MINI TOOLKIT
DESIGN
THINKING

SCHOOL OF
DESIGN THINKING

BUSINESSES ARE NOT AND WILL NEVER BE THE SAME AGAIN...

"In 2020, more than 75% of the 500 biggest companies, according to the S&P 500, will be companies that we have never heard of."

Creative Destruction: Why Companies That Are Built to Last Underperform the Market by Richard Foster and Sarah Kaplan.

IN the present economic model, the methods we have learned, re-learned and reinvented are not capable of dealing with the global competitiveness in which we are immersed. Today, we need to think locally and act globally, but at the same time, we need to mass-produce to reduce cost, to differentiate ourselves from the competition and also customise when required. We never know what the client wants. We deliver products and services today that might be totally obsolete tomorrow. We can compare the competition between companies to a bloody endless world war, where some win and others lose. Too often we create products to fulfil the need of a certain customer niche, without taking into account their social and environmental impact, or thinking about what that may bring to the future of the company. We simply deliver!

When we visit a retail shop, more specifically the LCD TV, plasma screen and LED department, we can clearly notice the similarity of all the products. The differences between the brands and products are almost indistinguishable.
What is really worrying in this case is that the model has been the same for years. All televisions are the same and the decisive factor will be made based on the price and the recommendations given by friends or the shop assistant. Is that the best way we have to make decisions? Do companies really want their products or services to be chosen solely based on price?

We know that the models and methods used in our businesses and companies are no longer relevant for the solution of problems, and that it is also generating piles of waste and rubbish around the planet. Can we think of a new approach that really contributes to a massive change of how people and companies think to solve problems?

"We need new choices - new products that can balance the needs of individuals and the needs of society as a whole. New ideas that deal with the global challenges of health, poverty and education; new strategies that result in meaningful differences and a sense of purpose that include all the stakeholders (...) we need an approach to innovation that is powerful, efficient and widely accessible, that can be integrated in all aspects of business and society and that individuals and teams may use to generate innovative ideas that can be implemented and, so, make a difference."
TIM BROWN IN DESIGN THINKING

Design Thinking offers such an approach!

WHY DESIGN?

In order to achieve a different future we need a behavioural change and that's why the most important design today is the invisible one, the kind thatdeals with beliefs, customs, values and systems.

Inspired by Steven Heller' texts on: http://commonwise.com/

D

esign does not necessarily mean beauty (yes, it may include it). In Brazil, common sense refers to design as an adjective related to beauty, whereas design is, in fact, a VERB, related to the planning of solutions; a process in which we start by developing an understanding of the problem, and end by generating the solution of a challenge.

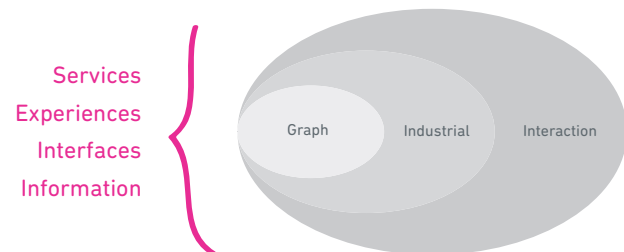## THROUGHOUT THE YEARS DESIGN HAS WIDENED ITS SCOPE OF APPLICATION.

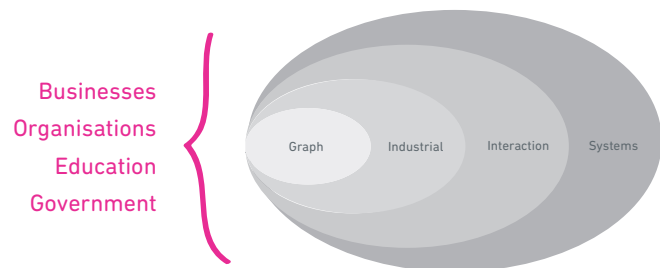It started out as a way to help people to communicate with each other.

Signs
Symbols
Images
Imprints

Graph

Later it expanded into helping people improve objects.

Products

Graph   Industrial
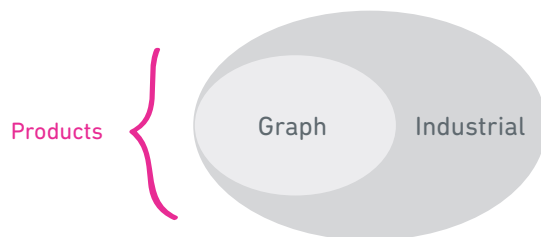
Later it expanded further in order to include solving issues of how to use less tangible services.

