eDea

Deliverable 5

Supporting content for integrating design thinking activities into learning processes

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Introduction

The eDea research project aims to design digital interventions that support design teams in the contexts of learning, entrepreneurship, and social entrepreneurship in collaboration, and the design of innovative solutions to difficult challenges of our time by applying the steps of design thinking, a deep human-centered process that helps introduce solutions even when they are not obvious at first glance. Design thinking is based on steps of problem investigation, empathy and observation to understand real user needs, problem redefinition, ideation, idea evaluation, and prototyping that design in design teams to approach a problem from different angles considering the real the initial perceived and not user needs.

This technique presents design thinking activities that can be directly applied to learning or design processes or as inspiration for new design. The activities are designed for applications in both learning and professional settings with the aim of encouraging alternative and innovative thinking. The activities can be implemented as presented in this text. They can also be used as a source of inspiration for new designs.

The technical report is organized in 2 parts. The first part presents a collection of actions and exercises that can be integrated directly into the stages of design thinking. Instructors or facilitators can choose from these actions and combine them for the promotion of innovative thinking. In the second part of the technical report specific challenges are presented in the form of cases that can be used by design or student teams for building innovation skills. The cases cover diverse themes of entrepreneurship and social entrepreneurship.

Part A. Atomic design thinking exercises

Atomic design thinking exercises are self-contained activities, each of which can be considered as a stand-alone element that can be combined in a flexible and adaptable way with others to create a complete unit of work. In this sense, structural exercises are "atomic", i.e. they cannot be broken down into smaller steps, just like an atom in physics. They are building blocks of larger activities.

Structural exercises are general purpose and usually relate to one or more steps of design thinking, such as problem solving, ideation, or prototyping. They are designed for maximum adaptability and use in broad design or learning contexts.

This section presents structured exercises that instructors or facilitators of design groups can use alone or adapt in conjunction with other activities to create an engaging design thinking experience for students or participants in innovative design processes.

Creativity

30 shapes

Goals

Encouraging participants and building self-confidence in their creative ability.

Use

The activity can be used at the beginning of the design thinking process.

Implementation

Each participant receives from the teacher or coordinator a sheet of paper showing 30 geometric figures. They have to turn each shape into a picture by drawing.

Duration

15 minutes.
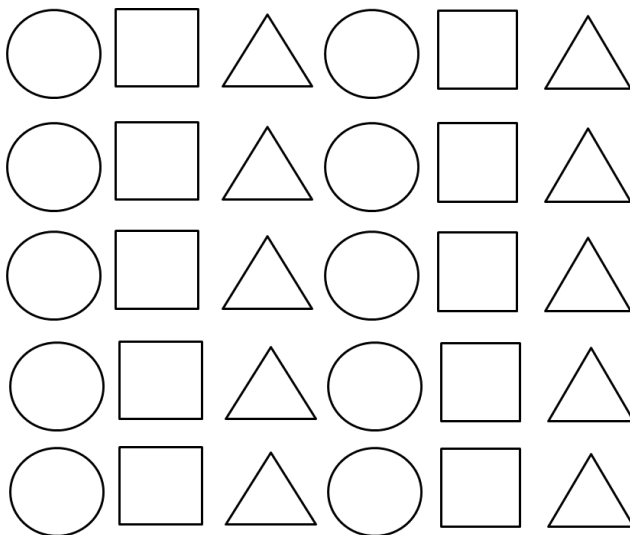
Figure 1. 30 shapes (adapted from Lewrick et al, 2020).

Designing an object that is useful to someone

Goals

Encouraging participants and building self-confidence in their creative ability.

Use

The activity can be used at the beginning of the design thinking process.

Implementation

Each participant is encouraged to draw something useful to someone using the shapes in the image below.

Duration

15 minutes.
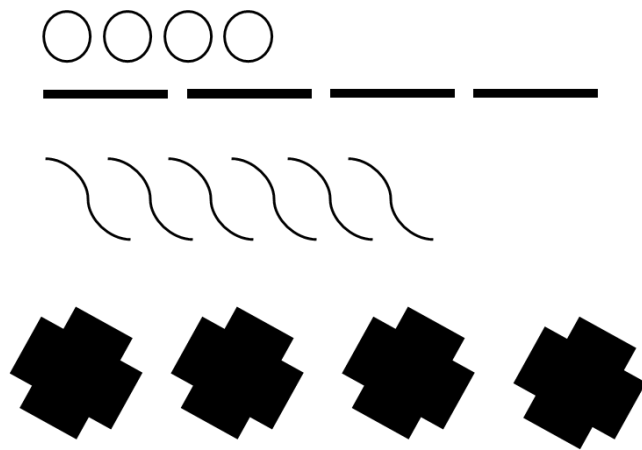
Figure 2. Designing an object that is useful to someone.

Encouraging team spirit

Team name definition and logo design

Goals

The expression of group identity.

Use

The activity can be used early in the design thinking process as a tool to encourage team spirit within a group.

Implementation

Team members are encouraged to come up with a name for their team and design a logo. They have the choice of medium to use to design the logo, which can be designed on paper, digitally, or in another medium of their choice.

Duration

The activity can be given as homework. Each group can choose the time to invest.

Group profile description and collaboration rules definition

Goals

Familiarity of team members with each other.

The recognition and recording of knowledge and skills of members.

The definition of good cooperation rules and procedures.

Use

The activity can be used at the beginning of the design thinking process as a tool that encourages team spirit within a group and the definition of a collaborative "contract" that ensures equality and respect among members while encouraging innovative thinking.

Implementation

Team members are encouraged to define their team profile using the "team canvas" shown in the image below. Team members discuss and agree on team goals, roles and skills, values, and rules of cooperation.

Duration

2 hours.

Figure 3. Group canvas (available through Creative Commons).

Table of interests

Goals

Getting members of a team to know each other or, in other words, "breaking the ice" at the beginning of a collaboration.

Use

The activity can be used at the beginning of a collaboration so that people who do not necessarily know each other get to know each other and form a group through discussion about their interests. Ideally, the activity is implemented with all the groups, i.e. the whole class.

The activity can also be used in between other exercises for team rest and relaxation.

Implementation

Each participant receives an A4 sheet of paper that includes a table of questions regarding interests, preferences, or experiences such as the one below. The process coordinator can adapt the questions given as examples. Each participant is asked to mark in each box the name of another participant for whom the question has a positive answer.

Has read 3 novels	Likes to cook	Has travelled to Europe	Has designed a game, learning or otherwise
Has attended ancient theater	Has attended 3 concerts	Has traveled to Paris	Their favorite color is blue
Speaks 3 languages	Has a parent from a different country	Enjoys holidays at the sea	Knows how to play a musical instrument
Prefers casual attire	Has siblings	Enjoys mountain hiking	Has worked in a professional environment
Has visited 3 Greek islands	Wants to start a company	Has programmed software	Has visited Epidaurus
Has visited 3 countries	Likes hiking	Has experience in design thinking	Wants to work in a startup company

Figure 1. Interests table (adapted from Lewrick et al, 2020).

In this way, participants are encouraged to communicate with many people in the class and get to know each other. The participant who completes the table first is the winner of the process and receives a reward.

Duration

20 minutes.

Water transfer

Goals

Encouraging teamwork and cooperation to achieve a common goal.

Use

The activity can be used at the beginning of a collaboration to promote team spirit.

The activity can also be used in between other exercises for team rest and relaxation.

Implementation

Teams are asked to carry water from a start point to a finish point that are some distance apart, for example 5 – 8 meters for teams of 6 using aids such as:

- 1 bottle of water 1.5lt.
- A plastic bag.
- 3 paper cups of water.
- A piece of watering hose 50cm long.
- A biodegradable plastic bag.
- 2 reams of A4 paper.
- 1 disposable wooden spoon.
- 1 piece of aluminum foil 50x50cm2.
- 1 sponge.
- Paper clips.
- 4 skewer sticks.

Between the start and finish points for each team are predetermined spots where members can stand, as shown below. Only water can be transported from one point to the next. Materials used in one place cannot be reused in another.

Initially, the members of each group meet to create a water transfer plan using the available auxiliary materials. They then execute their plan. The first team to carry water to the finish point is the winner and receives a reward.

Duration

45 minutes.
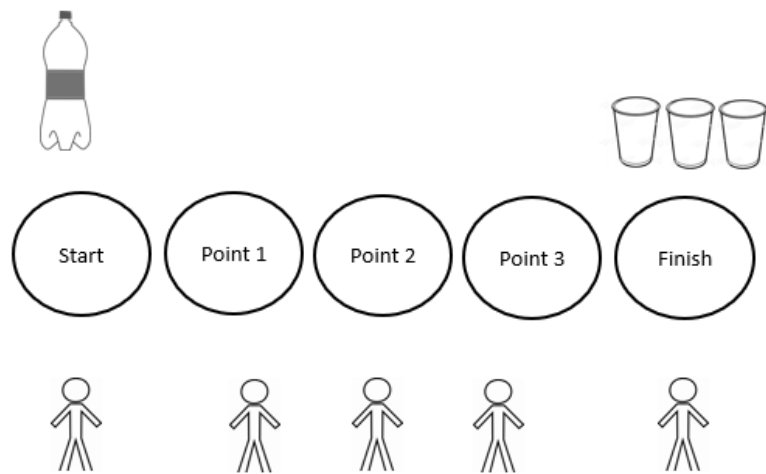
Figure 5. Water transfer.

Water purification

Goals

Encouraging teamwork and cooperation to achieve a common goal.

Use

The activity can be used at the beginning of a collaboration to promote team spirit.

The activity can also be used in between other exercises for team rest and relaxation.

