DESIGN THINKING

Design thinking is both an ideology and a process, concerned with solving complex problems in a highly user-centric way.

Design thinking is an approach used for practical and creative problem-solving. It is based heavily on the methods and processes that designers use (hence the name), but it has actually evolved from a range of different fields—including architecture, engineering and business.

Features of design thinking

- **User-c entered**:

This technique puts the user at the center of the process, prioritizing their needs, motivations, and context. In this way, it ensures that the products and services developed really satisfy their desires, avoiding solutions that are merely intuitive or based on assumptions.

- **Iterative and non-linear**

It is characterized by its iterative nature, where each stage of the process is continuously fed back and fine-tuned. This allows for greater flexibility and adaptability, enabling ideas and solutions to evolve based on the learnings obtained during experimentation and user testing

Collaborative and multidisciplinary:

Collaboration between disciplines, such as design, engineering, psychology, or business, allows problems to be addressed in a comprehensive manner and to take into account multiple factors that impact the final solution.

Focused on action:

Design Thinking puts into practice the principle of "learning by doing". Through rapid prototyping and user testing, ideas are materialized and valuable feedback is obtained early in the process.

THE 4 PRINCIPLES OF DESIGN THINKING

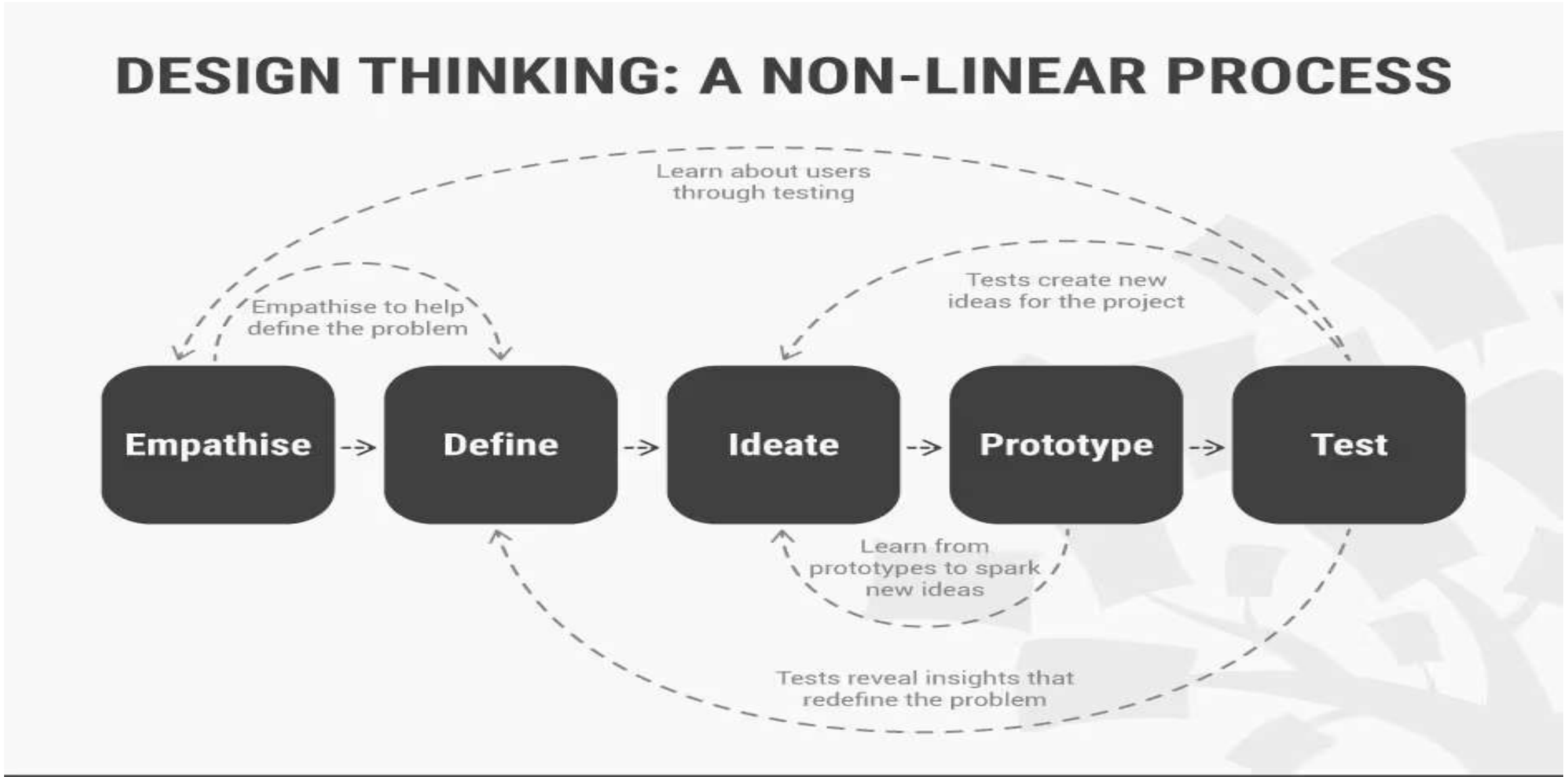
1. THE HUMAN RULE
All design activity is social in nature

