InCompEdu
Innovative Competence in Online Higher Education

TOWARDS EFFECTIVE TEACHING

Reimagining online courses
for the future of higher education

About our project

The InCompEdu project tackles the common challenges in the sudden switch to online teaching at the HEI in the EU, due to COVID-19, by identifying and sharing the good practices, knowledge and experience gained at the partner universities and beyond. The challenges include both mastering of new digital skills and the methodologies of creating and conducting online courses.

Project partners involved in InCompEdu Project

The project consortium involves 6 academic partners from 6 different countries, that is, Croatia (SVEUČILIŠTE U RIJECI), Finland (TURUN YLIOPISTO), Italy (UNIVERSITA DEGLI STUDI DI ROMA TOR VERGATA), Romania (UNIVERSITATEA 1 DECEMBRIE 1918) and Slovenia (UNIVERZA NA PRIMORSKEM), led by the University of Gdansk, Poland (UNIWERSYTET GDANSKI).

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Published: Gdańsk, 2023

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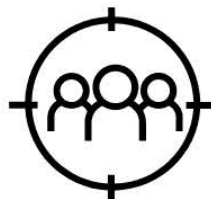
INTRODUCTION

Project goals

The recent research on the challenges of online education highlights the need for innovative solutions that address the unique issues that arise in this mode of instruction. The aim of the activities in Intellectual Output 3 is to develop such innovative ideas in online higher education, taking into account the needs and experiences of users.

To achieve this goal, the project applied the Design Thinking method, which is a user-centred approach to problem-solving. This method involves empathizing with the users, defining the problem from their perspective, ideating potential solutions, prototyping and testing the most promising ideas, and iterating on the design until a viable solution is found.

By applying the Design Thinking method to the challenges of online education, the project aims to develop original solutions that go beyond simply reproducing traditional teaching methods online. Instead, the project seeks to identify and address the unique needs and challenges of online learners and instructors, resulting in more effective and engaging online courses.

Overall, the activities in Intellectual Output 3 aim to contribute to the ongoing evolution of online education, providing innovative solutions that address the unique challenges and needs of learners and instructors in this mode of instruction.

The projects focus on the identification of online lessons scenario that can be easily adapted and modified to work within a given subject/class to meet the needs of on-line learning. It is necessary to identify the key problems of educational scenarios associated with remote learning, the choice of an appropriate IT platform that is easy to use by academic teachers and allows the learning objectives of specific subjects to be achieved in almost every field of higher education. The project's activities will focus on two aspects, that is, digital competence of academic teachers, and the development of new competences in creation and implementation of online/hybrid courses and innovative curricula.

Intellectual Output 3 "Reimagining online course for the future of tomorrow" has two main objectives: the development of innovative concepts/scenarios of effective online classes, and the development of innovative tools/methods of learning and working in online groups stimulating creativity, innovative thinking and teamwork. The tools apply to all teachers, regardless of their seniority, background, or the type of institution in

which they work, public or private. Design Thinking Workshop (DTW) can be also applied to students as part of the lecture.

Target groups

The target groups are academic teachers and university authorities. The expected impact on academic teachers is improved digital education skills in the field of higher education, including knowledge about innovative approaches and tools which can be used in online higher education to stimulate creativity, innovative thinking and teamwork in online courses. This will enable academic teachers to design and deliver effective online courses that meet the needs and expectations of students, as well as improve the overall quality of digital education in higher education.

The expected impact on university authorities is broader knowledge on possible innovations in online courses. This will enable universities to stay competitive in the digital age and attract more students who are interested in innovative and effective online courses. Furthermore, it will enhance the reputation and visibility of the university in the digital education landscape, thus contributing to the long-term sustainability of the institution.

Design Thinking Method

Design Thinking (DT) was first described by John E. Arnold in "Creative Engineering" (1959) and L. Bruce Archer in "Systematic Method for Designers" (1965) and can be applied in different fields and for different purposes. DT is a structured, creative problem-solving process that enables innovation and positive impact in solving tomorrow's problems. It is a human-centred design process that truly understands and empathizes with the user. The five-step process includes: i) Empathize, learning about the user; ii) Define, constructing the viewpoint based on user needs; iii) Ideate, brainstorming and developing creative solutions; iv) Prototype, creating a representation of the ideas; v) Test, testing the ideas. The core purpose of the process is to allow you to work in a dynamic way to develop and launch innovative ideas.

Design thinking has a human-centered core. It encourages teachers to construct ideas/lessons that are emotionally meaningful as well as functional. The elements of design thinking combine to form an iterative approach — one you can try out and adapt to suit your needs. In employing design thinking, you're pulling together what's is the best solution to the problem with what is practically feasible.

The process begins with acting and understanding the right questions. It involves making simple changes in mindset and approaching problems from a new direction.

The first phase is the problem space phase, where the name of the group, the selection of the angle/perspective of the problem to be addressed, and the identification of the group representative to present the problem to one of the other groups are determined. Then, each group conducts in-depth interviews to understand the problem in detail. After completing this phase, the groups present the results of their discussion in the form of a description of the problem and its analysis on an empathy map.

After going through the problem space phase, the next phase of design thinking follows, which is the solution space.
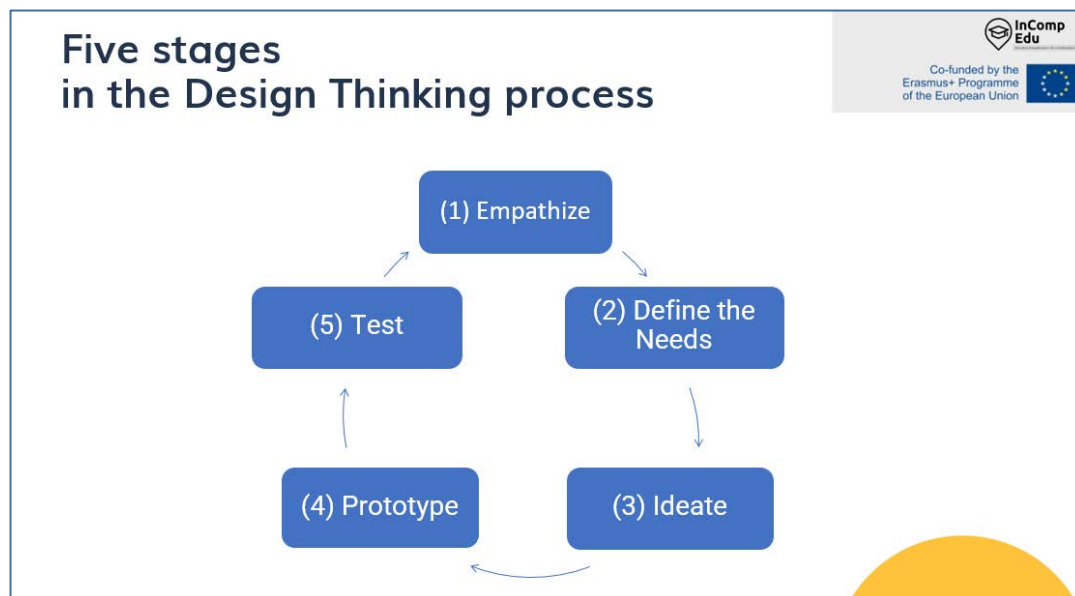
Source: based on R. Friis Dam, *The 5 Stages in the Design Thinking Process*,
https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process

DESIGN THINKING WORKSHOP METHODOLOGY AND EXPERIENCE

A Design Thinking workshop is a collaborative session that focuses on the five phases of Design Thinking: Empathize, Define, Ideate, Prototype, and Test. It is a process designed to encourage multi-disciplinary teams to plan and prototype user-centered designs. The workshop is hands-on and activity-based, with participants working together to arrive at a user-centered solution. To run a successful Design Thinking workshop, planning and preparation are a key.

The Design Thinking workshops steps

The five phases of design thinking are empathize, define, ideate, prototype, and test. These steps are part of a human-centered, iterative methodology that designers use to solve problems. The process starts with empathizing with the user to understand their needs and challenges. Then, the problem is defined based on the insights gathered during the empathy phase. In the ideation phase, ideas are generated to solve the problem. Prototyping involves creating a physical or digital representation of the solution. Finally, testing is done to validate whether the solution meets user needs and solves their problems.

The purpose of each phase in design thinking is as follows:

1. **Empathize:** The main aim of this phase is to develop the best possible understanding of users, their needs, and the problems that underlie the issue [1]. It involves observing and engaging with users to gain insights into their experiences.
2. **Define:** In this phase, designers synthesize the information gathered during the empathy phase to define the problem they are trying to solve. This helps them frame the problem in a way that is meaningful and actionable.
3. **Ideate:** The ideation phase involves generating a wide range of ideas that could potentially solve the problem identified in the previous phases. This is done through brainstorming sessions or other creative exercises.
4. **Prototype**: In this phase, designers create physical or digital representations of their ideas. Prototyping allows designers to test their ideas quickly and cheaply before investing more time and resources into developing a final solution.
5. **Test:** The final phase involves testing prototypes with users to validate whether they meet user needs and solve their problems. Testing provides feedback that can be used to refine or improve the solution before it is released.

The purpose of the **empathize stage** in design thinking is to develop a deep understanding of users, their needs, and the problems they face. This stage involves conducting research and engaging with users to gain insights into their experiences. Empathy is a key skill that allows designers to understand and share the same feelings as their users [1]. By putting themselves in other people's shoes, designers can connect with how users might be feeling about their problem or situation. The empathize stage helps designers identify user needs and behaviours that are latent or unarticulated. This understanding serves as the foundation for developing solutions that are relevant and meaningful to users.

Empathy in design thinking is defined as the ability to understand, be aware of, be sensitive to, and vicariously experience the feelings, thoughts, and experiences of others. It is a skill that allows designers to see the world through other people's eyes and connect with how they might be feeling about their problem or situation. Through empathy, designers can gain insights into users' needs and behaviours that are latent or unarticulated. Empathy is the first step in the design thinking process because it helps designers develop a deep understanding of users and their problems. This understanding serves as the foundation for developing solutions that are relevant and meaningful to users.

Empathy can be used to solve complex problems by helping designers gain a deep understanding of users and their needs. By putting themselves in other people's shoes, designers can connect with how users might be feeling about their problem or situation. This understanding allows designers to develop solutions that are relevant and meaningful to users. Empathy helps designers set aside their own assumptions about the problem and focus on the user's perspective. It also helps them identify user needs and behaviours that are latent or unarticulated. Empathy is the foundation of the whole design thinking process, which is a creative problem-solving process rooted in empathy. By leveraging creativity and empathy, designers can ultimately design solutions that meet user needs and solve complex problems.

There are several techniques that can be used to develop empathy in design thinking, including:

1. Empathy interviews: This involves conducting in-depth user interviews to better understand the user's needs, desires, and pain points.
2. Empathy mapping: This is a simple visual tool that captures knowledge about a user's behaviours and attitudes. It helps designers gain insights into users' thoughts and feelings.

3. Observation: Observing users in their natural environment can help designers gain a deeper understanding of their needs and behaviours.
4. Immersion: Immersing oneself in the user's experience can help designers gain empathy for their situation.
5. Personas: Creating personas based on user research can help designers develop a deeper understanding of their users' needs, goals, and motivations.

These techniques allow designers to gain insights into users' experiences and perspectives, which helps them develop solutions that are relevant and meaningful to users.

During the empathy phase of the design thinking workshop focused on creating online lesson scenarios, we followed the "Empathy: How To Get Into User's Shoes?" outline.

First, we initiated group brainstorming, where each group came up with questions to ask one teacher and/or one student. The questions were aimed at finding out what needs were important in creating a good online lesson scenario.

Next, we chose one or two persons from the group to be interviewed. We acknowledged that users of services and products are very different, and the same applies to lectures or classes. Thus, while creating brainstorming questions and conducting interviews, we were careful to think not of a target group, but of a specific user.

In the Empathy phase, we focused on diagnosing the needs of the users. We asked open-ended, non-suggestive questions, looking for patterns in what the users liked, disliked, found motivating, frustrating, or delightful. We also asked questions to understand their habits and demography. Additionally, we considered users with special needs, such as the talented, disabled, or bored.

Examples of the questions we asked during the Empathy phase include: What was your best experience with online teaching/learning? What do you value the most in online lessons? What about timing, preparation, activities, etc.? What new lesson will students love? What is important for your satisfaction from an online lesson? We also asked follow-up questions such as "why?" and "why not?" to understand the users' reasons behind their best and worst experiences.

Overall, the Empathy phase helped us gain a deeper understanding of the users' needs and preferences, which provided valuable insights for the next phase of the design thinking process.

The define stage is the second step in the design thinking process. During this stage, designers establish a clear idea of which problem they will solve for the user and shape it into a problem statement that will act as their guide throughout the design process. The define stage involves collating data from the observation stage and identifying the problem that designers are trying to solve. It also involves implementing methods of synthesizing raw data and creating a meaningful and usable body of knowledge. The main goal of this stage is to club all the answers together and convert them into a coherent single statement.

During the Define stage of Design Thinking, designers use various methods to synthesize data and create a meaningful and usable body of knowledge. Some of these methods include creating personas, journey maps, and empathy maps. Another method is to conduct affinity mapping, which involves grouping similar ideas or observations together to identify patterns and themes. Brainstorming sessions can also be used to generate many ideas that can be synthesized later on. Additionally, designers may use mind mapping techniques to visually organize their thoughts and ideas.

How to create Empathy map, Design Thinking workshop, University of Gdańsk, Poland

IDEATE

Ideate is the third stage in the design thinking process. It is a creative process where designers generate ideas in sessions such as brainstorming or worst possible idea. The goal of ideation is to generate many ideas that potentially inspire newer, better ideas that the team can then cut down into the best, most practical and innovative ones. Participants gather with open minds to produce as many ideas as they can to address a problem statement in a facilitated, judgment-free environment.

There are many ideation techniques that can be used in the design thinking process. Some of the most common ones include brainstorming, brainwriting, mind mapping, sketching or sketchstorming, storyboarding, provocation, movement or bodystorming, cheatstorming, crowdstorming, and prototyping. Brainstorm and worst possible idea techniques are typically used at the start of the ideation stage to stimulate free thinking and expand the problem space. Other ideation methods that can be explored include creative pause, cheatstorming, crowdstorming, daydreaming, provocation, forced relationships, roleplay visualization and synectics. The goal is to generate as many ideas as possible in a facilitated judgment-free environment.

Building on the results of the previous two stages, the Empathy and Define phases, in the Ideate phase, participants od DT workshop now have a clear understanding of the needs and problems of users (teachers and students) when it comes to online lesson scenarios. Based on this knowledge, their task was to generate as many ideas as possible for potential solutions. This is a divergent thinking stage, where quantity and variety of ideas are more important than quality. The goal is to come up with as many ideas as possible, no matter how unconventional or seemingly far-fetched they may be. This will create a wide pool of possibilities to draw from in the next phase of the design thinking process.

During the Ideate phase of the design thinking workshop focused on creating online lesson scenarios, we followed the "Generating Ideas – what came from the interview: What is the wording of the problem in your opinion? Whose problem is it? His? Her? Our? Not ours?" outline.

We asked participants to describe the problem that concerned them, in simple and universal terms, starting with "How could we do it..." For example, "How could we write a lesson plan online?" We also asked them to reflect on their memories of lectures from their studies and consider what they wanted to change or avoid.

While generating scenarios, we asked questions such as "How could we help the student feel like a star with the audience being in our lecture?" and "How can we help our talented student spend time efficiently at our lecture even though she has already read our textbook?"

The final stage of the Ideate phase was preparing an Affinity map, where we classified the developed ideas into groups such as "delightful", "rational", "team favourite", and "long-term with potential". This process helped us organize and prioritize our ideas and set the stage for the next phase of the design thinking process.
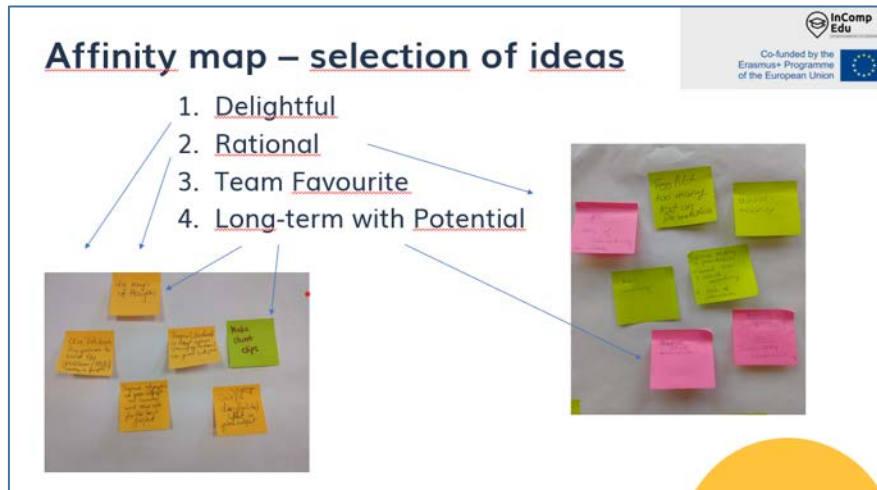
Affinity map. Design Thinking workshop, University of Gdańsk, Poland

PROTOTYPE

The prototype stage in design thinking is the fourth stage of the design thinking process. It involves creating simulations or samples of final products to test them before investing a great deal of time and resources into creating a sellable product. Prototyping can be used as an ideation method, allowing designers and users to explore alternative solutions. There are different types of prototyping, including low-fidelity prototypes, high-fidelity prototypes, and interactive prototypes.

In the penultimate phase of the workshop - prototyping, participants were asked to choose ideas of online lessons scenarios with the greatest potential. They then moved on to visual prototyping. It was emphasized that generated ideas are just the beginning of the search for solutions, and that needs are not solutions. The focus should not be on projecting for a persona, but for needs.

Visual prototyping was identified as the fastest way to showcase ideas and gather information on the needs of potential users. Participants were instructed to prepare visualizations of the scenario, such as a short performance, that would help to illustrate the potential solution. It was important to take notes and collect feedback, as this information would be invaluable in refining the solutions in the final phase of the design thinking process.

TEST

The test stage is the fifth and final stage in the design thinking process. During this stage, the solution or prototype created in the previous stage is tested by users in their real-life setting. The purpose of this stage is to learn more about the product and customer, observe how users react to it, and listen to their feedback on different aspects. Testing can help designers identify any issues with their solution and make improvements before implementing it.

The purpose of prototyping in design thinking is to concretize an idea and assess which features work and which do not. Prototyping helps designers to think by doing, and it offers a way of exploring a hypothesis with a flexible brief and the agility to rapidly react to changes. By building prototypes for potential solutions, designers can get feedback from users on the initial prototypes, identify which prototype works best as a solution to the problem, and iterate the design by incorporating users' feedback on whichever prototype worked.

Prototyping online scenarios makes it possible to present future lectures to potential teachers or students, reduce methodological mistakes, enhance quality, evaluate technical feasibility, and effectively present ideas to them.

In the testing phase, the selected online lesson scenarios are put to the test. The objective is to determine the potential of the chosen ideas and whether they effectively address the needs of the users.

During the testing phase, it is important to listen to feedback and avoid defending the ideas, as was emphasized in the empathy stage. The goal is to simply listen to the feedback from potential users- both teachers and students.

It is important to identify what needs to be checked during the testing phase. This may include whether the scenarios are easy to understand and use, whether they address the identified needs, and whether they are effective in achieving the desired outcomes.

Overall, the testing phase is crucial in refining the selected ideas and ensuring that the final solutions effectively meet the needs of the users.

The empirical examples of the Design Thinking workshops

DT workshops at the University of Gdańsk, Poland

The Design Thinking workshop was planned and carried out in 10-12 April 2022 at the University of Gdansk by IO3 coordinator, dr Magdalena Markiewicz. It was a pilot design thinking workshop. The workshop was performed with a group of the academic teachers from all partner universities. After being introduced to the method, they were divided into three groups and developed three pilot scenarios for online lectures. Two groups were working in-class and one group was working online, therefore, the workshop was conducted in the hybrid form.

Hybrid workshop on Design Thinking method, University of Gdańsk, Poland
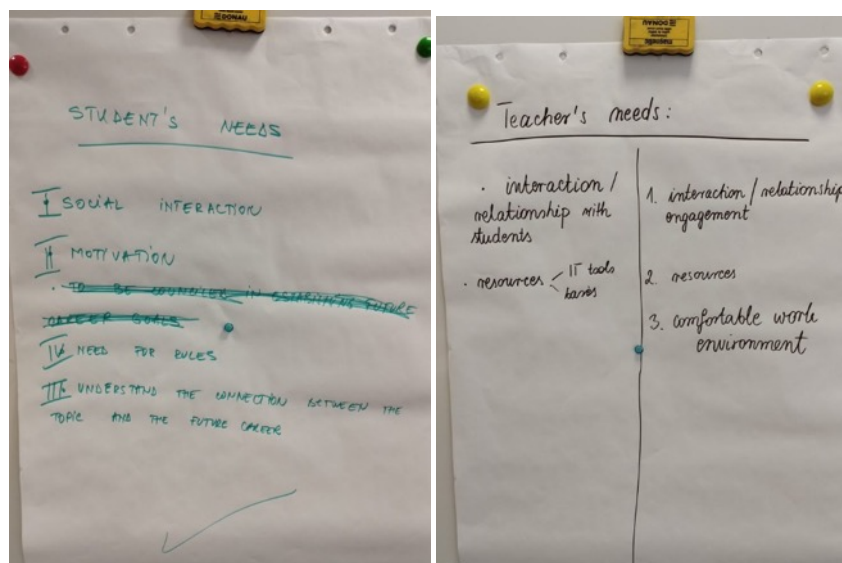
Summarizing observations about student's and teacher's needs
in the Empathy stage, Design Thinking workshop, University of Gdańsk, Poland
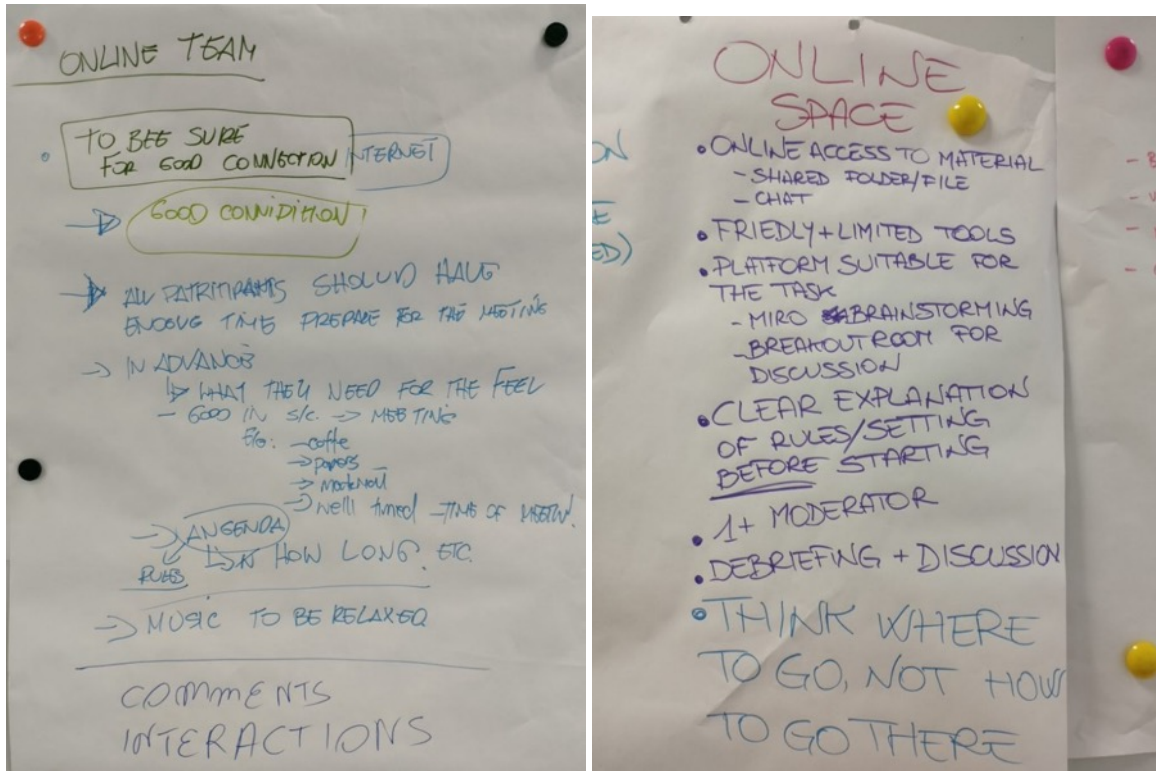
Searching for needs in the Empathy stage Design Thinking workshop, University of Gdańsk, Poland

Defining the problems in online lecturing. Interviews, Define phase, Design Thinking workshop, University of Gdańsk, Poland

Generating ideas, Ideate stage, Design Thinking workshop, University of Gdańsk, Poland

Creating solutions after interviews for online scenario, Ideate stage, Design Thinking workshop, University of Gdańsk, Poland

Prototyping online scenario, Design Thinking workshop, University of Gdańsk, Poland

Testing phase of the scenario, Design Thinking workshop, University of Gdańsk, Poland
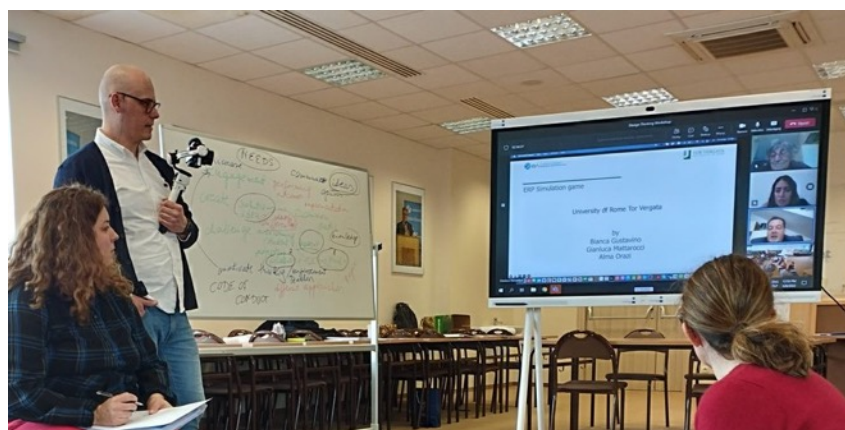
Testing phase of the scenario, Design Thinking workshop, University of Gdańsk, Poland

DT workshops at the University of Primorska, Slovenia

The Design Thinking workshop was carried out on June 1st 2022 at the University of Primorska. The workshop was performed with a group of eleven students from the Bioinformatics study course, and two teachers who participated on a voluntary basis. After being introduced to the method, they were divided into groups and developed three scenarios for online lectures that are herewith presented.

Ideation stage, Design Thinking workshop, University of Primorska, Slovenia

Prototyping the online scenarios, Design Thinking workshop, University of Primorska, Slovenia

DT workshops at "1 Decembrie 1918" University, Alba Iulia, Romania

The Design Thinking workshop was carried out on 22nd of September 2022 at University "1 Decembrie 1918" of Alba Iulia. For this workshop, the organisers have selected 6 teachers and also 1 student (the President of the Students Union). After being introduced to the method, they were divided into groups and developed three scenarios for online lectures.

Prototyping online scenario, Design Thinking workshop, University "1 Decembrie

1918" of Alba Julia, Romani
Presenting Empathy map, University "1 Decembrie 1918" of Alba Julia, Romania

The Design Thinking workshop was carried out on May 25th, 2022 at University of Rome Tor Vergata. For this workshop, the organisers invited students of economics, humanities, and engineering who worked together on tasks during the workshops.

Presenting online scenario 1, Design Thinking workshop, University of Rome Tor Vergara, Italy

Presenting online scenario 2, Design Thinking workshop, University of Rome Tor Vergara, Italy

All the DT workshops conducted by the project partners were based on a common overall framework, in which the following phases can be distinguished:

Empathize:

Five questions were asked to the students and the answers were collected on a teaching board. Based on brainstorming an Empathy Map was generated. After recognizing and then knowing the needs, the group generated ideas for online lessons scenarios. The instructions to the participants were the following:

- Generate as many ideas as it is possible.
- Choose ideas with the greatest potential.
- Facilitate the computer screen transition from idea generation to prototyping.
- Imagine your class, imagine your lesson.

Define:

In creating the scenarios, the participants described the problem that concerns them in simple. This task was made twofold: from the point of view of the students and from the point of view of the teachers. The groups were encouraged to generate ideas by forming sentences beginning with "How could we do ... ", "How could we write a lesson plan online?" and thinking about things to avoid. They were thinking and making the expressions about their experience with online lectures. The instructions and questions covered such issues:

- What do you want to implement?
- What do you want to avoid?
- What do you want to add?

The task for generating ideas was to define the goal. To determine the number of ideas, three different groups of four students were formed.

Then the selection of the ideas was done and the affinity map with 4 categories (Delightful, Rational, Team Favourite, Long term with Potential) was created.

Ideate:

The developed ideas and answers to the questions were written down at this stage and analysed. Questions related to developed ideas:

- What are you afraid of?
- How can you verify it?
- What will be the first prototype?

Prototype:

At the end we checked the potential of selected ideas for prototypes. In the prototype:

- What was checked?
- What was changed?

Test:

At this stage the groups were testing the scenarios, which were the effects of the previous stages.

At the workshop, the partners created various prototypes of possible online activities from which they could write lesson scenarios ready for implementation at a later stage.

The participants' needs towards on-line lessons - the effects of Design Thinking workshops at partner universities

Slovenia:

The main needs identified by the students participating in the DTW were to avoid asynchronous lectures, recording instead the synchronous ones. The recorded lectures should then be posted on Moodle, without the question-and-answer section otherwise they would feel inhibited in asking questions. Additionally, they requested regular breaks long enough for them to rest, drink and eat something; to have short exercises through the course to consolidate their knowledge, possible to be replaced with short self-assessment activities every now and then; gamification of the activities whenever possible; group exercises to support the exchange of ideas and build a sense of community; and the adoption of a single platform for the whole study program.
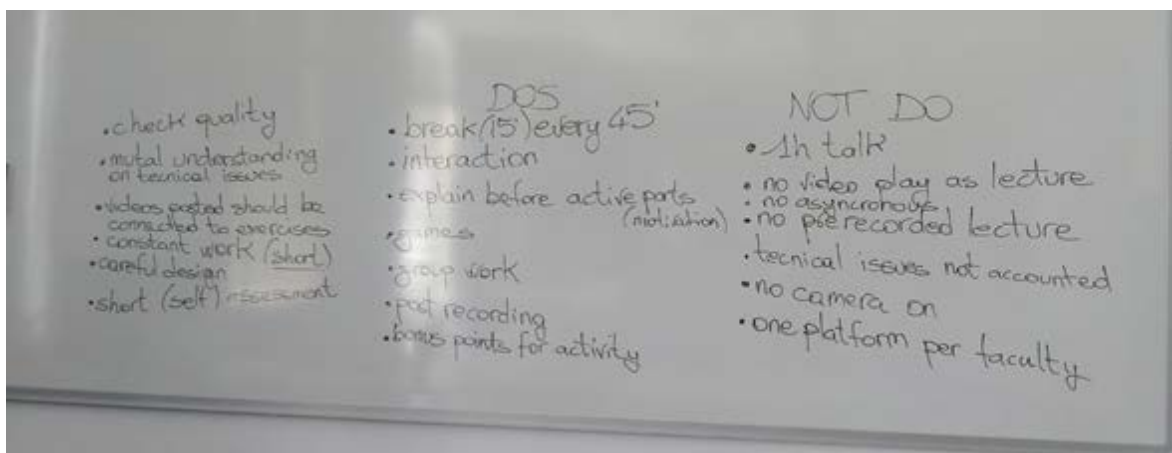
Does and don'ts for online lectures identified by Bioinformatics students at the University of Primorska.

Romania:

The general needs that have been highlighted by teachers are the following:

- The need for restructuring and adapting the courses.
- The need for technical skills.
- The need for better time management as the restructuring and adaptation of the courses implied a lot of time.
- The need for new teaching methods that are adapted for online classes.
- The need for online engagement methods.
- The need for interaction (with the colleagues and with the students).

- The need for quite hours (students were sending online messages 24h/day).
- The need for students' feedback.
- The need-to-know students' real needs in online learning.

The general needs that have been highlighted by students are the following:

- The need for warming-up.
- The need for clear rules and requirements for each course and seminar.
- The need for counselling – for a better involvement of the tutor.
- The need for interaction (with the colleagues and with the professors).
- The need for guided discussions.
- The need for a brief review of the last taught course.
- The need for shorter courses or for more breaks in order to be able to remain engaged for the whole course.
- The lack of motivation for online interaction.
- The need for better knowing their colleagues as if they were never opening their cameras and they were never interaction face-to-face, they were not contacting their colleagues as they were considering them as unknown.
- The need for a better interaction/ relation student – tutor.
- The need to be considered (the student) as a partner in creating the course.
- The need for a more objective evaluation at the end of the semester.

Italy:

The general needs that have been highlighted by students are the following:
- At the beginning of the course, explain very clearly what the requirements are and what is expected of the participants of the course.
- At the beginning of the lecture, briefly review what was covered in the previous class.
- Check and ask students if the explanation was clear and if they understood.
- Ensure sufficient breaks in terms of number and length.
- Give short messages for homework.
- Give short ongoing assignments.
- Information on Moodle should be organised by week or topics, rather than by activity of the course.

Visualization of the activities at the Design Thinking Workshops
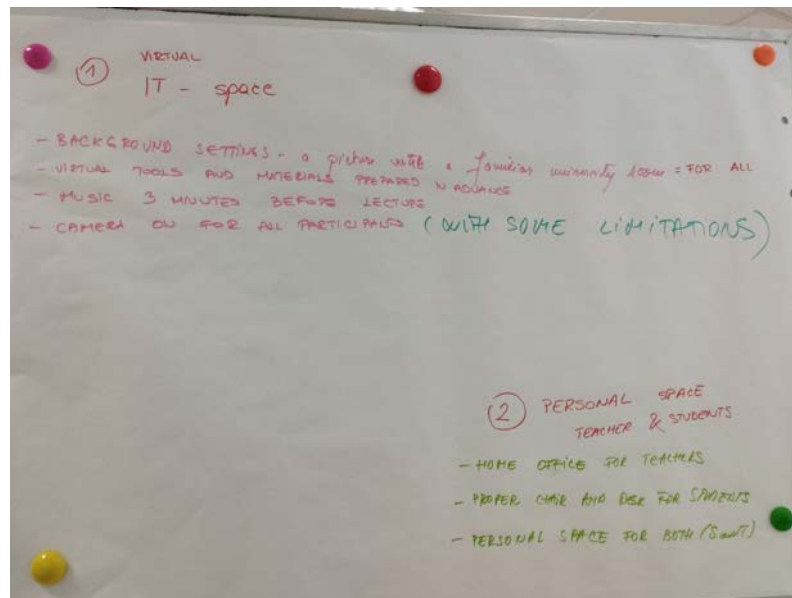
Empathize stage: Imagine your class- a virtual space (DT, Poland)
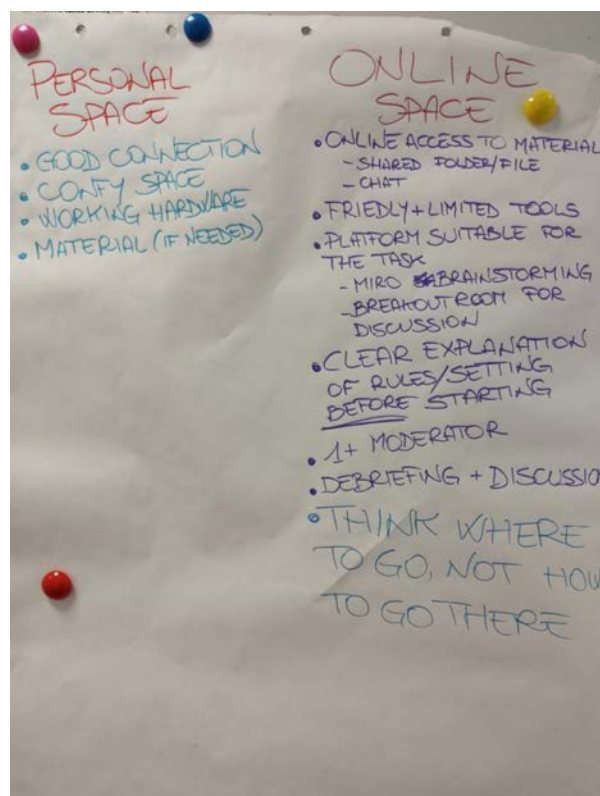
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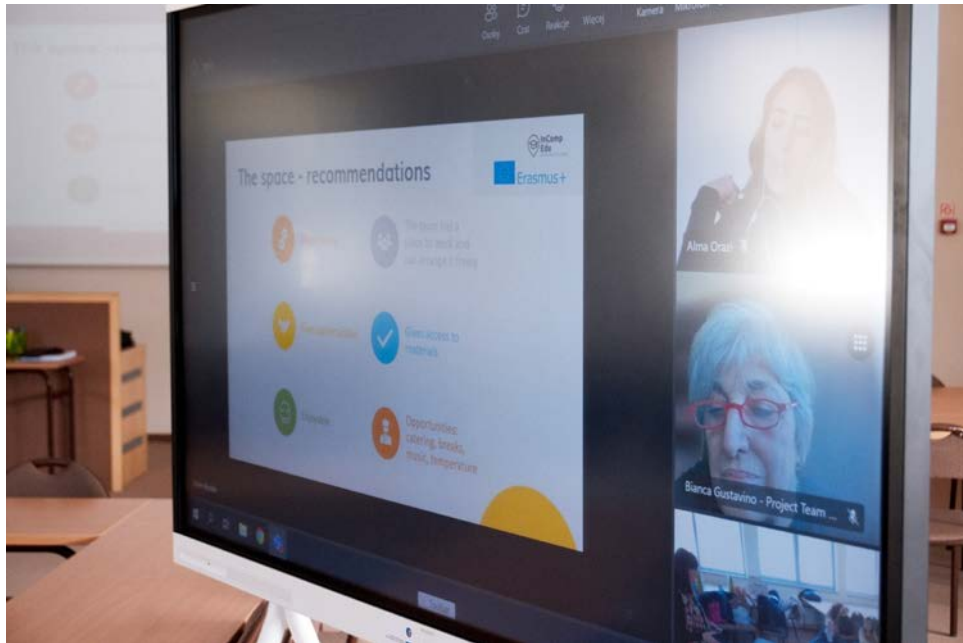
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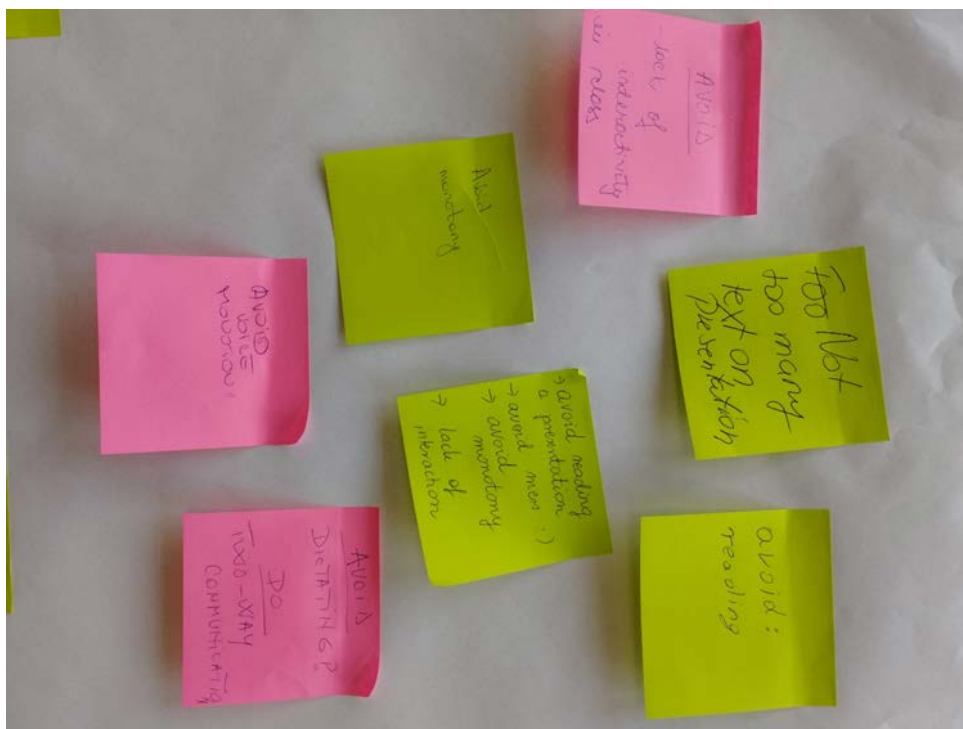
Define stage: What do you want to avoid during online lesson? (DT, Poland)
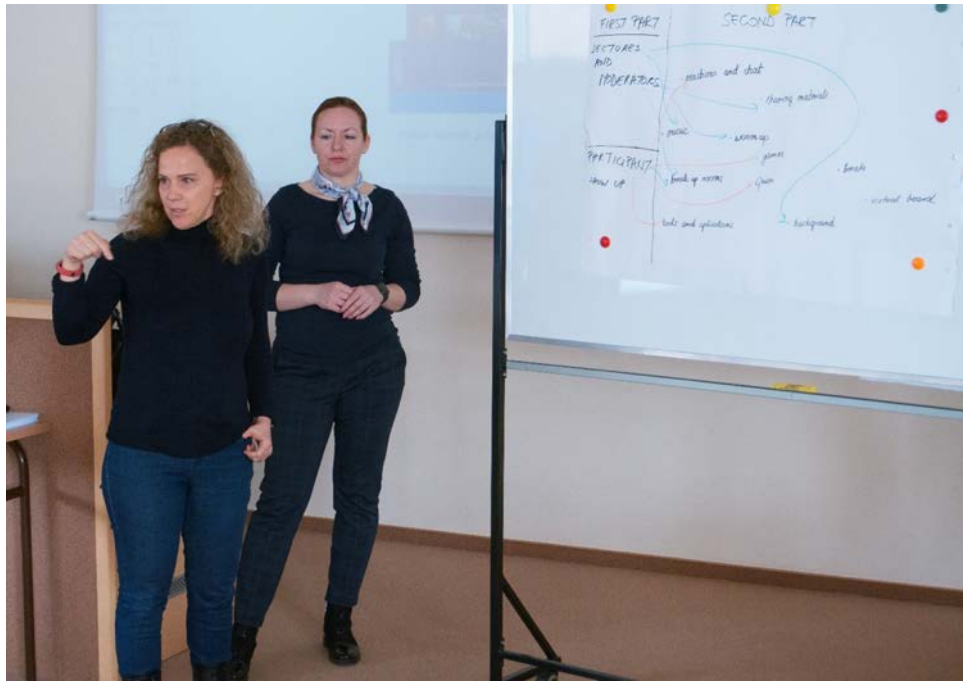
Define stage: What tools do you want to use during the different stages of the lesson (DT, Poland)
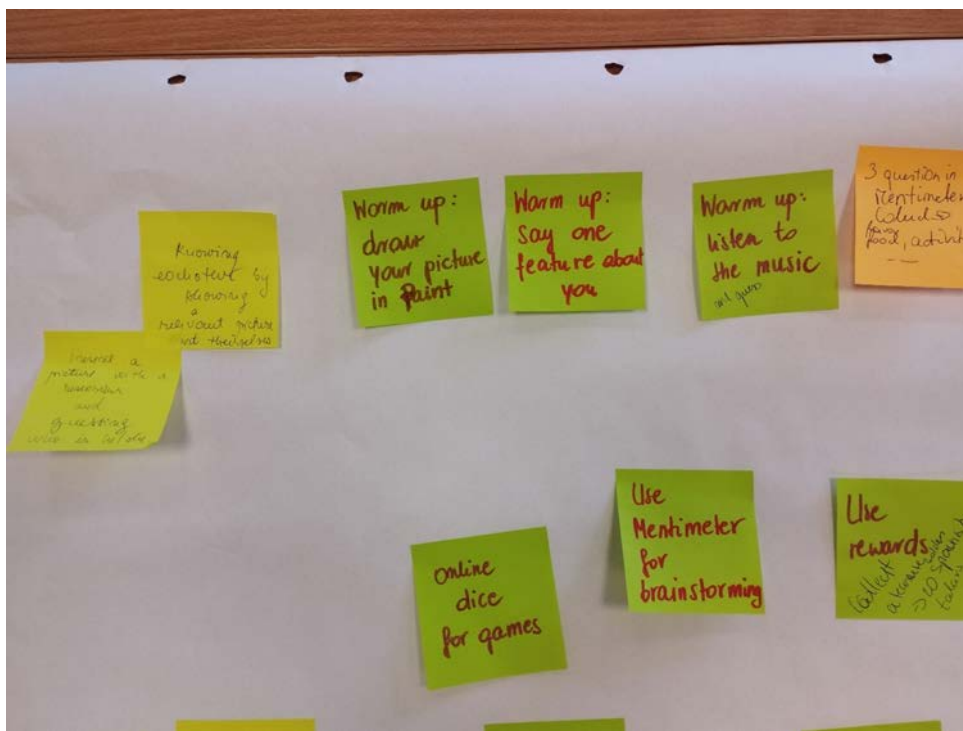
Define stage: How could we do a warmup of online lesson? (DT, Poland)

Define stage: interviews with the teachers (DT, Poland, Team 1)

Prototype stage: design of prototypes (DT, Poland, Team 2)

Prototype stage: design of prototypes (DT, Poland, Team 3)

Presentation of prototype (animal avatars to start online classes, DT, Poland)

Presentation of prototype (role-playing during class, DT, Poland)

THE ON-LINE LESSONS SCENARIOS
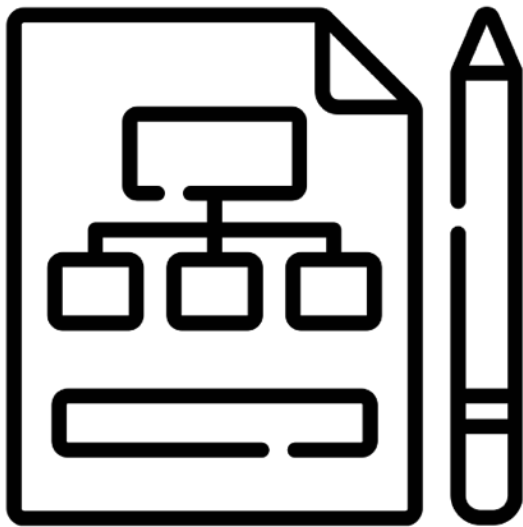
PILOT SCENARIO *"Due diligence in the phase of preparation of the investment projects. Team building and communication"*, University of Gdańsk, Poland

Overview of the on-line lesson scenario

The areas in which it may be preferably used: biology, business, chemistry, economics, psychology, management, and others.

The examples of courses in which it may be implemented: Mergers and acquisitions, Project planning, Project management, Team building, Project Management - In search of excellence, Team building, Risk assessment, Psychology of business, The company's activity in a contemporary environment, Modern technologies in industry, Experimental methods for studying chemical equilibria in aqueous solutions.

The aim of the lesson is to acquire knowledge in the field of due diligence in the project management conditions, including the principles of planning due diligence, its preconditions, the analysis of risk and monitoring the progress of the project implemented in the international environment. This lesson is focused on the due diligence in mergers and acquisitions of the companies.

The participants man benefit also acquiring knowledge of fundamentals of the functioning of enterprises, the ability to cooperate, make decisions and delegate the tasks.

The areas which can benefit from this scenario are biology, economics, philology, chemistry, etc.

Target groups and timing of the on-line lessons

The target group may be the class of students at Bachelor or Master level, at different levels of study: 1st/2nd/last year students.

It is possible to proceed with the scenario in international groups, multinational groups, and groups of domestic students.

The preferred number of participants enabling to gain the maximum benefits is 12-30 people, with maximum up to 30-35 people. However the minimum number is 6-8 people, due to the necessity of discussion of some aspects, playing the roles in the potential project or the enterprise. The number of participants is strongly connected with the effects of the lesson and possibility of delivering the process to the end in time. The number of participants is also related to creating the possibility of training

the team roles, and thus engaging the participants, fulfilling their expectations. The very small group (less than 6-8 persons) creates the opportunity to train the small talk on the topics in pairs. The assessment of team building will be optimal in the group of 12-24 people The bigger group will be more demanding in terms of role playing, as working with the very big group will not allow to limit the time for discussion and not all the participants may actively take part in a lesson. This is why, when working with a bigger group, it is important to divide the whole group into the smaller ones (approximately up to 5-6 persons each).

The number of hours required for the course: 30.

The timing of the on-line lesson: 90 minutes.

The lesson is divided into 5 phases: (1) introduction and warm-up, (2) working out the output, (3) presentation and discussion in the groups, (4) theoretical approach and comments, (5) conclusions. These phases should be sequenced, but according to the needs and group level, some elements may be also used separately. The scenario of this lesson allows to proceed with such competencies like team building, indicating the roles, playing the roles in a group and addressing the tasks. The scenario is possible to use either online or offline, but the preferred mode is on-line. In this scenario there are many opportunities to mix and change the sequence of the elements connected with the tools, effects, process, time, number of participants).

Time limits recommended for each part:

Introduction and warm-up (10 minutes), working out the output (15-20 minutes), presentation and discussion in the groups (25-30 minutes), theoretical approach and comments (15-20 minutes), conclusions (10 minutes).

Competencies of the participants and the teacher

After the lesson the student has in-depth knowledge of selected areas of operation in the due diligence of a modern enterprise in a national and international environment, he/she understands dependencies between enterprises on the international market. The student knows how to apply design principles to a planned process.

The student knows and understands the methods and tools for describing economic phenomena that allow describe and analyze economic entities operating on the international market and the processes and phenomena occurring in them and between them, as well as supporting processes making decisions. The student has structured knowledge related to planning and project implementation and project change management.

The student is able to identify and analyze the relationships between entities economic and institutions in their national and international environment. The participant can

plan the parameters of the due diligence on the way to project implementation and evaluate it in accordance with the needs and possibilities of the project task. The student is able to interpret the necessary data in this regard and economic indicators.

The student is able to innovatively solve tasks related to the functioning of entities economic on the international market, is able to correctly interpret and analyze the course, risk and effects of the implementation of design processes.

The students' competencies	The teacher competencies
- organizational skills, - analytical skills, - language skills, - teambuilding, - financial analysis, - refracturing of the objects.	- competencies how to build motivation, and engagement of the students, - increasing the digital competences of academic teachers in online teaching.

The methods of conducting the on-line lessons

Phase I. Introduction and warm-up (5-10 minutes): the teacher must set up the rules for the lesson, makes the overall scheme of a lesson – shows the goals and expected outcomes – what will the students know and learn from this lesson (2-3 screens in Power Point with the topics of the lesson, the goals and the outcomes).

The rules should cover such issues like: how to comment and speak during a lesson (suggestion – reaction mode "hand up"), shall be the person visible to all the participants (preferred in smaller groups below 25) or only the avatar of the person shown (preferred in a bigger group) or only the initials (and how it is recommended in a general room and in breakout rooms).

The teacher prepares the students to the next phase and reminds the materials that students had to read and watch before the lesson.

Recommended reading and short podcast with the comments of the bankers were about due diligence.

As the warm-up it is proposed a quick check-out of the vocabulary or the visual associations with vocabulary. The proposed tool is:

(1) Mentimeter and the cloud of words at the website:
    Enter the Code to Join & Vote on a Presentation - Mentimeter
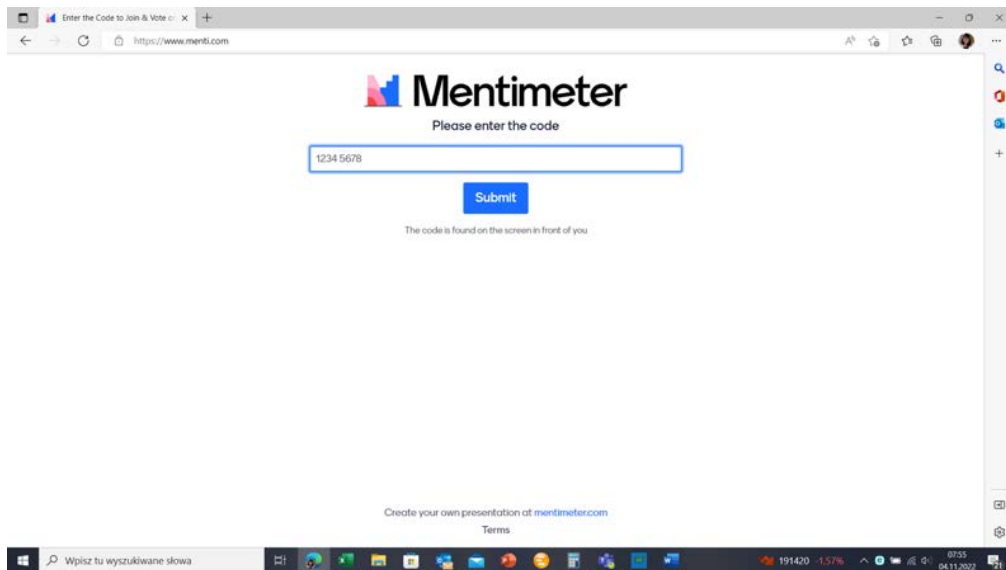
1.

The question may be:

What item do you see when you think due diligence?

Usual options in the lesson done: hammer, screwdriver, engine, chess, banknotes, bridge, papers (this is the open question)

The examples of the results from the online lesson:

Jaki przedmiot widzisz, gdy myślisz o due diligence?

(2) Mentimeter or MS Forms and ranking

The question may be: Which aspects would you like to research the most in your due diligence team?

Options: IT, HR, R&D, law, finance, environmental, risk, marketing, collaterals (other options possible)
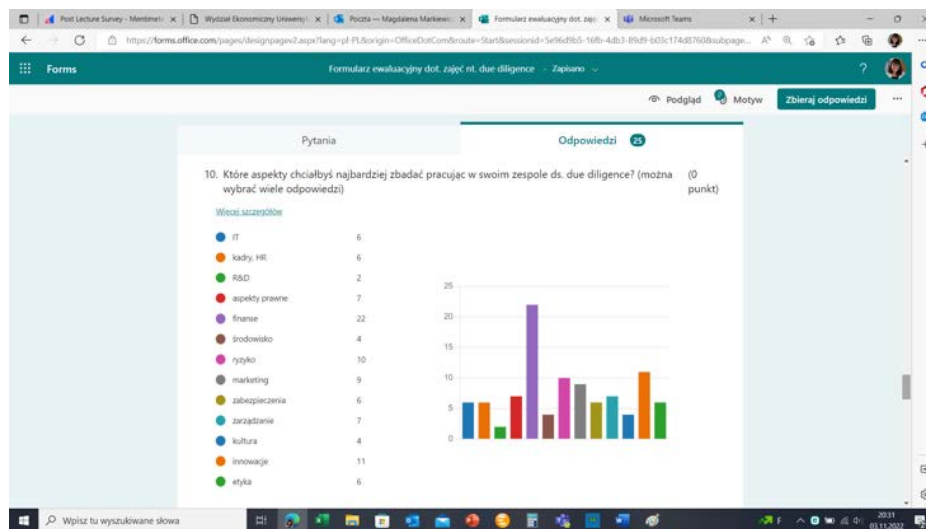
The teacher comments on the results and announces the next phase. In the example above the students indicated that they were interested the most in the financial positions and human resources.

Phase II. Working out the output (15-20 minutes):

All the students are given the task: **the MS Teams / MS Forms or Moodle questionnaire** with the open questions concerning the recommended article and podcast. They may see the material at the time of fulfilling the spaces in the questionnaire.

The time for answering is limited.

The are 5-7 questions concerning the topic and the answers will be sent to the teacher in MS Teams (or Moodle if preferred). The time for each answer is approximately 2-2,5 minutes. The questions should revise the reading material and make it possible to emphasize the main parts of the process. The questions should be open or semi-open (like suggesting the range or hierarchy of a problem, which shortens the time for the answers).

The students may achieve individually 10 points for this task after completion of all questions correctly.

The information for the students:

These are supporting questions for the text on due diligence, which will help you to get acquainted with the topic and its reflection. The answers can be sent back in MS Teams - this is an optional task, but you can get 10p for them.

What is due diligence? (1 pt.)

The example of the answer: The term due diligence, translated literally, means an examination with due diligence and diligence. In banking terminology, due diligence is defined as the conduct of experts, such as auditors and lawyers, in connection with the valuation carried out for the purposes of a new issue of M&A securities. Practically speaking, due diligence is an examination or audit of a potential investment, and its purpose is to collect and confirm information regarding sales to protect entities concluding a purchase and sale transaction. Due diligence deals with the examination of the assets of the entity being the subject of the investment in order to obtain information on their actual condition.

Why is due diligence important? (1.5p.)

The example of the answer: Due diligence is important from the investor's point of view. The owner of assets being a potential investment has information that he may not share with the investor or retouch it, e.g., exaggerate the advantages and conceal or belittle information indicating threats and weaknesses of the project. Due diligence allows you to obtain the most objective description of the investment.

In what projects / industries due diligence can it be used? (2p.)

The example of the answer: Due diligence may be used when:

- We plan to invest in the securities of the selected entity.
- We plan to cooperate with a selected entity, e.g., advertising, commercial exchange, commission.
- We are planning a merger / acquisition of a selected entity.

How is due diligence affected by industry differentiation? (1 pt.)

The example of the answer:

Industry differentiation has a large impact on small investors who prefer investments with which it is easier for them to identify - closer to their place of residence, in areas where they have experience, etc. For larger and more experienced investors, the industry in which the project is implemented does not affect the attractiveness investment. Accordingly, industry differentiation in due diligence will have a greater priority for less experienced investors than for those with more experience.

How long can due diligence take? (in months)? (1 pt.)

The example of the answer:

Due diligence may take up to several months and the period under examination may be up to 60 months (5 years)

What does the due diligence price depend on? (1.5p.)

The example of the answer:

The price of due diligence depends on: overall effectiveness and expediency of the project, financial situation, products, customers, competition, marketing, sales and distribution, research and development plans, management and personnel, legal position, environmental protection advancement, the current position of the entity on the market, expected market development, the expected position of the entity on the market, financial forecast of the entity, assessment of the net book value and market value of the entity.

Is the due diligence price final? If so, why? If not, why not? (1 pt.)

