From Ideas to Impact: A Practical Guide to Design Thinking in Higher Education

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University of Ss. Cyril and Methodius in Trnava
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Content

Introduction

After 2010, the changes in education became so clear that even an uninvolved person could notice them. They affect all levels of the school system, including higher education. Today it is not enough for students to only receive information passively. They need to learn to think in context, to cooperate, to look for new solutions, and to react quickly to different challenges they will face in real life. The traditional way of teaching, where the teacher lectures and students take notes or sometimes ask questions, can no longer meet these needs. One possible approach that can move education forward is Design Thinking. This approach puts emphasis on creativity, searching for solutions, empathy, and teamwork. Design Thinking is very flexible – it can be adapted to different subjects and fields. It is not a single method, but a set of techniques and attitudes that can be used almost anywhere. It is a very effective approach that brings dynamics and practicality into teaching and can strongly increase student engagement. Teaching can then become a space for experimenting, testing ideas, and learning from mistakes – similar to how it happens in real work teams in many companies. This handbook was created as a result of cooperation between four universities, which for several years researched and tested the use of Design Thinking in higher education. It is not a complicated theory. The described methods and processes were tested in different subjects and study fields. They can be used in seminars, workshops, or practice lessons. The handbook is made for all teachers who feel that their teaching could be more interactive, creative, and meaningful – no matter what subject they teach or which faculty they belong to. Because despite its name, Design Thinking is not only for designers. It is a way of working that can bring a new impulse also into your teaching.

1. History of Design Thinking

1 History of Design Thinking

The history of Design Thinking is varied and closely intertwined with the development of art, technology, industry and philosophy. It is virtually impossible to list all the influential factors that have led to the current understanding of design theory, process and practice. Business analysts, engineers, scientists and creative individuals have studied the methods and processes behind innovation for decades. Early glimpses of Design Thinking date back to the 1950s and 1960s, although these references were more in the context of architecture and engineering – disciplines that struggled to cope with the rapidly changing environment of the era.

Here is an overview of the main periods and ideas that have shaped how we understand design today:

1. Pre-industrial era (up to the 18th century)

- Design as a craft: design did not exist as a separate discipline. Things were designed and made by hand by craftsmen. Form and function were linked but often influenced by aesthetics and cultural practices.
- Aesthetics and symbolism: Things often had religious or ceremonial significance.

2. Industrial Revolution (18th–19th century)

- Separation of design and production: with the advent of machine production, design was separated from production. The design of a product could be done by someone other than the person who made it.
- Arts and Crafts Movement (William Morris): A critique of industrialization and a return to the aesthetic and moral values of craft.
- The first references to design: The term “industrial design” appears.

3. Modernism (early 20th century)

- Bauhaus (Germany, 1919–1933): One of the most influential movements – an attempt to combine art, craft and industrial production. Function and simplicity over form.
- “Form follows function” (Louis Sullivan): a fundamental modernist motto.
- Le Corbusier, Dieter Rams, Charles and Ray Eames: emphasis on rationality, purity of form and purpose.

4. Postmodernism (1970s–1990s)

- Critique of modernist rationality: design can also be playful, symbolic and subjective.
- Memphis Group (Italy, 1980): colorful, dysfunctional and provocative design.
- Design as language: design is beginning to be understood as a form of communication – meaning, narrative and context are important.

5. Design in the digital era (since the 1990s)

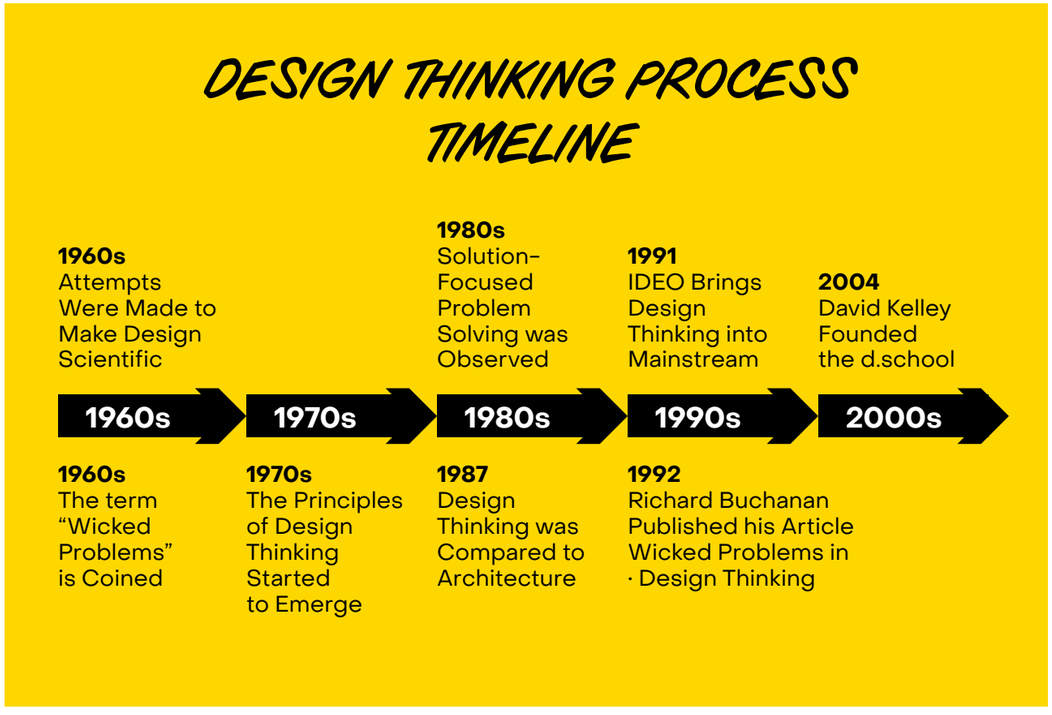
- UX and interaction design: the emergence of new disciplines focused on user experience.
- Design thinking: a methodology for solving problems using Design Thinking – empathy, prototyping, testing.
- Globalization and sustainability: design as a vehicle for social change – inclusivity, ethics, climate.

6. Current trends (2020+)

- Speculative and Critical Design: provokes discussion about the future, technology and society.

- AI and algorithmic design: machines become co-creators.
- Design as Systems Thinking: Emphasis on the complex interconnection of problems – ecological, social, political.

It is necessary to appreciate the roots and origins of the design concept to understand when it started. Let's look at how Design Thinking emerged from an exploration of theory and practice to become one of the most effective ways to address the human, technological and strategic innovation needs of our time. As noted above, it is possible to identify certain temporal milestones that Design Thinking has passed through. However, World War II had a profound effect on strategic thinking and since then new ways of solving complex problems have been sought. In fact, it can be said that this huge world event fundamentally changed the way we concentrate and apply to management, production and industrial design in the modern world. Figure 1 provides a concentrated history of Design Thinking, decade by decade.



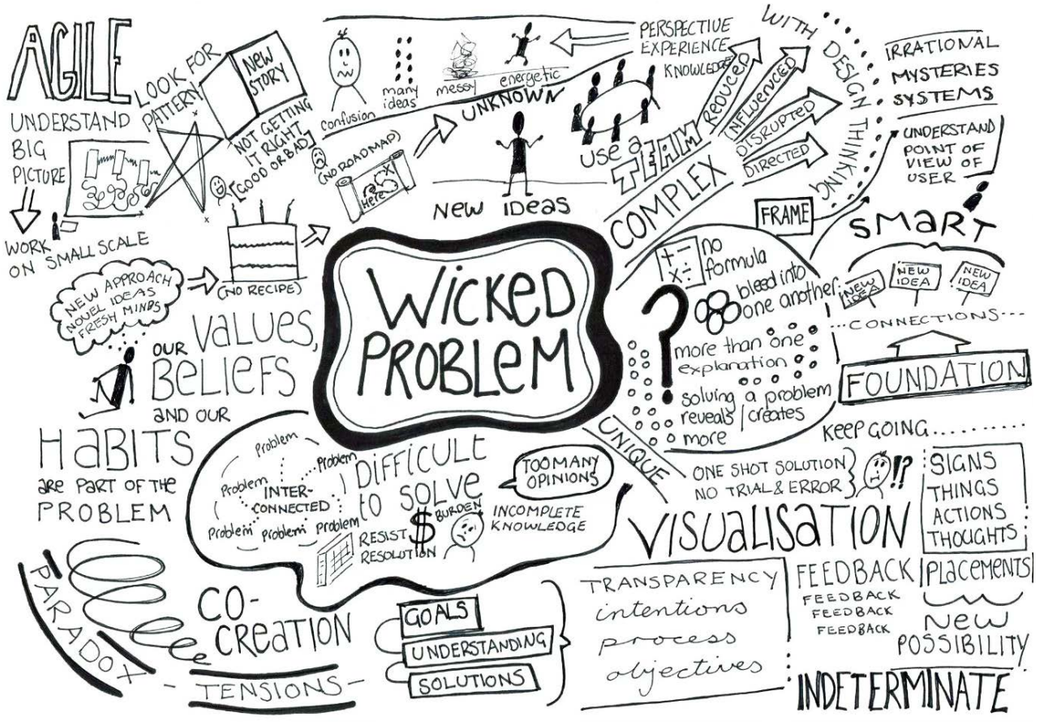
Picture 1 **The history of Design Thinking through the decades** (own processing, 2025)
Source: Interaction Design Foundation, CC BY-NC-SA 4.0.

1.1 The 1960s

In the 1960s people applied scientific methodology and processes in an attempt to understand every aspect of design – how it works and what is affected, for example Nigel Cross – Emeritus Professor of Design Studies at the Open University, UK – presents the battle that began to unfold in the early 1960s in his article "Designerly way show: design discipline versus design science" (2001). Cross highlights statements by radical technologist Buckminster Fuller in which he refers to the "decade of design science": *"[Fuller] called for a "design science revolution" based on science, technology and*

rationalism to overcome human and environmental problems that he believed could not be solved by politics and economics ".
–Nigel Cross

The struggle continued throughout the decade, as more attempts were made to bring the field within the reach of rational science, eventually making design scientific. In the mid-1960s, Horst Rittel wrote and spoke extensively on the subject of problem solving in design… so much so that he is known as the design theorist who coined the term "wicked problem" to describe problems that are multidimensional and extremely complex. Rittel specifically focused on how design methodologies could be used to solve complex (wicked) problems and how these methodologies were influential to the work of many design practitioners and academics of the time.



Picture 2 Complex (negative) – "bad" problems (Horst Rittel, LoraCBR, CC BY 2.0., 2023)

"Wicked" problems are at the heart of Design Thinking because it is these complex and multidimensional problems that require a collaborative methodology to gain a deep understanding of people's needs, motivations, and behaviors.

1.2 The 1970s

Cognitive scientist and Nobel laureate Herbert A. Simon was the first to mention design as a way of thinking in his 1969 book The Sciences of the Artificial. He then contributed many ideas in the 1970s that are now considered principles of Design Thinking. Simon talks about rapid prototyping and testing through observation, for example – concepts that form the core of many design and business processes today, including the two main

stages in a typical Design Thinking process. Simon touched on prototyping as early as 1969 when he stated the following in The Artificial Sciences:
“To be understood, systems had to be designed, and their behavior observed.”

Picture 3 Herbert Simon

Early research in artificial intelligence, such as the work of Herbert Simon, Allen Newell and Cliff Shaw involving chess software, also resulted in a better understanding of design as a way of thinking.

Much of their work has focused on the development of artificial intelligence and whether human forms of thought could be synthesized – a topic that is very prevalent in the design world today.

Robert H. McKim, professor emeritus of mechanical engineering, also referenced the idea of Design Thinking in his 1973 book Experiences in Visual Thinking. McKim differed from Simon in that he is best described as an artist and engineer – focusing his energy more on the impact of visual thinking on our ability to understand things and solve problems. McKim’s book unpacks various aspects of visual thinking and design methods used to solve problems. He emphasizes a combination of left and right brain modes of thinking to bring a holistic form of problem solving. The ideas discussed in his book ultimately support a Design Thinking methodology that can be used today.

1.3 The 1980s

In 1982, Nigel Cross continued to make history in the world of Design Thinking when he discussed the nature of how designers solve problems in his seminal paper “Designerly Ways of Knowing”. (Please note that this is not to be confused with his series of articles and papers with a similar title, “Designerly Ways of Knowing”, published much later in 2000). In his 1982 paper, Cross compared the problem-solving processes of designers with the “non-design” solutions we develop to problems in our everyday lives. Bryan Lawson, Emeritus Professor at the School of Architecture, University of Sheffield, UK, also discussed the insights he gained from a series of interesting tests. The main aim of the tests was to compare the methods used by scientists and architects when they tried to solve the same ambiguous problem.
Bryan Lawson asked architecture and science students to arrange the colored blocks according to a set of rules. What he discovered was incredibly interesting and contributed to his theories about the “design” way of solving problems.

Lawson ran tests on graduate architecture students (i.e., “designers”) and graduate science students (i.e., “scientists”). The problem he set for each group required the students to arrange colored blocks according to a set of rules, some of which were unfamiliar to the students.

