



Design Thinking Seminar for the Next Generation: Comparison of Short, Medium, and Long-Term Projects

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Abstract. Design thinking is a human-centered approach that revolutionizes the way you create new goods, services, procedures, and organizations. Design Thinking is widely used in education process to teach students about design thinking process and to create valuable projects that can boost innovations in the companies that support research at academic organizations. The question of our research is about the length of design thinking seminar. We study what is the most efficient length of the course to achieve the stated goals.

In this paper we observe the main information about design thinking seminars run at higher educational institutions. We study the examples of short-, medium- and long-term design thinking courses. The outcomes and comparison provided in the research show that design thinking teaching that can evolve into successful innovative startups is most efficient if it takes three or more months.

Keywords: Design Thinking · Academia Industry Collaboration · Innovation · Education

1 Introduction

Design thinking is a problem-solving approach that involves empathy, creativity, and experimentation to understand and address the needs of users [1]. It is often used in product and service design but can also be applied to other areas such as business strategy and organizational design. The goal of design thinking is to create innovative solutions that are user-centered and meet real needs [3].

Design thinking process usually involves five steps [1]:

1. Empathize: Understand the needs, wants, and limitations of the user through observation, research, and interviews.
2. Define: Clearly define the problem or opportunity that needs to be addressed.
3. Ideate: Generate a wide range of ideas and potential solutions through brainstorming and other idea-generation techniques.
4. Prototype: Create a physical or digital representation of the most promising ideas to test and refine them.

5. Test: Gather feedback on the prototypes and use it to iterate and improve the design.

It's worth noting that the process is often iterative, meaning that each step may be repeated multiple times and steps may be combined or re-arranged depending on the specific context. Additionally, some variants of design thinking may include additional steps or different terminology, but the five steps are the most common [4].

Design thinking is becoming increasingly popular in different fields and industries because of the number of benefits it has such as [2]:

- User-centricity. Design thinking puts the user at the center of the problem-solving process, ensuring that the solutions developed are tailored to their needs and preferences.
- Creativity and Innovation. Design thinking encourages creativity, experimentation and ideation, which allows to come up with innovative solutions to problems.
- Practicality. Design thinking is a hands-on approach to problem-solving that can be applied to a wide range of challenges, from product design to business strategy.
- Collaboration. Design thinking promotes collaboration and cross-disciplinary teamwork, which helps to bring different perspectives and skills to the problem-solving process.
- Flexibility. The process of design thinking is adaptable and can be tailored to different contexts and situations.
- Iteration. Design thinking allows to test and refine solutions until they are optimized for the user.
- Empathy. Design thinking process starts with empathy, the ability to understand and appreciate the perspective of the user, which is crucial for creating user-centered solutions.
- Incremental change. It allows teams to test and validate solutions with minimal investment, before scaling up.
- Holistic approach. Design thinking is a holistic approach that considers the problem not just from one perspective but from multiple perspectives, which allows teams to identify the root cause of the problem and find a comprehensive solution [5].

All of these valuable advantages make design thinking a valuable skill for students to learn, and it's why it's becoming increasingly popular in universities as part of the curriculum [6].

Design thinking seminars are usually taught using the following strategies.

Start with a clear introduction to the design thinking process and its key principles, such as empathy and iteration. Then provide students with a design challenge or problem to work on, one that is relevant and relatable to their own experiences. It is also important to facilitate the brainstorming and ideation process by using techniques such as mind-mapping, sketching, and idea-generation exercises. Encourage students to create and test prototypes, this can be done with low-fidelity mock-ups, wireframes, or other types of physical or digital representations of their ideas and to gather feedback on their prototypes from their peers, instructors, and potential users [3]. Provide time for reflection and self-assessment, where students can reflect on their own design thinking process and strategies used. Encourage them to iterate and improve their designs based on the feedback they received. Incorporate real-world examples, cases, and guest speakers to provide students

with a broader understanding of how design thinking is applied in different fields and industries. Encourage them to practice design thinking on different types of problems and industries. And of course, provide opportunities for students to share their work with others, through presentations, exhibitions, or other forms of public display [6].