The example of the answer:

Due diligence price is not final. Due diligence is an analysis that allows you to obtain the most objective assessment of a selected investment. For example, an investor may be willing to pay less and receive a lower return on investment.

What is the difference between due diligence and audit? (1 pt.)

The example of the answer:

Due diligence is characterized by a larger area of the scope of the examination than audit, because it is not limited to internal examination, but also analyzes the external environment. In addition, due diligence also considers forecasts for the coming years, and the audit is based on the events that have occurred.

After 15 minutes a teacher passes the oral announcement to the students that time is going to end soon and waits for the delivery of the questionnaires in next 2-3 minutes.

When the questionnaire is closed (students may not add next comments) they proceed to the next phase of discussion.

Phase III. Discussion in the groups (25-30 minutes):

Phase of presentation and discussion in the groups (5 minutes of explanation of the phase rules, scoring and roles by a teacher, 2 minutes elections after dividing into groups, 18 minutes of discussion and preparing the Jamboard output) + 15 minutes of class discussion).

The teacher announces moving to the next phase and clarifies the rules for this phase, the method of division into groups, the roles in the groups, the aims and usage of Jamboard and how to get the points for this task.

The students will be divided into groups of 4-6 persons (at least 4 people each group). **Their role now is to discuss the issues which were the subject of the questions in the previous task.**

Within discussion they should indicate the most common approach to answering each question and specify if there were outstanding indications.

There are 4 roles in the discussion, which help to work out the output:

1. One of the students should be the leader that keeps pace and makes sure that the group finishes on time.
2. One of the students should be the judge who makes sure everyone has spoken.
3. One of the students should be an accountant who summarizes the most common answers (make use of Jamboard page with the questions written down and the screen divided into as many parts as the number of questions).
4. One of the students should be creativity controller who saves the rarest, single opinions (make use of Jamboard page).

If there are more than 4 members in the group they are just group members.

The students shall choose roles themselves shortly after the divisions into groups in breakout rooms. Then they have 15-20 minutes for their discussion and filling in the Jamboard page.

This part of group discussion will take 15-20 minutes.

The groups may get 10 points if:

They finish on time (2 points)

They have the complete survey of all team members (3 points)

They completed the most common answers (3 points)

They completed the outstanding answers (2 points)

The participating students may achieve individually 10 points for this task after completion of all questions correctly if the group achieves 10 points (and accordingly less if the score is lower).

At this moment the teacher asks if the rules are clear and if so, he/she turns on **automatically** a division of the students into break out rooms in MS Teams/Zoom.

After 15 minutes a teacher passes the oral announcement to the students that time is going to end soon and waits for the delivery at the Jamboard screen in next 3-5 minutes.

It is the choice of a teacher if wants to check the group work during this session. It is recommended at the first years of studies to involve more and later phases require training responsibility. However, a teacher still has the opportunity to observe the chat in the groups and may intervene or help if there is a need.

After completion of a task the teacher summarizes if all groups finished on time.

There's time for asking the judge if a complete survey is a summary of all team members opinions. The number of outstanding opinions and common answers will be the proof.

The all screens are shortly shown by a teacher to all participants to compare if they all have the same or different answers.

It's time for expressing what new definitions / aspects were gained and what competencies were trained in this part of the lesson.

The scenario of this lesson allows to proceed with such competencies like: team building, indicating the roles, playing the roles in a group and addressing the tasks.

The effects:

The students were working in the groups, and they had time to generate the common opinions, share the knowledge and discuss the outstanding ideas. Meanwhile they trained teamwork, achieving the common goal, choosing the roles, delegating the tasks and encouraging themselves to mitigate the aim and time.

Phase IV. Theoretical approach and comments (15-20 minutes)

Now it's the time to go beyond the questions by a teacher. In the 15 minutes of a **lecture on theoretical aspects** he/she may explain the most important cases, aspects, theory or interpretation – it depends on the group level.

The Bachelor level lecture will be based on the foundations of due diligence and it's most important elements. The Master level will capture more advanced aspects.

Phase V. Conclusions (5-10 minutes).

In the phase of conclusions, it may be used again **Mentimeter or Jamboard** with small colorful paper notes.

The question examples:

    (1) Mentimeter: What will you remember after this lesson? What will you take with you after the lesson?

Write at least 3 most important things.

    (1) Mentimeter: What ability/ feature /skill do you have which may be useful in the process of due diligence?

Jaką posiadasz cechę/umiejętność, która może być przydatna w procesie due diligence?

Mentimeter

Chciwość	Żadną 😞	Umiem czytać
Negocjacji	zdolności analityczne	Dokładność, staranność,
Skrupulatnosc, skupienie na szczegółach	wnikliwość	Dokładność
Oczy do patrzenia i kalkulator do liczenia	Dokładność i dociekliwość, analityczne myślenie.	Cierpliwość

Jaką posiadasz cechę/umiejętność, która może być przydatna w procesie due diligence?

Mentimeter

Oczy do patrzenia i kalkulator do liczenia	Dokładność i dociekliwość, analityczne myślenie.	Cierpliwość
Umiejętność analitycznego myślenia, wyciagania wniosków, łączenia faktów.	cierpliwość	Analityczne myślenie
	dokładność	Dbanie o szczegóły, cierpliwość w długookresowym procesie analizy
Skrupulatność	Cierpliwość	Dokładność

Jaką posiadasz cechę/umiejętność, która może być przydatna w procesie due diligence?

Mentimeter

liczenia		Analityczne myślenie
Umiejętność analitycznego myślenia, wyciagania wniosków, łączenia faktów.	cierpliwość	Dbanie o szczegóły, cierpliwość w długookresowym procesie analizy
	dokładność	
Skrupulatność	Cierpliwość	Dokładność
Wnikliwość		

This lesson scenario describes the phases of the lesson, way of transition between phases, division of roles of the students in the class and the way of selecting them (e.g., break out rooms - who shares / who automatically enrolls) and the role of a teacher (at the subsequent steps).

Materials used during the course (books, notes, applications, scripts, any other)

- Articles with electronic open access or access through university library.
- Examples of the short films from YT.
- Mentimeter, Jamboard.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

The main methods proposed to build engagement of the participants during the process of on-line lessons refer to activating them to answer the questions, then discuss the results with the peers, what gives the peer review of the knowledge gained during the pre-class reading. The important part of the lesson is the group discussion time, which is sometimes underappreciated, but involves the students in creating the comments, sharing opinions, reflecting the other points of view. A teacher may use such motivational tools during this scenario as short quizzes directed into thinking about the definitions and process, but also the abilities of the participants and assessing the group discussion results.

The students collaborate during the on-line lessons with each other and with the teacher, using the university educational platform, MS Teams/Moodle, written / voice communication. For the better communication it's good to introduce the rules that all students have cameras open (especially in the smaller groups and in the breakout rooms).

Personalization of avatars is highly recommended for the persons with weaker speed of internet

Methods used for verifying students' knowledge

The main methods for verifying student's knowledge:

- MS Forms /Moodle questionnaire with a limited number of short open questions.
- Mentimeter questions.
- Jamboard group work assessment.

The overall expected results of the on-line lesson

The students are willing to think and act in an entrepreneurial manner as he adapts to new situations and conditions, assesses risks and threats and finds ways counteracting their effects. The students communicate with the other students in the group, demonstrate responsibility for the actions taken, skillfully determine their importance and order. The students are committed to planning and implementing the project task. The students are ready to initiate activities, inspire and organize projects for the benefit of environment and the international business environment, in line with the idea of sustainable development and the resulting legal, economic and environmental requirements, political and social.

The teacher may combine the online lesson with some other methods, like for example flipped learning – in the phase of theoretical lecture some of the groups may present their results or one of the students may present the results of individual or group results. It is also possible to combine with case study method, especially at the phase of preparation, when reading material may be a case study and then within a process of implementation the case method may be fruitful to imitate skimming or scanning process and evaluation of the ideas. The design thinking method itself may be useful in the context of internal discussion of the students, when they try to evaluate the common approach and the outstanding aspects. They might think about the needs and expectations that due diligence shall meet.

It is also possible to make use of blended learning and incorporate other didactic methods.

SCENARIO 1. *"Introduction to Bioinformatics"*, University of Primorska, Slovenia

Prototype of on-line lesson scenario, DT workshop, Slovenia

Overview of the on-line lesson scenario

This scenario is about the first lecture for the "Introduction to Bioinformatics" course, however, its basic structure can be easily modified to meet the needs of any course, especially if it includes practical/hands-on sessions.

The aim of the lesson is to provide the students with a general understanding of how the course will be structured and help them identify connections between the discipline and other subjects or real-life situations.

Target groups and timing of the on-line lesson

The "Introduction to Bioinformatics" course is currently implemented during the 2nd year of the Bachelor in Bioinformatics (parallel performance in Slovenian and English languages) and the scenario was developed involving both the Slovene and international students, it is thus applicable both in a national and international setting. However, due to the general structure of the scenario itself, we believe it can be applied at any level of higher education, the only limitation concerns the number of students, since the process includes a general introduction of all participants, the task would become too time consuming for large groups. We thus recommend to have a maximum of 2 minutes introduction for no more than 30 students.

The scenario is based on two 45-minutes slots that can either be consecutive, like in the scenario presented, or on different days, although we recommend a consecutive approach. The implementation can either be online or offline, as it aims to create cohesion within the group of students, but also increased understanding of the processes, content and requirements of the course.

The lesson is divided into 3 phases:

1. Round of introductions, of both teachers and students (max 5 min/teacher and 2 min/student);
2. Description of the course structure and grading system with Q&A (max 15 min);
3. Presentation of the Syllabus and discussion on links and connections between the subject and other courses or applications (30 min or depending on the time required by phase I).

On-line platforms and software used for on-line lesson

The University of Primorska chose Zoom (for more details please see Technical platform booklet "Revision of available IT solution for on-line education", under section 1.1.2 Zoom meeting, and 1.2.1 Moodle) as platform for online classes, the presented scenario thus relies on this platform, in combination with Moodle. However, any platform allowing for screen sharing and break-out rooms can be used for the implementation of this scenario.

For the introductory lecture on "Introduction of Bioinformatics" only Zoom for the synchronous online lecture will be used, with PowerPoint for the presentation. Each software is available under license purchased by the University. The Zoom link will be posted on the Moodle page of the course, together with the pdf of the presentation, a course description and the contact information of the teacher. Additional topic-

specific software will be needed during the course, all of them are free and links will be posted a week before the scheduled activity, together with installation resources.

Competencies of the participants and the teacher

After the lesson the students will have an overview of the course content, the activities that will be performed and the expected learning outcomes. Furthermore, students will learn about the grading system and the procedures for the evaluation of their knowledge.

The students' competencies	The teacher's competencies
Prerequisites - Basic IT knowledge, - General biological knowledge, - Familiarity with topic specific lexicon (e.g., algorithm, DNA, etc.) **To be increased** - organizational skills, - analytical and computational skills, - data presentation skills, - report writing skills.	- competencies how to build motivation and engagement of the students, - increasing the analytical skills of students, - organizational skills, - communication skills, - topic specific knowledge

The methods of conducting the on-line lesson

This first scenario goal is to familiarise the students with the content and implementation of the course, as well as help them gain ownership on the course content and independently realise the connections between this and other courses. The scenario requires no beforehand preparation from the students since it addresses the very first lecture of the course. Instead, the teacher should post on Moodle one week (minimum) before the course their contact information, the platform to be used and the link to the event, all relevant information about the course (e.g. book, if mid-terms will be possible, etc.) and organise the Moodle page. This was an aspect student stressed, since the Moodle page should be organised in a way that makes it easy for them to retrieve information later on, so a division only in Lectures/Exercises was deemed uninformative. They recommend dividing the Moodle page into sections corresponding either to the date of the lecture or by topic. In the case of this scenario, the recommendation was to have the page divided into: "Presentation of the course", "Databases", "Alignment", "Blast", "Next Generation Sequencing", "Mid-terms" and "Homework assignments", with each section containing both the theoretical part and the corresponding exercises. This aspect was also felt deeply by the students, the need

of a connection between the theoretical part and the exercises. Furthermore, all deadlines should be clearly marked in the calendar on Moodle.

On the day of the lecture, the teacher should additionally post the pdf of their presentation before the lecture, so that students can take notes directly on the file. Considering this is the introductory lecture, it constitutes an exception to the recording and post on Moodle afterwards recommendation, since most of the content will be performed by the students themselves. In this case, it is important that either the slides include all the relevant information in text format, or that the syllabus, examination method and grading requirements will be posted on Moodle.

Phase I - The lecture should start with the teacher introducing themselves and, if necessary, all the other people that will participate in the teaching process (e.g. teaching assistants or co-lecturers). All involved people should be present since questions might arise on specific aspects during the presentation. This should include information such as research topics, reception hours and preferred method of communication. Following, students should introduce themselves providing information on their educational background, research interests, previous related experiences, interests and expectations from the course. During this phase the teacher should act as moderator, thus encouraging students to share, but also keeping track of time to avoid running late without allocating enough time to each activity.

Phase II - After this round of introductions, the teacher should briefly explain how the course will be structured and the activities that will be included (i.e., experiments, field work, internships, hands-on sessions with software, graded homework, etc.), the overview of the course content, information on the grading system, including aspects that will be particularly relevant (i.e., proficiency with certain software or to demonstrate critical thinking). A question-and-answer session should follow this introductory part, with students being mindful of providing constructive feedback and input, whereas the teacher should take notes of the suggestions so that they can be incorporated in the course whenever appropriate to increase students' engagement and motivation.

A 15 minutes (minimum 10 minutes) **break** should be allowed here.

Phase III - After the break, the professor should present the syllabus in more detail and allow the students to comment on which topics they are more interested in, but also to discuss their expectations in this sense. Examples mentioned during the DTW were specific software or methodologies, but also topics that were perceived as highly relevant in the news associated with the topic being presented, aspects students were particularly eager to learn about and that they felt had a strong connection to the subject. The teacher should pay particular attention to encourage students to think

and try to establish connections with topics from other courses that they find relevant and connected to the subject to allow them to see for themselves how the course starting is not a standalone subject but relays on and relates to other courses. This will increase the students' critical thinking and understanding, but also help them build ownership on the content and implementation of the course.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

The main method proposed in this scenario is to build engagement by making students part of the process. By involving the students in identifying aspects of relevance for relevance for the course, like examples or hot topics in the news with potential associations with the course, the students develop a sense of ownership on the course content, which increases motivation. However, it is paramount that the teacher later includes these aspects in the course, otherwise the students will feel betrayed and that their opinions are not take into consideration, which would lead to the opposite effect and make them loose interest in the course. Additionally, by supporting the students in the identification of bridges with other courses, they will better appreciate the relevance of the course content and realise the presented activities are not per-se but are building block for their professional development; seeing the "bigger picture" will increase their motivation to actively engage and develop their competencies.

This scenario mainly involves voice communication interactions with both teacher(s) and peers. Students recommended to leave freedom in the choice of how to appear, so camera should be voluntary and so should be the use of an image to represent themselves. Based on the interactions during the DTW, the moderators' impression was that posting on Moodle beforehand or requesting students to identify themselves with an image during the lecture, would increase their engagement without making them feel pressured to turn on the camera during interactions. In this regard, methods of interaction should also be as flexible as possible. Both to accommodate different personalities, but also to take into accounts possible technical difficulties (e.g. poor connection or malfunctioning of equipment).

The scenario includes only personal introductions and question-and-answer sessions, but the course additionally includes hands-on activities that will be performed in breakout rooms, randomly created, of maximum 4-5 students to facilitate brainstorming and troubleshooting.

Methods used for verifying students' knowledge

This aspect was not directly addressed in the scenario development. However, during the DTW students suggested to have regular quizzes or short assessment. One of the recommendations was in case the test was included as part of the lecture, this should be clearly stated at the beginning of the class, to keep their attention higher. Additionally, they suggested to have games included among the activities. They previously had an escape room experience in one of their courses and reported their retention rate was higher, because they had fun solving the exercises, so they learnt more because they were more engaged:

The overall expected results of the on-line lesson

The presented scenario is about the introductory lecture, so the main goal is to provide students with all information concerning the course, its implementation, the syllabus and expected learning outcomes, the grading method and how their knowledge will be assessed. During the course the scenario focuses on, the students will learn about different computational approaches for the analysis of biomolecules, their history, and the current developments in the field, at the end of this first class, they should have a general overview of what they are going to learn, but they should also identify how such knowledge is connected to their everyday experiences and other courses. This understanding will increase their motivation to actively engage in the course activities and consolidate their knowledge.

Additionally, the scenario includes rounds of introduction and the possibility to share interests and experiences. Such activities aim at creating a connection among the students and encourage them to develop a sense of community despite the distance created by the online setting. Creating bonds among the students will enable them to share peer to peer feedback, brainstorm and troubleshoot later in the course during the hands-on exercises.

SCENARIO 2. *"Endangered species in conservation biology"*, University of Primorska, Slovenia

Prototype of n-line lesson scenario, DT workshop, Slovenia

Overview of the on-line lesson scenario

The lesson can be used preferably in biology, but its structure can be easily adapted to any topic with practical applications and real-life examples. The objective of the lesson is to acquire topic-specific knowledge in conservation biology and how such a measure can be used to create a simple and widely understood system for classifying species threatened with global extinction. At the same time, students learn problem-solving strategies by working in groups to solve a specific problem based on a case study.

Target groups and timing of the on-line lesson

The lesson could be implemented at the bachelor's or master's level in the 2nd or final year of the program, respectively. It is also possible to conduct the scenario in international groups, with a minimum of ten and a maximum of thirty students. Larger groups are not advisable because it will become increasingly challenging to involve all students in the task.

The scenario is based on two 45-minutes lesson delivered one week apart. The implementation can either be online or offline, as it aims to present theoretical knowledge and its real-life applications.

The first lesson is divided into 4 phases:

1. Introduction to the theoretical background (15 minutes),
2. Presenting the summary of the five criteria (a-e) used to evaluate if a taxon belongs in an IUCN Red List category (15 minutes),
3. Summary and conclusions (5-7 minutes),
4. Explanation of the assignment and its grading (10 minutes).

The second lesson is divided into 5 phases:

1. Group presentation of the I. part of the assignment results (5 minutes per group; for 3 groups is a total of 15 minutes),
2. Students are invited to break out rooms to discuss and summaries the results of the other groups (5 minutes),
3. Summary and conclusions (5-7 minutes),
4. Group presentation of the II. part of the assignment results (5 minutes per group; for 3 groups is a total of 15 minutes),
5. Summary and conclusions (5-7 minutes).

On-line platforms and software used for on-line lesson

The University of Primorska chose Zoom as platform for online classes, the presented scenario thus relies on this platform, in combination with Moodle. However, any platform allowing for screen sharing and break-out rooms can be used for the implementation of this scenario.

For the lectures only Zoom will be used for the synchronous online activities, in combination with PowerPoint for the lecture presentation. Each software is available under license purchased by the University. The Zoom link will and all materials supporting the lecturers (the introductory lesson in ppt format, the worksheets in Word format, and the case study articles in pdf format) have to be posted on the Moodle page of the course, together with the course description and the contact information of the teacher. Additional topic-specific analytical software will be needed during the course, all of them freeware, and links will be posted a week before the scheduled activity, together with installation resources. For some activities, software like Mentimeter and Miro might be used in support for group activities.

Competencies of the participants and the teacher

After the lesson the students will have knowledge on the concept of The IUCN Red List of species and their status as well as how this tool could be used to inform and catalyse action for biodiversity conservation and policy change, critical to protecting the natural resources. Participants will be able to identify the steps needed to assess

species status in a IUCN list, critically assess the current status of the species, what lead to the observed status and considering the biological requirements of the target species, possible risks and limitations, and the desired state.

The students' competencies	The teacher's competencies
Prerequisites - basic IT knowledge, - general biological knowledge, - familiarity with topic specific lexicon (e.g., IUCN, endangered, etc.). **To be increased** - organizational skills, - analytical and computational skills, - data presentation skills, - report writing skills.	**Prerequisites** - basic IT knowledge, - knowledge of platforms like Moodle, Zoom, Microsoft forms. - biological knowledge, - upload the material for lesson. **To be increased** - competencies how to build motivation and engagement of the students, - increasing the analytical skills of students, - organizational skills, - communication skills, - topic specific knowledge.

The methods of conducting the on-line lesson

As stated in previous scenarios, the first step is the preparation of the information and making them available to the students beforehand. Teacher uploads the files in Moodle. The platform should be organized in clearly named sections corresponding to topics covered, where both theoretical aspects and exercises are grouped according to the content. The material (articles and book chapters) needed for the students' activity should be posted a minimum of 1 week in advance and a message should be sent through the platform itself, informing the students the readings are available and will be needed for the activity.

Materials used during the course:

- file: theoretical background of IUCN – ppt format,
- file: summary of the five criteria (a-e) used to evaluate if a taxon belongs in an IUCN red list Threatened category – pdf format,
- file: the worksheets for the assignment – Word template format containing the descriptions of two species,
- file: articles of case study – pdf format,

- assignment folder: create the folder in Moodle where the students will upload their assignment.

One teacher is enough to participate in conducting the on-line lesson. Teacher need to carefully prepare all the needed material before the lesson. During the lesson the teacher need to verified if the students understands the assignment and need to be very precise when giving the instructions and the end date for the assignment. After the first lesson the teacher is supposed to review the student's homework.

First lesson

Phase I - Introduction to the theoretical background (15 minutes),

The teacher describes the structure of the lecture, highlighting the content presented will be needed for a homework assignment. Then proceeds to introduce the concept of threats to species and their causes particularly endangered and protected plant and animal species; learn about IUCN and its role as the global authority on the status of the natural world and the measures needed to safeguard it.

Phase II - Presenting the summary of the five criteria (a-e) used to evaluate if a taxon belongs in an IUCN Red List category (15 minutes),

Students are introduced to the five criteria (a-e) used to evaluate if a taxon belongs in an IUCN Red List category (applicability of assignment the species in one of the five criteria).

15 minutes break.

Phase III - Summary and conclusions (5-7 minutes),

Key points are summarised and students are reminded of the learning goals of the lecture.

Phase IV - Explanation of the assignment and its grading (10 minutes).

The teacher randomly assigns Word template format file contains descriptions of species which will need to be defined the IUCN threat level category. To each group of students is allocated 2 species for this assignment to be done asynchronous (one-week time). Students will be required to enter their reasoning for each criterion.

In addition, to each group of students is assigned a document containing the description of one case study. The students have to read and report a summary of the case study. The assignment is done asynchronous (one-week time). Students will submit their assignments via the Moodle platform.

Students perform the activity on their own and present their work during the next class.

Second lesson

Phase I - Group presentation of the I. part of the assignment results (5 minutes per group; for 3 groups is a total of 15 minutes),

Students presents the assignment results of their reasoning for each criterion in the IUCN threat level category for the assigned species. The teacher should moderate the presentations and use them as an opportunity to refresh concepts and clarify doubts and uncertainties emerging from the presentations.

Phase II - Students are invited to break out rooms to discuss and summaries the results of the other groups (5 minutes),

Teacher needs to allocate the students in the breakout rooms, were they need to discuss about the results of the other groups.

Phase III - Summary and conclusions (5-7 minutes),

Key points are summarised and students are reminded of the learning goals of the lecture.

Phase IV - 4. Group presentation of the second part of the assignment results (5 minutes per group; for 3 groups is a total of 15 minutes),

Students presents the assignment results - 5 minutes for each group to presenting the summary of the case study.

Phase V - Summary and conclusions (5-7 minutes),

The key points are summarised, and students are asked five questions to review the learned topic.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

The main methods proposed to build engagement of the participants during the process of on-line lessons is the active participations of the students in each step. In the first step the students need prepare the homework with the presentation of the content learned at home, in the second step they need to be actively involved in listening the presentation of the other group of students and summarized the content, in the third step they need to recall relevant content from the lecture and answer the questions.

During the scenario different motivational tools can be used, such as white board, Mentimeter, and Quizlet.

Students collaborate before the on-line lessons with each other during the preparation of the assignment and during the on-line lessons they collaborate with each other when preparing the summary of the content of the other group. Students interact with the teacher in all the assignment in different ways: first during the lesson the students actively listen and give the feedback to the teacher about the instruction for the assignment, in the time between the two lesson the students interact with the teacher via e-mail (asking questions, clarifies unresolved issues), during the student's presentation the teacher actively moderate the timing and steps in the lesson process.

During the lesson is advisable that the students have their cameras on.

Methods used for verifying students' knowledge

The student knowledge is verified during each lesson with small task and questions. At the end of the course a written exam is performed.

The overall expected results of the on-line lesson

The presented scenario is about the endangered species as a part of conservation biology course, so the main goal is to provide students with information that focuses on how to protect and restore biodiversity, how the biodiversity should be preserved, untimely extinctions should be prevented, ecological complexity should be maintained, and the evolution should continue. During the course the scenario focuses on different approaches on how to maintain the biological diversity, ecological integrity, and ecological health, together with the current developments in the field. At the end of this first class, they should have a general overview of the five criteria (a-e) used to evaluate if a taxon belongs in an IUCN red list threatened category (critically endangered, endangered, or vulnerable), and should also identify how such knowledge is connected to conservation biology. This understanding will increase their motivation to actively engage in the course activities and consolidate their knowledge.

SCENARIO 3. *"Genetic diversity"*, University of Primorska, Slovenia

Presenting on-line lesson scenario, DT workshop, Slovenia

Overview of the on-line lesson scenario

This class falls within the course on Genetics, and it can be applied in any biology oriented course, but it structure can be easily adapted to any topic with practical applications and real-life examples.

The aim of the lesson is to acquire topic specific knowledge in the field of genetic diversity and how such measure can be used to diagnose the conservation and health status of populations. At the same time students will learn which interventions can be applied to improve the status of populations.

Target groups and timing of the on-line lesson

The scenario was developed by 3rd year Bachelor students, involving both national and international students and thus mainly target this group. However, its schematic structure and approach, can be easily adapted to any higher education level, especially in courses combining theoretical knowledge with its applications. The scenario has no particular limitation in terms of number of students, since it focuses on the

presentation of the theoretical knowledge and the students then perform the assigned activities in groups afterwards.

The scenario is based on two 45-minutes consecutive slots. The implementation can either be online or offline, as it aims to present theoretical knowledge and its real-life applications.

The lesson is divided into 7 phases:

1. Definition of genetic diversity and its importance (20 minutes).
2. How to measure genetic diversity (25 minutes).
3. Causes of reduction of genetic diversity (10 minutes).
4. Possible mitigation strategies (10 minutes).
5. Q&A and discussion session (10-15 minutes).
6. Summary and conclusions (5-7 minutes).
7. Explanation of the assignment and its grading (5-7 minutes).

On-line platforms and software used for on-line lesson

The University of Primorska chose Zoom as platform for online classes, the presented scenario thus relies on this platform, in combination with Moodle. However, any platform allowing for screen sharing and break-out rooms can be used for the implementation of this scenario.

For this lecture only Zoom will be used for the synchronous online activities, in combination with PowerPoint for the lecture presentation. Each software is available under license purchased by the University. The Zoom link will have to be posted on the Moodle page of the course, together with the pdf of the presentation, a course description and the contact information of the teacher. Additional topic-specific analytical software will be needed during the course, all of them freeware, and links will be posted a week before the scheduled activity, together with installation resources. For some activities, software like Mentimeter and Miro might be used in support for group activities.

Competencies of the participants and the teacher

After the lesson the students will have in-depth knowledge on the concept of genetic diversity, its implications for conservation and management purposes, the causes that might lead to an overall reduction of this parameter and which interventions can mitigate loss of genetic diversity in natural populations.

The students understand biological processes and can analyse the relationships between the life dynamics of populations and their effects on the genetic composition of populations. Participants will be able to identify the steps needed to assess genetic

diversity in a given situation, critically assess the current status of the population, what lead to the observed status and provide recommendations on how to intervene to mitigate genetic loss, if needed, considering the biological requirements of the target species, possible risks and limitations, and the desired effects.

The students' competencies	The teacher's competencies
Prerequisites - basic IT knowledge, - general biological knowledge, - familiarity with topic specific lexicon (e.g., ploidy, DNA, etc.) **To be increased** - problem solving skills, - analytical skills, - language skills, - scientific presentation skills, both written and oral, - teambuilding, - decision-making skills.	**Prerequisites** - competencies how to build motivation and engagement of the students, - topic specific knowledge, - organizational and communication skills. **To be increased** - enhancing the students' problem solving and analytical skills, - supporting the development of the students' decision-making skills, - fostering the development of each students' presentation style.

The methods of conducting the on-line lesson

As stated in previous scenarios, the first step is the preparation of the information and making them available to the students beforehand. This class relies on the content of previous lectures and the corresponding material should be available on Moodle. The platform should be organized in clearly named sections corresponding to topics covered, where both theoretical aspects and exercises are grouped according to the content. The material (articles and book chapters) needed for the students' activity should be posted a minimum of 1 week in advance and a message should be sent through the platform itself, informing the students the readings are available and will be needed for the activity.

Phase I - Definition of genetic diversity and its importance (20 minutes):

The teacher describes the structure of the lecture, highlighting the content presented will be needed for a homework assignment. Then proceeds to introduce the concept of genetic diversity, its importance for the species survival and the biological processes influencing it.

Phase II - How to measure genetic diversity (25 minutes):

Students are introduced to the mathematical approaches used to calculate the parameter in relation to the molecular marker used (strengths, weaknesses and applicability of molecular markers are known to the students from previous classes).

15 minutes break.

Phase III - Causes of reduction of genetic diversity (10 minutes):

Causes that might lead to a reduction of genetic diversity are presented, with real-life studies in support.

Phase IV - Possible mitigation strategies (10 minutes):

Examples of real-life cases where interventions led to improvements in the status of populations are presented, highlighting the factors that led to the observed success.

Phase V - Q&A and discussion session (10-15 minutes):

Students will have time to ask question or discuss aspects they deem critical of the successful implementation of either the mitigation or measurement of the parameter.

Summary and conclusions (5-7 minutes):

Key points are summarised, and students are reminded of the learning goals of the lecture.

Explanation of the assignment and its grading (5-7 minutes):

The teacher randomly assigns a potential scenario to each group, connected to the readings posted previously, explains the grading system and asks the students to identify how to proceed to:

1. Measure the genetic diversity in a given population (1 point);
2. Identify the causes that might have led to the observed value (2 points);
3. Decide if interventions are needed to preserve the population (1 point);
4. Suggest mitigation strategies (5 points).

Students perform the activity on their own and present their work during the next class. The teacher should moderate the presentations and use them as an opportunity to refresh concepts and clarify doubts and uncertainties emerging from the presentations.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

The main methods proposed to build engagement during this scenario are:

- the use of real-life examples to explain the concepts presented, to help students identify the transition from theoretical knowledge to its applications and consequences.
- linking, at every step, what is being presented with the activity the students will be performing on their own afterwards.

To better enable the students to perform their group activity, the teacher should use guiding questions when describing the different situations (e.g.: how do we define a population in need of intervention? Which will be the consequences of fragmentation on the genetic composition of the populations? How can we reduce the negative effects of fragmentation?), so that students will find it easier to connect the characteristics of the scenario they have been assigned to the relevant aspects of the lecture.

Collaboration during the lecture will be limited, but students will be required to work as a team for the homework.

Methods used for verifying students' knowledge

In this scenario students' understanding and knowledge will be verified through the results presented during the following class.

The overall expected results of the on-line lesson

Students will learn how to measure genetic diversity, which processes can lead to increase/decrease of this parameter and how they can use such information to devise plans for conservation and management of wildlife. Students will critically assess the status and needs of a given population and think and act as professionals in their field, developing both computational and decision-making skills.

SCENARIO 4. *"Local Council Meeting"*, "1 Decembrie 1918" University, Alba Iulia, Romania
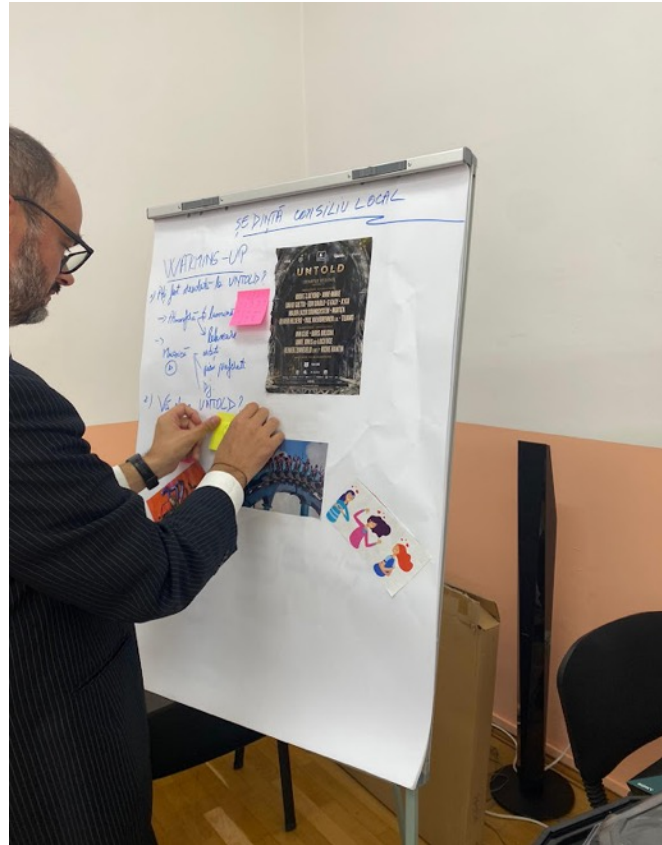
Prototyping on-line lesson scenario, DT workshop, Romania

Overview of the on-line lesson scenario

This scenario can be used during the Communication and Public Relations courses (Business specializations) and Public Relations courses and/or Public Management and/or Public Projects (Law or Public Administration specializations). The areas where this course can be taught are law, public administration and business. Organizing a meeting and the management of a meeting represents a very important aspect in every area as no matter which domain we work in, at a certain moment we do need a meeting. This subject was chosen as the team members where from 2 different domains: one was from public administration and the other two were from business. In the need to find a common subject for both the teachers that were designing the prototype and for the students.

Each student, no matter the specialization domain, has to learn what a meeting is, who and what are the key elements and the steps and rules toward a successful meeting.

Target groups and timing of the on-line lesson

The target group for this online lesson are usually the Bachelor students from the 1st or 2nd year that are enrolled at Law, Public Administration or Business specializations.

The number of participants must be between 7 and 15 per each group of students. We established the minimum number of 10 as during this type of meetings the following persons have to participate: the Mayor, the Mayor's secretary, the Vice-Mayor, the local councilors, auditorium, civil servants, representatives of the event organizers.

The aim of the lesson is:

- To study the language and techniques of setting up a meeting using online tools (email).
- To practice composing an email by email to establish a meeting with different types of participants.
- To study some useful phrases and techniques for managing a local council meeting.
- To provide practice and feedback of the situation of managing a meeting.

This lesson focuses on four important aspects of managing a meeting: setting up the meeting with a series of emails, keep the meeting under control, introducing the meeting and closing the meeting.

As regarding the timing and the rules for the lesson, they are strictly established straight from the beginning of the lesson. The lesson will be taught on Microsoft Teams platform and will have several stages, as it follows.

First, there will be a 15-minute **warming-up session** based on a discussion approach. For this session Jamboard will be used, so students can place their answers on stickers that everybody can see. During the session, students will have to answer and discuss about the following questions:

- Do you know UNTOLD Festival? Have you ever attended this festival?
- Do you know what kind of atmosphere is created during the festival? How about the settlement? The lights? The music?
- Do you know who were the artists that performed during this festival in the last years?
- Do you know how many persons have participated to the last editions of it? From what countries?
- Do you like the festival? Which are your favorite artists that were performing during the festival? Which were your favorite songs?

Second, the theoretical content of the lesson will be taught:

- Defining and discussing the main terms for this lesson: meeting, local council, mayor, vice-mayor, mayors secretary, auditorium, civil servants, event, local council meeting, debate, proposals, vote, quorum, argument, agenda of the meeting etc.
- Presenting the regulations of the local council, the rules, the responsibilities.
- Discussing about authority and about the importance of analyzing the impact of each decision take during the meeting, in this case the impact on the local authority, the impact on the local community, the impact on the local budget etc.
- Discussing about the roles of each participant of the meeting.
- Discussing about the rules that have to be followed during the meeting.

This theoretical session will last for 35 minutes. During this session, using the discussion approach, students will have to put down on paper the main concepts related to meeting topic, as mentioned above.

Third, there will be a role-playing session that will last for 40 minutes. The rules for the role-play session will be presented. Students will be split into groups of minimum 7 persons and maximum 15. If there will be more than 15 persons, then there will be 2 separate groups created that will work in 2 different rooms and will simulate 2 different meetings, but on the same subject. After splitting the students into groups, the roles for each student will be established: who will be the mayor, who will be the secretary, the audience, civil servant and so on.

During the role-play session, the teacher will enter each room to attend the meetings at different moments to be able to evaluate whether the students have assimilated the theoretical part of the lesson and to interfere if needed for correcting the direction of the meeting.

Fourth, at the end of the lesson, there will be a 10 minute closing session where the teacher, for 5 minutes, using a Q&A session, will make a short conclusion of the lesson and will reiterate the main idea of the lesson, emphasizing the good parts and also the mistakes made during the role-play session, in order for the students to better understand the rules and the stages toward a productive meeting. At the very end, using Kahoot, there will also be a quick quiz with 5 short questions to evaluate the level of students' knowledge at the end of the lesson.

On-line platforms and software used for on-line lesson

For this lesson the Teams platform will be used as the universities usually already have the needed licenses for using Microsoft products. For the first part of the lesson Jamboard will be used to post the answers to the warming-up session, so that all the students will see all the answers. The theoretical part of the lesson will be on Teams. During the role-play session, if there are more than 15 students, split rooms feature of Teams platform will be used. At the end of the class, the quiz for evaluation will be posted on Kahoot so that there can be an evaluation of student's knowledge and a hierarchy of their answers.

The main software for teaching online will be Microsoft Teams. The reason for choosing this software is that the universities have the licenses for it as they already use different other products from Microsoft, so the license for Teams platform came as natural as that.

The university is creating each student an institutional email address and the credential for it and having it, the students will have the access to Microsoft Teams platform for free.

Microsoft Teams gives the teachers and the students the opportunity to attend the lessons, have discussions all together or in separate groups, use a white board, or have quick, or longer time homework, access the documents uploaded by the professors, and so on.

Competencies of the participants and the teacher

The students competencies – examples	The teacher competencies – examples
- managerial skills, - organizational skills, - analytical skills, - language skills, - public speaking skills, - financial analysis.	- competencies how to build motivation and engagement of the students, - increasing the digital competences of academic teachers in online teaching.

The methods of conducting the on-line lesson

Excellent communication skills are necessary to succeed in any field, be it business or public administration. While learning these skills takes time, best practices can help students quickly learn and apply them. With improved communication skills, students

will have the confidence and knowledge to not only excel in the workplace but also to seek out jobs and perform well in interviews.

What are communication skills?

Communication skills are the abilities you use to give and receive different kinds of information. These skills are essential when working with others, managing people, and overseeing projects. Examples include volume, clarity, empathy, respect and understanding of nonverbal cues. You use these skills to communicate ideas, feelings, tasks, and events.

Communication skills are vital to a healthy, efficient workplace. Often categorized as a soft skill or an interpersonal skill, communication is the act of sharing information from one person to another person or group of people. There are many ways to communicate, each of which plays an important role in sharing information.

Importance of communication

We use communication every day in nearly every environment, including in the workplace. Whether you give a slight head nod in agreement or present information to a large group, communication is absolutely necessary when building relationships, sharing ideas, delegating responsibilities, managing a team and much more.

Learning and developing good communication skills can help you succeed in your career, make you a competitive job candidate and build your network. While it takes time and practice, communication and interpersonal skills are certainly able to be both increased and refined.

There are four main types of communication we use on a daily basis: verbal, nonverbal, written and visual. With all of these communication styles, it's most effective when you know how to actively listen, observe and empathize. Developing these soft skills can help you better understand a message and respond thoughtfully.

Types of communication

There are several different ways we share information with one another. For example, you might use verbal communication when sharing a presentation with a group. You might use written communication when applying for a job or sending an email. Here's a more in-depth look at the four main categories of communication:

1. Verbal

Verbal communication is the use of language to transfer information through speaking or sign language. It is one of the most common types, often used during presentations,

video conferences and phone calls, meetings and one-on-one conversations. Verbal communication is important because it is efficient. It can be helpful to support verbal communication with both nonverbal and written communication.

Here are a few steps you can take to develop your verbal communication skills:

- Use a strong, confident speaking voice. Especially when presenting information to a few or a group of people, be sure to use a strong voice so that everyone can easily hear you. Be confident when speaking so that your ideas are clear and easy for others to understand.

- Use active listening. The other side of using verbal communication is intently listening to and hearing others. Active listening skills are key when conducting a meeting, presentation or even when participating in a one-on-one conversation. Doing so will help you grow as a communicator.

- Avoid filler words. It can be tempting, especially during a presentation, to use filler words such as "um," "like," "so" or "yeah." While it might feel natural after completing a sentence or pausing to collect your thoughts, it can also be distracting for your audience. Try presenting to a trusted friend or colleague who can call attention to the times you use filler words. Try to replace them by taking a breath when you are tempted to use them.

2. Nonverbal

Nonverbal communication is the use of body language, gestures, and facial expressions to convey information to others. It can be used both intentionally and unintentionally. For example, you might smile unintentionally when you hear a pleasing or enjoyable idea or piece of information. Nonverbal communication is helpful when trying to understand others' thoughts and feelings.

If they are displaying "closed" body language, such as crossed arms or hunched shoulders, they might be feeling anxious, angry or nervous. If they are displaying "open" body language with both feet on the floor and arms by their side or on the table, they are likely feeling positive and open to information.

Here are a few steps you can take to develop your nonverbal communication skills:

- Notice how your emotions feel physically. Throughout the day, as you experience a range of emotions (anything from energized, bored, happy, or frustrated), try to identify where you feel that emotion within your body. For example, if you're feeling anxious, you might notice that your stomach feels tight. Developing self-awareness around how your emotions affect your body can give you greater mastery over your external presentation.

- Be intentional about your nonverbal communications. Make an effort to display positive body language when you feel alert, open and positive about your surroundings. You can also use body language to support your verbal communication if you feel confused or anxious about information, like using a furrowed brow. Use body language alongside verbal communication such as asking follow-up questions or pulling the presenter aside to give feedback.

- Mimic nonverbal communications you find effective. If you find certain facial expressions or body language beneficial to a certain setting, use it as a guide when improving your own nonverbal communications. For example, if you see that when someone nods their head it communicates approval and positive feedback efficiently, use it in your next meeting when you have the same feelings.

3. Visual

Visual communication is the act of using photographs, art, drawings, sketches, charts, and graphs to convey information. Visuals are often used as an aid during presentations to provide helpful context alongside written and/or verbal communication. Because people have different learning styles, visual communication might be more helpful for some to consume ideas and information.

Here are a few steps you can take to develop your visual communication skills:

- Ask others before including visuals. If you are considering sharing a visual aid in your presentation or email, consider asking others for feedback. Adding visuals can sometimes make concepts confusing or muddled. Getting a third-party perspective can help you decide whether the visual adds value to your communications.

- Consider your audience. Be sure to include visuals that are easily understood by your audience. For example, if you are displaying a chart with unfamiliar data, be sure to take time and explain what is happening in the visual and how it relates to what you are saying. You should never use sensitive, offensive, violent, or graphic visuals in any form.

- To make improvements to your communication skills, set personal goals to work through the things you want to accomplish step by step. It might be helpful to consult with trusted colleagues, managers or mentors to identify which areas would be best to focus on first.

4. Written

Written communication is the act of writing, typing or printing symbols like letters and numbers to convey information. It is helpful because it provides a record of information

for reference. Writing is commonly used to share information through books, pamphlets, blogs, letters, memos and more. Emails and chats are common forms of written communication in the workplace.

Here are a few steps you can take to develop your written communication skills:

- Strive for simplicity. Written communications should be as simple and clear as possible. While it might be helpful to include lots of detail in instructional communications, for example, you should look for areas where you can write as clearly as possible for your audience to understand.

- Don't rely on tone. Because you do not have the nuance of verbal and nonverbal communication, be careful when you are trying to communicate a certain tone when writing. For example, attempting to communicate a joke, sarcasm or excitement might be translated differently depending on the audience. Instead, try to keep your writing as simple and plain as possible and follow up with verbal communications where you can add more personality.

- Take time to review your written communications. Setting time aside to re-read your emails, letters or memos can help you identify mistakes or opportunities to say something differently. For important communications or those that will be sent to many people, it might be helpful to have a trusted colleague review it as well.

- Keep a file of writing you find effective or enjoyable. If you receive a certain pamphlet, email, or memo that you find particularly helpful or interesting, save it for reference when writing your own communications. Incorporating methods or styles you like can help you to improve over time.

The teaching methods to teach communication skills

You can learn and practice communication skills. Students benefit from methods that give them hands-on practice, clear directions and the opportunity to reflect. Here are some of the best ways to teach these skills with several examples.

1. Role-play

Role-playing is a classic method for teaching communication skills. To use this technique, students act out skills after discussing them. For example, appropriate posture or body language.

Role-playing should always focus on full group participation and mutual respect. Be sure to talk to students about how to be respectful audience members and allow plenty of time for daily role-playing to help students get comfortable. Students will need to have patience and open-mindedness, as well as a positive rapport with each other. If you foster these skills first, role-playing can be a great way to learn communication abilities quickly.

Role-play tips:

- Whenever you teach a new skill, use role-playing to check that students fully understand the information.
- Act out a skill for students. Then have them guess which skill you modeled.
- Use specific scenarios students experience on a day-to-day basis in an office setting.
- Have the students discuss what went well and what went wrong after each role-play. Ask them what they would have done differently to improve the situation.

Examples:

In a role-playing scenario, two students act out examples of both excellent and ineffective communication during a mock project disagreement. Afterward, the group takes two minutes to write down the effects of each communication style and shares them with the group.

Write various communication skills on strips of paper. Have students choose at random and then act out the skills. The rest of the group can guess. Choose clear examples such as eye contact, posture, body language, active listening, and confidence.

2. Group games

Group games are an interactive, engaging way to teach verbal and nonverbal communication, persuasion, collaboration and relationship-building skills. Through group games, students learn to efficiently pass the information on to others. During games, you should watch closely, make notes and be prepared to share your observations with students so they can improve over time.

Group game examples:

<u>Complete a group project</u>

Working towards a specific goal as a group requires communication. Ask the team to build, design or create something over a set period. Provide the group with any necessary materials and observe their interactions as they work. Afterward, ask the group what went well and what they could've done differently. Share your observations with positive feedback for everyone on what they did well.

<u>Play the "emotional rollercoaster" game</u>

Divide the group into two teams. Each team gets a set of cards with an emotion written on it, such as "angry," "delighted" or "sluggish." A student on the first team acts out an emotion while their teammates guess what it is. Then the other team tries. Set a time limit for guesses, and the team who guesses the most by the end is the winner.

This game will help students become more aware of the expressions and body language signals they use to express emotions. It will also spark conversations about non-verbal signals. Be sure to leave time for post-game discussion.

<u>Lead a team member through an obstacle course</u>

Divide the group into teams of two and put a blindfold on one member of each team. Then, have them stand at the start of the course. The second member guides their partner through the course using only verbal directions. Let both the blindfolded and non-blindfolded members share their experiences, then ask them to swap roles and try the course again.

3. Films

A carefully compiled collection of film and TV clips is a great teaching tool. You can pause, discuss, and replay clips. Video clips also make for great take-home work. Students can watch as many times as they like, write responses and share during the next class.

You can look for examples of:
- Characters who learn how to handle crises using clear, concise communication.
- Nonverbal communication skills.
- How characters process and communicate complex emotions.
- Ways to use multiple communication skills to solve problems.
- Examples of situations that went wrong because of poor communication.

4. Introspection

Learning about interpersonal and communication skills often necessitates time for reflection and introspection. When students are learning about communication, especially those related to social and emotional health, provide ample time for structured self-analysis. Give students prompts to guide them as they contemplate. For example, ask them to think about communication methods that have worked well for them during difficult situations in the past.

Here are several additional introspection exercises to consider:
1. Journaling.
2. Drawing.
3. Photography.
4. Poetry.
5. Lists.

6. Stream of consciousness.
7. Collages.

5. Turn-talking

One of the most basic and helpful communication skills students can learn is turn-talking. During a turn-talking lesson, students will learn the difference between interrupting and interjecting. This is a critical skill people need to learn for negotiation, conflict resolution and idea-sharing. Students should also learn how to overlap in conversation cooperatively rather than competitively.

Turn-talking methods include:

- Use a talking stick or other talking object in your classroom. This sets turn-talking as a standard on the very first day of class.
- Introduce pause-fillers. Make a poster with helpful pause-fillers, like "Let me see," "Let me think" and "What I mean is," to help keep the conversation going.
- Suggest opinion phrases. These can help students invite others to speak. A poster of opinion phrases might include "What do you think?" and "Do you like that idea?"

6. Asking questions

Productive conversations are created by asking and answering thoughtful questions. Asking open-ended questions can help move projects forward, encourage new ideas, solve complex problems,

and delegate tasks. However, learning how to ask those questions is a skill. Take time to teach students about open-ended questions and be sure to provide plenty of examples. You might devote an entire class unit to a lesson on questions, using role-play activities to help guide the discussion.

You can start by conversing with one student in front of the class. Have students keep track of how many words their peer uses in response to your questions. Alternate closed and open questions. Your first question might be, "Did you like the movie?" Follow that up with a question like, "What did you like best about the movie?"

Ask alternating questions for a few minutes. Then, get together with the class to discuss their findings. Have them determine which questions prompted longer, more interesting answers and which inspired discussion. Then have students practice asking open-ended questions in pairs or groups.

7. Record and reflect

Watching yourself is an effective way to learn communication skills. If you have the time and resources, ask students to record themselves having a conversation with someone else or in front of a mirror. Then, they should watch the recording and observe their verbal and nonverbal communication. Finally, they should take time to reflect on what they did well and what they can focus on improving.

Here are several additional examples of record and reflect methods:

- Record a two-person conversation. Have the participants watch the recording while writing down their responses or sharing their observations out loud.

- Have students record a short speech by themselves. Record their speech in front of an entire classroom audience. Compare the two videos.

- Record a video at the beginning of class and another at the end. It can be useful to watch the improvement between the two videos.

- Assign video-watching and reflection as a take-home assignment. This is a helpful alternative to students watching their videos with their peers and may offer the chance for a more in-depth response.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

During the interview, students mentioned that they needed warming-up sessions and, while teaching, they needed the teacher to provoke them to talk by calling their names, otherwise they were not answering at the questions. That's why we suggest that at the beginning of the course the teacher should establish some straight rules regarding opening the cameras (in order to motivate them open the camera they can be promised some rewards at the end of the course). Also, the teacher has to be sure that he is all the time engaging all the connected students to talks. The theoretical sessions should not have more than 10 minute dialogue from the teacher as the students mentioned that it was very hard to follow the teacher talking alone for one or two hours. Even the theoretical part can be done "in partnership with the students" using the discovering method of teaching.

Methods used for verifying students' knowledge

In order to verify students' knowledge, first, their knowledge can be evaluated during the role-play session and the mistakes they do can be corrected in the same time. Second, at the end of the course, we suggest to use a short Kahoot quiz as it is interactive, it can be funny and can help create a hierarchy of the answers between the students that can provoke their competition sense.

The overall expected results of the on-line lesson

The main goal of this lesson is to teach students from public administration specializations, law, or business the importance of communications skills during a meeting, more specifically in a local council meeting.

At the end of this course, we expect students to have better managerial, organizational, communicational, analytical skills, as long as better public communication skills.

SCENARIO 5. *"Development of new product in B2B",* "1 Decembrie 1918" University, Alba Iulia, Romania

Prototype of on-line lesson scenario, DT workshop, Romania

Overview of the on-line lesson scenario

This scenario can also be implemented for subjects like Marketing, Business simulation or engineering courses.

This approach aims to encourage creativity and learning through discovery. The teacher starts from the premise that he must be creative and stimulate the students' creativity. It will provide the necessary information support but will also ensure creativity and the development of opinions.

Business-to-business marketing or industrial marketing covers a vast territory: any company whose customer portfolio is represented by other organizations, businesses, or companies: you can sell Intel chips to IBM, accounting services of PriceWaterHouse to small companies or furniture for school classrooms to local authorities. The product policy is the main one component of the company's marketing mix including on the market of productive goods. Without having competitive products, adapted to the requirements of the target market, no one has any chance in the competition for attracting and keeping as many as possible customers. Designing and creating new products, involves the creation of new products, in compliance with consumer needs,

to be able to be tested (technical testing and of acceptability) in order to launch them on market.

The main stages of this process are:

- carrying out documentary studies, market research, economic analyses as well as other ways of obtaining an information about the opportunity and the possibility of creating a new product;
- selection of ideas regarding the new product, by the filter of some technical, economic, and financial criteria and marketing and selection the optimal variant based on them;
- release new products: making the prototype of the respective product; technical and acceptability testing;

Technical testing is carried out in premises specially arranged (laboratories, workbenches sample, etc.), following the technical parameters of the product. Acceptability testing (sometimes in the case of productive goods it se overlaps technical testing) se carried out in the form of studies carried out in among potential buyers, for a observe their appreciations and suggestions with look at the different elements of the new product.

- finalizing the product following the conclusions derived from technical testing and from acceptability testing;
- establishing the identification elements of the product (name, brand, etc.), protection its legality (patent registration of the invention, of the brand of the product);
- the preparation of the company's resources for introducing the product into series production;
- establishing the conditions for the product launch on market (when, where and how it will take place product launch);
- preparing the market for receiving the new product.

Target groups and timing of the on-line lesson

The lesson is addressed to students in the second and third years (Bachelor) of economic and technical specializations that involve product development.

The group of students is 20-25 people.

This lesson can be used both online and offline. It is not suitable for the hybrid environment.

The lesson takes place in the online environment in 80 min, in the physical version 100 min:

- Introduction and objectives 5-7 min.
- Presentation of the situation 5 min
- Theoretical aspects 40 min interspersed with questions.
- Creativity stimulation 40 min
- Conclusions 5 min

On-line platforms and software used for on-line lesson

The course will take place on TEAMS. Video will be used for illustration if necessary. The DACIA company website will be used to describe the technical characteristics of the products. Other sites that offer technical and technological indicators can also be used. www.dacia.ro

Competencies of the participants and the teacher

The students' competencies – examples	The teacher's competencies – examples
- organizational skills, - analytical skills, - language skills - teambuilding, - financial analysis, - refracturing of the objects.	- competencies how to build motivation and engagement of the students, - increasing the digital competences of academic teachers in online teaching.

The methods of conducting the on-line lesson

The lesson used is part of the new product launch chapter of the product policy. The basic technique of the lesson is LEARNING THROUGH DISCOVERY. Students are guided through questions and discussions so that at the end of the course they know the stages of launching a new product.

The students are already enrolled in the class and work group. The lesson begins with the presentation of the three four stages of lesson:

1. The subject and objectives, bibliography.
2. The importance of the theme and theoretical notions.
3. Individual work and presentation of the information found.
4. Conclusions and answers to questions.

Both in the case of the online lesson and the physical one, the sources of information are from the online environment. Students have access to technology in the classroom as well.

Discusion: When an organization introduces a product into a market they must ask themselves a number of questions:

1. Who is the product aimed at?
2. What benefit will customers expect?
3. How does the firm plan to position the product within the market?
4. What differential advantage will the product offer over their competitors?

New Product Development (NPD) will take in to account the consumer's preference for benefits over features by considering research into their needs. NPD aims to satisfy and anticipate needs. NPD delivers products which offer benefits at the core, actual and augmented levels.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

Warming up> AVATAR!

If you have a car. What would this be?

The ideas that were the basis of the choice will be developed.

During the lesson, students are challenged to look for technical information about the product they want to develop and to support their choice.

The students will be divided into groups, one part will analyze the competitive market. Another group will develop the products.

We will introduce the concept Degree of novelty - Range of products.

Students will be stimulated to support their idea regarding > maintaining the degree of novelty, a product within the range.

The degree of novelty a range of products:

- improvement of existing products, it only aims to improve the product in order to extend the maturity phase to it;
- assimilation of new products, used to replace the old products, which will be withdrawn from the market.

SCENARIO 6. *"Conflict Management"*, "1 Decembrie 1918" University, Alba Iulia, Romania

Prototype of on-line lesson scenario, DT workshop, Romania

Overview of the on-line lesson scenario

This scenario can be used during the Management, Strategic Management and/or Human Resources Management classes for Business study programs. The topic can be approach in any of the classes mentioned above and it is important because the conflict management is the process by which disputes are resolved, where negative results are minimized, and positive results are prioritized.

For business students, this critical management skill involves using different tactics such as negotiation, and creative thinking, depending on the situation. An organization can minimize interpersonal issues, enhance client satisfaction, and produce better business outcomes with adequately managed conflict. Managing conflict well can help find creative solutions to internal relationship issues, and can help to prevent environments that breed negativity, stress, demotivation, and general employee unrest.

This subject was chosen by the team members that have attended the Design Thinking Workshop, respectively two teachers and one student.

Target groups and timing of the on-line lesson

The target group for this online lesson are usually the Bachelor students from the 1st, 2nd or 3rd grade that are enrolled at different Business specializations (Business Administration, Management, Marketing, Tourism etc.).

The number of participants has to be between 15 and 25 persons per each group of students.

The aim of the lesson is:

- To understand what a conflict is.
- To recognize reasons of conflict.
- To know types of conflicts.
- To understand which are the consequences of conflict.
- To understand the levels of conflict.

As regarding the timing and the rules for the lesson, they are strictly established straight from the beginning of the lesson. The lesson will be taught on Microsoft Teams platform and will have several stages, as it follows:

First, there will be a 15-minute warming-up session based on a discussion approach. For this session Jamboard will be used, so students can place their answers on stickers that everybody can see. During the session, students will have to answer and discuss about the following questions:

- Who I am?
- How am I?
- How would I describe myself using one word?

Second, the theoretical content of the lesson will be taught:

The students will be asked to answer to the following questions:

- How many people or groups does it take to have a conflict?.
- Why does a conflict occur? - (Fear, Expectations, Different knowledge, Attachment, Stress, Scarce resources, Different paradigms, Misunderstanding, Poor communication, Incompatible values).
- Defining and discussing the concept of conflict.
- Presenting and discussing the main types of conflict (goal conflict, cognitive conflict, affective conflict).