Table 1 The results were as follows

Scientists	Designers
He systematically explored all possible combinations of blocks.	Quickly created multiple color block arrangements.
He formulated a hypothesis about the basic rule they should follow to create an optimal block arrangement.	He tested their block layout to see if it conformed to the rules.

Lawson concluded that scientists were problem-solvers focused on the problem, while engineers were solution-focused.

Designers chose to generate many solutions and eliminate those that did not work. Cross considers this solution-focused thinking to be the basic concept of “designedly” problem solving. According to Cross:
“A central feature of the design activity is its reliance on a relatively quick satisfactory solution rather than any prolonged analysis of the problem. In Simon’s inelegant term, it is a process of satisficing “satisfaction” rather than optimization; producing any of what might be a large range of satisfactory solutions rather than attempting to generate a single hypothetical optimal solution. This strategy has been observed in other studies of design behavior, including by architects, urban planners and engineers”.

Nigel Cross (1982)

1987: Design thinking was again compared to architecture
Peter Rowe, then director of the urban design programs at Harvard, published a book in 1987 called Design Minding. It focuses on the way architects approach their tasks through an inquisitive lens.
“This book is an attempt to create a generalized portrait of Design Thinking. The main aim will be to reflect the basic structure and focus of research directly related to those rather private moments of ‘searching’ on the part of designers to invent or create buildings and urban artefacts.

Peter Rowe (1987)

As you can see, the progression of Design Thinking as a subject has made its way through various areas of specialization over the decades. Thinkers in these different fields explored cognitive processes within their own cognition until Design Thinking eventually became a separate concept and moved into its own space.

1.4 The 1990s-present

It is widely accepted that IDEO is one of the companies that brought Design Thinking into the mainstream. Over the years, they have developed their own terminology, steps, and toolkits and have made the process more accessible to those not trained in design methodology.

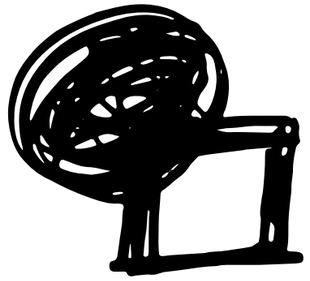
IDEO has developed its own terminology, steps, and toolkits. This image was taken at one of their Make-a-thons – two fun, intense days where groups of people create, hack, and build human-centered design solutions to real-world problems.
Richard Buchanan, then head of design at Carnegie Mellon University, published his article “Wicked Problems in Design Thinking” discussing the origins of Design Thinking. In the article, he discusses how the sciences evolved over time to become more and more cut off from each other until they eventually became a specialty. It explains that Design Thinking is a means of integrating these highly specialized areas of knowledge so that they can be applied together to the new problems we face in the world today – and from a holistic perspective.

Years 2004

David Kelley founded the Hasso Plattner Institute of Design at Stanford – commonly known as the d. school. The school has made the development, teaching, and implementation of design one of its primary goals since its inception and serves as a source of tremendous inspiration for design thinkers around the world, including us here at the Interaction Design Foundation.
A day in the life of a pop-up class at Stanford school.

After 2020

Today, the Design Thinking movement is rapidly gaining ground – with pioneers like IDEO and the school blazing a trail for others to follow. Other prestigious universities, business schools and progressive companies have adopted the Design Thinking methodology to varying degrees, sometimes even reinterpreting it to suit their specific context or brand values.



2.

Getting Started

2 Getting Started

Design Thinking is an approach used for practical and creative problem solving. Its foundations lie in the methods and processes that are often used. This approach is applicable in a wide range of areas and is not necessarily limited to design. The first publication on Design Thinking was written by Stanford University professor John E. Arnold in 1959. Design Thinking is an approach that helps solve problems creatively by considering the needs of different users. This method finds application not only in management and design, but also in the creation and improvement of products and services in companies and organizations... It empathetically examines the needs of users and uses the findings to find optimal solutions. Ultimately, he contributes to the continuous improvement of user experiences with specific products and services.

2.1 Design Thinking phases

From a methodological standpoint, Design Thinking (DT) is typically structured into five fundamental phases: Empathize, Define, Ideate, Prototype, and Test. Each phase serves a specific purpose within the innovation process, and together they form a flexible and dynamic sequence, allowing forward movement, backtracking, or iteration based on ongoing learning.

Empathize

In this initial phase, the goal is to gain a deep understanding of the problem from the users' perspective. It involves immersing oneself in their experiences, needs, and contexts using techniques such as observation, interviews, or ethnography. The objective is not only to gather visible data, but also to uncover underlying meanings, motivations, and emotions, achieving an authentic understanding of the realities faced by those involved.

Define

Based on the information obtained during the empathizing phase, the initial problem is reformulated to present a new challenge from a more precise and revealing perspective. This phase focuses on finding an original approach—an unexplored point of view—derived from unmet needs or key insights. These insights, understood as non-obvious truths that reshape our perception of a situation, allow the problem to be reframed as an opportunity for innovation.

Ideate

In this phase, a wide variety of ideas are generated without restrictions or premature judgment. The focus is on quantity, fluency, and team collaboration. Ideation is usually organized in two sub-stages: an initial expansive and open-ended idea generation, followed by a selection phase in which the most promising ideas are chosen in relation to the previously defined framework. Visualization and collective work play a prominent role here.

Prototype

Once the most promising ideas are selected, prototypes—visual, physical, or digital representations—are built to explore and refine the solutions. The goal is not definitive validation but ongoing learning, rapid feedback collection, and iterative improvement of the proposals.

Test

The final phase involves presenting the prototypes to users to evaluate their usefulness, effectiveness, and acceptance. This testing provides valuable information that may confirm the solution's validity or uncover new needs, potentially leading to further iteration, adjustments, or even a fundamental redefinition of the problem or solution.

In some innovation contexts, these five phases are arranged into a double diamond scheme—based on the Design Council model and adapted by Stanford's d.School—which divides the process into two major cycles: the first dedicated to problem framing, and the second focused on solution development.

2.2 How to get started with Design Thinking

Starting the Design Thinking process is not difficult, but it requires openness, curiosity and a willingness to experiment. Understanding the basics and having a team ready to embrace new approaches to problem solving are essential for effective implementation. To successfully apply Design Thinking, it is essential that the entire team has a common understanding of what you are trying to solve, ensuring that all subsequent work is directed towards solving the right problem. Creating a multi-disciplinary team is also an important aspect. Having a diverse team that includes different disciplines and backgrounds helps to look at the problem from multiple angles. This approach allows for a richer repertoire of solutions to be discovered while encouraging creative thinking among team members.

One of the key elements of Design Thinking is empathy. This approach requires a deep understanding of the needs, wants and frustrations of end users, often achieved through direct conversations, observation and exercises in empathy. In this way, you can gain valuable insights that are invaluable in creating solutions that truly resonate with users.

In the next phase of ideation comes idea generation, where the goal is to design the widest possible range of possible solutions. After selecting the most promising ideas, prototyping follows, which involves quickly creating working models that can be tested and iterated. Prototyping provides immediate feedback on the functionality and acceptance of the solution and allows for rapid adjustments to the design based on real user experience.

Finally comes testing with real users, where it is important to collect detailed feedback and use it to iterate and improve designs. Each step in the Design Thinking process provides valuable insights and opportunities for improvement, increasing the chances of success for the final product. This iterative approach helps organizations adapt to changing needs and ensure that the results are relevant and sustainable.

2.3 Double Diamond Model

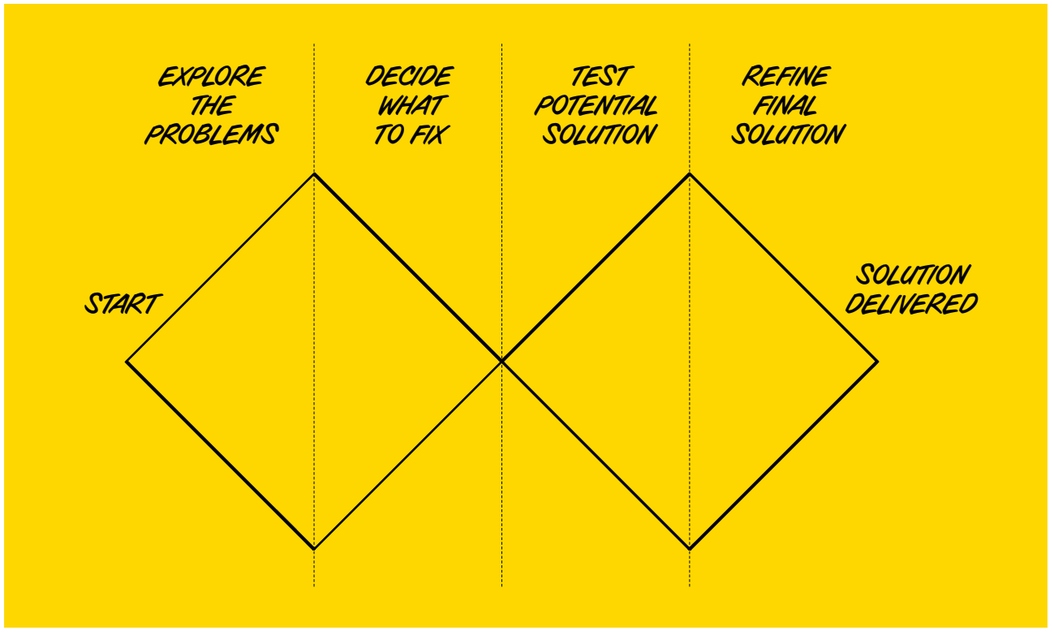
The simplest and one of the most widely used visualizations of the Design Thinking process is the Double Diamond model. Originally introduced by the UK Design Council in 2005, it was created to help designers navigate the different stages of creative work and problem-solving. Over time, it has found application across industries and disciplines, serving not just as a tool for designers but as a structure that supports focused, time-efficient innovation.

A key feature of the model is its **non-linear nature**. Although presented in four distinct stages—Empathize, Define, Ideate, and Prototype—it encourages regular movement between phases, allowing teams to adapt their direction based on new insights.
At its core, the Double Diamond consists of two main phases:

First Diamond: Problem Framing

This phase covers the **Empathize** and **Define** stages. It begins with **divergence**—a broad exploration of the problem space from multiple perspectives. The **Empathize** phase focuses on understanding users and their needs through research methods such as interviews, observations, and questionnaires. The goal is to collect a wide range of insights into user behaviors, frustrations, and motivations.

This is followed by **convergence** in the **Define** phase, where collected data is synthesized and patterns are identified. This leads to a clear, focused problem statement—often framed as a "How Might We" question—which transforms the challenge into a concrete innovation opportunity. In short, the first diamond is about designing **the right thing**—understanding and defining the actual problem.



Picture 4 Second Diamond: Solution Development (own processing, 2025)

The second diamond focuses on **Ideate**, **Prototype**, and **Test** phases. It also starts with **divergence** in the **Ideate** phase, where multiple solutions are brainstormed using techniques such as mind maps or storyboarding. Creativity is encouraged, and ideas are not judged prematurely to foster a wide spectrum of possibilities.

This is followed by **convergence** in the **Prototyping** phase, where selected ideas are made tangible—whether through physical models, digital mock-ups, or simple sketches. These prototypes are tested with users, who provide feedback that informs further iterations. Testing may lead to refinements or even radical shifts in direction, reinforcing the idea that the process is inherently **non-linear**. This second diamond is thus about designing **the thing right**—developing and refining the best possible solution.

Flexible and Adaptable

The Double Diamond provides a clear structure for tackling complex problems and generating innovative outcomes. However, it is not the only model used in Design Thinking. For instance, some teams prefer **circular models**, which emphasize a continuous cycle of learning and adaptation. One such variant includes the stages: Understanding → Observation → Defining a Point of View → Idea → Prototype → Testing → Reflection.

It is not a question of which model is better. Rather, both illustrate the same key principles: Design Thinking is a **flexible framework** that adapts to the context and needs of a team or project. Whether visualized as a diamond or a circle, the core idea remains constant—focus on the user, stay open to feedback, and iterate toward more meaningful solutions.

2.4 Thinking outside-the-box

Thinking “outside the box” is an approach to problem solving that requires unconventional creative strategies that deviate from standard methods and perspectives. In the context of Design Thinking, where the emphasis is on innovation and solving complex problems, thinking outside the box is essential.

Taking this approach means freeing the mind from traditional constraints and fostering the ability to view problems from new, often unexpected angles. This thinking allows designers to come up with original, innovative solutions that would not be possible within conventional thought models.

How to learn to think outside the box?

Questions and curiosity

Start with questions that explore the underlying assumptions of the problem. “What if...?” and ‘Why not...?’ are the types of questions that unleash creative thought processes. Curiosity encourages innovation because it forces you to explore new possibilities and alternatives.

Divergent thinking

This type of thinking encourages the generation of as many ideas as possible, regardless of their quality. It is the opposite of convergent thinking, which focuses on finding the single right solution. Divergent thinking allows you to think freely and without constraints, which is essential for creative problem solving.