Implementation

Teams are asked to purify water in various contexts, for example during the duration of a mountain excursion, in the school yard, using colored water, and more. They have at their disposal auxiliary materials such as:

- 2 paper cups of water.
- 1 roll of A4 paper.
- 5 clips.
- 3 large size clips.
- 2 paper coffee filters.
- 1 piece of aluminum foil 50x50cm2.
- 5 rubber bands.
- 5 skewer sticks.

Duration

20 minutes.

Warm-up, step 1: Story of my name

Goals

Getting members of a team to know each other or, in other words, "breaking the ice" at the beginning of a collaboration.

Use

The activity can be used at the beginning of a collaboration so that people who do not necessarily know each other get to know each other and form a group through discussion about their interests.

Implementation

The members of each group are asked to talk about themselves, their interests, and their skills. The broader activity includes 3 steps, of which all or some of them can be implemented depending on the needs of the group.

This exercise is the 1st of the 3 steps. Each group member is asked to share the story of their name, its special meaning, for example cultural, historical, spiritual, or other, how it was chosen, for example based on traditions or important family figures, and more. The exercise is designed to be simple, encouraging all team members to participate in the discussion and thus initiate collaboration (adapted from Stein Greenberg et al, 2021).

Duration

5 minutes for each team member.

Warm-up, step 2: Survival skills in a post-apocalyptic age

Goals

Getting members of a team to know each other or, in other words, "breaking the ice" at the beginning of a collaboration.

Use

The activity can be used at the beginning of a collaboration so that people who do not necessarily know each other get to know each other and form a group through discussion about their interests.

Implementation

The members of each group are asked to talk about themselves, their interests, and their skills. The broader activity includes 3 steps, of which all or some of them can be implemented depending on the needs of the group.

This exercise is the 2nd of the 3 steps. Each team member is asked to describe their skills that would help their team survive in a post-apocalyptic era where civilization has been destroyed. The exercise is unexpected and encourages group members to talk about their interests outside of the professional arena, such as farming skills, cooking, coordination, herb gathering, making shelters, orienteering, and more (adapted from Stein Greenberg et al, 2021).

Duration

5 minutes for each team member.

Warm-up, step 3: Professional skills

Goals

Getting members of a team to know each other or, in other words, "breaking the ice" at the beginning of a collaboration.

Use

The activity can be used at the beginning of a collaboration so that people who do not necessarily know each other get to know each other and form a group through discussion about their interests.

Implementation

The members of each group are asked to talk about themselves, their interests, and their skills. The broader activity includes 3 steps, of which all or some of them can be implemented depending on the needs of the group.

This exercise is the 3rd of the 3 steps. Each team member is asked to describe their skills in their field of work, such as at school, university, or the company they work for. Alternatively or additionally, he is asked to describe how he would like to be seen by colleagues in a professional setting, i.e. what skills he would like to project in a positive way (adapted from Stein Greenberg et al, 2021).

Duration

5 minutes for each team member.

Two truths and a lie

Goals

Getting members of a group to get to know each other through sharing stories about themselves.

Use

The activity can be used at the beginning of a collaboration so that people who don't necessarily know each other get to know each other and form a team through telling their stories.

Implementation

The members of each group are asked to tell 3 stories about themselves. Two of them are true, while the third is false. Group members try to guess which stories are true and which are not (adapted from World of Work Project, 2023).

Duration

10 minutes for each team member.

Telling our stories

Goals

The acquaintance of the members of a group with each other through structured stories about their lives.

Use

The activity can be used at the beginning of a collaboration so that people who do not necessarily know each other get to know each other and form a team through storytelling.

Implementation

Panel members answer questions about their childhood, their years as young adults, and now. They then weave these into a story that they share with other group members (adapted from Hi Toolbox, 2023). Each team member notes their answers on slips of paper and groups them by category.

Examples of questions that group members could answer about their childhood are:

- Think of a situation that made you happy.
- A person who was important to you.
- A situation that changed you.

Examples of questions that group members could answer about their years as young adults are:

- Present something you were very interested in.
- A person who helped you grow.
- A situation that caused you to change.

Examples of questions that team members could answer for now are:

- Present a situation that motivates you to take action.
- A situation that made you realize a talent of yours.
- A failure from which you learned something.

Then each team member has 10 minutes to organize the answers into a story.

Finally, each team member has 4 minutes to present the story.

Duration

1 hour for a group of 6 people.

Problem investigation

Description of the problem through images, videos, scientific articles, and other sources

Goals

Investigating the problem through digital and other sources.

Understanding the true parameters of the problem.

Recording information about the problem.

Describing the problem.

Use

The activity can be used in investigative processes to understand different aspects of a problem through searching for information and data.

Implementation

Team members are encouraged to explore and record information that contributes to the understanding and description of the problem through images, videos, scientific articles, media articles, social media posts, and other sources.

Duration

3 hours.

Identifying correlations

Goals

The recognition of correlations between the problem and the wider social environment.

Use

The activity can be used in investigative processes to understand the different aspects of a problem in relation to the wider social environment and the wants and needs of the users of a possible solution.

Implementation

Team members are encouraged to explore and record correlations that contribute to understanding the real parameters of the problem from the users' perspective. They are asked to record:

- 3 ideas related to the problem.
- 3 ideas related to the problem and people.
- 3 ideas related to the problem and places.
- 3 problem-related ideas and feelings.
- 3 ideas related to the problem and actions.

Duration

2 hours.

Expert eyes

Goals

Identifying the context in which the problem will be solved.

Use

The activity can be used to help participants reflect on the importance of approaching the problem from different perspectives to generate ideas to solve and address needs.

It can also be used when the design team is unable to propose new ideas to help the collaboration progress.

Implementation

Participants are asked to take a walk around their neighborhood and record their observations.

They are then asked to take the same walk each time in the company of an expert with a different specialty and note down their observations. Through this walk, different observations related to the expert's point of view will emerge each time. For example, an engineer will notice imperfections in the road or invisible traffic signals while a gardener will notice gardens, sidewalk beds, and balconies with plants (adapted from Stein Greenberg et al, 2021).

Duration

1 hour for each walk.

Metaphors and similes

Goals

Seeking inspiration for new ideas by recognizing associations between seemingly disparate situations or environments that have common characteristics.

Use

The activity can be used to explore the problem space.

It can also be used in brainstorming processes to generate a wealth of ideas to solve the problem.

Implementation

Participants are asked to use similes and metaphors to understand a need, a quality, etc. based on analogies with something else. For example, the metaphor "the user is drowning in paper" brings out emotions.

Alternatively or additionally, participants, in their attempt to solve a problem, are asked to observe an apparently different situation that nevertheless has similar characteristics. For example, in a track car race, after some laps a car needs to change tires. He enters the pits where a team of specialists who each perform a very specific task work together to change the tires in the shortest possible time. A seemingly different situation is an emergency room in a hospital. When a new case comes in, a team of specialists who each perform a very specific task work together to deal with a health emergency in the shortest possible time to save the patient's life. Both cases involve immediate response by a highly collaborative team of specialists, and thus solutions for one case could inspire solutions for the other (adapted from Brown, 2019).

Duration

1 hour.

Immersion for insight

Goals

Put the design team in the shoes of the user to understand the experiences, problems, and emotions that users face when using a product or service to improve.

Use

The activity can be used to help participants understand the real needs of users through their own personal experience.

Implementation

Participants are asked to follow a step-by-step user-oriented process and note down points for possible improvements. For example, if the goal is to improve the digital application process for admission to a master's degree program, participants can follow the prescribed steps until the process is complete without making a submission. They can also follow these steps in different environments, such as at home, in the university library, or in an Internet cafe. Different conditions, for example different computer power or different network speeds, could highlight different points of potential improvements (adapted from Stein Greenberg et al, 2021).

Duration

Duration depends on the process in which the participants will be immersed.

Shadowing

Goals

Understanding the real needs of users through observation of their daily life in their environment.

Use

The activity can be used to help participants understand the importance of approaching the problem from a different perspective.

Implementation

Participants choose a non-characteristic user with experience different from their own and follow them for 1 day. During the day's Duration they note their observations, for example what impressed them, what surprised them, what new they learned about the user's needs (adapted from Stein Greenberg et al, 2021).

Duration

1 day.

Observation exercise

Goals

The encouragement of observation.

Use

The activity can be used during Duration problem-solving exercises to help participants understand the importance of observation in identifying user needs.

Implementation

Participants see an image of everyday life that presents multiple levels of information. For example, the image may show a busy square where groups of people are engaged in different activities. The more layers of information that appear in the image, the more interesting the activity will be. Participants are asked to discuss what they see, what they think is happening in the image, why they believe this, and what else they see (adapted from Stein Greenberg, 2021).

Figure 2. Observation exercise.

Duration

30 minutes.

What does this person need?

Goals

The encouragement of observation.

Use

The activity can be used during Duration problem-solving exercises to help participants understand the importance of observation in identifying user needs.

Implementation

Participants see a picture where a person is trying to find something. They are asked to think about what the user needs. They are encouraged to give at least 7 answers. Answers must begin with a verb. A verb describes a need as opposed to a noun which describes a solution. (adapted from Stein Greenberg, 2021).

Figure 3. What does this person need?

Duration

30 minutes.

What? How? Why?

Goals

This tool helps design teams reach deeper levels of observation. It is a way that guides designers from concrete observations of a situation to more abstract feelings, observations, and concepts in order to discover the motivations and patterns that exist in the background. This tool can be used to analyze photographs taken by the design team in the field for both composition purposes and to expand the search area of needs.

Use

The activity can be used in the early stages of exploring the design thinking process.