Services
Experiences
Interfaces
Information

Graph   Industrial   Interaction

Recently, design is being used to solve problems that are more complex and inter-connected.

Businesses
Organisations
Education
Government

Graph   Industrial   Interaction   Systems

Reference: Buchanan's Order of Design

"Everyone designs who devises courses of action aimed at changing existing situations into preferred ones."
HEBERT SIMON

When we are designing something, we are intentionally transforming contexts. A transformation of this kind is always directly connected to people.

If you want to transform and innovate the context you are in, creating new possibilities for the future, you are definitely a designer. A designer is not only a professional graduated in Design. Professional training contributes a lot, but all of us can become agents of change in our own contexts. INCLUDING YOU!

"Design Thinking is not an experiment; it empowers and encourages us to experiment."

Design Thinking for Strategic Innovation, Idris Mootee

Design Thinking is a mindset that encompasses a pluralist systemic thinking that aims at building a better future. It is not a magic toolbox of solutions to problems; it does not follow a linear thinking model and cannot be over simplified, at the risk of losing its value.

"Design Thinking is the balance between business and art, structure and chaos, intuition and logic, playfulness and formality, control and empowerment." (Concept extracted from Design Thinking for Strategic Innovation, Idris Mootee).

In practice, Design Thinking is a human-centred approach that accelerates innovation and brings about solutions for complex problems.

By bringing down the barriers of hierarchy and of the exclusive Cartesian thinking model, Design Thinking, offers opportunities for ideas to emerge without preconceptions, forcing our brains to move out of its comfort zone and start foreseeing desirable futures.

In times such as these, it has become imperative that we are prepared to conceive new possibilities of choice and outcomes that are capable of responding to the complex challenges of the world today. Thinking and acting in the same ways we have been doing in the past 100 years will not takes us to a new future. Design Thinking proposes a new way of thinking based on 3 main values: empathy, collaboration and experimentation.

However, Design Thinking's major differential is the fact that it is human-centred. We all have the ability to use our knowledge to collaborate with others. When an individual thinks of a problem, this problem is addressed by one individual perspective. But if we multiply the number of people involved in the solution of this problem, we also multiply the perspectives and we may get closer to a clearer understanding of what this problem really is about. This diversity of perspectives, coupled with a multidisciplinary approach, allows us to identify opportunities and solutions, that would not otherwise be conceived, had it

THE FOUR MAIN CHANGES PROPOSED BY DESIGN THINKING, AT THE LEVEL OF THINKING:

1. Decisions are human-centred

2. Question the questions

3. Build in order to think

4. Iterate

VALUES
OF DESIGN
THINKING

"Empathy is about putting yourself in someone else's shoes. But it goes further than that. It is about allowing the new perspective gained from this insight to have a permanent internal impact on you. Only then will you 'learn from the other person'."

Renato Nabuco - former student from School of Design Thinking 2013

♥ EMPATHY

Empathy means to put yourself in someone else's shoes, let go of preconceptions and understand the context and actions of another, welcoming, assimilating and accommodating another person's perspectives.