Experimentation

Don’t be afraid to experiment and take risks. Many ideas may seem unfeasible at first, but it is testing and experimenting that can reveal new avenues and solutions that would otherwise go unexplored.

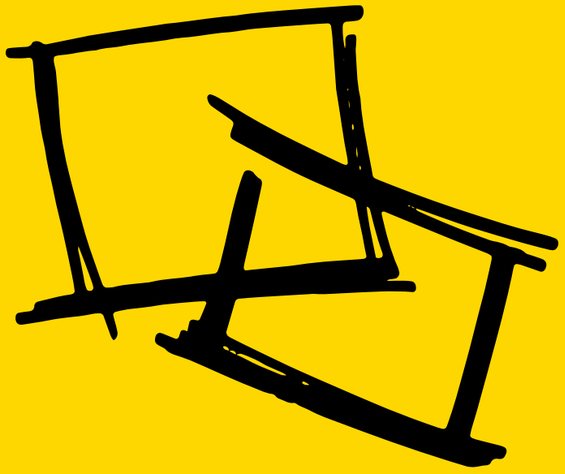
Interdisciplinary approaches

Take inspiration from different fields and disciplines. Thinking outside the box often requires bringing together seemingly unrelated disciplines, which can lead to entirely new insights and solutions.

Criticism-free environment: create an environment where there is no room for premature criticism. In the early stages of idea generation, it is important that every idea is given a chance to develop without being immediately rejected.

The benefits of thinking outside the box: this approach allows designers to better respond to rapidly changing market and technology demands. It also helps to identify hidden customer needs and wants, thereby significantly increasing the value and relevance of the solutions proposed. By thinking ‘outside the box’, teams can overcome the limitations of conventional thinking and discover sustainable and disruptive innovations that will truly change the game in the industry.

3.



The Design Thinking process STEP BY STEP

3 The Design Thinking process step by step

Design Thinking is finding its strong place in education, mainly thanks to its focus on understanding students' needs, motivation, technological changes, and experiences. In the university environment, it helps to transform the traditional model of passing on knowledge into active creation of learning opportunities that are more adapted to the individual needs of students. This chapter offers a practical guide on how to integrate Design Thinking step by step into the teaching process. It also gives recommendations on how to choose the most suitable methods for each phase of the process and how to use them effectively in online education, which requires a specific approach to cooperation and team interaction.

3.1 A human-centered approach in school practice

Design Thinking brings into education a new way of thinking that focuses on the student as an active participant in learning. The teacher becomes a designer of education – starting with finding out what students really need, what blocks their learning, and what motivates them. The teacher understands that everyone approaches the subject a little differently and tries to capture and respect these views. During preparation and also in the lesson itself, the teacher observes reactions, notices what works and what does not, and adjusts the approach accordingly. In this way, the lesson becomes a living process, not a fixed scenario.

Practical approaches

Empathy as a continuous process: collecting feedback, informal conversations, and observing group dynamics – all these are ways to build sensitivity to students' needs.

Involving students in design: they can take part in shaping goals, choosing formats of outputs, or cooperating on creating evaluation criteria.

Creating a safe space: in an environment where students are not afraid to fail, ask questions, and propose their own solutions, critical thinking and creativity can grow better.

Iteration and adaptation: the teacher continuously reflects on what worked and what did not – making adjustments during the semester, not only at its end.

Consequences for the University

An institution that applies a human-centered approach actively creates space for input from both students and teachers. It does not rely only on formal tools, such as annual surveys, but also pays attention to impulses from daily contact and informal conversations.

Such a university sees its functioning as a living, changing system that can be shaped consciously by better understanding people's needs. This does not mean fulfilling every wish of students, but it does mean considering their perspective in decision-making – for example, when adjusting study programs, changing forms of teaching, or redesigning

spaces where they spend their time. It is also sensitive to the needs of teachers, researchers, and practice partners, who bring different experiences and priorities into the academic environment.

> *Test Your Perspective*
> *Take a topic from your teaching and prepare it the way you usually do. Then ask yourself: How would I explain this topic to a student who does not understand it, is afraid of failure, and has no support at home? This change of perspective will bring you closer to a human-centered approach.*

3.2 Choosing the ideal method

One of the most common questions teachers face when applying Design Thinking in education is not “what” the process is, but “how” to choose and implement the most suitable method in each phase. The range of tools is wide – from Stanford d.school models to IDEO guides – and the real challenge is to find an approach that fits the specific subject, goal, and group of students.

This section brings practical recommendations on how to choose methods in the university environment. What matters is awareness and sensitivity to context – not just a mechanical checklist of techniques.

How to choose the right method in each phase of Design Thinking

Knowing different methods is not enough today. Much more important is to know when to use them so they bring the best possible effect. Each phase requires a specific approach and also a different way of thinking: from deeper understanding of the user, to a creative explosion of ideas, and finally to testing them in practice. The right method can speed up the process, improve the quality of solutions, increase team engagement, bring more relevant results, and save time and energy by focusing on what is most valuable at the moment.

Types of methods by phases of the design thinking process

- **Empathy phase:** qualitative research – observation, user interviews, empathy maps. They work best in pairs or small groups and require time for deep listening and reflection.
- **Define phase:** ynthesis techniques such as affinity clustering, creating personas, or writing a point-of-view statement. They help turn insights into clear challenges.
- **Ideation phase :** space for creativity – Brainwriting, SCAMPER, Crazy 8s. Best in larger groups and in an environment where ideas are not judged too early.
- **Prototyping phase:** quick materialization of ideas – Storyboards, paper prototypes, role play. The key is fast feedback and repeating the cycle.
- **Testing phase:** collecting feedback, usability testing, “think-aloud” protocols. Ideally with the target group or with peers

What to consider when choosing a method

Apart from the process phase, practical limits and teaching goals are also important:

- **Time**: in a 90-minute lesson, fast methods work best, like short interviews or idea sprints. Longer formats allow for techniques that need preparation and reflection.
- **Group size:** large groups respond better to structured brainstorming or gallery walk; small groups are ideal for in-depth interviews and observations.
- **Goals:** if the aim is to develop empathy, direct interaction is best; for critical thinking, analytical and synthesis techniques are more suitable.
- **Discipline:** adapt methods to the study field – in business it can be customer scenario role play, in engineering physical prototypes, in social sciences ethnography.

Criteria for selecting a **method:**

- **Available time:** with little time (e.g. a 90-minute seminar), choose fast and easy-to-explain methods (e.g. short interviews, idea sprints). For multi-session workshops, use methods that require preparation and reflection.
- **Group size:** large groups work better with structured brainstorming or gallery walk, while small groups or pairs are ideal for observation, interviews, and peer feedback.
- **Teaching goals:** match the method to the intended learning outcome. For empathy, choose direct interaction (e.g. interviews, user observation). For critical thinking, use analytical or synthesis methods like creating insights or prioritization matrices.
- **Discipline specifics:** adapt DT methods to your field. In business, role-playing customer scenarios may fit; in engineering, prototyping can include physical models; in social sciences, ethnographic methods are valuable.

Combining methods

It is necessary to select methods thoughtfully so they match real conditions and desired results, adapting them to time, group size, goals, and context, while engaging participants and producing valuable solutions. Another important point is to combine methods and techniques from different phases, adjusting them to the current group dynamics and process needs. Combining strengthens creativity on one side and analytical thinking on the other, while also speeding up the path from idea to real solution.

Examples of combining methods:

- Combining interviews with user journey mapping gives a deeper insight into target group behavior.
- After brainstorming, dot-voting can be used to quickly select preferred ideas.
- Connecting paper prototypes with feedback cards allows more effective testing and improving ideas in short cycles.
-

This layered approach increases engagement and helps participants understand how different types of thinking work together – from divergent to convergent, from creative to analytical. Choosing and combining methods in the right order means using their strengths fully and turning the Design Thinking process into a smooth journey from understanding the problem to a tested solution.

What works for university students

They learn best in an environment that allows independence but has a clear structure, supports collaboration, and gives space to try new things without fear of failure. Visual tools like templates and canvases are useful, but with room for personal interpretation. At university, the goal is not a perfect result, but the development of skills – empathy, creativity, iteration, and critical thinking.

3.3 Design thinking in online education

Remote work brings many advantages, such as time flexibility, the possibility to include people regardless of their geographical location, and effective collaboration in international teams. At the same time, it requires stronger communication, coordination, and cooperation among team members who are physically apart. Thanks to the development of online tools during the COVID-19 pandemic, we are now able to run interactive workshops also in an online environment – including those based on Design Thinking principles.

Advantages and disadvantages of virtual workshops

Compared to traditional face-to-face workshops, online workshops offer several advantages that come mainly from the digital environment and from the possibilities of modern online tools.

- **Involving participants from different locations:** people can work together without the need for travelling. This also opens the opportunity to invite participants from abroad, which would not be efficient in a face-to-face format.
- **Time flexibility:** participants do not need to travel and can more easily plan to join at the exact time. It also allows faster transitions between activities.
- **Higher interaction:** digital tools like virtual whiteboards, polls, or chat can increase participant engagement.
- **Easy recording and archiving**online platforms allow recording workshops and storing documents and notes for later use.
-
-

However, we cannot ignore certain disadvantages and limits that in some cases can strongly influence the decision whether to choose an online workshop or prefer the face-to-face format.

- **Difficult to keep attention**: working with several programs can lead to switching between the task document, communication tool, and other activities. Active engagement during the whole workshop requires strong self-discipline.

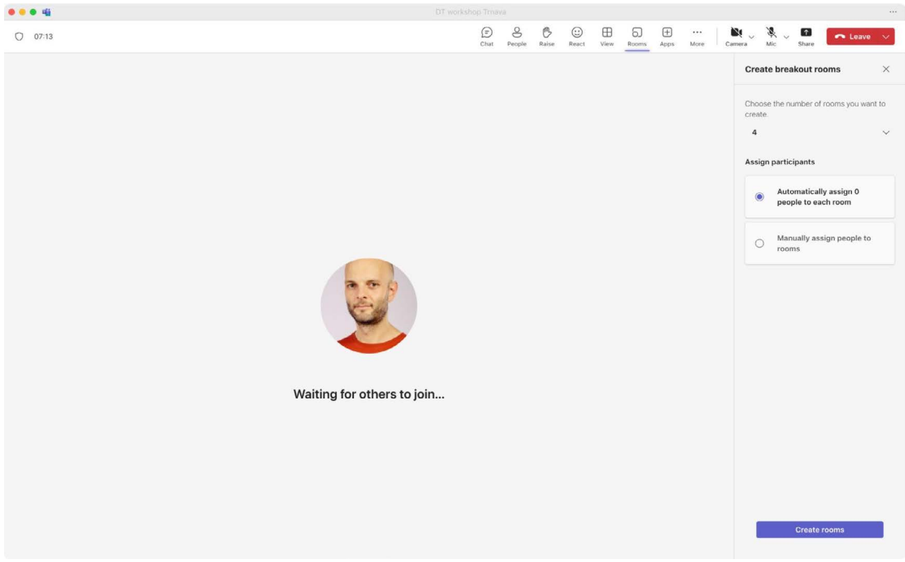
- **Limited personal interaction**: absence of physical presence reduces spontaneous discussion and informal communication, which often supports creative ideas and strengthens team relations.
- **Technical problems:** unstable internet connection or poorly set audio devices (microphone, speakers, headphones) can disrupt the flow of the workshop or even prevent some participants from joining.
-

The aim of this chapter is not to search for the ideal workshop format, but to focus on the specifics of the online workshop. In the following text we assume that the reader finds the online format meaningful and wants to learn more about how to run it.

Technical solution

To run virtual workshops focused on Design Thinking, two basic types of software are needed: a communication platform and a collaboration tool.

The communication platform is used for the video call and for managing the process of the workshop. The most common platforms are MS Teams, Zoom, or Google Meet. It is important that the tool supports the Breakout Rooms function – splitting participants into smaller group rooms, which is essential for group activities. In picture 5 we can see that the Breakout Rooms function allows with one click to create participant groups and move them into a private call. The event organizer (trainer) can enter any group call, guide the group, leave it, and move to another group or back to the main call.