Implementation

In the preparation stage, the participants are asked to divide a sheet into three sections titled What? How; and why;

In the next stage, that of observation, they record specific observations and objective details. What is the user doing in a particular case or photo? At this stage participants are asked not to make assumptions.

In the next step, that of understanding, participants are asked to answer questions such as: How does the user do what they do? Does it require effort? Does he seem rushed? Does the activity seem to be a negative or positive experience? Participants are asked to use adjectives and explanations.

In the next stage the participants are asked to make assumptions that interpret the situation. Why does the user do what they do in the particular way they do it? Participants are asked to make educated guesses about his motives and feelings. This step reveals hypotheses that the design team can test with users and often leads to unexpected ideas (adapted from Hasso Plattner Institute of Design, 2018).

Duration

20 minutes.

Stakeholder map

Goals

The tool is a visual representation of the ecosystem of stakeholders that affect or are affected by the specific challenge the design team is studying. It is a useful tool because it helps to better understand the wider ecosystem in which the solution proposed by the design team will fit, as well as the relationships between different groups that will interact with it.

Use

The activity is used in the problem investigation process.

Implementation

The activity helps uncover existing formal and informal relationships between stakeholders, identify frictions between them, as well as identify potential opportunities to create new relationships, advance existing ones, or create alternatives.

A stakeholder can be an individual, a group, or an organization that has a particular interest or relationship to the topic or challenge being studied by the design team.

Examples of stakeholders may include:

- Customers, users.
- Employees, internal departments.
- Collaborators.
- Suppliers.
- Associations and communities.
- Government institutions.
- NGOs.
- Media.

Steps for completing a stakeholder map:

- Designers engage in a rapid brainstorming process and list all potential stakeholders with the topic or challenge they are studying. It is recommended that they answer the following questions to facilitate the process:
    - Who is involved with the issue / challenge under study?
    - Who is affected by the result?
    - Who can support the resulting outcome or solution?
    - Who are the key decision makers?

- o Which user groups should be investigated so that the design team has a comprehensive understanding of the problem?

- Planners rank the stakeholders they have listed in order of priority, determining the level of importance of the stakeholders. Categorizing stakeholders and defining their influence helps to better understand their importance. Which of these stakeholders are essential and important to the issue or challenge under study?
- Designers create the stakeholder map by placing the stakeholders in the appropriate place on the map based on the categorization that preceded.
- Analyze and map the ways in which stakeholders are interconnected and exchange value in order for the design team to understand and analyze the relationships formed between them by following the following steps:
    - a. They connect with arrows the involved parties that are interconnected.
    - b. They record what kind of value the parties involved are exchanging, such as products or information, and how one affects the other.
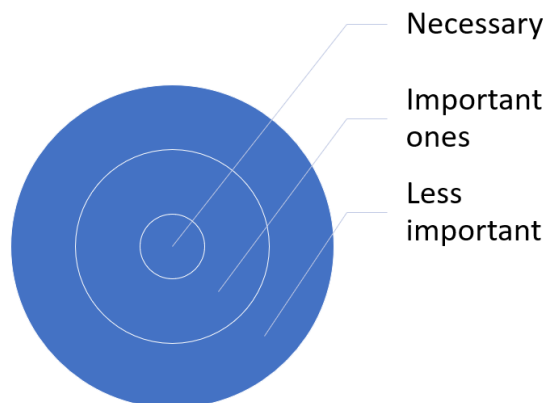
Figure 4. Stakeholder map.

Duration

1 hour.

Problem definition

How can we …

Goals

Redefining the problem in a way that incorporates the results of the problem investigation while facilitating the introduction of many ideas towards possible implementation.

Use

The activity can be used after the problem-solving process and before the ideation process to define the problem as a solution in a way that contributes to innovative thinking.

Implementation

Team members are encouraged to redefine the problem with a proposal. The new definition should achieve the following:

- Incorporate the information gathered through the investigative process about the parameters of the problem.
- Incorporate the design team members' understanding of the problem.
- Offer opportunities to introduce multiple ideas that can be combined to design an effective solution.

Problem redefinition can take the form:

"How could we ... design something that ... would be useful to someone...".

Alternatively, problem redefinition can take the form:

"Who (the user) … what (needs) … why (observation)".

Who?	What?	Why?
The user…	… the needs …	… observation

As mentioned above in the exercise "what the user needs" (page 34) it is important to define the problem using a verb instead of a noun. A verb describes the problem and offers opportunities to introduce new ideas. A noun is already a solution and thus limits the opportunities to introduce further possible solutions.

Duration

1 hour.

2x2 table

Goals

Activity helps structure and classify information about users and the design space, highlighting the relationships between them. The goal is to uncover ideas or areas that need to be explored more deeply. A 2x2 table is also a great way to visually communicate a relationship.

Use

The activity can be used in the problem definition stage of the design process.

Implementation

Participants draw a 2x2 matrix on x- and y-axes, select a range of values for each axis, and draw or stick sticky notes with items on the matrix. They can explore any group of objects or attributes, such as products, incentives, or users.

For example, participants can place products on a table of perceived quality, low to high, against Use natural materials, natural or synthetic. They then look for clusters and associations by observing quadrants that contain information or are empty. Finally they note where the hypothesized correlation breaks down.

Participants may need to try different combinations of price ranges to find one that makes sense. Often the discussion generated by filling in the table is more valuable than the map itself. The 2x2 matrix can also be used to map a competitor landscape. An empty quadrant can signal a market opportunity (or a very bad idea).

Duration

20 minutes.

Scalable "Why-How?"

Goals

The activity helps to specify the different needs of users in a way that highlights a middle ground that makes sense and is workable. As a general rule, the question "Why?" leads to abstract statements and the question "How?" leads to specific statements. Often, abstract statements make more sense, but are not as actionable. The opposite is true for more specific statements.

Use

The activity can be used in the problem definition stage of the design process.

Implementation

Participants implement the following steps:

- They identify some important user needs and write them down at the bottom of a piece of paper.
- Starting from a specific need, they ask "Why?". For example, why does a user "need to see a connection between a product and the process that creates it?" Because the user, "needs confidence that he will not harm his health by understanding its origin."
- They ask why again and continue to build on the same need. At some point, they will reach a very general, abstract need like, "the need to be healthy." This is the top of the ladder.
- They go back down the stairs asking "How?". This step gives participants ideas on how to address the needs.

Duration

20 minutes.

Interviews and user persona

Color, promotion, and reflection

Goals

Preparing and conducting interviews in a way that produces interesting information and feedback.

Use

The activity can be used to define users' needs, wants, feelings, and opinions before the ideation process.

Implementation

Team members are encouraged to prepare for the interview process. General recommendations for organizing the process:

- Conduct at least 3 interviews.
- Each interview should have a Duration of at least 30 minutes.
- The interview should be conducted by at least 2 team members. One of them asks the questions and the other records the answers. In this way, the member asking the questions focuses all his attention on the interviewee, without her being distracted by trying to take notes. This method creates greater closeness between the interviewer and the interviewee.
- Plan the place and time of the interview in a way that contributes to the creation of a relationship of trust between the interviewer and the interviewee.
- The group members offer a gift or consideration to the interviewee, which depends on the relationship between them, for example friendly or professional.
- The interviewees should be people who are familiar so as to facilitate the building of a relationship of trust but not too familiar so that the information to be produced presents interesting and unknown aspects. For example, they may be acquaintances or colleagues but not good friends.

Recommendations for designing interview questions:

- It is recommended to write a collection of questions before the interview.
- It is recommended that team members visualize the progress of the interview.
- The first interview questions are recommended to create an atmosphere of trust.
- Next, it is recommended to design questions:

    "**Colour**", i.e. questions that encourage the interviewee to delve deeper into the topic of discussion. For example if the interviewee mentions that they had

a very interesting visit to a museum a color question could be "what made the visit interesting".

"**Promotion**", i.e. questions that go to a different topic. For example a lead question might be "the conversation is very interesting, could we talk about...".

'Reflection', i.e. questions that encourage the interviewee to reflect on what they have said. These questions offer opportunities for the interviewee to realize ideas that until then were latent. They can provide very interesting information. However, they should only be done if a relationship of trust has been built between the interviewer and the interviewee.

Duration

3 hours for designing questions. At least 30 minutes to conduct each interview.

Route map

Goals

The road map helps break down a process into its individual parts to highlight areas where a new perspective on the problem can be gained. It helps design teams not overlook but instead systematically analyze the details in the process of empathizing and understanding a user and their experience.

Use

The road map can be used in the early exploratory stages of the design thinking process, after data from user research has been gathered. It can lead the design team's empathy process. It can also be used to communicate the design team's findings to others.

Implementation

The participants:

- **Select a procedure to examine**. For example, the user's morning routine. They then create a map of this process that captures each step. They organize data in a way that makes sense using, for example, a timeline of events, a series of pictures, or a deck of cards. The design team can create a roadmap based on user observation or interviewing. Alternatively, the user can design their own route map.
- **They are encouraged to consider all available information**. Often design teams overlook seemingly insignificant details such as opening the window shades during the Duration of the morning routine. What seems insignificant can be the trigger that evolves into an amazing insight. In this activity, participants are asked not to overlook elements even if they do not appear at first glance related to the problem to be solved.
- **They look for patterns and anomalies**. Participants are encouraged to connect individual events to a larger context. It is often the coupling of an observation with prior knowledge that leads to an important finding.

Duration

20 minutes.

Empathic interviews

Goals

The activity contributes to the acquisition of empathy. By interviewing users participants begin to better understand a person's behaviors, choices, and needs. We suggest interviewing in person and in pairs of researchers so that one person can chat while the other records.