Methods to be used: presentation, debates. Each team will prepare using break out rooms. The preparation will take 15 minutes. After that, a debate will take place and each team will expose pros and cons about having a conflict.

This theoretical session will last for 35 minutes. During this session, using the discussion approach, students will have to put down on paper the main concepts related to conflict management topic, as mentioned above.

Third, there will be a, exercise for two teams. Each team will prepare using break out rooms. The preparation will take 15 minutes. Each team will purpose a conflict to the other team who must find a solution for solving the conflict. The students will need to use the words that they use in warming up session to describe themselves.

During this session, the teacher will enter each room to attend the meetings at different moments in order to be able to evaluate whether the students have assimilated the theoretical part of the lesson and to interfere if needed for correcting the direction of the meeting.

Fourth, at the end of the lesson, there will be a 10 minute closing session where the teacher, for 5 minutes, using a Q&A session, will make a short conclusion of the lesson and will reiterate the main idea of the lesson, emphasizing the good parts and also the mistakes made during final session, in order for the students to better understand the conflict management. At the very end, using Kahoot, there will also be a quick quiz with 5 short questions to evaluate the level of students' knowledge at the end of the lesson.

On-line platforms and software used for on-line lesson

For this lesson the Teams platform will be used as the universities usually already have the needed licenses for using Microsoft products. For the first part of the lesson Jamboard will be used to post the answers to the warming-up session, so that all the students will see all the answers. The theoretical part of the lesson will be on Teams. During the role-play session, if there are more than 15 students, split rooms feature of Teams platform will be used. At the end of the class, the quiz for evaluation will be posted on Kahoot so that there can be an evaluation of student's knowledge and a hierarchy of their answers.

Competencies of the participants and the teacher

The students' competencies – examples	The teacher competencies – examples
- managerial skills, - organizational skills, - analytical skills, - language skills, - public speaking skills.	- competencies how to build motivation and engagement of the students, - increasing the digital competences of academic teachers in online teaching.

The methods of conducting the on-line lesson

Excellent conflict management skills are necessary to succeed in any field, be it a managerial position or an executive one. While learning these skills takes time, best practices can help students quickly learn and apply them. With improved conflict management skills, students will have the confidence and knowledge to not only excel in the workplace but also to seek out jobs and perform well in interviews.

The most frequent thing that occurs in a workplace or organization is conflict. As a leader, it is his duty to come up with a resolve to maintain the harmony in the workplace. However, this can be challenging as you're dealing with different people that have their own unique ideas and perspectives.

If not dealt with correctly and promptly, conflict can create a ripple effect in an organization or a workplace. This includes: dysfunctional teamwork, decreased productivity level, decrease in quality of work, and increased employee turnover. However, dealing with those can be alleviated by having the Conflict Management skill as a competency. With Conflict Management, you can bring about improved teamwork and productivity, and customer and employee satisfaction.

As a leader, one should be able to:

- Handle difficult individuals and groups and tense situations with diplomacy and tact.
- Spot potential conflict, bring disagreements into the open, and help de-escalate.
- Encourage debate and open discussion.
- Draw out all parties, understand the differing perspectives, and find a common ideal that everyone can endorse.
- Orchestrate win-win solutions.

Learning the importance of Conflict Management is one thing, but developing it is another. Here are some tips on how you can develop this skill and resolve conflict in the workplace:

- Having self-awareness - When in conflict or heated discussion, become self-aware in the moment, and focus on the issues rather than personal matters. "Separate the people from the problem."
- Asking yourself - Ask yourself: What can I say or do that will make this a more productive conversation?
- Facing the problem - Don't avoid conflict. It lingers and will need to be dealt with sooner or later. Sooner is better and creates fewer hard feelings.
- Welcoming new ideas - Resist digging in your heels or putting up walls. Be willing to change perspectives and consider a wider range of alternatives and options.
- Minding your tone and words - Examine your intent when negotiating. Deliver your message in a way that doesn't create hostility and preserves the other person's dignity (no putdowns, no make-wrongs).
- Being creative - Be creative, brainstorm, invent options for mutual gain.
- Being objective - Insist on using data or some objective criteria to reach resolution, not emotion.
- Acknowledging other people's emotions - Be aware of the other person's emotions in the conflict. You will get your point across better if you can be responsive to their needs.
- Asking for help - Bring in a neutral third party if the conflict cannot be resolved.

Conflict is often feared by many people because they feel challenged by differing viewpoints and opinions. As a leader, one should create a workplace that invites open discourse and change the notion this can only result in a negative. By developing the right skill and competency for it, resolving conflicts can lead to a stronger, more creative, and more united workplace.

The teaching methods to teach conflict management skills.

You can learn and practice conflict management skills. Students benefit from methods that give them hands-on practice, clear directions and the opportunity to reflect. Here are some of the best ways to teach these skills with several examples.

1. Role-play: Role-playing is a classic method for teaching conflict management skills. To use this technique, students act out skills after discussing them. For example, appropriate posture or body language.

Role-playing should always focus on full group participation and mutual respect. Be sure to talk to students about how to be respectful audience members and allow plenty of time for daily role-playing to help students get comfortable. Students will need to have patience and open-mindedness, as well as a positive rapport with each other. If you foster these skills first, role-playing can be a great way to learn conflict management abilities quickly.

Role-play tips:

- Whenever you teach a new skill, use role-playing to check that students fully understand the information.
- Act out a skill for students. Then have them guess which skill you modeled.
- Use specific scenarios students experience on a day-to-day basis in an office setting.
- Have the students discuss what went well and what went wrong after each role-play. Ask them what they would have done differently to improve the situation.

Examples: In a role-playing scenario, two students act out examples of conflicts during a project management process. Afterward, the group takes ten minutes to write down the solutions for each conflict.

2. Group games: Group games are an interactive, engaging way to teach conflict management skills. Through group games, students learn to efficiently solve different conflictual situations. During games, you should watch closely, make notes and be prepared to share your observations with students so they can improve over time.

3. Films: A carefully compiled collection of film and TV clips is a great teaching tool. You can pause, discuss, and replay clips. Video clips also make for great take-home work. Students can watch as many times as they like, write responses and share during the next class.

4. Asking questions: Productive conversations are created by asking and answering thoughtful questions. Asking open-ended questions can help move projects forward, encourage new ideas, solve complex problems and delegate tasks. However, learning

how to ask those questions is a skill. Take time to teach students about open-ended questions and be sure to provide plenty of examples. You might devote an entire class unit to a lesson on questions, using role-play activities to help guide the discussion.

You can start by conversing with one student in front of the class. Have students keep track of how many words their peer uses in response to your questions. Alternate closed and open questions. Your first question might be, "Did you like the movie?" Follow that up with a question like, "What did you like best about the movie?"

Ask alternating questions for a few minutes. Then, get together with the class to discuss their findings. Have them determine which questions prompted longer, more interesting answers and which inspired discussion. Then have students practice asking open-ended questions in pairs or groups.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

During the interview, students mentioned that they needed warming-up sessions and, while teaching, they needed the teacher to provoke them to talk by calling their names, otherwise they were not answering at the questions. That's why we suggest that at the beginning of the course the teacher should establish some straight rules regarding opening the cameras (in order to motivate them open the camera they can be promised some rewards at the end of the course). Also, the teacher has to be sure that he is all the time engaging all the connected students to talks. The theoretical sessions should not have more than 10 minute dialogue from the teacher as the students mentioned that it was very hard to follow the teacher talking alone for one or two hours. Even the theoretical part can be done "in partnership with the students" using the discovering method of teaching.

Methods used for verifying students' knowledge

In order to verify students' knowledge, first, their knowledge can be evaluated during the role-play session and the mistakes they do can be corrected in the same time. Second, at the end of the course, we suggest to use a short Kahoot quiz as it is interactive, it can be funny and can help create a hierarchy of the answers between the students that can provoke their competition sense.

The overall expected results of the on-line lesson

At the end of this course, we expect students to have better managerial, organizational, communicational, analytical skills.

SCENARIO 7. *"Fluid Machinery"*, Tor Vergata University of Rome, Italy

Overview of the on-line lesson scenario

The course objective is to provide students with knowledge on both fluid mechanics and fluid machines technologies for energy conversion: they are different but complementary subjects.

The course allows students to know more about SDG7: affordable and clean energy, that is a common ground for all students irrespective of their country of origin. Fluid Machinery is a 3rd year course of the English taught BSc. program in Engineering Sciences.

Target groups and timing of the on-line lesson

All the students could attend classes online or in class with same quality standards. Blended learning is an opportunity for all courses, especially with high percentage of international students, to attract more students from new geographical areas.

Presentation of on-line lecture scenario, DT workshop, Italy

Lectures are organized by following the standard time scheduling for a lecture in presence (90 minutes) and students connected online are frequently interacting with the instructor and students that are attending in presence.

On-line platforms and software used for on-line lesson
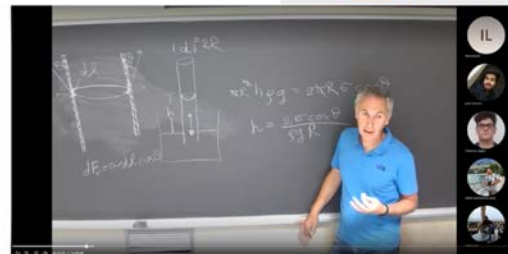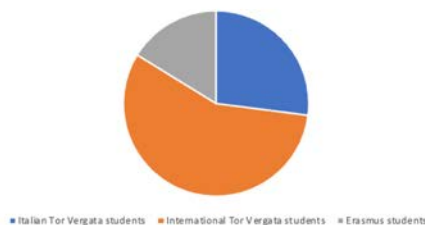
All the lectures are on streaming on the TEAMs channel and the teaching rooms are equipped with high-quality wide-angle cameras and high-fidelity microphones in order to increase the quality of the streaming.

Students may interact by chat during the lecture and someone from the instructor team will supervise the chat during the full lecture.

Lessons are also recorded and provided on the TEAMs platform immediately after the lecture and all the students enrolled to the course may access the recorded lecture whenever they need.

Every two weeks, students will have assignments that will be done in class and on remote simultaneously by using the Moodle platform.

Competencies of the participants and the teacher

The students' competencies – examples	The teacher competencies – examples
- fluid mechanics, - fluid machines, - SDG7, - analytical skills, - time management, - problem solving.	- streaming and TEAMs channel management, - increasing the digital competences of academic teachers in online teaching tools, - applied analysis on real case studies, - IT skills necessary for evaluating students in a virtual scenario.

The methods of conducting the on-line lesson

The lesson is a 90 minute lecture that will focus on:

- Theoretical issues.
- Computation and data analysis.
- Real examples applications.

The course is open to students with different background and experience (especially students in a mobility program) and it could be useful to add an entry level test for identifying better the skills and the initial knowledge of the students.

For improving the effectiveness of the multidisciplinary approach you can use invited speakers (guest lecturer) from different countries and different backgrounds.

The use of technology requires a teaching assistant that will help instructors in developing the activities online and will allow them to save time in constructing the platform necessary for the course.

The general needs that have been highlighted by students are the following:

- Asynchronous tutorials online may be useful for explaining activities assigned to each group and the rules for evaluating students that are members of a group.
- A self-evaluation tool for grading students may be used in order to evaluate is students are able to recognize their mistakes and their contribution to the group.
- The blended solution is better perceived by all participants with respect to traditional face-to-face courses.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

Students attending in presence will be directly interacting with the instructor whenever needed. Students connected online may interact by using a chat during all the lectures and a teaching assistant will collect and discuss all the requests submitted by students connected online.

During the exam and the bi-weekly assignments all the students are connected online and all activities are done only online.

During the lectures, the communication is only one way (instructors will explain something), and students may interact only by using chat and they are not obliged to have the camera open during the meeting (in order to avoid problem of lack or poor internet connection).

During the assignment, each student will work independently and cannot interact with other students (online or in presence). Instructor is always available by chat for all the students during the assignment.

Methods used for verifying students' knowledge

Students will have assignments every two weeks that are based on solving practical problems on fluid machines in terms of flow, work and power. The student will have to prove his critical awareness with respect to the simplifying assumptions useful to describe and calculate fluid machines, as well as his critical awareness of the correct order of magnitude of performance parameters while dealing or designing fluid machines.

A final oral test (in presence or on remote) will be organized at the end of the course for testing the capacity of the students of describing the operation and functioning of fluid machines, convening of the knowledge developed. In the case of an oral test on remote, final test are arranged with dual cameras in order to ensure the same type of exams for students attending in presence and those online.

The overall expected results of the on-line lesson

The blended solution for maximizing the number of people allow to attend the lecture and the role of international students in the class has increased significantly.

The opportunity of recording the lecture online and following them asynchronously allow reducing at the minimum the drop-out rate of the students because they can recap concepts that needed to be clarified by viewing the recording of the lecture.

The presence of a teaching assistant that follow the chat allow to have real time feedback about question raised by students attending in class or on remote.

The blended solution allows inviting guest speakers for the course and increase the multi-disciplinarity of the course and develop the course jointly with partners coming from other countries. After the experience of the blended course of the past academic year, for the current edition a new instructor from UC3M will be involved directly in the course.

The new teaching mode allows increasing the percentage of students able to pass the exam at the first call available and the average grade assigned is also higher than in the face-to-face scenario.

SCENARIO 8. *"Enterprise Resource Planning Simulation"*, Tor Vergata University of Rome, Italy

Overview of the on-line lesson scenario

The course is addressed to students that are interested to learn an ERP software normally used by corporations and have a hand-on experience in running an enterprise. Student do not require to have previous training on SAP S4/Hana but they have to be able to read and analyze balance sheet and internal reporting normally used by corporations.

The simulation will focus on the procurement, production and selling process and it may be interesting for courses focused on supply chain, operations and marketing. Students will work for a company and by using SAP S4/Hana they have to decide the supplier strategy, the pricing and selling policy, the production and the innovation strategy for maximizing the performance of the company.

Target groups and timing of the on-line lesson

The lesson is addressed to students in the first year (master) of economic and engineering. Blended learning is an opportunity for all courses, especially with high percentage of international students, to attract more students from new geographical areas. The lesson can be used both online and offline but in the second case is always necessary to have at least one laptop available for each group that is playing the game.

The first lecture will introduce student to the software and explain how it is used in the industry worldwide. Sometimes it could be useful to invite someone (online or in presence) from the company that is developing the software to provide some data and information about how it is used by their customers for running the company. During the first meeting instructors will provide credentials for accessing to the system and a first preliminary lecture with some guidelines about how to use the software. This first lecture is normally more effective if organized in groups in order to have more time to spend in training students for the first time access to the platform. The first lecture normally requires 90 minutes at least and the length could change on the basis of the number of students attending and the issues that may arise from using for the first time the software.

Other lessons will take up 120 minutes and the standard structure is the following:

1. Introduction and objectives of the game: 10 min.
2. Guidelines for using the software and the platform: 20 min.

3. Round 1 of game simulation: 20 minutes.
4. Debriefing: 15 minutes.
5. Round 2 of game simulation: 20 minutes.
6. Debriefing: 15 minutes.
7. Final assignment and conclusion: 5 minutes.

On-line platforms and software used for conducting the on-line lesson

The lesson will be organized online by using TEAMS. In TEAMs the instructor will create a general meeting channel that will be used for providing information and guidelines to the students all together. For each of the group that is playing the game, the instructor will create a private meeting in which students may discuss during a video call or share information by chat without disclosing information to members of the other groups.

All the students will have their own access on the SAP S4/Hana platform that will be used for the game. User ID and password will be personal credentials and so instructors can monitor in the system what is done by each of students.

An administrator access to SAP S4/Hana will be provide to instructor and staff for monitoring and managing the game. https://ucc.tum.de/ucc-products/

The SAP S4/Hana platform (for students and instructors) is already developed by HEC Montreal for such type of business simulation games and HEIs from all over the world can buy licenses for running the game. Each license will provide full access to the platform as a student for playing the game for a time period of up to 6 months and for each class a limited number of free instructor licenses (1 or 2) will be provided to instructors.

https://erpsim.hec.ca/

Presentation of on-line lesson scenario's prototype

Data related to the simulation are downloadable during and after the game, and students will be required to use Excel (Windows users) or Tableau (Mac users) for analyzing data for their decision process.

Competencies of the participants and the teacher

The students' competencies – examples	The teacher competencies – examples
- organizational skills, - team building, - project management, - analytical skills, - financial analysis, - time management, - problem solving.	- competencies how to build motivation and engagement of the students in a gamification scenario, - increasing the digital competences of academic teachers in online teaching, - develop IT skills necessary for training students in using a real software, - apply concepts of flipped classroom.

The methods of conducting the on-line lesson

Phase 1: Instructors presents the type of the company and the type of market in which the students will play the game, providing information about the type of good sold (e.g. Muesli), the expected market demand, the selling channels, and evaluation criteria for the company.

Phase 2: Instructors recap all the commands that students will be allowed to use on SAP S/4Hana during the first round of the game and guide them on the system in real time. At the end, instructors invite students to leave the general meeting and enter in their group private meeting.

Phase 3: Round 1 starts and students will start working in groups (in their private meeting) to identify their strategy for running the company. The system will automatically provide information about the time passed and the remaining time, and the system will go into pause at the end of the round

Phase 4: All students join the general meeting and discuss with the instructors about the strategy adopted in the round and results achieved. Instructors explain the new rules and the new instruments (if any) that will be applied during the second round. At the end, instructors invite students to leave the general meeting and enter in their group private meeting.

Phase 5: Round 2 starts and students will start working in groups (in their private meeting) in order to identify their strategy for running the company. The system will automatically provide information about the time passed and the remaining time, and the system will go into pause at the end of the round.

Phase 6: All students join the general meeting and discuss with the instructors about the strategy adopted in the round and results achieved. If no additional rounds are scheduled, instructors explain the assignment related to the simulation done and close the lecture.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

The lecture is organized as a game and group members have to interact in order to identify the strategy and run the company. Groups are assigned at the beginning of the course and the group structure is not changing over time.

Interaction among members of different groups is limited and a turnover rule of group composition may be applied for increasing the interaction among students that are members of different groups.

Instructors work as facilitator and explain the game set up for all the participants. During the game students have the possibility to ask instructors to join their private group meeting if needed and can write on the general chat for any issue that could be relevant for all the groups.

A preliminary analysis of students' knowledge and skills may be useful for identifying the best mix of competences that each of the group may have. Due to the fact that instructors do not know students before the class a preliminary test (online) will be necessary in order to define group composition.

The students collaborate during the on-line lessons with each other and with the teacher, using MS Teams and they have to open their camera in the private meetings in order to develop a real online interaction with other groups members.

During the general meeting, the communication is only one way (instructors will explain something) and students may interact only by using chat and they are not obliged to have the camera open during the meeting (in order to avoid problem of lack or poor internet connection).

Methods used for verifying students' knowledge

The current evaluation criteria is based on the individual attendance to the game and quality of final assignment submitted by each of the groups at the end of the game.

The assignment is asking them to provide a process description of what they have done during the game and a SWOT analysis of their strategy.

Presentation of verification methods in on-line lesson scenario, DT workshop, Italy

Students suggested to disclose better how the instructor will evaluate the assignment provided and what are the key features that matter for assigning the grade. Also an example of an assignment developed directly by the instructor on a simplified game scenario may be useful in order to guide the students in preparing each of the assignments.

The overall expected results of the on-line lesson

The students are willing to think and act in an entrepreneurial manner by using an ERP software, assessing risks and threats and finding ways for beating the other groups that are playing in the same market. The students communicate with the other students in the group, and assign roles on the basis of skills and interest. The students will have an experience of team working and will learn fundamentals of a software that they will probably use for their professional career. One of the key outcomes of the lecture will be to learn how to improve decision making when they have strict time constraints and how to use and read data that are related to business processes.

SCENARIO 9. *"Social Pedagogy and Education"*, Tor Vergata University of Rome, Italy

Overview of the on-line lesson scenario

Area: Humanities

Social Pedagogy, it could be argued, is all about 'being' – about being with others and forming relationships, being in the presence and focusing on initiating learning processes, being authentic and genuine, using one's own personality, and about being there in a supportive, empowering manner.

The course provide an holistic approach towards children's experiential learning. It is about constantly creating and providing opportunities for learning through interaction with children; joint activities; being in a relationship and connection to others.

Target groups and timing of the on-line lesson

The course is structure only for online learning and it provides a mix of asynchronous and synchronous activities. Students attend the course by doing jointly asynchronous activities before or after the lectures and synchronous activities organized as assignments to small groups. Instructor oversees providing feedback more frequently and interact directly with the students during the lecture and supervising debates and group work.

Lectures are organized by following the standard time scheduling for a lecture in presence (90 minutes) but the lecture will be strongly interactive thanks to the online tools used.

On-line platforms and software used for conducting the on-line lesson

The materials are available on the Moodle platforms and the lectures are done through the TEAMs channel. During the lecture, instructor will used multiple tools for interacting with the students:

- TEAMs or Zoom for creating meetings online. The calendar of the lectures is disclosed at the beginning of the course.
- Kahoot and Mentimeter for providing real-time quiz and games during the lectures.
- Google forms for assigning and submitting individual works assigned by the instructor at the end of the lecture.

- Padlet used as collaborative web platform for upload, organize, and share content. The solution is mainly used for group works.

IT tools proposed in on-line lesson scenario, DT workshop, Italy

Competencies of the participants and the teacher

The students' competencies – examples	The teacher competencies – examples
- follow the work, face to face and remotely, with attention, participation and compliance with the delivery dates of the works and materials, as well as the work of all the other participants, - assume a responsible and collaborative behavior towards the teacher and the other participants, - participate in moments of discussion and collaboration in mutual recognition and respect, promoting listening and understanding in the group, - respect the times and methods established by the training course, - actively contribute to building the work group.	- listen and take into account the needs of the participants and implement the appropriate strategies to meet them. - inform participants clearly and adequately in advance of commitments, activities and deadlines. - provide feedback in person and remotely in a timely manner to carry out the course and to achieve the training objectives. - communicate the methods of final evaluation.

The methods of conducting the on-line lesson

Online lecture is fully integrated with asynchronous activities. After each lecture students have to access to the Moodle platform and they will have individual or small groups assignment.

During the lecture instant-pool platforms will be used to interacting with students and all students must interact with the instructor.

There is not face-to-face activity, and the course is fully online.

Methods of building engagement, interacting with the students and collaboration in the group during the on-line lesson

Students will be directly involved in the lecture in both asynchronous and synchronous mode.

During the lectures, students will be involved by using the following instruments:

- Real time quiz.
- Debates during a general or a group meeting.

Asynchronously students will have:

- Assignment online assigned individually or by group.
- Quiz.
- Forum.

Students will use online tools (like Padlet) for developing online the assignment given by the instructor. Each small group will have a different assignment and they have to organize themselves for developing the assignment jointly and submit it before the deadline provided.

Students will also have forum and discussion online supervised by the instructor and they will interact online by using tolls provided by Zoom and TEAMs.

The overall expected results of the on-line lesson

Online lectures allow to offer the course to a wider set of students that includes those that have family obligation, health issues, and duties related to the job.

The drop-out rate from online classes is expected to be lower than standard lectures due to the opportunities offered by the technology for monitoring the students and supporting them during their learning process.

EVALUATION OF THE ON-LINE LESSON SCENARIOS

Evaluation forms for online activities were prepared for both the teacher and the students. They were checked during the pilot lessons on Investment banking and then adapted to content, needs both students and teachers. British universities good practices were the inspiration for the evaluation.

They contain a series of questions, ready to be used.

The student questionnaire consists of questions on general aspects of the lesson, measuring the lesson design and measuring the lesson activities:

1. Which part of the lesson did you like the most (single choice question) *:

*The questioned activities should be consistent with the specific lecture process

       a. pre-class reading materials
       b. preparing answers to questions in MS Teams / Forms
       c. group discussions
       d. lecture
       e. additional quizzes

2. The instructions were clear (from strongly disagree to strongly agree, 1 - 5)
3. The materials and applications were easy to navigate (from strongly disagree to strongly agree, 1 - 5)
4. The information was prepared at the right level, e.g., not too low/simple, too high/complex (from strongly disagree to strongly agree, 1 - 5)
5. The pre-class reading materials and presentations were interesting and gave me the necessary knowledge (from strongly disagree to strongly agree, 1 - 5)
6. The activities were clearly explained (from strongly disagree to strongly agree, 1 - 5)
7. The timing of activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)
8. The sequence of the activities was right (from strongly disagree to strongly agree, 1 - 5)
9. The range of activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)
10. Specific question: Which aspects would you most like to investigate while working in your due diligence team? (multiple answers can be selected) *

*Optional question, gives the overall assessment of the interest of the students towards the topics

11. I think I understand this topic (from strongly disagree to strongly agree, 1 - 5)
12. The online platform for activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)
13.   Rate your overall experience of the course (from very poor to very good, 1 - 5)
14.   What did you like in your online lesson? (open question)
15. What was new/surprising for you? (open question)
16. What would you like to change in your online lesson? (open question)

The teacher questionnaire consists of questions on the same aspects as those indicated in the student questionnaire:

1. Which part of the lesson did your students like the most (single choice question) *:

*The questioned activities should be consistent with the specific lecture process

   a. pre-class reading materials
   b. preparing answers to questions in MS Teams / Forms
   c. group discussions
   d. lecture
   e. additional quizzes
2. The instructions were clear (from strongly disagree to strongly agree, 1 - 5)
3. The materials and applications were easy to navigate for the students (from strongly disagree to strongly agree, 1 - 5)
4. The information was prepared at the right level, e.g. not too low/simple, too high/complex (from strongly disagree to strongly agree, 1 - 5)
5. The pre-class reading materials and presentations were interesting and gave my students the necessary knowledge (from strongly disagree to strongly agree, 1 - 5)
6. The activities were clearly explained (from strongly disagree to strongly agree, 1 - 5)
7. The timing of activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)
8. The sequence of the activities was right (from strongly disagree to strongly agree, 1 - 5)
9. The range of activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)

10. Specific question: Which aspects my students indicate that they would like to investigate the most while working in a due diligence team? (multiple answers can be selected) *

*Optional question, gives the overall assessment of the interest of the students towards the topics

11. My students understand this topic (from strongly disagree to strongly agree, 1 - 5)
12. The online platform for activities was appropriate for the content (from strongly disagree to strongly agree, 1 - 5)
13. Rate your overall experience of the course (from very poor to very good, 1 - 5)
14. What did you like in your online lesson? (open question)
15. What was new/surprising for you? (open question)
16. What would you like to change in your online lesson? (open question)

Evaluation of the on-line lesson scenario - by partner universities
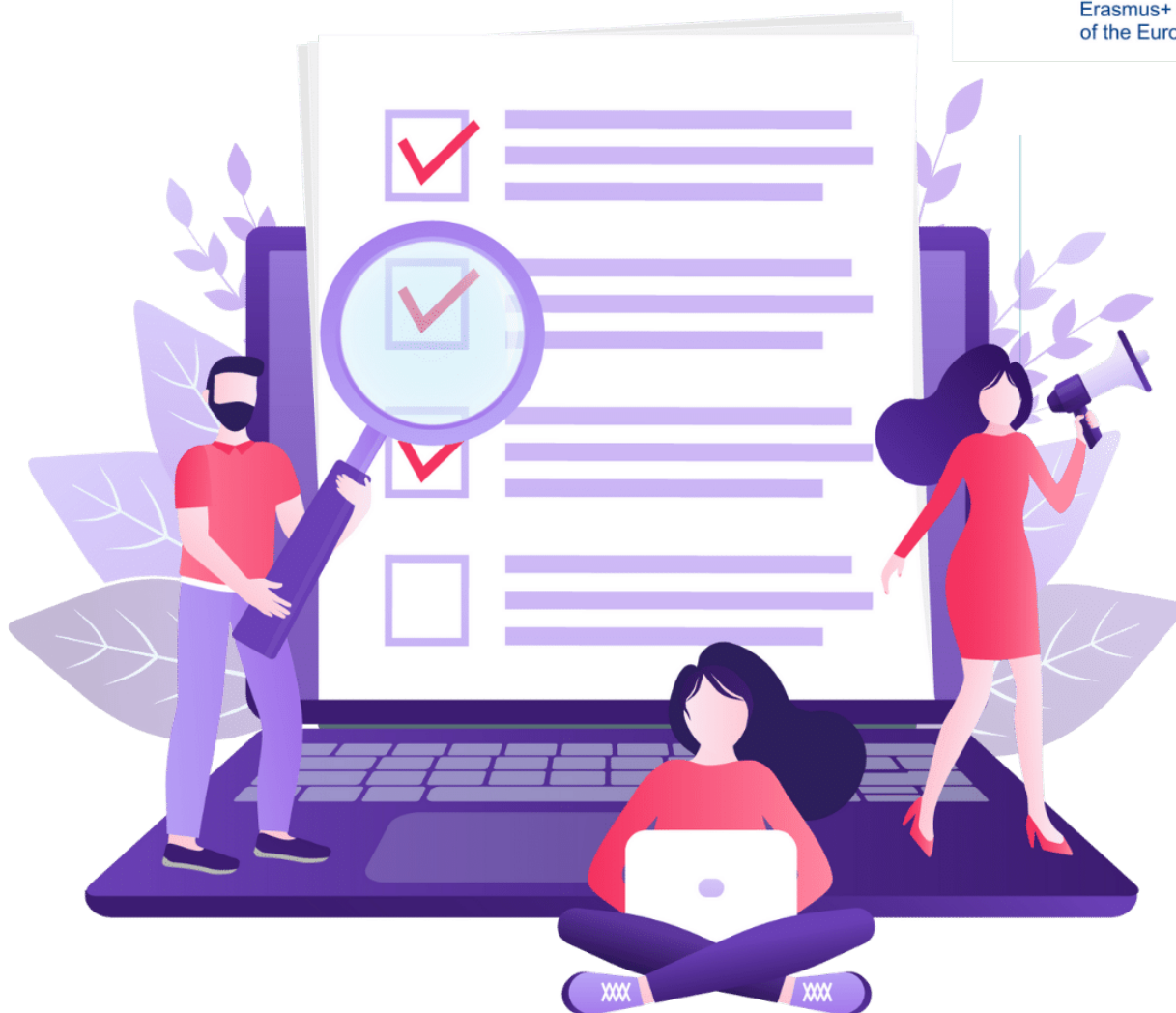
Evaluation of the modal lesson scenario *"Local council meeting"* prepared by "1 Decembrie 1918" University, Alba Iulia, Romania

Introduction and target group

The scenario Local Council Meeting is prepared by the partners of the Universitatea 1 Decembrie 1918 from Romania. The scenario is designed for courses such as communication and public relations (business specializations), public management and/or public projects (law or public administration specializations). The areas in which this course can be taught are law, public administration, and business.

In order to implement and evaluate one scenario designed by our partners from Romania, scenario 1 "Local Council Meeting" was most suitable for implementation in the quantitative course "Business Decision-Making Methods in Hotel Industry".

The modal lesson was held on-line on 22nd December 2022 from 4:30pm to 8:00pm for part-time 4th year students of the undergraduate university study programme Business Economics in Tourism and Hospitality, module Tourism Management at the Faculty of Tourism and Hospitality Management in Opatija, Croatia.

For the evaluation of the modal lesson, the Teams platform was used, as the Faculty of Tourism and Hospitality Management at the University of Rijeka uses licenses for the use of Microsoft products. The University sets up an institutional email address and associated credentials for each student, allowing students to access the Microsoft Teams platform free of charge. Microsoft Teams provides both faculty and students with the ability to participate in class, discuss together or in separate groups, use a whiteboard, complete short or longer homework assignments, access documents uploaded by professors, and so on.

For the first part of the lesson, Google Jamboard was used to create a mind map and activate the participants' prior knowledge. The theoretical and practical part of the lesson was taught with Microsoft Teams. Students were actively involved in the lesson by using Breakout rooms in Microsoft Teams. At the end of the lesson, a quiz is performed in a virtual environment for e-learning in higher education - Merlin to reflect on the lesson and assess the students' acquired knowledge.

In regard to the learning outcomes, after the lesson, students are expected to:
- understand the basic concepts of zero-sum games,
- solve the saddle point matrix game,
- solve the mixed matrix game using the graphical and analytical methods,

- apply the concept of dominance to reduce the matrix game,
- define and describe the assignment problem,
- solve the assignment problem using the Hungarian method and interpret the solutions obtained.

Although the target audience for this on-line lesson were 1st or 2nd year students enrolled in law, public administration or business, the scenario was also suitable for 4th year part-time students in Business Economics in Tourism and Hospitality, module Tourism Management and quantitative course "Business Decision-Making Methods in Hotel Industry".

The proposed number of participants was between 7 and 15 per student group. The number of students enrolled in the course "Business Decision-Making Methods in Hotel Industry" is 177 students. The expected number of students was around 50. Unexpectedly and surprisingly, only 16 students participated in the on-line lecture till the first activity. Half of the present students (8) were active until the end of the lecture. It must be pointed out that the part-time students are not obliged to attend the class.
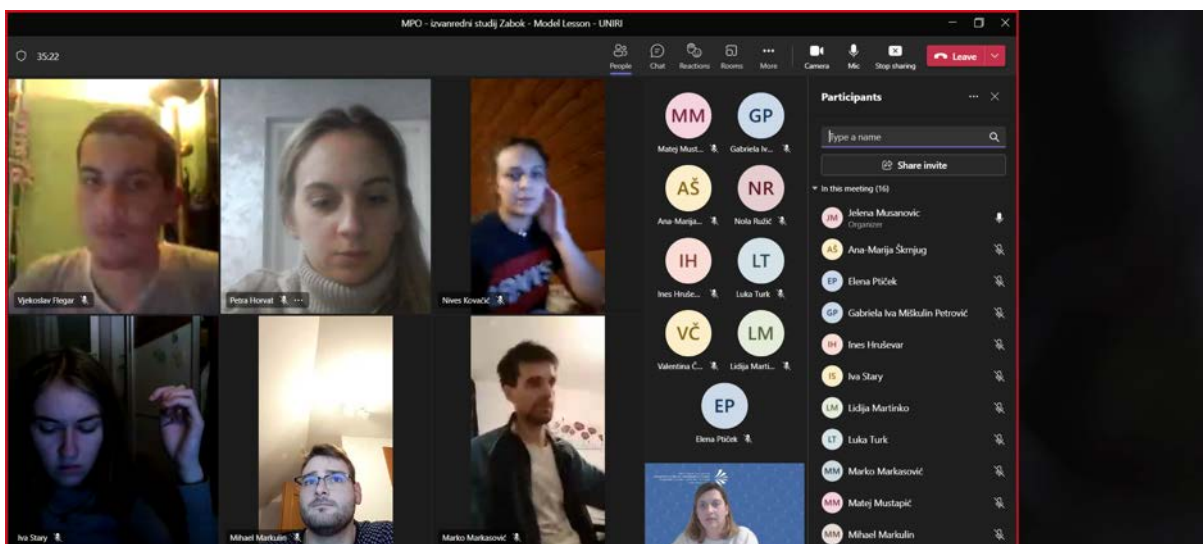
Evaluation of on-line lesson scenario, University of Rijeka, Croatia

Structure of the on-line lesson

The structure and activities for on-line lesson described in the scenario was 75 per cent applicable. The fourth activity "role playing" could not be implemented and assessed due to the specific and quantitative nature of the course.

In the scenario, a valuable note was highlighted regarding the detailed timetable and rules that should be provided at the very beginning of the lesson. By following this advice, students knew what to expect from the on-line lesson and how to behave or interact during the on-line lesson. The lesson was held on the Microsoft Teams platform and consisted of several phases, as follows.

First, a 15-minute **warm-up phase** based on a discussion approach was built into the scenario. For this purpose, the use of a Jamboard was suggested and applied. Students were supposed to write their answers on stickers visible to others. The aim of this activity was for the students to draw a mind map to activate their prior knowledge. The central circle was set by the teacher and represents the main topic. In this case, three main topics are given on three different sheets. The students were divided into three groups. Clear instructions were given verbally and in writing on the first page in the Google Jamboard.

Presentation of on-line lesson concept, University of Rijeka, Croatia

Presentation of requirements to students, University of Rijeka, Croatia

For me as a teacher, it was the first time I used the Google Jamboard in on-line teaching. I expected that students could access and actively participate in the activity without logging into their Google account. A valuable hint would be desirable to avoid technical problems and wasted time. I struggled giving students access to the application. Students started sending me individual requests to my private Gmail. Later on, I noticed in the settings of the application that I had to manually assign the role of "editor" to all students in order for them to participate in the activity. Therefore, the warm-up phase took more than the planned 6 minutes (about 25 minutes).
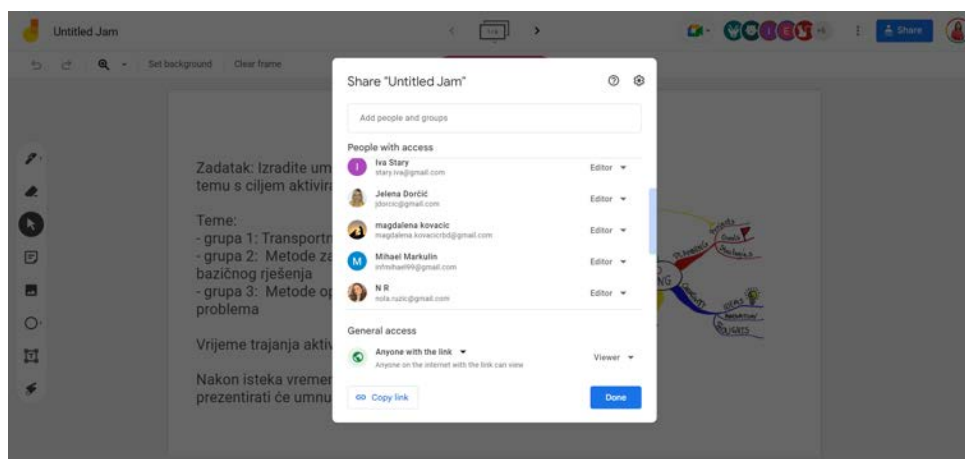
Inviting students to shared board in Jamboard, University of Rijeka, Croatia

The students' reaction to such an activity was divided. Two groups responded positively to such an activity by asking additional questions and wanting to start drawing the mind map, while one group was very passive. Later I decided to change the rules and allow them to contribute on each sheet in the hope that they are more familiar with the other keywords. Already at the beginning of the first activity, some students left the on-line meeting.
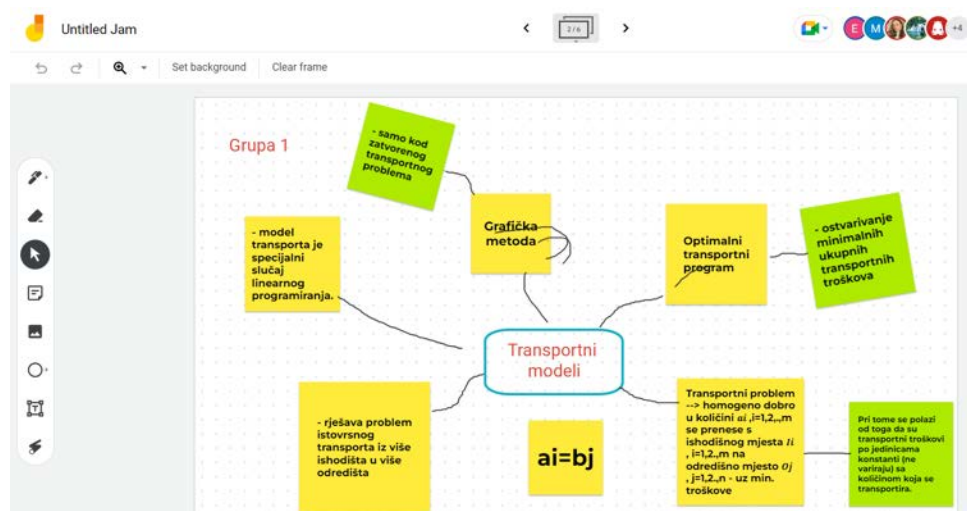
Presenting results of work in Jamboard-group 1, University of Rijeka, Croatia
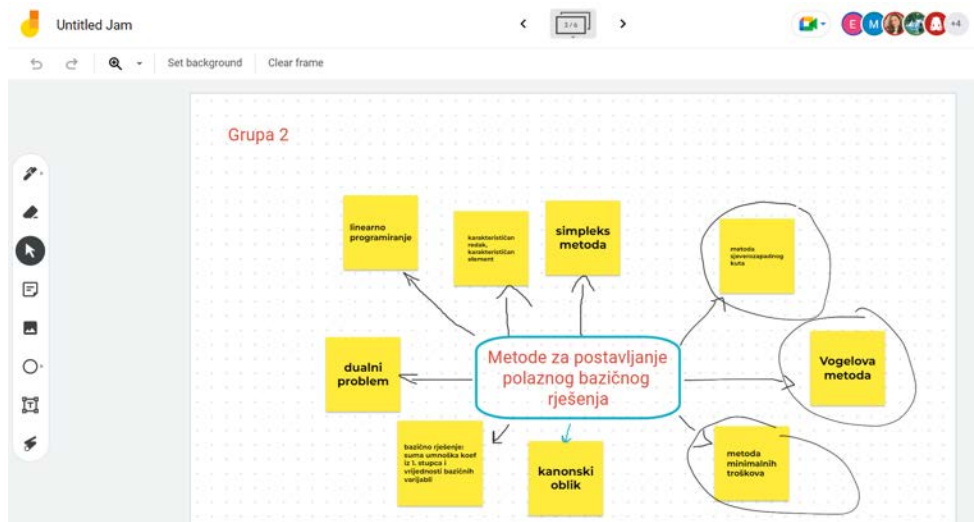
Presenting results of work in Jamboard-group 2, University of Rijeka, Croatia
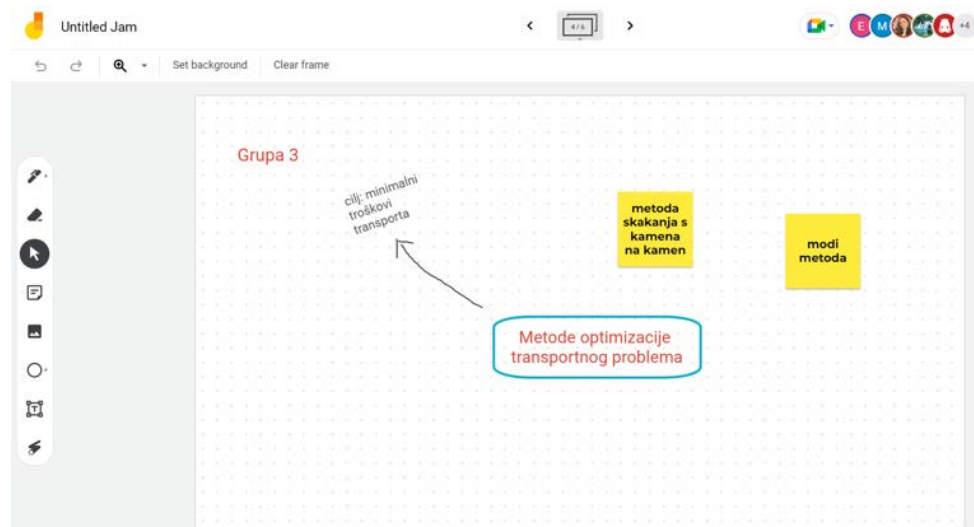
Presenting results of work in Jamboard-group 3, University of Rijeka, Croatia

In the second phase, the theoretical and practical content of the lessons was taught. To keep the students active, engaged and participating in the meeting, I took turns explaining the new topics and sub-topics asking questions and solving tasks. I divided the students into breakout rooms to let them solve the tasks themselves to see if they had understood the study content. In this way, I combined the second and third phases of the on-line lesson scenario. As this was the first time I used the breakout rooms in an on-line class, I must emphasize that they were very easy to use and navigate. Initially, I was a little afraid not to accidentally close the breakout rooms while switching between rooms to see if they were progressing with the task, but this did not happen. My experience was very positive because the breakout rooms have many advantages for both the teacher and the students when teaching on-line. The reaction of the students was also very surprising and positive. The students told me that it was the first time that someone had prepared such an activity for them as part-time

students. They felt that they were really participating in the lecture and not just listeners with the camera turned off.
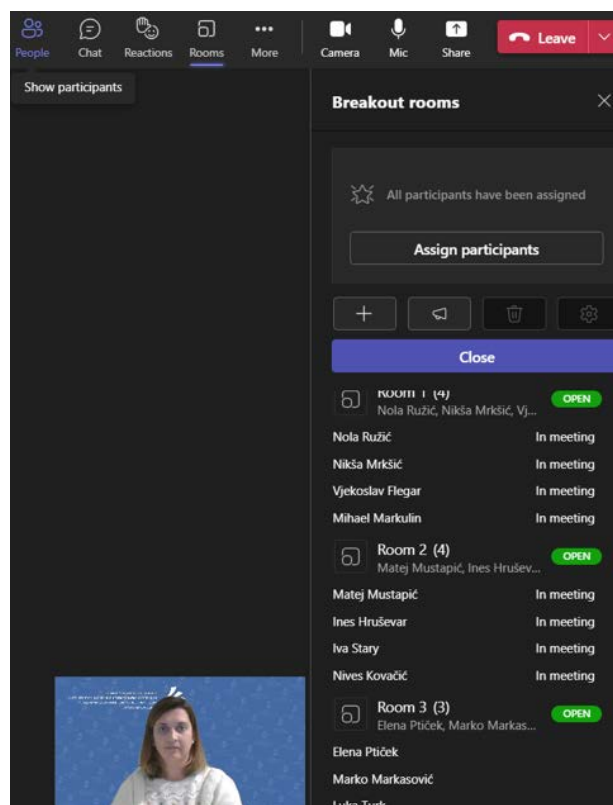
Dividing students into breakrooms, University of Rijeka, Croatia
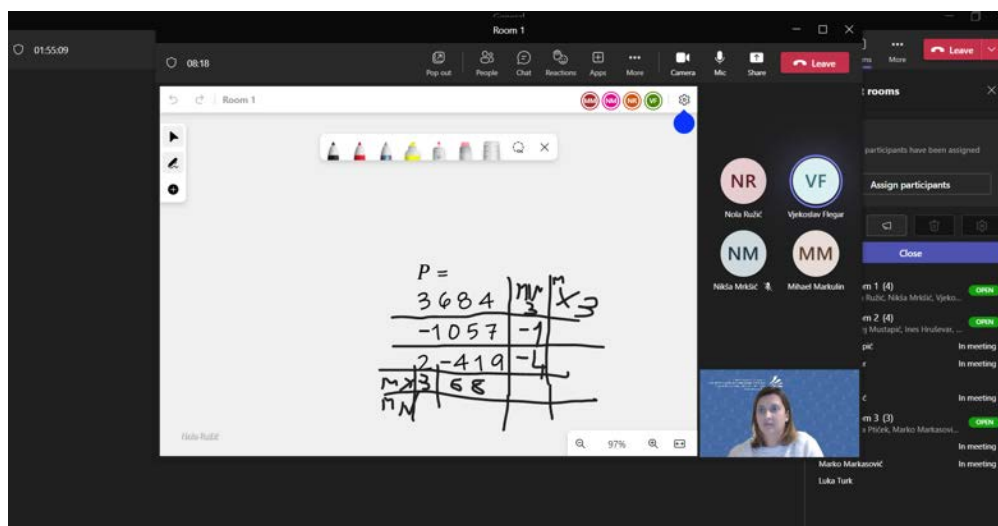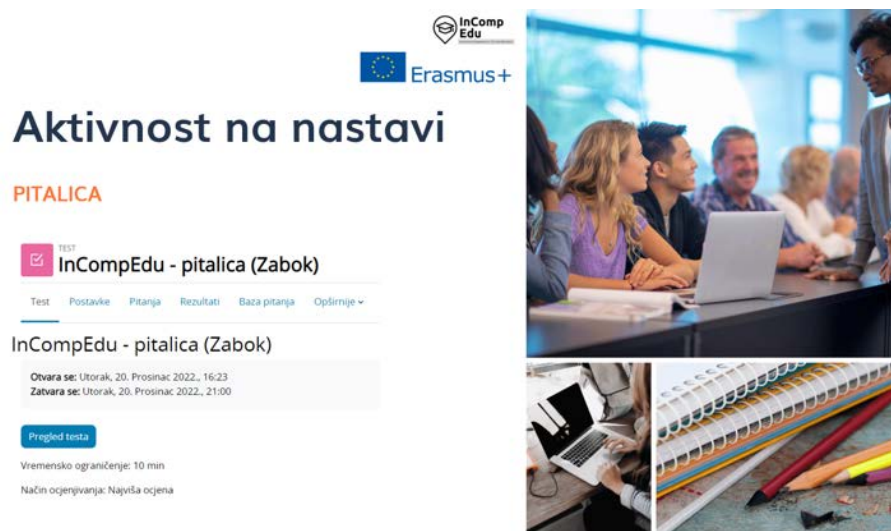
Working with whiteboard, University of Rijeka, Croatia

Once again, the students welcomed such an activity. They were given the opportunity to collaborate and work in smaller groups. According to the students, no teacher had prepared such an activity for them. It was a new experience for them, and they felt very comfortable, engaged and confident to speak in a smaller group.

At the end of this phase, I showed the students how to solve such tasks in POM-QM softer.

This session lasted for approx.160 minutes.
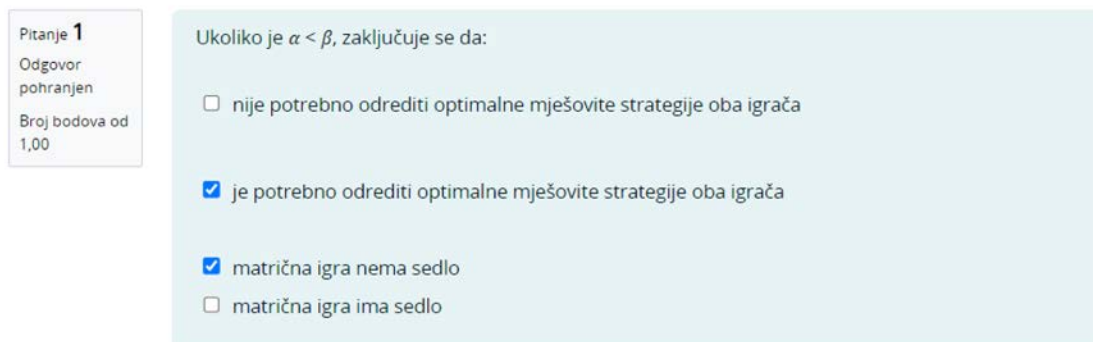
As proposed in the scenario, at the end of the lesson, there was a 10 minute closing session where the teacher, for 5 minutes, made a short reflection of the lesson, reiterated the main idea of the lesson. At the very end, using Merlin, there was a quick quiz with 6 short questions to evaluate the level of students' knowledge.

Closing session, University of Rijeka, Croatia

For example:

Quiz to evaluate the level of students' knowledge, University of Rijeka, Croatia

Quiz to evaluate the level of students' knowledge, University of Rijeka, Croatia

Strengths and weaknesses of the on-line lesson

The strengths and weaknesses of this on-line lesson are consistent with what was described in the scenario.

The main strengths are interactivity, student to student and student to teacher interaction, and student engagement. MS Teams offers provides teachers the opportunity to divide students into different rooms and have them work together without disturbing or influencing the others. In addition, MS Teams allows students to use the whiteboard to draw solutions and share with each other. This scenario is designed to increase student's engagement such by using different application such as Jamboard, Mentimeter, Kahoot or other quizzes.

The weaknesses of this scenario relate to the limited number of students per group (7 to 15 students) and do not fit well with a large group of students like this (177 students) or even less than 7 who can participate in the course. Another obstacle or difficulty that is most common in online teaching is technical problems and the inability of the teacher in terms of technical skills. Also, not all students turn on their cameras or participate in the activities suggested by the teacher. Therefore, it is necessary to have a plan B to engage students in the planned activity.

Evaluation of the on-line lesson scenario by students

After the given lesson, students were pleased to evaluate the on-line lesson. Seven students participated in the class till the end and evaluated the on-line lesson. The results are provided below.

Evaluation form for students, University of Rijeka, Croatia

Question 1. *Which part of the lesson did you like best?*
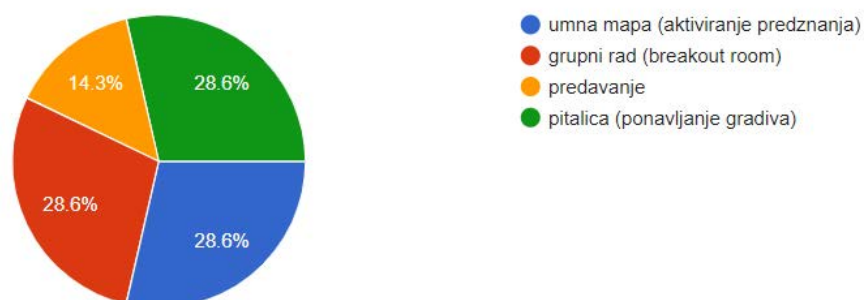
Students rated all parts of the lesson almost equally. The mind mapping activity (warm-up), the group work (breakout rooms) and the quiz (reflection) were equally favored by the students.

Question 2. *Please indicate the degree of agreement with the above statements using a scale of 1-5 (1 - completely disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - completely I agree)*

Statements	Mean score
1. The instructions received were clear	5.00
2. The apps used were easy to navigate	4.57
3. The prepared tasks were at the appropriate level, i.e. neither too simple nor too complex	4.71
4. Activities were clearly explained	4.86
5. The time for the activities was adequate considering the content of the lectures	4.86
6. The sequence of activities was correct	4.86
7. The number of activities was appropriate for the content	4.86
8. I think I understand the topic of the lecture	4.57
9. The on-line activity platforms were suitable for the lecture content	5.00

Out of the results, it can be seen that the students evaluated all statements with a very high mean score.

Question 3. *Evaluate the held on-line lesson (1 - very bad, 2 - bad, 3 - neither bad, nor good, 4 - very good, 5 - excellent).*

In total, 7 students evaluated the on-line lesson with excellent and two students with very good.

Ocijenite održano online predavanje (1 - vrlo loše, 2 - loše, 3 - niti loše, niti dobro, 4 - vrlo dobro, 5 - odlično).   [ ] Copy

7 responses
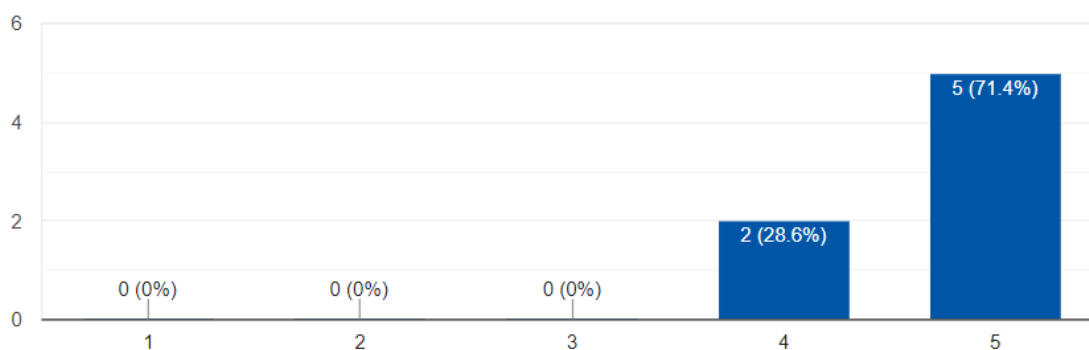
Question 4. What did you like most about the on-line lesson?

Što Vam se najviše svidjelo na online predavanju?   ⧉ Copy

4 responses

1 (25%)	2 (50%)	1 (25%)
Od objašnjavanja zadataka pa do objašnjena sve je bilo jasno	Umna mapa	rad u grupama, komunikacija
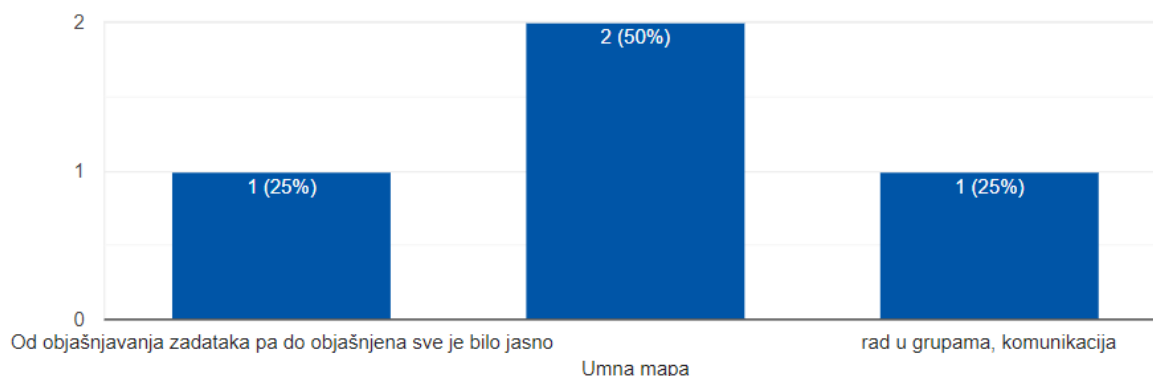
According to the results, 1 student liked everything the most, 2 students liked the mind mapping activity and 1 student liked the group work and communication.

Question 5. *What was new/surprising for you?*

The students emphasized that the group activity and breakout rooms surprised them the most, as they had never participated in them.

Što je bilo za Vas novo/iznenađujuće?

3 responses

grupna aktivnost

Breakout sobe

na početku sve ali kasnije sa objašnjenjem je sve bilo jasno

Question 6. What would you like to change about this on-line lecture?

Što bi ste voljeli promjeniti na ovom online predavanju?

3 responses

/

ništa

Ne bi ništa mijenjao jer je sve jasno izrečeno

All 3 respondents stated that they would not change anything.

Evaluation of the on-line lesson scenario by teacher

1. What did you like in your on-line lesson process?

- I really liked the prepared activities and the interaction with the part-time students, which is usually lacking in a large group.

2. What would you like to change in your on-line lesson process?

- I would keep the breakout rooms and probably try different activities for warm-up and reflection.

3. What contradictions appeared?

- None.

4. What surprised you?

My students and the realization that no one had prepared such an interactive lecture with them before. The students were really surprised. At the very beginning they were reserved and anxious, not knowing what to expect. In the end, they were very surprised and grateful for such a lesson.