2. THE AMBIGUITY RULE
Ambiguity is inevitable — experiment at the limits of your knowledge!

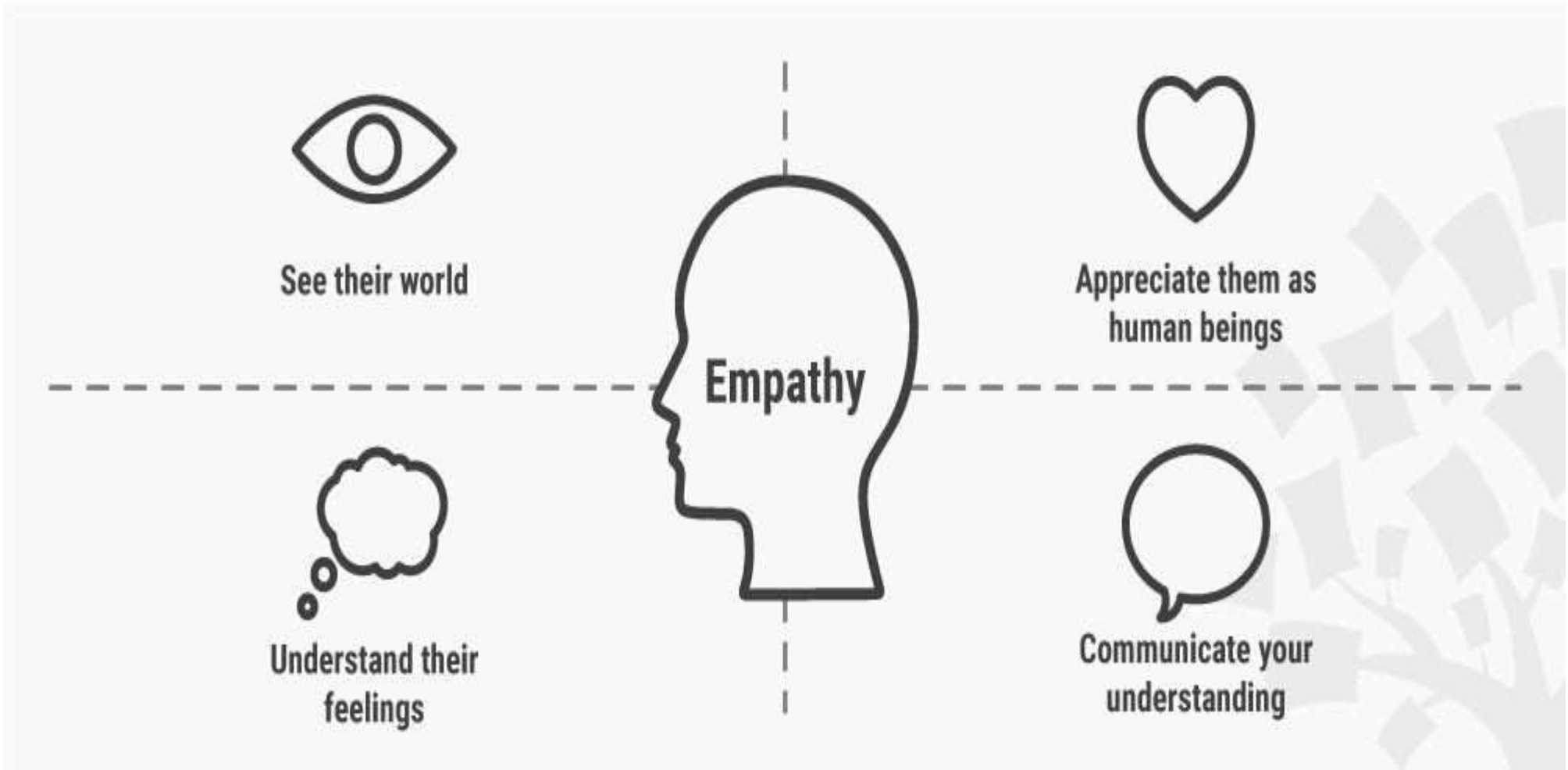
3. ALL DESIGN IS REDESIGN
While technology and social circumstances may change, basic human needs remain unchanged.