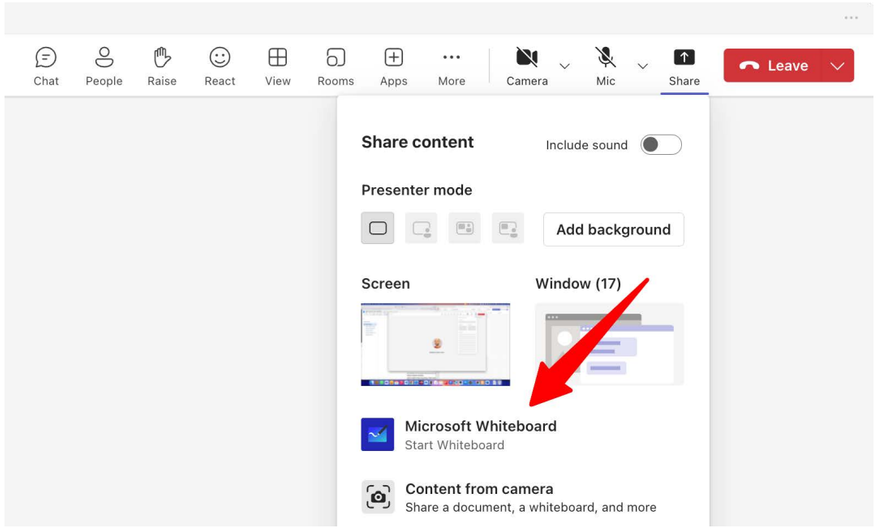


Picture 5 Breakout Rooms function for group work (own processing, 2025)

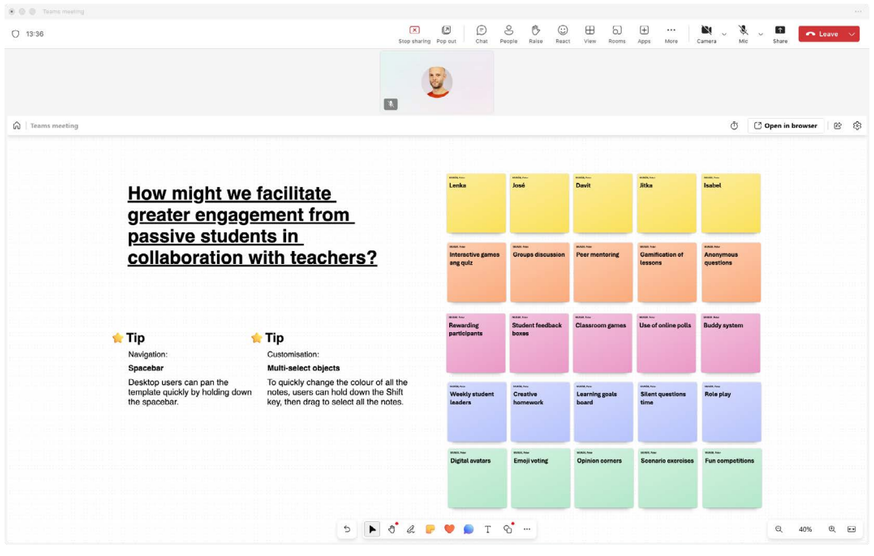
A collaboration tool allows participants to work together in real time, write down ideas, solve tasks, and share outputs so they can work on them jointly.
The most commonly used are Google Documents – simple, reliable, free to use, and suitable for any type of workshop. The trainer creates a separate document with a list of tasks for each group, shares it with editing rights, and participants work in it during the whole activity.

As an additional option, virtual whiteboards such as Microsoft Whiteboard are useful. They allow visual representation of ideas, brainstorming, or creating concepts. They offer many templates for methods like the Ishikawa diagram, Affinity diagram, Jobs to Be Done, and others.

An alternative is Miro (miro.com), which allows creating and sharing mind maps, diagrams, wireframes, and other visual outputs. The trainer can prepare a separate board with templates for each group, set timers, or use the private mode, where participants see only their own work and do not know what the other groups are doing



Picture 6 Whiteboard is available during every online meeting through the Share screen function (own processing, 2025)



Picture 7 Microsoft Whiteboard in MS Teams brings virtual brainstorming even closer to the experience of working in a real physical environment (own processing, 2025)

Workshop preparatioin

A successful online workshop requires not only teaching but also technical and organizational preparation. Well-designed settings of tools and processes help keep the workshop smooth, avoid delays, and allow participants to fully focus on the work itself.

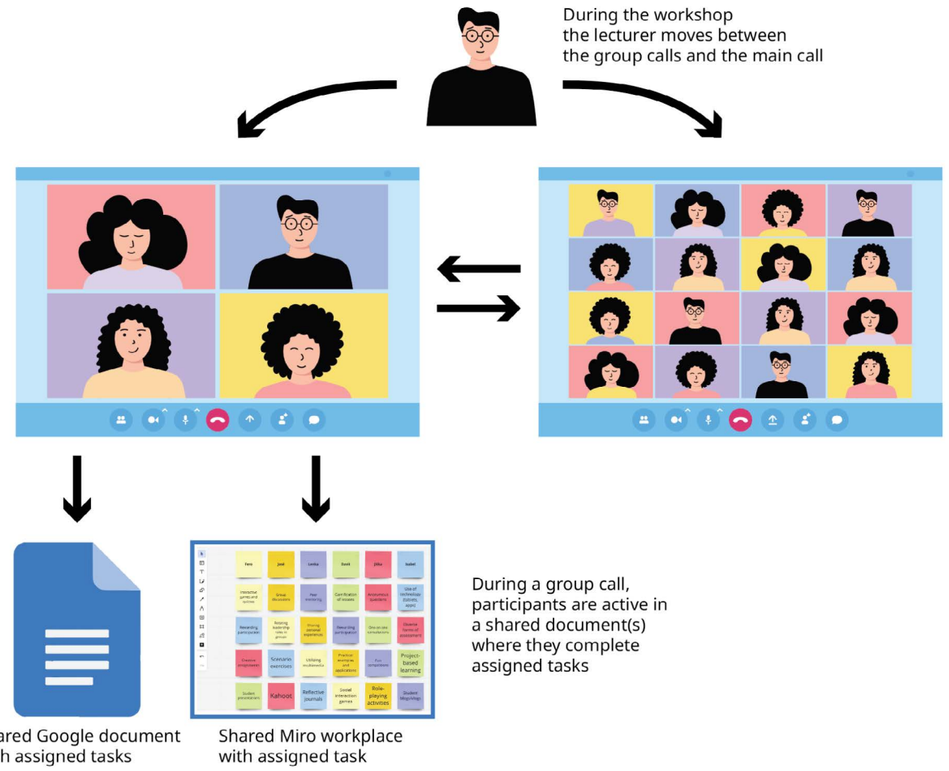
For collaborative work, we recommend using Google Documents regardless of company habits. Their simplicity, intuitiveness, and reliability are still unmatched in the field of collaborative work. As part of the preparation, the trainer needs to create Google documents in advance with all the tasks and assignments that participants will solve during the workshop. Each group should have a separate file, shared via a link with editing rights (not just reading or suggesting rights). The easiest way is when the trainer shares the links to the Google documents directly in the chat at the beginning of the meeting.

If the trainer plans to use Miro, it is necessary to prepare the board with tasks in advance, ideally based on a template that can be quickly cloned for each group. Sharing works similarly to Google documents – by entering emails, usernames, or via a link. The most effective way is to share a link with editing rights, placed at the beginning of the Google document with tasks for the group. A workshop prepared in this way has a clear structure and a smooth flow.

Workshop process

The workshop starts with a joint meeting, during which the trainer introduces the topic, explains the goals, and clarifies the tasks. Then, the trainer informs participants that they will be divided into smaller working groups. Each group receives a link in the chat to their Google document or Jamboard, where they will work together. After the set time ends, the trainer closes the group work, and all participants return to the main room. At this stage, the trainer summarizes the results and progress, gives feedback, and provides further instructions.

During group work, the trainer moves between the breakout rooms, checks the progress, gives advice, and guides participants. Similar to moving from table to table in a real classroom, this ensures that each group receives the necessary support and guidance. As shown in picture 8, during the online workshop participants alternate between the main call and group calls. The main call is used for the initial explanation and task assignment, while the group calls enable team discussion. At the same time, participants actively work in the shared document, where they solve the assigned task.



Picture 8 Process of an online workshop – combination of calls and a shared document (own processing, 2025)

Well-chosen communication and collaboration tools make it possible to keep a high level of interaction, cooperation, and creativity in the online environment. It does not matter whether the teaching takes place face-to-face or online – in both cases, careful preparation, thoughtful choice of methods, and the ability to adapt to ongoing feedback are crucial. The teacher – facilitator is the one who can turn the principles of Design Thinking into a meaningful and innovative learning process.

4.

The Design Thinking Teacher

4 The Design Thinking Teacher

Technological progress and changes in society bring new challenges to education that the traditional model can no longer fulfill. The teacher is no longer just a carrier of knowledge but becomes a guide and innovator who supports critical thinking, collaboration, and creativity. Design Thinking brings empathy, experimentation, and iteration into teaching, changing the way we learn.

In such a classroom, the teacher creates an environment where students can explore, ask questions, and try new approaches without fear of mistakes. More important than offering a ready answer is the ability to ask good questions, connect ideas, and help students distinguish between an idea, a solution, or a final concept. The student thus becomes an active participant in learning, with their own pace, style, and needs.

Team assignments create space not only for creative thinkers but also for implementers, organizers, and managers. Evaluation focuses on the whole process—collaboration, response to feedback, and progress over time. Failure is understood as a natural part of learning. For this approach to work fully, it is not only the teacher's thinking that must change but also the space and conditions in which education takes place.

4.1 The role of the teacher in the past and today

The internet, the web, search engines, and mobile devices have fundamentally changed how we see information and its value. Education is an area where this change is especially visible. In the past, teachers were seen as the main source of knowledge, passed on through frontal teaching—teachers lectured, and students passively received information. This model was strongly rooted in hierarchy and traditional rules that shaped the relationship between teachers and students (Gyawali & Mehndroo, 2023). As Keller and Raemy (2025) or Hoxha (2016) note, the knowledge dominance of teachers is now largely a thing of the past. Information is available anytime, in huge amounts, often within seconds. The role of the teacher is therefore changing—they become a guide, facilitator, and mentor who supports active learning and student independence. This approach increases student involvement in the process and strengthens their motivation.

Change in the teacher–student relationship

This shift also affects the relationship between teacher and student, or professor and learner. The traditional hierarchical model should ideally move toward a partnership based on collaboration and mutual respect. This allows the development of critical thinking, creativity, and the ability to solve problems independently (Sá & Serpa, 2020). Empathy and understanding of individual needs are becoming key elements of modern pedagogy.

The need for continuous updating

Technological progress and digital transformation have also influenced how teachers prepare for lessons and communicate with students. Interactive whiteboards, online learning platforms, and digital textbooks bring new opportunities to increase engagement and motivation (OECD, 2018). These tools make it easier to adapt content to individual needs, which improves the effectiveness of learning. More and more teachers are also using Design Thinking to better identify learning problems and design solutions tailored to specific needs (Brown, 2008). To respond to rapidly changing conditions,

teachers need to constantly develop. Dweck (2006) describes this approach as growth mindset—the willingness to continually improve skills and knowledge. This is also connected to a shift in evaluation: traditional grading is giving way to methods that focus on the learning process, feedback, and tracking progress (Hattie & Timperley, 2007). In this context, Design Thinking provides a flexible framework that helps teachers adapt teaching to current needs and student interests. It supports creativity, makes solving challenges easier, and develops the ability to react to change (OECD, 2018). Teachers who combine modern technologies with this approach create an environment that supports active learning, critical thinking, and student readiness for the challenges of the future.

4.2 Design Thinking mindset

Design Thinking is becoming an important approach in education that teachers can use to improve the learning process. This approach includes several key aspects that are essential for effective teaching and learning.

Empathy in pedagogy

Empathy is a core element of Design Thinking and a key tool teachers use to understand the needs and perspectives of their students. Thanks to empathy, they can better recognize individual challenges students face and design learning experiences tailored to their needs. Empathetic teaching helps teachers identify hidden barriers in learning and create an environment where students feel supported and motivated. Empathy means not only listening to students but also actively observing their behavior and reactions in different situations. This way, teachers gain a deeper understanding of their experiences and can adjust teaching so it suits everyone, including those who struggle with standard methods.

Experimentation and learning from mistakes

Design Thinking emphasizes experimentation and learning from mistakes as inseparable parts of the learning process. Teachers who follow this approach lead their students to not be afraid of trying new things and to see mistakes as opportunities for personal growth. This approach increases student engagement and develops life skills such as curiosity, resilience, and problem-solving. Experimentation can take the form of different projects, lab work, or group discussions, where students can safely try new ideas and immediately see the results of their efforts. This process helps them understand that mistakes are a natural part of learning and bring valuable lessons for the future.

Growth mindset

Growth mindset is another pillar of the design approach that supports the continuous personal and professional development of teachers. Teachers with this mindset are open to new challenges and willing to keep improving their practice. In times of rapid changes in education, including the introduction of new technologies and methods, growth mindset is considered crucial (Dweck, 2006). Teachers who show interest in learning and development themselves also motivate their students to take the same approach. This creates a cycle of mutual inspiration and improvement, which contributes to building a dynamic and innovative learning environment.

Openness and creativity

Supporting open thinking and a creative approach to teaching is a key part of the Design Thinking concept. Teachers should encourage students to ask “what if?” questions and look for new solutions to problems. This approach develops not only creativity but also critical thinking and the ability to see things in a wider context. Openness and creativity can be developed through brainstorming, project-based learning, or collaboration between different subjects. Students then gain experience with different perspectives and methods and learn to see challenges as opportunities.

