domain in which you learned it.
- ***Design Thinking*** *is one such framework*

Design Thinking Context

- It is a common misconception that design thinking is new.
- Design has been practiced for ages: monuments, bridges, automobiles, subway systems are all end-products of design processes. Throughout history, good designers have applied a human-centric creative process to build meaningful and effective solutions.
- We live and work in a world of interlocking systems, where many of the problems we face are dynamic, multifaceted, and inherently human.

What is design thinking ?

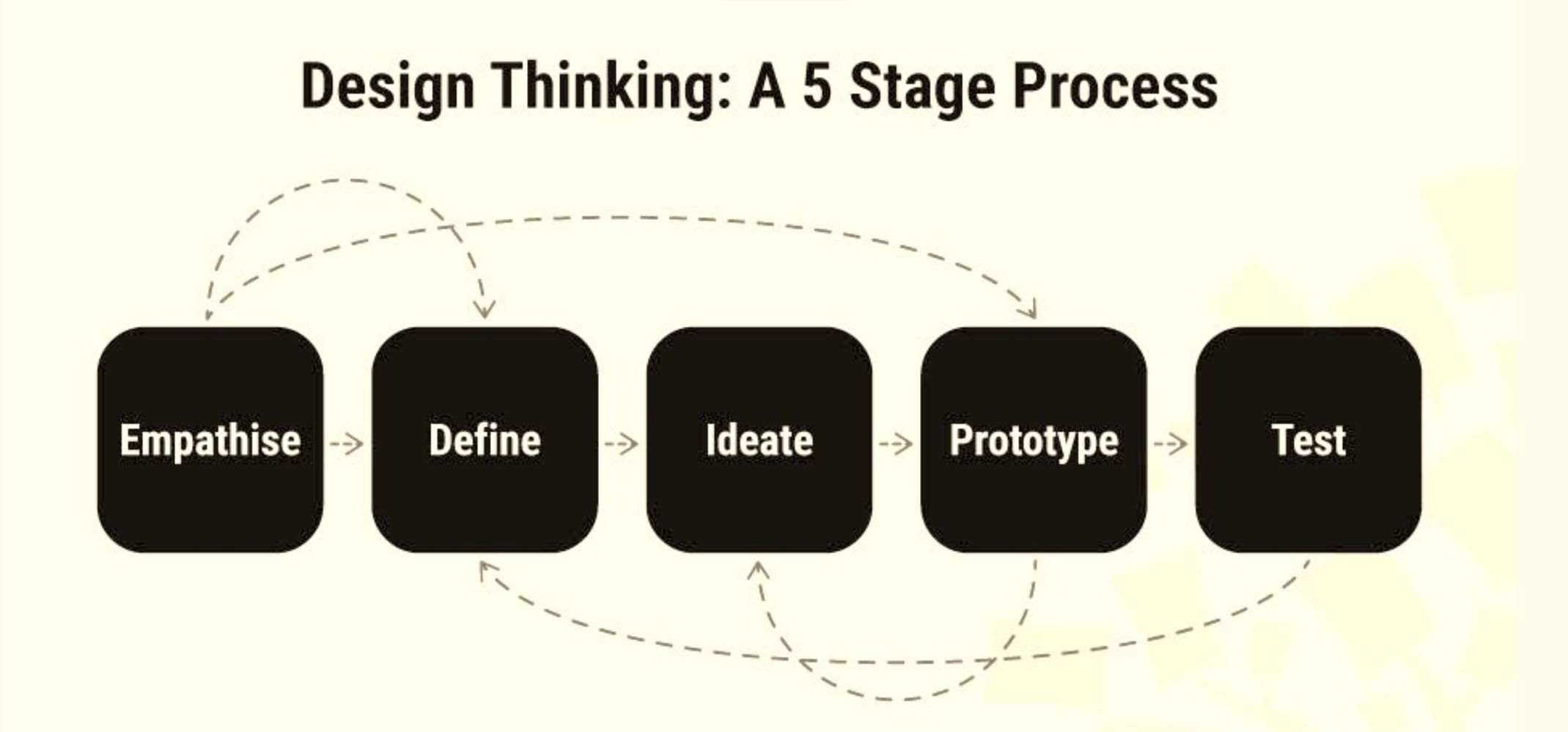
- There’s no single definition for design thinking. It’s an idea, a strategy, a method, and a way of seeing the world.
- It’s grown beyond the confines of any individual person or organization. And as it matures, its history deepens and its impact evolves.
- *To put it simply, design thinking is a way to solve problems through creativity.*
- In essence, the Design Thinking process is iterative, flexible and focused on collaboration between designers and users, with an emphasis on bringing ideas to life based on how real users think, feel and behave.