4. THE TANGIBILITY RULE
Prototypes help to make ideas tangible, enabling designers to communicate them effectively.

DESIGN THINKING STAGES



EMPATHIZE


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

"Engaging with people directly reveals a tremendous amount about the way they think and the values they hold. Sometimes these thoughts and values are not obvious to the people who hold them. A deep engagement can surprise both the designer and the designee by the unanticipated insights that are different from what they actually do - are strong indicators of their deeply held beliefs about the way the world is."

– d. School Boot camp Bootleg, 2013

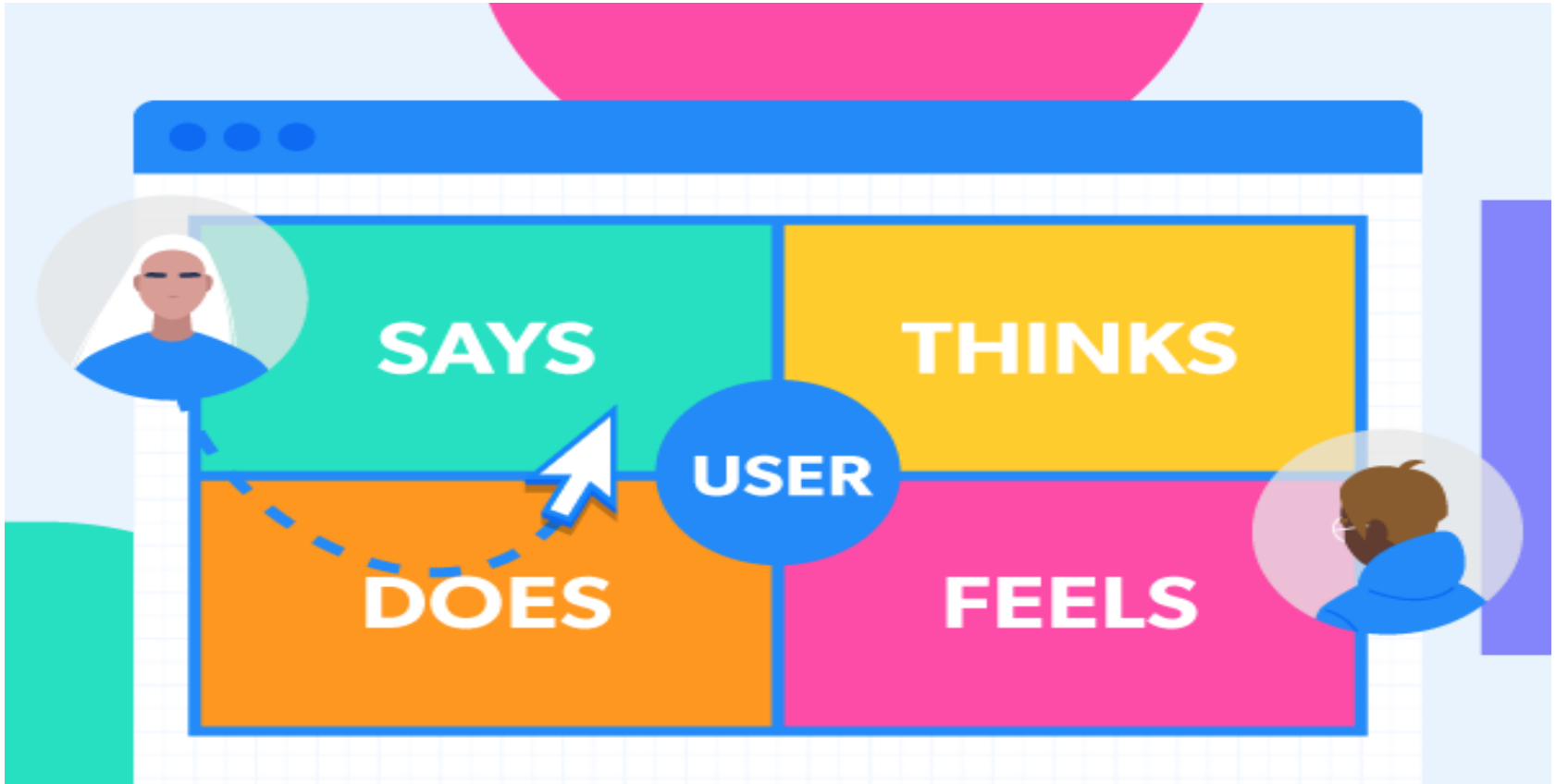
Empathy is the first step in design thinking because it is a skill that allows us to understand and share the same feelings that others feel.