Adaptability and flexibility

In today’s educational environment, adaptability and flexibility are essential. Teachers must be able to respond to changing conditions and individual needs of students. This approach is necessary not only for their own professional growth but also for improving the overall quality of education. Teacher flexibility makes it possible to adapt methods to the needs and interests of students. This can include adjusting learning materials, techniques, and strategies to make sure all students have access to learning. It also means being open to new ideas, changing established routines, and implementing innovative solutions that can improve the whole learning process.

4.3 Design Thinking leadership

Defining the term “design” can be difficult, but its impact is easy to recognize—especially when it fails. It often shows the dysfunction or mistakes in a system that we meet in all areas of life, including schools and universities. Design Thinking represents a way of problem-solving that combines creativity with the systematic use of methods and processes to create innovative and functional solutions. People often imagine Design Thinking as an isolated method used only occasionally—when a specific problem needs to be solved. But this uses only part of its potential. In reality, it can also be a mindset—a way to lead a school, company, or organization openly, with empathy, and with readiness to respond to new challenges and opportunities.

From random ideas to systematic innovations

Many leaders—deans, school principals, heads of departments, and others—come up with individual ideas. Design Thinking can help them not to be just random innovators but leaders who systematically search for new solutions and test them in practice. The foundation is to understand people’s needs, test ideas, change them, or even leave them behind. Leaders who think this way act with more purpose and greater impact—and Design Thinking helps them turn ideas into real changes. The difference between traditional and design-oriented leadership is shown in the following table (Gallagher & Thordarson, 2018).

Traditional leadership versus design thinking leadership

Traditional leadership and design thinking leadership differ in key aspects. Traditional leadership focuses on the teacher and their role in the education process, relying on hierarchy and fixed organizational rules. Leaders in this model often depend on already proven practices, which can lead to fear of crossing established boundaries. This

approach starts from limitations and brings slower decision-making, since every step is carefully considered to avoid mistakes. Static thinking values correctness and risk minimization—which has its place, for example, in accounting, logistics, or production—but it does not offer much space for innovation or breakthrough solutions.

Table 2: Difference between traditional and design thinking leadership
(Gallagher & Thordarson, 2018; adapted, 2025)

Traditional leadership	Design thinking leadership
• focus on the teacher • strong influence of hierarchy • fear of crossing recommended and usual practices • starts with limitations • slow action • starts with answers • fear of the unknown • prefers order and putting things in boxes • values correctness and risk avoidance • static mindset	· focus on the student · values the intelligence in the room, regardless of status · not afraid to go beyond usual practices and find new ways · starts with possibilities, “What if…” · tendency to act · starts with questions · accepts ambiguity · comfort with disorder during learning · values good questions and experimentation · growth mindset

Unlike traditional leadership, design thinking leadership emphasizes the student and their needs, while recognizing the contributions of all team members regardless of position. It is open to crossing established practices and finding new, innovative paths. It starts with possibilities and questions like “What if…?”, which supports experimentation and action. A leader in this model accepts ambiguity and the natural disorder of the learning process. Growth mindset values good questions and testing of ideas, which leads to continuous improvement and innovation. Mistakes are seen as part of the process, not as failure.

Five roles of a design-oriented leader

Gallagher and Thordarson (2018) identify five roles through which this approach shows itself:

- **Experience architect:** designs and curates learning experiences that go beyond the status quo.
- **Rule Breaker:** thoughtfully disrupts traditional approaches and processes.
- **Producer**: keeps the goal in sight, starts processes, creates fast learning cycles, and takes responsibility for the final result.
- **Storyteller**: can capture both hearts and minds and support an authentic learning environment.
- **Opportunity Seeker**: does not stop at solving problems but actively looks for new possibilities.
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-

Each role has its own attitudes and ways of thinking—some are well known from other environments, others may be new to schools. The change to this way of leadership does not have to be radical; it can happen through a series of smaller steps that, over time, bring visible progress.

Education today needs teachers and leaders who are constantly developing, trying new approaches, and adapting to the dynamic changes of society. Design Thinking supports them in this—not only as a set of methods and techniques, but mainly as a way of thinking based on openness, empathy, and the courage to experiment. It creates an environment where students are not just passive receivers of knowledge but partners in searching for solutions. Even small changes or short teaching experiments can be impulses for deeper transformation that makes education more engaging, creative, and accessible for everyone.

4.4 What can be done in 3 hours

Many teachers would like to innovate their teaching, but they are discouraged by the assumed time demands. However, a lot can be done in just three hours. Three lessons during a semester do not have to be an obstacle—they can instead be a good opportunity to try the basic principles of **Design Thinking** in a compact but effective form. This section offers a plan on how to use 3 × 90 minutes efficiently and at the same time show students the essence of creative problem-solving.

1st lesson: Observation, interview, and problem definition

The goal of the first lesson is to teach students to look at a problem from the user’s perspective. The introduction (about 15 minutes) is for presenting Design Thinking, its phases, and benefits. Then students work in teams—with a pre-set problem (e.g., “Improve the everyday life of a university student”) or with their own chosen area. Using simple techniques such as *empathy map* or short interviews with classmates, they identify user needs, frustrations, and motivations.

The outcome is a *How Might We (HMW)* question that frames further idea searching. If time is limited, it helps to prepare the task in advance and guide teams to collect insights quickly.

2nd lesson: Ideas and selecting a solution

The second lesson is focused on generating ideas and choosing solutions. At the start, a short warm-up activity can be included to support creativity—for example, finding unusual uses for a common object. After that, teams brainstorm on their HMW questions, where:

- quantity is preferred over quality,
- ideas are not judged when they appear,
- teams build on each other’s ideas,
- diverse and often bold proposals are welcome.

Ideas are then grouped, and 1–2 with the most potential are chosen. These are briefly presented to the class and receive feedback. It is recommended to leave room also for “crazy” ideas—these often lead to innovative solutions.

3rd lesson: Prototyping and feedback

The last lesson is for fast prototyping and feedback. Teams prepare a low-fidelity prototype—such as an interface sketch, storyboard, paper model, or simple mockup.

Then:

- they present the prototype to another team,
- the second team in the role of “tester” gives feedback using a simple grid (what works / what is unclear / what could be improved),
- students note down insights and focus on findings that can shape further development.

At the end, there is a short reflection—what worked, what was surprising, and how the solution could be improved. This phase often brings the most learning, because prototypes reveal weak points as well as new opportunities.

What students take away

Even in three hours, students can experience the essence of Design Thinking: teamwork, dealing with uncertainty, asking questions, experimenting, and making mistakes without fear of grading. They realize that solutions come from interaction with people and real needs. Many will experience learning that is not about correct answers but about the courage to explore and test. When planning, it is good to choose a topic close to students, set clear time limits, and use simple tools—paper, markers, and classroom walls are often enough. At the end of each lesson, leave time for feedback and summary.

The three-hour format does not cover the full complexity of Design Thinking, but it can plant a seed of curiosity and show that even regular classes can be a space for creativity, questioning, and shared discovery. For teachers, it is an ideal way to try the method without big risks—and maybe the first step toward a bigger change.

Do not be afraid to start

First small steps often decide whether Design Thinking becomes only a one-time experience or the beginning of something bigger. You do not need to have everything perfectly prepared—it is enough to have the will to try, openness to failure, and trust in students as partners in discovering solutions. Every lesson that manages to break routine is a chance to make education better.

5. Design Thinking in the Classroom

5 Design Thinking in the Classroom

The environment in which teaching takes place has a major influence on both the process and the results of learning. With **Design Thinking** this is even more important—a flexible, creative, and collaborative approach needs spaces that allow quick changes in setup, support communication, and give students room to experiment. It does not really matter whether it is a specially equipped lab or a regular classroom; what matters is that the space responds to the needs of the people who use it. In this chapter, we will look at practical aspects of creating and adapting learning spaces so they support creativity, teamwork, and a smooth flow through the phases of Design Thinking.

5.1 Classroom setup

Classrooms that support Design Thinking are not just places where “teaching happens”—they are also tools for learning itself. More and more educational institutions explore how physical space can help teamwork, visualization of ideas, and spontaneous testing of solutions. Thanks to creative methods, available technologies, and the open approach of teachers, traditional frontal teaching is changing into an interactive and experience-based process. Flexible spaces allow students not only to move freely but also to quickly change the work dynamic according to the needs of each phase of Design Thinking—different for empathy, different for idea generation, and different for prototype testing.

Classroom space as part of Design Thinking

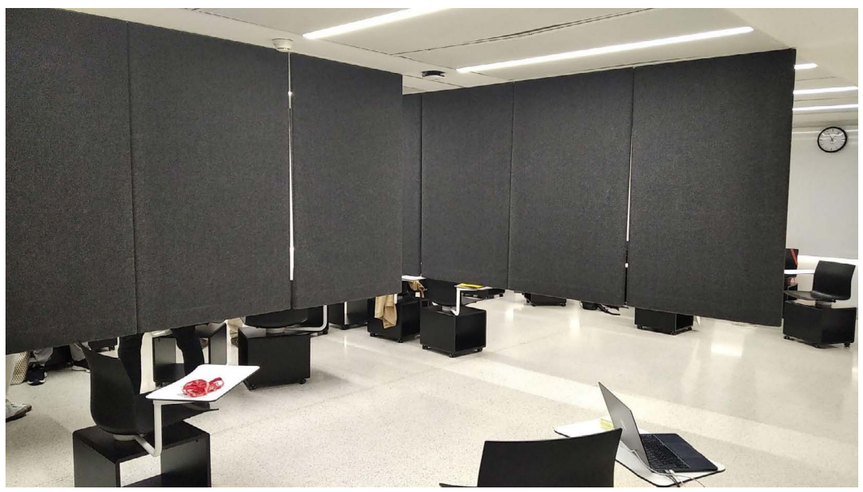
A well-designed space is open, adaptable, and inspiring. It allows free movement and creates zones for different work styles—a quiet corner for reflection, a table for group discussion, or an open area for presenting ideas. These details support teamwork dynamics, and space divided into smaller work zones helps students focus while also giving them some privacy for team tasks. The quality of a classroom is not in design decorations but in how it helps students learn actively and collaborate. From this perspective, any classroom can be adapted for Design Thinking—even with a minimal budget.

Picture 9 Traditional classroom layout as a lecture hall for a large audience. Photo: Rudolf Rokošný, 2025

From traditional classroom to flexible space

To start, it is enough to replace the classic conference-style seating with 4–5 tables with chairs around them. This layout is much more suitable for group work and it encourages activity much more strongly than conference seating, which tends to invite passive listening. Classrooms designed in the spirit of Design Thinking are flexible, interactive, stimulating, and open. If we go further, a Design Thinking classroom can be improved by creating work zones adapted to the different phases of the process. There can be a zone for problem-finding and brainstorming with larger tables where the whole group fits comfortably and can work with many sticky notes or templates. Another part of the classroom can serve as a zone for discussion and evaluation of ideas, equipped with flipcharts or writable boards for collective feedback and active debate. Next, a prototyping zone gives access to paper, tape, scissors, or simple modeling materials. Finally, a testing zone allows teams to present their prototype and immediately collect feedback from others. Dividing the classroom into such zones supports different learning styles and allows free movement.

Picture 10 Space for individual and team work. Photo: Peter Murár, 2025.

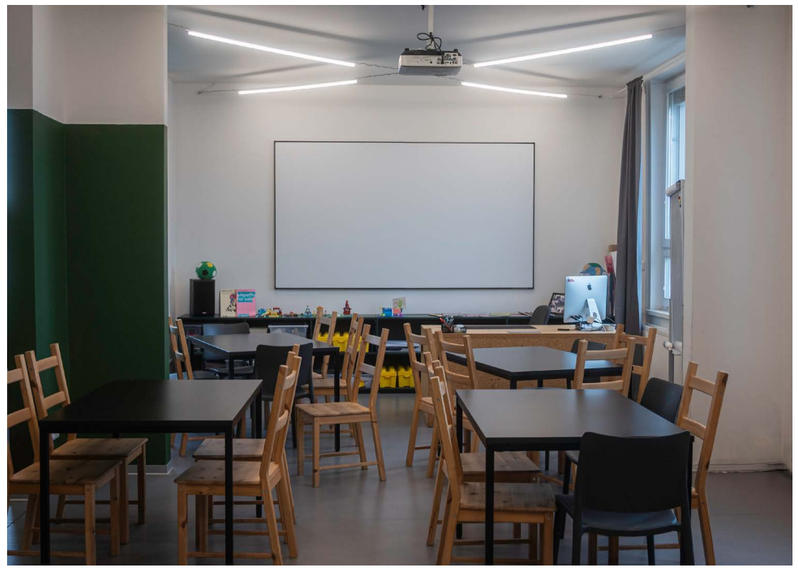


Picture 11 Panels for flexible space division. Photo: Peter Murár, 2025.

In figure 11, a classroom is shown divided by panels fixed to ceiling rails. The panels make it possible to create smaller zones, and their textile surface with a soft texture effectively absorbs the natural noise in the room.