Use

The activity can be used to define users' needs, wants, feelings, and opinions before the ideation process.

Implementation

It is recommended that the interviews be carried out in person and in groups of two designers, so that one member can chat while the other takes notes.

Designers conducting the interviews follow the following best practices:

- **They ask why**. Even when they think they know the answer.

- **They never say "usually" when asking a question**. Rather, they are asking about a specific incident. "Tell me about the last time you _____."

- **They encourage storytelling. Stories reveal how users think about the world**. Designers look for inconsistencies. What users say and what they end up doing may be different. These inconsistencies often hide interesting findings.

- **Pay attention to non-verbal cues**. They are aware of body language and emotions.

- **They are not afraid of silence**. When they allow silence, they give users time to think about their answers, which can lead to deeper answers.

- **Ask questions in a neutral way and do not indicate answers**. "What do you think about buying gifts for your spouse?" is better than "Don't you think shopping is great?".

Duration

Each interview must have a duration of at least 30 minutes.

Five "Why?"

Goals

Activity contributes to a deeper understanding of why a phenomenon occurs or why users act in a certain way, building a better understanding of the problem.

Use

The activity can be used in the early stages of empathizing and defining, in conjunction with other forms of interviewing.

Implementation

Designers ask a basic question about something the user is doing, such as "Why are you doing this?". In each answer, they successively ask again "Why ..?".

For example:

- Why do you play sports?
  - For my health.
- Why does exercise improve your health?
  - Because I exercise vigorously and burn calories.
- Why is this important?
  - To lose weight.
- Why do you want to lose weight?
  - To have a better presentation.

The questions can continue.

Duration

5 minutes.

Photo diary

Goals

The activity helps to highlight friction points, opinions, and behavioral patterns of users based on what they consider important in their daily lives.

Use

The activity is used in the stages of empathy and ideation.

Implementation

The designers ask potential users to keep a journal, both written and photographic. If possible, they can provide them with a camera. They don't give very specific instructions. Instead, they let users photograph what they consider important.

The log can generally be about the daily life of the users or more specifically about their interaction with a particular product or service.

Duration

Up to 1 day.

Card sorting

Goals

Activity contributes to understanding users' mental models regarding a product, device, or system.

Use

The activity is used in the empathy stage.

Implementation

Designers prepare cards / pieces of paper where on each they mention a possible feature, function, or design property of the product or system under design. They ask users to arrange and sort the cards in the space, for example on the table, in whatever way makes sense to them. It helps to encourage users to describe what they are doing so that designers can better understand how users decide to group concepts.

The way they organize the cards can reveal their expectations, their priorities and their desires regarding possible functions and other features.

Duration

30 minutes preparation, 5 minutes per user.

End user interviews

Goals

By identifying extreme cases of users that deviate from the expected average, new insights can be discovered and areas where improvements can be made.

Use

This is a specific type of interview that can be used in the initial stages of empathy and definition.

Implementation

Designers are required to identify edge users, people who are either very familiar with the object they are designing, and people who are not at all familiar with the object. Conduct assessment and interview activities with these individuals using the methods of other tools on this list.

Duration

Per case.

Fly on the wall

Goals

Activity is a user research technique in which the researcher does not intervene or guide the user at all, but only observes their actions. The goal is to reveal what users do in their daily lives in realistic conditions and times without giving a basis to the users' narrative which may hide subjectivities.

Use

Activity is an empathizing tool used in the very early stages of design.

Implementation

The activity is preferable to take place in the natural environment Uses of the object under design, which can be the user's home, a workplace, a public space, etc. The goal of the designers in this case is to observe and record the routine, user actions, and interactions without any intervention. Researchers remain unnoticed and uninvolved, like a "fly on the wall".

Duration

15 minutes.

Sharing stories

Goals

After conducting interviews, design team members meet to share stories they heard. Sharing stories serves a number of purposes. It allows team members to learn about what others have collected in the field. Even if everyone was present in the field research, comparing how each participant experienced the interview has value. Furthermore, by listening and seeking more information, group members tend to bring out specific aspects and deeper meaning that they were not initially aware of. Thus begins the synthesis process.

Use

The activity is used in the early exploratory stages of the design thinking process, after data from user research has been drawn.

Implementation

Designers collect their observations and share stories that stand out from their team's field research. While each team member shares user notes and stories, the others should take notes on interesting things said, references to things users said, surprises and interesting facts, jotting down a title per note (post-it). Notes can be grouped and rearranged on the board to reveal themes and patterns. The ultimate goal is for designers to understand what is really happening with each user to discover who their users are and what they need in relation to the design space.

Duration

30 minutes.

Point of view- POV

Goals

A perspective framework helps to concretely state a problem that will drive the design process so that the design team can begin brainstorming solutions. Most importantly, each designer's perspective helps articulate the challenge facing the team in a way that is meaningful and inspiring.

Use

The activity is used in the problem definition stages of the design process, after interviews.

Implementation

After interpreting user empathy interviews, designers try different ways of phrasing the problem.

To define perspectives, they begin by describing the user in clear and descriptive language, including relevant details. They then choose their favorite surprise/realization that represents the most powerful shift in their perspective. Finally, they articulate what would be a pivotal change for the user, assuming their finding is correct.

Designers follow the following best practices:

- They make sure their point of view flows in an understandable way that is understandable to a third party.

- They identify a finding that focuses on a specific user, rather than a demographic group.

- They articulate a game-changing direction without dictating a specific solution.

Duration

20 minutes.

User persona

Goals

The creation of a user persona, i.e. a description of a user characteristic.

Use

The activity can be used to describe a user characteristic before the ideation process.

Implementation

Team members are encouraged to create a user persona based on the information they have gathered during the problem investigation, immersion, and/or interview processes. A persona is not a specific person. Instead, he is a fictional person who has the characteristics of a typical user.

There are many ways to create a persona. Some of them are:

Empathy map

The tool describes what the user feels, sees, hears, and does.
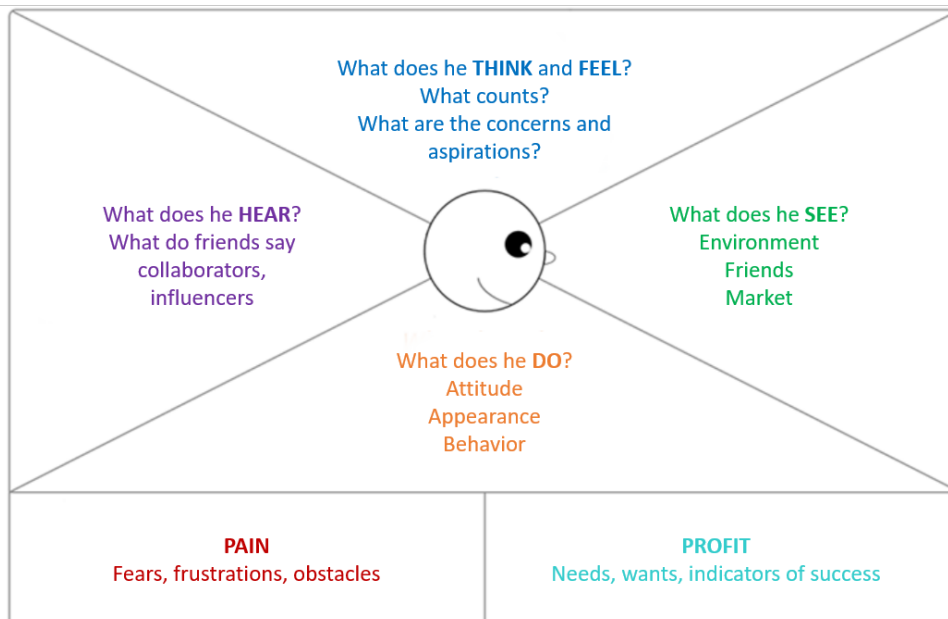
Figure 9. Empathy map

In addition, he describes the problem he has to face and his needs and desires.

User journey

The tool describes the user's journey from the beginning of his life until today, recording experiences and important events that have influenced his way of thinking, his desires, and his needs.

55
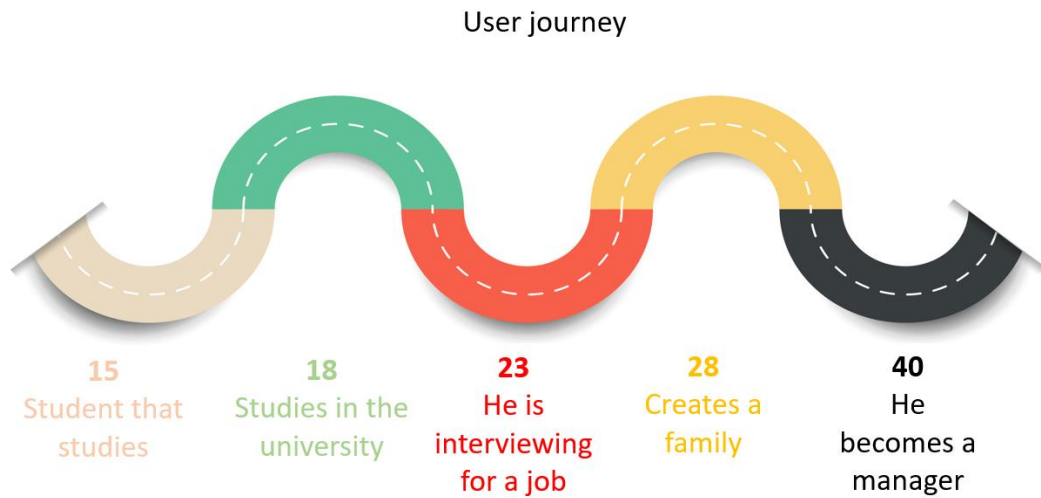
User journey

Figure 10. User journey.