🔗 COLLABORATION

Collaboration means to think together, co-create in multidisciplinary teams, so that our reasoning and understanding can expand exponentially.
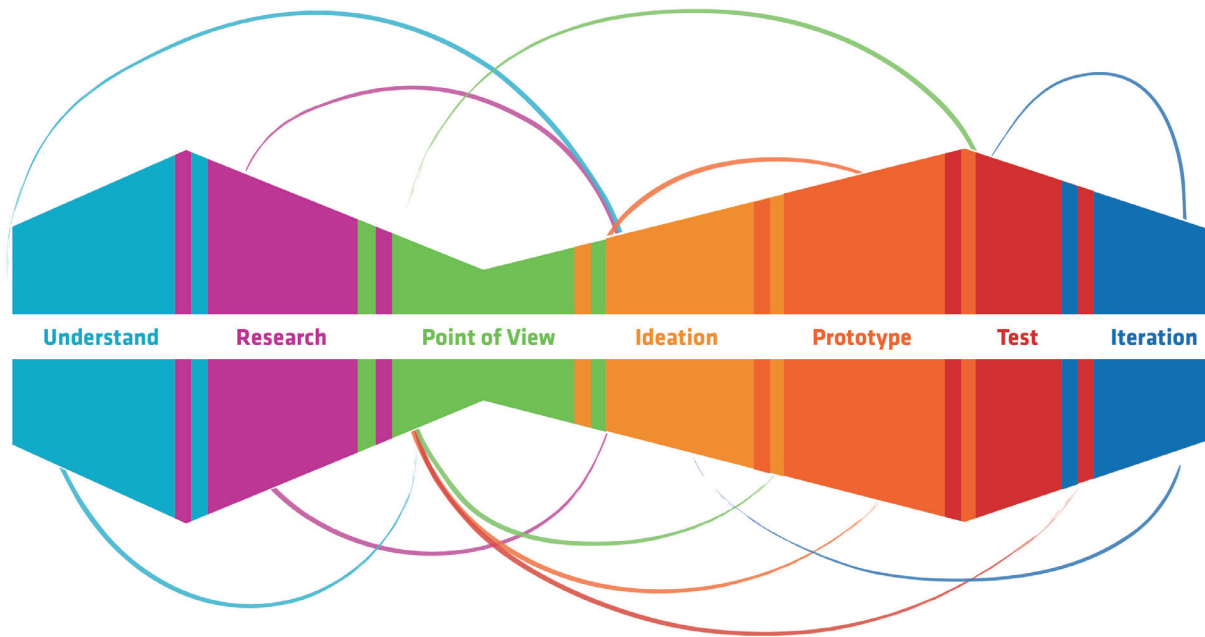

🔨 EXPERIMENTATION

Experimentation means moving out from the field of ideas and speech, in order to build and test solutions, so that problems can be avoided in the phase of implementation.

APPROACH

Understand   Research   Point of View   Ideation   Prototype   Test   Iteration

Design Thinking is a mindset of flexible and interactive nature, which means that any error or mistake is seen as an integral and invaluable part of the process.

There are alternate moments of divergence and convergence of thinking process, based on the innovation process known as the Double Diamond, mapped by the Design Council UK in 2005.

According to this approach, the moment to generate solutions starts only after a deep understanding of the context and a re-signification of the challenge have been established and are seen as steps in the process.

UNDERSTANDING

Divergent Thinking Moment.

It is important to have a 360º view of the challenge - what we affectionately call ununderstanding. This is the time of laying all the assumptions and hypothesis on the table and to let go of them. This is the moment of opening up for the discovery phase (understanding) and the preparation of the field research. It is vital to collect all the existing and available data.

The phase of understanding is a very important moment for the team, as this is the time for levelling the knowledge base and for creating the team's social code that will greatly facilitate collaboration.

🔧 TOOLS

- Desk Research

- Deconstruction and holistic understanding of the challenge

DECONSTRUCTING THE CHALLENGE

What is it? Break the statement/question presented as challenge in smaller sentences or isolated words to explore meanings and meaningfulness. Observe how the parts interact to understand the whole and vice-versa.

What is it for? As you isolate sentences and words, it is easier to explore them without having to limit yourself to the challenge, thus increasing the amplitude of your perspective on the challenge presented.

How? Write the challenge on a piece of paper that is big enough so that everybody can read and pin it on the wall. Highlight the words or short phrases that will be exploited separately. Write them in separate pieces of paper and pin them on the wall. Discuss the definition and meaning of each of them in your team. Write key words during the discussion in sticky notes and fix them next to the fields of each word.

HOW MIGHT WE IMPROVE MOBILE PHONE USE WHEN DRIVING?

mobile phone	driver	car
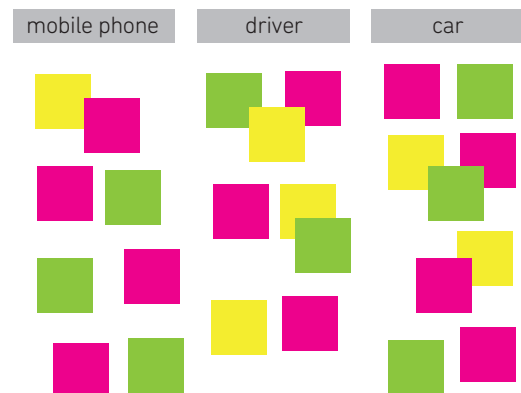
RESEARCH AND OBSERVATION

Time for convergence of perspective and empathy.