The length of the design thinking process can vary depending on the specific project or problem being addressed. In general, it can take anywhere from a few days to several weeks or even months to go through the full process. Some specific steps within the process, such as prototyping and testing, may take longer than others. It's also worth noting that the process is often iterative, meaning that each step may be repeated multiple times and steps may be combined or re-arranged depending on the specific context. Also, the design thinking process is not a linear process, and it can be flexible, it can be adjusted to the complexity and scope of the problem and the resources available. In general, the key is to keep the process moving forward, and be flexible with the time frame, and make sure that you are not taking too long on one step while neglecting the others. The goal is to find a balance between spending enough time on each step to gather useful information and insights, but not so much time that the process becomes bogged down or loses momentum.

2 Design Thinking Seminars

In 2022 we participated in organizing several design thinking seminars that lasted for different periods of time. Seminars typically cover the key concepts and methods of design thinking, such as empathy, prototyping, and iteration. They may also include hands-on exercises and group activities to give participants the opportunity to practice the design thinking process. Design thinking seminars are a great way for individuals and organizations to learn about the design thinking process and how it can be applied to their own work. They can provide a valuable introduction to the key concepts and methods of design thinking and help participants develop the skills and mindset needed to use design thinking in their own projects. There is a brief description of each workshop below.

2.1 Short-term Design Thinking Seminar

Two-days elective for MBA and EMBA students of at School of Management Skolkovo. Usually this course is offline, but this year it took place in hybrid mode. The seminars were held in a high-tech auditorium with equipment that allowed you to conduct classes in the most modern formats. The equipment allowed the teacher to conduct a discussion with hundreds of listeners gathered in the audience, without being distracted by technical problems and maintaining eye contact with each participant. If the format of the event in the audience is mixed – online/offline – the professor connects remotely, and five cameras allow you to instantly “snatch” the speaker’s face and transmit the picture to both him and other participants in Zoom. The professors and some other facilitators from the South Korea and the USA joined the seminar in Zoom, while students with assistants were present at the Business School auditorium. The majority of students were

not familiar with the concepts of design thinking before the start of the seminar. Two-days seminar made it possible to familiarize students with the fundamentals of design thinking and practice its steps while creating projects in groups (Table 1, Fig. 1).

Table 1. Short-term Design Thinking Seminar

Duration	2 days
Dates	March 2022
Name of the course	Stanford Design-Based Method
Number of students	30
Audience	Top-level managers and specialists who are students of MBA and EMBA programs
Format	Blended learning
Initial goal	Teach students the basics of design thinking Run a workshop to show all steps of design thinking on practice Provide examples of real-world applications of design thinking to help students see the potential relevance of this approach for their current work
Results	The students unlocked their creative potential, learnt how to create user experiences that resonate with the users and provide high strong business impact obtained



Fig. 1. Stanford Design-Based Method, 2022. (Source: personal archive)

2.2 Medium term Design Thinking Seminar

Design thinking seminar lasted for 3 weeks in total, with 4–6 h of face-to-face communication per week. It was a part of Internet Project Management course at the National Research University Higher School of Economics and showed students how they can use design thinking in project management. Majority of students were already familiar with the basics of design thinking (Table 2, Fig. 2).

Table 2. Medium term Design Thinking seminar

Duration	3 months
Dates	January – March 2022
Name of the course	Internet Project Management
Number of students	28
Audience	Master students all working mostly in IT companies
Format	Blended learning
Initial goal	Teach students how to use design thinking in project management students see the potential relevance of this approach for their current work
Results	The students learnt how use Design Thinking methodology in project management, how to clarify project's goals and objectives, enhanced creativity, discovered how to pivot towards a project management style that is user-centered and playful, includes empathy and creativity

**Fig. 2.** Design Thinking on Internet Project Management course, 2022. (Source: personal archive)

2.3 Long term Design Thinking Seminar

Stanford University ME310 university course that focuses on building solutions that anticipate the future. This programme was invented back in 1965. And it was the one that helped solve a bunch of different problems, creating many interesting approaches. In particular, ME310 has been used by Audi, IKEA, GM, Huawei, Lockheed Martin, Merck, Microsoft, Siemens and many others. The methodology involves complex tasks involving multicultural teams from different universities. Different ages, cultures, genders, specialties – all this gives the project a breadth of vision. This year students from the USA, Austria and Germany developed the solution of Yoi ecosystem that inspires employees and employers to enhance workplace wellbeing via wearable band to measure personalized wellness level. They decided to do this project because more than 70% of Americans report that they experience stress at work. Work-related stress has become one of the most serious health problems in the modern world. Long working hours and

lack of resources are the main sources of stress. That is why it is important to lower the stress levels of people working in the companies.