5. What was new for your students?
- All. The students realized that a lecture and such a topic can be designed and taught in a very interesting way.

6. What was least expected?
- /

7. What topic was the dominant issue?
- The lack of technological procedure and the number of participants.

8. What have you learned about yourself as a teacher (what do you know better, what can you do better)?

-I have learned that I can contribute more and better to the on-line lessons and student's knowledge by designing more interactive lessons. Scenarios such as this are of great advantage.

Evaluation of the modal lesson scenario *"Social Pedagogy and Education"* prepared by Tor Vergata University of Rome, Italy

Introduction and target groups

The University of Tor Vergata offers an online course in Social Pedagogy, which emphasizes the importance of forming relationships and being present in the learning process. The course takes a holistic approach to experiential learning for children and provides a mix of asynchronous and synchronous activities, with lectures following a standard time schedule of 90 minutes. The course uses Moodle for materials and Teams for lectures, with additional tools like Kahoot, Mentimeter, Google Forms, and Padlet for interactive activities and group work. The instructor provides frequent feedback and interacts directly with students during lectures and supervises debates and group work.

The classes conducted in accordance with the scenario proposed by the University of Tor Vergata were held at the Faculty of Economics of the University of Gdańsk in December 2022.

The above scenario was conducted during an online model lesson on the course of Management Support Systems for Enterprise, where knowledge management was discussed. The substantive content of the scenario was adjusted to the subject matter of the course, while the proposed solutions for organizing the classes and using tools were fully implemented. 19 students from the third year of undergraduate studies in International Managerial Economics participated in the classes.

Structure of the on-line lesson

The MS Teams platform was used to conduct the classes, with a special team created for this purpose. During the classes, various tools were sequentially utilized, such as Mentimeter as a warm-up activity, Jamboard, and Kahoot at the end.

In Mentimeter, at the beginning of lecture for warming-up, students anonymously expressed their views on the reasons for implementing knowledge management in a business, which served as a good introduction to the subsequent discussion, presentation of a topic and summary by the instructor (10 minutes)

The address to the Mentimeter application and the access code for the exercise were pasted in the meeting chat.

Results of warming-up in Mentimeter, University of Gdańsk, Poland

This was followed by the presentation of the lecture content (30 min). To deepen their knowledge in this area, students were then asked to find and briefly characterize systems that support knowledge management.

The scenario suggested the use of Padlet or another application, so to activate students and work in small groups, however, Jamboard was used. The link to the app was posted in advance on the team board in MS Teams.

Students were randomly assigned to 7 rooms and each group was supposed to work out information on the system of their choice. Students were given 10 minutes to complete the task. After returning, the instructor displayed the prepared slides in the application and each group had 3 minutes to briefly present it. Presentation of systems by all groups lasted 30 minutes.

Sharing link to Jamboard in MS Teams, University of Gdańsk, Poland

It should be noted, however, that both the teacher and the students had used the Jamboard application before and had no problems logging in.

Results of students' work in Jamboard, University of Gdańsk, Poland

At the end of the session, a short quiz was conducted using the Kahoot program to check what the students remembered from the series of meetings. The quiz consisted of 4 single-choice questions. It aroused lively interest among the students, which I did not expect. Unfortunately, as a teacher I did not use the Kahoot program before, and the preparation required a lot of work on my part to learn the system. The quiz took another 10 minutes, including logging in and announcing the results.

ESZ podsumowanie	
Played on	15 Dec 2022
Hosted by	olgadebicka
Played with	19 players
Played	4 of 4
Overall Performance	
Total correct answers (%)	86,25%
Total incorrect answers (%)	13,75%
Average score (points)	3162,00 points

Results of short quiz in Kahoot, University of Gdańsk, Poland

The implementation of such a scenario required excellent time management. It is not entirely suitable for working with many groups because there would not be enough time to present all the results.

Evaluation of the on-line lesson scenario by students

After completing the online lesson, which lasted 90 minutes, students were asked to evaluate it by completing the anonymous online survey. All students who attended the class completed the survey questionnaire (19 people). The results are provided below.

Question 1. Which part of the lesson did you like best?
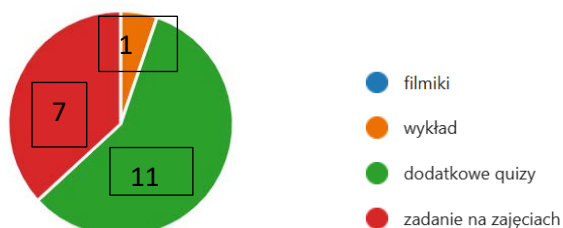
Students gave the highest marks to the additional activity in class in the form of a quiz (58% - 11 students) and a group task in Padlet (37% - 7 students).

Question 2. Please indicate the degree of agreement with the above statements using a scale of 1-5 (1 - completely disagree, 2 - disagree, 3 - neither agree nor disagree, 4 - agree, 5 - completely I agree)

Statements	Mean score
1. The instructions received were clear	4.84
2. The apps used were easy to navigate	4.89
3. The prepared tasks were at the appropriate level, i.e. neither too simple nor too complex	4.79
4. Activities were clearly explained	4.95
5. The time for the activities was adequate considering the content of the lectures	4.89
6. The sequence of activities was correct	4.86
7. The number of activities was appropriate for the content	4.79
8. I think I understand the topic of the lecture	4.74
9. The on-line activity platforms were suitable for the lecture content	5.00

The survey results indicate that the majority of the students found the instructions received to be clear (mean score of 4.84), and the apps used were easy to navigate (mean score of 4.89). The prepared tasks were at the appropriate level, i.e. neither too simple nor too complex, according to the respondents (mean score of 4.79).

The activities were clearly explained, and the time allocated for them was adequate, considering the content of the lectures (mean score of 4.95 and 4.89, respectively). The sequence of activities was also considered correct (mean score of 4.86).

However, the number of activities was considered appropriate for the content by a slightly lower mean score of 4.79, and students' understanding of the topic of the lecture was considered to be slightly lower with a mean score of 4.74.

The online activity platforms were highly suitable for the lecture content (mean score of 5.00), which indicates that students found the online platforms easy to use and relevant to the course material. Overall, the survey results suggest that the students were satisfied with the quality of instruction and the learning experience provided by the online course.

Question 3. Evaluate the held on-line lesson (1 - very bad, 2 - bad, 3 - neither bad, nor good, 4 - very good, 5 - excellent).
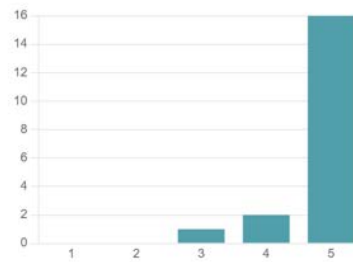
In total, 16 students evaluated the on-line lesson with excellent, two students with very good and one with neither bad, nor good grade.

Więcej szczegółów　　🔆 Szczegółowe informacje

4.79
Średnia ocena

Question 4. What did you like most about the on-line lesson?

Co podobało Ci się podczas zajęć nt. zarządzania wiedzą?
Wszystko
Quizz z wiedzy na koniec
Ogromna wiedza przedstawiającej i odpowiedzi na wszystkie zadawane pytania
Duza ilość zadan interaktywnych
kahoot
Forma ich przeprowadzenia
Wszystko
Zadania i quizy
Sposób przeprowadzenia zajęć, zaprezentowanie nieznanej mi do tej pory platformy do opublikowania odpowiedzi do zadania, quiz końcowy
Najbardziej podobała mi się praca indywidualna niż rozmieszczanie w pokojach teams, gdyż zajęło by więcej czasu i byłoby mniej efektowne.
Kahoot
Korzystanie z nowych aplikacji
w końcu mogliśmy korzystać z ciekawych rozwiązań informatycznych.
Same wykłady, słuchanie, ćwiczenia pisanie, notatki jest to trochę mało ciekawy sposób prowadzenia zajęć
Przygotowane materiały oraz wiedza którą mogliśmy posiąść.
Aktywny udział w zajęciach, zawsze jakiś quiz czy kahoocik fajny
Quizy
Zadanie na platformie padlet.com
Że samemu mogę porównać wiedzę w praktyce od razu na zajęciach
Forma prowadzenia zajęć, angażowanie studentów

The feedback from the students suggests that they appreciated the interactivity of the online classes, particularly the quizzes and interactive tasks. Many students also appreciated the opportunity to compare their knowledge with their peers on online platforms. Some students suggested that the lectures themselves could be made more engaging and interesting, though overall the feedback was positive. The results of the survey suggest that online classes can be a successful way to deliver instruction and engage students in the learning process.

Based on the responses from the students, it appears that they enjoyed various aspects of online classes. Some students liked everything about the classes, while

others specifically mentioned interactive tasks and activities, such as quizzes (including the end-of-course quiz), Kahoot, and the use of new applications. The way the classes were conducted and the active engagement of the students, as well as the preparation of materials and the knowledge presented, were also mentioned.

Some students appreciated the opportunity for individual work rather than being assigned to Teams rooms, which they felt would have taken more time and been less effective. The use of a previously unknown platform for publishing task answers and the end-of-course quiz were also positively received. Additionally, some students enjoyed the opportunity to compare their knowledge in practice during the classes, using platforms such as Padlet.com.

Overall, the responses indicate that the students appreciated the flexibility and opportunities for engagement provided by online classes, as well as the use of interactive activities and technology to enhance their learning experience.

Question 5. What was new/surprising for you?

The survey results indicate that students were generally positively surprised and found many new and interesting aspects during online classes. The most mentioned elements were the use of quizzes and individual assignments during a single session, the coverage of many new topics related to technology, and the overall engaging and

interactive nature of the classes. Additionally, the use of various online tools such as Padlet and Kahoot was particularly appreciated.

Overall, students appreciated the new forms of teaching and the introduction of different online platforms that made learning more interactive and engaging. The use of new and diverse tools and assignments also contributed to keeping students interested and motivated during classes. The final quiz on Kahoot was also a pleasant surprise for many students, as it added an element of fun and competition to the learning process.

In conclusion, the survey results suggest that students generally found online classes to be a positive and engaging experience, with many new and surprising elements that kept them interested and motivated. The use of diverse tools and assignments, as well as the incorporation of quizzes and individual work, were particularly appreciated.

Question 6. What would you like to change about this on-line lecture?

Co byś zmienił(a) podczas zajęć nt. zarządzania wiedzą? ▼
nic
nic
Nic
Jeszcze więcej wiedzy praktycznej
nic
nic bym nie zmienil
Nic
nic
Raczej nic
Wszystko było bardzo dobrze.
nic
Nic
Nic :)
Więcej quizów i tym podobnych spraw.
prezentacje
więcej zadań w trakcie
Krótsze wykłady, więcej quizów

The majority of the student responses to the question about what they would change about their online lesson was "nothing." Some students expressed satisfaction with the current format of their online lesson and did not see the need for any changes.

However, a few students suggested adding more practical knowledge to the lesson, such as more interactive tasks, quizzes, and activities. Some students also suggested shorter lectures with more quizzes or other interactive elements to keep them engaged.

In conclusion, while most students seem content with their online lessons, some suggested adding more practical and interactive elements to the lesson. The responses indicate that there is a desire for more engaging and interactive learning experiences that can help improve the effectiveness of online lessons

Summary and Conclusions of the Survey Question for Students on What They Would Change in Online Classes:

Students were asked about the changes they would like to see in online classes. A majority of the responses indicated a desire for more interactive and engaging activities, and greater opportunities for collaboration with peers and the instructor. Some students expressed a desire for more personalized feedback and a more flexible schedule.

Many students suggested incorporating more technology and online tools to enhance the learning experience. Additionally, students desired a clearer understanding of course expectations and requirements.

In conclusion, the survey responses suggest that students want a more engaging and interactive learning experience, with greater opportunities for collaboration and technology-enhanced instruction. These findings highlight the need for instructors to continue to innovate and adapt their teaching strategies to meet the changing needs and expectations of students in online learning environments

Evaluation of the on-line lesson scenario by teacher

1. What did you like in your on-line lesson process?

From the perspective of an academic teacher, online classes have been both a challenge and a reward. On the one hand, it has been satisfying to see the high level of engagement and participation from students in the online setting. Many students have expressed their appreciation for the variety of interactive tools used, such as quizzes, interactive tasks, and the use of new IT systems, which have helped to keep them engaged and interested in the course material.

2. What would you like to change in your on-line lesson process?

However, it must be noted that online teaching also required a significant amount of work to prepare and develop materials for the students. The use of IT systems and tools has added a layer of complexity that required a lot of time and effort to navigate and incorporate effectively into the curriculum. Additionally, there was a need to adjust the teaching style and methods to fit the online setting and ensure that students were still able to fully engage with the material and participate in class discussions. Still I need to learn a new approach to remote teaching.

3. What contradictions appeared?

- None.

4. What surprised you?

I was surprised by how much the students appreciate the engaging elements in the classes, and how eager they are to participate and work hard, which exceeded my expectations.

5. What was new for your students?

. For the students, the novelty was the way in which the lecture was conducted, where they were actively engaged in the lecture. It was not just a matter of listening to the teacher for 90 minutes.

6. What was least expected?

The most surprising thing was the students' willingness to discuss and present their solutions they had been working on. I thought I would have to encourage them to speak up, but that wasn't the case.

7. **What topic was the dominant issue?**

-   no answers

8. **What have you learned about yourself as a teacher (what do you know better, what can you do better)?**

I have learned how crucial it is to adopt a new approach to knowledge transmission, one that engages students actively. It is essential to prepare interactive tasks carefully in online systems, test them beforehand and ensure that the links to these tasks are shared effectively.

Evaluation of the modal lesson scenario "Genetic diversity" prepared by University of Primorska, Slovenia

Introduction and target group

The scenario on "Genetic diversity" is designed for biology courses such as conservation, botany, zoology or general biology. The areas in which this course can be taught are natural sciences, biology, and bioinformatics.

In order to implement and evaluate the scenario, we adapted it to the course "Evolutionary and Population Genetics".

The modal lesson was held on-line on 20th December 2022 from 2:30pm to 7:30pm for 3rd year international students of the undergraduate study programme in Bioinformatics.

For the evaluation of the modal lesson, the Zoom platform was used, as this platform is the one the University of Primorska holds license for. The University provides an anonymised institutional email address and associated credentials for each student, allowing students to access the platform free of charge. Zoom provides both faculty and students with the ability to participate in class, discuss together or in separate groups, use a whiteboard, conduct polls, and interact synchronously in a virtual setting. The Zoom platform is used in combination with Moodle, where, using individual credentials students can access files uploaded by teachers asynchronously.

The original scenario included a first theoretical part (45 minutes), where students were introduced to the background and criteria for conservation status identification. In our case this part was replaced by a two hours in person lecture where students were introduced to the definitions and principles enabling researchers to infer the structure and degree of separation of populations, either human or wildlife. The scenario then required an explanation of the activities to be performed (15 minutes), followed by group work of the students that should later present their output to their peers and discuss the results together. The online implementation focused on this second part of the scenario.

In regard to the learning outcomes, after the lesson, students are expected to:

- understand the basic concepts of population differentiation and structure, which are fundamental for understanding change of genetic/genomic diversity thought space and time,
- be able to analyse genomic data to detect population differentiation and structure,

- be able to critically interpret the output of their analyses and draw conclusions on the structuring of the population(s) investigated,
- perform analysis in R,
- present results and their interpretation to peers.

Although the target audience for this on-line lesson were 3rd year students enrolled in Bioinformatics, the scenario was also suitable for earlier years and master level students in Natural Sciences, Biology, Biopsychology and Medical and Health Sciences.

The proposed number of participants was between 10 and 30 overall. The number of students enrolled in the course "Evolutionary and Population Genetics" is 11, close to the lower limit, and only 9 of them took part in the activity. All of them were active for the whole duration, with one that experienced connection problems and had to reconnect several times. It must be pointed out that one of the registered students completed their obligations the previous year and was thus exempt from attending.

Structure of the on-line lesson

The structure and activities for on-line lesson described in the scenario was mostly applicable, although alterations were made to meet the needs of the course. The main deviations were the in-person implementation of the theoretical explanation, due to organizational problems, and the completely online implementation of the hands-on activity. The scenario had an initial brainstorming and planning phase online followed by at home work later presented online. Considering out activity included the use of an R package the students were unfamiliar with, and they needed to acquire proficiency with, teacher supervision was provided, on a rotation basis, for the whole duration of the activity.

In the scenario, a valuable note was highlighted regarding the detailed timetable and rules that should be provided at the very beginning of the lesson. By following this advice, students knew what to expect from the on-line lesson and how to behave or interact during the on-line lesson. Additionally, a word document was provided on Moodle, with the general outline of the hands-on activities, questions to help students take notes of the most relevant aspects, and final question to help them reflect on the activities performed, their relevance and applicability on different situations (Fig. 1).

Extract of the Word document provided in support of the activities

The lesson was performed on Zoom and was divided in three parts, as follows.

First, a 15-minute explanation of the activities, purposes, and applicability of the analysis to be performed was provided. Students were reminded to download and open the Word document with the instructions before starting the activities. Additionally, students were informed that the analyses they were going to learn could be part of the final project they have to prepare as part of the evaluation of the course. This is usually a strong motivation to pay attention and gain proficiency in the analysis and was expected from the students, since they know from the very beginning of the course that their will have to analyse a dataset and prepare a report for the final evaluation. This activity was in line with the 15-minutes explanation of the assignment of the scenario.

In the **second** phase, students were divided in break-out rooms (Fig. 2) where they collaboratively performed the analyses. Since there was no indication on this aspect in the scenario description groups were created randomly. The teacher joined the different break-out rooms on rotation to provide guidance, help solve doubts and technical aspects, and support the identification of relevant results. Working with R is sometimes perceived as challenging from students, thus sharing their computer screen and collaboratively addressing difficulties and unclear aspects helped keeping them engaged (Fig. 3). This was somewhat different from the in class implementation where each student works independently and error messages or difficulties are mostly addressed on a one on one basis teacher-student, with occasional moments when common errors/problems are addressed with the whole class, including peer-support

and troubleshooting. The setting allowed a closer peer-to-peer interaction and a more collaborative approach, although this limited the practical skills acquired by individual students. This group of students is usually very active and talkative during class, and the online implementation did not limit their interactions nor the exchange of ideas.
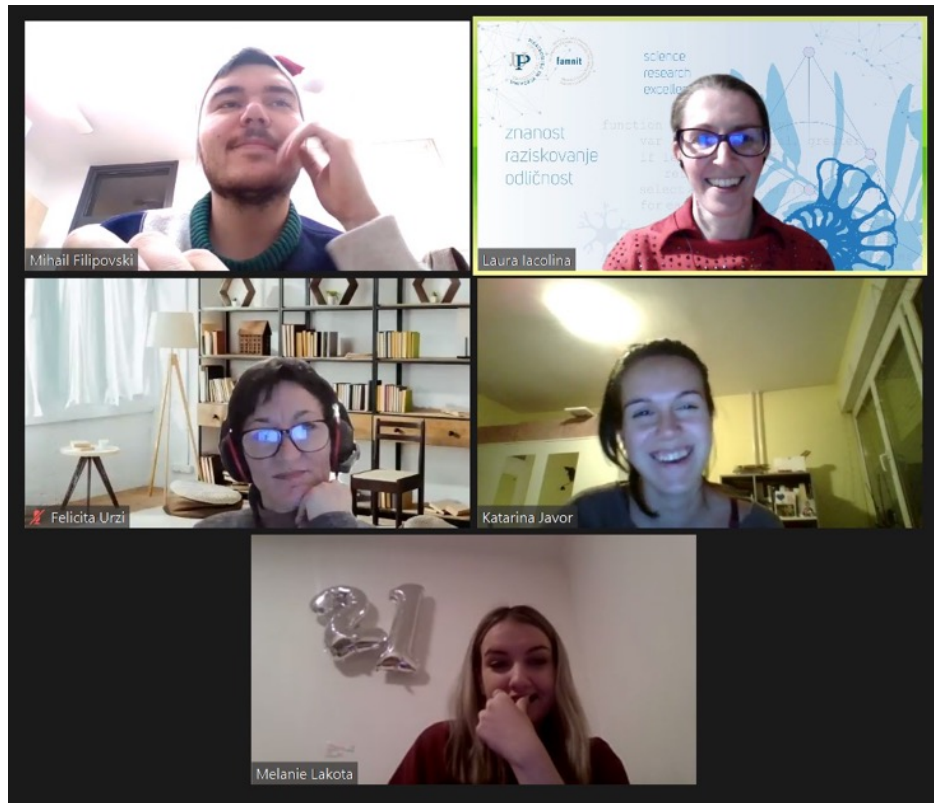
Screenshot from one of the break-out rooms
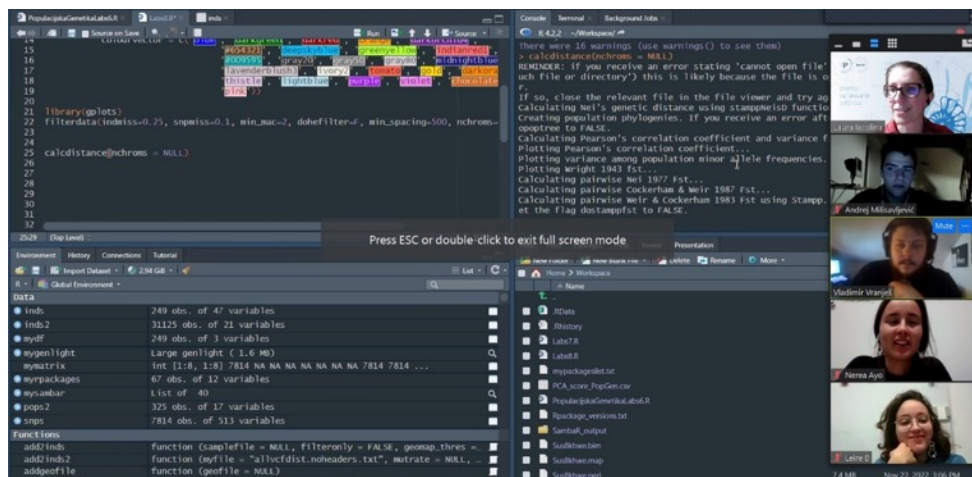
Collaborative approach implemented by students using the screen sharing option

When students were reaching the end of the activities, they were asked to prepare a summary of the main results and their interpretation before joining the main room again. The second phase deviated from the scenario, since it was performed entirely

online and not independently offline by students. The activity took most of the time, approximately 2.5 hours.

The **third** and last phase of the online class was performed in the main room, where all students joined again after the break-out rooms were closed. A representative of each group presented the main findings. The teacher then moderated a short discussion on the interpretation of such results which soon expanded to include trouble shooting aspect, a discussion on the errors and difficulties faced during the activity and sharing of how they were solved. Students welcomed such an activity, especially the collaborative aspects. This last part was in line with the scenario and lasted about 20 minutes.

As discussed during the project meeting before the implementation, there was a 10 minute closing session where the teacher, for 5 minutes, invited students to provide feedback on the lesson and asked them to fill in the online survey. Students overall appreciated the activity and working in break-out rooms.

Evaluation of the on-line lesson scenario by students

After the given lesson, students were pleased to evaluate the on-line lesson. Nine students participated in the class till the end and evaluated the on-line lesson.

The majority of the students (71%) enjoyed the group discussions the most, followed by working with R studio and implementation of the activity, which were both liked by 14% of the students. None of the students chose theoretical aspects of the lecture or the word document with the instructions as their favourite part of the lesson. The average rating of the most liked part of the lesson is 3.1, which is closer to the option of "Group discussions" as the mode. The standard deviation of 0.9 suggests that the responses are relatively consistent, with most students preferring group discussions. It can be inferred that students enjoy the interactive and collaborative aspects of the lesson more than the passive lecture or instructions.

Overall, the results suggest that incorporating more group discussions or interactive activities into the lesson may increase student engagement and enjoyment. The instructor may also consider providing clearer instructions or more engaging lecture material to enhance the learning experience.

Q1	Which part of the lesson did you like the most (single choice question)				
	Answers	Frequency	Percent	Valid	Cumulative
	1 (Theoretical aspects (Lecture))	0	0%	0%	0%
	2 (Working with R studio)	1	14%	14%	14%
	3 (Group discussions)	5	71%	71%	86%
	4 (Word document with the instructions)	0	0%	0%	86%
	5 (Implementation of the activity)	1	14%	14%	100%
	Total	7	100%	100%	
	Average	**3,1**	Std. deviation	0,9	

When evaluating different aspects of online lecture, the highest mean score was given for questions related to the clarity of instructions, ease of app navigation, and correct sequence of activities (all 4.30). Questions related to appropriateness of task difficulty, explanation of activities, time allocation, and number of activities received scores ranging from 3.90 to 4.10, indicating that the students found these aspects of the lecture satisfactory but not exceptional. The lowest mean score was given for the statement "I think I understand the topic of the lecture" (3.60), indicating that some students may not have fully grasped the topic. Overall, the mean scores suggest that the students found the lecture to be well-organized and clear, with appropriate tasks and activities.

However, the lower score on understanding the topic suggests that the instructor may need to provide additional support or clarification on the content to ensure that all students understand the material.

In conclusion, while the feedback is mostly positive, the instructor should consider focusing on improving students' understanding of the lecture content. They may want to provide additional explanations or examples to ensure that all students understand the topic. Additionally, the instructor should continue to ensure that instructions are clear and that the activities are appropriately sequenced and explained.

Statements	Mean score
1. The instructions received were clear	4.30
2. The apps used were easy to navigate	4.30
3. The prepared tasks were at the appropriate level, i.e. neither too simple nor too complex	3.90
4. Activities were clearly explained	4.10
5. The time for the activities was adequate considering the content of the lectures	4.10
6. The sequence of activities was correct	4.30
7. The number of activities was appropriate for the content	4.10
8. I think I understand the topic of the lecture	3.60

Based on the students' responses to the question what they like most in online lecture, we can draw the following conclusions:

- The majority of the students (71%) appreciated the added ease of staying at home during the online lesson, which suggests that the convenience of online learning may be a significant factor in student satisfaction.
- Other factors that were mentioned by the students include the similarity of the online activities to those in person, the precise and well-explained instructions, the ability to share screens in small groups, and the opportunity to work with classmates and freely discuss things with the professor and colleagues.
- The fact that all responses were different indicates that different students may have different preferences and priorities when it comes to online learning.
- Overall, the results suggest that the convenience of online learning is a significant factor in student satisfaction, but other factors such as well-explained instructions, collaborative activities, and opportunities for discussion can also contribute to a positive online learning experience.

Based on the responses of the students to the question of what they would like to change in their online lesson, we can draw the following conclusions:

- The majority of the students (57%) stated that they were satisfied with their online learning experience and did not want to change anything.
- Some students (14%) suggested minor improvements, such as making different groups to discuss problems or addressing errors in the online lesson.
- A few students (29%) could not think of anything in particular to change in the online lesson.

Overall, the results suggest that the majority of students were satisfied with their online learning experience and did not feel the need for major changes. However, some

students suggested minor improvements, indicating that there is always room for improvement in any teaching method.

Evaluation of the on-line lesson scenario by the teacher

1. **What did you like in your on-line lesson process?**

I really liked the collaboration level showed by students.

2. **What would you like to change in your on-line lesson process?**

I would probably post on Moodle information before hand, so that students would be more on point during the activity, I would also like to introduce a gamification aspect for the final discussion, to increase engagement and stimulate a broader participation.

3. **What contradictions appeared?**

None.

4. **What surprised you?**

The quality of the brainstorming and trouble shooting in some of the groups.

5. **What was new for your students?**

I don't feel this lecture was particularly new to them, after such a long-time having classes online.

6. **What was least expected?**

Nothing much.

7. **What topic was the dominant issue?**

Errors and speed of computation.

8. **What have you learned about yourself as a teacher (what do you know better, what can you do better)?**

I have learned that I prefer more interactive classes, and that I would like to make my lectures even more collaborative. However, I recognize the time needed to properly prepare interactive activities is a limiting factor.

Evaluation of the on-line lesson scenario - by experts

The remaining six scenarios developed during the Design Thinking workshop were evaluated by groups of academic experts. The evaluations were based on several criteria, including student preferences, clarity of instructions, ease of navigation, appropriateness of materials, interesting pre-class reading materials and presentations, clear explanation of activities, appropriate sequence and range of activities, suitability of the online platform, and an overall assessment of the written scenario. The evaluations were rated on a scale from strongly disagree to strongly agree, with a score ranging from 1 to 5.

Criterions	Evaluation (1-5)
1. The instructions are clear	1-5
2. The materials and applications are easy to navigate	1-5
3. The information is prepared at the right level	1-5
4. Pre-class reading materials and presentations are interesting	1-5
5. The activities are clearly explained	1-5
6. The sequence of the activities is right	1-5
7. The range of activities is appropriate	1-5
8. The online platform for activities is appropriate	1-5
9. Overall assessment of the written scenario	1-5

These evaluations provide valuable insights into the quality of online teaching scenarios and can help instructors improve their instructional designs for a more engaging and effective learning experience.

Title of scenario	Criterions								
	1	2	3	4	5	6	7	8	9
Introduction to Bioinformatics	5	5	4	4	5	5	3	5	4
Endangered species in conservation biology	5	5	5	5	5	5	5	5	5
Development of new products in B2B	3	3	4	3	4	3	3	5	3
Conflict Management	5		5		4	5	5	5	5
Fluid Machinery	5	4	5		5	5	5	4	4
Business and Management - Enterprise Resource Planning Simulation	5	3	5		5	5	5	5	5

According to the evaluation conducted by experts on online teaching scenarios, the "Introduction to Bioinformatics" scenario received mixed ratings, with some high scores (5s) for student preferences, clarity of instructions, and interesting pre-class reading materials, but lower scores (3s) for the sequence of activities and range of activities. The "Endangered species in conservation biology" scenario received consistently high ratings across all criteria. The "Development of new products in B2B" scenario received lower scores in most criteria, particularly for instructions, materials and applications, and range of activities. The "Conflict Management" scenario received high scores for student preferences and clear explanation of activities, but lower scores for information prepared at the right level and range of activities. The "Fluid Machinery" scenario received high scores for most criteria, but a lower score for ease of navigation. Finally, the "Business and Management - Enterprise Resource Planning Simulation" scenario received mixed ratings, with some high scores (5s) for most criteria, but lower scores for instructions and range of activities. Overall, the evaluation provides valuable feedback for instructors to improve their online teaching scenarios and enhance the learning experience for their students.

The experts were also asked to answer the question: "Which part of the lesson do you think students may like the most?" This was a single choice question, and the experts were asked to select one part of the lesson that they believed would be the most appealing to students:

1. Scenario *"Introduction to Bioinformatics"*: The scenario presents well the next steps of the activities and their consequences.
2. Scenario *"Endangered species in conservation biology"*: I liked the group work and the fact that students had the opportunity to assess the work of their colleagues.
3. Scenario *"Development of new products in B2B"*: In my opinion evaluated online lesson will be very interesting for students since it uses learning through discovery technique. Learning through discovery enables students to exercise higher-level thinking skills and better retain knowledge. As students go through discovery learning, they have a more active role. Specifically for this lesson, during group work students will be encouraged to collect data from various resources to analyse the competitive market and develop the product. During this activity students have opportunity to practically learn how to lunch new product and theoretical aspects of this marketing activity.
4. Scenario *"Conflict Management"*: I was most impressed by the multitude of different activities for students and the very good estimation of the time required for each activity. Also, I was pleasantly surprised by knowing and using several different tools for online learning (Jamboard, Teams Kahoot), which is certainly very fun for students and increases the dynamics of the lesson.
5. Scenario *"Fluid Machinery"*: The blended lesson opportunity, that allow for larger group of students, and facilitates students' access to the lessons and their content.
6. Scenario *"Business and Management - Enterprise Resource Planning Simulation"*: Interactive learning (games) representing the real situation in Business and Management. The students collaborate during the on-line lessons with each other and with the teacher. Lectures are normally recorded, and students may get back to the simulation when needed for analysis the game development scenario.

According to the experts' responses to the open question "What would you like to change in evaluated online lesson?", the suggestions were as follows:

1. Scenario *"Introduction to Bioinformatics"*: I would add more student's activation tasks using ICT applications, e.g. Wheel of Fortune in Wordwall, etc
2. Scenario *"Endangered species in conservation biology"*: The scenario mentions that ICT applications can be used for quizzes and testing, I would certainly recommend their use to add an element of competition.
3. Scenario *"Development of new products in B2B"*: It will be useful that this scenario has more details. For example – how students will be split in groups (I assume that break out rooms will be used in online environment), do they will have individual assignments to collect information and then have group

discussion, which tools could they use for discussion and later on presentation of their findings. In my opinion scenario is missing these details. I will shorten theoretical aspects of lesson since it known that online students have shorter attention span. In my opinion 20 minutes is more than enough to introduce students with basic theoretical concepts assuming that before class they had pre-reading materials. For group work 30 minutes will be enough, following presentation of each group 10 minutes per each group. Also I would like that in this scenarios are used more techniques to engage students.

4. Scenario *"Conflict Management"*: More emphasis on real-life scenarios and case studies to practice conflict resolution skills.
5. Scenario *"Fluid Machinery"*: Instead of each student working independently and not being able to interact with other students during the task, the implementation of group work is used.
6. Scenario *"Business and Management - Enterprise Resource Planning Simulation"*: Tailored assignment by instructor. End-of-lesson assignment results will be better if submitted individually.

These suggestions can help instructors improve their online teaching scenarios by incorporating more practical exercises, real-life examples, interactive activities, and opportunities for learners to engage and interact with each other

Strengths and weaknesses of the on-line lesson scenarios

Pilot Scenario *"Due diligence in the phase of preparation of the investment projects. Team building and communication",* University of Gdańsk, Poland

Strength: the strength of the on-line lesson scenario was evaluated by asking the pilot group the question: What did you like in your lesson on-line on due diligence. The answers of the students may be structured in some categories:

- Acquisition of new knowledge, I have not heard of it before, It's about getting to know how due diligence works, The opportunity to learn something completely new, I haven't heard of due diligence before, The issue itself was interesting.
- Group work, integrating exercises, working in a group, activation of groups, Group discussions, examples from "life", Comparing your answers to questions with other people during group discussions, Discussion.
- Commitment of the leader, which made me also involved, Way of conducting, The clarity of the lecture, the presentation of quite complicated matter in a simple and easily digestible way, The lecturer spoke as if he knew what he was saying, and it really interested him, so it interested us as well.
- Examples of additional tasks, Text and questions to be developed, Mentimeter, Activating methods.
- Analysis of conclusions after reading the article, text to read, what was apparent from the content of the articles about the investor.
- Stress-free classes despite effective information transfer
- A variety of ways to transfer knowledge.

Weaknesses: the weakness and obstacles or difficulties which may be experienced by the students of the on-line lesson scenario were evaluated by asking the pilot group the question

Scenario 1. *"Introduction to Bioinformatics",* University of Primorska, Slovenia

Strengths: The main strength of this scenario is the interaction among the students, both during the round of introduction but also during the brainstorming session when students will identify aspects of interest and connection with other disciplines or the news. This will keep them engaged and increase their understanding of the potential applications of the knowledge they are going to acquire during the course. Furthermore, their contribution in terms of examples and identification of topics of

particular relevance will increase their ownership in the course content, motivating them to remain engaged during the whole duration of the course.

Additionally, the detailed introduction of the course content and implementation will allow a better organization of the students' independent activities.

Weaknesses: The main weakness is the time needed for everyone to introduce themselves, which will make the scenario inapplicable to large groups of students.

Another potential problem is that students might need substantial input from the teacher to identify connections with other courses or real-life events. The more input from the teacher will be needed, the lower the ownership of the students will be.

Scenario 2. *"Endangered species in conservation biology"*, University of Primorska, Slovenia

Strengths: The main strength of this scenario is the interaction among the students, both during the preparation of the assignments but also during the lesson when students need to summaries the work of the other group of students. This will keep them engaged and increase their focus as well as deepen their knowledge acquired during the course. Furthermore, their contribution in terms of examples and identification of topics of particular relevance will increase their ownership in the course content, motivating them to remain engaged during the whole duration of the course.

Weaknesses: The weakness of the scenario is that could be performed only in a small group of students (15 – 20). Some obstacles or difficulties could be experienced by the students if the group don't interact well and only some students are actively work on the assignment. Teachers could experience some difficulties if all the material is not prepared in advance or had some trouble with the software or platforms while making use of on-line lesson scenario.

Scenario 3. *"Genetic diversity"*, University of Primorska, Slovenia

Strengths: This scenario is supporting the students' transition from theoretical knowledge to its practical implementation, mimicking what they might be required to do in their future professional life. The main strengths are interactivity, student to student and student to teacher interaction, and student engagement. Zoom allows students to be divided into small groups where they can interact and collaborate, sharing the screen to show progress and challenges that need to be solved by the group.

Weaknesses: A weakness of this scenario is that it does not allocate time for students to start working on their assignment online, which would benefit from the teacher presence that could help clarify aspect or provide guidance. Another weakness of this scenario is that multiple teachers would be needed to provide support for larger groups of students. In our implementation we only had a few students, so a single person was enough to visit all groups and provide assistance. However, if larger classes were to perform a similar activity, more teachers would be needed to allocate enough time to each group. Another obstacle was the connection problems experienced by one of the students, that is, unfortunately, neither unexpected nor something the teacher could do something about. An additional challenge is that students are more likely to turn on the camera when in the break-out room than when they are all gathered in the main room, whereas the difficulty in finding a volunteer that will present the group's work is very similar to in class situations.

Scenario 4. *"Local community meeting"*, University of Alba Julia, Romania

Strengths: Even the students that cannot attend onsite for the course can participate/ engage in the activities. Using online platforms as MS Teams, we have the chance to split students into different rooms and let them work together without disturbing or influencing the others. Also, we have the chance to use other platforms that can increase students' engagement for the course like: Jamboard, Mentimeter or Kahoot. Increasing students' engagement by letting them use their smartphones during the class, or even transforming them in our partners while designing the scenario for the lesson.

Weaknesses: During the online lessons, the most frequent obstacles or difficulties that can appear are: technical issues related to internet connection or computers. Also, students might not open their cameras or choose not to involve in the activities suggested by the teacher, so the teacher has to have a plan B for engaging students in the planed activity.

Scenario 5. *"Development of new products in B2B"*, University of Alba Julia, Romania

Strengths: It grabs attention. Develop creativity Students learn by themselves through discovery.

Weaknesses: There are groups of students who do not interact. In the online environment there are situations when it does not work.

Scenario 6. "Conflict Management", University of Alba Julia, Romania

Strengths: Even the students that cannot attend onsite for the course can participate/engage in the activities. Using online platforms as MS Teams, we have the chance to split students into different rooms and let them work together without disturbing or influencing the others. Also, we have the chance to use other platforms that can increase students' engagement for the course like: Jamboard, Mentimeter or Kahoot. Increasing students' engagement by letting them use their smartphones during the class, or even transforming them in our partners while designing the scenario for the lesson.

Weaknesses: During the online lessons, the most frequent obstacles or difficulties that can appear are technical issues related to internet connection or computers. Also, students might not open their cameras or choose not to involve in the activities suggested by the teacher, so the teacher has to have a plan B for engaging students in the planed activity.

Scenario 7. "Fluid Machinery", University of Tor Vergata Rome, Italy

Strengths: Curricular flexibility. Diversity making a productive environment. Multidisciplinary knowledge. Interaction with professors. Progressive instructional approach. Real examples with design-oriented calculations.

Weaknesses: Group working can be introduced as synchronous activities. More blending can be done with asynchronous to offer a better service also for students that cannot attend in presence.

Scenario 8. *"Enterprise Resource Planning Simulation"*, University of Tor Vergata Rome, Italy

Strengths: During private meetings organized by each group, facilitators can easily be contacted and the feedback is almost in real time. Roles are clearly assigned at the beginning of the game. Lectures are normally recorded, and students may get back to the simulation when needed for analysis the game development scenario. The system allow to download on real time data related to the game and by using student's laptop it will be easier to organize and analyze data related to the game.

Weaknesses: The value added of the game is clear only if the roles are clearly assigned to the each group member and some turnover rules are applied in order to allow all the students to play all the roles. Training sessions (asynchronous) will be helpful if

provided well in advance with respect to the game start. Teams have not to be selected randomly and instructors have to identify the group structure in order to have different background and expertise in them. Evaluation of group member contributions is not easy and it has to be based not on the final ranking position but on the ranking improvements in the different rounds. Time management is an issue for the game and instructors have to adjust the time in order to adapt to student's needs and skills . Asynchronous courses on using excel and Miro may be useful for level playing field of all the students enrolled to the course. The final target (maximize profits) may be not interesting for all the students. A target that could be customized by the instructor could be more interesting for some of students (i.e. carbon footprint, ESG, etc....). A final certification offered by the software provider may be a value added for making the activity (not compulsory) more attractive for the students.

Scenario 9. "Social Pedagogy and Education", University of Tor Vergata Rome, Italy

Strengths: The course is using a set of comprehensive tools for allowing interaction between students and instructor (Kahoot, Padlet, Mentimeter, google module, etc...). Instructor will use different tools for supporting the interaction between students and instructors and among students during the group assignments.

Platforms for sharing ideas are a useful tool for providing the same set of information to all the students that attend the course. Normally a platform could allow to organize better the contents and help the students in understanding the topics and follow the learning path identified by the instructor.

The usage of asynchronous activities allows organizing better the time for preparing the exam, especially for not young students that have family or work obligations. The usage of asynchronous activities allows increasing the inclusivity of the program offered.

Weaknesses: Discussion online cannot be so effective as face-to-face interaction even when the technology is used for maximizing the interaction. The effectiveness of the lecture is also related to the capability of the instructor to create am online scenario comfortable for the students and suitable for a discussion.

Excessive usage of online tools may bring to a lack of concentration for the students that is already low in an online scenario. Instructors have to be trained for using the tools in order to avoid the risk of over-using IT tools when it is not strictly necessary.

CONCLUSIONS

The aim of the activities in Intellectual Output 3 was to develop innovative ideas in online higher education, taking into account the needs and experiences of users. With this aim in mind we used design thinking, which is a problem-solving methodology that can be applied to creating lesson scenarios that are engaging and effective for students. DT method usability to create lesson scenarios is associated with the approach which enables discovering the needs of participants in the teaching and learning process and helps effectively in defining and visualizing the results. In the project, we tested the DT method as the tool, which includes a few stages making it possible to:

(1) **empathize** with the students and understand their needs and interests. This involves gathering information through observation, interviews, and surveys to understand what the students want to learn and how they know best in the online mode;

(2) **define**, based on the information gathered in the empathy stage, the problem to solve. This could be a specific learning objective, a topic that students are struggling with during the online lessons, or a gap in their knowledge that needs to be filled;

(3) **generate** a wide range of ideas for the online lesson scenario, using brainstorming techniques to come up with various ideas, no matter how wild or unconventional they may seem. The goal was to think creatively and generate a broad range of possibilities;

(4**) create** a prototype of the online lesson scenario, which may be a storyboard or a rough draft of the materials used in the lesson. The goal was to test the ideas and see how they work in practice;

(5) **test** the lesson scenario with a smaller or larger group of students, observe how they engage with the materials, and adjust the online lesson scenario based on their feedback. This could involve modifying the content, changing the delivery method, or adjusting the difficulty level, based on student feedback.

By following the above steps, a teacher can create lesson scenarios tailored to the students' needs and interests, engaging them and effectively helping them achieve their learning objectives. The key was to be open to new ideas and test the online lesson scenarios to ensure they meet the students' needs.

Design thinking's advantages come from its problem-solving approach, which focuses on user needs and utilizes creativity, empathy, and collaboration to find innovative solutions. Design thinking could benefit education because it helps teachers and students think "out of the box" and creatively solve problems. Design thinking can be

helpful in education because it develops creativity and innovation: These skills are instrumental in education because they enable students to think independently and innovatively and help teachers develop creative teaching methods. Besides, using the DT process in creating online scenarios encouraged collaboration and interdisciplinary work. Students and teachers from different fields can work together to solve a problem. In education, design thinking helps teachers and students work together on a project, promoting interdisciplinary work and developing collaboration skills. Our online lesson scenarios are designed to enable academics from different fields, from stem sciences to social sciences, to use them as the base for creating individual schemes for lessons and creatively apply them to the specific needs of the students and teachers. The universal patterns are based on the versatile needs of good communication and interaction.

Online classes have become increasingly popular recently due to the COVID-19 pandemic. Design thinking can help address the needs of both teachers and students in this context. Based on DT workshops conducted during the project, we found that the needs of teachers and students were similar: good communication and interaction.

As a result of the project DT workshops, we also defined some of the user needs, specific for teachers and students in online classes, that could be addressed using design thinking:

For teachers, we defined such needs as (1) clear guidelines for conducting online classes, (2) practical tools for delivering content, and (3) strategies for engaging students. Teachers need clear guidelines and training on how to conduct online classes effectively. Design thinking can help create resources tailored to their specific needs that address their concerns about online teaching. Teachers also need practical tools for delivering content online, such as interactive videos or presentations, which helps deliver the content and make time management very important. The online component of the course requires not only to invest time in preparing the materials but also to involve staff that is necessary in order to have an effective interaction with the students that are connected online and reduce the risk that the quality of the activity online is poorer that lecture offered in presence.

DT can help identify and create engaging tools and strategies that effectively deliver content online and promote student engagement and participation in online classes. One of the main advantages of the on-line and blended solutions is to increase the number of students attending the course and make the course itself more appealing.

The needs defined in the case of students, which our online lessons suggest as a consequence of DT workshops, are (1) accessible and user-friendly online platforms, (2) practical tools for collaboration, and (3) personalized learning experiences. Students need online platforms that are accessible and user-friendly. Design thinking can help identify and create platforms that are easy to use and that meet the needs

of diverse student populations. Students also need practical tools for collaborating with their classmates and teachers online. This need was very strongly announced during our workshops. Students also need personalized learning experiences that cater to their individual learning needs. The advantages of online lessons also include the possibility of following the course online even if the students have family or work constraints, but at the same may be virtually in the academic environment.

Adapting lesson scenarios for online teaching in different areas of knowledge can be challenging but achievable if a teacher starts by identifying the learning objectives of the lesson scenario a teacher wants to adapt (the content and measuring the progress). Another step is considering the online learning environment and its unique features, such as the tools and technologies available, the limitations of online communication, and the potential distractions students may face. It is recommended in online lessons scenarios to simplify the content while using multimedia elements such as videos, images, and interactive simulations to help engage the students and distract them. Online learning can bring the feeling of isolation both for students and teachers. Therefore, it is recommended to consider ways to foster interaction and collaboration. This could involve online discussion forums, group projects, or virtual breakout rooms. Using gamification elements such as quizzes, puzzles, or games may help students stay engaged.

To be effective and reduce the time allocated to the simulation, it is necessary to provide videos with the explanation, materials for reading study, or exercises with the explanation in advance, with respect to the lecture content and structure. In some situations, the additional training hours for students that have no sufficient skills in specific programs, like Excel or Tableau, sometimes are necessary in order to achieve the equivalence of chances to participate fully in the process.

The students' needs include regular feedback and guidance, which can be conducted while answering questions and providing help. Instant pools solutions allow to check attendance of the students and verify if the students are understanding the topic discussed during the lecture. The instructor shall be in charge of stimulating the discussion and the debate in order to ensure that, in the time slot, the students can complete the topic scheduled for each of the lectures. Small group assignments allow to develop interaction and discussion among students that are enrolled in the course and create networking opportunities among them. The group assignment is an important component of the learning process because students will be evaluated also based on the interaction among members and capability of problem solving. The forum discussion allows students to learn from peers and stimulate collaboration among participants even in an online scenario. The role of the instructor as moderator of the forum is a key component of the learning process and ensures the quality of the outcome of the course. The final oral test makes students sure they have not only follow actively the course online but are prepared for a standard exam on the topic.

One of the tools we recommend is using evaluation questionnaires tested during the project after the online lessons with teachers' and students' engagement. Reflection on the attention, content, and simply the online study structure is a way to continuously improve a teaching process, which aligns with the design thinking method foundations.

Adapting lesson scenarios for online teaching can be challenging. The online lesson scenarios combine many elements which are necessary in the teaching process. Preparation of these lessons starts with technical issues, agreements towards communication, time management, and many other elements that should be prepared even more carefully in on-line process of teaching than for in-class teaching. All these factors are important in stimulating creativity and learning. Preparing the on-line lesson requires a sustained effort on the part of the teacher, which applies to the stage before, during, and after the lesson. Still, by following the steps described in the booklet "Towards effective teaching", teachers may create engaging and effective learning experiences for students in various subject areas in an interdisciplinary and international environment. Online solutions create opportunities also to involve foreign students or foreign visiting professors. Blended solutions offer more opportunities for identifying guest lecturers that can contribute to the success of the course by bringing knowledge and skills that are different with respect to the background of the main lecturers. The scenario of the lessons gives the opportunity to achieve and build such competencies such as: IT skills, team building, and time management.

To enhance the project results' internationalization, the instructions for conducting design thinking workshops were prepared in five languages: English, Polish, Slovenian, Croatian, Italian, and Romanian.

Design thinking can be used to address the needs of both teachers and students in online classes. It helps develop creativity and innovation, focuses on user needs, requires empathy and understanding, and encourages collaboration and interdisciplinary work. By focusing on user needs and creating tailored solutions, design thinking can help improve the online learning experience for everyone involved. For maximizing the impact of the online lessons, it could be useful to organize longer debriefings that allow students to better understand the theoretical issues behind the problem covered by the online lessons and guide them in the next steps of their learning process. By using the online platforms it is possible to use more interactive tools during the lecture. Some of these tools create the opportunity not only to gain knowledge, but also to recognize the additional skills and digital competencies.

Annexes in national languages

Towards Effective Teaching
Reimagining online courses
for the future of higher education

InComp
Edu
Innovative Competence in On-Line Education

InComp Edu

Innovative Competence in On-Line Education

Instruction how to prepare Design Thinking workshop - in Croatian

**Towards Effective Teaching
Reimagining online courses
for the future of higher education**

Kako pripremiti *Design Thinking* radionicu?

„InCompEdu" Innovative Competence in On-Line Education

Kako pripremiti *Design Thinking* radionicu?

Na putu do razrade scenarija predavanja ili nastave u akademskoj zajednici

IO3: Ponovno osmišljavanje online tečajeva za budućnost visokog obrazovanja

Dizajn radionice: Magdalena Markiewicz, University of Gdansk (UG),
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Prijevod na nacionalni jezik/Provedba na partnerskon sveučilištu:
Jelena Dorčić
Jelena Mušanović
Lorena Dadić Fruk

Design Thinking metoda

- Cilj mu je stvaranje smislenih inovacija temeljenih na poznavanju potreba korisnika

- Uokvirivanje problema kroz empatiju i zanimanje za živote, iskustva i mišljenja korisnika

- Generiranje koliko god je moguće ideja umjesto samo jedne koja je najbolja

- Izrada prototipova za testiranje ideja i učenje o rješenjima

InCompEdu projekt:

- Izrada scenarija nastave na temelju potreba, iskustava i mišljenja studenata i nastavnika koji su korisnici nastavnog procesa .

Pet faza u *Design Thinking* procesu
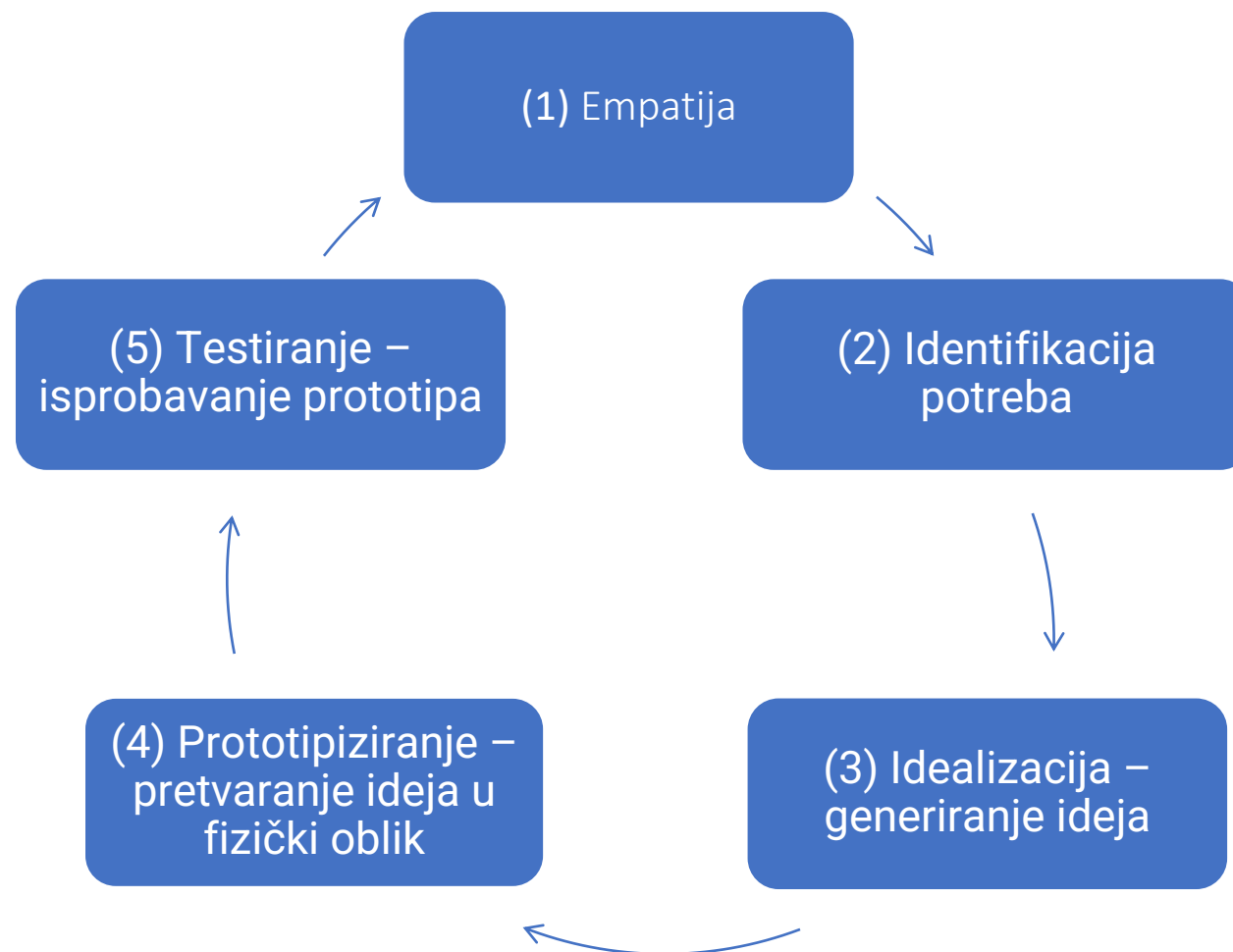
Design Thinking radionica – pozadina i struktura

Elementi relevantni za raspored i organizaciju radionice - stvari koje treba uzeti u obzir

a) Kratak opis **iskustva** s metodom na sveučilištu, ako ga ima

b) Broj **sudionika**, njihovo iskustvo i područja

c) **Mjesto** održavanja: gdje i zašto je to mjesto zgodno

d) **Raspored:** dani, sati radionice u razredu i faza pripreme plus sažetak nakon radionice

e) **Elementi** *Design Thinking* metode korišteni u okviru radionice (poput analize potreba, izrade prototipa)

Design Thinking radionica – pozadina i struktura

Rezultati radionice

Opis scenarija:

a. Predložene teme kao opcija u različitim područjima

b. Korišteni on-line alati, moguće prednosti korištenja ovih alata za interakciju

c. Predloženi načini interakcije "predavač - studenti" u okviru scenarija

d. Trajanje lekcije (optimalno – minimalno – maksimalno)

e. Moguće bodovanje i načini ocjenjivanja

f. Postoje li preduvjeti ili potrebna formalna priprema s gledišta studentovog ranijeg iskustva i kolegija

g. Kompetencije koje se mogu postići nakon lekcije

Fotografije – aktivnosti sudionika

Osnovna pravila za organizaciju radionice

Cilj - razrada scenarija online nastave na temelju korisničkog iskustva. Korisnici ove radionice su nastavnici i studenti te treba uvažiti njihove potrebe.

Metoda – *Design Thinking* metoda.

Sudionici – akademski nastavnici i/ili studenti
(4-12 osoba je optimalna veličina grupe, najmanje 3 osobe).

Vrijeme radionice: 3-4 sata minimalno, vremenski pritisak je važan za postizanje učinka, ali otvorena atmosfera također je ključna za stvaranje ideja.

Moderatori:

1-2 osobe tijekom radionice, njihova je uloga pratiti putanju radionice i provjeravati rezultate.

Osnovna pravila za provođenje DT radionice:
putanja radionice sastoji se od 3 elementa

Proces ➡ Prostor ➡ Ljudi

Korak 1. Faze PROCESA

Upitajte sudionike prva pitanja – empatija u DT-u (10-20 minuta, ovisno o broju sudionika)

Zašto ste došli na radionicu?

Gdje i kako želite koristiti znanje o *design thinking-u* ?

Primjer:

Ja sam ... Radim u odjelu ... Želim iskoristiti znanje o DT-u u...

Multidisciplinarni timovi su dozvoljeni, nekad čak i preporučeni.

Što je zapravo *design thinking* metoda? Kako može doprinijeti vašem podučavanju?

Povećati...

Kreirati ...

Izazvati ....

Komunicirati ...

Motivirati ...

Implementirati ....
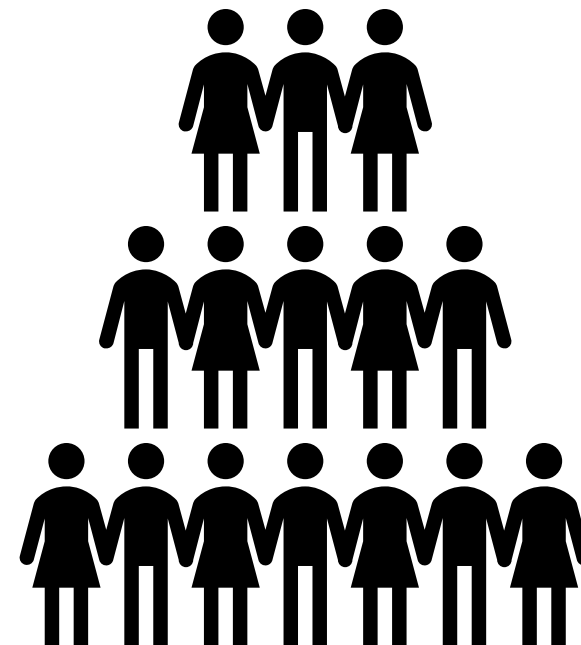
PROCES.
Svrha je riješiti problem

Upitati sudionike incijalna pitanja:

- Što je inovacija?
- Što je inovativnost u nastavi?