Mind map

The tool describes the user's thoughts and what concerns him in his daily life.
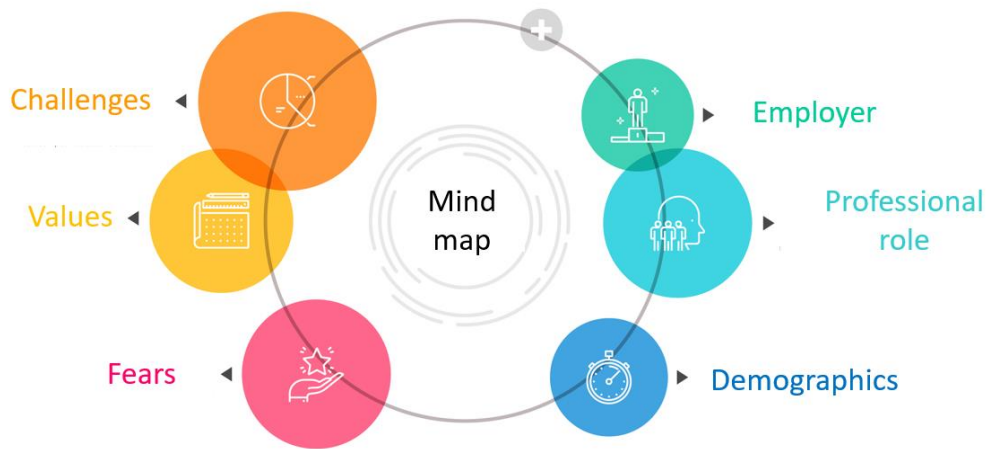
Figure 11. Mind map.

Duration

2 hours.

Comment board

Goals

Activity makes it easy to capture real-time feedback for presentations and prototyping. Designers can use a feedback board to either provide feedback on progress within the design team or to capture user feedback. The board itself sorts thoughts and ideas into four categories for easy evaluation.

Use

The activity is part of the process of testing ideas.

Implementation

Designers divide a blank page or whiteboard into quadrants. They draw a plus sign in the upper left quadrant, a delta sign in the upper right quadrant, a question mark in the lower left quadrant, and a light bulb in the lower right quadrant. They complete the table as they give or receive feedback and comments. They place the features that someone likes or finds remarkable in the upper left (plus sign). They place constructive criticism in the upper right (delta symbol). They place the questions asked in the lower left (question mark). And finally they place the new ideas on the right (bulb). During the Comment and Feedback Duration they seek to provide evidence in each quadrant, especially the top two quadrants. The plus quadrant captures ideas that are liked while the delta quadrant captures potential desires.

Duration

Along with other activities, without specific duration.

Ideation

Basic ideation exercises

Goals

The introduction of ideas towards the synthesis of a possible solution to the problem.

Use

The activity can be used to introduce ideas in a collaborative way by group members.

Implementation

Team members are encouraged to follow the steps below, which could contribute to the collaborative generation of ideas. Team members are asked to record:

- 5 possible solutions, without receiving further instructions or clarifications.
- 1 solution whose Implementation requires a budget of 1m Euro.
- 1 solution whose Implementation requires a budget of 1 Euro.
- Solutions starting with every letter of the alphabet. This activity is based on words and can activate different parts of the brain, possibly leading to the introduction of additional solutions.
- 1 solution whose Implementation requires magic. The word magic refers to technology.

Duration

3 hours.

Relevance charts

Goals

By placing various key concepts and observations into a single diagram, relationships and connections between different aspects of the problem can be identified, revealing opportunities and potential points of intervention to achieve innovation.

Use

The activity is used in the ideation stage.

Implementation

Participants create a list of key concepts related to the problem and the proposed solutions they design. Items in the list may be more general concepts, ideas, and themes that emerged during research, specific functional or other characteristics of their ideas, and characteristics of user categories.

They then place all the ideas on a common diagram, grouping common and related concepts by similarity, interdependence, proximity, or any other way that makes sense to them.

Duration

20 minutes.

6-3-5

Goals

The introduction of ideas towards the synthesis of a possible solution to the problem.

Use

The activity can be used to introduce ideas in a collaborative way by group members.

Implementation

The activity is most effectively implemented by groups of 6 people. Each team member receives a paper and pencil. Team members sit at a round table. In Duration 5 minutes, each member is asked to write 3 ideas on the paper. After the 5 minutes are up, each member passes the paper to the person sitting to their right. Each member of the group writes in Duration 5 minutes 3 new ideas or comments related to the ideas on the paper they received. The activity can generate 180 ideas in 30 minutes (adapted from Lewrick et al, 2020).

Duration

30 minutes.

Powers of 10

Goals

The activity introduces a framing technique used as a method of synthesis or ideation. It allows the design team to consider each challenge through frames of various sizes and scales.

Use

The activity can be used in the initial synthesis and ideation stages of the design process.

Implementation

Participants are asked to consider increasing and decreasing the scale and dimensions of the frame they are examining to reveal connections and ideas. The activity can be used in different ways, as described below:

- **Powers of ten to investigate findings**. Participants are encouraged to imagine designing a checkout experience. They have already observed that users read customer reviews before purchasing and have found that users value the opinions of their peers when making purchases. Participants are asked to imagine that the user is shopping for items in a different cost range, from chewing gum to a bed or a house. Does this change user behavior? Participants are asked to elaborate on their findings. They are also asked to note where these findings break down or do not make sense.
- **Powers of ten for ideation**. Participants add constraints that change the size of the solution space. What if it had to cost more than a million euros to implement? Or less than 25 minutes? What if it was bigger than this room? Or smaller than a wallet?

Duration

30 minutes.

How could we…

Goals

The activity focuses on short questions that trigger ideation. They are broad enough to encompass a wide range of solutions, but narrow enough to set useful boundaries. Between the very narrow "How could we create an ice cream cone that doesn't drip" and the very vague "How could we redesign dessert" is the more aptly defined "How could we redesign ice cream to be more portable."

Use

The activity is used in the problem definition stages, leading to ideation.

Implementation

Participants use the design challenge and point of view statement as a starting point. They then break down the larger challenge into smaller chunks and ask questions that open up the solution space.

An example of the application of the activity follows.

Challenge. Redesign the airport waiting area.

Visual angle. A frantic mother of three runs to the gate of her flight to find out her flight is delayed. She has to entertain her playful children so as not to irritate her already irritated fellow passengers.

Application questions how could we…

- Mitigating the pressure: How could we separate children from fellow passengers?

- Exploring the opposite: How could we make waiting the most exciting part of the journey?

- Challenging an Assumption: How could we eliminate waiting time altogether?

- Making an analogy from a need to a specific context: How could we make the airport look like a spa? Or with a playground?

- Changing a status quo: How could we make playful, loud children less disruptive?

Duration

20 minutes.

63

Brainstorming

Goals

Brainstorming generates tons of ideas at once. Brainstorming is a special time when the creative part of the designers' brain is enhanced and the evaluative part remains relatively inactive. The intention is to encourage the collective thinking of the design team.

Use

Activity is used throughout the duration of the design process, such as designing empathy work, evaluating products and services. and to find design solutions.

Implementation

The goal of the design team during the brainstorming process is to generate as many ideas as possible without being judged or evaluated. Participants gather in front of a whiteboard and spend 15 to 30 minutes in highly concentrated brainstorming.

They make sure to record every idea, regardless of the feelings or thoughts it gives rise to. The design team can assign one person to record the ideas that are heard. Alternatively, each member can share their ideas and put them on the board. Regardless, participants are encouraged to use sticky notes and stick them quickly. They can use questions of the form "How could we …" to start brainstorming.

Duration

15 to 30 minutes.

Facilitate a brainstorm

Goals

Good coordination is the key to a creative brainstorm. Brainstorming generates many, broad, and sometimes unrelated ideas. A good moderator creates the conditions for open, active, and constructive participation.

Use

The activity can be thought of as preparation for a multi-participant brainstorming session.

Implementation

Tips and best practices for effective brainstorming coordination follow.

- **Energy**. The moderator must keep the ideas flowing. He makes sure to write a compelling question to start the brainstorming session. If the group slows down or runs out of ideas, try introducing a variation of the question to restart the brainstorming process. It is recommended that the facilitator prepare some question options in advance.

- **Restrictions**. The moderator adds solution constraints to spark new ideas. "What if it had to be round?" or "How would Superman do it?". Or it introduces restrictions on the process, such as that participants must enter 50 ideas in 20 minutes.

- **Space**. The space where brainstorming takes place is important to the process. A room with a lot of vertical work space (walls/surfaces) is recommended. It's a good idea for all participants to be standing and have supplies such as post-its and a marker handy.

Duration

20 minutes.

Brainstorming "Yes, and!"

Goals

Brainstorming can often seem irrational and jerky. It can also leave less outgoing people feeling left out of the process. Brainstorming "Yes, and!" it provides some structure to guide brainstorming and create appropriate space for each team member to contribute and build on the ideas of others.

Use

This is a specific category of "brainstorming" activity, usually used in the ideation stage.

Implementation

The facilitator writes on a board a radical and innovative idea that changes the data, for example "It would change the data to ...". Give team members two minutes to write on a memo a new approach to achieving the data change. Ask participants to briefly share their innovative ideas and place them on the board.

He then leads the group through a series of brainstorming "Yes, and!" for every idea. Asks group members to expand on ideas by saying "yes, and [...]" when they start. It makes sure that every team member has a chance to contribute to each idea before moving on to the next one.