About 80% of seminar participants of the design thinking seminars already knew the main concepts of design thinking while for another 20% it was a completely new approach. Students widely all the resources they were provided and at the end even received offer of 10000\$ investment to continue their project (Table 3, Fig. 3).

Table 3. Long term Design Thinking seminar

Duration	10 months
Dates	September 2021 – June 2022
Name of the course	ME310 Future Talents project
Number of students	11
Audience	Master students with engineering major
Format	Blended learning
Initial goal	Teach students how to prototype and test their different design concepts Help them to create a full proof-of-concept system that demonstrates their ideas at the end
Results	The students learnt how use Design Thinking methodology for creating startups, teamwork, international collaboration, received 10000\$ funding for future development of the project from one of the partners



Fig. 3. ME310 Future Talents program participants working, 2022. (Source: personal archive)

2.4 Comparison

Stanford The best length of a design thinking workshop depends on the specific goals and objectives of the workshop and the level of familiarity of the participants with design thinking.

A short-term workshop can be a good introduction to the basics of design thinking, providing participants with an overview of the key concepts and methods. This type of workshop can be useful for participants who are new to design thinking and want to understand the basics of the process.

A medium-term course can be more in-depth, providing participants with more hands-on experience and the opportunity to practice the design thinking process in a more detailed way. This type of workshop can be useful for participants who are familiar with the basics of design thinking and want to develop their skills further.

A multi-day workshop provides more time for in-depth learning, practicing and refining the design thinking process. It also provides opportunities to work on real-world problems and to have more time for feedback and iteration. This type of workshop can be useful for participants who are already familiar with design thinking and want to apply it to a specific problem or challenge.

3 Conclusion

The best length of the design thinking process is the one that allows for a comprehensive understanding of the problem or challenge being addressed, the generation of a wide range of ideas, and the testing and validation of the most promising solutions. This length will vary depending on the specific project and the resources available as we saw in the examples discussed in this article. It's important to balance the need for a thorough understanding of the problem with the need for timely solutions. A short process didn't provide enough time to fully understand the problem and test them on greater number of users, in the medium term seminar there was enough time to do all steps of design thinking, but less team cohesion and no future project development, while a longer process led to delays but as the same more time provided teams travel and international collaboration opportunities which improved team cohesion, the quality of minimal viable product and the reality of continuing the project with investments.

To summarize, when facing the question about the length of the design thinking seminar it is important to look at the goals first. If the goal is to introduce students with design thinking method, then short- or medium-term seminar would be the best option. However, if the goal is to create a new innovative product or tool, medium- and long-term seminars would be the best solution.

References

1. Brown, T., Katz, B.: *Change by Design: How Design Thinking Transforms Organizations*, 272 p. Harper Publisher (2009)
2. Cote, C.: Why learn design thinking? Harvard Business School. Business Indights. [Electronic resource]. <https://online.hbs.edu/blog/post/why-learn-design-thinking> (2022)

3. Leifer, L., et al.: Engineering design thinking, teaching, and learning. *J. Eng. Educ.* **94**(1), 103–120 (2005)
4. Leifer, Lewrick, Link: The design thinking toolbox. [Electronic resource]. <https://www.design-thinking-playbook.com/home-en?lang=en> (2020)
5. Roger, M.: The Design of Business: Why Design Thinking is the Next Competitive Advantage, pp. 132–147. *Harvard Business Review* (2009)
6. Taratukhin, V., Pulyavina, N., Becker, J.: The Future of Design Thinking for Management Education. Project-based and Game-oriented methods are critical ingredients of success. Issue Vol. 47 (2020): Developments in business simulation and experiential learning. Volume: Innovations and Future Directions in Education, 18 Mar 03 2020