Prevalence

- Design Thinking is an approach that has been applied by organisations all over the world. In fact, 75% of organisations self-report that they are engaged in design thinking.
- All forms of professional design education can be assumed to be developing design thinking in students, even if only implicitly, but design thinking is also now explicitly taught in general as well as professional education, across all sectors of education.
- Design as a subject was introduced into secondary schools' educational curricula in the UK in the 1970s, gradually replacing and/or developing from some of the traditional art and craft subjects, and increasingly linked with technology studies.
- This development sparked related research studies in both education and design.

Where to Start ?

Design Thinking Process



What is the Empathize mode

- Empathy is the centerpiece of a human-centered design process.
- The Empathize mode is the work you do to understand people, within the context of your design challenge.
- It is your effort to understand the way they do things and why, their physical and emotional needs, how they think about world, and what is meaningful to them.

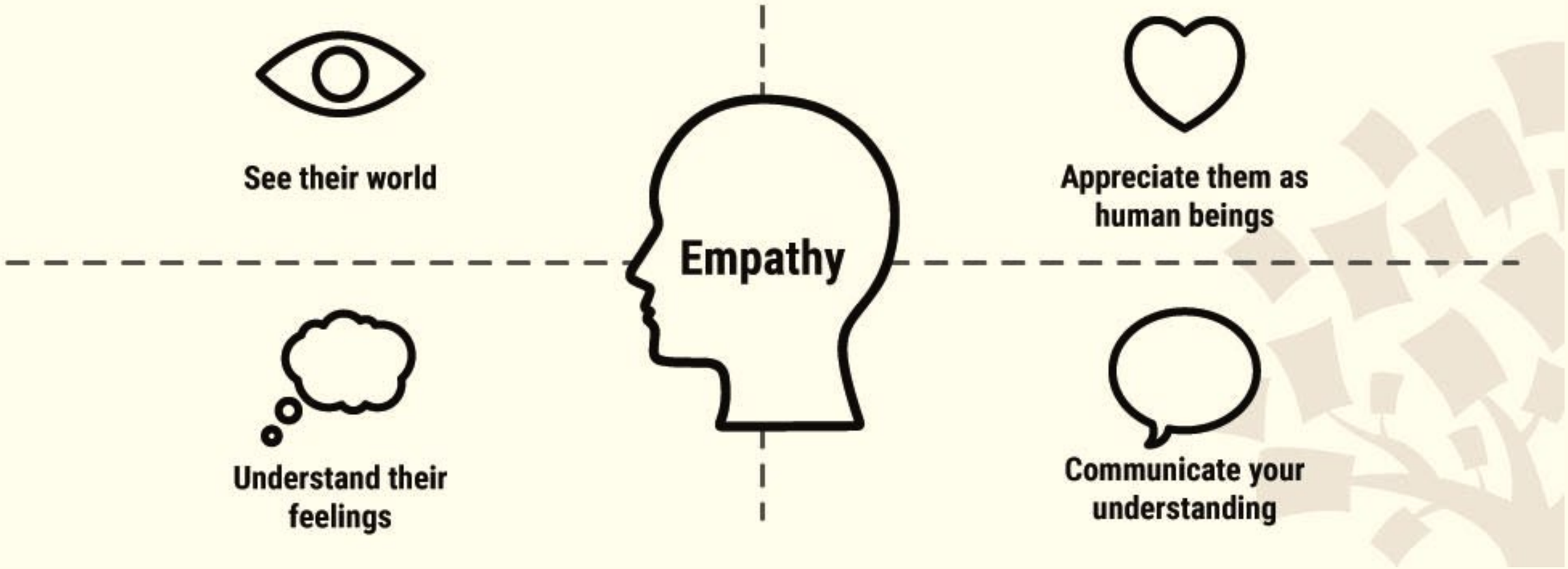
Learning about your user and about the context

Why Empathize

- the problems you are trying to solve are rarely your own—**they are those of a particular group of people** ; in order to design for them, you must gain empathy for who they are and what is important to them.
- They could be farmers community, people belonging to particular region, iPhone Users, Car Owners, or anybody for whom your trying to solve the problem or built a product for them.
- Observing what people do and how they interact with their environment gives you clues about what they think and feel. It also helps you learn about what they need.
- Good designs are built on a solid understanding of these beliefs and values.

How to Empathize

- **Observe.**
  View users and their behavior in the context of their lives
- **Engage.**
  Have a conversation, always ask “Why?” to uncover deeper meaning
- **Watch and Listen.**
  Have them physically go through the steps, and talk you through why they are doing what they do.