- Metoda rješavanja problema
- Način kreiranja novog proizvoda i usluge
- **Korisnik i njezine/njegove potrebe su u središtu**

Korak 2. Priprema PROSTORA

- stvoriti ugodnu atmosferu
- ugodna soba sa tepisima
- podesiva
- prikladna za male skupine

- Posebno bitno za intervjue i individualne sastanke

Prostorni zahtjevi:

- Veliki prostori za radionice, dovoljno prostora za veličinu grupe

- Materijali za izradu prototipa i rad: papir, kemijske, olovke, ljepilo, škare, novine za izrezivanje slika, veći formati papira A2/A1, šarene ljepljive ceduljice

- Bijele ploče, markeri za bijele ploče, školske ploče, krede

Prostor za prezentacije

Stvaranje prostora u online lekcijama

Korak 3: LJUDI u procesu Design Thinking-a

Korisnici mogu biti iz različitih ili iz istih disciplina

Uloga moderatora:
- urediti **prostor**
- motivirati **sudionike**
- izabrati tko s kim radi u **timu**
- osigurati poštivanje **vremena**
- pitati grupu da odrede **voditelja** ili ... odrediti voditelja svake grupe
- brinuti o **ljudima** - angažmanu sudionika

Razmišljanje o ljudima, njihovim ulogama i perspektivama u online lekcijama

Pet faza u *Design Thinking* procesu
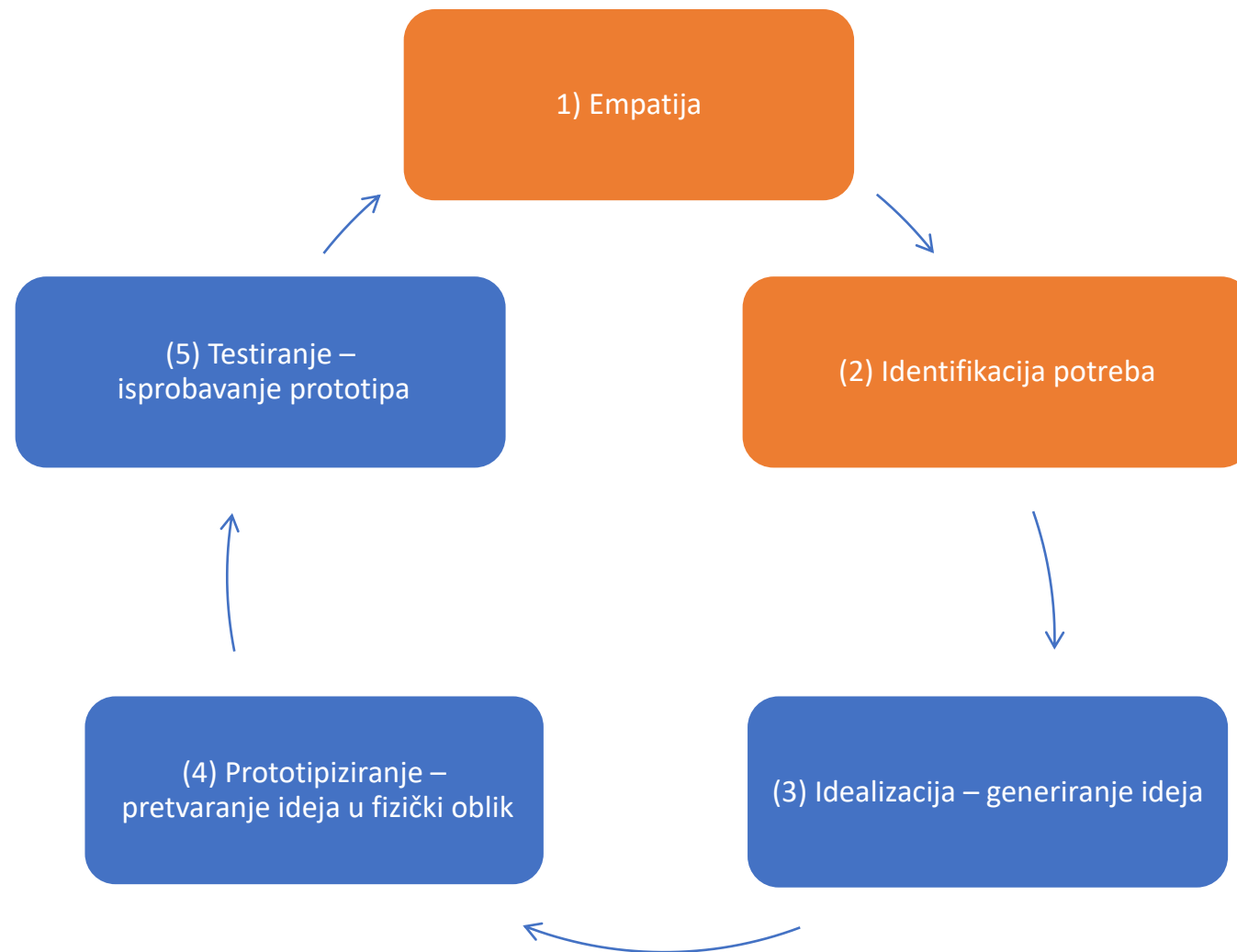
Emaptija i dijagnosticiranje potreba

Empatija i intervju s korisnicima. U smjeru dijagnoze potreba.

Empatija: Kako ući u kožu korisnika?

1. Započnite *brainstorming* – svaka grupa treba pronaći (zapisati na komad papira) pitanja koja treba postaviti jednom nastavniku i/ili jednom studentu kako bi saznali što je važno za stvaranje dobrog scenarija online lekcije.

2. Odaberite u grupi jednu-dvije osobe koje će biti intervjuirane.

3. Korisnici usluga i proizvoda vrlo su različiti. Isto vrijedi i za predavanja ili nastavu.

4. Dok stvarate pitanja tijekom *brainstorming* i intervjuiranja - ne mislite na ciljanu skupinu, već na konkretnog korisnika.

Dijagnosticiranje potreba

- Primjeri pitanja: koje je bilo vaše najbolje iskustvo s online podučavanjem/učenjem? Što najviše cijenite u online nastavi? Što je s vremenom, pripremom, aktivnostima itd. ? Kakvua bi se nova lekcija svidjela studentima? Što je važno za vaše zadovoljstvo online lekcijom?

- Pronađite obrasce - otvorena, nesugestivna pitanja

- Korisnici - što vole, što mrze

- Pitanja za razloge:

  zašto? zašto ne? najbolje i najgore iskustvo

- Motivacija, frustracija, oduševljenje, navike, demografija – karakteristike.

- **Mislite i na korisnike s posebnim potrebama (talentirani, hendikepirani, dosadni,…)**

Intervjui – struktura i uloge

- Odaberite timove
- Pripremite pitanja
- Odaberite osobu za intervju
- Napravite intervjue
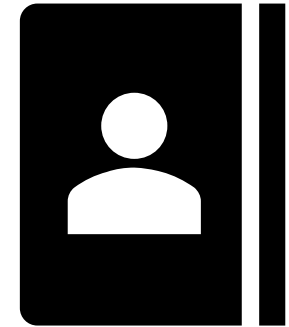
Optimalno, najmanje tri osobe sudjeluju u razgovoru:
1. jedan (korisnik) govori o svojim iskustvima
2. jedan (intervjuer) postavlja pitanja i aktivno sluša
3. jedan vodi bilješke

Empatija – intervjui

Jedna osoba **(intervjuer)** postavlja pitanja i aktivno sluša

- Predstavlja se i objašnjava svrhu intervjua
- Objašnjava glavnim crtama tijek razgovora
- Naglašava cilj
- Koristite pitanja koja su proizašla iz *brainstorminga* u fazi empatije
- Sluša… 75% vremena korisnika
- Ako korisnik želi nešto dodati, to je dobrodošlo

Mapa empatije – emocije i riječi; promatranje korisnika

Govori: doslovni citati stvari koje se često pojavljuju kontradikcije	**Razmišlja:** uspoređujemo ono što ona/on govori s onim što ona/on radi i osjeća
Radi: koje aktivnosti proizlaze iz izjave ono što ona/on radi, bira što ona/on koristi	**Osjeća:** koje se emocije mogu očitati (bijes, zadovoljstvo, radost, gorčina) kada se smiješi kad se koncentrira kada pomiče noge/obrve kad se igra s olovkom

Ključna zapažanja – sažetak rasprave

- Koje su se kontradikcije pojavile u fazi empatije?
- Što vas je iznenadilo?
- Što je bilo zanimljivo?
- Što je bilo novo?
- Što se najmanje očekivalo?
- Koja je tema bila dominantna?

Intervjui – informacije za voditelja intervjua

- Ne bojte se tišine - uživajte u tišini
- Gledajte, održavajte kontakt očima

- Osoba broj 2 traži dopuštenje ukoliko se snima, stvara dobru atmosferu, treba biti iskusna i suzdržana, umjerena
- Kamera utječe na ponašanje, zaboravimo na diktafon ili ... ne koristimo ga
- Osoba broj 3 bilježi: šutnju, oklijevanje, otpor i entuzijazam, koja pitanja utječu na reakciju

Pet faza u *Design Thinking* procesu

(1) Empatija

(2) Identifikacija potreba

(3) Idealizacija – generiranje ideja

(4) **Prototipiziranje** – pretvaranje ideja u fizički oblik

(5) Testiranje – isprobavanje prototipa

InComp Edu
Innovative Competence in On-Line Education

Co-funded by the
Erasmus+ Programme
of the European Union
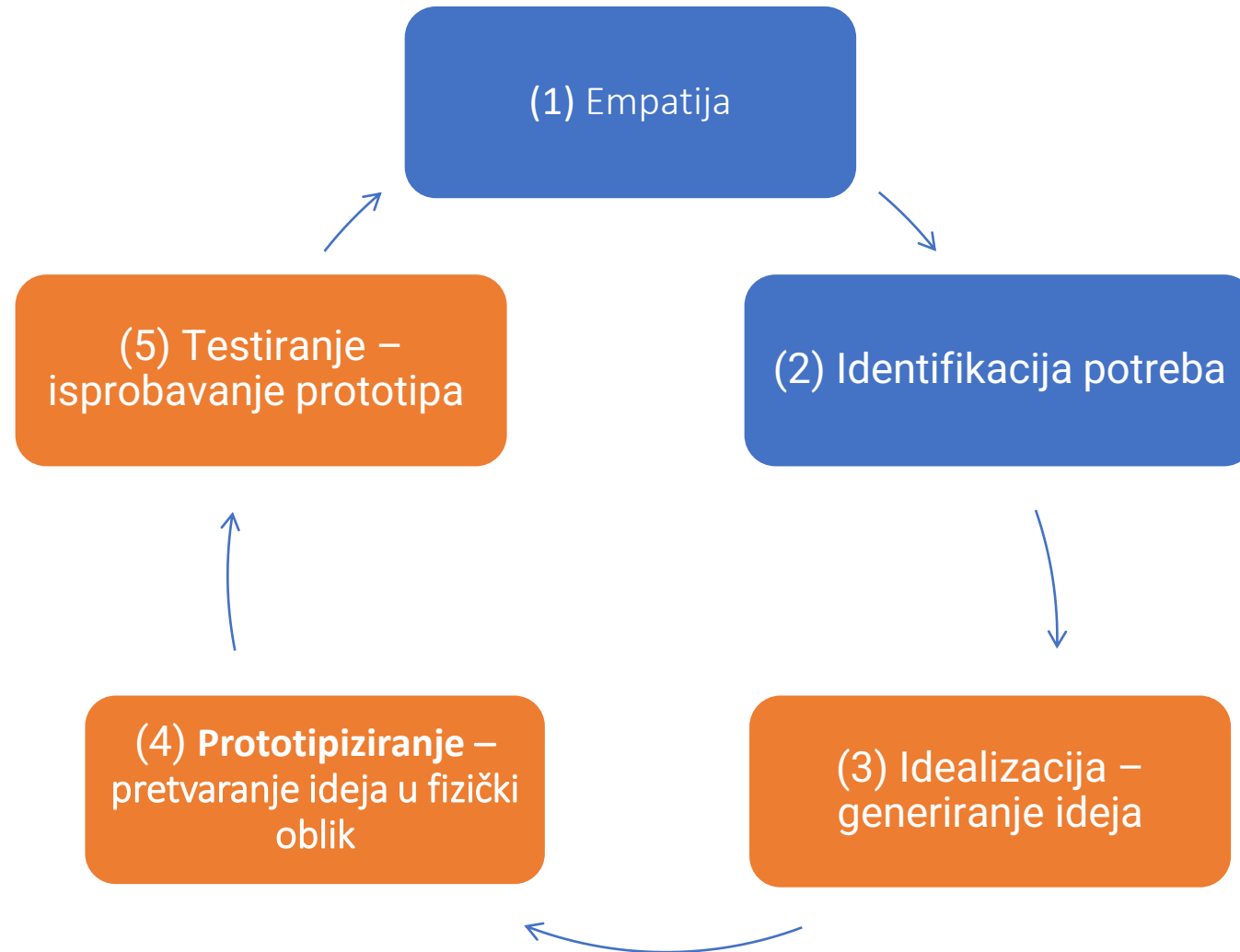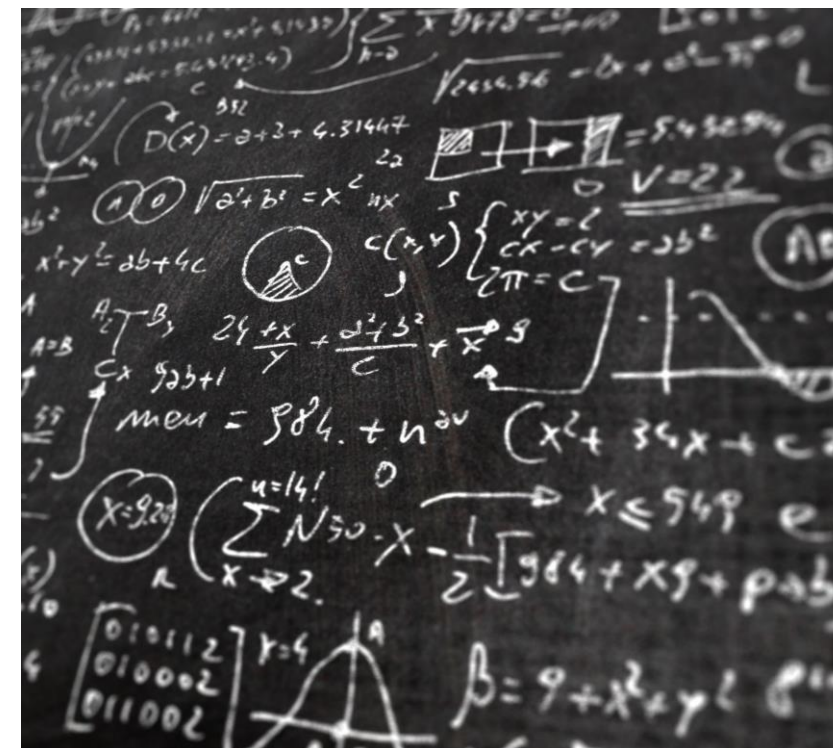
Generiranje ideja, prototipiziranje i testiranje

Korak 5. Generiranje ideja, prototipiziranje i testiranje

- Vi i grupa sada znate koje su potrebe definirane te generirajte što više ideja za sve scenarije *online* nastave
- Odaberite ideje s najvećim potencijalom
- Pojednostavite prijelaz od generiranja ideja do izrade prototipa
- Predočite svoj dvoranu i svoj ekran

Identifikacija potreba i generiranje ideja – što je prizašlo iz intervjua?

Što mislite kako glasi problem?

Čiji je to problem?

Njegov? Njezin? Naš? Nije naš?

Savjet:

Što je najvažnije za njega/nju? (u koraku empatije)?

O čemu je najviše razgovarao/-la?

Gdje su nestale emocije?

Prilikom generiranja scenarija:

Opišite problem koji vas zabrinjava

Jednostavno i općenito

Započni s "Kako bismo to mogli učiniti..."

Kako bismo mogli napisati izvedbeni plan online nastave?

Materijali:

Koristite samoljepljive papiriće (engl. *post-it*)

Zalijepite ih na flipchart/bijelu ploču

Vrijeme: 10 minuta

ZAŠTO? ZBOG ČEGA?

PROBLEM

KAKO?

Top-left panel:

INTRO CLOSING

CORE

- WELCOME
- EXPLANATION OF RULES AND EXPECTED OUTCOMES
- QUIZ ON PREVIOUS KNOWLEDGE OR CLUSTERING OF IDEAS
- CHECK PREVIOUS HOMEWORK
- 15' LECTURE
- TEAM WORK
- COMPREHENSION EXERCISE
- ROLE PLAY DEBATE
- GAME
- PRESENTATION
- DISCUSSION OF RESULTS
- REFLECTION
- TAKE HOME MESSAGE
- VIDEO

Top-right panel:

...ATION INTRODUCTION CONTENT

- interactive
- prepared
- Colourfull
- AVATAR
- COMPARISION GAMES
- SPEED DATES
- PARTICIPATORY SYLLABUS
- PODCAST BEFORE LECTURE SUMMARY (GROUPS)
- Pools
- Kahoot Breakup Rooms Study Cases
- Simmulation Games

Bottom-left panel:

- online dice for games
- Use Mentimeter for brainstorming
- Use rewards (Collect a knowledge → 10 points talers)
- Watching a movie related to the topic and discuss and relate
- Listenurung their collegues / friends exercise
- Use break up rooms
- Use Miro for drawing group presentation on the same table
- Ask students for recording something connected with the subject and present it on public
- Question...
- Use Kahoot! for memo game
- Use maps of thoughts
- Playing...

Bottom-right panel:

- ...lava ...m to ...the ...m (MIRO) ...in groups
- Prepare (students) a script opera (many episodes) on given subject
- Make short clips
- Prepare infographics on given subject in Canva and then vote for the best project
- Write a diary (online) what on given subject in groups

Stvaranje ideja - zadatak

Koje je naše jedinstveno gledište?

Što je bilo jedinstveno u fazi dijagnosticiranja potreba tijekom intervjua?

ZADATAK:

Pitanje

Broj ideja

Različite osobe– različite grupe

Kakva vas sjećanja vežu uz predavanja na studiju?

- Što želite implementirati?
- Što želite izbjeći?

Dok generirate scenarije postavljajte pitanja

Primjer:

Kako bismo mogli pomoći Mariji da se osjeća kao zvijezda na pozornici kada je na našem predavanju?

Kako možemo pomoći našoj talentiranoj studentici da učikovito provede vrijeme na našem predavanju iako je već proučila obveznu literaturu?

Tijekom radionice

Moderator

- Određuje i predlaže na kojem stupnju problema treba raditi

- <mark>Provjerava ispunjava li izazov dizajna postavljene kriterije</mark>

Sudionici

- Traže skrivene, neizgovorene potrebe

- Odvajaju potrebe od rješenja

- Formuliraju izazove dizajna

Brainstorming

- Uobičajeno (flipchart, papir, markeri)
- Nacrtano (izazovi crtanja, arhitektura)
- Pisano (za introverte)
- Prilagođeno (vi birate način)

Materijali

Samoljepljivi papirići, markeri, bijela ploča

Vrijeme: do 20 minuta

6-3-5 (max. 6 sudionika – 3 ideje – 5 minuta) / ili 4-3-4

Brainstorming - upute
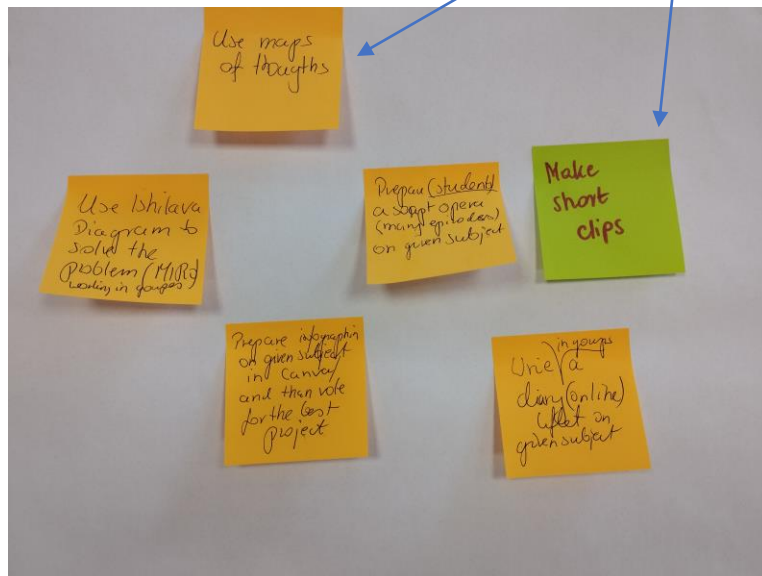
- Zapišite/nacrtajte/iznesite sve ideje
- Ideje a ne koncepte
- Ideje na zadanu temu
- Jedna sesija
- Izgradite asocijacije s prethodnima
- Iznesite i otkačene ideje
- Ne sudite
- Ne ustručavajte se
- U ovom koraku ne brinemo o točnosti/pojedinostima

Dijagram afiniteta – selekcija ideja

1. Oduševljeno
2. Racionalno
3. Najdraži tim
4. Dugoročno s potencijalom
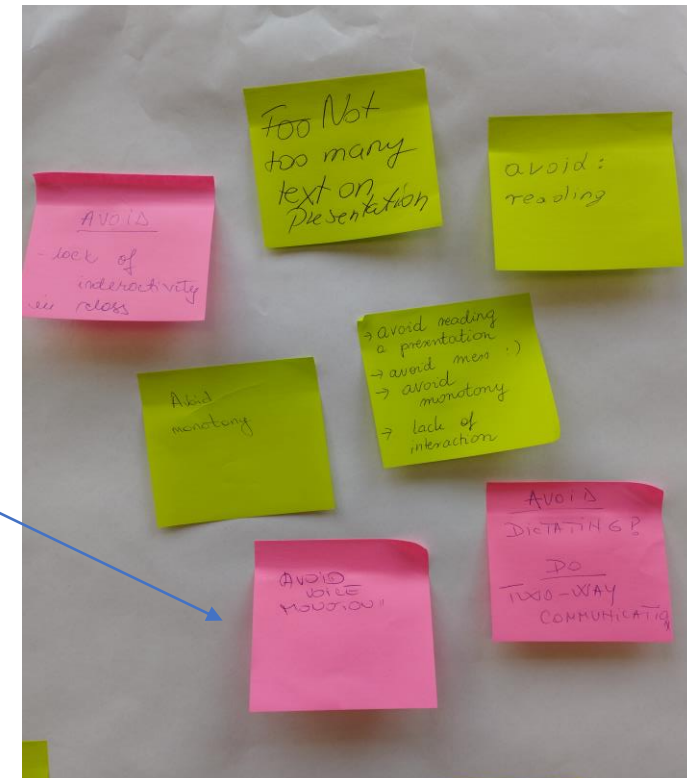
Izrada prototipa i testiranje

Prototipovi su sada provjereni.
Iskoristite ove odgovore u scenarijima.

Što je ovo?

Je li to korisnikovo rješenje problema?

Što daje korisniku?

Kako radi?

Prototipiziranje i testiranje

Prototip 1 – Što je provjereno? Što je promijenjeno?

Prototip 2 –
Što je provjereno? Što je promijenjeno?

Prototip 3–
Što je provjereno? Što je promijenjeno?
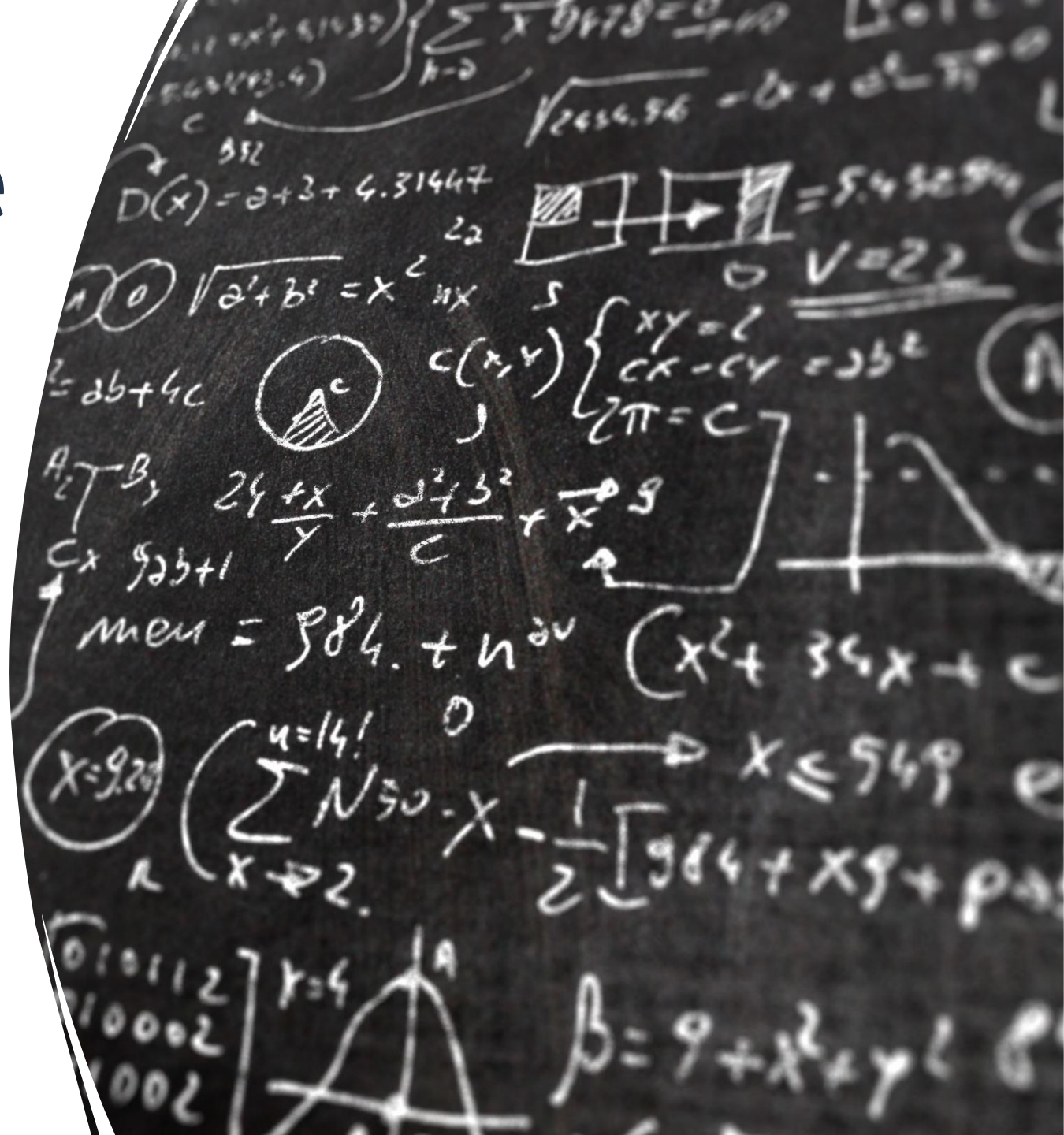
Prototipiziranje i testiranje

Prototipiziranje i testiranje

Vizualno prototipiziranje

Prikaži akciju (igranje uloga, pričanje priče).

Funkcionalnost (mislite na cilj).

Raspodjela vremena i prostora (brzina, vremensko ograničenje)

Odnos među elementima

Vizualno prototipiziranje

Generirane ideje početak su potrage za rješenjima. Vodite bilješke, skupljajte one koje nam mogu pomoći.

Potrebe nisu rješenja!

Ne projektirajte za <mark>osobe</mark> već za potrebe.

Vizualno prototipiziranje je najbrži način za prikaz ideja i prikupljanje infomacija o potrebama potencijalnih korisnika.

Pripremite vizalizaciju scenarija – kratki prikaz izvedbe.

Testiranje

Cilj: testiranje potencijala odabranih ideja

Kako bi to trebalo funkcionirati?

Što želimo ispitati/provjeriti?

Slušanje - ne branite naše ideje (sjetite se koraka empatije)

Zapišite sve odgovore

Ne analizirajte ocjene, samo slušajte

Prototipiziranje i testiranje

- razvoj ideja odabranih tijekom selekcije
- izrada prototipova omogućuje vam da provjerite njihov potencijal i postignete rezultate
- sažetak treba biti pripremljen u pisanom obliku

Kako pripremiti Design Thinking radionicu?

Instruction how to prepare Design Thinking workshop - in English

**Towards Effective Teaching
Reimagining online courses
for the future of higher education**

How to prepare Design Thinking Workshops?

„InCompEdu" Innovative Competence in On-Line Education

How to prepare
Design Thinking Workshops?

On the way to working out the scenarios
of the lectures or classes in academia

IO3: Reimagining on-line courses for the future of high education

Workshop design: Magdalena Markiewicz, University of Gdansk (UG),
magdalena.markiewicz@ug.edu.pl

Translation into national languages/Implementation in partner universities:
....

Design Thinking Method

Introduction

- Aims at creating meaningful innovations based on knowledge of users' needs

- Framing the problem through empathy and interest in users' lives, experiences, and opinions

- Generating as many ideas as possible instead of the only one which is best

- Builiding the prototypes to test the ideas and learn about the solutions

InCompEdu Project:

- Building the lesson scenarios based on the needs, experiences, and opinions of students and teachers being the users of the teaching process.

Five stages in the Design Thinking process
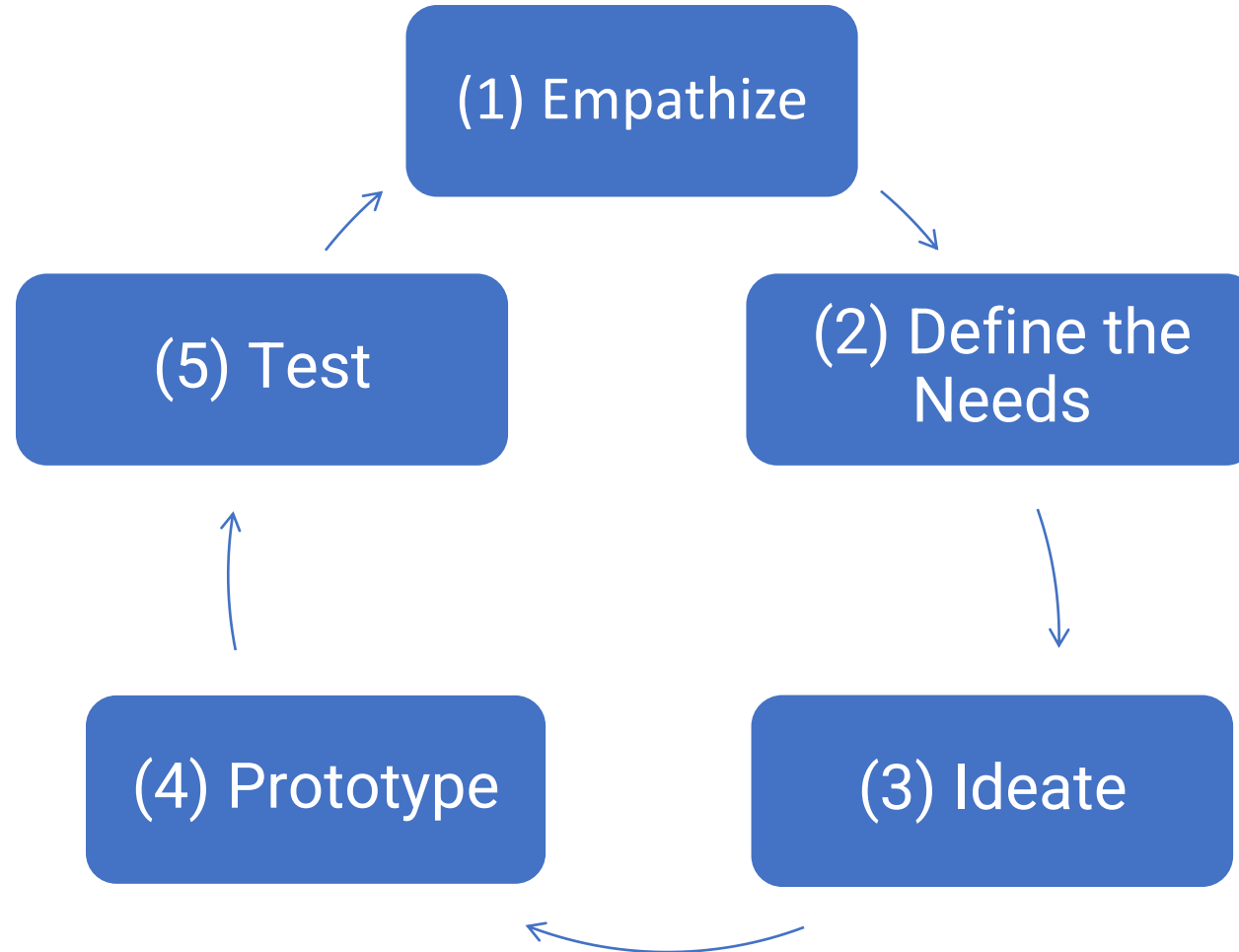
Design Thinking Workshop – background and structure

The elements relevant to the workshop schedule and organization – things to consider

a) The short description of the method **experience** at the university, if there is any

b) The number of **participants**, their experience, and fields

c) The **venue**: where and why this place was convenient

d) The **schedule**: days, hours of in-class workshop and preparation stage plus an after-workshop summary

e) The **elements** of design thinking methods used within the workshop (like needs analysis, prototyping)

Design Thinking Workshop – background and structure

The results of the workshop

The description of the scenarios:

    a. Proposed topics as an option in different areas

    b. On-line tools used, possible benefits of using these tools for interaction

    c. The proposed ways of interaction „lecturer – students" within the scenario

    d. The length of a lesson (optimal – minimum-maximum)

    e. Possible scoring and ways of assessment

    f. Are there any prerequisites, or formal preparation needed, from the point of view of a student's earlier experience and courses

    g. Competencies which might be achieved after a lesson

Photographs - participants' engagement activity.

Basic rules for organizing the workshop

The aim - working out the scenarios of online lessons based on the user experience. Users of this workshop are the teachers and students and their needs should be considered.

The method – Design Thinking method.

The participants – academic teachers and/or students
(4-12 people is the optimum group size, at least 3 people).

The time of the workshop: 3-4 hours as the minimum, time pressure is important to work out an effect, but an open atmosphere is also crucial to create ideas.

The moderators:

1-2 persons during the workshop, their role is to keep the path of a workshop and check the results.

Basic rules to conduct the DTW:
the path of the workshop consists of 3 elements

Process ➡ Space ➡ People

Step 1. The PROCESS stage

Ask participants the first questions – empathy in DT (10-20 minutes, depending on the number of participants)

Why did you come to the workshop?

Where and how do you want to use the knowledge of design thinking?

The example:

I am ... I work at Department of ... I want to make use of DT in ...

Interdisciplinary teams are allowed, sometimes even recommended.

What is really the design thinking method? How it can contribute to your teaching?

To increase ...

To create ...

To challenge ....

To communicate ...

To motivate ...

To implement ....
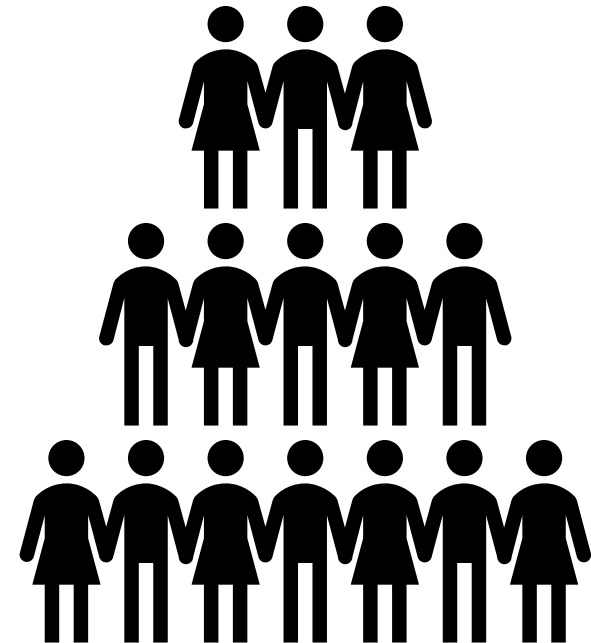
The PROCESS.
The purpose is to solve the problems

Ask the participants the initial questions:

- What is innovation?

- What is innovation in teaching?

- The method of solving the problems

- The way to create the new products and services

- **The user and his/her needs are in the center**

Step 2. Prepare the SPACE
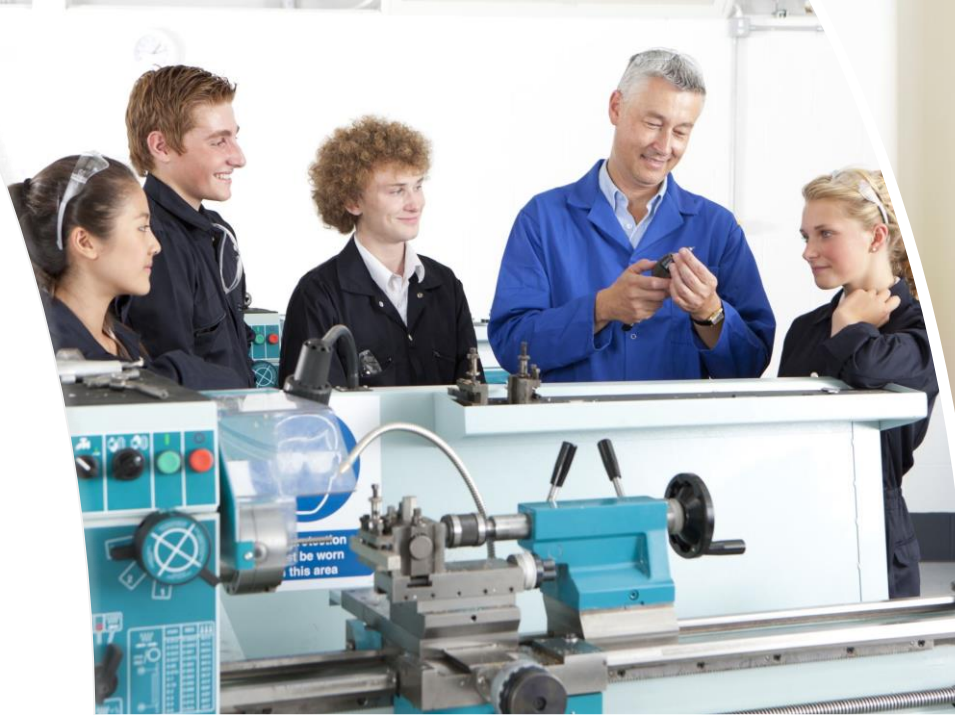
- creating pleasant atmosphere
- cozy room with carpets
- adjustable
- convenient for small groups

- especially important
for interviews
and individual meetings

The space requirements:

- Large workshop space, enough space for a group size

- Materials for prototyping and work: paper, pencils, pens, scissors, glue, newspapers to cut the pictures, bigger A2/A1 paper cards, colourful sticky notes

- Whiteboards, whiteboard markers blackboards, chalk

Space for presentations

Creating space in online lessons

(Text visible on the whiteboards:)

① VIRTUAL
IT - space

...KGROUND SETTINGS - a picture with a familiar university room = FOR ALL
...AL TOOLS AND MATERIALS PREPARED IN ADVANCE
...SIC 3 MINUTES BEFORE LECTURE
...ER ON FOR ALL PARTICIPANTS (WITH SOME LIMITATIONS)

② PERSONAL SPACE
TEACHER & STUDENTS

- HOME OFFICE FOR TEACHERS
- PROPER CHAIR AND DESK FOR STUDENTS
- PERSONAL SPACE FOR BOTH (S and T)

PERSONAL SPACE
- GOOD CONNECTION
- COMFY SPACE
- WORKING HARDWARE
- MATERIAL (IF NEEDED)

ONLINE SPACE
- ONLINE ACCESS TO MATERIAL
  - SHARED FOLDER/FILE
  - CHAT
- FRIENDLY + LIMITED TOOLS
- PLATFORM SUITABLE FOR THE TASK
  - MIRO BRAINSTORMING
  - BREAKOUTROOM FOR DISCUSSION
- CLEAR EXPLANATION OF RULES/SETTING BEFORE STARTING
- 1+ MODERATOR
- DEBRIEFING + DISCUSSION
- THINK WHERE TO GO, NOT HOW TO GO THERE

Step 3. PEOPLE in the design thinking process

Users might be from different or the same discipplines

Moderator's role:
- to arrange **space**
- to motivate the **participants**
- to select who works with whom in teams
- to discipline **time**
- to ask the group to indicate the leader or ... indicate a leader of each group
- to care about **people** – participants engagement

FIRST PART

LECTURES
AND
MODERATORS

PARTICIPANT

SHOW UP

SECOND PART

· reactions and chat

· sharing materials

· music · worm up

· games

· break up rooms · Quizes

· background

· tools and aplications

Thinking about people and their roles and perspectives in online lessons

Five stages in Design Thinking process

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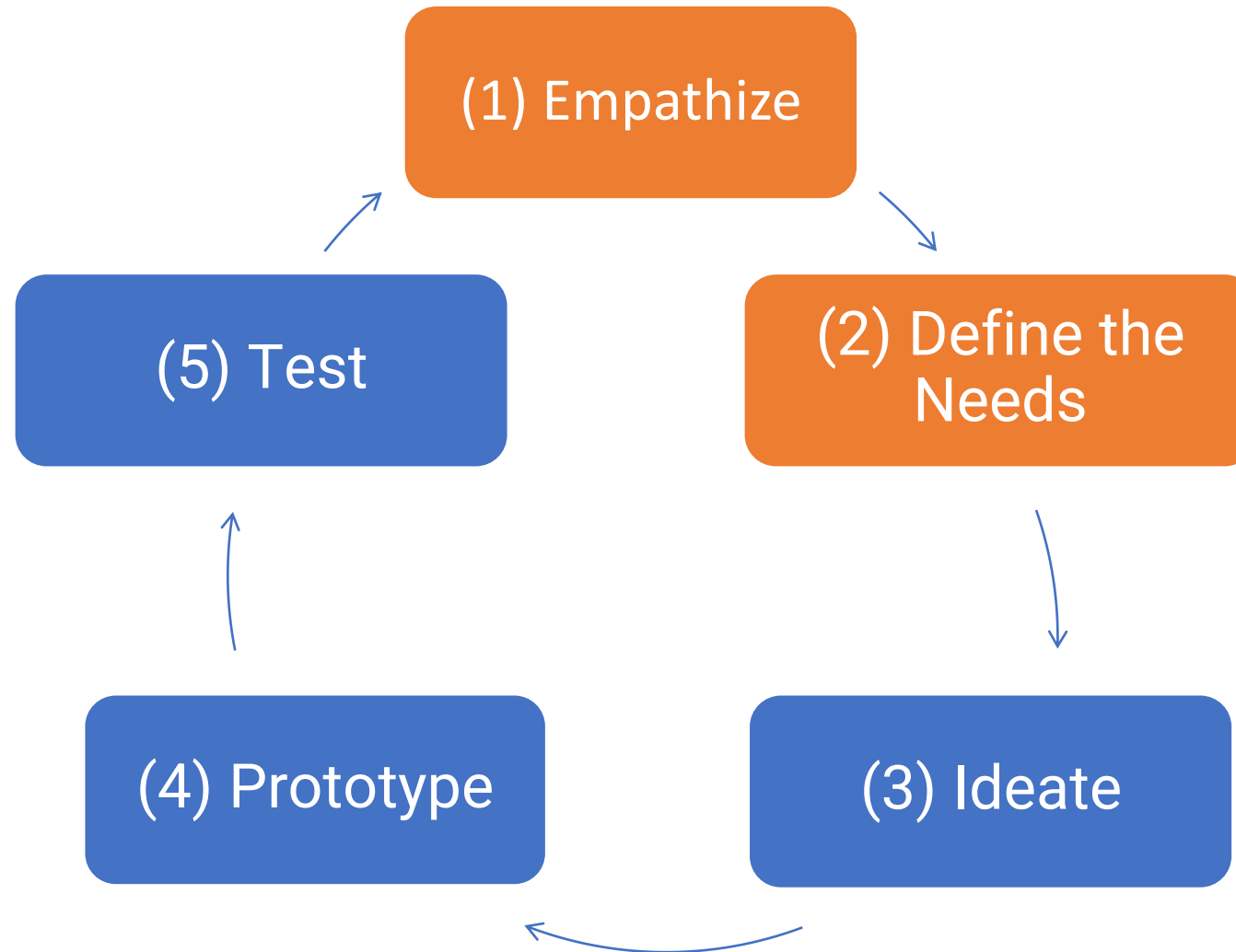
Empathy & Diagnosis of the Needs

Empathy and the interview of users. Towards the diagnosis of needs.

Empathy: How To Get Into User's Shoes?

1. Initiate the group brainstorming – each group should find (write down on the piece of paper) the questions which should be asked to one teacher and/or one student to find out what are the needs important in creating a good online lesson scenario.

2. Choose in a group one person/two persons who will be interviewed.

3. Users of services and products are very different. The same applies to lectures or classes.

4. While creating the brainstorming questions and then interviewing - think of not a target group, but the specific user.

The diagnosis of needs

- Examples of the questions: what was your best experience with online teaching/learning? What do you value the most in online lessons? What about timing, preparation, activities etc. What new lesson will students love? What is important for your satisfaction from an on-line lesson?

- Find patterns - open-ended, non-suggestive questions

- Users - what they like, what they hate

- Questions for reasons:
why? why not? best and worst experience

- Motivation, frustration, delight, habits, demography – features.

- **Think also about the users with special needs (talented, disabled, bored, …)**
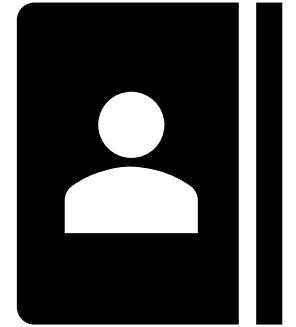
Interviews – structure and roles

- Select teams
- Prepare the questions
- Indicate the person for an interview
- Make interviews

Optimally, at least three people take part in the interview:
1. one (user) tells about his/her experiences
2. one (interviewer) asks the questions and listens actively
3. one takes notes

Empathy – interviews

One person **(interviewer)** asks the questions and listens actively

- Introduce yourself and the purpose of the interview

- Outline the conversation axis in the script

- Underline the goal

- Use the questions which were indicated within brainstorming at the empathy stage

- Listen… 75% time for the user

- If the user wants to add anything it's welcome

Empathy Map – emotions and words; observation of the user

Says:	**Thinks:**
literal quotes	we compare what she/he says with what
things that come up frequently	she/he does and feels
contradictions	

Does:	**Feels:**
what activities result from the statement	what emotions can be read (anger, contentment, joy, bitterness)
what she/he does, chooses	when smiles
what she/he uses	when concentrates
	when moves legs/brows
	when plays with a pen

Key observations – summary discussion

- What contradictions appeared in the Empathy stage?
- What surprised you?
- What was interesting?
- What was new?
- What was least expected?
- What topic was the dominant issue?

Interviews – info for the interviewer

- Don't be afraid of silence - enjoy the silence
- Watch, keep eye contact

- Person number 2 asks for permission if recording, creates good atmosphere, should be experienced and restrained, moderate
- The camera influences the behavior, we forget about the voice recorder or … we don't use it
- Person number 3 notes: silence, hesitation, resistance, and enthusiasm, which questions affect reaction

Five stages in Design Thinking process

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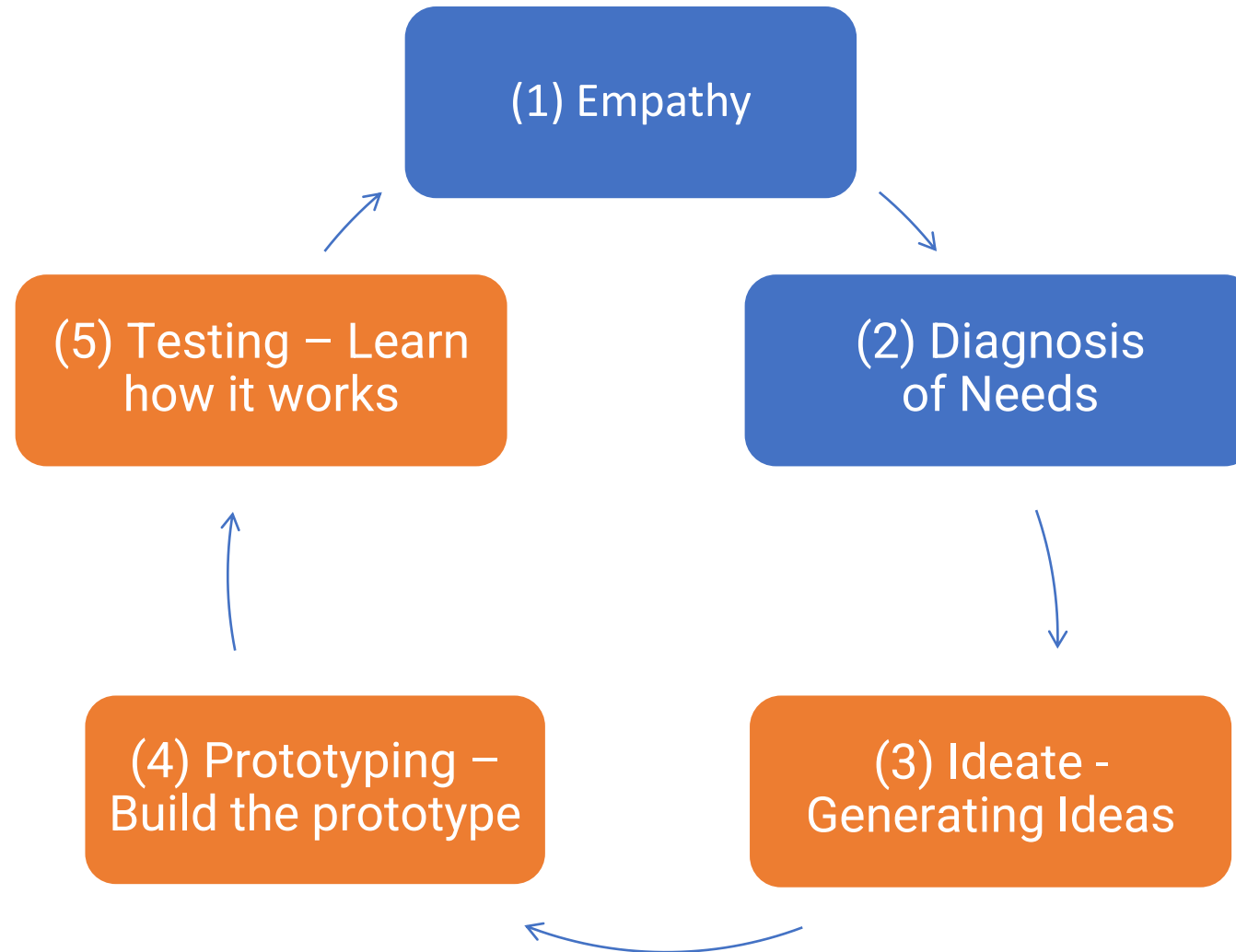
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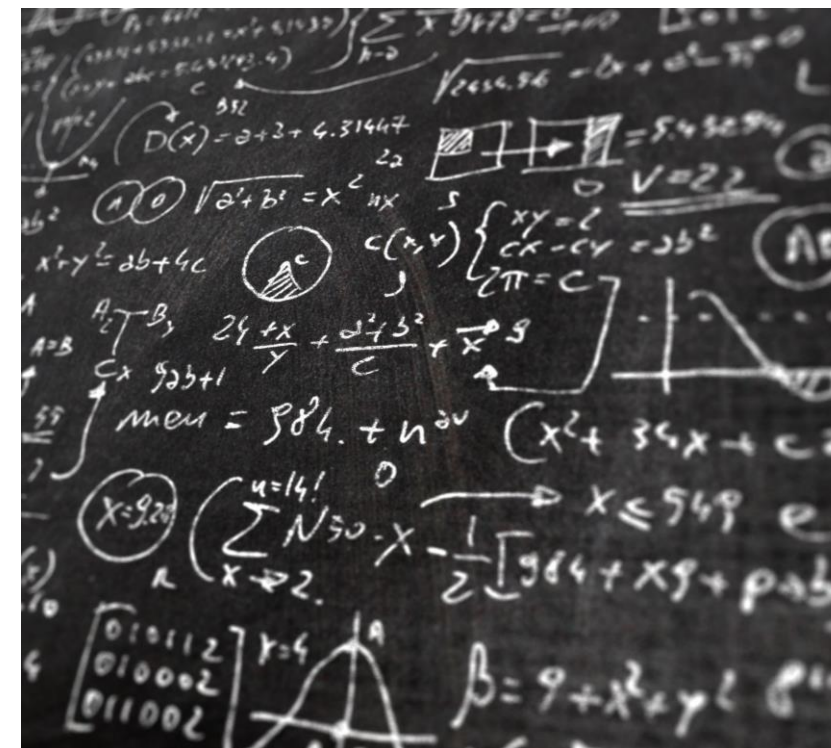
Generating Ideas, Prototyping & Testing

Step 5. Generating Ideas, Prototyping and Testing

- You and the group know now what needs are defined, now generate as many ideas of online lessons scenarios as possible

- Choose ideas with the greatest potential

- Facilitate the transition from idea generation to prototyping

- Imagine your class, imagine your screen

Diagnosis of Needs and Generating Ideas – what came from the interview?

What is the wording of the problem in your opinion?

Whose problem is it?

His? Her? Our? Not ours?

Tips:

What is the most important for him/her (in the process of empathy)?

What did he/she talk the most about?

Where did the emotions go?

While generating the scenarios:

Describe the problem that concerns you

Simple and universal

Start with "How could we do it ..."

How could we write a lesson plan online?

Materials:
use post-it cards

stick them on paper / whiteboard

Time: 10 minutes

WHY? WHAT FOR?

PROBLEM

HOW?

INTRO / CLOSING / CORE

- WELCOME
- EXPLANATION OF RULES AND EXPECTED OUTCOMES
- QUIZ ON PREVIOUS KNOWLEDGE — OR — CLUSTERING OF IDEAS
- CHECK PREVIOUS HOMEWORK
- 15' LECTURE
- TEAM WORK
- COMPREHENSION EXERCISE
- ROLE PLAY DEBATE
- GAME
- PRESENTATION
- REFLECTION
- TAKE HOME MESSAGE
- DISCUSSION OF RESULTS
- VIDEO

...TION / INTRODUCTION / CONTENT

- interactive
- Prepared
- Colourfull
- AVATAR
- COMPARISION GAMES
- SPEED DATES
- PARTICIPATORY SYLLABUS
- PODCAST BEFORE LECTURE SUMMARY (GROUPS)
- POOLS
- Kahoot
- Breake up Rooms
- Study cases
- Simulation Games

- online dice for games
- Use Mentimeter for brainstorming
- Use rewards (Collect a knowledge, 5-10 spoons, talen)
- Watching a meme related to topic and discuss and relate
- Listening their recollegues (maindy recollecion and presenter the resalts
- Use break up rooms
- Use Miro for drawing group presentation on the same table
- Ask students for recording something connected with the subject and present it in public
- Question
- Use Kahoot! for memo game
- Use maps of thoughts
- Playing

- Prepare (Students) a script opera (many episodes) on given subject
- Make short clips
- ...ilava ...m to the ...m (MIRO) in groups
- Prepare infographic on given subject in Canva and than vote for the best project
- Write a diary (online) in groups What on given subject

Generating ideas - TASK

What is our unique perspective?

What was unique in the persona diagnosis phase?

TASK:

The question

Number of ideas

Different personas – different groups

What is your memory from your lectures from your study?

- What do you want to implement?
- What do you want to avoid?

While generating the scenarios ask the questions

Examples:

How could we help Maria feel like a star with the audience when she is in our lecture?

How can we help our talented student spend time efficiently at our lecture even though she has already read our textbook?

During the workshop

Moderator

- determines and proposes at which level of the problem ladder you should work
- checks if the design challenge meets the criteria

Participant

- looks for hidden, unspoken needs
- separates needs from solutions
- formulates design challenges

Brainstorming

- traditional (flipchart, paper, markers)
- drawn (drawing challenges, architecture)
- written (for introverts)
- custom (you choose the way)

Materials

Post-it notes, markers, whiteboard

Time - up to 20 minutes

6-3-5 (max. 6 participants – 3 ideas – 5 minutes) / or 4-3-4

Traditional brainstorming - guidelines
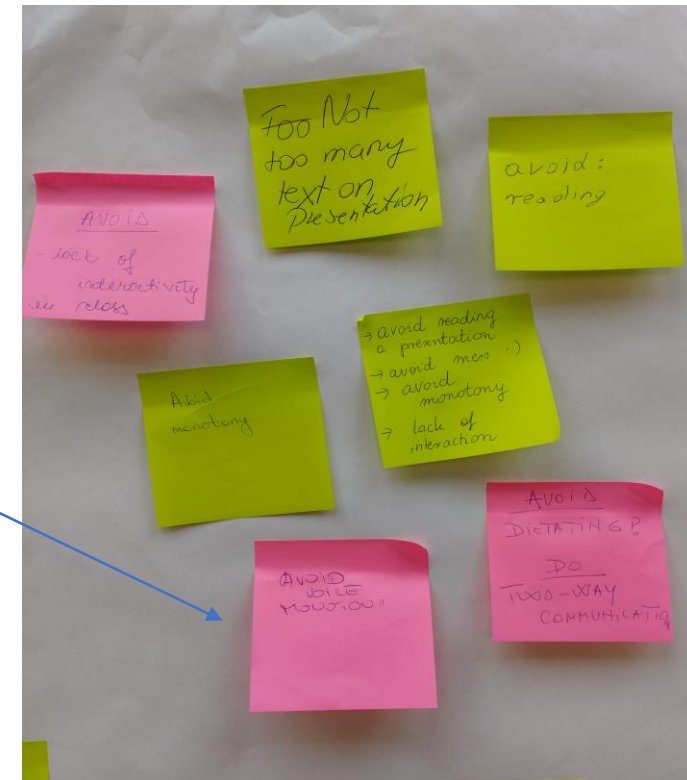
- Write down/draw/write all ideas
- Ideas not concepts
- Ideas on this topic
- One session
- Build associations with the previous ones
- Crazy ideas as well
- Do not assess
- Do not block
- We do not care about corectness/details at this stage

Affinity map – selection of ideas

1. Delightful
2. Rational
3. Team Favourite
4. Long-term with Potential

Prototyping & Testing
Prototypes are now checked.
Use these answers in the scenarios.