5.2 Classroom equipment in the context of Design Thinking

The arrangement of tables and chairs should support team dynamics—for example, with round or grouped tables—and at the same time allow quick reorganization of the space according to current needs. For teamwork, several tables surrounded by chairs have proven effective, as their setup makes communication and collaboration easier. Large boards, flipcharts, or a projector work well for presenting and visualizing ideas. An interesting solution is walls painted with chalkboard or whiteboard paint, which can be used for drawing, writing, or visually mapping ideas. Another practical option is ceiling rails with movable panels—these can serve as writing surfaces or dividers, making it possible to quickly adapt the space to the activity at hand.



Picture 12 Classroom for group work. Photo: Rudolf Rokošný, 2025

Didactic and creative tools

Effective work in the spirit of Design Thinking requires a variety of tools. The basics are post-its, markers, colored paper, strings, tape, scissors, or modeling clay, which allow quick creation and adjustment of prototypes. Other useful tools can be LEGO sets, modeling materials, or simple building supplies for visualizing concepts.
Having these tools available creates an atmosphere where students feel free to experiment, change the pace of work, and adapt to different phases of the process.

Picture 13 Tools for prototyping. Photo: Rudolf Rokošný

Transforming space into a learning tool

Thoughtful classroom layout, availability of tools, and the teacher's ability to create an atmosphere of trust and openness are the foundation for effective learning through Design Thinking. A classroom designed this way stops being a static place for delivering knowledge and becomes a dynamic space that supports collaboration, empathy, critical thinking, and creativity. Here, students not only develop their own ideas but also learn to work in teams, accept feedback, and respond flexibly to new challenges—key competences of the 21st century.

6. Case studies

6 Case studies

In this chapter we introduce two case studies that show how Design Thinking can be adapted to different conditions and goals in education. Both studies were created in different environments and differ in scope and depth, but they share a focus on the practical application of Design Thinking in teaching practice.

The first study – Safari in the classroom – was developed at the University of St. Cyril and Methodius as part of a short-term innovation workshop. The starting point was not a specific challenge, but an open space for looking for improvements. The result was a feasible solution that proved to be functional and sustainable in the long term. This example shows that even with limited time and resources, it is possible to achieve visible results – especially if the current needs of students are captured and existing links to practice are used.

The second study – Innovative methods to improve teaching – presents a systematic, long-term innovation process at the University of Navarra. Here, Design Thinking serves as a tool for deeper understanding of the needs of students and teachers, for redesigning courses, testing alternative forms of assessment, and supporting a culture of experimentation. It is a complex approach that goes beyond a single activity and moves towards transforming the educational system.

Both studies are inspiring, each in its own specific way. Safari is a good example for those who want to change something quickly and with a smaller team. The case from the University of Navarra can appeal to those who are thinking about a deeper transformation of teaching or the whole institution. Together they show that Design Thinking is not just a “creative method”, but an adaptable approach that can be applied in one-time changes as well as in long-term system innovation.

6.1 Case study - Safari

This case study shows how Design Thinking can lead to creating a simple but effective initiative that responds to a specific need of students. The workshop at the Faculty of Mass Media Communication, University of St. Cyril and Methodius, took place during three sessions. In the first session, participants focused on defining different target groups and their needs. They identified two main groups: students and teachers. Then they divided into two working teams, each focusing on one target group. In this case study, we will look only at the team that worked on student needs.

Problem

The group focused on a problem that could be described as the lack of clear direction among students. From research we carried out earlier at FMK UCM, it turned out that up to 83% of students see the attribute “creative” as the most characteristic for the faculty’s students. Other attributes followed with a big gap. However, teachers clearly notice that a large part of students, even in higher years, do not have a clear idea about their career path. They are undecided, and throughout their studies they lack a clear vision of their professional direction.

This phenomenon can also be observed in a wider social context. The study program in marketing communication does not require students to consciously specialize. The offer of elective courses creates space for specialization, but the system of prerequisites is

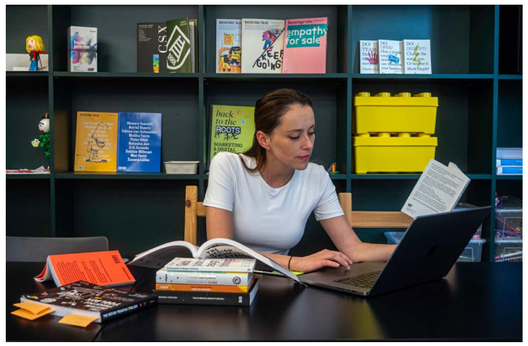
not strictly set. As a result, many students try courses from different areas during their studies. On the one hand, this gives them the chance to discover their field of interest, but on the other hand, many still do not have a clear idea about their career even in the final phase of their studies.

Timeline

September 2022 – Workshop 1: Defining the project scope
October – November 2022 – Research and insight mining
January 2023 – Workshop 2: Reflection on research, narrowing the scope, choosing one problem and generating ideas for solving it
March – April 2023 – Implementation of a pilot event (prototyping)
May 2023 – Evaluation
September 2023 – Scaling 1: Creation of 4 more safaris within the same department
September 2024 – Scaling 2: Creation of more safaris in other departments

Workshop 1: Finding the problem

In the first workshop, participants focused on the phases of empathizing and defining. To reach the widest impact, they concentrated on extreme groups of students. The first group were *students who dedicate only the bare minimum of their time to studying*. They do not care about grades and think in a binary way: passed–not passed. The second group were *over-motivated students who, besides school, also work in the field, attend professional conferences, and actively take part in faculty events*.

Picture 14: Extremes highlight the diversity of needs, attitudes and motivation of the target group and open the door to ideas beyond common patterns. Photo: Rudolf Rokošný

After identifying these groups, the workshop participants formulated this challenge:
How can we help 4th-year students[1] to profile themselves so they can discover and improve in what they enjoy?

The end of the workshop focused on preparing interviews with representatives of both student groups. Participants prepared questions for semi-structured interviews, which allowed them to respond flexibly to individual situations (answers) of the respondents. The interviews were conducted through video calls on MS Teams and were recorded. In total, 6 interviews were carried out. Before the second workshop, participants listened to each other's recordings, which helped them better understand the perspectives of both groups.

1 The standard length of study in Slovakia is 5 years, so the 4th year is the last real chance for students to profile themselves.

Intro – warm-up questions:

- What is your name?
- Where do you work? (company + position)
- What study program did you study at our faculty?

Core questions:

- What did your typical day look like when you were still studying?
- Why did you decide to study at our faculty?
- Why did you apply to university at all? (Why didn't you go straight to work after high school?)
- Which assignment or project did you recently really enjoy?
- Which specific courses did you enjoy?
- Which specific courses did you not enjoy at all?
- What would be so valuable for you that you would prefer school over work?
- What do you use in your work today that you expected to learn at school but did not?
- Do you remember a situation at school when something really excited you? What was it?
- Do you remember a situation when something really demotivated you?
- Do you remember a situation when you proudly said you studied at our faculty?

Final questions:

- Is there anything else you would like to add on this topic?
- Do you want to ask us something?

Since these were semi-structured interviews, apart from the listed questions, participants also asked some additional ones that came up in specific situations. For understandable reasons, they are not included here. The workshop facilitator recommended conducting at least five interviews, and the group eventually managed to carry out six. All interviews were conducted through MS Teams video calls and were recorded. Before the second workshop, group members listened to each other's recordings to get a sense of the reality of several respondents, not only the one they personally interviewed. In this way, they gained valuable insights that helped them better understand the needs and motivations of both extreme groups.

Workshop 2: Generating idea

The second workshop focused on the ideation phase. Participants started with silent brainstorming, where the facilitator emphasized that there are no limits to creativity – *"Sky is the limit"* – and everyone should propose at least 10 solutions.

After the time limit ended, the facilitator invited participants with the highest number of ideas to present them to the others. This strategy proved very effective, because from the very beginning a strong base of topics and solution areas emerged, which others could smoothly build on. Then participants added their suggestions to a shared board, grouping them step by step according to similarity. The facilitator also created space for adding more ideas.
In the end, all suggestions were clearly divided into several thematic groups:

Study programs:
- Theses lasting 2 years
- More flexibility in studies
- Change the seminar system in the master's degree – longer seminars
- Narrow student profiling: graphic design/PR/online
- **Flexible timetable choices**
- Cancel boring courses
- Narrow the topics of compulsory courses so they don't go too far from marketing
- Improve/expand the choice of elective courses
- **Reduce compulsory courses in favor of electives**
- Or at least reduce time allocation + seminars for them in favor of more useful courses
- Cancel unnecessary elective courses
- **Improve students' soft skills**

Practical experience and connection with practice:
- Internship abroad in the field
- Mandatory internship in a company for 6 months
- Field research
- Give students real practice, not just formality
- Linking several courses
- **Enable them to connect with practice to see how it really works**
- **Work on practical projects**
- **Show everyone agency life**

Support and resources for students:
- Access to Seduo online courses by purchasing a company account
- YouTube Premium free or cheap for students
- A book for every student
- Buy MacBooks for all
- Access to foreign courses

Interdisciplinary and innovative education:
- **Multidisciplinary assignments – real situations**
- Practical assignments based on usefulness
- **Digital safari**
- More bachelor/master thesis topics as real problems in cooperation with companies
- Support proposing custom bachelor/master thesis topics

Pedagogical and mentoring support:
- Employ at least 5 practitioners in master's programs
- Education for teachers, mentors
- Classes in the form of individual consultations for specific problems
- Buddy program from FMK alumni
- Have a buddy from among students

Creative and motivational activities
- High reward for the best team in a course
- More networking – e.g., school agencies
- Do brainstormings on various topics

After presenting all the ideas, a joint discussion followed. The ideas that participants found the most interesting and that became the subject of deeper debate were highlighted in bold on the board. In some cases, it turned out that several group members came up with very similar suggestions, which indicated their shared relevance.

Final idea

From the discussion, a common conclusion emerged – the focus should be on the concept of **so-called safari – excursions to companies.** Participants agreed that this form of experiential learning could help students better imagine specific professions and consider whether they could succeed in that field.

Apart from the informational benefit, the motivational aspect of this solution also played an important role:

1. In some companies, students could meet graduates of the faculty, which would give them authentic feedback about their career path.
2. Company spaces are often visually attractive and strongly create the creative atmosphere that often prevails in marketing departments.

The idea was also evaluated as realistic, mainly thanks to the good relationships FMK UCM has with several companies, which created favorable conditions for its quick and successful implementation.

Pilot – outcome after the workshop

The promise of quickly carrying out a pilot project was fully met. What was outlined only as an idea during the workshop was soon successfully implemented. The teacher who took charge of the organization quickly contacted three willing full-service advertising agencies and arranged specific dates for visits. These were well-known agencies with a long history on the Slovak market, working for prestigious clients. Another advantage was that several FMK UCM graduates worked in these agencies, and the faculty had excellent long-term relationships with them. Thanks to this, the agencies quickly got excited about the Safari concept and actively joined in.

The pilot event was promoted specifically among 4th-year students, with the teacher mainly reaching out to talented and motivated ones. The idea behind this choice was clear: to inspire students who would then share their positive experience with classmates and thus naturally increase interest in participation in the next academic year.

The pilot safari turned out to be very successful. In one day, students together with the teacher visited three agencies, where they had a tour of individual departments and a short workshop. Students were excited about the opportunity to see agency work up close, as it gave them a more realistic idea than just hearing about it second-hand. The success of the pilot event was underlined by the fact that three of the eight participating students made such a good impression during the visits that the agencies later invited them to an interview. Two of them were even accepted for junior positions.

Picture 15 Pilot Safari. Photo: Linda Barborková

Safari today

With some time passed, we can say that the chosen strategy worked out exactly as expected. During the following academic year, we managed to involve more colleagues in the Safari project, who became guarantors of individual thematic Safaris. One year after the pilot event in full-service agencies, we were already offering students six different thematic Safaris:

- **PR safari –** focused on learning about work in PR agencies
- **Global safari** – focused on marketing in corporations with global brands
- **Agency safari** – focused on work in traditional full-service advertising agencies
- **Digital safari** – focused on digital agencies oriented on social media and performance marketing
- **Client safari** – focused on preparing campaigns from the client's perspective
- **UX safari** – focused on work in UX studios or corporate UX departments

The partners of these Safaris were always strong brands and respected companies from practice, which significantly increased the attractiveness of the events. Students had the chance to look into inspiring work environments and gain valuable know-how directly from practice during workshops.

With great pleasure, two years after the first Design Thinking workshop, we welcomed the initiative of other departments that showed interest in joining. Thanks to this, the offer of Safaris expanded with new formats:

- **Media literacy safari** – focused on the work of organizations active in media and information education
- **Radio safari** – focused on learning about work in radio
- **Game safari –** focused on work in game development studios
- **TV safari –** focused on work in television news
-

Picture 16 Students during a corporate safari at Procter & Gamble. Photo: Linda Barborková, 2025

Safari has proven to be an effective initiative that does not try to solve the entire system but instead focuses directly on a specific need – helping students profile themselves better at the end of their studies. The concept, as it was designed, has worked well and shows long-term sustainability. Feedback from students was very positive. They especially appreciated the chance to look into a real work environment and compare their expectations with reality. Over time, we can also see that the Safari brand has become well known among students.