See their world
Appreciate them as human beings
Empathy
Understand their feelings
Communicate your understanding

Transition: Empathize >> Define

- Unpack: When you move from empathy work to drawing conclusions from that work, you need to process all the things you heard and saw in order to understand the big picture and grasp the takeaways of it all.
- Unpacking is a chance to start that process – sharing what you found with fellow designers and capturing the important parts in a visual form.
- Get all the information out of your head and onto a wall where you can start to make connections.
- This is the beginning of the synthesis process, which leads into a ‘Define’ mode.

WHAT is the Define mode

- The Define mode of the design process is all about bringing clarity and focus to the design space. It is your chance, and responsibility, as a design thinker to define the challenge you are taking on, based on what you have learned about your user and about the context.
- After becoming an instant-expert on the subject and gaining invaluable empathy for the person you are designing for, this stage is about **making sense of the widespread information you have gathered.**

“Framing the right problem is the only way to create the right solution.”

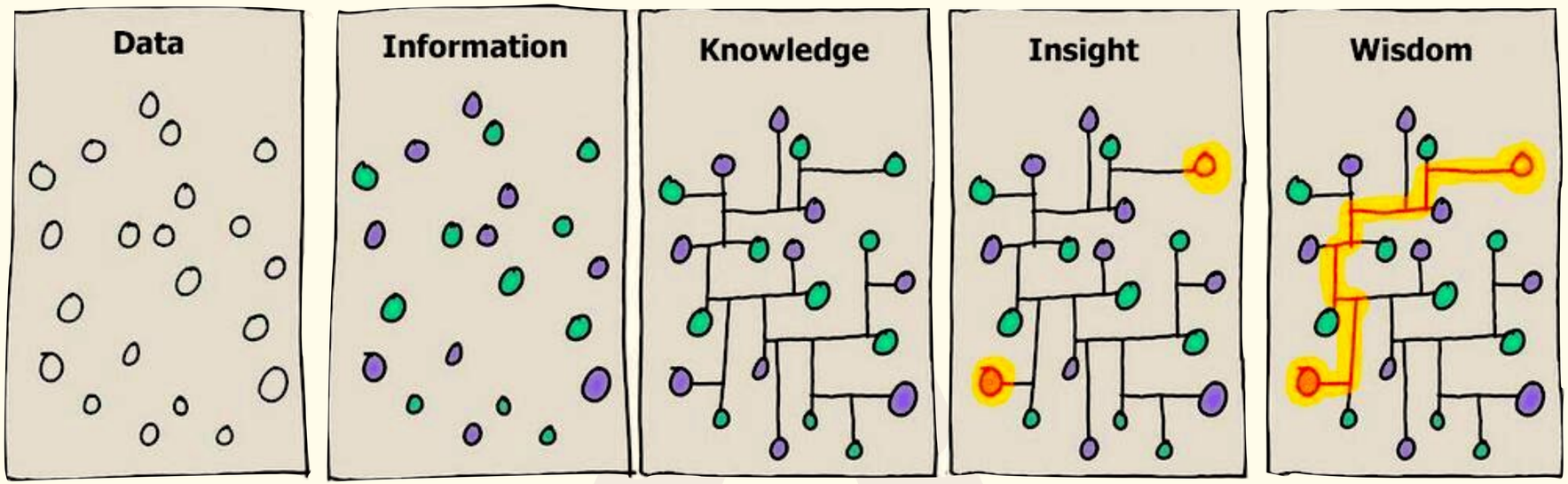
WHY Define

- The goal of the Define mode is to craft a meaningful and actionable problem statement – this is what we call a point-of-view.
- The Define mode is also an endeavor to synthesize your scattered findings into powerful insights.
- It is this synthesis of your empathy work that gives you the advantage that no one else has: discoveries that you can leverage to tackle the design challenge; that is, INSIGHT.

How Define

- Develop an understanding of the type of person you are designing for – your **USER**.
- Synthesize and select a limited set of **NEEDS** that you think are important to fulfill; you may in fact express a just one single salient need to address.
- Work to express **INSIGHTS** you developed through the synthesis of information your have gathered through empathy and research work.

*Then articulate a point-of-view by combining these three elements – **user, need, and insight** – as an actionable problem statement that will drive the rest of your design work.*



- Each new thing that you learn can be thought of as a dot.
- Connecting these dots creates this web of knowledge from where insight and wisdom can be drawn.
- A new dot might allow a new path to be drawn between two different areas of knowledge—a new bridge between two pieces of information.
- As more and more knowledge is added, the gaps in knowledge fade away, and the big picture reveals itself, becoming clear.