If any of the ideas developed spark other ideas, they can be recorded as well. The moderator repeats the process until everyone's idea has been passed around and built upon by everyone else at least once.

Duration

15 minutes.

I like it, I would like it, what if…

Goals

Designers must rely on personal communication, feedback, and constructive feedback throughout the design process. Other designers provide feedback on the design frameworks and process, while users comment on potential solutions. "I like, I would like, what if …" is a /simple tool to encourage constructive feedback.

Use

The activity can be used at any stage of the design process.

Implementation

The activity is almost too simplistic, but it is very useful and should be mentioned. Group members meet and coordinate by expressing "likes," "would likes," or "what ifs" in short phrases.

For example, "I like the way we split our group into pairs." "I wish we had discussed our plan before the test." "What if we tried one more prototype?"

Team members share dozens of such thoughts in a meeting and record them. They don't have to reply to every comment. The facilitator lets the group decide which topics to discuss as they arise.

Duration

20 minutes.

Analogous inspiration

Goals

The method leverages as a springboard for inspiration solutions, such as products, services, and others, from different industries than the one the team is studying. Participants are then first asked to identify key ideas, values, and characteristics that embody the products and services selected as motivation for inspiration, and then to transfer these values and characteristics in order to inspire solutions relevant to the challenge being studied. club.

Use

The activity is used after an initial brainstorming process to generate new ideas.

Implementation

Designers follow the following steps:

- Based on the previous problem definition, they list the most basic feelings, values, and needs that they want their solution to focus on.
- They list 5 - 10 products and services that provide solutions to the feelings, values, and needs they recorded.
- For each of the products or services they recorded in the previous step, record the main ideas and individual elements that characterize the solution. For example, if in the previous step they recorded IKEA® as an example for inspiration, here they can record key features of the IKEA® customer experience such as assembly by the customer, instructions and tools for assembly, product combinations, additional services with extra charge, flat packs to reduce space, and more.
- They use the features they recorded to produce solutions relevant to the challenge under study.

Duration

1 hour.

Evaluation of ideas

Choose from brainstorming

Goals

Brainstorming should generate many, broad ideas. This is the easy part. The hard part is choosing which ideas to use. Brainstorming can be simple in some cases (participants simply pick a few ideas that stand out), but choosing design solutions can require more thought.

It is recommended that design teams not choose just one idea to explore and settle for the safe and obvious options. Instead, it is recommended that they select a range of ideas to proceed with prototyping with the aim of maintaining the range of solutions produced by the team.

Use

The activity is handled immediately after a brainstorm. It is considered the last part of the ideation process moving towards prototyping.

Implementation

Design teams should not limit their ideas too quickly. An improbable idea can lead to a useful or meaningful finding. It is useful to hold ideas that excite, amuse, or intrigue. They can choose from the following selection techniques.

- **Voting by voting**. Ideas are on a whiteboard. Each team member has three votes. Votes are marked with a marker mark or sticker on each note. The ideas with the most votes are selected.

- **Four categories**. Design team members choose one or two ideas from each category: the rational choice, the most likely to excite, the favorite, and the unlikely.

- **Bingo**. Team members consider one or two ideas that inspire the creation of a physical prototype, a digital prototype, or an experience prototype.

If an idea is so far-fetched that it seems pointless to try it, participants are asked to ask themselves what attracted them to it and then test that aspect or incorporate it into a new solution.

Duration

15 minutes.

Evaluating ideas through categorization

Goals

The evaluation of ideas to select one for prototype Implementation.

Use

The activity can be used after the ideation process to evaluate the multitude of ideas proposed by team members and select one or a combination of ideas for prototype implementation.

Implementation

Group members are encouraged to categorize the ideas they generated through brainstorming into 3 groups. Categorization can be graphically represented using the graph shown in the figure below. Members are asked to categorize the ideas into the corresponding squares.

Idea Categories:

- "Simple" ideas, easily implemented (blue square).
- Innovative but feasible ideas that promote innovation (green square).
- Ideas not yet implementable due to non-maturation of the required technology. In other words, ideas for future Implementation (yellow square).
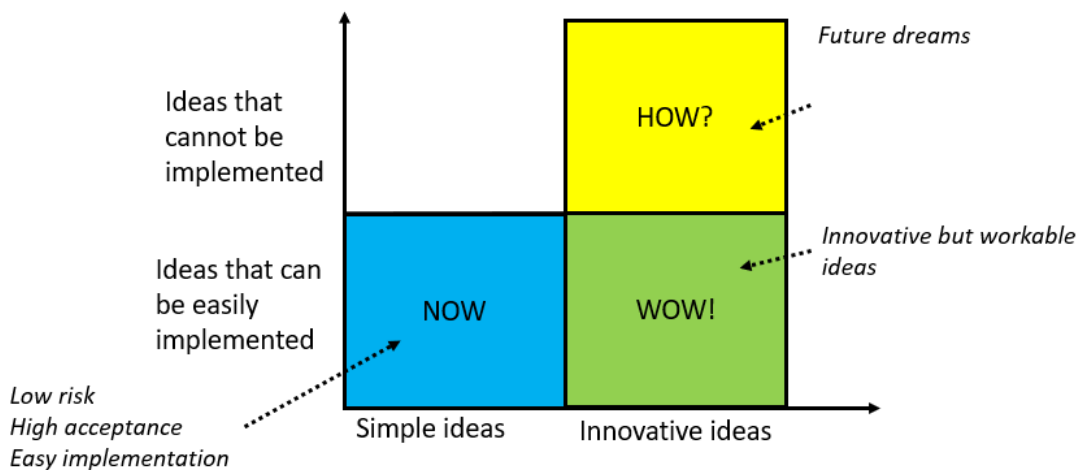
Figure 5. Evaluating ideas through categorization (adapted from Gamestorming, 2023).

Team members are encouraged to select for prototyping one or more combined innovative yet feasible ideas, i.e. ideas categorized in the green square.

Alternative Implementation

Groups can choose different criteria to place on the axes of the graph. However, it is recommended that the criteria be linked to user requirements. Examples of criteria are user enthusiasm, solution performance, added value, how feasible the implementation is, and more. Whatever criteria the groups choose, the axes should have value variations in the form of more or less, high or low, or others.
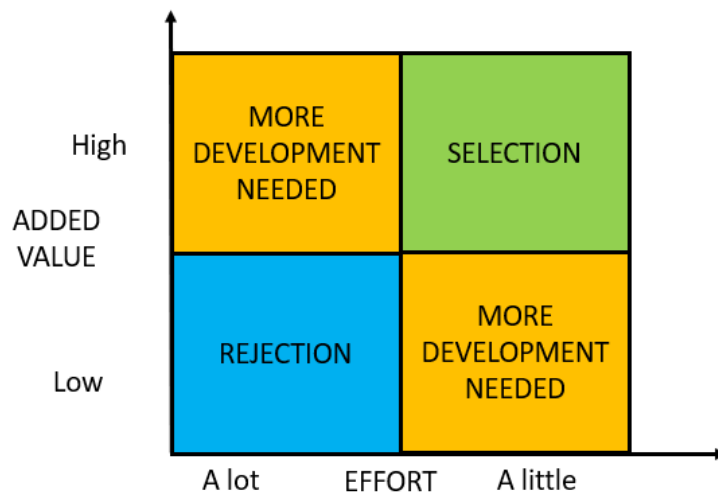
Figure 6. Alternative method for evaluating ideas through categorization (adapted from Lewrick et al, 2020).

Duration

2 hours.

Design guidelines

Goals

Design guidelines, also known as design instructions, are written statements that articulate a strategy for how participants might solve their design challenge, regardless of any particular solution. The activity helps translate the design team's findings related to user needs and insights into actionable design guidelines.

Use

The activity is used in the problem definition stages of the design process.

Implementation

Participants can translate their insights and observations into design guidelines by articulating their findings in terms of solutions rather than observations about the user. For example, "a user's need to feel that they are contributing to the creation of a gift" becomes "the user needs to be involved in the creation of a gift."

They can also work backwards from a potential solution to create design guidelines. It is recommended that they ask themselves what aspects of the solution resonate with users and turn those aspects into guidelines or instructions.

Design guidelines should be independent of a solution. That is, they must be useful regardless of the design solution chosen. Participants may know they are designing a gift product, but are unsure whether it is physical, digital, or experiential. The above design guideline of "the gift giver should be involved in the creation of the final gift" is still useful even if the design team does not yet know the final design solution.

Duration

15 minutes.

Overview of design team portfolio

Goals

The design team's portfolio consists of incremental (simple) and radical innovations. Examining where each design idea falls helps the design team understand where to focus their energy and attention.

Use

The activity is used at any stage of the design process.

Implementation

Participants create a simple 2x2 board. They plot the "depth of finding" on the x-axis, from shallow to deep. Shallow findings are things the team knew before the project started. The profound findings reveal completely new aspects of the problem.

They plot the "radicality of the idea" on the ψ-axis, from incremental to revolutionary or radical idea. Incremental concepts are simple improvements to existing products or services or ideas that the organization has tried in the past. Revolutionary ideas are those that have never been tried or existed.

It is easier to use a deep insight to achieve revolutionary innovation than a shallow one. It is recommended that when the team looks at their portfolio they ask themselves "what ideas address problems that we haven't thought of before?". These ideas can be used in the "Yes, and!" activity.

Duration

20 minutes.

Prototyping

Solution poster

Goals

The description of the solution in a poster, through which the audience can have a visual representation of the main features.

Use

The activity can be used to present the proposed solution that introduces a group in a way that allows users to interact with it and generate feedback.