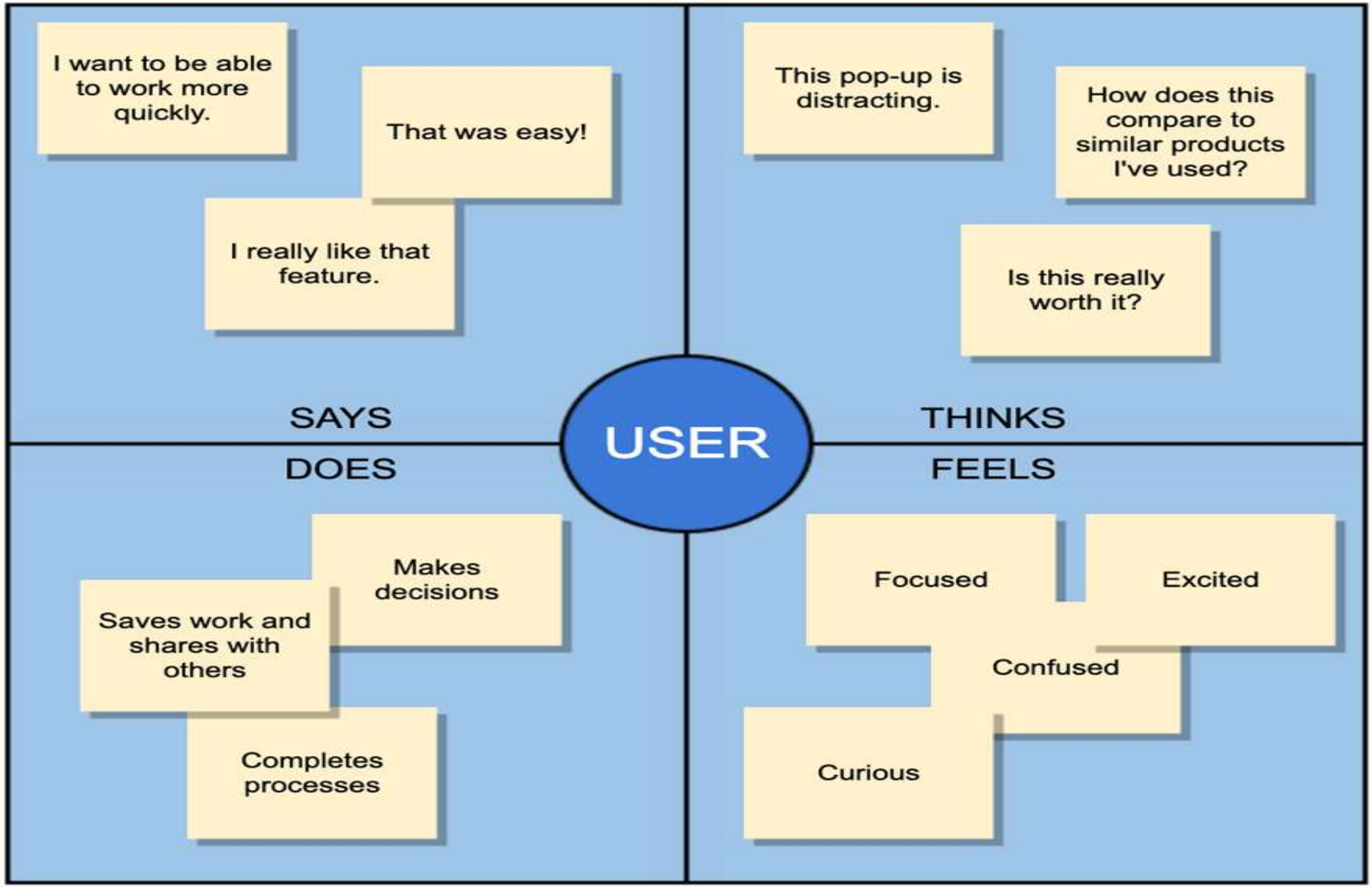
METHODS OF EMPATHY BUILDING

- *User Research and Interviews*
- *Empathy Mapping*
- *User Personas*
- *Storytelling*
- *Immersion and Observation*
- *Adopt an Empathic Approach*

EMPATHY MAP

An empathy map is a diagram with four quadrants that illustrates a product team's knowledge of users' thoughts, feelings, and actions.




I want to be able to work more quickly.
That was easy!
I really like that feature.
This pop-up is distracting.
How does this compare to similar products I've used?
Is this really worth it?
SAYS
USER
THINKS
DOES
FEELS
Makes decisions
Saves work and shares with others
Completes processes
Focused
Excited
Confused
Curious

DEFINE

The Define stage of Design Thinking first identifies the problem designers are trying to solve. This keeps everyone oriented to the same solution. This stage also helps to define the problem in the most beneficial way: it should be broad but not too obscure and narrow but not too limiting.

IDEATE

Ideation is a creative process where designers generate ideas in sessions. Participants gather with open minds to produce as many ideas as they can to address a problem statement in a facilitated, judgment-free environment.