Transition: Define >> Ideate

- In the Define mode you determine the specific meaningful challenge to take on, and in the Ideate mode you focus on generating solutions to address that challenge.
- A well-scoped and -articulated point-of-view will lead you into ideation in a very natural way.
- In fact, it is a great litmus test of your point-of-view to see if brainstorming topics fall out your POV.

WHAT is the Ideate mode

- Ideate 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.

“It’s not about coming up with the ‘right’ idea, it’s about generating the broadest range of possibilities.”

WHY ideate

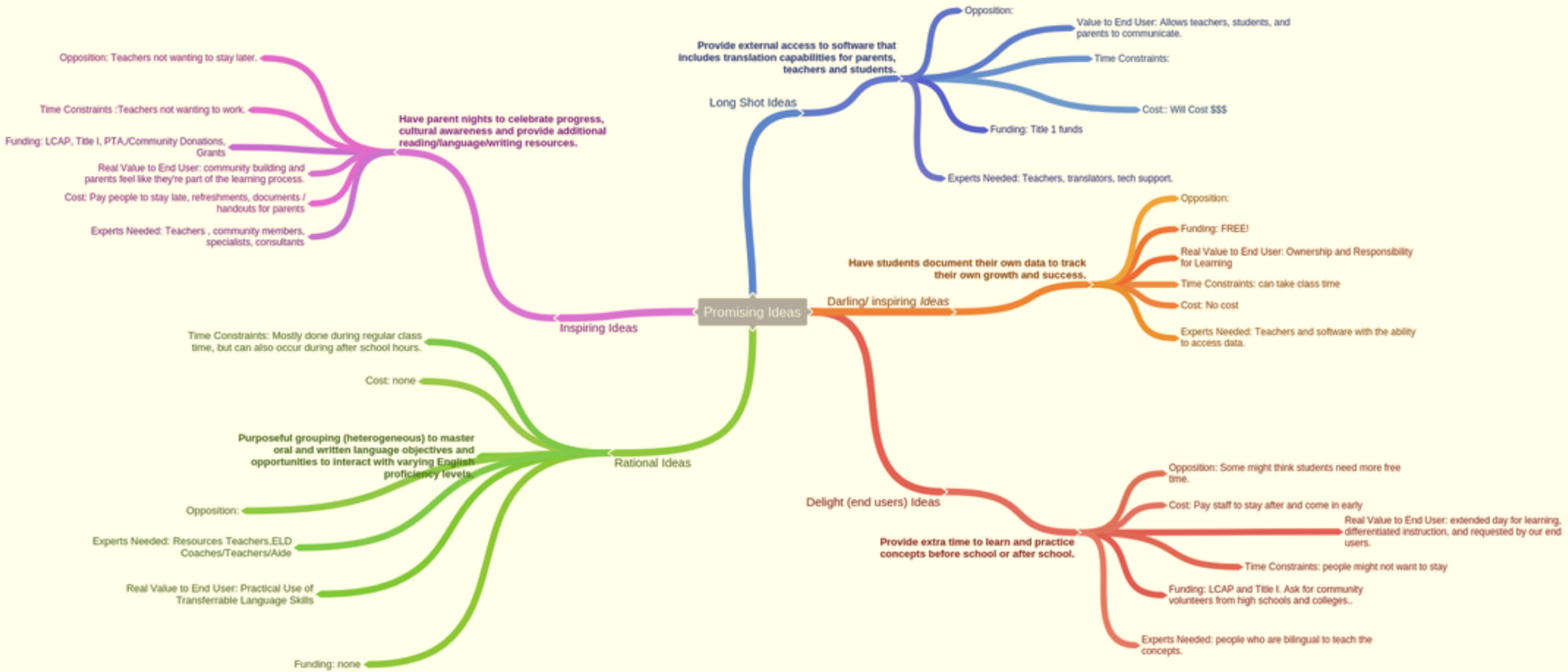
- You ideate in order to transition from identifying problems to creating solutions for your users.
- Ideation is your chance to combine the understanding you have of the problem space and people you are designing for with your imagination to generate solution concepts.
- Particularly early in a design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

HOW to ideate

- You ideate by combining your conscious and unconscious mind, and rational thoughts with imagination.
- For example, in a brainstorm you leverage the synergy of the group to reach new ideas by building on others' ideas.
- Adding constraints, surrounding yourself with inspiring related materials, and embracing misunderstanding all allow you to reach further than you could by simply thinking about a problem.
- Another ideation technique is building – that is, prototyping itself can be an ideation technique. In physically making something you come to points where decisions need to be made; this encourages new ideas to come forward.