What is this?

Is it the user's problem solving?

What does it give the user?

How it works?
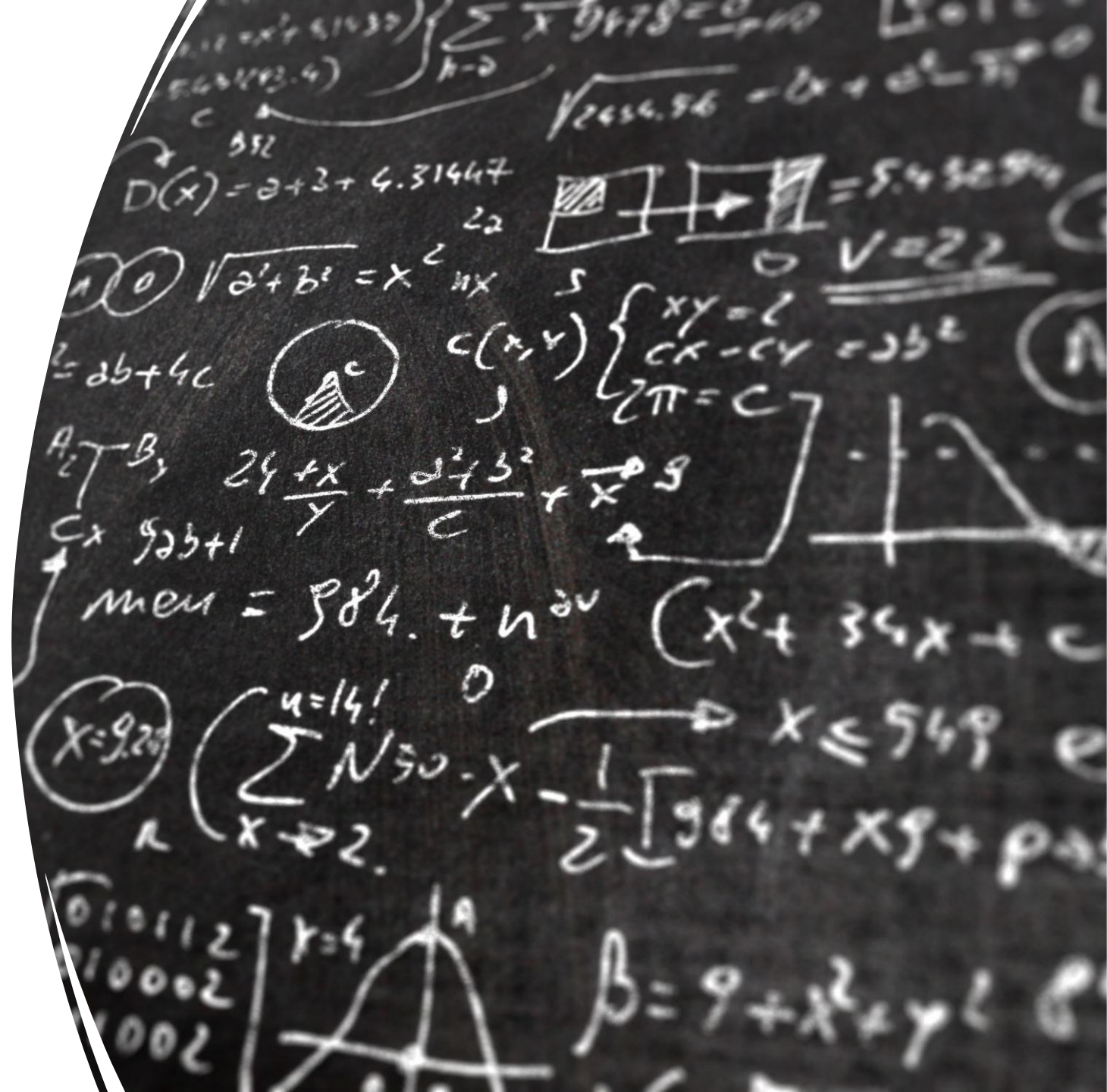
Prototyping & Testing

Prototype 1 – What was checked? What was changed?

Prototype 2 – What was checked? What was changed?

Prototype 3– What was checked? What was changed?
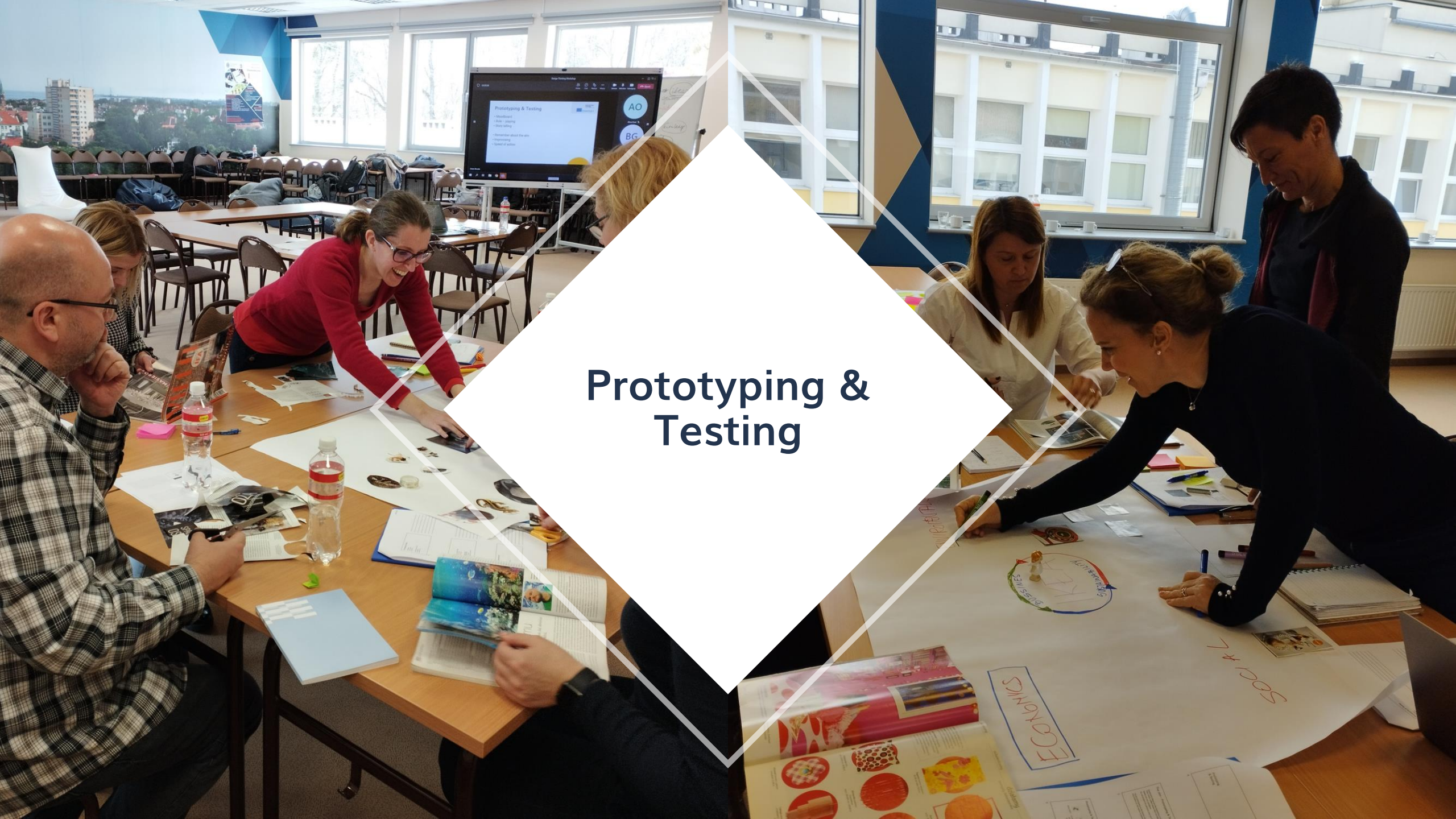
Prototyping &
Testing

Prototyping & Testing

Visual prototyping

Show action (role playing, story telling)

Functionality (remember about the aim)

Distribution in time and space (speed, time limit)

Relations between the elements

Visual prototyping

Generated ideas are the beginning of looking for solutions.
Take notes, collect those that can take us further.

Needs are not solutions!

Do not project for persona, but for needs.

Visual prototyping is the fastest way to show ideas and gather information on the needs of potential users.

Prepare visualization of the scenario – short performance.

Testing

Objective: to test the potential of selected ideas

How is it supposed to work?

What do we want to check?

Listen - don't defend our ideas (remember the empathy stage)

Write down all the answers

Do not analyze the grades, just listen

Prototyping & Testing

- development of ideas selected during the selection

- prototyping allows you to check their potential and achieve results

- summary should be prepared in a written form

How to prepare Design Thinking Workshops?

Instruction how to prepare Design Thinking workshop - in Finnish

**Towards Effective Teaching
Reimagining online courses
for the future of higher education**

Miten toteutetaan Design Thinking Workshop eli Muotoiluajattelutyöpaja?

„InCompEdu" Innovative Competence in On-Line Education

Miten toteutetaan muotoiluajattelutyöpaja?

Tiellä akateemisten luentojen tai oppituntien skenaarioiden työstämiseen

IO3: Reimagining on-line courses for the future of high education

Alkuperäisen työpajan malli: Magdalena Markiewicz, University of Gdansk (UG), magdalena.markiewicz@ug.edu.pl

Käännetty suomeksi (Turun yliopisto, Riitta Pöntynen)

Design Thinking (DT) eli muotoiluajattelu-metodi

Johdanto

- Pyrkii luomaan merkityksellisiä innovaatioita, jotka perustuvat tietoon käyttäjien tarpeista

- Ongelman hahmottaminen empatian ja kiinnostuksen avulla käyttäjien elämää, kokemuksia ja mielipiteitä kohtaan

- Mahdollisimman monen idean luominen, sen sijaan että keskitytään vain parhaaseen ideaan

- Prototyyppien rakentaminen ideoiden testaamiseksi ja ratkaisuista oppimiseksi

InCompEdu –projekti:

- Skenaarioluentojen rakentaminen opetusprosessin käyttäjien eli opiskelijoiden ja opettajien tarpeisiin, kokemuksiin ja mielipiteisiin perustuen

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Innovative Competence in On-Line Education

Co-funded by the Erasmus+ Programme of the European Union

Muotoiluajatteluprosessin viisi vaihetta
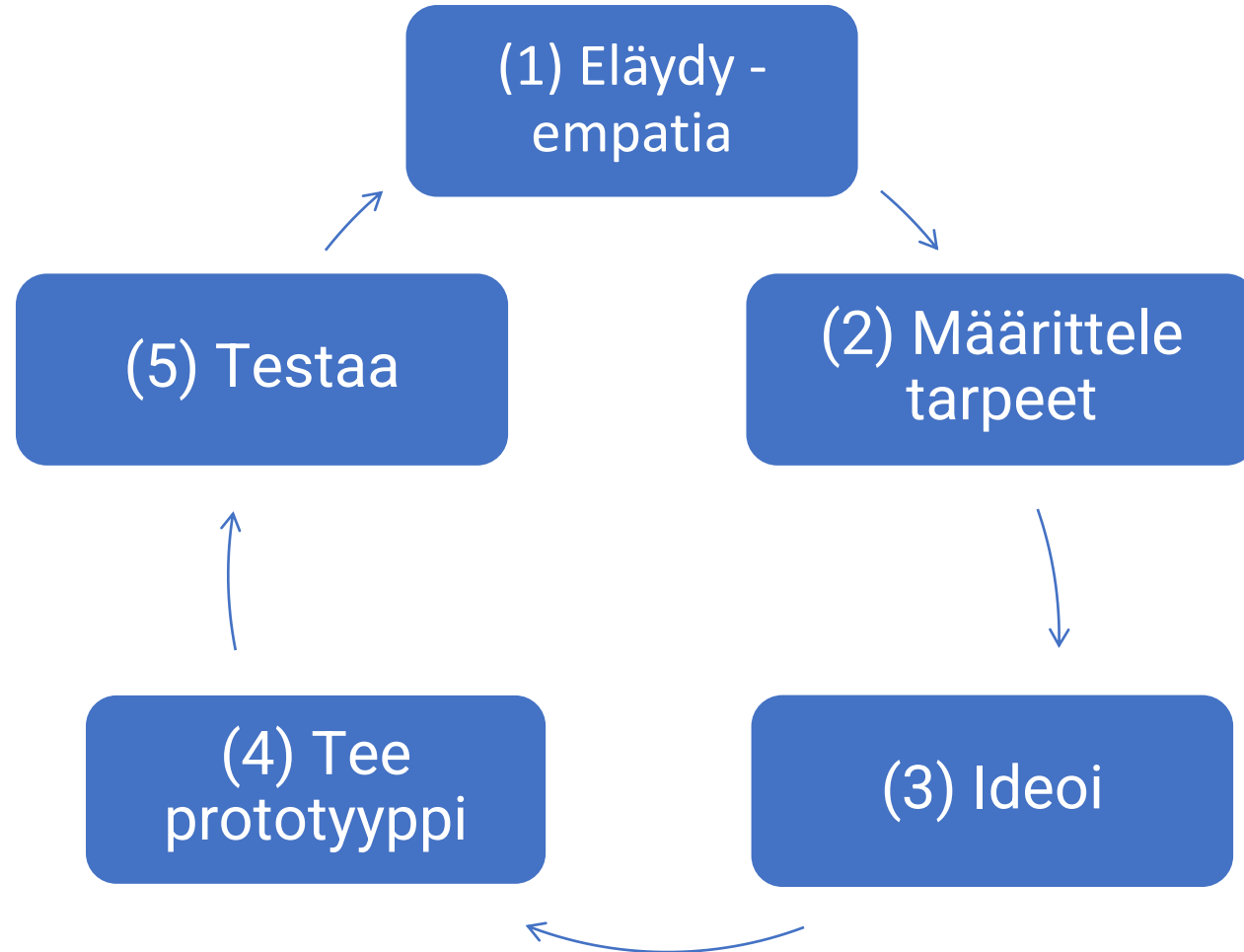
Muotoiluajattelutyöpaja – tausta ja rakenne

Työpajan aikataulun ja organisoinnin elementit – mitä on otettava huomioon

a) lyhyt kuvaus **metodikokemuksesta** yliopistossa, jos sitä on

b) **osallistujien** määrä, heidän kokemuksensa ja alansa

c) **paikka**: missä, miksi tämä paikka on sopiva

d) **aikataulu**: luokassa järjestettävän työpajan ajankohta (päivät, tunnit); valmisteluvaihe, työpajan jälkeen tehtävä tiivistelmä

e) työpajassa käytettävät muotoiluajattelu-metodin **elementit** (kuten tarveanalyysi, prototyyppien työstäminen)

Muotoiluajattelutyöpaja – tausta ja rakenne

Työpajan tulokset

Skenaarioiden kuvaus:

a) ehdotetut vaihtoehtoiset aiheet eri osa-alueilla

b) verkossa käytetyt työkalut, mahdolliset edut näiden työkalujen käyttämisestä vuorovaikutukseen

c) skenaariossa ehdotetut vuorovaikutustavat "luennoija – opiskelija"

d) luennon pituus (optimaalinen – minimi-maksimi)

e) mahdollinen pisteytys ja arviointitavat

f) onko opiskelijan aiemman kokemuksen ja kurssien perusteella ennakkovaatimuksia tai muodollisen valmistautumiseen tarvetta

g) mahdolliset luennon avulla saavutettavat pätevyydet

Valokuvat – osallistujien sitoutuminen toimintaan

Työpajan järjestämisen perussäännöt

Tavoite – etäluentojen skenaarioiden työstäminen käyttäjäkokemukseen perustuen. Työpajan käyttäjiä ovat opettajat ja opiskelijat ja heidän tarpeensa pitäisi huomioida.

Metodi – muotoiluajattelu (Design Thinking)

Osallistujat – akateemiset opettajat ja/tai opiskelijat - (optimikoko 4-12 osallistujaa, vähintään 3)

Työpajan kesto: vähintään 3-4 tuntia, aikaraja on tärkeä tulosten aikaansaamiseksi, toisaalta avoin ilmapiiri on myös tärkeä ideoiden syntymiseen

Moderaattorit:

1-2 henkilöä työpajan aikana, roolina viedä työpajapolkua eteenpäin ja tarkistaa tulokset.

Perussäännöt muotoiluajattelutyöpajan (DT) järjestämiseksi: työpajan kulku koostuu kolmesta elementistä

Prosessi → Tila → Ihmiset

Askel 1. PROSESSIVAIHE
**Kysy osallistujilta ensimmäiset kysymykset – empatia muotoiluajattelutyöpajassa (DT)
(10-20 minuuttia, riippuen osallistujien määrästä)**

Miksi tulit työpajaan?

Missä ja miten haluat käyttää tietoa muotoiluajattelusta?

Esimerkki:

Olen .. työskentelen osastossa ... haluan hyödyntää DT:tä ..

Monitieteiset tiimit ovat sallittuja, joskus jopa suositeltavia

Mitä muotoiluajattelumetodi on?
Miten se voi edistää opetustasi?

Lisätä..

Luoda..

Haastaa..

Viestiä..

Motivoida..

Toteuttaa..
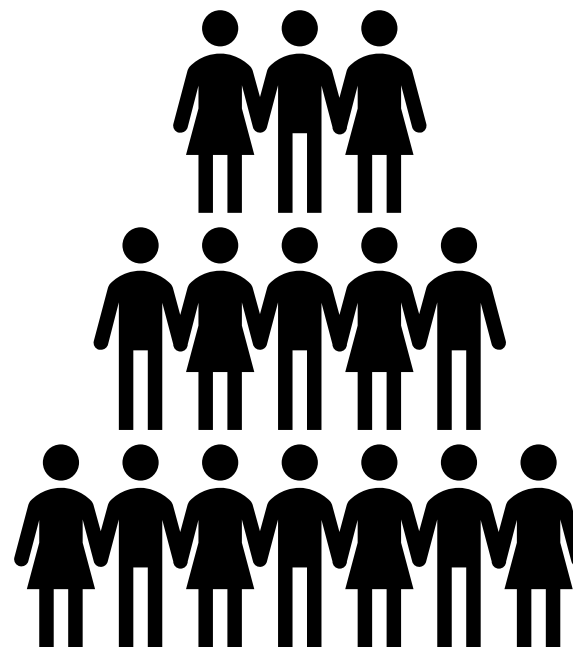
PROSESSI
Tavoitteena on ratkaista ongelmia

Kysy osallistujilta alustavat kysymykset:

- Mitä on innovaatio?

- Mitä on innovaatio opetuksessa?

- Metodi ongelmien ratkaisuun

- Tapa luoda uusia tuotteita ja palveluita

- **Käyttäjä ja hänen tarpeensa ovat keskiössä**

Askel 2. Valmistele TILA

- luo miellyttävä ilmapiiri
- mukava huone, jossa mattoja
- säädettävissä oleva tila
- miellyttävä pienille ryhmille

- erittäin tärkeää haastatteluissa ja yksittäisissä tapaamisissa

Tilan vaatimukset:

- iso työpajatila, tarpeeksi tilaa ryhmälle

- materiaalit prototyyppien tekoon ja työskentelyyn: paperia, erilaisia kyniä, sakset, liimaa, sanomalehtiä kuvien leikkaamiseen, isompaa paperia A2/A1 koossa, värikkäitä post-it-lappuja

- taulut, markkereita, liitutaulut, liidut

Tilaa esitelmille

① VIRTUAL

IT - space

...K GROUND SETTINGS - a picture with the a *familiar university room* = FOR ALL
...AL TOOLS AND MATERIALS PREPARED IN ADVANCE
...SIC 3 MINUTES BEFORE LECTURE
...HERA ON FOR ALL PARTICIPANTS (WITH SOME LIMITATIONS)

② PERSONAL SPACE
TEACHER & STUDENTS

- HOME OFFICE FOR TEACHERS
- PROPER CHAIR AND DESK FOR STUDENTS
- PERSONAL SPACE FOR BOTH (S and T)

PERSONAL SPACE

- GOOD CONNECTION
- CONFY SPACE
- WORKING HARDWARE
- MATERIAL (IF NEEDED)

ONLINE SPACE

- ONLINE ACCESS TO MATERIAL
  - SHARED FOLDER/FILE
  - CHAT
- FRIEDLY + LIMITED TOOLS
- PLATFORM SUITABLE FOR THE TASK
  - MIRO BRAINSTORMING
  - BREAKOUT ROOM FOR DISCUSSION
- CLEAR EXPLANATION OF RULES/SETTING BEFORE STARTING
- 1+ MODERATOR
- DEBRIEFING + DISCUSSION
- THINK WHERE TO GO, NOT HOW TO GO THERE

Luova tila etäluennoilla

Askel 3. IHMISET muotoiluajatteluprosessissa

Käyttäjät voivat edustaa eri tai samaa tieteenalaa

Moderaattorin rooli:
- järjestellä tila
- motivoida osallistujia
- valita, ketkä ja kenen kanssa tiimeissä työskennellään
- hallita ajankäyttöä
- pyytää ryhmää valitsemaan johtaja tai osoittaa johtajat eri ryhmille
- huolehtia ihmisistä – osallistujien sitouttaminen

FIRST PART

LECTURES
AND
MODERATORS

PARTICIPANT

SHOW UP

SECOND PART

· reactions and chat

· sharing materials

· music

· worm up

· games

· break up rooms

· quizes

· background

· tools and aplications

Ihmisten ja
heidän roolinsa
ja näkökulmiensa
huomioiminen
etäluennoilla

Muotoiluajatteluprosessin viisi vaihetta
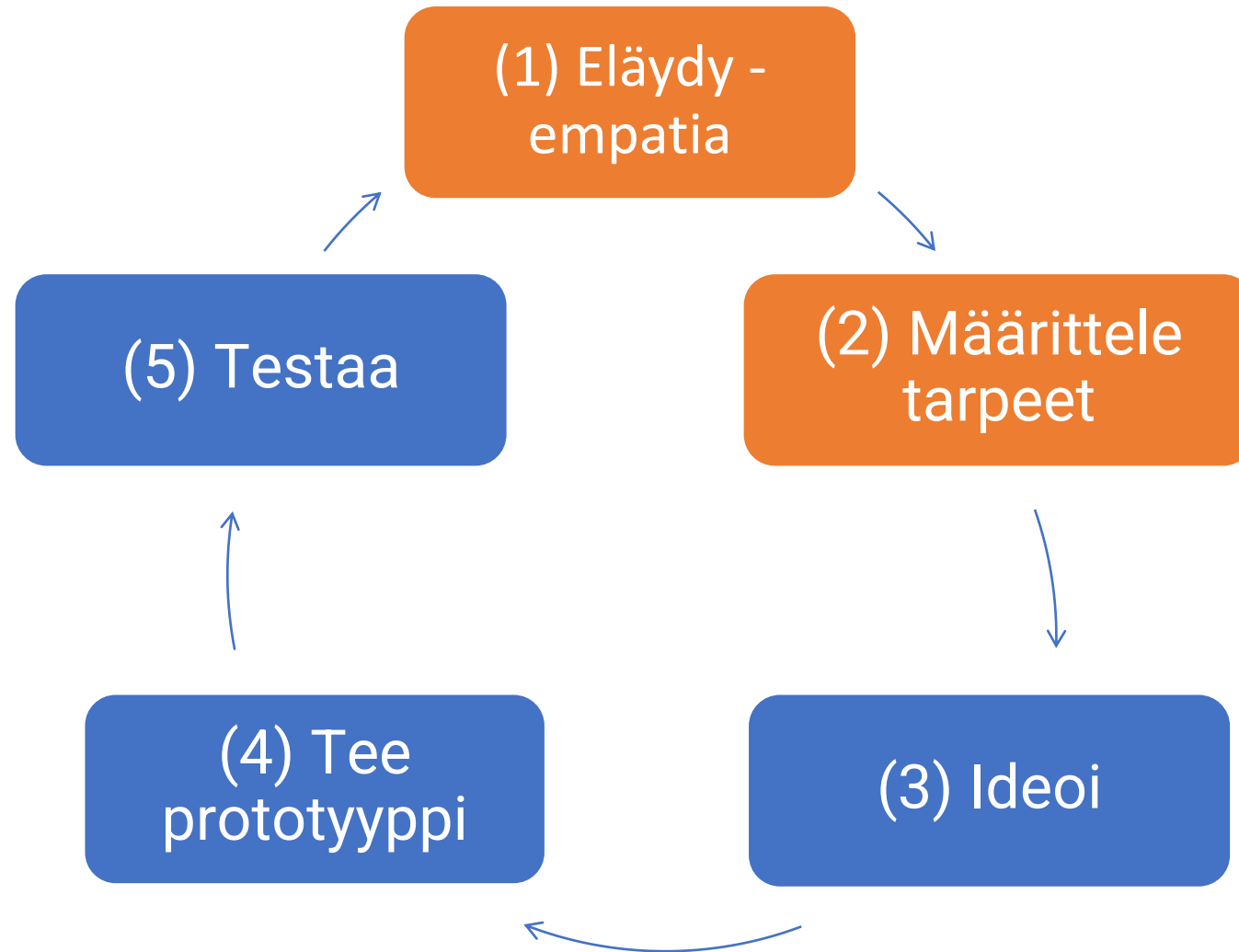
Empatia & tarpeiden analysointi

Empatia ja käyttäjien haastattelut. Kohti tarveanalyysiä.

Empatia: miten päästä käyttäjien saappaisiin?

1. Käynnistä ryhmän "aivoriihi" – jokaisen ryhmän pitäisi löytää kysymykset (kirjataan) jotka pitäisi kysyä opettajalta ja/tai opiskelijalta - löydetään tarpeet, jotka ovat tärkeitä hyvän etäluennon skenaarion luomisessa

2. Valitse ryhmästä yksi tai kaksi henkilöä haastateltaviksi

3. Käyttäjien tarpeet ja tuotteet ovat hyvin erilaisia. Sama pätee luennoilla tai luokissa.

4. Kun tehdään " aivoriihi" -kysymykset ja haastattelu – älä ajattele kohderyhmää vaan yksittäistä käyttäjää

Tarpeiden diagnosointi

- Esimerkkejä kysymyksistä: mikä oli paras kokemuksesi etäopetuksesta/oppimisesta? Mitä arvostat eniten etäluennoilla? Entä ajoitus, valmistelu, toimet jne. Mitä uutta luentoa opiskelijat rakastivat? Mikä on tärkeää, että olisit tyytyväinen etäluentoon?

- Löydä kysymysmalleja - avoimia, ei johdattelevia kysymyksiä

- Käyttäjät – mistä he pitävät, mitä he vihaavat

- Kysymyksiä syihin liittyen: miksi? miksi ei? paras ja huonoin kokemus

- Motivaatio, turhautuminen, ilonaiheet, tavat, väestörakenne – ominaispiirteet

- **Huomioi myös käyttäjät, joilla on erityistarpeita (lahjakkaat, vammautuneet, kyllästyneet..)**

Haastattelut – rakenne ja roolit

- Valikoi tiimit
- Valmistele kysymykset
- Valitse henkilöt haastatteluita varten
- Tee haastattelut

- Optimitilanteessa, vähintään kolme henkilöä osallistuu haastatteluun:
1. yksi (käyttäjä) kertoo kokemuksistaan
2. yksi (haastattelija) kyselee ja kuuntelee aktiivisesti
3. yksi tekee muistiinpanot
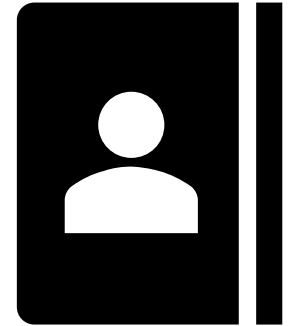
Empatia – haastattelut

Yksi henkilö (haastattelija) kysyy kysymykset ja kuuntelee aktiivisesti

- Esittele itsesi ja haastattelun tarkoitus
- Rajaa keskustelun ydin käsikirjoituksessa
- Korosta päämäärää
- Käytä kysymyksiä, jotka valittiin "aivoriihen" avulla empatiavaiheessa

- Kuuntele…varaa 75 % ajasta käyttäjälle (haastateltava)
- Jos haastateltava haluaa lisätä jotain, se on hyvä ja tervetullutta

Empatiakartta – tunteet ja sanat, käyttäjän havainnointi

Sanoo: Sanalliset sitaatit Usein esille tulevat asiat Ristiriidat	**Ajattelee:** Vertaamme sitä mitä hän sanoo, siihen mitä hän tekee ja tuntee
Tekee: Mitä tekoja syntyy väittämistä Mitä hän tekee, valitsee Mitä hän käyttää	**Tuntee:** Mitä tunteita voidaan havaita (viha, tyytyväisyys, ilo, katkeruus) Milloin hymyilee Milloin keskittyy Milloin liikuttaa jalkojaan/kulmakarvojaan Milloin leikkii kynällä

Päällimmäiset havainnot – keskustelun tiivistelmä

- Mitä vastakohtia ilmeni empatiavaiheessa?
- Mikä hämmästytti sinua?
- Mikä oli mielenkiintoista?
- Mikä oli uutta?
- Mikä oli vähiten odotettua?
- Mikä aihe oli eniten esillä?

Haastattelut – infoa haastattelijalle

- Älä pelkää hiljaisuutta – nauti siitä
- Katsele, pidä katsekontakti

- Henkilö numero 2 kysyy lupaa mahdolliseen nauhoitukseen, luo hyvää ilmapiiriä, pitäisi olla kokenut ja hillitty, maltillinen
- Kamera vaikuttaa käytökseen, unohdamme äänityksen tai …emme käytä sitä
- Henkilö numero 3 huomioi: hiljaisuus, epäröinti, vastustaminen ja innokkuus, mitkä kysymykset vaikuttavat reaktioon

5 vaihetta muotoiluajatteluprosessissa

(1) Eläytyminen - empatia

(2) Tarpeiden analysointi

(3) Ideointi – ideoiden työstäminen

(4) Prototyyppien rakentaminen

(5) Testaaminen – opi miten se toimii
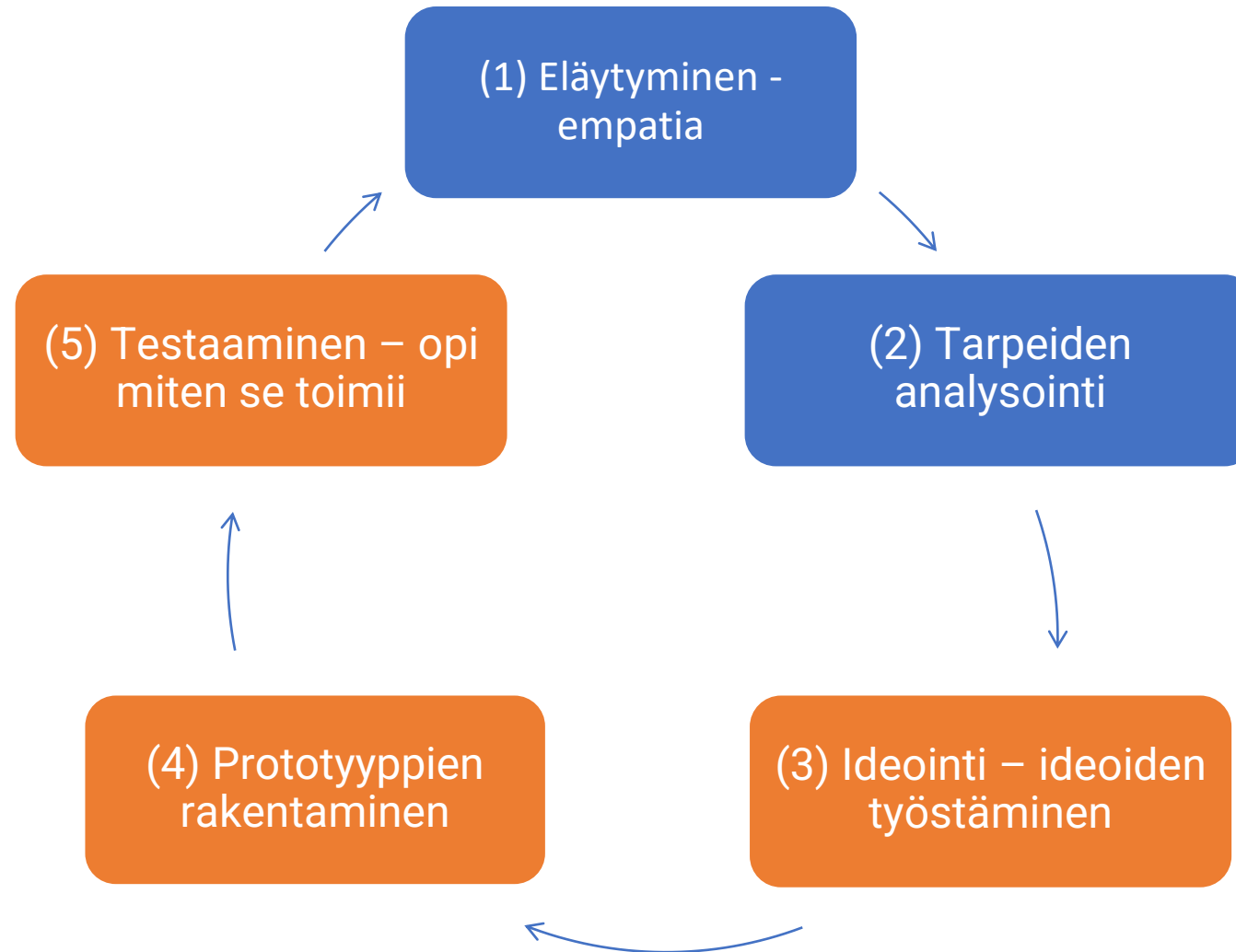
Ideoiden luonti, prototyyppien tekeminen & testaus

Askel 5. Ideoiden luonti, prototyyppien tekeminen ja testaus

- Sinä ja ryhmä tiedätte nyt mitkä tarpeet on määritelty, nyt luotte mahdollisimman monia ideoita etäluentoskenaarioista kuin mahdollista

- Valitse ideoita, joilla on suurin potentiaali

- Edistä siirtymää idean luonnista prototyyppiin

- Kuvittele luokkasi ja ruutusi
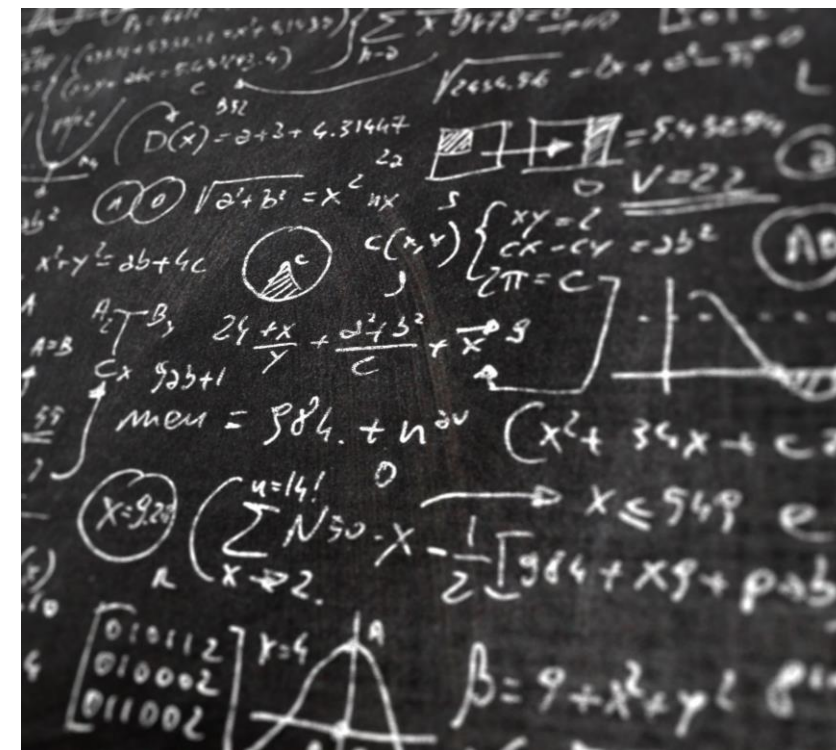
Tarpeiden diagnosointi ja ideoiden luominen – mitä haastatteluista saatiin?

Miten ongelma voidaan mielestäsi sanoittaa?

Kenen ongelma on?

Hänen? Meidän? Ei kuulu meille?

Vinkkejä:

- Mikä on tärkeintä hänelle (empatiaprosessissa)?
- Mistä hän puhui eniten?
- Minne tunteet katosivat?

Skenaarioita luotaessa:

- Kuvaa ongelma, joka koskee sinua
- Yksinkertainen ja universaali
- Aloita näin: "Miten voisimme tehdä sen…?
- Miten voimme kirjoittaa etäluennon suunnitelman?

Materiaalit:

- käytä post-it lappuja,

laita ne paperille tai taululle

Aika: 10 minuuttia

MIKSI? MITÄ VARTEN?

ONGELMA

MITEN?

INTRO

CORE

CLOSING

INTRODUCTION

CONTENT

- Welcome
- Explanation of rules and expected outcomes
- Quiz on previous knowledge
- OR
- Clustering of ideas
- Check previous homework
- Discussion of results
- 15' Lecture
- Team work
- Comprehension exercise
- Role play / Debate
- Game
- Presentation
- Reflection
- Take home message
- Video

- interactive
- prepared
- colourfull
- AVATAR
- COMPARISON GAMES
- SPEED DATES
- PARTICIPATORY SYLLABUS
- PODCAST BEFORE LECTURE SUMMARY (GROUPS)
- Pools
- Kahoot
- Break up Rooms
- Study Cases
- Simulation Games

- online dice for games
- Use Mentimeter for brainstorming
- Use rewards (Collect a knowledge / knowledge / 10 spoons tokens)
- Make short clips
- Prepare (students) a script opera (many episodes) on given subject
- Watching a meme related to the topic and discuss and relate
- Listening their colleagues (mainly) experiences and present the results
- Use break up rooms
- Use Miro for drawing group presentation on the same table
- Ask students for recording something connected with the subject and present it in public
- Question
- Use Kahoot! for memo game
- Use maps of thoughts
- Prepare infographic on given subject in Canva and then vote for the best project
- Write a diary (online) what on given subject in groups
- Playing

TEHTÄVÄ- ideoiden luonti

Mikä on uniikki näkökulmamme?

Mikä oli uniikkia henkilön diagnoosivaiheessa?

TEHTÄVÄ:

- Kysymys
- Ideoiden määrä
- Erilaiset henkilöt – erilaiset ryhmät

34. Mitä muistat luennoilta opintojesi aikana?

- Mitä haluat toteuttaa?
- Mitä haluat välttää?

Skenaarioita luotaessa kysy kysymyksiä

Esimerkkejä:
Miten voisimme saada Marian tuntemaan itsensä tähdeksi yleisön joukossa, kun hän on luennollamme?
Miten voimme auttaa lahjakasta opiskelijaamme käyttämään tehokkaasti aikaa luennollamme, vaikka hän on jo lukenut oppikirjan?

Työpajan aikana

Moderaattori

- määrittelee ja ehdottaa, millä ohjelman askeleella sinun pitäisi työskennellä
- tarkistaa, täyttääkö muotoiluhaaste kriteerit

Osallistuja

- etsii piilotettuja, sanomattomia tarpeita
- erottaa tarpeet ratkaisuista
- muodostaa muotoiluhaasteita

Aivoriihi

- perinteinen (fläppitaulu, paperi, markkerit)
- piirretty (piirretään haasteet, arkkitehtuuri)
- kirjoitettu (introverteille)
- itse valittu tapa

Materiaalit

Post-it-laput, markkerit, taulut

Aika: enintään 20 minuuttia

6-3-5(enintään 6 osallistujaa – 3 ideaa – 5 minuuttia) / tai 4-3-4

Perinteinen aivoriihi - ohjeet

- kirjaa/piirrä/kirjoita kaikki ideat
- ideat, ei käsitteet
- ideat tästä aiheesta
- yksi sessio
- luo yhteyksiä edellisten kanssa
- myös hullut ideat
- älä arvioi
- älä estä
- tässä vaiheessa emme välitä oikeellisuudesta/yksityiskohdista

Samankaltaisuuskartta – ideoiden valinta

1. ilahduttavat
2. rationaaliset
3. tiimin suosikit
4. mahdolliset pidemmällä ajalla
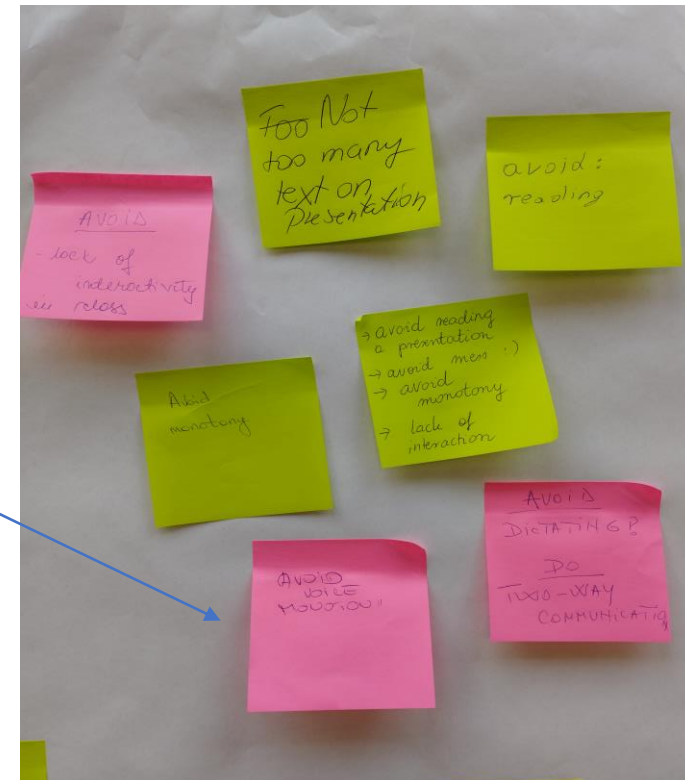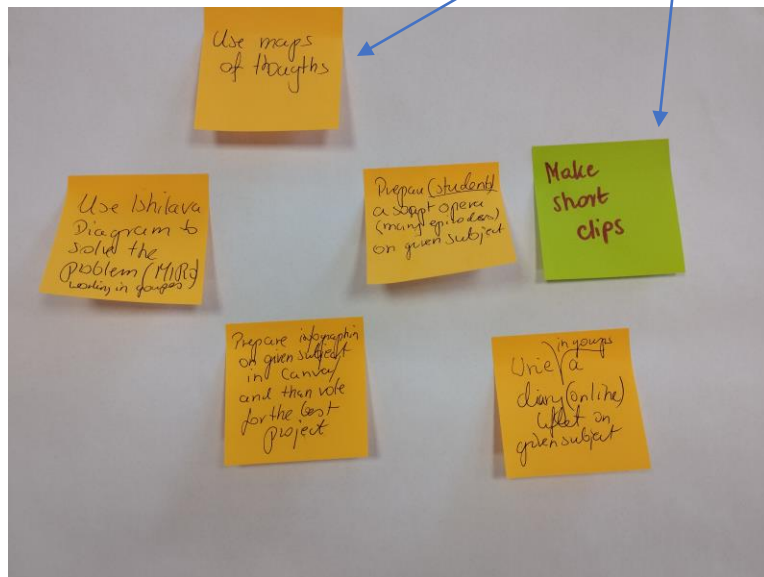
Prototyyppien teko & testaus

- Prototyyppi 1. Mitä tarkistettiin? Mitä muutettiin?
- Prototyyppi 2. Mitä tarkistettiin? Mitä muutettiin?
- Prototyyppi 3. Mitä tarkistettiin? Mitä muutettiin?

Prototyyppien teko & testaus

Prototyyppien teko & testaus

Visuaalisten prototyyppien teko

Näytä toiminta

(roolipelit, tarinat)

Toiminnallisuus (muista tavoite)

Jako ajassa ja paikassa (nopeus, aikarajat)

Suhteet elementtien välillä

Visuaalisten prototyyppien teko

- Syntyneet ideat ovat alku ratkaisujen etsimiseen. Tee muistiinpanoja, kerää ne jotka voivat viedä meidät pidemmälle.

- **Tarpeet eivät ole ratkaisuja!**

- Älä projisoi personaa, vaan tarpeita varten.

- Visuaalisten prototyyppien teko on nopein tapa esittää ideoita ja kerätä tietoa potentiaalisten käyttäjien tarpeista.

- Valmistele skenaarion visualisointi – lyhyt esitys

Testaus

- Päämäärä: testata valittujen ideoiden potentiaali
- Miten sen on tarkoitus toimia?
- Mitä haluamme tarkistaa?

Kuuntele – älä puolusta ideoitamme (muista empatiavaihe)

Kirjaa kaikki vastaukset

Älä analysoi, kuuntele vain

Prototyyppien teko & testaus

- kehitetään valittuja ideoita
- prototyypittäminen mahdollistaa niiden potentiaalin tarkistamisen ja tulosten saavuttamisen
- tehdään kirjallinen tiivistelmä

Miten toteutetaan Design Thinking Workshop eli Muotoiluajattelutyöpaja?

Instruction how to prepare Design Thinking workshop - in Italian

**Towards Effective Teaching
Reimagining online courses
for the future of higher education**

Come preparare un workshop su Design Thinking?

La metodologia del Design Thinking

Introduzione

- Obiettivo di creare delle innovazioni didattiche sulla base della conoscenza dei fabbisogni degli utilizzatori

- Mappatura dei problemi attraverso empatia e condivisioen degli interessi, esperienze e opnioni dei partecipanti

- Definizione di un numero elevato di possibili idee senza focalizzarsi su una soltanto

- Costruzione di prototipi per discutere l'idea e le possibili soluzioni

Progetto InCompEdu:

- Costruire scenari di lezione sulla base dei fabbisogni, le esperienze e le opinioni di studenti e docenti coinvolti nel processo formativo.

Le cinque fasi del processo di design thinking
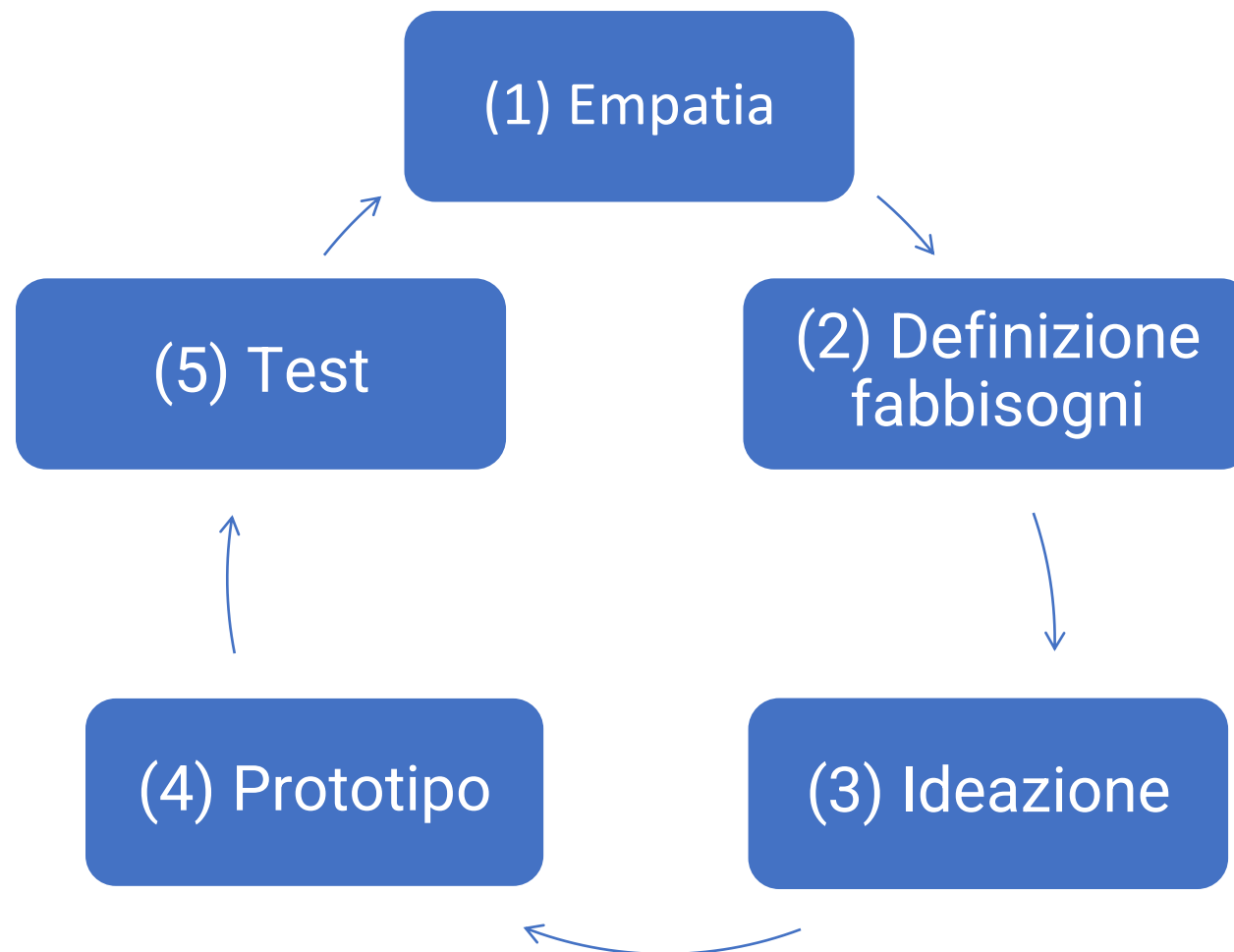
Design Thinking Workshop – Prerequisiti e struttura

Gli elementi importanti da considerare per la programmazione e l'organizzazione del workshop

a) Breve descrizione delle esperienze in termini di **metodologie didattiche** all'università, se presenti

b) **Numero di partecipanti**, loro esperienza e area di interesse

c) La **sede**: dove organizzare il workshop e quali sono i vantaggi

d) Il **programma**: giorni, ore di formazione in aula e preparazione dei materiali e sintesi al termine del workshop

e) Gli **elementi** della metodologia di design thinking utilizzati durante il workshop (come la mappatura dei fabbisogni, la costruzione dei prototipi)

Design Thinking Workshop – Prerequisiti e struttura

I risultati del workshop

La descrizione degli scenari

   a. Argomenti proposti come opzioni su differenti aree

   b. Strumenti on-line utilizzati, possibili benefici legati all'interazione con tali strumenti

   c. Canali di interazione „docente – studenti" all'interno dello scenario

   d. La durata della lezione (ottimale – minima - massima)

   e. La valutazione finale e i criteri utilizzati

   f. Quali sono i prerequisiti, o l'attività preparatoria necessaria, dal punto di vista degli studenti considerando sia la loro esperienza personale che i corsi sostenuti

   g. Competenze che verranno acquisite al termine della lezione

Fotografia – Coinvolgimento dei partecipanti nella discussione.

Regole di base per l'organizzazione del workshop

Obiettivo - Costruire scenari di lezioni online basare sull'esperienza dei partecipanti. I partecipanti sono sia studenti che docenti e i loro fabbisogni devono essere considerati congiuntamente nel workshop.

Metodologia – Design Thinking method.

Partecipanti – Docenti universitari e/ studenti
(4-12 persone è la dimensione ottimalre e il gruppo minimo è di 3 persone).

Durata: 3-4 ore almeno, i vincoli temporali limitati aiutano a raggiungere l'obiettivo ma una atmosfera aperta è necessaria per discutere e sviluppare nuove idee.

Moderatori:

1-2 pesone da coinvolgere durante l'intero workshop per tenere il filo logico dei lavori e verificare i risultati.

Regole di base per gestione del DTW: Il percorso del workshop consiste di 3 elementi

Processo → Spazio → Partecipanti

Step 1. La fase di processo

Chiedi ai partecipanti alcune prime domande e sviluppa l'empatia nel DT (10-20 minuti sulla base del numero di partecipanti)

Perchè hai deciso di partecipare al workshop?

Dove e come pensi di utilizzare le competenze legate al design thinking?

Esempio:

Io sono … Io lavoro al dipartimento di … Vorrei utilizzare il DT in …

Team interdisciplinari sono possibili e in alcuni casi anche raccomandati.

Che cosa rappresenta realmente il metodo di design thinking? Coem può contribuire al metodo di insegnamento?

Per far crescere …
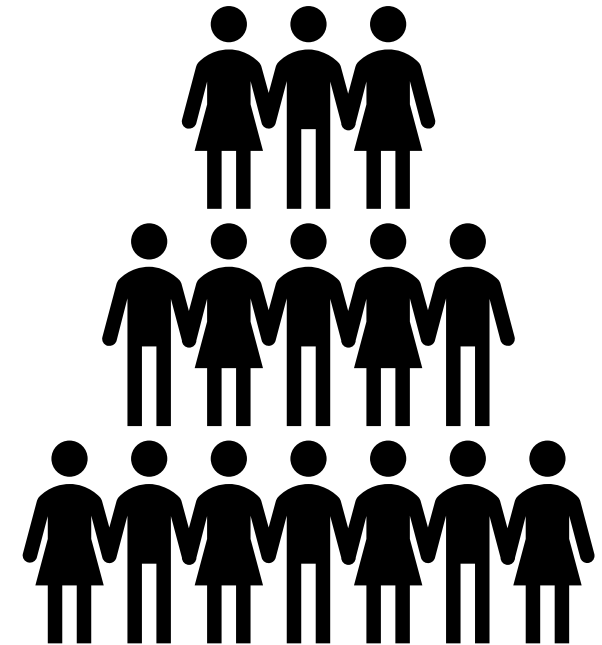
Per creare …

Per coinvolgere ….

Per comunicare …

Per motivare …

Per applicare ….

Il PROCESSO
L'obiettivo di trovare soluzioni

Fai ai partecipanti le seguenti domande iniziali:

• Che cos'è l'innovazione?

• Che cos'è l'innovazione nell'insegnamento?

Esempio:

• La metodologia per risolvere problemi

• La soluzione per creare nuovi prodotti o servizi

• **La soluzione per mettere l'utilizzatore e i suoi fabbisogni al centro**

Step 2. Preparare lo SPAZIO

- Creare un atmosfera confortevole
- Aule accoglienti con tappeti
- Flessibile
- Adatta a gruppi piccoli

- Area riservata per interviste e o meeting individuali

Gli spazi necessari

- Area ampia per il workshop con spazio definito in funzione del numero di partecipanti

- Materiali per la creazione del prototipo: carta, matite, penne, forbici, colla, giornali, figli di dimensione A1 o A2, post it colorati

- Lavagne, pennarelli o gessi colorati

Spazio alle presentazioni

① VIRTUAL
IT - space

...KGROUND SETTINGS - a picture with a familiar university room = FOR ALL
...AL TOOLS AND MATERIALS PREPARED IN ADVANCE
...SIC 3 MINUTES BEFORE LECTURE
...ERA ON FOR ALL PARTICIPANTS (WITH SOME LIMITATIONS)

② PERSONAL SPACE
TEACHER & STUDENTS

– HOME OFFICE FOR TEACHERS
– PROPER CHAIR AND DESK FOR STUDENTS
– PERSONAL SPACE FOR BOTH (S and T)

PERSONAL SPACE
• GOOD CONNECTION
• COMFY SPACE
• WORKING HARDWARE
• MATERIAL (IF NEEDED)

ONLINE SPACE
• ONLINE ACCESS TO MATERIAL
  - SHARED FOLDER/FILE
  - CHAT
• FRIENDLY + LIMITED TOOLS
• PLATFORM SUITABLE FOR THE TASK
  - MIRO BRAINSTORMING
  - BREAKOUT ROOM FOR DISCUSSION
• CLEAR EXPLANATION OF RULES/SETTING BEFORE STARTING
• 1+ MODERATOR
• DEBRIEFING + DISCUSSION
• THINK WHERE TO GO, NOT HOW TO GO THERE

La creazione degli spazi nelle lezioni online

Step 3. PARTECIPANTI nel processo di design thinking

I partecipanti possono avera la stessa specializzazione o provenire da diverse discipline

Il ruolo del moderatore

• Organizzare lo **spazio**

• Motivare i **partecipanti**

• Creare i **gruppi** di lavoro

• Gestire i **tempi**

• Chiedere a ciascun gruppo di identificare un responsabile o indicare il responsabile di ciascun gruppo

• Assicurasi del coinvolgimento dei partecipanti

Pensare alle persone e al loro ruolo nelle lezioni online

Le cinque fasi del processo di design thinking
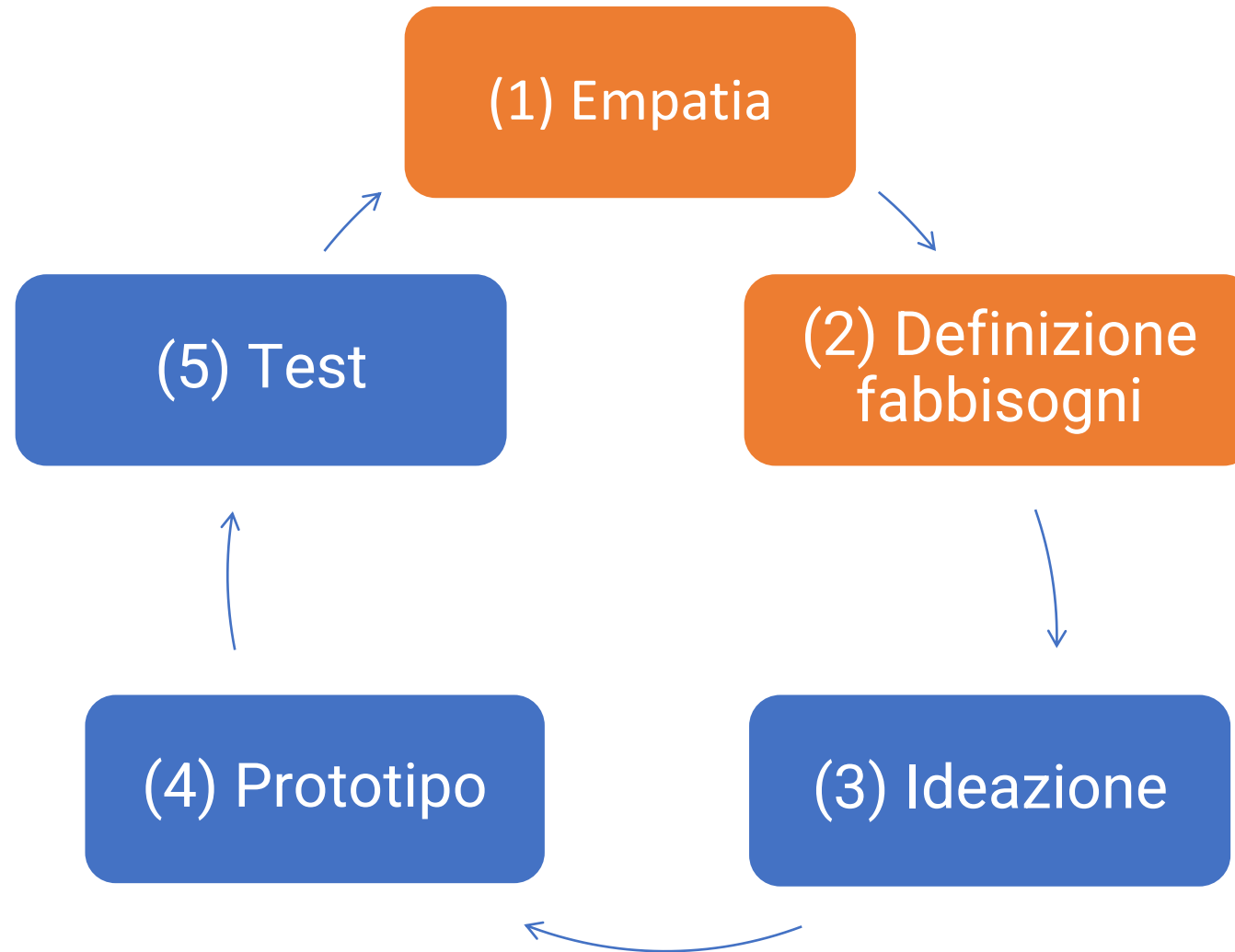
Empatia e definizione dei fabbisogni

Empatia e l'intervista dei partecipanti. Verso un'analisi dei fabbisogni.