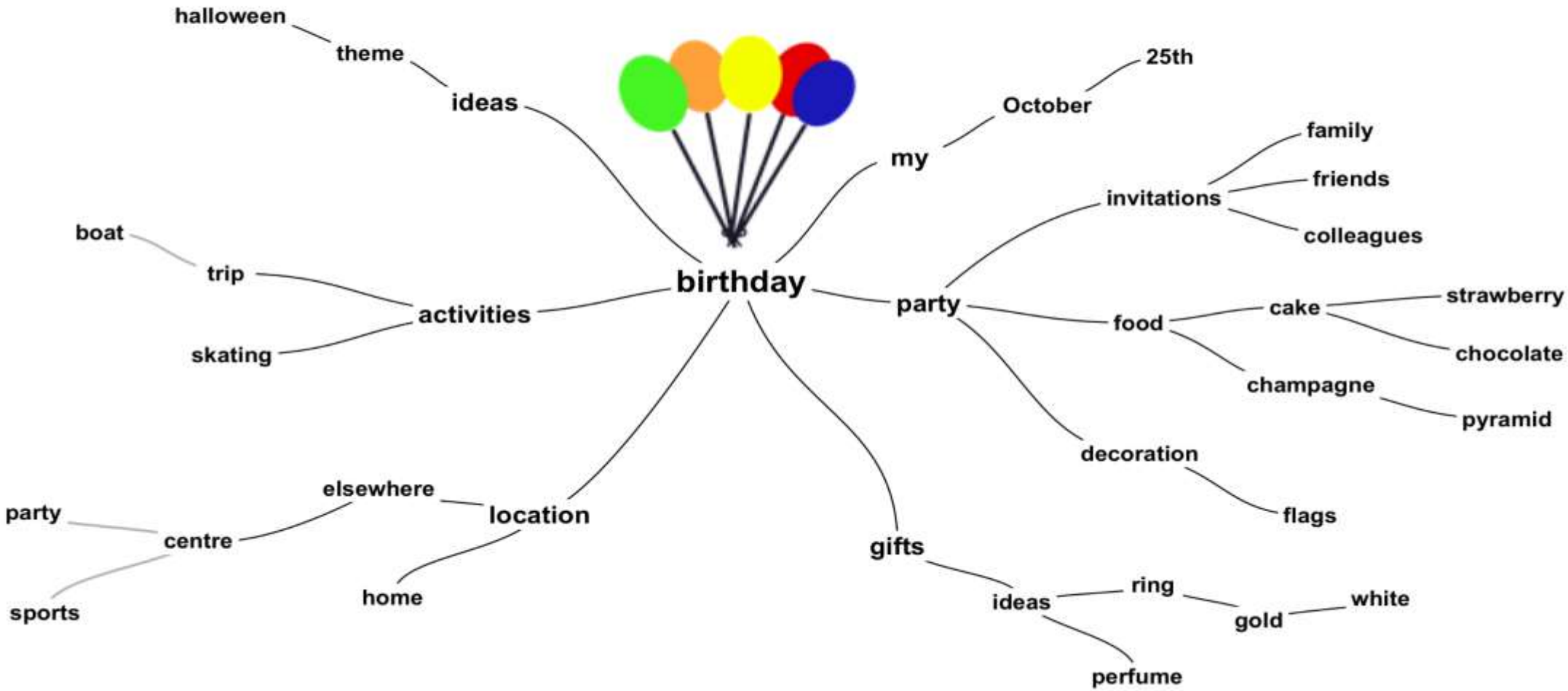
IDEATION METHODS

- ***Brainstorm:*** *Brainstorming is a group problem-solving method that involves the spontaneous contribution of creative ideas and solutions.*

- ***Brain dump:*** *Brain dump is very similar to Brainstorm, however it's done individually. The participants write down their ideas on post-it notes and share their ideas later with the group.*

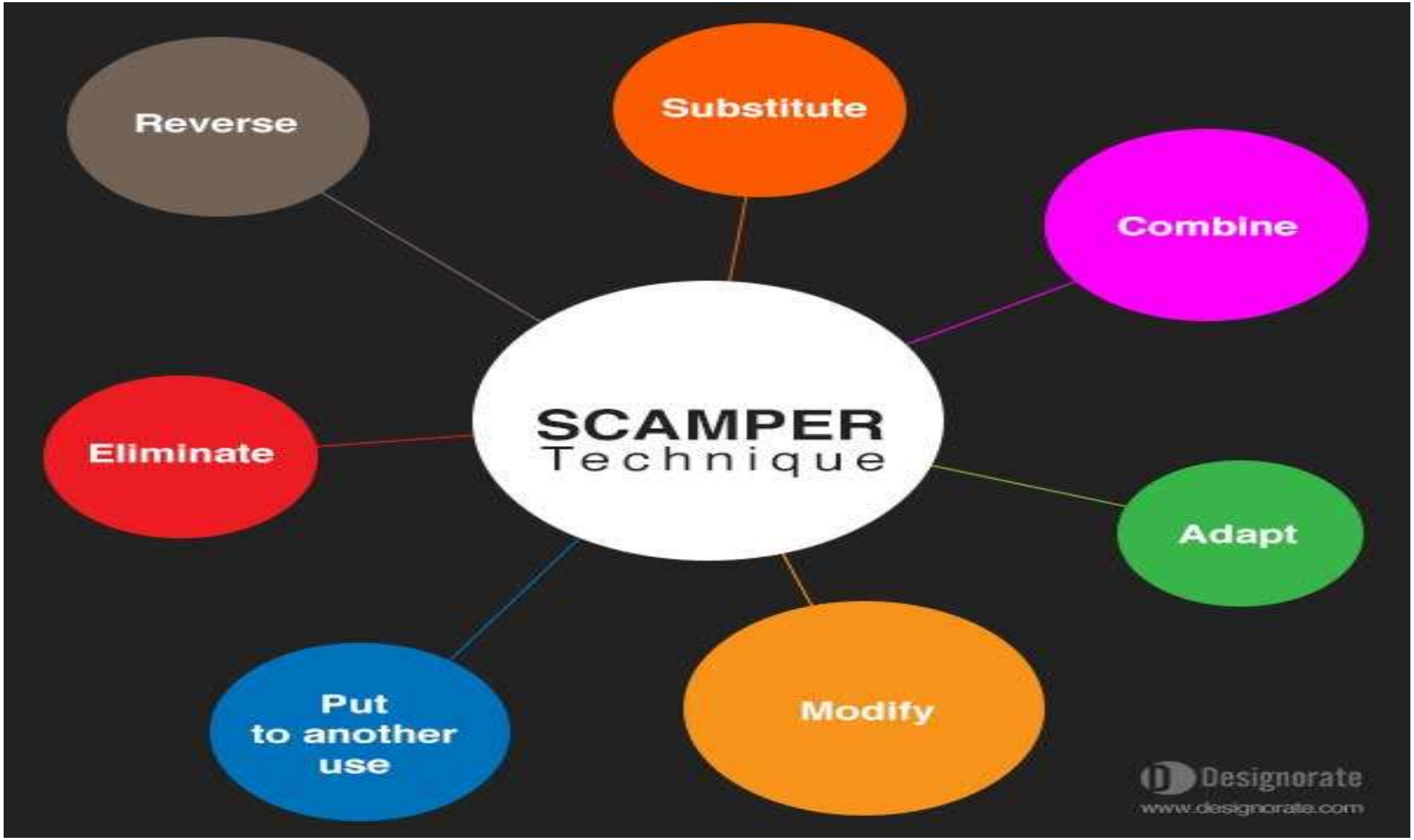
- ***Brain write:*** *The participants write down their ideas on paper and, after a few minutes, they pass on their own piece of paper to another participant who'll then elaborate on the first person's ideas and so forth. Another few minutes later, the individual participants will again pass their papers on to someone else and so the process continues. After about 15 minutes, you will collect the papers and post them for instant discussion.*