Brainstorming

- Brainstorming is a great way to generate a lot of ideas that you would not be able to generate by just sitting down with a pen and paper.
- The intention of brainstorming is to leverage the collective thinking of the group, by engaging with each other, listening, and building on other ideas.
- Conducting a brainstorm also creates a distinct segment of time when you intentionally turn up the generative part of your brain and turn down the evaluative part.
- You can use brainstorming throughout any design or work process, of course, to generate ideas for design solutions, but also any time you are trying to generate ideas, such as planning where to do empathy work, or thinking about product and services related to your project.


Promising Ideas
Long Shot Ideas
Provide external access to software that includes translation capabilities for parents, teachers and students.
Opposition:
Value to End User: Allows teachers, students, and parents to communicate.
Time Constraints:
Cost:: Will Cost $$$
Funding: Title 1 funds
Experts Needed: Teachers, translators, tech support.
Darling/ inspiring Ideas
Have students document their own data to track their own growth and success.
Opposition:
Funding: FREE!
Real Value to End User: Ownership and Responsibility for Learning
Time Constraints: can take class time
Cost: No cost
Experts Needed: Teachers and software with the ability to access data.
Delight (end users) Ideas
Provide extra time to learn and practice concepts before school or after school.
Opposition: Some might think students need more free time.
Cost: Pay staff to stay after and come in early
Real Value to End User: extended day for learning, differentiated instruction, and requested by our end users.
Time Constraints: people might not want to stay
Funding: LCAP and Title I. Ask for community volunteers from high schools and colleges..
Experts Needed: people who are bilingual to teach the concepts.
Rational Ideas
Purposeful grouping (heterogeneous) to master oral and written language objectives and opportunities to interact with varying English proficiency levels.
Opposition:
Experts Needed: Resources Teachers,ELD Coaches/Teachers/Aide
Real Value to End User: Practical Use of Transferrable Language Skills
Funding: none
Time Constraints: Mostly done during regular class time, but can also occur during after school hours.
Cost: none
Inspiring Ideas
Have parent nights to celebrate progress, cultural awareness and provide additional reading/language/writing resources.
Opposition: Teachers not wanting to stay later.
Time Constraints :Teachers not wanting to work.
Funding: LCAP, Title I, PTA,/Community Donations, Grants
Real Value to End User: community building and parents feel like they're part of the learning process.
Cost: Pay people to stay late, refreshments, documents / handouts for parents
Experts Needed: Teachers , community members, specialists, consultants

OPINION WITHOUT JUDGMENT

BRAINSTORMING

BAD OPTIONS

ideas

ABOUT

What is the product?

What do we have to do?

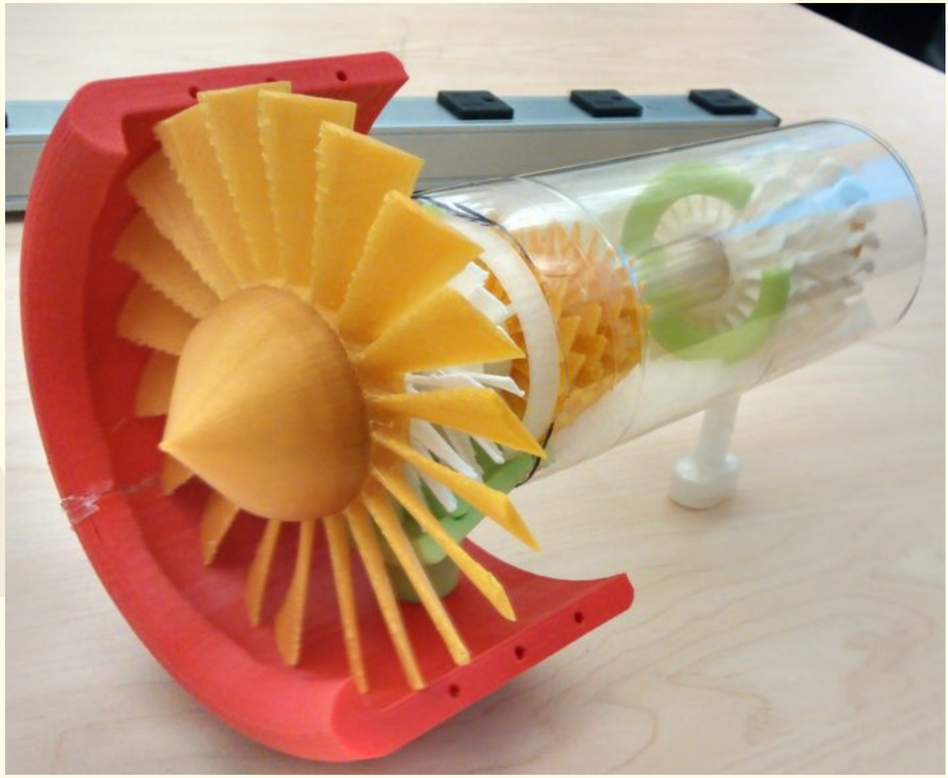
Why is it important for users?