That is why we can confidently say that the Design Thinking workshop fulfilled its goal and left a tangible, long-term impact on the quality and meaningfulness of the students' learning experience.

6.2 Case Study: Applying Innovation Methods to Improve Teaching Quality at the School of Communication

In the academic year 2017/2018, ten professors from the Faculty of Communication at the University of Navarra – four from marketing, three from audiovisual communication, and three from journalism – launched a project aimed at exploring and experimenting with different methodologies. The starting point was the question: *"How could we innovate?"*

Innovation techniques are an effective tool for exploring new possibilities and reducing risks. *"Fail cheap, fail fast"* became a well-known slogan that reflected this philosophy: when no data was available and uncertainty prevailed, innovation tools guided the implementation of measures after data collection. They could be used to improve teaching practices, increase student satisfaction, and support their engagement.

The goal of the working group was to use these tools and design a reliable method for improving academic content and applying the Design Thinking methodology. Design Thinking had the potential to meet student needs in a way that was both technologically feasible and strategically viable. It had to include empathy for students, who became the center of the process together with teachers.

The project aimed to test the suitability of Design Thinking for improving the curriculum of courses in PR, radio, writing, multimedia communication, creativity, and economics. The expected outcome was a methodology for co-creating better learning experiences according to student expectations – so that anyone interested in a similar process could replicate the same approach.

Timeline

First phase:

- **September 2017** – Phase 0: Challenge – defining the project scope
- **October 2017** – Phase 1: Empathy – system stakeholders, research of best practices, interviews with stakeholders
- **December 2017** – Phase 2: Focus – interpreting patterns and defining partial challenges
- **January 2018** – Phase 3: Idea – co-creation with stakeholders, evaluation and selection of prototypes
- **March 2018** – Phase 4: Prototyping – prototype design
- **April 2018** – Phase 5: Testing – prototype implementation, collecting feedback from stakeholders, results analysis
- **May and June 2018** – Redesigns: iterations of previous phases (as required by phase 5)
- **August 2018** – End of the first phase
-

Second phase:

- **October 2019** – Review of achieved results and setting new challenges
- **November 2019** – Feedback models
- **December 2019** – Presentation of prototypes by professors
- **December 2019** – Selection and implementation of prototypes
-
-

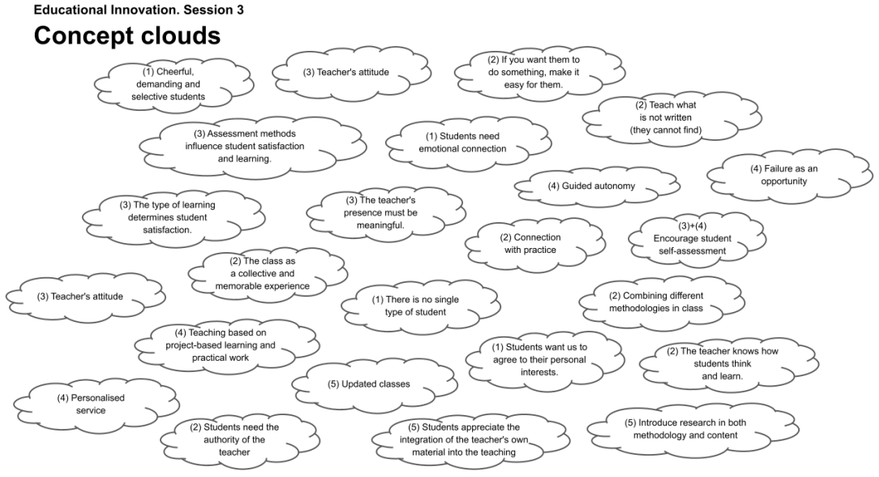
Empathy phase

The first step was to define the main goals, while the final goal was different for each participant. Using different techniques (*"A day in the life…", customer journey map, 5W+H*), four goals were specified:

- **Understand how to reach and engage current and future students** :In this case, the main user is the professor. This goal aimed to develop solutions that – from the teacher's perspective – allow closer involvement and greater impact in achieving academic goals, while also communicating in the language of students.
- **Satisfied and well-educated students:** Here, the main user is the student. This goal focused on empathizing with students in order to achieve greater educational impact (quality) and emotional connection (positivity and engagement). It aimed to develop new curricular solutions as well as possible new class or learning space structures.
- **Tested prototypes**: This was the main goal of the project: not only to create theoretical definitions, but also to implement pilot tests that could be verified and provide the necessary knowledge to evaluate the real impact of new solutions.
- **Teaching materials serving as a guide (including ways to improve the education system):** The team intended the final output to take the form of a handbook, manual, set of guidelines (or another format) that could extend teaching and support the use of new solutions across different faculties and courses at the University of Navarra.

Picture 17 At the beginning it was necessary to define the scope of the project: who we want to reach and what we want to achieve (own processing, 2025)

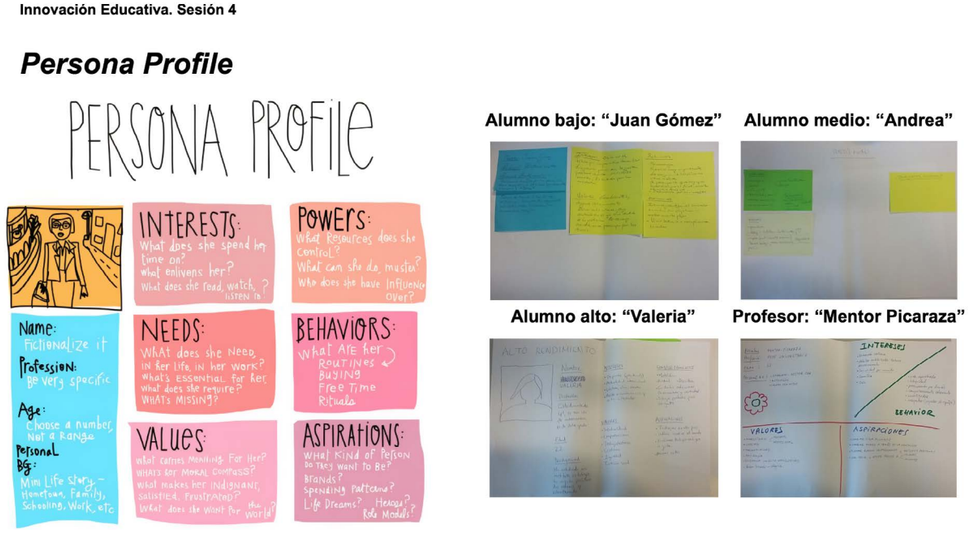
At the second meeting, team members shared the information they had gathered about the challenge so far. They wrote down their insights on sticky notes that were visible to everyone. Then they discussed their assumptions, asked for feedback, and admitted what they still did not understand. Finally, they grouped the information by themes so they could plan the research and continue on a stronger foundation.



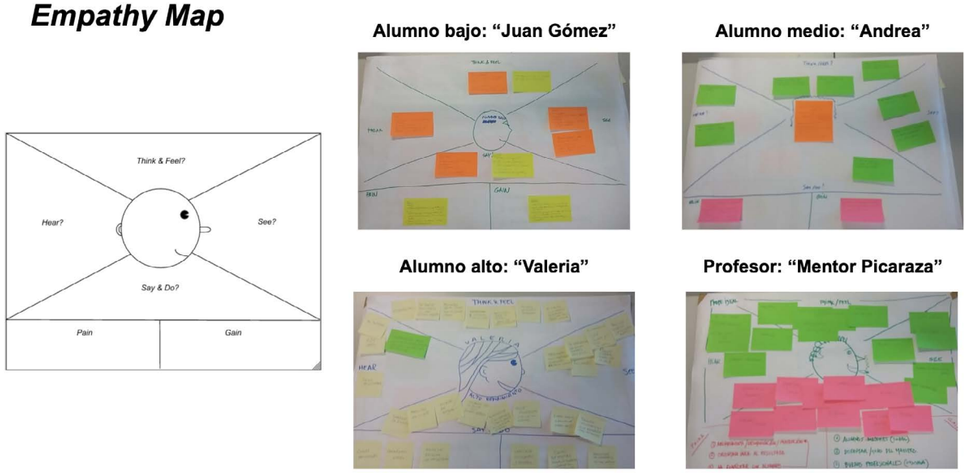
Picture 18 Writing down insights and ideas served as a basis for planning further research (own processing, 2025)

Word clouds:
(1) Students are cheerful, demanding, and selective
(1) There is no single type of student
(1) Students want us to address their personal interests
(1) Students need emotional connection
(2) If you want them to act, make it easy
(2) Teach what is not written – what they cannot find
(2) The class as a collective and unforgettable experience
(2) Connection with professional practice
(2) Combine different methodologies
(2) The professor understands how students think and learn
(2) Students need the authority of the professor
(3) Learning style affects satisfaction
(3) Assessment methods affect satisfaction and learning
(3) The professor's presence must have meaning
(3) Professor's approach
(3) Professor's qualification
(3)+(4) Professor's competences

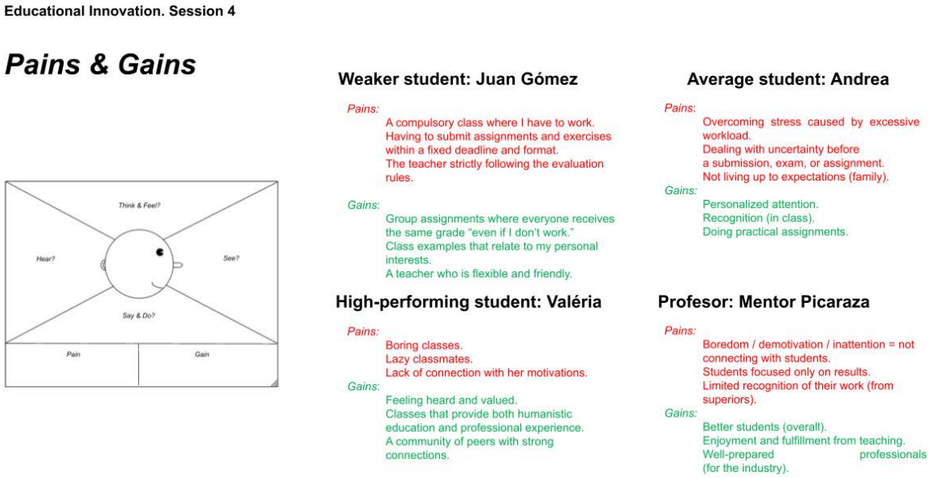
At the fourth meeting, aimed at designing questionnaires and interviews, the team created personas, their empathy maps, and a following analysis of pains and gains. With these tools as a starting point, it became easier to formulate questions for interviews with students and professors from the Faculty of Communication at the University of Navarra.



Picture 19: Workshop participants identified four different personas (own processing, 2025)



Picture 20: Empathy maps of individual personas show their specific perception of reality (own processing, 2025)



Picture 21: The identified problems and expected benefits help to better understand the needs of the target person and guide the design of the solution (own processing, 2025)

Finally, the following questionnaires were prepared:

Questionnaire for students

- Identification data: level of study, year, gender, nationality, place of residence, do you receive a scholarship?
- What is/was your ideal class? (Give three positive and three negative aspects)
- What is/was your ideal professor? (Give three positive and three negative aspects)
- Do you remember which assessment system you liked the most (not because of the grade, but because of the system itself)?
- What happens in class, and what happens with you, when you connect with what is going on?
- Can you recall something from a course that was useful outside the classroom (in life, internship, work, or higher studies)? Why do you think it was useful?

Questionnaire for professors

- How do you know if a class went well?
- What do you do to connect with students?
- What is your ideal student?
- What competences do you want to pass on to students so that they become good professionals (both academically and beyond)?
- What do you think industry is looking for? How do you know?
- Why did you decide to become a professor?
-
-

Define phase

During the fourth session, the team began this phase by sharing inspiring stories based on the interviews they had conducted. Instead of simply summarizing data, each member spoke about their experiences with participants, describing who they were, what motivated them, what frustrated them, and how they interacted with their learning environment. This dynamic helped create shared, emotional, and concrete insights, which

allowed the team to see beyond general statements and connect with the real people behind the challenge.

As the stories were told, the walls filled with post-it notes containing significant insights, quotes, and behaviors. Actively listening to others was key to identifying contrasts, similarities, and surprises. In this exchange, recurring themes started to emerge – for example, the need for emotional connection between teacher and student, the desire for excellence, or the tension between educational innovation and the limits of time and resources.

Once the team was surrounded by stories, they moved on to organizing them. This took place during the 6th session, where each person chose the post-it notes they considered most relevant, and together they grouped them according to thematic similarities. Main categories appeared: teaching vocation, shared motivation, pedagogical sophistication, high standards, and openness to the world. This activity revealed that many professors wanted to educate responsible and innovative students, but faced structural and personal obstacles.