- ***Mind map:*** *Mind mapping is a graphical technique in which participants build a web of relationships. To get started with the simplest form of mind mapping, the participants write a problem statement or key phrase in the middle of the page. Then, they write solutions and ideas that comes to their mind on the very same page. After that, participants connect their solutions and ideas by curves or lines to its minor or major (previous or following) fact or idea*


birthday
my
October
25th
party
invitations
family
friends
colleagues
food
cake
strawberry
chocolate
champagne
pyramid
decoration
flags
gifts
ideas
ring
gold
white
perfume
location
elsewhere
party
centre
sports
home
activities
trip
boat
skating
ideas
theme
halloween

- ***SCAMPER***

The SCAMPER method is a structured tool used to initiate the creative process. It emphasizes altering familiar concepts or materials to create something new. SCAMPER encourages people to take an old idea and substitute (S), combine (C), adapt (A), modify (M), put to another use (P), eliminate (E), and reverse (R).


Reverse
Substitute
Combine
Eliminate
SCAMPER
Technique
Adapt
Put
to another
use
Modify
Designorate
www.designorate.com

PROTOTYPE

*A **prototype is basically a scaled-down version of the product** which incorporates the potential solutions identified in the previous stages. This step is key in putting each solution to the test and highlighting any constraints and flaws. Throughout the prototype stage, the proposed solutions may be accepted, improved, redesigned or rejected depending on how they fare in prototype form*

TESTING

Test is one of the most important stages in the Design Thinking process, as it is where you discover whether your idea(s) solves the user problem uncovered during the Empathise stage.

ITERATION

The iterative process is an approach to continuously improving a concept, design, or product. Creators produce a prototype, test it, tweak it, and repeat the cycle with the goal of getting closer to the solution

ETHICS

At its simplest, ethics is a system of moral principles. They affect how people make decisions and lead their lives. Ethics is concerned with what is good for individuals and society and is also described as moral philosophy. The term is derived from the Greek word ethos which can mean custom, habit, character or disposition

ROLE OF ETHICS IN PROTOTYPING & DESIGN THINKING

Ethics play a crucial role in prototyping and design thinking, ensuring designs are not only functional but also beneficial, inclusive, and avoid harm to users and society. Ethical considerations guide designers to make responsible choices, prioritize user well-being, and contribute to a more equitable world

ETHICAL DESIGN

Ethical design is a design approach that prioritizes the well-being and interests of users, society, and the environment, promoting fairness, inclusivity, transparency, sustainability, and respect for user privacy and autonomy.