Time to set out and start the field research, talk, observe, try and move out of the comfort zone. Every service, product or platform is designed for people. That's why our research is based on them. We are interested in the human factor, therefore, we must look into all the aspects of the human being: physical, cultural, sociological and psychological.
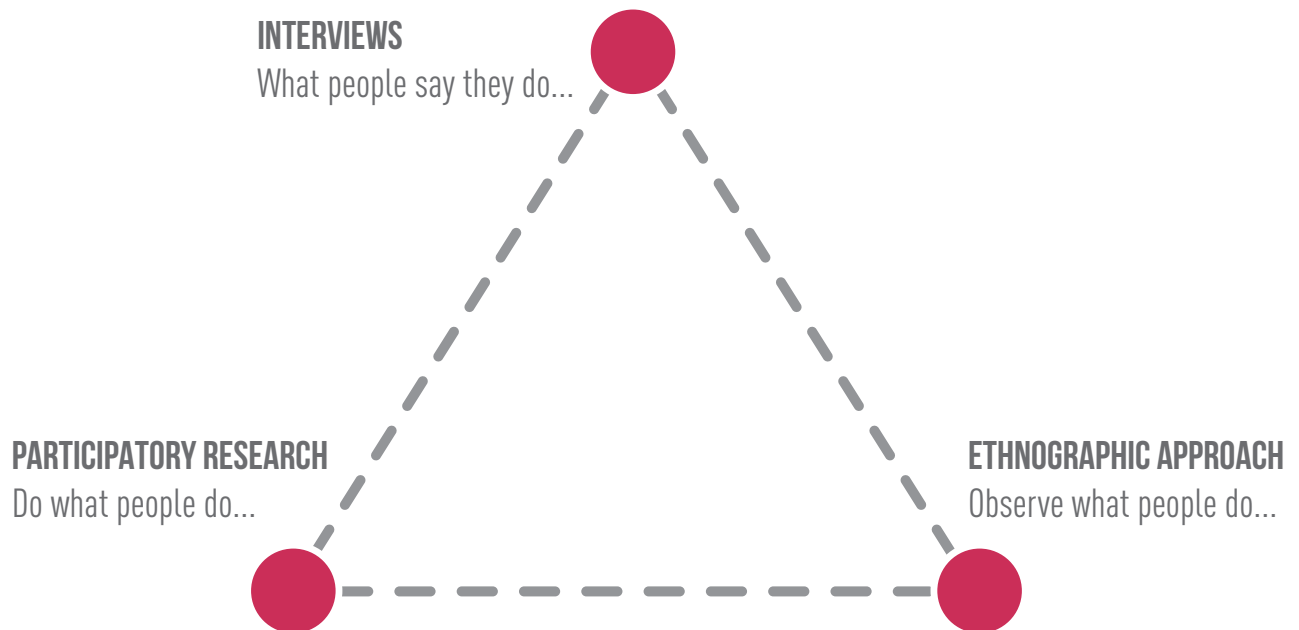
🔧 WHAT TOOLS CAN WE USE?

– Data triangulation

DATA TRIANGULATION

In the Design Thinking approach, it is important that the research maps out insights, generates in-depth understanding about the challenge and accesses the real needs of people and all the actors involved in the system. For this reason, this must be a holistic research and it must have an empathic perspective.

In order to have a good understanding of the problem, ideally, techniques in the three axes of the triangle should be used.

INTERVIEWS
What people say they do...

PARTICIPATORY RESEARCH
Do what people do...

ETHNOGRAPHIC APPROACH
Observe what people do...

POINT OF VIEW

The Moment of Convergent Thinking

Defining the point of view is probably one the most challenging moments in the whole project. After generating a considerable amount of data and insights, it is time to re-word the challenge in the light of the new understandings and findings brought by the group research. This is the moment of organising and navigating through the complexity that has been generated. The need for closure and convergence in this moment is directly proportional to the level of divergence and amplitude generated in the previous phases. The bigger and the longer the project is, the greater the need to converge.

🔧 WHAT TOOLS TO USE?