Based on these categories, the team worked on formulating headings that clearly summarized the main ideas, always linked to real experiences, not assumptions:

- Increase learning effectiveness
- Activate teaching vocation
- International openness
- Teachers striving for excellence: trying to do things well
- We want the best for our students
- Reflective, proactive, innovative, and entrepreneurial students
- Relationship with industryLack and/or prioritization of teacher's time
- Lack of material resources
- Increase motivation
- Lack of teacher interest and/or training in innovation
- Diverse profiles and interests of students

Finally, using the Dot Voting tool, four groups were selected. The winning headings were:

- Increase learning effectiveness
- Increase motivation
- Activate teaching vocation
- Reflective, proactive, innovative, and entrepreneurial students

Working with these tools not only helped to make sense of the research, but also stimulated deep discussions about the role of teachers, student diversity, and the need for innovation. The rigorous and collective analysis transformed a large amount of scattered information into a clear vision of the challenges faced by education at our school, and prepared the ground for relevant and realistic solutions.

At the beginning of the 7th session, the team used the POINT OF VIEW (PoV) technique to synthesize the analyzed data, identified needs, and key insights into a single sentence that captured the user's perspective. This sentence served as a common reference point that inspired the phases of ideation and prototyping. The required structure was: *user + need (verb) + insight*.

The result was:

- Teachers and students must connect and allow themselves to be surprised so that learning becomes more effective.
- Teachers and students must share goals in order to increase their motivation.
- Teachers must rethink their vocation so they can continue being educators (enthusiastic and demanding teachers who train capable, responsible, and flexible students).
- Teachers must design more specialized and sophisticated learning activities in order to train reflective, proactive, innovative, and entrepreneurial students.

Finally, the team initiated the HMW (How Might We) technique to transform the Point of View (real needs and identified insights) into a new challenge that would guide and inspire idea generation in the next Design Thinking phase. The HMW formula is specific: **"How"** suggests that there are ways to solve the challenge, **"might"** creates a safe space where our ideas could work, and **"we"** reminds us that we are a team solving the challenge together. It is recommended to create several HMW statements to find one that fits the PoV without being too vague or too narrow.

Some examples:

- How might we involve students in assessment?
- How might we protect professors' time for innovating education?
- How might we support a personal and/or collective training plan for teachers in the area of innovation?
- How might we support personalized learning plans for students?
- How might we create channels for continuous and/or regular qualitative research with students?
- How might we incorporate insights from other universities (visits here and abroad) and contributions from exchange students?
- How might we create coexistence/convergence/unity of goals between students/teachers/industry in projects?
- How might we create activities that motivate students to improve and increase the value of the profession?
- How might we create and/or optimize resources, train students to use their own technologies effectively, and seek material collaboration with industry?

Ideation phase

During the 8th meeting, organized in four pairs, the team began the idea generation phase. The techniques used included brainstorming and selecting ideas based on four criteria:

- Which idea would we choose as the easiest to test tomorrow?
- Which idea would we choose as the riskiest, but with the greatest potential if successful?
- Which idea would the dean choose as the most balanced in terms of risk and long-term positive impact on the University of Navarra?
- Which idea would students choose as the one that best meets their expectations?

Prototyping phase

Before starting the prototyping session (session 10), the group was reminded that every proposal should answer two key questions: *"How can we measure what students learned in each class?"* and *"How can we measure students' interest in the activities and learning materials used?"* With these challenges in mind, the pairs began shaping their ideas and creating solutions that built on findings from the previous workshop phases.

In line with the Design Thinking approach, teams used large sheets of paper to describe their concepts. Each pair gave their idea a title, summarized it in one sentence, explained how it worked, and identified users and responsible persons. They also noted which needs the proposal addressed, what benefits it offered, and what doubts or challenges it might bring. This description remained visible and constantly evolving, serving as a shared guide for refining and developing prototypes.

Testing phase

In the 11th session, prototypes were presented to the rest of the team. The presentation and feedback phase was designed to encourage openness and honest conversation. Before presenting, the teams explained that their ideas were still under development and not polished to perfection. This approach allowed others to share opinions more freely, without fear of offending, since the goal was improvement, not evaluation.

Each team presented its proposal in a neutral tone, without justifying decisions or defending details. Some teams even presented more than one version of their prototype, which made comparison easier and sparked richer discussion. Feedback emerged spontaneously and often turned into active collaboration: participants suggested new ideas, pointed out contradictions, or even proposed changing the approach on the spot.

At the end of the session, teams set aside time for shared reflection. They spoke openly about their impressions and wrote the most relevant reactions on post-it notes: what was well received, what raised doubts, and what clearly needed to be adjusted. This information was organized with the help of two questions (*What are the 3 elements of my prototype that worked best?* and *What are the 3 elements of my prototype that worked worst?*) and then discussed to decide which proposals should have priority for the next prototype iteration.

Thanks to this dynamic, each team was able to identify the most valuable parts of its design as well as the aspects that needed to be reconsidered. Feedback thus became another design tool, helping to refine ideas and prepare a new working cycle focused on improving what really matters: the students' learning experience.

In conclusion, each team was asked to create a final prototype with the following premise: *If you had to design a common prototype for everyone, what three key elements should it contain?*

Finally, nine key elements were identified. The first phase of the project ended with 15 key variables that would serve as guidance for the final solutions to be developed during the next academic year:

- Combine quantitative and qualitative methods of course evaluation.
- Provide professors with methodological freedom depending on the course.
- Ensure that evaluation results are useful and not perceived as a threat to professors.

- Develop improvement proposals after analyzing the final course data.
- Create a dual evaluation model depending on student profiles: highly engaged students / average students.
- Aggregate results to visualize the overall situation.
- Synchronize evaluation periods to avoid overload.
- Explain to students in advance the future relevance of courses.
- Enthusiastic professors willing to take risks.
- Capable professors.
- Competent students.
- Students who believe in themselves.
- Students who understand why they are learning.
- Experiments with prototypes and assessment.
- Shared methodologies (professor/student).

Next activities and consolidation

Between September 2019 and February 2020, the participants met four times:

First meeting (17.10.2019): overview of achieved results and definition of challenges:

- Overcoming professors' resistance to changes/innovation.
- Launching prototypes and measuring their effectiveness through short and frequent feedback.
- Refocusing on the student as the center of attention in the classroom.

A vision for the academic year was set:

- Implement innovation prototypes aimed at student satisfaction but also at achieving educational goals.
- By the end of the year, have a documented and tested methodology for training professors in innovation.
- Improve academic results.

Based on this, a task schedule was defined for the rest of the academic year:

- List of past and ongoing prototypes.
- Development of different feedback collection models (by the facilitator) to share and inspire future evaluation practices for prototypes.
- Creation of a shared folder (Google Drive) with different project outputs.
- Agreement on required results for each prototype.
- Identification (planned for the end of the academic year) of factors influencing students' grades based on prototype implementation and results measurement.

Second meeting (07.11.2019): a total of 23 prototypes implemented in previous innovation projects were collected. Different models of feedback collection were discussed.

Third meeting (05.12.2019): professors presented the prototypes they planned to implement starting in January

Fourth meeting (19.12.2019): members shared their observations (after attending specific training sessions and/or testing them in class) on the usefulness of tools such as Kahoot, Socrative, Question Pro, the case method (IESE style), and class participation routines such as *Think and Share*. After the meeting, it was agreed that prototypes would be selected and implemented during the semester beginning in January 2020.

Final Solutions and Test Results

Prototype: Publication of a collection of student stories:

https://www.editorialgraviola.com/cuenta

During the academic year, because of COVID-19, we moved to a flipped classroom model. Students read at home and answered questions before class. I sent them theoretical materials in advance, which allowed smoother discussions. It worked well, although face-to-face teaching was limited.

The bigger challenge was not the technology (e.g., Zoom) but communication – fatigue and loss of interest. However, with an independent online group the method worked better: they debated, engaged, and saw value in home preparation.

Prototype 02 - Course context

The course used continuous assessment and a flipped classroom model. Students were divided into teams from the start and worked on the same assignment (a start-up in Navarra), presenting their progress every three weeks. Assessment included attendance, reflections, and peer review.

Changes during COVID-19 (2020/2021):
Hybrid and face-to-face classes, virtual presentations, and support for remote teamwork

Conclusions from evaluation
Besides measuring the impact of the hybrid model, the evaluation provided insights on what to strengthen or change. Key adjustments:

- Two projects instead of one.
- First weeks: discomfort zone with random teams. Rest of the semester: soft skills development, teams based on behavior style.
- Project 2 as a competition.
- Zoom only for lectures, other activities face-to-face.
- Option to resolve conflicts through the teacher.

What did not work:
random teams, repeated presentations, concentrated outputs at the end of the semester, virtual teaching.

What worked:
real projects, sharing outputs between groups, flipped classroom evaluation, teamwork and presentations, combination of open assignments and student autonomy.

It is important to balance challenge: the course should push students, but not overwhelm them. During the pandemic, this balance was lost, and the challenge became too intense.

Prototype 03 - Effective online teaching

Goals:
Design and measure effective online teaching that motivates without overload, combines active learning with synchronous/asynchronous approaches, and analyzes the limits and benefits of online learning.

Learning principles that cannot be removed:

- Equal quality of teaching for all.
- Maintain student–teacher dialogue.
- Use didactic tools to compensate for the lack of physical presence.
- Improve teaching quality.
- Support student autonomy and sense of belonging.

Tools used:

1. **Kahoot and Socrative** – interactive quizzes.
2. **Case Method** – solving real cases.
3. **Video summaries** – 7–10 minute teacher videos summarizing key content from previous face-to-face lectures.
4. **Professionals via Zoom** – short online lectures from experts.

Implementation in courses:

- **Accounting and Finance:** video summaries, Socrative, case studies.
- **Economic Journalism:** Kahoot/Socrative, 5 expert lectures.
- **Economics:** 11 tests during the semester.
- **Pricing Policies**: 9 fictional cases, 10 tests.
-

Evaluation:

- **Socrative and Kahoot** were rated highest by economics students (Socrative 3.7/4, Kahoot 3.6/4).
- **Case Method** was effective especially in accounting (satisfaction 3.4/4).
- **Video summaries** helped with difficult topics.
- **Professionals via Zoom** were seen as one of the most useful tools for reaching goals; students recommended increasing their use.

Qualitative feedback (KIDS method): preferences varied by course type. Students in economics and journalism found the tools essential, while marketing students preferred more traditional methods.

Prototype 04 - Applied Intellectual Creativity

An international project introduced as a joint course at eight universities. Its aim was to develop creativity and innovative thinking through solving a social challenge with Design Thinking. The final projects were to be presented online, voted on by students and experts, and the winning team would implement its innovation at Wayra Academy.

Planned steps:
Course development, presentation at partner universities, platform design, teacher training, course launch, research partnerships, and creation of a social innovation center.

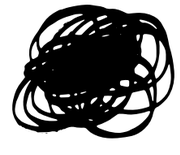
Expected outputs:

- Basics of applied creativity.
- Development of solutions to social challenges.
- A feasible project with global potential.
- A network of student innovators.
- Partnership with Wayra and other centers.

Conclusion:
Although the course was well designed, it was not actually implemented.

Reflection and impact:
The project introduced a culture of collaboration and experimentation into the school.

Design Thinking strengthened student engagement and encouraged teachers to change their teaching methods – introducing empathetic interviews, prototyping, and feedback. Despite difficulties with the virtual environment, the impact was positive. The project showed that innovation methods can be effectively applied in the university setting and inspired many professors to adopt pedagogical changes.



Conclusion

Design Thinking today represents a significant shift from traditional teaching methods toward an approach that puts the student and their needs at the center of the learning process. This handbook repeatedly highlights the key principles of Design Thinking such as empathy, experimentation, creative thinking, and flexibility, while also capturing its historical development from the 1960s to the present, the practical phases of the process, and visual models like the Double Diamond, as well as approaches that support creative thinking. Each chapter focuses on a detailed description of the individual steps of the process and on its possible use in school practice, including online learning environments. The reader finds explanations of what a human-centered approach means for both teachers and students, how the arrangement of space or choice of tools can support the creative process, and how case studies from practice can show the concrete benefits of an established method. Attention is also given to the important role of the teacher in a changing educational environment, to Design Thinking mindsets, and to leadership approaches that encourage team creativity and innovative solutions.

Design Thinking helps students develop 21st-century skills – from critical thinking and creativity to teamwork and openness to feedback. Through these principles, they can actively participate, ask questions, think in contexts, and contribute to proposing possible solutions based on their real needs. Teachers, in turn, feel the need to rethink their role in education – moving away from the position of traditional authority toward supportive mentors who actively embrace new teaching approaches. At the institutional level, Design Thinking creates space for a coordinated framework that supports active change management. It connects students, teachers, and professionals from practice into one creative system and makes it possible to transform teaching from passive knowledge transfer into dynamic, experiential learning based on real challenges.

Design Thinking is not a universal manual, but rather a path – a way of thinking and acting that changes the view of teaching and creates room for a dynamic, creative, and meaningful learning experience. We believe that this handbook will inspire teachers who want not only to motivate but also to discover new approaches together with their students and actively take part in creating various solutions that bring added value to education, society, and professional practice.

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Notes

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