Implementation

Team members are encouraged to describe their solution using a poster that presents:

- The name and logo of the design team.
- The problem to be solved.
- The objectives of the solutions.
- The application of technology, if this is relevant.
- The target groups.
- The solution, description with pictures and text.
- How to access the market, if relevant.

Duration

1 day.

The user journey

Goals

The description of the user's experience from his exposure to the proposed solution through a description of his journey, i.e. the description of his experience during its use.

Use

The activity can be used to present the proposed solution. It can be applied to describe any solution but is particularly useful in situations where developing a physical prototype is not feasible, such as describing the user experience of digital services or intangible products.

Implementation

Team members are encouraged to describe their solution using the user journey, as described above in the User Persona exercise (page 46).

Accordingly, team members can use a storyboard to visually describe the user experience of the proposed solution.

Duration

2 hours.

Usage scenarios

Goals

Through the design and representation of scenarios of the designed products and services, fundamental features of an idea can be communicated and tested in the context of a realistic and expected use.

Use

The tool is used in the stages of ideation and initial prototyping.

Implementation

Participants are encouraged to design a scenario that demonstrates a Use case of the designed object or service. The script should include all the necessary characters involved. In addition, it must include a description of both the Use of the object or service and the wider context of Use.

The description of the scenario can be done through text or presentation. It can also be done through rough timelines (like comics) that describe the steps of the script.

Duration

30 minutes.

Prototyping for empathy

Goals

Generating empathy through prototyping and observing users interact with them.

Use

The activity is used in the prototyping stage, simultaneously offering information for the first step of empathy.

Implementation

When creating a prototype, participants think about the people who will interact with that object or experience. They develop the prototype or design the experience specifically to gain empathy. They don't necessarily need to look for solutions when testing prototypes with users. In the same way that a solution-oriented prototype reveals new information about the concept being tested, an empathy-seeking prototype helps gain an understanding of people and their space.

Prototyping for empathy helps designers delve into user needs or explore an image they are developing. They can create empathic prototypes to test with users or the design team. Examples of empathic prototypes that designers can create are the following.

- **Sketch**. They ask users to draw something and then talk about it. "Plan how you get to work."

- **Game**. They create a game to explore specific topics. They use a simple card game to force users to make choices relevant to their design challenge.

- **Simulation**. They design an aspect of the user experience to better understand it themselves. If users are gardening while carrying a baby, they're trying to carry ten pounds while doing yard work.

Duration

30 minutes.

Scenes, sets, roles

Goals

The activity prepares the design team to test their prototype in the field with real users. It is based on improvisation and helps to understand where and how the prototype will be tested, as well as the roles of each member of the design team who will participate in the field research.

Use

The activity is part of the prototyping process.

Implementation

A team is formed to test an idea in the field. This group calculates the following.

- Where should the user ideally come into contact with the team idea? This is the "stage" on which the design team can test the new idea, or at least represent it in their own space.

- What props, prototypes, and objects will the design team need to build? These are the minimum physical objects necessary to enable the user to imagine experiencing the concept through simulation.

- What roles should team members take? Who will host the users? Who will be actively involved in testing the prototype either directly interacting with the user or performing some function in the background? Who will observe and take notes?

Duration

1 hour.

Test with users

Goals

User testing is a fundamental part of human-centered design. It contributes to the improvement of a solution but also to a better understanding of the people for whom the design is made.

Use

The activity is part of the prototyping process but also serves the testing stage of ideas.

Implementation

When testing prototypes, designers are advised to consider both what they can learn about the solution they are proposing and about the user. The activity helps create empathy.

Good practices for designers regarding the implementation of the activity follow.

- **They let the user test the prototype**. They show but do not guide. They put their prototype in the hands of the user, or put the user in the prototype, and give them just the basic framework they need to understand what to do.

- **They encourage the user to talk** about their experience during the duration of use. They use prompts. "Tell me what you think as you do this."

- **They actively observe**. It is recommended that they do not correct the user immediately. Instead, they are advised to watch how he uses the prototype, or how he uses it incorrectly, or if he abuses the prototype.

- **They ask supplementary questions**. This is often the most valuable part of the activity. "Show me why this would work (not work) for you." "Can you tell me how that made you feel?" "Why;" They answer user questions with questions. "So what do you think this button does?"

Duration

20 minutes per user.

Defining a variable

Goals

The activity encourages prototyping to evaluate a specific variable of a solution. Specifying a variable not only saves time and money, since the design team does not have to create all aspects of a complex solution, but it gives the opportunity to test multiple prototypes, each of which differs in one particular property. This encourages the user to make more specific comparisons between prototypes and choose one option over another.

Use

The activity is part of the prototyping process and at the stage of testing ideas.

Implementation

Based on user needs and knowledge, designers identify a variable of their concept to refine and test. Then they make low-res prototypes for a few different versions. A prototype doesn't have to be or even look like the solution. For example, it can help the design team assess how heavy a device should be. To achieve this, the team creates prototypes of varying weight without making them functional. Another example concerns the evaluation of the method of receipt of a product by the users, for example from the store or through distribution. To evaluate possible solutions, the team designs boxes and packaging for each different service, without filling them. By choosing a variable to test, the team can address this aspect of their idea and take a step toward a good design solution.

Duration

1 hour prototyping, 10 minutes per user.

Wizard of Oz

Goals

A "Wizard of Oz" prototype is a mockup of the functionality the design team wants to test with users. It saves time and money to actually create it. These prototypes are often used for prototyping digital systems, in which the user thinks that the response and interaction is being done by the prototype itself or by a computer, when in fact it is operated by a human.

Use

The activity is part of the prototyping process and at the stage of testing ideas.

Implementation

Designers determine what they want to test. Then they figure out how they can emulate that functionality and give users an authentic experience. They can combine existing tools such as tablets, email systems, or presentations with human intervention to create the illusion of functionality. For example, to test a human interaction with a questionnaire, instead of programming the functionality of the questionnaire, an instant messaging system and background team members can be used to direct the questions and responses. Wizard of Oz prototypes can be extended beyond the digital realm, and into physical prototypes. The design team can prototype a vending machine without building the necessary mechanisms by using a person hidden inside to deliver the purchases.

Duration

1 hour.

Download and edit videos

Goals

Video is a powerful medium for communicating ideas or knowledge and for telling stories. The plan is the means of communication. If something isn't in the plan, it doesn't exist.

Storytelling is achieved through video editing, where the story comes to life. Careful editing is crucial to achieving the best and clearest narrative.

Use

Video and its editing is a tool that can be used at any stage of the design process.

Implementation

Basic Guidelines for Downloading Videos for Use in Design:

- Designers make their intent clear. What do they want their audience to get?

- They always have a clear shot of the subject or protagonist.

- Consider light sources and shadows.

- They take more shots than they think they need. Editing is where the telling of the story begins. Longer takes allow some room for editing transitions as well as corrections.

- They keep the microphone close to the subject and the protagonist.

- They turn the microphone away from unwanted noises.

Instructions for quickly editing a video:

- Designers make sure the audience understands their visual narrative. The video must be clear.

- They make an initial rough edit of the entire video. They define the beginning, the middle, and the end.

- They stay focused on faithfully telling their story, even if it means removing shots they like.

- Sound is just as important as picture. They make sure that any music complements the visuals and doesn't distract.

- They know where the video will be hosted. If it is to be reproduced from the designer's computer, Use minimal compression is recommended to ensure

quality. For social media or video hosting sites, it is recommended to follow the guidelines.

Duration

1 hour for preparation and downloads. Several hours for editing.

Creating a physical prototype

Goals

Physical prototyping aims to generate user feedback through a rough physical structure that can be built quickly and economically by simulating the key features of the proposed solution.

Use

Physical prototyping can be used both in the initial stages of problem investigation to better understand needs and when evaluating potential solutions to generate user feedback.

Implementation

Participants are asked to sketch and quickly create a cost-effective prototype of the final solution using simple materials such as paper, cardboard, rubber bands, paper clips, rope, sticks, and more. The prototype is not the final product. After its Use for evaluation it will be rejected. The final product will be manufactured at a later stage in detail. The disposable nature of the prototype means that participants will not have to invest significant effort in its implementation.

Prototyping can have several goals, including:

- The evaluation of specific characteristics of a possible solution.
- The evaluation of a combination of features of a possible solution.
- Evaluation and investigation of extreme solutions.
- Evaluation of the vision of the solution.
- Evaluation of the final product through the Implementation of a prototype that closely simulates the characteristics of a final product Implementation.

Duration

Several hours.

Creating an intangible prototype

Goals

Intangible prototyping aims to produce feedback from users about an intangible solution, such as a digital service, or an intangible experience, such as a cultural experience in a place.

Use

Intangible prototyping can be used both in the initial stages of problem investigation to better understand needs and when evaluating possible solutions to generate user feedback.

Implementation

When the proposed solution is intangible, it is not possible to create a physical prototype. In this case the participants can create an intangible prototype. The intangible prototype can take different forms. Some of them are:

- A storyboard, which describes with images the user's experience of being exposed to the proposed solution in a way similar to that used in the cinema industry in the pre-production phase.
- The user journey, which describes the user's experience from exposure to the proposed solution.
- A Use scenario, which also describes the user's experience from exposure to the proposed solution.

Duration

Several hours.

Creating a digital prototype

Goals

The description of the solution in a poster, through which the audience can have a visual representation of its main features.

Use

The activity can be used to present the proposed solution that introduces a group in a way that allows users to interact with it and generate feedback.

Implementation

Participants are invited to implement a digital prototype of the proposed solution following software design processes. The result of this process will not constitute the final digital implementation of the proposed solution. Instead, it will be the Quick Implementation product that includes the minimum desired functionality in a way that allows users to interact with it. If the evaluation of the solution is positive, it will be re-implemented in a stable software with friendly user interface and graphics.