PRINCIPLES OF ETHICAL DESIGN

User-Centered Approach

Design thinking emphasizes understanding user needs and perspectives. Ethical considerations ensure that designs are truly user-centered and prioritize their well-being.

Avoiding Harm

Ethical design aims to prevent designs from causing harm, whether intentional or unintentional. This includes considerations like accessibility, privacy, and safety.

Inclusivity and Accessibility:

Ethical design promotes inclusivity and accessibility, ensuring that designs are usable by people with diverse abilities and backgrounds

Transparency and Fairness

Ethical design encourages transparency and fairness in design processes and outcomes. This includes being upfront about design choices and avoiding manipulative or deceptive tactics.

Long-Term Impact

Ethical design considers the long-term societal and environmental impact of designs. It aims to create solutions that benefit humanity and the planet, rather than simply focusing on short-term gains.

Early Ethical Considerations:

Incorporate ethical considerations early in the design process, rather than as an afterthought.

User Research and Feedback:

Conduct thorough user research and solicit feedback to ensure that designs meet the needs and expectations of diverse user

Stakeholder Engagement

Engage with stakeholders, including users, experts, and ethicists, to gain diverse perspectives and identify potential ethical issues.

Iterative Design

Use an iterative approach to design, allowing for continuous refinement and improvement based on feedback and ethical considerations.

Prototyping for Ethical Testing

Use prototypes to test designs and identify potential ethical issues early in the process.

Document Ethical Decisions:

Document ethical decisions and the reasoning behind them to ensure accountability and transparency.

Continuous Learning

Stay informed about emerging ethical issues and best practices in design .

Intellectual Property Rights (IPR)

Intellectual Property Rights (IPR) are legal protections that grant creators exclusive rights over their creations, including inventions, literary and artistic works, designs, and symbols, names, and images used in commerce. These rights allow owners to control the use, distribution, and exploitation of their intellectual properties.

Why is IPR important in design thinking?

- **Encourages Innovation**: IPR provides a framework for rewarding and protecting creators, thus motivating innovation and creativity.

- **Protection of Original Ideas**: IPR allows designers and businesses to safeguard their unique designs, inventions, and creative expressions from unauthorized use or imitation.

- **Commercialization and Monetization**: IPR enables creators to control and benefit financially from their work, fostering a culture of creativity and growth.

Examples of IPR in design:

- ***Patents:*** *Protect inventions, such as new product designs or processes.*
- ***Trademarks:*** *Protect brand names, logos, and other identifiers.*
- ***Copyrights:*** *Protect original works of authorship, such as designs or software.*
- ***Design Rights:*** *Protect the aesthetic aspects of products, such as their shape, configuration, or ornamentation.*

Case Study: Facebook and Cambridge Analytica

One of the most infamous AI-related privacy breaches involves the social media giant Facebook and political consulting firm Cambridge Analytica. Cambridge Analytica collected data of over 87 million Facebook users without their explicit consent, using a seemingly innocuous personality quiz app.

This data was then used to build detailed psychological profiles of the users, which were leveraged to target personalized political advertisements during the 2016 US Presidential Election. This case highlighted the potential of AI to infer sensitive information (political views in this case) from seemingly benign data (Facebook likes), and misuse it for secondary purposes.

Case Study : Strava Heatmap

Fitness tracking app, Strava, released a "heatmap" in 2018 that revealed the activity routes of its users worldwide, unintentionally exposing the locations of military bases and patrol routes. Strava's privacy settings allowed for data sharing by default, and many users were unaware that their data was part of the heatmap.

While Strava's intent was to create a global network of athletes, the incident underlined how AI's ability to aggregate and visualize data can unwittingly lead to breaches of sensitive information.

Case Study :AI-driven Facial Recognition

Facial recognition systems, powered by AI algorithms, have raised significant privacy concerns. In one instance, IBM used nearly a million photos from Flickr, a popular photo-sharing platform, to train its facial recognition software without the explicit consent of the individuals pictured. The company argued the images were publicly available, but critics highlighted the secondary use harm, as the images were initially shared on Flickr for a different purpose.