– Empathy Map or persona

EMPATHY MAP OR PERSONA

What is it? Definition of a specific user based on the research findings, so as to allow for the solution to be designed for a "someone".

The persona is often a fiction character, but it should not be invented, with no base on the research. It should be built based on the sum of all research data gathered and the decisions made in the course of the project.

What is it for? The empathy maps or personas are used to understand the users' objectives, needs, desires and limitations. The data that was once abstract gain a face and become a person with whom it is easier to relate.

Your persona might be described as:

Name and image | Socio-demographic profile (such as age and educational background)

Needs, desires and tasks | Objectives and aspirations

How? By filling in the Empathy Map

Reference: Osterwalder, A., Pigneur, Y., Business Model Generation (Amsterdam: OSF, 2009)

IDEATION

The moment when solutions come to life!

In the stage of ideation solutions for the problems and dilemmas from the previous stage are built.
It is important to have a clear understanding of what we are trying to solve, because the ideation phase
allows for several different creative paths.

This is a creativity-based stage that entails the generation of new, useful and surprising ideas,
weighing two thinking processes: the divergent thinking process, which is the human capacity to find
an infinite number of ideas from a single stimulus, with the convergent thinking process, responsible
for the logical, analytical and detailed work.
Try to amplify this activity by offering a comfortable but exciting environment to encourage people to
explore ideas free from judgmental thoughts. Try to create an atmosphere where the team members
can mix elements found in the research and their own repertoire to generate meaningful solutions for
the challenge.

WHAT TO USE?

– Brainstorming

RULES FOR BRAINSTORMING

1. DEFER JUDGMENT

2. ENCOURAGE WILD IDEAS

3. BUILD ON THE IDEAS OF OTHERS

4. STAY FOCUSED ON THE TOPIC

5. ONE CONVERSATION AT A TIME

6. BE VISUAL

7. GO FOR QUANTITY

PROTOTYPING

"Prototypes are more valuable as a means of communication and interaction among people than as a means to validate or prove a concept."

Michael Schrage

The prototyping phase is a moment of DIVERGENCE, of generating yet more ideas, of amplifying your understanding, of expanding...

Prototypes are powerful means of communication that force us to think realistically about a way through which people will interact with a concept that we are trying to design. It is the moment to remove ideas from the paper and bring them alive.

The prototype is capable of provoking an emotional reaction in someone even before the solution exists.

WHAT TOOLS TO USE

- Prototypes of paper and interfaces

- Storyboards

- Models

- Enacting of a Prototype

- Service Prototype

- Constructive Interaction

THE MOST IMPORTANT THING!

1. WHY ARE WE PROTOTYPING THIS?

2. WHAT DO WE WANT TO KNOW?

3. WHAT DO WE WANT TO TEST?

4. WHAT DO WE WANT TO DISCOVER?

5. PROTOTYPES ARE QUICK, DIRTY AND CHEAP.
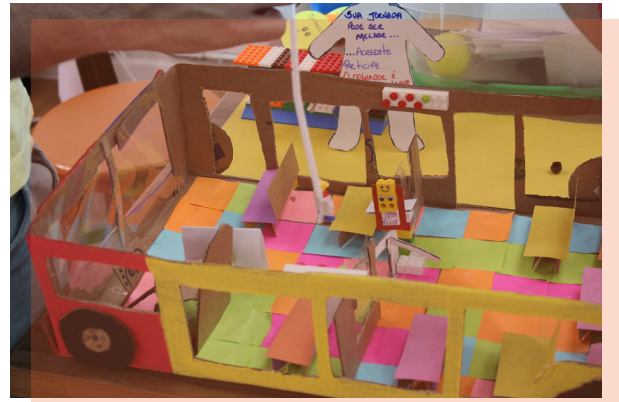
PROTOTYPING IS MORE THAN TESTING

Prototyping can be used to:

• *Trigger Empathy:* Prototyping is a tool to deepen your understanding of the user, even in the pre-solution phase of the project.

• *Explore:* Build to think. To develop multiple option solutions: to generate more ideas.

• *Test:* Build prototypes (and develop the context) to test and refine solutions with the users.

• *Inspire:* Inspire others (colleagues, clients, investors) and show them your vision.

• *Learn:* If an image is worth more than a thousand words, then a prototype is worth more than a thousand images.