Empatia: Come immedesimarsi negli utilizzatori?

1. Avviare una discussione di gruppo: ciascun gruppo deve trovare (e scrivere su un foglio) le domanda che devono essere fatte ad un docente o a uno studente per capire quali sono i fabbisogni importanti nella costruzione di uno scenario di didattica online.

2. Seleziona in ogni gruppo una o due persone che verranno intervistate.

3. Gli utilizzatori di beni e servizi sono molto diversi e lo stesso principio si applica alle lezioni.

4. Nel costruire le domande per la discussione iniziale e per le interventi non pensare ad uno specifico gruppo ma allo specifico partecipante.

L'analisi dei fabbisogni

- Esempi di domande: Quale è stata la tua migliore esperienza sulla didattica online? Quale profilo è più importante nelle lezioni online? Cosa ne pensi sulla durata, la prepazione, le attività,. Etc... che possono essere svolte online per aumentare l'efficacia della formazione? Quali novità nelle lezioni online verranno più apprezzate dagli studenti? Che cosa è più importante per il tuo livello di soddisfazione nella didattica online?

- Trovare percorsi – domande con risposta aperta senza supervisione dell'intervistatore

- Partecipanti – Cosa per loro è più interessente e cosa odiano

- Domande per discussione: Perchè? Perché no? Migliori e peggiori esperienze

- Motivazione, frustrazione, vantaggi, abitudini, e caratteristiche demongrafiche.

- **Valuta anche gli utenti con bisogni speciali (motivati, disabilità, calo attenzione, ...)**

Interviste – Struttura e ruoli

- Selezionare i team
- Preparare le domande
- Indicare le persone per le interviste
- Svolgere le interviste

La soluzione ottimale prevede che almeno tre soggetti diversi prendano parte alle interviste:

1. Un utilizzatore presenta la sua esperienza
2. Un intervistatore pone le domande e ascolta in modo attivo le risposte
3. **Un soggetto prende appunti sull'intervista**
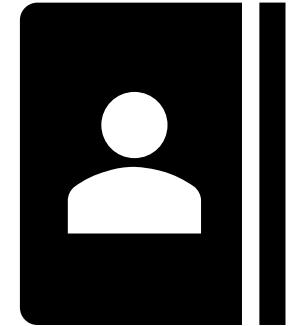
Empatia – Interviste

L'**intervistatore** pone le domande e ascolta in modo attivo:

- Presenta te stesso e l'obiettivo dell'intervista
- Spiega il filo logico della discussione
- Evidenzia il risultato atteso
- Utilizza le domande identificate nella fase di discussione iniziale per la fase di empativa
- Ascolta… almeno per il 75% del tempo dell'intervista
- Se il partecipante vuole aggiungere qualcosa è sempre bene accetto

Mappa dell'empatia – emozioni, parole e monitoraggio intervistato

Parole:	**Pensieri:**
Citazioni letterali Argomenti che vegono riproposti di frequente Contraddizioni	Confrontare quello che lui/lei dice e quello che lui/le fa e prova
Azioni:	**Comportamenti:**
Quali attività sono collegate alle parole? Come vengono influenzate le scelte o le decisioni? Che cosa utilizza?	Quali emozioni possono essere percepite? (rabbia, felicità, gioia, amarezza) Quando sorride? Quando sempra concentrato? Quando muove le gambe e/o le sopracciglia Quando gioca con la penna?

Osservazioni principali – discussione

- Quali sono state le contraddizioni nella fase di empatia?
- Cosa ti ha sorpreso?
- Cosa ti ha interessato?
- Cosa è risultato nuovo?
- Cosa è stato più inatteso?
- Quali argomenti sono stati più discussi?

Interviste – informazioni per gli intervistatori

- Non aver paura del silenzio – Goditi il silenzio
- Guarda e mantieni il contatto visivo

- Il secondo partecipante chiede il permesso per registrare, creando così una buona atmosfera, e deve essere esperto, professionale e non invasivo
- La videocamera influenza i comportamenti, se l'audience si dimentica del registratore ok… altrimenti meglio non utilizzarlo
- Il terzo partecipante prende nota di: silenzi, esitazioni, resistenza, entusiamo e delle domande che hanno generato tale reazione

Le cinque fasi del processo di design thinking

Ideazione, propotipo e test
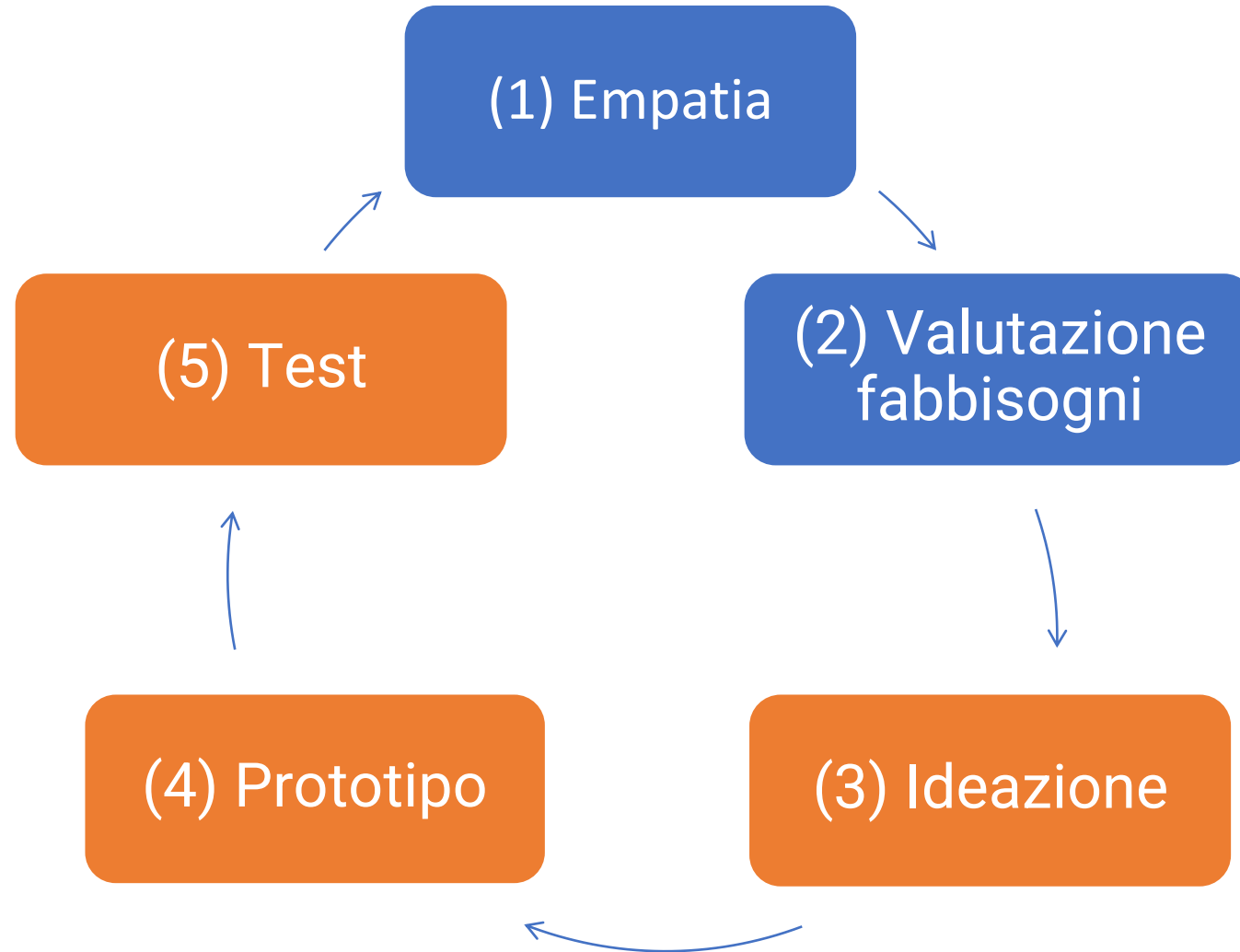
Step 5. Identificazione idee, creazione prototipo e test

- Tu e il gruppo ora conoscete i fabbisogni e potete proporre diverse idee per la creazione di scenari di lezione online
- Selezionate le idee con il maggiore potenziale
- Facilitate la transizione dalla idea al prototipo
- Immagina la tua classe e immagina il tuo schermo del PC

Analisi dei fabbisogni e creazione idee – Cosa ottenere dalle interviste?

Quale è il problema lessicale nella tua opione?

Chi è interessato da questo problema?

Lui? Lei? Noi? Non noi?

Suggerimenti:

Cosa è più importante per lei/lui (nel processo empatico)?

Su cosa cosa lui/lei ha parlato di più?

Cosa dicono le emozioni?

Mentre vengono creati gli scenari

Descrivi il problema che ti riguarda

Semplice e universale

Inizia con " Come potremmo fare a..."

Come progremmo costruire un modello di lezione online?

Materiali:

Utilizza i post-it

Posizionali su una lavagna o su un foglio

Tempo: 10 minuti

PERCHÉ? PER COSA?

PROBLEMA

COME?

Ideazione – ATTIVITÀ

Quale è la nostra prospettiva originale?

Cosa è originale nella valutazione del fabbisogno individuale?

ATTIVITÀ:

La domanda

Il numero delle idee

Le diverse persone e gruppi

Cosa ricordi delle lezioni di quando eri studente

- Cosa vuoi implementare?
- Cosa vuoi evitare?

Durante il processo di generazione degli scenari chiediti queste domande

Esempi:

Come possiamo aiutare Maria a sentirsi importante rispetto la resto dell'audienze mentre segue la nostra lezione?

Come possiamo aiutare gli student più bravi a spendere nel loro miglio il loro tempo anche se hanno già letto quanto presente sul libro di testo?

Durante il workshop

Moderatore

- Decide e propone a che livello analizzare il problema
- Verifica se la struttura rispetta i criteri previsti

Partecipante

- Ricerca per fabbisogni nascosti e non dichiarati
- Distingue le sigenze dale soluzioni
- Formula delle proposte di nuovo design

Discussione idee

- tradizionale (lavagna, carta, evidenziatori)
- grafico (sfide grafiche, grafici e diagrammi)
- scritto (per persone introverse)
- personale (scelta libera della soluzione migliore)

Materiali

Post-it, lavagna, evidenziatori

Tempo: fino a 20 minutes

6-3-5 (max. 6 partecipanti – 3 idee – 5 minuti) oppure 4-3-4

Descrizione idee tradizionale – Linee guida

- Scrivi / disegna / appunta tutte le idee
- Idee e non concetti
- Idee legate all'argomento
- Sessione unica
- Costruisci delle associazioni tra le idee presentate
- Anche le idee più assurde sono utili
- Non valutare
- Non interrompere
- Non preoccuparti in questa fase della correttezza o del dettaglio

Mappa delle affinità – Selezione delle idee

1. Eccezionale
2. Razionale
3. Soluzione preferita dal team
4. Prospettiva di lungo termine
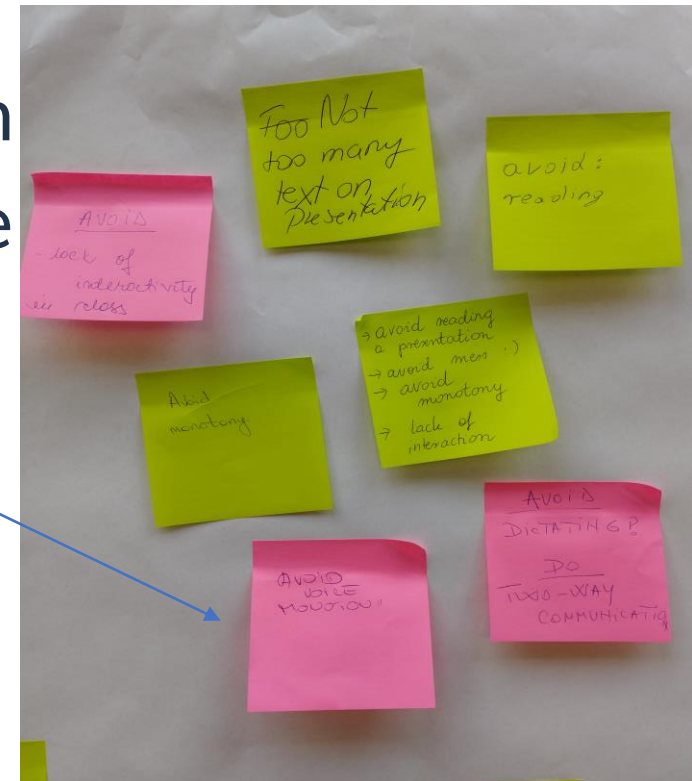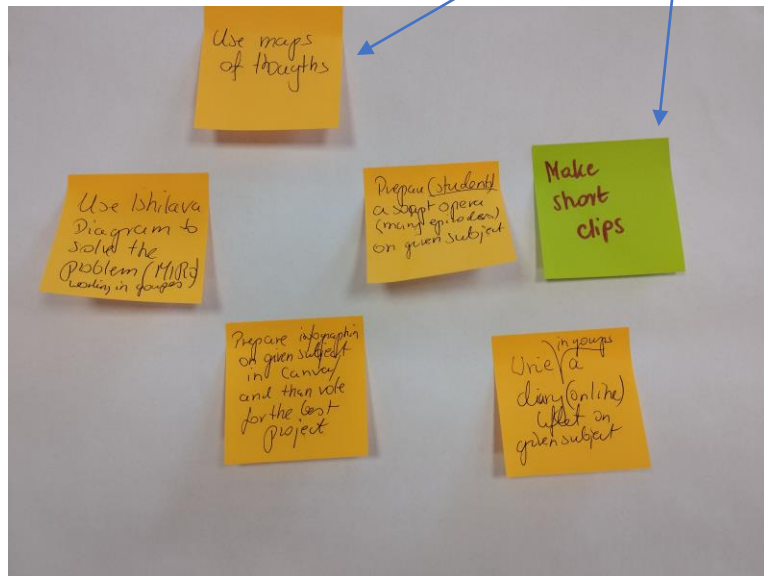
Costruzione prototipi e test
I prototipi sono adesso verificati. Considera le seguenti domande negli scenari

Cos'è?

Rappresenta la soluzione per il problema dell'utilizzatore?

Quale è il vantaggio per l'utilizzatore?

Come funziona?

Costruzione propotipi e test

Prototipo 1 – Cosa è stato oggetto di discussione e/o verifica? Cosa è stato cambiato?

Prototipo 2 – Cosa è stato oggetto di discussione e/o verifica? Cosa è stato cambiato?

Prototipo 3 – Cosa è stato oggetto di discussione e/o verifica? Cosa è stato cambiato?

Costruzione prototipi e test

Costruzione prototipi e test

Visualizzazione dei prototipi

Simulazione (Gioco di ruolo, Narrazione)

Funzionalità (sulla base dell'obiettivo formativo)

Gestione tempi e spazi (velocità, tempi limite)

Legame tra i singoli elementi

Simulazione

Crea idee che possono portare a delle soluzioni.

Prendi nota e raccogli i suggerimenti che possono essere utilizzati per trovare la soluzione

<u>I fabbisogni non rappresentano soluzioni!</u>

Non progettare il corso sulla base del destinatario ma sulla base del fabbisogno.

La simulazione è la soluzione più veloce per illustrare le idee e per raccogliere le informazioni sui fabbisogni dei singoli utilizzatori

Prepara la simulazione con delle presentazioni brevi.

Test

Obiettivo: Valutare le potenzialità delle idee proposte

Come dovrebbe funzionare il corso?

Cosa è necessario verificare nella struttura del corso?

Fase di ascolto – non difendere le tue idee

(ricorda la fase di empatia)

Scrivi le risposte

Non valutare i giudizio, ascolta solo le opinioni.

Costruzione propotipi e test

- Sviluppo delle idee selezionate nelle precedent fasi

- Costruzione dei propotipi che permettono di valutare le potenzialità e la capacità di raggiungere gli obiettivi

- Sintesi dell'incontro che deve essere preparata in forma scritta

Come preparare un workshop su Design Thinking?

Instruction how to prepare Design Thinking workshop - in Polish

**Towards Effective Teaching
Reimagining online courses
for the future of higher education**

Jak przygotowywać warsztaty Design Thinking?

„InCompEdu" Innovative Competence in On-Line Education

Jak przygotowywać warsztaty Design Thinking?

Sposoby na efektywne tworzenie scenariuszy wykładów i ćwiczeń w szkolnictwie wyższym

IO3: Nowe spojrzenie na kursy online dla przyszłości szkolnictwa wyższego

Opracowanie warsztatu: Magdalena Markiewicz, Uniwersytet Gdański (UG), magdalena.markiewicz@ug.edu.pl

Tłumaczenie na polski: Maria Fengler

Metoda Design Thinking

Wprowadzenie

- Cel: tworzenie wartościowych innowacyjnych pomysłów opartych na znajomości potrzeb użytkowników

- Konceptualizacja problemu poprzez empatię oraz zainteresowanie codziennością, doświadczeniami i opiniami użytkowników

- Wypracowanie jak największej liczby pomysłów, a nie tylko jednego najlepszego

- Budowanie prototypów w celu przetestowania pomysłów i znalezienia rozwiązań

Projekt InCompEdu:

- Opracowanie scenariuszy lekcji opartych na potrzebach, doświadczeniach i opiniach studentów i nauczycieli jako użytkowników procesu kształcenia.

5 etapów w procesie Design Thinking
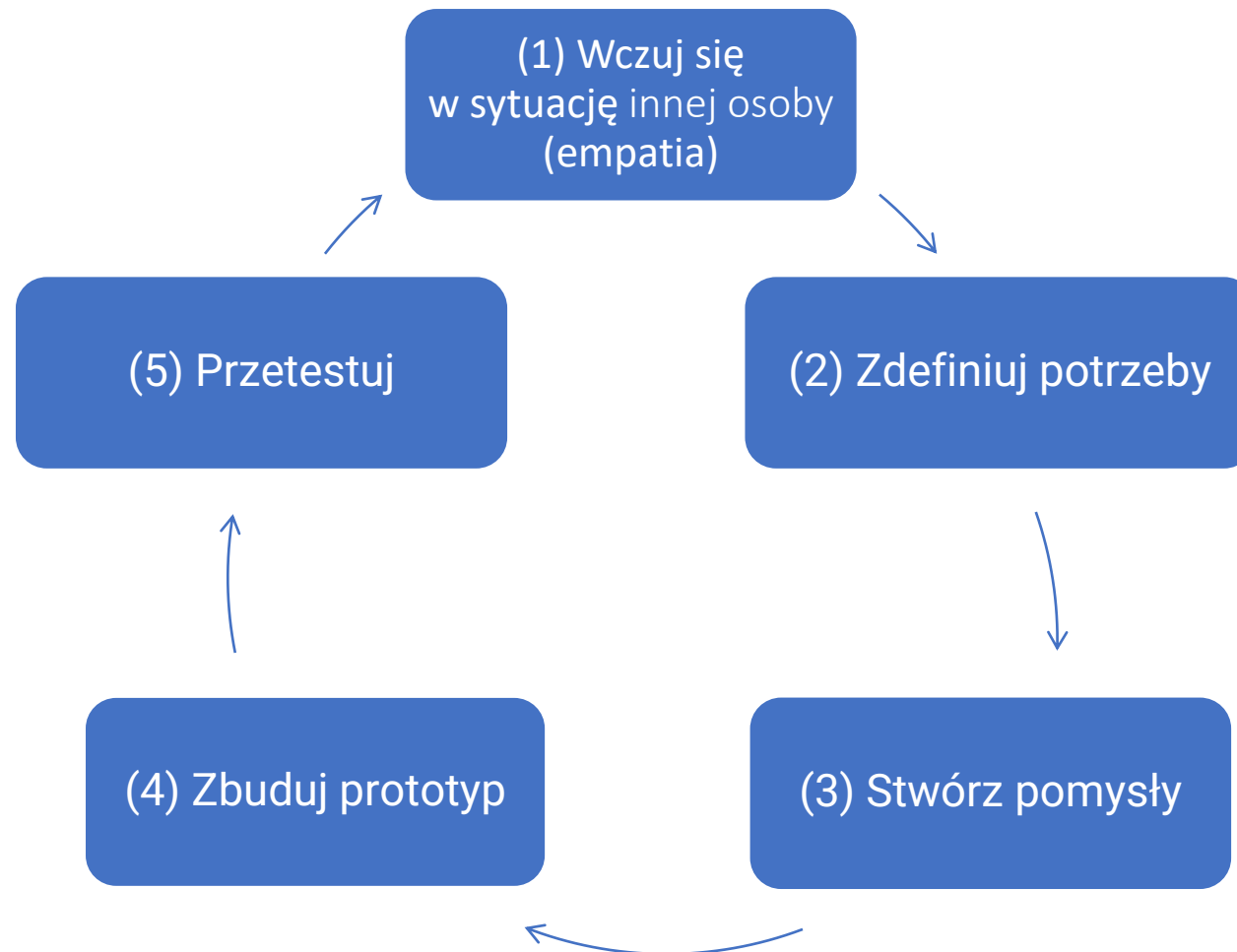
Warsztat Design Thinking – planowanie i struktura

Elementy istotne dla planowania i organizacji warsztatu – co należy rozważyć

a) Krótki opis **doświadczeń** uniwersytetu ze stosowania metody, jeśli takie istnieją

b) Liczba **uczestników**, ich doświadczenia i kierunki studiów / pola zainteresowań

c) **Miejsce warsztatu**: gdzie - i dlaczego to miejsce jest dogodne

d) **Harmonogram**: dni, godziny przygotowania oraz przeprowadzenia warsztatu plus podsumowania po warsztacie

e) **Elementy** metody design thinking wykorzystane podczas warsztatu (analiza potrzeb, budowanie prototypu)

Warsztat Design Thinking – planowanie i struktura

Rezultaty warsztatu

Opisy scenariuszy:

a. Proponowane opcje tematów w różnych dziedzinach

b. Wykorzystane narzędzia, możliwe korzyści w użycia tych narzędzi w interakcji

c. Proponowane sposoby interakcji „wykładowca – studenci" w ramach scenariusza

d. Długość lekcji (optymalna – minimalna – maksymalna)

e. Możliwe sposoby punktacji i oceniania

f. Czy potrzebne są jakieś wymogi wstępne lub formalne przygotowanie z punktu widzenia wcześniejszych doświadczeń studentów oraz kursów, na które uczęszczają

g. Kompetencje, jakie można uzyskać w wyniku udziału w lekcji.

Zdjęcia – zaangażowanie uczestników podczas zajęć.

InComp Edu
Innovative Competence in On-Line Education

Co-funded by the Erasmus+ Programme of the European Union

Podstawowe zasady organizacji warsztatu

Cel - opracowanie scenariuszy lekcji online opartych na doświadczeniach użytkowników. Użytkownikami warsztatu są nauczycieli i studenci, a więc ich potrzeby należy wziąć pod uwagę.

Metoda – metoda Design Thinking.

Uczestnicy – nauczyciele akademiccy i / lub studenci.
(4-12 osób to optymalna liczebność grupy, minimalna liczba to 3 osoby).

Długość warsztatu: 3-4 godziny to minimum; presja czasu jest istotna, aby uzyskać pożądany efekt, ale otwarta atmosfera również jest niezbędna, aby tworzyć nowe pomysły.

Moderatorzy:

1-2 osoby podczas warsztatu; ich rolą jest trzymać się wyznaczonej ścieżki warsztatu i sprawdzać rezultaty.

Podstawowe zasady prowadzenia warsztatu DT: ścieżka warsztatu składa się z 3 elementów

Proces → Przestrzeń → Ludzie

Krok 1. Etap PROCESU

Zadaj uczestnikom pierwsze pytania – empatia w DT (10-20 minut, w zależności od liczby uczestników)

Dlaczego przyszedłeś / przyszłaś na ten warsztat?

Gdzie i jak chciałbyś / chciałabyś wykorzystać znajomość metody design thinking?

Przykład:

Jestem … Pracuję w Instytucie … Chcę używać DT w …

Zespoły interdyscyplinarne są dopuszczalne, a czasem nawet zalecane.

Czym naprawdę jest metoda design thinking? Co może wnieść do Twojego sposobu uczenia?

Zwiększyć …

Stworzyć …

Zakwestionować …

Podjąć wyzwanie …

Zakomunikować …

Zmotywować …

Wdrożyć ….
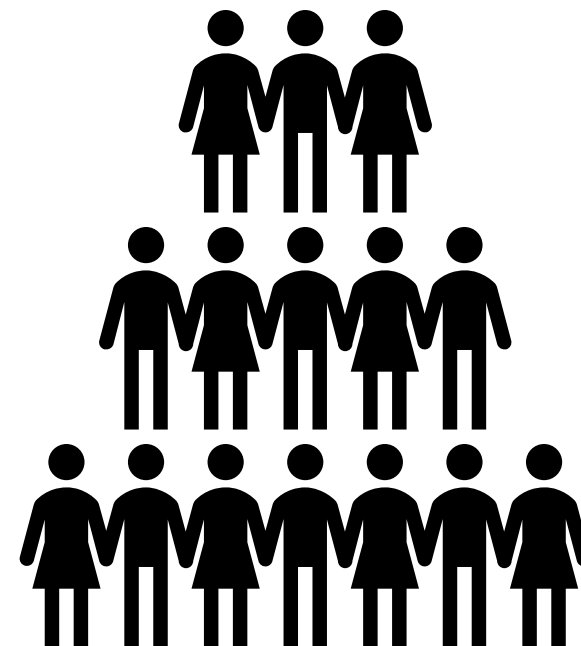
PROCES.
Celem jest rozwiązanie problemów

Zadaj uczestnikom wstępne pytania:
- Czym jest innowacja?
- Czym jest innowacja w nauczaniu?

- Metoda rozwiązywania problemów
- Sposób na stworzenie nowych produktów i usług
- **Użytkownik/Użytkowniczka i jego/jej potrzeby są w centrum**

Krok 2. Przygotuj PRZESTRZEŃ

- stwórz przyjemną atmosferę
- przytulne pomieszczenie z dywanem lub wykładziną
- umożliwiające aranżację
- wygodne dla małych grup

- szczególnie ważne podczas wywiadów i spotkań indywidualnych

Wymagania dotyczące przestrzeni:

- Duża przestrzeń warsztatowa, odpowiednia dla rozmiaru grupy

- Materiały do pracy i budowania prototypów: papier, ołówki, długopisy, nożyczki, klej, gazety do wycinania obrazków, większe arkusze papieru A2/A1, kolorowe karteczki samoprzylepne

- Tablice czarne lub białe, markery, kreda

Przestrzeń do prezentacji

① VIRTUAL
IT - space

KGROUND SETTINGS - a picture with a familiar university room = FOR ALL
AL TOOLS AND MATERIALS PREPARED IN ADVANCE
SIC 3 MINUTES BEFORE LECTURE
ERA ON FOR ALL PARTICIPANTS (WITH SOME LIMITATIONS)

② PERSONAL SPACE
TEACHER & STUDENTS

- HOME OFFICE FOR TEACHERS
- PROPER CHAIR AND DESK FOR STUDENTS
- PERSONAL SPACE FOR BOTH (S and T)

PERSONAL SPACE

- GOOD CONNECTION
- CONFY SPACE
- WORKING HARDWARE
- MATERIAL (IF NEEDED)

ONLINE SPACE

- ONLINE ACCESS TO MATERIAL
  - SHARED FOLDER/FILE
  - CHAT
- FRIEDLY + LIMITED TOOLS
- PLATFORM SUITABLE FOR THE TASK
  - MIRO BRAINSTORMING
  - BREAKOUT ROOM FOR DISCUSSION
- CLEAR EXPLANATION OF RULES/SETTING BEFORE STARTING
- 1+ MODERATOR
- DEBRIEFING + DISCUSSION
- THINK WHERE TO GO, NOT HOW TO GO THERE

Tworzenie przestrzeni na lekcjach online

Krok 3. LUDZIE w procesie design thinking

Użytkownicy mogą reprezentować te same lub różne dyscypliny

Rola moderatora:
- zaaranżować **przestrzeń**
- motywować **uczestników**
- wybrać kto pracuje z kim w **grupach**
- przestrzegać **limitów czasowych**
- poprosić grupę, by wskazała **lidera** lub… wyznaczyć lidera w każdej grupie
- zadbać o **ludzi** – zaangażowanie uczestników

FIRST PART

LECTURES
AND
MODERATORS

PARTICIPANT

SHOW UP

SECOND PART

. reactions and chat

. sharing materials

. music

. worm up

. games

. break up rooms

. Quizes

. background

. tools and aplications

Myślenie o ludziach, ich rolach i punktach widzenia podczas lekcji online
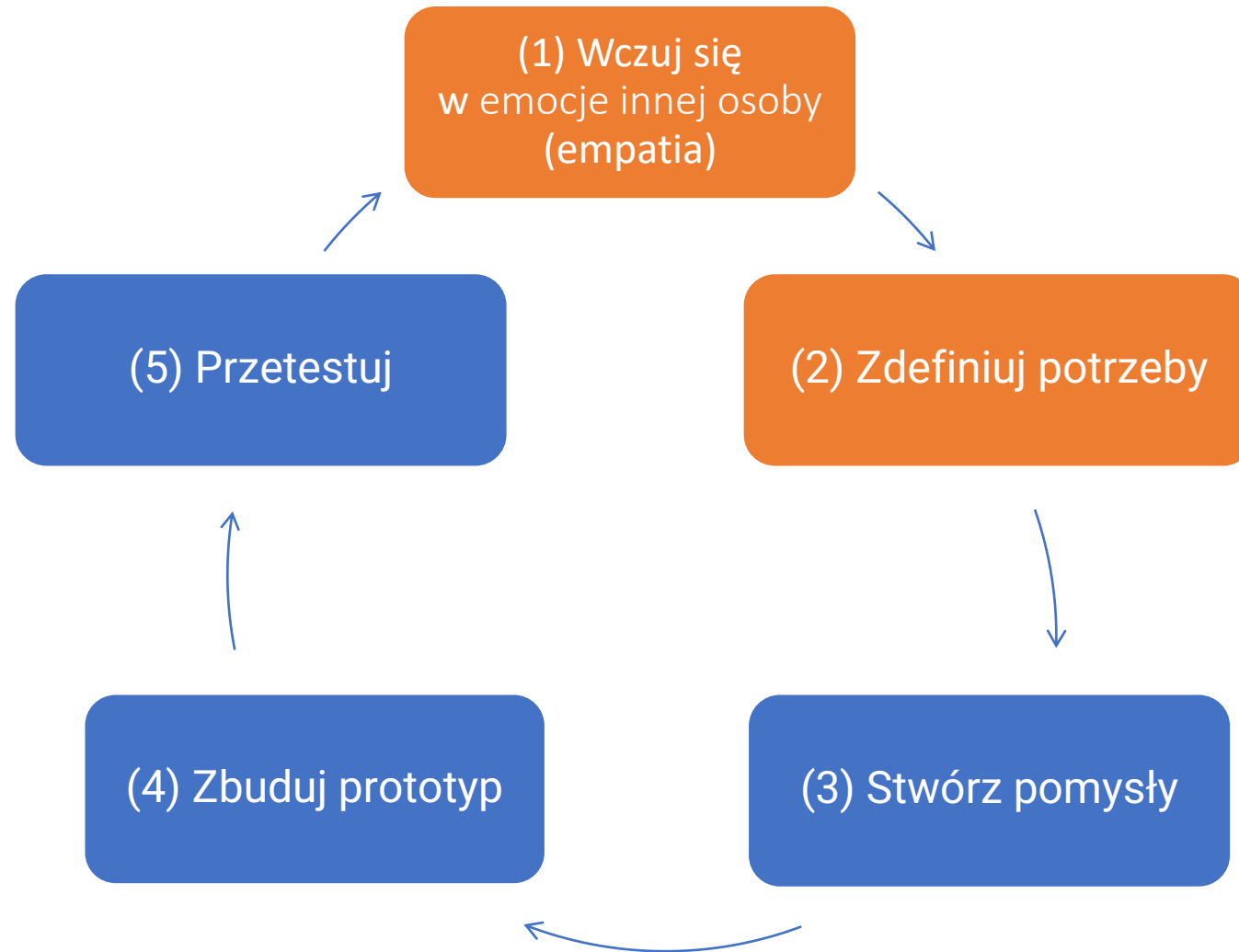
Empatia i diagnoza potrzeb

Empatia i wywiad z użytkownikami. Ku diagnozie potrzeb.

Empatia: Jak postawić się w sytuacji użytkownika?

1. Zainicjuj grupową burzę mózgów – każda grupa powinna wymyślić i zapisać na kartce pytania, jakie powinno się zadać jednemu nauczycielowi i / lub jednemu studentowi, aby dowiedzieć się, jakie potrzeby należy wziąć pod uwagę podczas tworzenia dobrych scenariuszy lekcji online.

2. Wybierz jedną / dwie osoby w grupie, z którymi przeprowadzicie wywiad.

3. Użytkownicy usług i produktów są różni. To samo odnosi się do wykładów i ćwiczeń.

4. Tworząc pytania podczas burzy mózgów oraz przeprowadzając wywiad, nie myśl o grupie docelowej, ale o konkretnym użytkowniku.

Diagnoza potrzeb

- Przykłady pytań: jakie były twoje najlepsze doświadczenie podczas zajęć online? Co cenisz najbardziej w zajęciach online? Co możesz powiedzieć o czasie przewidzianym na wykonanie zadania, itd. Jakie nowe zajęcia spodobają się studentom? Co jest istotne dla poczucia satysfakcji z lekcji online?

- Znajdź prawidłowości /wzorce – otwarte pytania niesugerujące odpowiedzi

- Użytkownicy – co lubią, czego nie znoszą

- Pytania o przyczyny:
Dlaczego? Dlaczego nie? Najlepsze i najgorsze doświadczenia

- Motywacja, frustracja, zachwyt, zwyczaje, demografia – cechy

- **Pomyśl także o użytkownikach ze specjalnymi potrzebami (utalentowanych, z niepełnosprawnością, znudzonych…)**

Wywiady – struktura i role

- Wybierz zespoły
- Przygotuj pytania
- Wyznacz osobę, z którą zostanie przeprowadzony wywiad
- Przeprowadź wywiady

Optymalnie w wywiadzie biorą udział co najmniej 3 osoby:

1. jedna (użytkownik) opowiada o swoich doświadczeniach
2. jedna (osoba przeprowadzająca wywiad) zadaje pytania i aktywnie słucha
3. jedna robi notatki

Empatia - wywiady

Jedna osoba **(przeprowadzająca wywiad)** zadaje pytania i aktywnie słucha

- Przedstaw siebie i cel wywiadu

- Zarysuj oś rozmowy według skryptu

- Podkreśl cel

- Użyj pytań, które zostały wskazane podczas burzy mózgów na etapie empatii / wczuwania się w sytuację innego

- Słuchaj... 75% czasu dla użytkownika

- Dodatkowe uwagi użytkownika są mile widziane

Mapa empatii – emocje i słowa; obserwacja użytkownika

Mówi:	**Myśli:**
Dosłowne cytaty Często poruszane kwestie Sprzeczności	Porównujemy co użytkownik/użytkowniczka mówi z tym, co robi i czuje
Robi:	**Czuje:**
Jakie czynności wynikają z danej opinii Co użytkownik/użytkowniczka robi, wybiera Czego używa	Jakie emocje można wyczytać (złość, zadowolenie, radość, gorycz) Kiedy się uśmiecha Kiedy się koncentruje Kiedy porusza nogami/ brwiami Kiedy bawi się długopisem

Kluczowe obserwacje – dyskusja podsumowująca

- Jakie sprzeczności pojawiły się na etapie Empatii?
- Co było zaskakujące?
- Co było interesujące?
- Co było nowe?
- Co było najmniej spodziewane?
- Jaki był dominujący problem?

Wywiady – informacje dla przeprowadzającego wywiad

- Nie bój się ciszy – ciesz się ciszą
- Obserwuj, utrzymuj kontakt wzrokowy

- Osoba nr 2 prosi o pozwolenie, jeśli wywiad jest nagrywany, tworzy dobrą atmosferę; powinna to być osoba doświadczona, opanowana, umiarkowana.
- Kamera wpływa na zachowanie; zapominamy o dyktafonach albo ... nie używamy ich.
- Osoba nr 3 notuje: ciszę, wahanie, opór, entuzjazm, a także które pytania wzbudzają reakcje.

Pięć etapów procesu Design Thinking
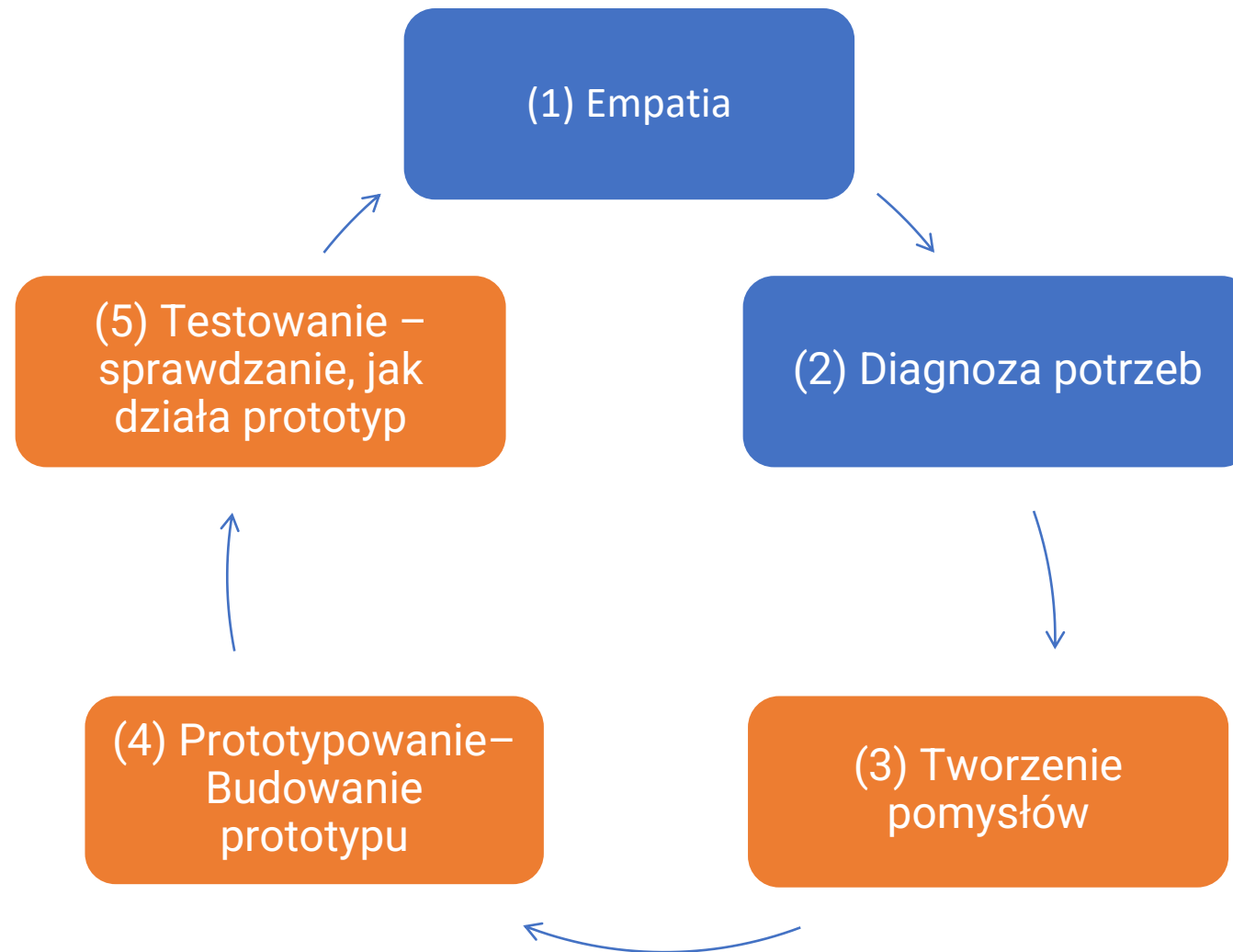
Tworzenie pomysłów, budowanie prototypów, testowanie

Krok 5. Tworzenie pomysłów, budowanie prototypów i testowanie

- Teraz, kiedy Ty i Twoja grupa wiecie, jakie potrzeby zostały zdefiniowane, stwórzcie jak najwięcej pomysłów na scenariusze lekcji online.

- Wybierzcie pomysły o największym potencjale

- Stwórzcie warunki umożliwiające przejście od etapu tworzenia pomysłów do budowania prototypu

- Wyobraźcie sobie Wasze zajęcia, wyobraźcie sobie Wasz ekran

Diagnozowanie potrzeb i tworzenie pomysłów – co wynikło z wywiadu?

Jak według Ciebie sformułować problem?

Czyj to problem?

Jego? Jej? Nasz? Nie nasz?

Wskazówki:

Co jest dla niego / niej najważniejsze (w procesie empatii)?

O czym mówił / mówiła najczęściej?

Co wzbudziło emocje?

Podczas tworzenia scenariuszy:

Opisz problem, który Ciebie dotyczy

Prosto i uniwersalnie

Zacznij od: „Jak moglibyśmy to zrobić ..."

Jak moglibyśmy napisać plan lekcji online?

Materiały:

Użyj karteczek samoprzylepnych

Naklej je na papier / tablicę

Czas: 10 minut

DLACZEGO? PO CO?

PROBLEM

JAK?

INTRO   **CLOSING**   **CORE**

- WELCOME
- EXPLANATION OF RULES AND EXPECTED OUTCOMES
- QUIZ ON PREVIOUS KNOWLEDGE
- OR
- CLUSTERING OF IDEAS
- CHECK PREVIOUS HOMEWORK
- DISCUSSION OF RESULTS
- 15' LECTURE
- REFLECTION
- TAKE HOME MESSAGE
- VIDEO
- COMPREHENSION EXERCISE
- TEAM WORK
- GAME
- ROLE PLAY DEBATE
- PRESENTATION

...TION   **INTRODUCTION**   **CONTENT**

- interactive
- prepared
- colourfull
- AVATAR
- COMPARISION GAMES
- SPEED DATES
- PARTICIPATORY SYLLABUS
- PODCAST BEFORE LECTURE SUMMARY (GROUPS)
- POOLS Kahoot Break up Rooms Study cases
- Simulation Games

- online dice for games
- Use Mentimeter for brainstorming
- Use rewards (Collect knowledge 5-10 special tokens)
- Use break up rooms
- Use Miro for drawing group presentation on the same table
- Ask students for recording something connected with the subject and present it in public
- Question...
- Use Kahoot! for memo game
- Use maps of thoughts
- Watching a movie related note for theme and discussion
- Listening their colleagues
- Playing

- Prepare (students) a script opera (many episodes) on given subject
- Make short clips
- Prepare infographic on given subject in Canva and then vote for the best project
- Write a diary (online) in groups what on given subject
- ...room to the ... (MIRO) in groups

Tworzenie pomysłów – ZADANIE

Jaka jest nasza unikalna perspektywa?

Co było unikalnego na etapie diagnozy użytkownika?

ZADANIE:

Pytanie

Liczba pomysłów

Różni użytkownicy – różne grupy

Jakie są Twoje wspomnienia z wykładów podczas Twoich studiów?

- Co chcesz wdrożyć?
- Czego chcesz unikać?

Podczas tworzenia scenariuszy zadawaj pytania

Przykłady:

Jak moglibyśmy pomóc Marii poczuć się jak gwiazda przed publicznością, kiedy jest na naszym wykładzie?

Jak możemy pomóc utalentowanemu studentowi/studentce efektywnie spędzić czas na naszym wykładzie, chociaż przeczytał/a już nasz podręcznik?

Podczas warsztatu

Moderator

- proponuje i ustala na którym poziomie drabiny problemowej powinieneś pracować
- Sprawdza, czy wyzwanie projektowe spełnia kryteria

Uczestnik

- Szuka ukrytych, niewypowiedzianych potrzeb
- Oddziela potrzeby od rozwiązań
- Formułuje wyzwania projektowe

Burza mózgów

- tradycyjna (flipchart, papier, markery)
- graficzna (rysowanie, makiety)
- pisemna (dla introwertyków)
- dobrana indywidualnie (Ty wybierasz sposób)

Materiały

Karteczki samoprzyplepne, markery, whiteboard

Czas – do 20 minut

6-3-5 (max. 6 uczestników – 3 pomysły – 5 minut)/ albo 4-3-4

Tradycyjna burza mózgów - wytyczne

- Zapisz / narysuj wszystkie pomysły
- Pomysły nie pojęcia
- Pomysły na dany temat
- Jedna sesja
- Twórz skojarzenia z poprzednimi pomysłami
- Zapisz również szalone pomysły
- Nie oceniaj
- Nie blokuj
- Na tym etapie nie zajmujemy się poprawnością / szczegółami

Mapa powiązań – selekcja pomysłów Zachwycające

2. Racjonalne

3. Ulubione pomysły zespołu

4. Długoterminowe z potencjałem
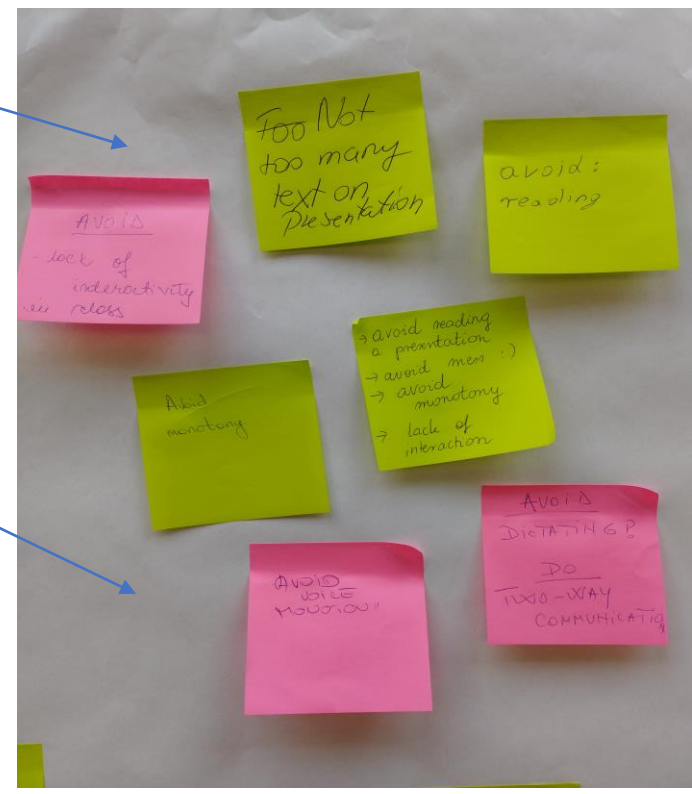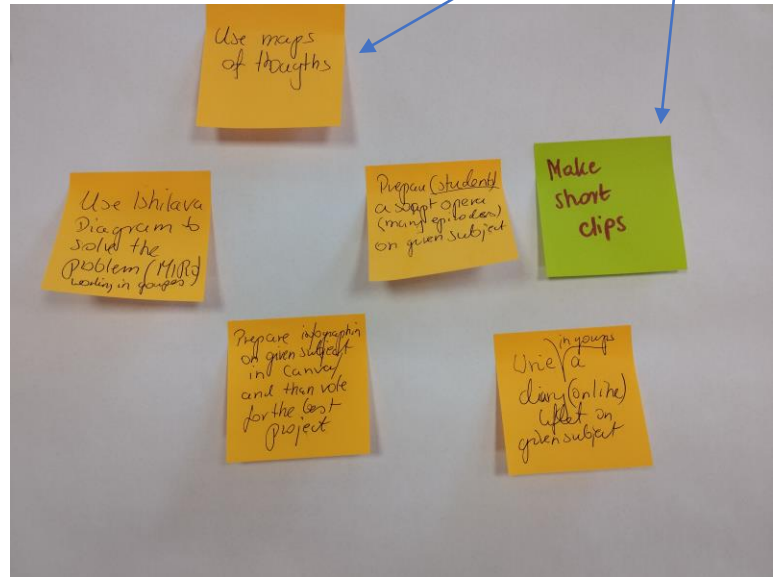
Budowanie prototypów i testowanie
Prototypy są teraz sprawdzane.
Użyj tych odpowiedzi w senariuszach.

Co to jest?
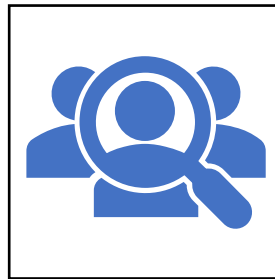
Co to daje użytkownikowi?
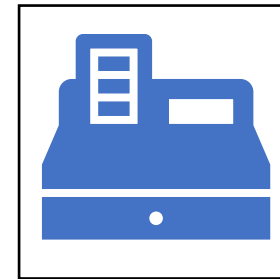
Jak to działa?

Budowanie prototypów i testowanie

Prototyp 1 – Co zostało sprawdzone? Co zostało zmienione?

Prototyp 2 – Co zostało sprawdzone? Co zostało zmienione?

Prototyp 3 – Co zostało sprawdzone? Co zostało zmienione?

Budowanie prototypów i testowanie

Budowanie prototypów
i testowanie

Prototypowanie wizualne

Pokaż działanie (odgrywanie ról, opowiadanie historii)

Funkcjonalność (pamiętaj o celu)

Rozkład w czasie i przestrzeni (szybkość, limit czasowy)

Relacje pomiędzy elementami

Prototypowanie wizualne

Stworzone pomysły są podstawą do poszukiwania rozwiązań. Rób notatki, zbierz te, które mogą być podstawą dalszych działań.

Potrzeby to nie rozwiązania!

Nie projektuj dla użytkownika, ale dla potrzeb.

Do not project for persona, but for needs.

Tworzenie wizualnych prototypów to najszybszy sposób, aby pokazać pomysły i zebrać informacje na temat potrzeb potencjalnych użytkowników.

Przygotuj wizualizację scenariusza – krótkie przedstawienie.

Testowanie

Cel: przetestować potencjał wybranych pomysłów

Jak to ma działać?

Co chcemy sprawdzić?

Słuchaj – nie broń swoich pomysłów (pamiętaj o etapie empatii)

Zapisz wszystkie odpowiedzi

Nie analizuj ocen, po prostu słuchaj

Budowanie prototypów oraz testowanie

- Rozwijanie pomysłów wybranych podczas etapu selekcji.

- Budowanie prototypów pozwala sprawdzić ich potencjał i osiągnąć rezultaty.

- Podsumowanie powinno być przygotowane w formie pisemnej.

Jak przygotowywać warsztaty Design Thinking?

Jakiekolwiek wsparcie Komisji Europejskiej dla stworzenia niniejszego dzieła nie oznacza poparcia dla jego zawartości, która wyraża wyłącznie poglądy autorów, a Komisja i Agencja Narodowa nie ponoszą odpowiedzialności za jakikolwiek użycie zawartych tu informacji.

Instruction how to prepare Design Thinking workshop - in Slovenian

Towards Effective Teaching
Reimagining online courses
for the future of higher education

Kako pripraviti delavnice oblikovalskega razmišljanja (Design Thinking)?

InComp Edu
Innovative Competence in On-Line Education

University of Gdańsk

UNIVERSITY OF TURKU

UNIVERSITY OF RIJEKA
FACULTY OF TOURISM AND HOSPITALITY MANAGEMENT
OPATIJA, CROATIA

UAB
UNIVERSITATEA
1 DECEMBRIE 1918
DIN ALBA IULIA

UP
UNIVERZA NA PRIMORSKEM

TOR VERGATA
UNIVERSITY OF ROME

Kako pripraviti delavnice oblikovalskega razmišljanja (Design Thinking)?

Snovanje učinkovitih scenarijev za visokošolska predavanja

IR3: Preoblikovanje spletnih predavanj za prihodnost visokega šolstva

Delavnico pripravila: Magdalena Markiewicz, Univerza v Gdansku, magdalena.markiewicz@ug.edu.pl

Prevod v nacionalne jezike/izvedba na partnerskih univerzah: Felicita Urzi, Elena Buzan

Metoda oblikovalskega razmišljanja

Uvod

- Težnja k ustvarjanju pomenljivih inovacij, ki temeljijo na razumevanju potreb uporabnikov.

- Določitev problema prek empatije in zanimanja za življenje, izkušnje in mnenja uporabnikov.

- Tvorjenje čim več idej namesto ene same najboljše.

- Izdelovanje prototipov za preizkušanje idej in ugotavljanje možnih rešitev.

Projekt InCompEdu:

- Gradnja učnih scenarijev na podlagi potreb, izkušenj in mnenj študentov in predavateljev kot uporabnikov učnega procesa.

Pet stopenj oblikovalskega razmišljanja
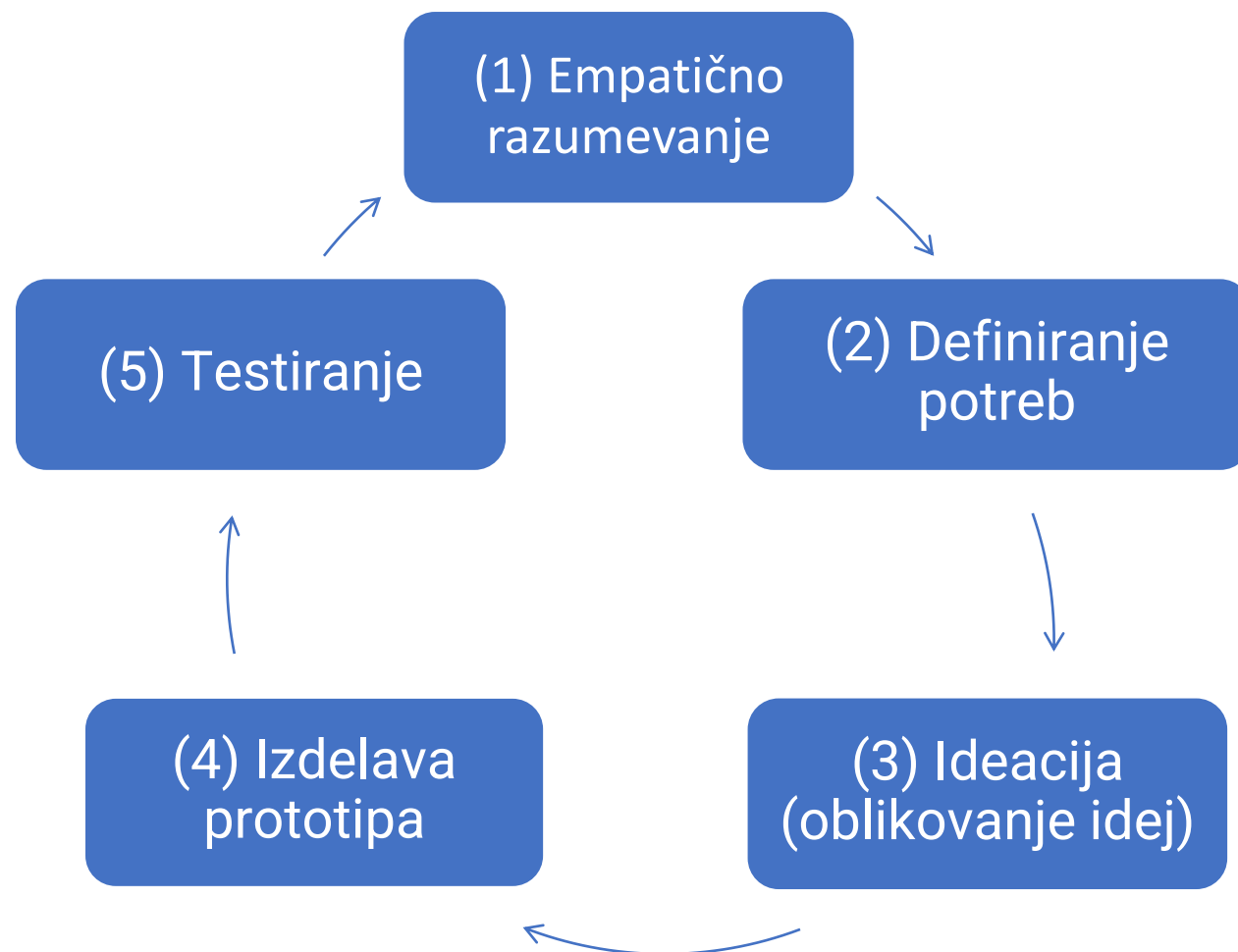
Delavnica oblikovalskega razmišljanja – ozadje in zgradba

Elementi, pomembni za časovni razpored in organizacijo delavnice – kaj je treba upoštevati

a) Kratek opis **izkušenj** z metodo na univerzi (če obstajajo).

b) Število **udeležencev**, njihove izkušnje in področja študija/zanimanj.

c) **Prizorišče:** kje in zakaj je to mesto priročno.

d) **Časovni razpored:** dnevi, čas v predavalnici, čas za predpriprave ter povzetek po delavnici.

e) **Elementi** metode oblikovalskega razmišljanja, ki se uporabljajo v okviru delavnice (npr. analiza potreb, izdelava prototipov).