Transition: Ideate >> Prototype

- In order to avoid losing all of the innovation potential you have just generated through ideation, we recommend a process of considered selection, by which you bring multiple ideas forward into prototyping, thus maintaining your innovation potential.
- As a team, designate three voting criteria like “the most likely to delight,” “the rational choice,” “the most unexpected” as potential criteria, to use to vote on three different ideas that your team generated during brainstorming.
- Carry the two or three ideas that receive the most votes forward into prototyping.
- In this way, you preserve innovation potential by carrying multiple ideas forward—a radically different approach than settling on the single idea that at least the majority of the team can agree upon.

WHAT is the Prototype mode

- The Prototype mode is the iterative generation of artifacts intended to answer questions that get you closer to your final solution.
- In the early stages of a project that question may be broad and should create low-resolution prototypes that are quick and cheap to make but can bring out useful feedback from users and colleagues.
- In later stages both your prototype and question may get a little more refined.
- “Build to think and test to learn.”



WHY prototype

- **To ideate and problem-solve.** *Build to think.*
- **To communicate.** *If a picture is worth a thousand words, a prototype is worth a thousand pictures.*
- **To fail quickly and cheaply.** *Committing as few resources as possible to each idea means less time and money invested up front.*
- **To test possibilities.** *Staying low-res allows you to pursue many different ideas without committing to a direction too early on.*
- **To manage the solution-building process.** *Identifying a variable also encourages you to break a large problem down into smaller, testable chunks.*

HOW to prototype

- You can learn a lot from a very simple prototype
- **Start building.** Even if you aren't sure what you're doing, the act of picking up some materials will be enough to get you going.
- **Don't spend too long on one prototype.** Let go before you find yourself getting too emotionally attached to any one prototype.
- **ID a variable.** Identify what's being tested with each prototype. A prototype should answer a particular question when tested. That said, don't be blind to the other tangential understanding you can gain as someone responds to a prototype.
- **Build with the user in mind.** What do you hope to test with the user? What sorts of behavior do you expect? Answering these questions will help focus your prototyping and help you receive meaningful feedback in the testing phase.

Transition: Prototype >> Test

- Prototype and Test are modes that you consider in tandem more than you transition between.
- What you are trying to test and how you are going to test that aspect are critically important to consider before you create a prototype.
- Though prototyping and testing are sometimes entirely intertwined, it is often the case that planning and executing a successful **testing scenario is a considerable additional step after creating a prototype.**

WHAT is the Test mode

- The Test mode is when you ask for feedback, about the prototypes you have created, from your users and have another opportunity to gain empathy for the people you are designing for.
- Testing is another opportunity to understand your user, but unlike your initial empathy mode, you have now likely done more structuring of the problem and created prototypes to test. Ideally you can test within a real context of the user's life.
- *For a physical object, ask people to take it with them and use it within their normal routines.*
- *For an experience, try to create a scenario in a location that would capture the real situation.*
- *If testing a prototype in situation is not possible, frame a more realistic situation by having users take on a role or task when approaching your prototype.*
- A rule of thumb: always **prototype as if you know you're right, but test as if you know you're wrong**—testing is the chance to refine your solutions and make them better.

“Testing is an opportunity to learn about your solution and your user.”