• *Solve divergences:* Prototyping is a powerful tool that can eliminate ambiguity, help ideation and reduce communication problems. It is a good tool to initiate a conversation.

• *Manage the process of building the solution:* Identify a variable to explore a big problem in smaller, testable sizes.

TEST

"Always prototype thinking that your idea is right, but always test thinking that your idea is wrong."

If you spent enough time on your creations, they will reveal themselves to you. But if you test your idea and let it grow ungovernably, it will gain a life of its own, it will become true and it will reveal itself to others. This is what happens when you start to build something tangible, when you prototype and start learning how to think about your challenge from you original idea.

Inspired by Gever's Tulley TED Talk

"Fail often to succeed sooner."

IDEO

WHAT TO FOCUS ON

1. IMPROVISATIONS

2. NEW OPPORTUNITIES

3. NEW USAGE

THE RULES OF TESTING!

• *Generate empathy* > a purpose

• *Be open to be wrong* > to grow

• *Inspire* > people that test your ideas will be the first to help you implement them, if they see relevance and purpose!

• *Don't test everything at the same time* > focus on one or two things with a view to understanding. If you test everything at the same time, you will never know what works and what doesn't.
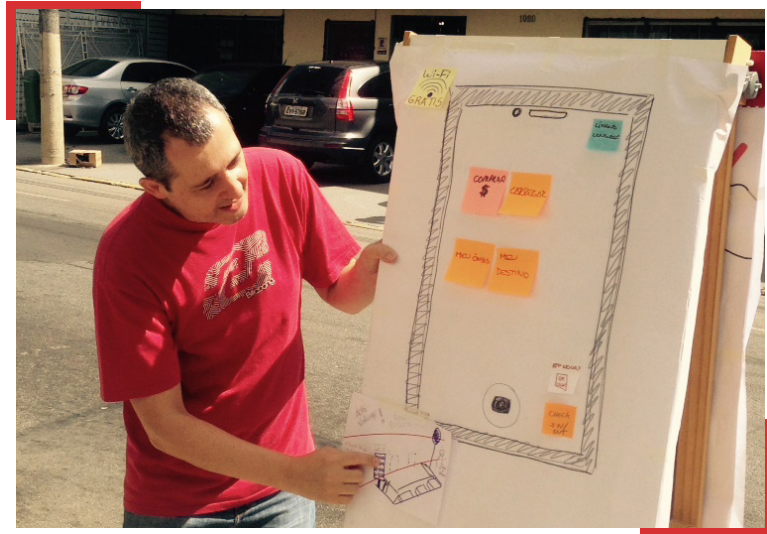
ITERATION

In order to receive feedback we have to know how to listen to it!

Try not to be defensive, don't judge, summarise and reflect about what you heard. Ask questions to clarify understanding and for examples of stories that may illustrate the main point on the feedback. Be open but check other points of view, with other people – don't change your whole project just because of a negative feedback.

Iteration is an opportunity to refine our solutions and improve them, so we can take them to the next level.

Feedback brings us valuable insights that can help us create relevant and important solutions that can truly add value to the users. We iterate to refine our prototypes and solutions. Sometimes, this means having to go back to the beginning of the process. Testing is just another opportunity to trigger empathy through observation and engagement, which often brings about unexpected insights. Sometimes, testing reveals not only that we are in the right track, but also that we have managed to redefine the problem correctly.

WHAT TOOL TO USE?