Delavnica oblikovalskega razmišljanja – ozadje in zgradba

Izsledki delavnice

Opis scenarijev:

a. Predlogi za tematike na različnih področjih.

b. Uporabljena spletna orodja, možne koristi uporabe teh orodij za interakcijo.

c. Predlagani načini interakcije „predavatelj–študenti" v okviru scenarija.

d. Dolžina predavanja (optimalna: najkrajša–najdaljša).

e. Možnosti za točkovanje in načine ocenjevanja.

f. Ali obstajajo kakšni predpogoji oz. ali so potrebne formalne priprave z vidika študentovih prejšnjih izkušenj in predavanj?

g. Kompetence, ki jih lahko pridobimo po predavanju.

Fotografije – angažiranost udeležencev.

Temeljna pravila za pripravo delavnice

Namen – izdelava scenarijev za spletna predavanja na podlagi uporabniških izkušenj. Uporabniki te delavnice so učitelji in študentje, katerih potrebe je treba upoštevati.

Metoda – metoda oblikovalskega razmišljanja.

Udeleženci – visokošolski učitelji in/ali študentje.
(optimalna velikost skupine je 4–12 ljudi, minimalno pa 3 osebe).

Časovni razpored delavnice: najmanj 3–4 ure; časovni pritisk je pomemben za doseganje želenega učinka, a ključnega pomena za ustvarjanje idej je tudi sproščeno ozračje.

Moderatorji:

1–2 osebi na delavnici; skrbita, da delavnica ostane na pravem tiru, in preverjata rezultate.

Temeljna pravila za izvedbo delavnice oblikovalskega razmišljanja:
potek delavnice sestoji iz 3 elementov

Proces ➡ Prostor ➡ Ljudje

1. korak: PROCES

**Udeležencem postavite prva vprašanja – empatično razumevanje
(10–20 minut, odvisno od števila udeležencev)**

Zakaj ste prišli na delavnico?

Kje in kako nameravate uporabiti znanje o oblikovalskem razmišljanju (OR)?

Primer:

Sem … delam na Oddelku za … OR želim uporabljati …

Meddisciplinarne ekipe so dovoljene, včasih celo priporočljive.

Kaj pravzaprav je metoda oblikovalskega razmišljanja? Kako lahko prispeva k vašemu poučevanju?

Povečati ...

Ustvariti ...

Izpodbijati/Izzvati ....

Sporočiti ...

Motivirati ...

Vzpostaviti ...

PROCES
Namen je reševanje problemov

Udeležencem postavite začetna vprašanja:

- Kaj je inovativnost?
- Kaj je inovativnost v poučevanju?

- Način reševanja problemov.
- Način ustvarjanja novih izdelkov in storitev.
- **V središču je uporabnik in njegove/njene potrebe.**

2. korak: Pripravite PROSTOR

- prijetno vzdušje,
- prijetna soba s preprogami,
- prilagodljiv prostor,
- priročen za manjše skupine.

- še posebej pomembno
  za intervjuje
  in individualna srečanja.

Prostorske zahteve:

- Velik prostor, primeren za velikost skupine .

- Materiali za izdelavo prototipov in delo: papir, svinčniki, kemiki, škarje, lepilo, časopisi za rezanje slik, večji A2/A1 šeleshamerji, pisani samolepilni listki.

- Table, flomastri, krede.

Prostor za predstavitve

Priprava prostora za spletna predavanja

3. korak: OSEBE v procesu oblikovalskega razmišljanja

Uporabniki so lahko iz različnih ali istih disciplin.

Vloga moderatorja:

- urediti **prostor,**
- motivirati **udeležence,**
- izbrati, kdo dela s kom v ekipi,
- upoštevati **časovne omejitve,**
- prositi skupino, da izbere vodjo ali ... izbrati vodjo vsake skupine,
- skrbeti za **ljudi** – vključenost udeležencev.

FIRST PART

LECTURES AND MODERATORS

SECOND PART

· reactions and chat

· sharing materials

· music

· worm up

· games

PARTICIPANT

SHOW UP

· break up rooms

· quizes

· background

· tools and aplications

Razmišljanje o ljudeh in njihovih vlogah ter perspektivah med spletnimi predavanji

Pet stopenj oblikovalskega razmišljanja
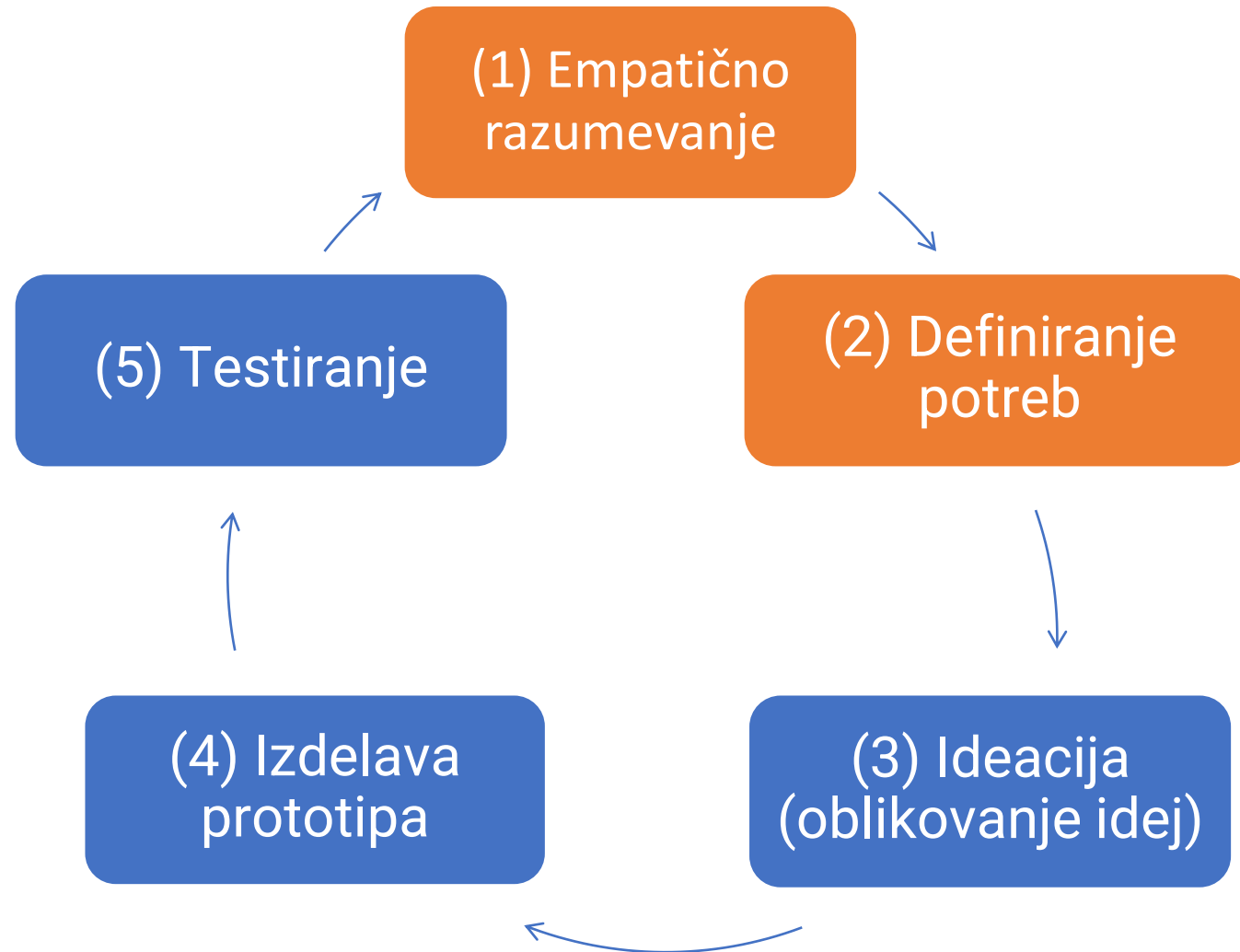
Empatično razumevanje in diagnoza potreb

Empatija in intervju z uporabniki. Diagnosticiranje potreb

Empatično razumevanje: Kako se vživeti v kožo uporabnika?

1. Začnite s skupinskim viharjenjem idej – vsaka skupina naj poišče (zapiše na list papirja) vprašanja, ki naj jih zastavi enemu predavatelju in/ali enemu študentu, da ugotovi, katere potrebe moramo upoštevati pri ustvarjanju dobrega scenarija spletnega predavanja.

2. Izberite eno/dve osebi v skupini, ki bosta intervjuvani.

3. Uporabniki storitev in izdelkov so zelo razlikujejo. Enako velja za predavanja.

4. Med oblikovanjem vprašanj in kasnejšim intervjuvanjem ne mislite na ciljno skupino, ampak na posameznega uporabnika.

Diagnoza potreb

- Primeri vprašanj: kakšna je bila vaša najboljša izkušnja s spletnim poučevanjem/učenjem? Kaj najbolj cenite pri spletnih predavanjih? Kaj pa čas, priprave, aktivnosti itd.? Katera nova lekcija bo učencem všeč? Kaj vpliva na vaše zadovoljstvo s spletnim predavanjem?

- Poiščite vzorce – odprta, nesugestivna vprašanja.

- Uporabniki – kaj jim je všeč, česa ne marajo?

- Vprašanja o razlogih:
  zakaj? zakaj ne? najboljša in najslabša izkušnja?

- Motivacija, frustracija, veselje, navade, demografija – značilnosti.

- **Pomislite tudi na uporabnike s posebnimi potrebami (nadarjeni, invalidi, zdolgočaseni ...).**

Intervjuji – struktura in vloge

- Določite ekipe
- Pripravite vprašanja
- Opredelite osebo za razgovor
- Izvedite intervjuje

Optimalno v intervjuju sodelujejo vsaj tri osebe:
1. nekdo (uporabnik), ki pripoveduje o svojih izkušnjah,
2. nekdo (anketar), ki postavlja vprašanja in aktivno posluša,
3. nekdo, ki dela zapiske.
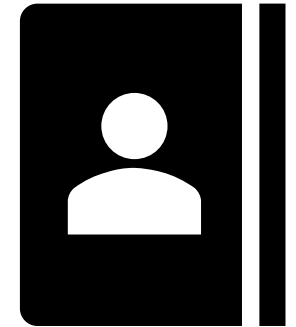
Empatija – intervjuji

Ena oseba **(izpraševalec)** postavlja vprašanja in aktivno posluša:

- predstavite sebe in namen razgovora.
- v scenariju začrtajte pogovorno os,
- izpostavite cilj,
- uporabite vprašanja, ki so bila navedena med viharjenjem idej na stopnji empatije,
- poslušajte … 75 % časa je namenjenega uporabniku,
- če želi uporabnik karkoli dodati, je to dobrodošlo.

Zemljevid empatičnega razumevanja – čustva in besede; opazovanje uporabnika

Izrečeno:	**Mišljeno:**
dobesedni navedki stvari, ki se pogosto omenjajo protislovja	kar uporabnik govori primerjamo s tem, kar počne in čuti
Storjeno: katere dejavnosti izhajajo iz izjave kaj počne, izbere kaj uporablja	**Občuteno:** katera čustva lahko razberemo (jeza, zadovoljstvo, veselje, zagrenjenost) ko se nasmehne ko se na nekaj osredotoči ko premika noge/obrvi ko se poigrava s kemikom

Ključne ugotovitve – povzetek

- Kakšna protislovja so se pojavila na stopnji empatije?
- Kaj vas je presenetilo?
- Kaj je bilo zanimivo?
- Kaj je bilo novega?
- Kaj je bilo najmanj pričakovano?
- Katera tema je predstavljala prevladujočo težavo?

Intervjuji – informacije za izpraševalca

- Ne bojte se tišine − uživajte v njej.
- Opazujte, ohranjajte očesni stik.

- Oseba številka 2 prosi za dovoljenje, ali se intervju lahko snema, ustvarja dobro vzdušje; ta oseba naj bo izkušena, zadržana, zmerna.
- Kamera vpliva na vedenje, pozabimo na diktafon oz. … ga ne uporabljamo.
- Oseba številka 3 zapisuje: tišina, obotavljanje, odpor in navdušenje, katera vprašanja sprožijo reakcije.

Pet stopenj v procesu oblikovalskega razmišljanja
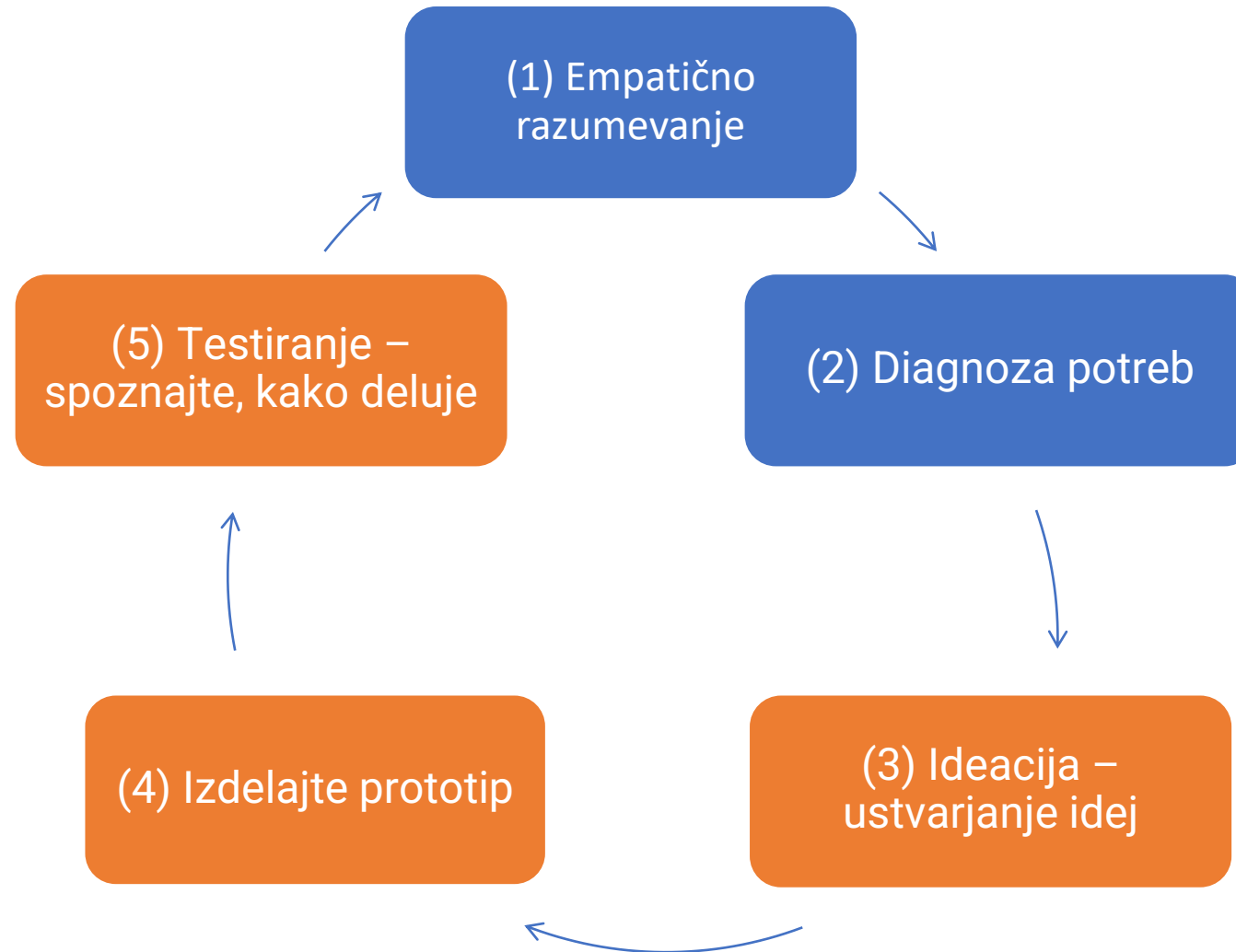
Ustvarjanje idej, izdelava prototipov in testiranje

5. korak: Razvijanje idej, izdelava prototipov in testiranje

- Zdaj, ko vi in skupina veste, katere potrebe so bile definirane, razvijte čim več zamisli za scenarije spletnih predavanj.

- Izberite ideje z največjim potencialom.

- Olajšajte prehod od razvoja idej k izdelavi prototipov.

- Zamislite si svojo predavalnico in svoj zaslon.

Diagnosticiranje potreb in ustvarjanje idej – kaj smo dobili iz intervjuja?

Kakšna je formulacija problema po vašem mnenju?

Čigava je težava?

Njegova? Njena? Naša? Ni naša?

Nasveti:

Kaj se je izkazalo kot najpomembnejše (v procesu empatizacije)?

O čem je bilo največ govora?

Kam so bila usmerjena čustva?

Med oblikovanjem scenarijev:

Opišite dotično težavo.

Naj bo enostavno in univerzalno.

Začnite s "Kako bi lahko to storili ..."

Kako bi lahko oblikovali učni načrt na spletu?

Materiali:
uporabite samolepljive listke,

nalepite jih na papir/tablo

Čas: 10 minut

ZAKAJ? ČEMU?

PROBLEM

KAKO?

Generiranje idej – NALOGA

Kakšna je naša edinstvena perspektiva?

Kaj je bilo edinstvenega v fazi diagnoze persone?

NALOGA:

Vprašanje.

Število idej.

Različne persone – različne skupine.

Kakšni so vaši spomini na predavanja med študijem?

- Kaj želite implementirati?
- Čemu se želite izogniti?

Med ustvarjanjem scenarijev postavljajte vprašanja

Primeri:
Kako bi lahko pomagali Mariji, da se počuti kot zvezda pred občinstvom, ko je na našem predavanju?
Kako lahko naši nadarjeni študentki pomagamo, da čas na našem predavanju preživi učinkovito, čeprav je že predelala učbenik?

Med delavnico

Moderator

- Določi in predlaga, na kateri ravni lestvice problemov bi morali delati.
- Preveri, ali oblikovalski izziv ustreza kriterijem.

Udeleženec

- Išče prikrite, neizrečene potrebe.
- Loči potrebe od rešitev.
- Sestavlja oblikovalske izzive.

Viharjenje idej

- tradicionalno (demonstracijska tabla, papir, flomastri),
- risano (risarski izzivi, arhitektura),
- pisno (za introvertirane),
- po meri (sami izberete način).

Materiali

Samolepilni listki, flomastri, tabla.

Čas: do 20 minut .

6–3–5 (največ 6 udeležencev – 3 ideje – 5 minut) ali 4–3–4.

Tradicionalno viharjenje idej – smernice
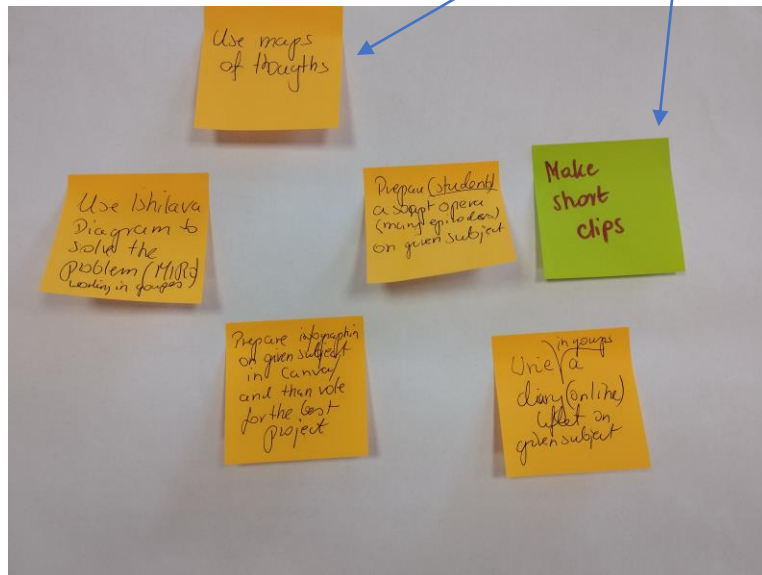
- Zapišite/narišite vse ideje.
- Ideje, ne koncepti.
- Ideje na dotično temo.
- Eno srečanje.
- Poiščite asociacije s prejšnjimi idejami.
- Vključite tudi nore ideje.
- Ne ocenjujete.
- Ne blokirajte.
- Na tej stopnji nas ne zanima pravilnost/podrobnosti.

Zemljevid afinitet – izbor idej

1. Enkratno
2. Racionalno
3. Ekipni favorit
4. Dolgoročno s potencialom

Izdelava prototipov in testiranje
Prototipe smo zdaj preverili.
V scenarijih uporabite te odgovore.

Kaj je to?

Je to rešitev uporabnikove težave?

Kaj daje uporabniku?

Kako deluje?

Izdelava prototipov in testiranje

Prototip 1 – Kaj smo preverili? Kaj se je spremenilo?

Prototip 2 – Kaj smo preverili? Kaj se je spremenilo?

Prototip 3 – Kaj smo preverili? Kaj se je spremenilo?

Izdelava prototipov in testiranje

Izdelava prototipov in testiranje

Vizualna izdelava prototipov

Prikaz delovanja (igranje vlog, pripovedovanje zgodb)

Funkcionalnost (ne pozabite na namen)

Porazdelitev v času in prostoru (hitrost, časovna omejitev)

Povezave med elementi

Vizualna izdelava prototipov

Ideje predstavljajo začetek iskanja rešitev. Delajte zapiske in zbirajte tiste, ki nas lahko vodijo dlje.

Potrebe niso rešitve!

Ne projektirajte za persono, temveč za njene potrebe.

Vizualna izdelava prototipov je najhitrejši način za prikaz idej in zbiranje informacij o potrebah potencialnih uporabnikov.

Pripravite vizualizacijo scenarija − kratka predstavitev.

Testiranje

Cilj: preizkusiti potencial izbranih idej.

Kako naj bi stvar delovala?

Kaj želimo preveriti?

Poslušajte – ne zagovarjajte svojih idej (spomnimo se na fazo empatiziranja).

Zapišite vse odgovore.

Ne analizirajte ocen, samo poslušajte.

Izdelava prototipov in testiranje

- razvijanje izbranih idej,
- izdelava prototipov omogoča preverjanje njihovega potenciala in doseganje želenih rezultatov,
- povzetek mora biti pripravljen v pisni obliki.

Kako pripraviti delavnice oblikovalskega razmišljanja (Design Thinking)?

Instruction how to prepare Design Thinking workshop - in Romenian

Towards Effective Teaching
Reimagining online courses
for the future of higher education

Cum pregătim un Design Thinking Workshop?

„InCompEdu" Innovative Competence in On-Line Education

Cum pregătim un Design Thinking Workshop?

Sugestii privind elaborarea scenariilor, prelegerilor sau orelor în mediul academic

IO3: Reimagining on-line courses for the future of high education

Workshop design: Magdalena Markiewicz, University of Gdansk (UG), magdalena.markiewicz@ug.edu.pl

Translation into national languages/Implementation in partner universities:
…………………………

Methoda Design Thinking

Introducere

- Urmărește crearea de inovații semnificative bazate pe cunoașterea nevoilor utilizatorilor

- Încadrarea problemei prin empatie și interes pentru viața, experiențele și opiniile utilizatorilor

- Generarea a cât mai multe idei posibil în loc de singura care este cea mai bună

- Construirea de prototipuri pentru a testa ideile și a afla despre soluții

Proiect InCompEdu:

- Construirea scenariilor de lecție bazate pe nevoile, experiențele și opiniile elevilor și profesorilor care sunt utilizatorii procesului de predare.

Cele cinci etape ale procesului Design Thinking
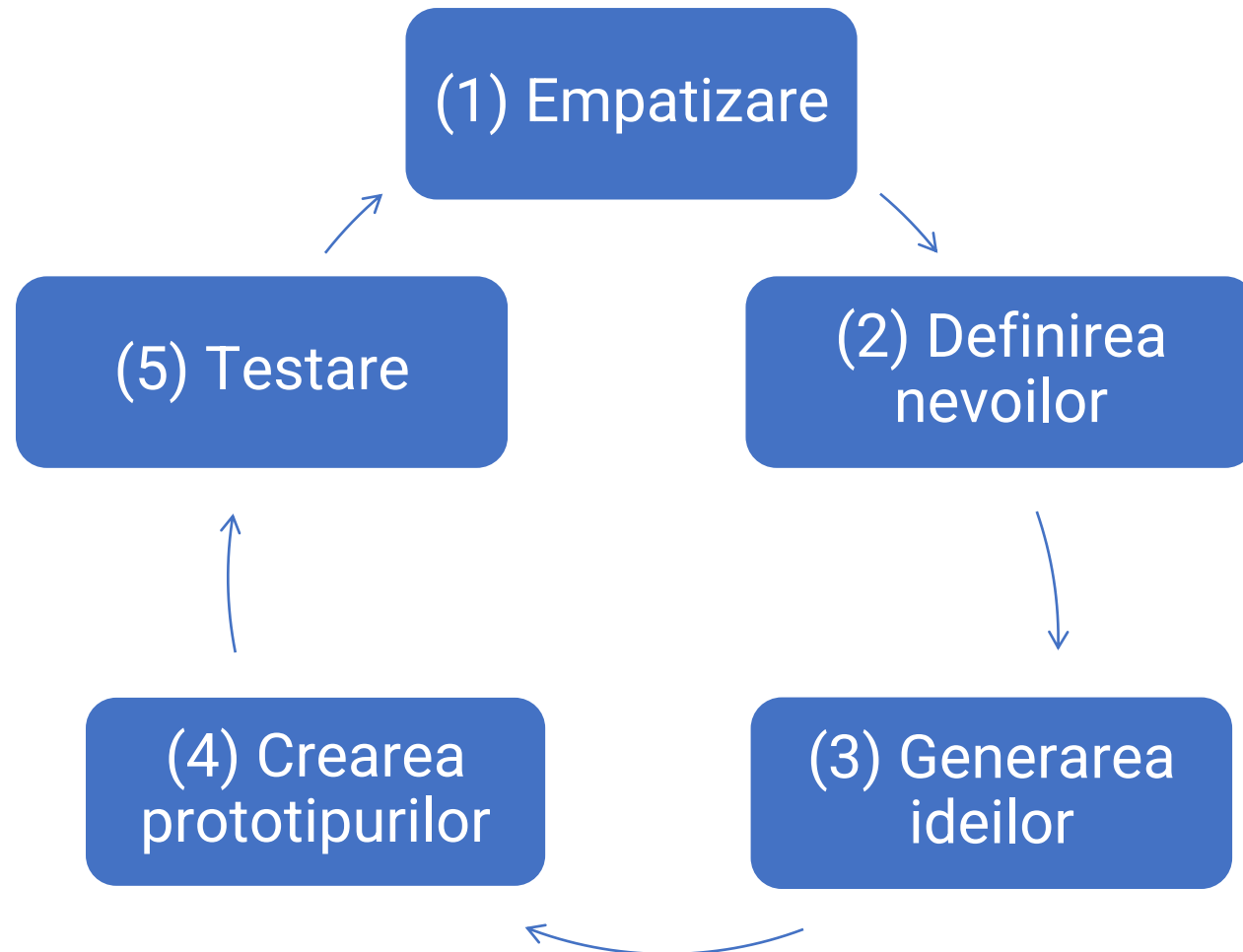
Design Thinking Workshop – condiții și structură

Elementele relevante pentru programul și organizarea atelierului – lucruri de luat în considerare

a) Scurta descriere a **experienței** metodei la universitate, dacă există

b) Numărul de **participanți**, experiența lor și domeniile

c) Locul de desfășurare: unde și de ce acest loc a fost convenabil

d) Program: zile, ore de atelier în clasă și etapa de pregătire plus un rezumat după atelier

e) Elementele **metodelor** de design thinking utilizate în cadrul atelierului (cum ar fi analiza nevoilor, prototiparea)

Design Thinking Workshop – condiții și structură

Rezultatele workshop-ului

Descrierea scenariilor:

a) Subiecte propuse ca opțiune în diferite domenii

b) Instrumente on-line utilizate, posibile beneficii ale utilizării acestor instrumente pentru interacțiune

c) Modalitățile de interacțiune propuse „profesor – studenți" în cadrul scenariului

d) Durata unei lecții (optimă – minim-maxim)

e) Posibile punctaj și modalități de evaluare

f) Există condiții prealabile sau pregătire formală necesară, din punctul de vedere al experienței și cursurilor anterioare ale unui student

g) Competențe care pot fi dobândite după o lecție

h) Fotografii - activitatea de implicare a participanților.

Reguli de bază în organizarea workshop-ului

Scopul - elaborarea scenariilor de lecții online pe baza experienței utilizatorului. Utilizatorii acestui atelier sunt profesorii și studenții, iar nevoile acestora trebuie luate în considerare.

Metoda – Metoda Design Thinking.

Participanți – profesori și/sau studenți (4-12 persoane este dimensiunea optimă a grupului, cel puțin 3 persoane).

Durata atelierului: minim 3-4 ore, presiunea timpului este importantă pentru a obține un efect, dar o atmosferă deschisă este, de asemenea, crucială pentru a crea idei.

Moderatorii:1-2 persoane în timpul atelierului, rolul lor este să păstreze traseul unui atelier și să verifice rezultatele.

Reguli de bază pentru desfășurarea DTW: traseul atelierului este format din 3 elemente

Proces ➡ Spațiu ➡ Oameni

Pasul 1. Etapa PROCES

Adresați participanților primele întrebări – empatie în DT (10-20 de minute, în funcție de numărul de participanți)

De ce ai venit la atelier?

Unde și cum doriți să utilizați cunoștințele despre design thinking?

Exemplul:

Sunt...

Lucrez la Departamentul de...

Vreau să folosesc DT în...

Echipele interdisciplinare sunt permise, uneori chiar recomandate.

Ce este de fapt metoda design thinking? Cum poate contribui la predarea ta?

A creste ...

A crea ...

A contesta ....

A comunica ...

A motiva ...

A implementa ....
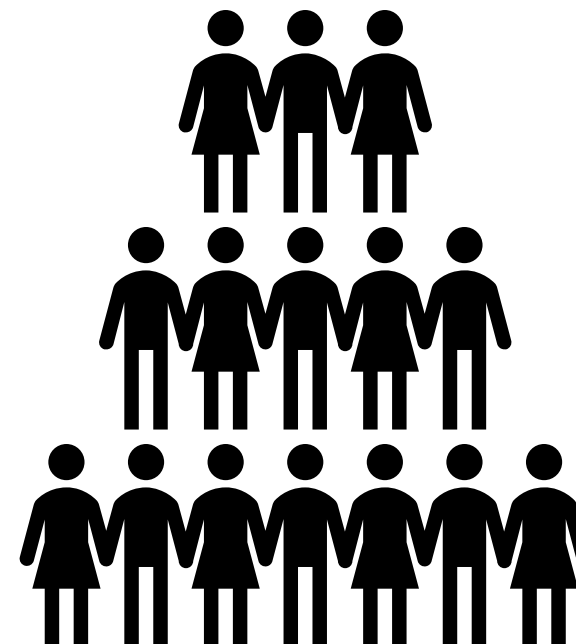
PROCESul.
Scopul este de a rezolva problemele

Puneți participanților întrebările inițiale:

Ce este inovația?

Ce este inovația în predare?

Metoda de rezolvare a problemelor

Modul de a crea noile produse și servicii

Utilizatorul și nevoile sale sunt în centru

Pasul 2. Pregătirea SPAȚIULUI

- crearea unei atmosfere plăcute
- cameră confortabilă cu covoare
- adaptabil / ajustabil
- potrivit pentru grupuri mici
- deosebit de important pe interviuri și întâlniri individuale

Cerințele de spațiu:

- Spațiu mare de atelier, spațiu suficient pentru dimensiunea unui grup

- Materiale pentru prototipare și lucru: hârtie, creioane, pixuri, foarfece, lipici, ziare pentru tăierea imaginilor, cartonașe de hârtie mai mari A2/A1, stickere colorate

- Tablă albă, marker pentru tablă albă table negre, cretă

Spațiu pentru prezentări

Crearea de spațiu în lecțiile online

① VIRTUAL
IT - space

...KGROUND SETTINGS - a picture with a familiar university room = FOR ALL
...al TOOLS AND MATERIALS PREPARED IN ADVANCE
...sic 3 MINUTES BEFORE LECTURE
...mera ON FOR ALL PARTICIPANTS (WITH SOME LIMITATIONS)

② PERSONAL SPACE TEACHER & STUDENTS
- HOME OFFICE FOR TEACHERS
- PROPER CHAIR AND DESK FOR STUDENTS
- PERSONAL SPACE FOR BOTH (S and T)

PERSONAL SPACE
- GOOD CONNECTION
- CONFY SPACE
- WORKING HARDWARE
- MATERIAL (IF NEEDED)

ONLINE SPACE
- ONLINE ACCESS TO MATERIAL
  - SHARED FOLDER/FILE
  - CHAT
- FRIEDLY + LIMITED TOOLS
- PLATFORM SUITABLE FOR THE TASK
  - MIRO BRAINSTORMING
  - BREAKOUT ROOM FOR DISCUSSION
- CLEAR EXPLANATION OF RULES/SETTING BEFORE STARTING
- 1+ MODERATOR
- DEBRIEFING + DISCUSSION
- THINK WHERE TO GO, NOT HOW TO GO THERE

Pasul 3. PERSOANELE implicate în procesul design thinking

Utilizatorii pot fi din discipline diferite sau asemănătoare

Rolul Moderatorului :
- să aranjeze **spațiul**
- să motiveze **participanții**
- să selecteze cine lucrează cu cine în **echipe**
- să organizeze **timpul**
- să ceară grupului să aleagă liderul sau...
- să indice un lider pentru fiecare grup
- să fie atent la oameni –
  la implicarea participanților

SECOND PART

- reactions and chat
- sharing materials
- music
- worm up
- games
- breaks
- break up rooms
- Quizes
- virtu
- tools and aplications
- background
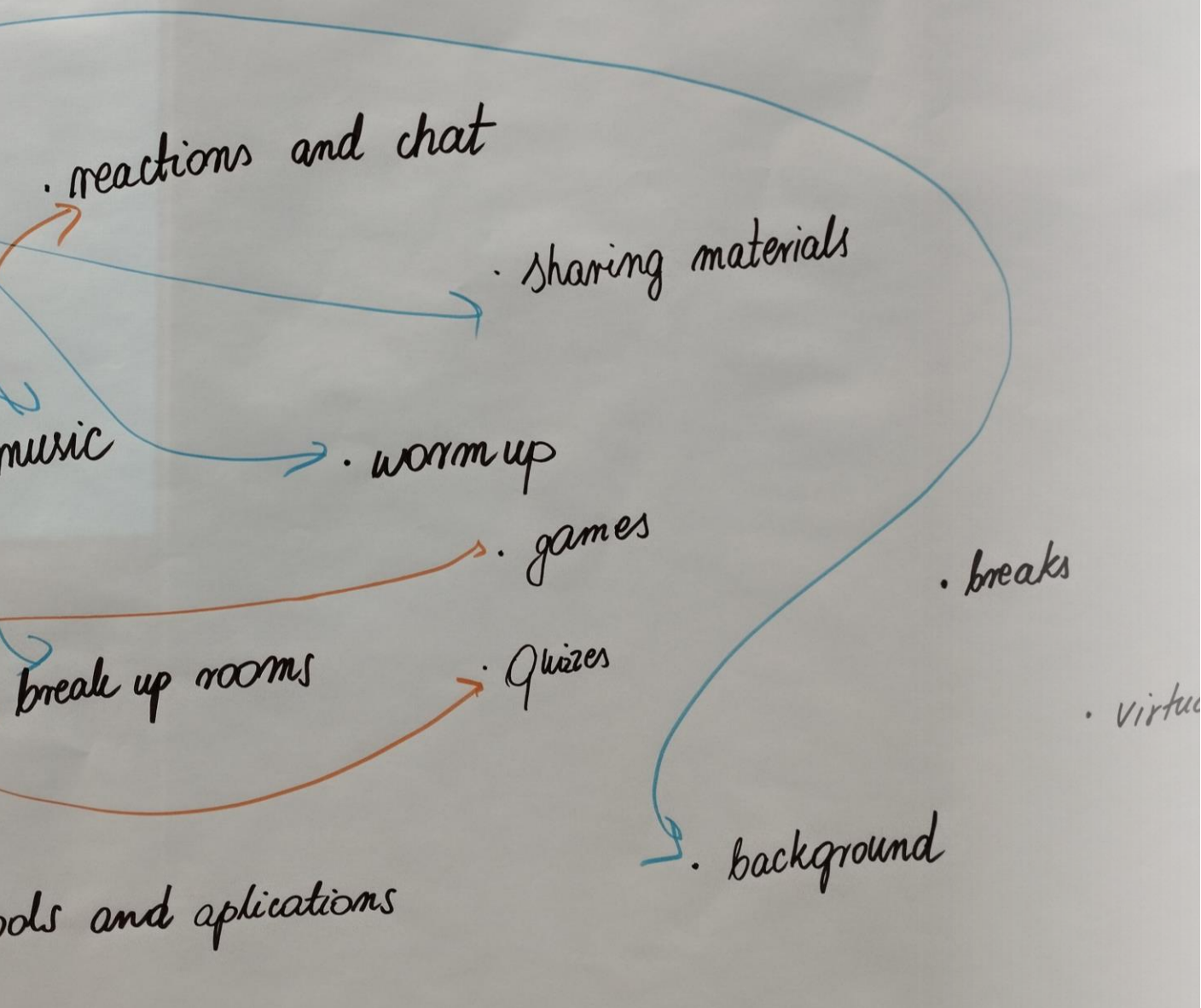
Considerarea oamenilor și a rolurilor lor și perspectivele lor în lecțiile online

Cele cinci etape ale procesului Design Thinking
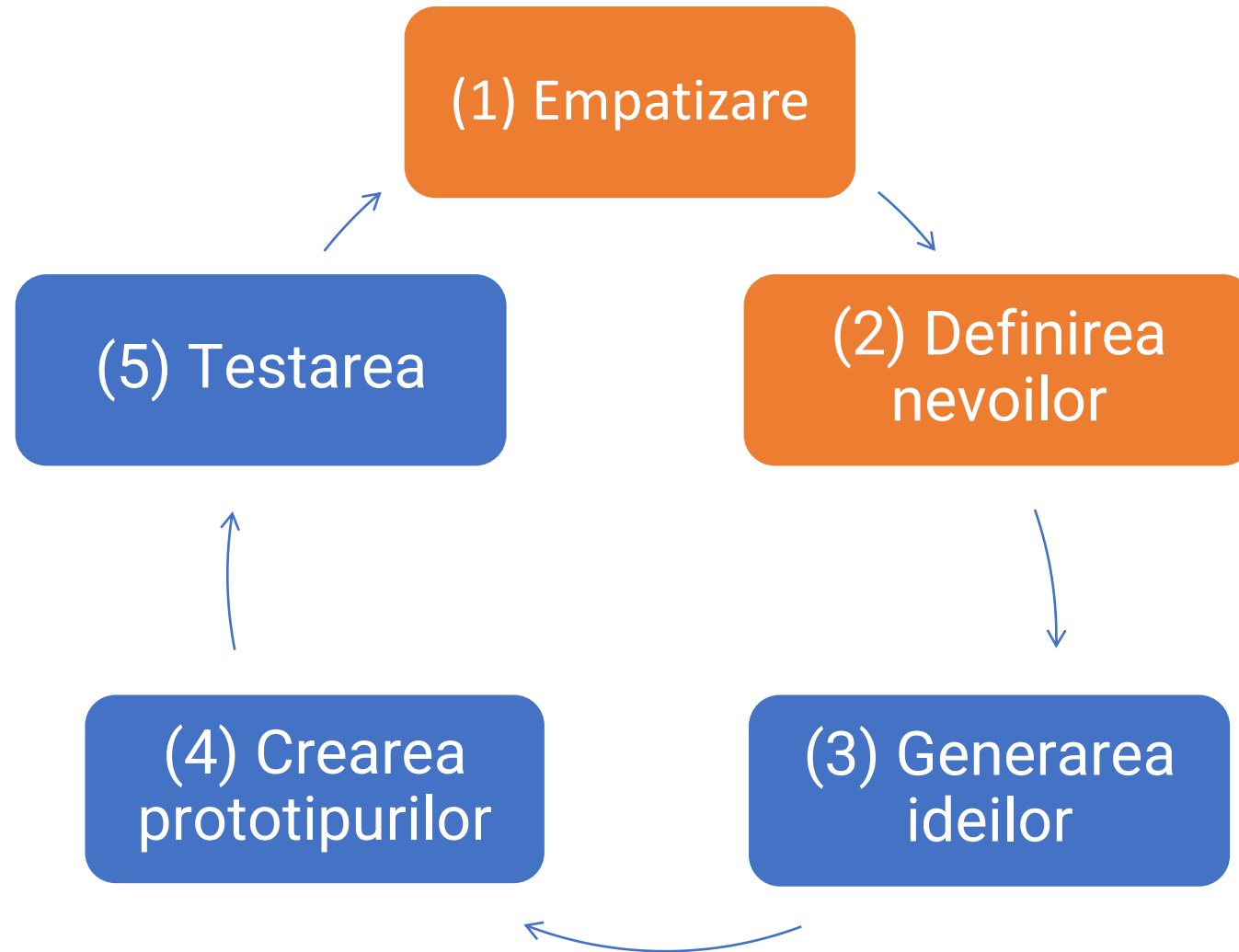
Empatizare & Diagnoza nevoilor

InComp Edu
Innovative Competence in On-Line Education

Co-funded by the
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of the European Union

Empatia și interviul utilizatorilor. Spre diagnosticarea nevoilor.

Empatie: Cum să intri în pantofii utilizatorului?

1. Inițierea brainstorming-ul de grup – fiecare grup ar trebui să găsească (scrie pe foaie de hârtie) întrebările care ar trebui adresate unui profesor și/sau unui elev pentru a afla care sunt nevoile importante în crearea unui scenariu bun de lecție online.

2. Alegerea într-un grup a unei persoane/două persoane care vor fi intervievate.

3. Utilizatorii de servicii și produse sunt foarte diferiți. Același lucru este valabil și pentru cursuri sau seminarii.

4. În timp ce creării întrebărilor de brainstorming și apoi intervievării – focusul trebuie să fie nu la un grup țintă, ci la utilizatorul specific.

Diagnoza nevoilor

- **Exemple** de întrebări: care a fost cea mai bună experiență a ta cu predarea/învățarea online? Ce apeciezi cel mai mult la lecțiile online? Ce părere ai despre cronometrare, pregătire, activități etc.? Ce nouă lecție vor iubi elevii? Ce este important pentru satisfacția ta în cazul unei lecții online?
- Găsiți **modele** - întrebări deschise, nesugestive
- **Utilizatori** - ce le place, ce urăsc
- Întrebări pentru **motive**: de ce? de ce nu? cea mai bună și cea mai proastă experiență
- **Motivație, frustrare, încântare, obiceiuri, demografie** – trăsături.
- Gânditi-vă și la utilizatorii cu **nevoi speciale** (talentați, cu dizabilități, plictisiți etc)

Interviurile
– structură și roluri

- Selectarea echipelor
- Pregătirea întrebărilor
- Indicarea persoanelor pentru interviuri
- Realizarea interviurilor

În mod optim, la interviu participă cel puțin trei persoane:
- unul (utilizator) povestește despre experiențele sale
- unul (intervievatorul) pune întrebările și ascultă activ
- unul ia notițe
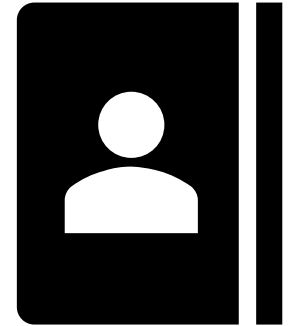
Empatie - interviuri

O persoană (intervievatorul) pune întrebările și ascultă activ

Se prezintă și prezintă scopul interviului

Conturează axa conversației în scenariu

Se subliniază obiectivul

Se folosesc întrebările care au fost indicate în cadrul brainstorming-ului la etapa empatiei

Se ascultă... 75% timp pentru utilizator

Dacă utilizatorul dorește să adauge ceva, este binevenit

Harta empatiei – emoții și cuvinte; observarea utilizatorului

Zice: citate literale lucruri care apar frecvent Contradicții	**Crede:** comparăm ceea ce spune cu ceea ce face și ce simte
Face: ce activități rezultă din ce spune ce face / ce alege ce foloseste	**Simpte:** ce emoții pot fi citite (mânie, mulțumire, bucurie, amărăciune) când zâmbește când se concentrează când mișcă picioarele/sprâncenele când se joacă cu un pix

Observații cheie – discuție rezumativă

- Ce contradicții au apărut în etapa Empatiei?
- Ce te-a surprins?
- Ce a fost interesant?
- Ce era nou?
- Ce era de așteptat cel mai puțin?
- Ce subiect a fost problema dominantă?

Interviuri – informații pentru intervievator

- Nu vă fie frică de tăcere - bucurați-vă de liniște
- Privește, păstrează contactul vizual
- Persoana numărul 2 cere permisiunea dacă înregistrează, creează o atmosferă bună, ar trebui să fie experimentată și reținută, moderată
- Camera influențează comportamentul, uităm de reportofon sau... nu îl folosim
- Persoana cu numărul 3 notează: tăcere, ezitare, rezistență și entuziasm, care întrebări afectează reacția
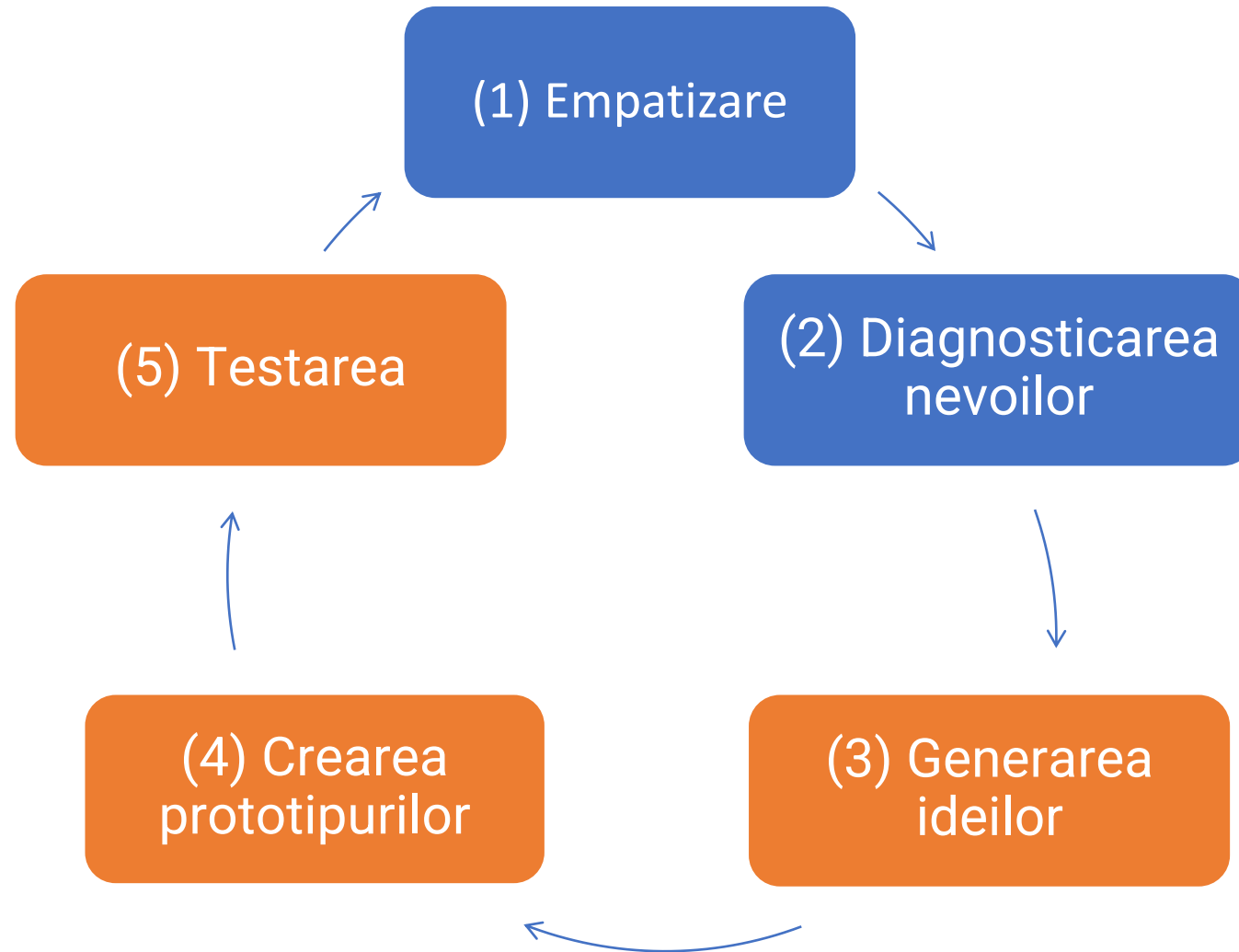
Generarea ideilor, Crearea prototipurilor & Testarea

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Pasul 5. Generarea ideilor, crearea prototipurilor și testarea

- Grupul știe acum ce nevoi sunt definite, și se generează acum cât mai multe idei de scenarii de lecții online
- Se aleg idei cu cel mai mare potențial
- Se facilitează tranziția de la generarea de idei la prototipare
- Se imaginează clasa, se imaginează ecranul

Diagnosticarea nevoilor și generarea de idei – ce a rezultat din interviu?

Care este formularea problemei în opinia dumneavoastră?

A cui este problema?A lui? A ei? A noastră? Nu a noastră?

Sfaturi:

Care este cel mai important pentru el/ea (în procesul de empatie)?

Despre ce a vorbit el/ea cel mai mult?

Unde s-au canalizat emoțiile?

În generarea the scenariilor:

Se descrie problema care stârnește îngrijorarea

Simplu și universal

Se începe cu „Cum am putea să o facem..."

Cum am putea să scriem un plan pentru o lecție online?

Materiale:

post-it cards

se lipesc pe o foaie de hârtie sau pe tabla albă

Timp: 10 minute

DE CE? PENTRU CE?

PROBLEMA

CUM?

Generarea ideilor - TASK

Care este perspectiva noastră unică?

Ce a fost unic în faza de diagnoză a personas?

TASK:

Întrebarea

Număr de idei

Diferite personas – diferite grupuri

Ce îți amintești de la cursurile din studenția ta?

- Ce ai vrea să implementezi?
- Ce ai vrea să eviți?

În timp ce se generează scenariile se pun întrebări:

Exemple:

Cum am putea-o ajuta pe Maria să se simtă ca o vedetă alături de public atunci când este la prelegerea noastră?

Cum ne putem ajuta studentul nostru talentat să petreacă timpul eficient la prelegerea noastră, deși el a citit deja manualul nostru?

Pe parcursul workshop-ului

Moderator

- Determină și propune la ce nivel al scării problemelor ar trebui să se lucreze
- Verifică dacă provocarea proiectării întrunește criteriile

Participant

- Caută nevoi nerostite, ascunse
- separă nevoile de soluții
- formulează provocări de proiectare

Brainstorming

- tradițional (flipchart, hârtie, markere)
- desenat (desenarea provocărilor, arhitectura)
- scris (pentru introvertiți)
- personalizat (se alege modalitatea)

Materiale

Post-it-uri, markere, tablă albă

Timp – până la 20 minute

6-3-5 (max. 6 participanți – 3 idei – 5 minute) / sau 4-3-4

Brainstorming tradițional – linii directoare

- Se scriu/desenează toate ideile
- Idei nu concepte
- Idei pe temă
- O singură sesiune
- Se construiesc asocieri cu sesiunile anterioare
- De asemenea, sunt acceptate ideile nebunești
- Nu se evaluează
- Nu se blochează
- Nu contează corectitudinea/detaliile în această etapă

Harta de afinitate – selecție de idei

1. Încântător
2. Raţional
3. Echipa favorită
4. Pe termen lung cu potențial

Prototiparea și testarea. Prototipurile sunt acum verificate. Se folosesc aceste răspunsuri în scenarii

Ce este asta?

Este rezolvarea problemelor de către utilizator?

Ce oferă utilizatorului?

Cum funcționează?

Prototiparea & Testarea

Prototip 1 – Ce a fost verificat? Ce a fost schimbat?

Prototip 2 – Ce a fost verificat? Ce a fost schimbat?

Prototip 3– Ce a fost verificat? Ce a fost schimbat?
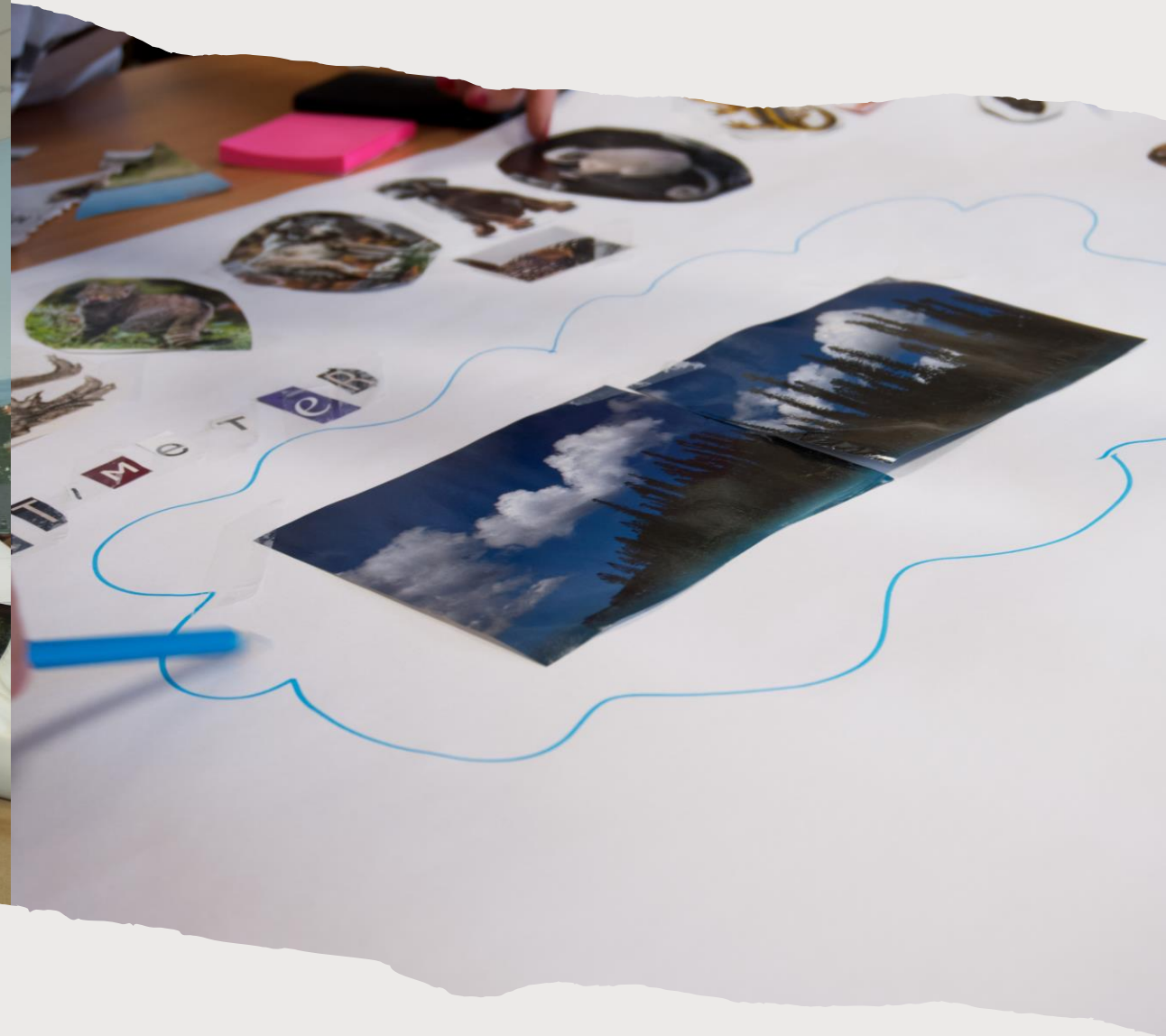
Prototipare & Testare

Prototipare & Testare
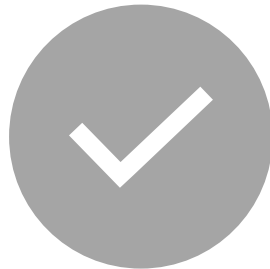
Prototiparea vizuală

Ideile generate sunt începutul căutării soluțiilor. Luați notițe, adunați-le pe cele care ne pot duce mai departe.

Nevoile nu sunt soluții!

Nu proiectați pentru persoană, ci pentru nevoi.

Prototiparea vizuală este cea mai rapidă modalitate de a arăta idei și de a aduna informații despre nevoile potențialilor utilizatori.

Pregătiți vizualizarea scenariului – performanță scurtă.

Testarea

Obiectiv: testarea potențialului ideilor selectate

Cum ar trebui să funcționeze?

Ce vrem să verificăm?

Ascultă - nu ne apăra ideile (amintește-ți etapa empatiei)

Notează toate răspunsurile

Nu analiza notele, doar ascultă

Prototiparea & Testarea

- dezvoltarea ideilor selectate în timpul selecției

- prototiparea vă permite să verificați potențialul lor și să obțineți rezultate

- rezumatul trebuie pregătit în formă scrisă

Cum pregătim un Design Thinking Workshop?

The InCompEdu project promotes innovative digital skills

that can be implemented both in online and hybrid higher education.

Towards Effective Teaching
Reimagining online courses for the future of higher education

https://incompedu.ug.edu.pl
Published: Gdańsk, 2023

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