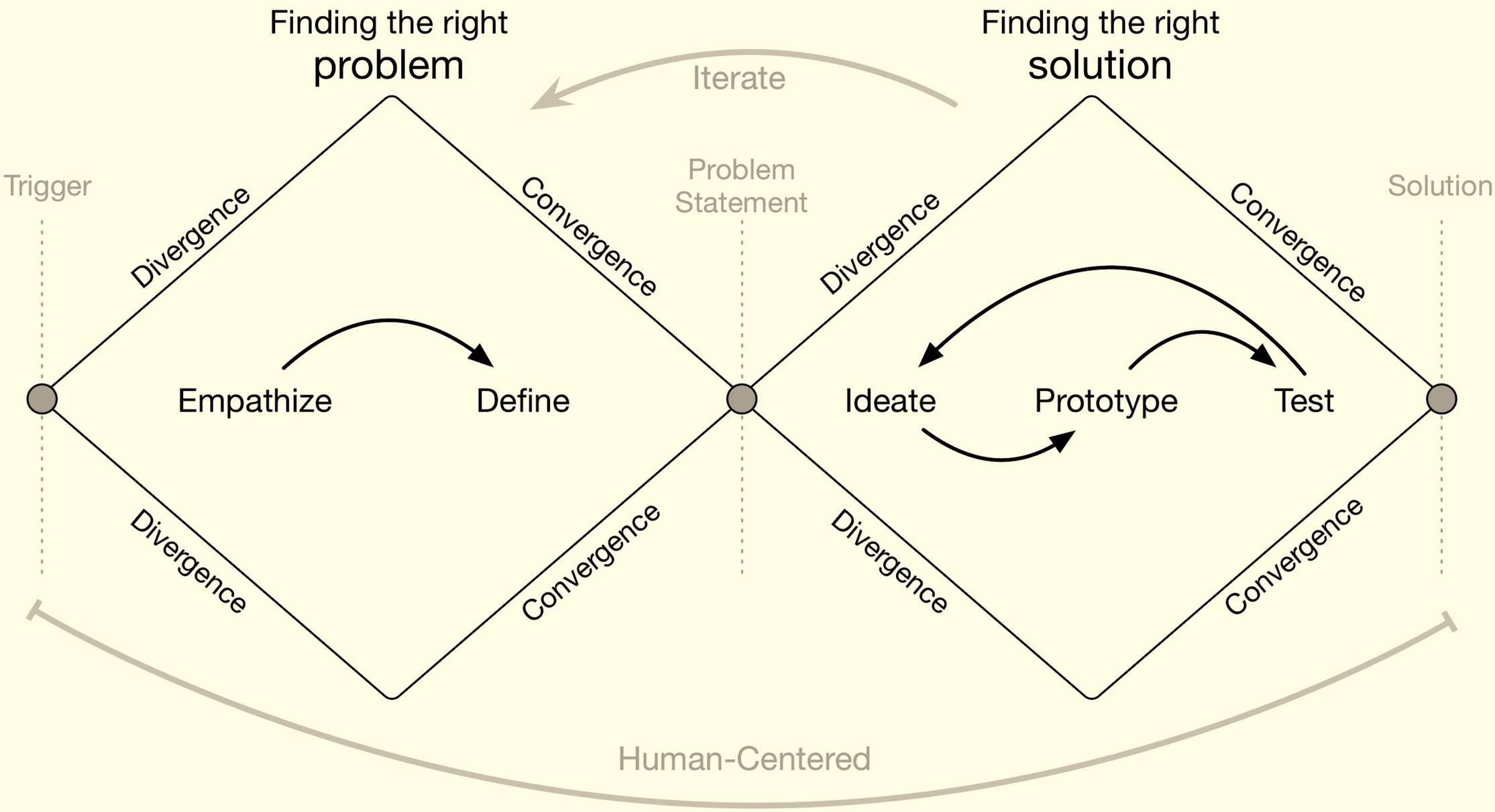
HOW to test

- **Show don’t tell.** Put your prototype in the user’s hands – or your user within an experience. And don’t explain everything (yet). Let your tester interpret the prototype. Watch how they use (and misuse!) what you have given them, and how they handle and interact with it; then listen to what they say about it, and the questions they have.
- **Create Experiences.** Create your prototypes and test them in a way that feels like an experience that your user is reacting to, rather than an explanation that your user is evaluating.
- **Ask users to compare.** Bringing multiple prototypes to the field to test gives users a basis for comparison, and comparisons often reveal latent needs.

Iteration

Empathize | Define | Ideate |Prototype

- Iteration is a fundamental of good design.
- Iterate both by cycling through the process multiple times, and also by iterating within a step—for example by creating multiple prototypes or trying variations of a brainstorming topics with multiple groups.
- Generally as you take multiple cycles through the design process your scope narrows and you move from working on the broad concept to the nuanced details, but the process still supports this development.


Finding the right
problem
Finding the right
solution
Iterate
Trigger
Problem
Statement
Solution
Divergence
Convergence
Divergence
Convergence
Empathize
Define
Ideate
Prototype
Test
Divergence
Convergence
Divergence
Convergence
Human-Centered

Make the process your own

- The process presented here is one suggestion of a framework; ultimately you will make the process your own and adapt it to your style and your work.
- Hone your own process that works for you.
- Most importantly, as you continue to practice innovation you take on a designer mindset that fill the way you work, regardless of what process you use.