Create tables with positive and negative points, ideas and new issues. Choose a point of view and make the necessary changes. Every time a new issue emerges, test again!
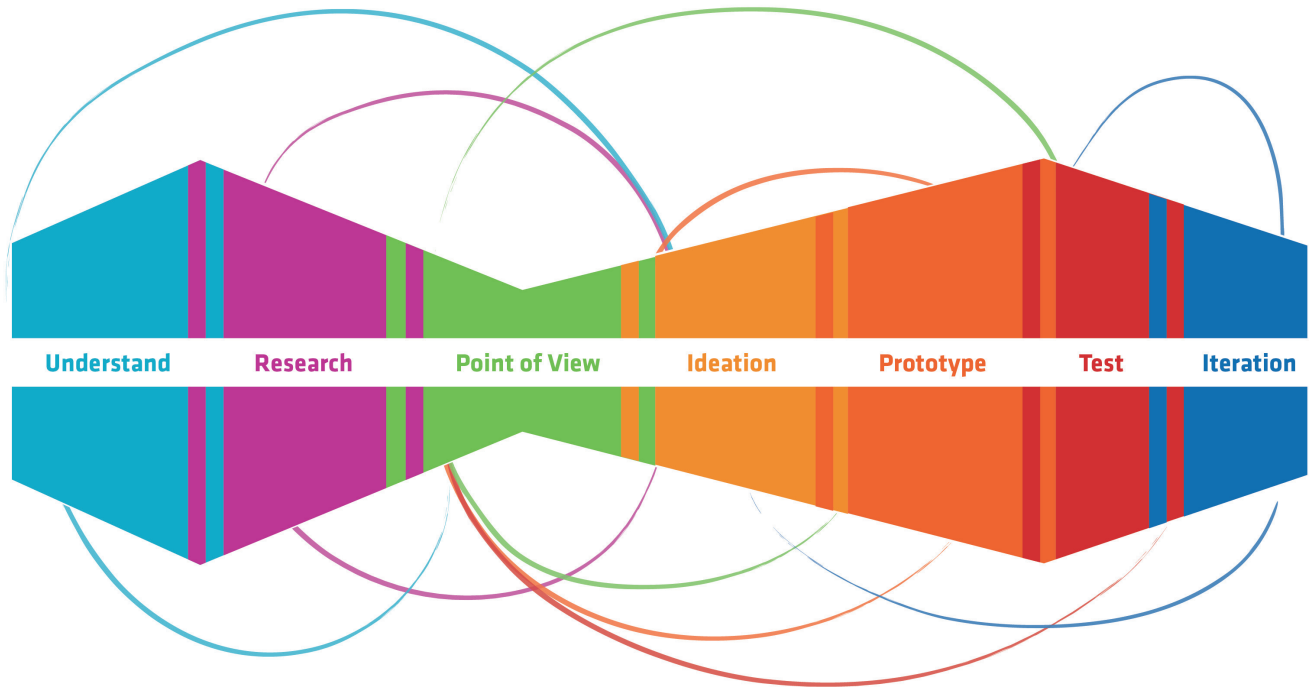
+ what was good	– what was bad
? doubts	! ideas

Understand   Research   Point of View   Ideation   Prototype   Test   Iteration

The process of Design Thinking that we have suggested here is continuous and metamorphous.

After the testing phase, iteration may mean going back to some previous stage of the process. During the testing phase, we sometimes find out that we have not brought the point of view to the necessary convergence; or we may have misinterpreted some other point or aspect of the challenge. This is the time to go back and iterate!

The double diamond can open and close, diverge and converge as many times as possible.

Remember: This approach is not a recipe, but a way of accelerating innovation. However, there is no innovation if we always approach situations and challenges in the same way. INNOVATE!

REFERENCE

SITES

DESIGN THINKING FOR EDUCATORS TOOLKIT:
http://www.designthinkingforeducators.com/

HUMAN CENTERED DESIGN TOOLKIT:
http://www.ideo.com/work/human-centered-design-toolkit/

COLLECTIVE ACTION TOOLKIT:
http://www.frogdesign.com/collective-action-toolkit

CREATIVE ENTERPRISE TOOLKIT:
http://www.nesta.org.uk/publications/creative-enterprise-toolkit

SEVICE DESIGN TOOLS:
http://www.servicedesigntools.org/

THE ART OF POWERFUL QUESTIONS
http://academy.extensiondlc.net/file.php/1/resources/RM-ArtOfQuestions.pdf

IDEO
http://labs.ideo.com/

ABOUT PROTOTYPE
http://proto.io/

ABOUT BRAINSTORMING
http://personalexcellence.co/blog/25-brainstorming-techniques/

"THIS IS SERVICE DESIGN THINKING"
http://thisisservicedesignthinking.com/

BOOKS

MARTINS, Bella; HANINTON, Bruce. UNIVERSAL METHODS OF DESIGN. Rockport, 2012.

MOOTEE, Idris. Design Thinking for Strategic Innovation: What They Can't Teach You at Business Or Design School. Wiley, 2013.

LIEDTKA, Jeanne; OGILVIE, Tim; BROZENSKE, Rachel. The Designing for Growth Field Book. Columbia, 2014.

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