Analogies

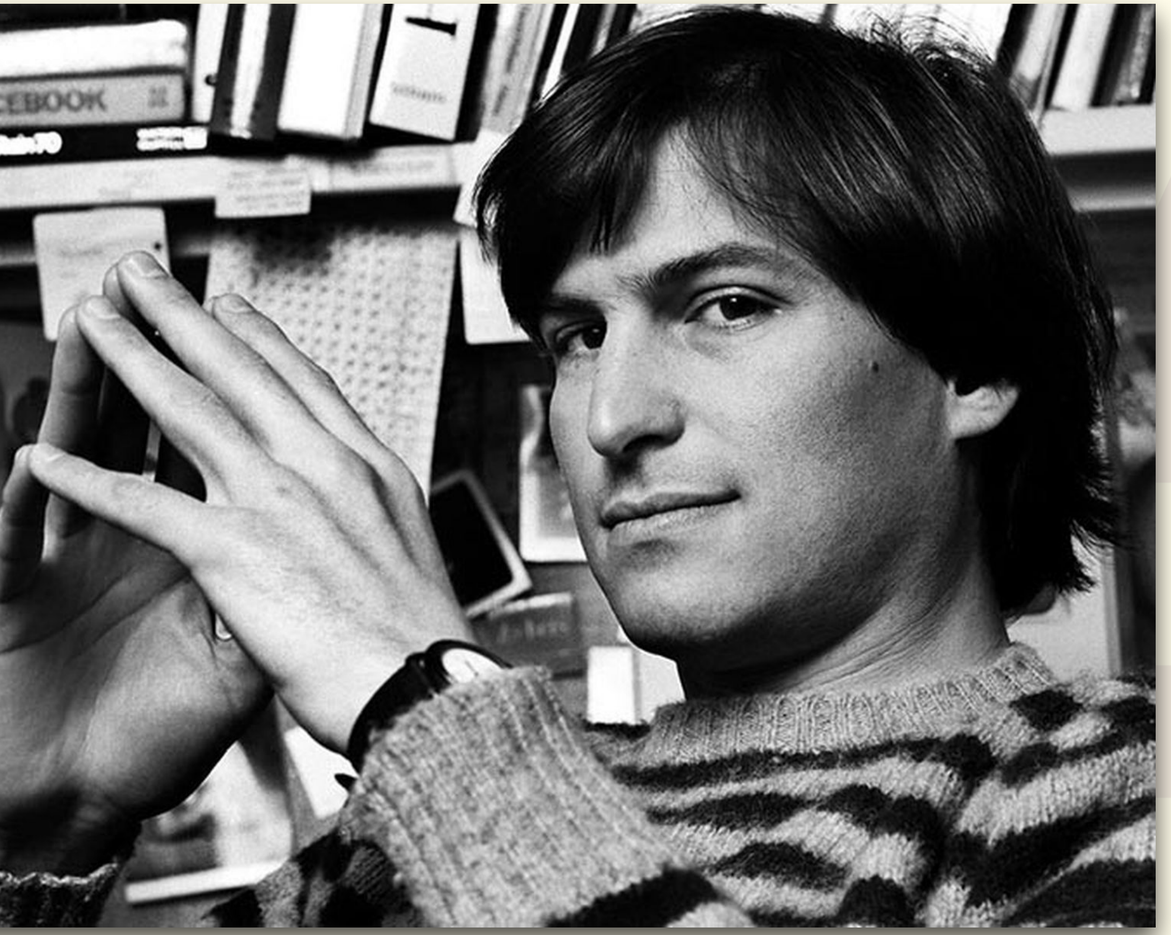
User Experience, Scientific Method, Agile and Design Thinking could be considered more like mindsets. They’re all approaches that focus on action and human (or natural) centred experiences that guide the team to the correct outcome.

- Agile methods are used more and more frequently to develop prod- ucts to reduce development time. However, for developing desirable products with good user experience, Agile methods alone are not enough.
-

When to use DT?

- **When facing a complex challenge!** - *Complex challenges work exactly the opposite way! There just isn't a proven way to solve the issue and get it done.*
- **When facing a human centered challenge** - *we are able to create a solution that builds on the user's current behavior, needs, wishes and habits and this way allowing for easy adaptation.*
- **Systemic Problems Need Systemic Solutions**

Design Thinking is an exploratory approach used in the face of a complex challenge where the problem behind the problem isn't really understand and a convincing solution isn't obvious.



“Design is not just what it looks like and feels like. Design is how it works.”

Steve Jobs