Alternatively, the digital solution can be presented through user interface modeling tools such as Figma®.

Digital Prototyping Implementation assumes that the design team has the required programming skills.

Duration

2 weeks.

Creating a digital story

Goals

Η περιγραφή της λύσης με μια ψηφιακή ιστορία, μέσα από την οποία το ακροατήριο μπορεί να έχει μια οπτική αναπαράσταση των βασικών της χαρακτηριστικών.

The description of the solution with a digital story, through which the audience can have a visual representation of its main features.

Use

Digital stories provide the opportunity to present ideas in an understandable and dramatic way. Digital stories can be used not only for entertainment but also in professional contexts to communicate messages.

This method is suitable for intangible solutions for which it is not possible to create a physical prototype.

The activity can be used to present the proposed solution that introduces a group in a way that allows users to interact with it and generate feedback.

Implementation

Participants are asked to develop a digital story that describes the desired user experience from implementing a proposed solution. Relevant digital environments and tools, such as Adobe Slate®, can be used to develop the digital story.

Duration

1 day.

Part B: Design Thinking Challenges

This module presents design challenges related to entrepreneurship or social entrepreneurship. The challenges are inspired by real life and the needs of industry and society. They are designed as integrated design activities. They are aimed at students or design teams and aim to develop design thinking skills.

The challenges are structured using the structured, individual exercises presented in the previous section. They can be used exactly as presented or adapted to the needs of participants in innovation processes.

Sustainability and regenerative design

Why is the activity interesting

The green transition through environmentally friendly activities concerns all sectors of today's economy and everyday life, from building design to fashion. Sustainability is about the future meaning that the present generation carries out all activities for its well-being in a way that does not consume resources that ensure the well-being of future generations. Sustainability is a concept with a lot of resonance today due to the challenges of climate change affecting safety and quality of life. The United Nations recognizes 17 sustainability goals (UN Sustainability Goals, 2023), such as the fight against poverty and hunger, health, quality education, clean water, gender equality, clean and cheap energy, work and economic development, industry and infrastructure, eliminating inequalities, sustainable cities, responsible production and consumption, climate action, life under the sea, life on land, peace and justice, and cooperation to achieve these goals.

To ensure the well-being of future generations, the design of any product or service must be done from a sustainability perspective. Traditional design is degenerative, meaning it systematically reduces ecosystem vitality by consuming resources. Society should pursue regenerative design that restores, reconciles, and reproduces the environment.
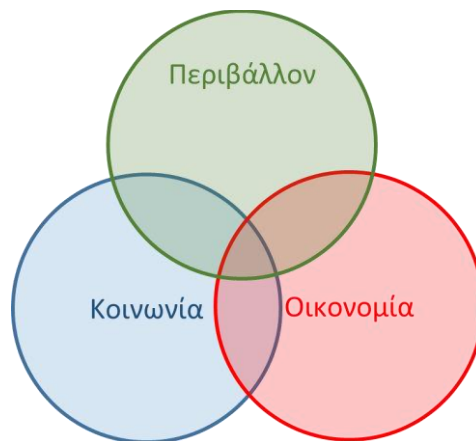
Figure 14. Sustainability takes into account goals for the environment, society, and the economy.

Sustainability is a holistic process that considers a combination of ecological, social, and economic factors with the goal of long-term prosperity. Sustainability solutions are at the intersection of goals related to the environment, society, and the economy.

The global community cannot afford to ignore the sustainability goals. For this reason, there is often discussion about taking actions to limit the increase in the Earth's

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temperature to no more than 1.5 degrees Celsius. Even this small increase in Earth's temperature is estimated to lead to a 100% increase in extreme weather events, affect 6% of insects, 8% of plants, and 4% of vertebrates, lead to ice-free summers in arctic cycle at least once every 100 years, will displace 46 million people due to sea level rise, while for every half degree of temperature rise there will be a significant reduction in food production in tropical regions and reduced economic growth (WWF, 2023). These consequences multiply rapidly for an increase in the Earth's temperature by 2 degrees Celsius.
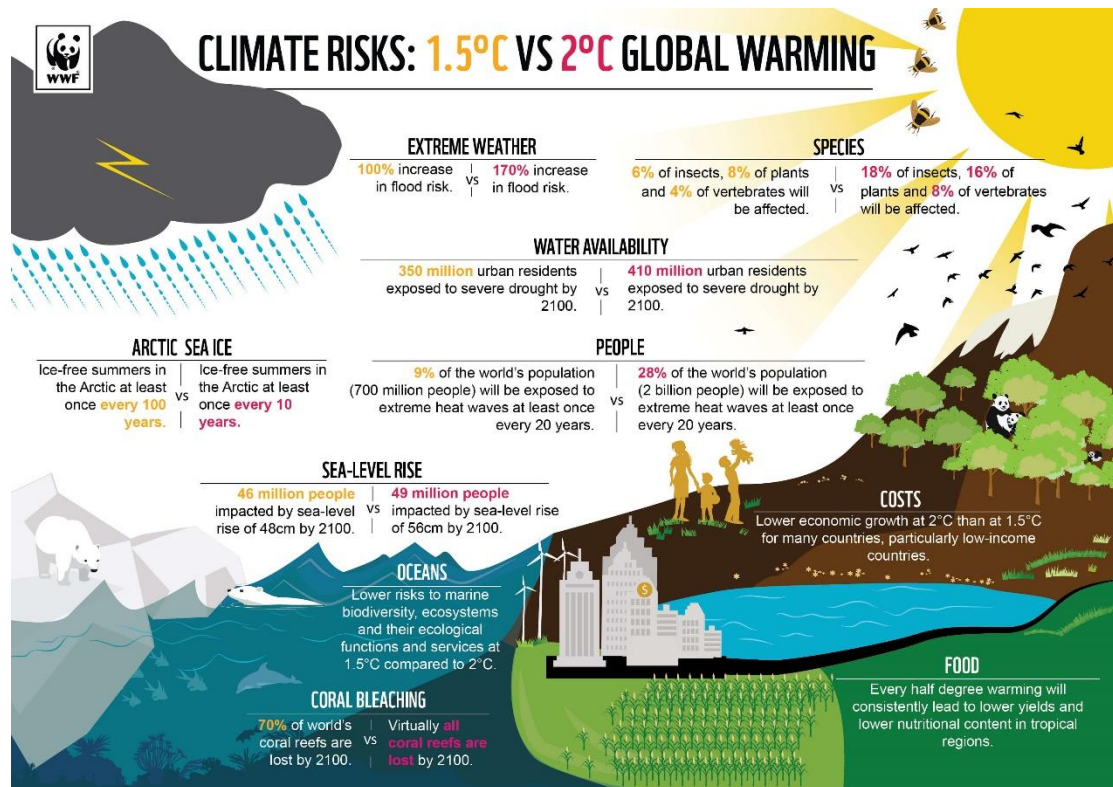
Figure 7. The consequences of rising temperatures by 1.5 and 2 degrees Celcious (source WWF, 2023).

Some of the biggest sustainability challenges for 2023 are mismanagement, food waste, biodiversity loss, plastic pollution, deforestation, air pollution, melting ice caps and rising sea levels, agriculture, and the insecurity of food and water availability.

This activity invites participants to design sustainability solutions for all aspects of daily life and economic activity. It is deliberately open to give students and designers the opportunity to analyze sustainability in broad contexts. The goal is to redesign services, products, or experiences through sustainable practices.

Concepts covered by the activity and key words

Sustainability, environment, development, natural resource management, climate crisis, regenerative design.

Who is the activity aimed at?

The activity is addressed to everyone because the subject of sustainability is of wide interest. It can be used by students, designers, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding concepts of sustainability, environment, and natural resource management.
- Understanding the United Nations' sustainability goals.
- Development of critical and analytical thinking.
- Investigating sustainability challenges in broad areas of everyday life and the economy.
- Collaborate in teams to brainstorm, evaluate, and synthesize ideas toward sustainable solutions that best serve the needs of citizens and companies.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Encourage creativity

The aim of the step is to encourage the confidence of the members of a group about their creative skills.

Recommended activities:

1. Encourage creativity by applying the 30 shapes exercise (page 10).

Step 2: Developing a team spirit of cooperation

The goal of the step is to create team spirit among the team members and familiarize the team members with each other.

Recommended activities:

1. Define a team name and design a logo (page 13).
2. Getting to know the group members with each other by applying the exercises story of my name (page 20), survival skills in a post-apocalyptic era (page 21), and professional skills (page 22).

Step 3: Investigate the problem

The goal of the step is to investigate, describe, and record sustainability challenges from different perspectives, leading to a better understanding of the problems in various areas of everyday life and the economy.

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 26).
2. Recognizing associations (page 28).
3. Expert eyes (page 29).

Step 4: Define the problem

The objective of the step is to clearly document a specific sustainability challenge with the aim of designing relevant innovative solutions to address it.

Recommended activities:

1. How can we … (page 39).

Step 5: Analysis and recording of user needs

The objective of the step is to identify the user groups that will benefit from the proposed sustainability solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. Design and conduct interviews with color, promotion, and reflection (page 43).
2. Create a persona (page 46).

Step 6: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Basic ideation exercises (page 62).
2. Exercise 6-3-5 (page 64).

Step 7: Evaluation of ideas

The goal of the step is to evaluate ideas and select the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas by categorization into feasible, feasible but innovative, and not yet feasible due to immaturity of technology (page 73).

Step 8: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Description of the problem with a solution poster (Page Error! Bookmark not defined.).
2. Alternatively, a description of the proposed solution with a digital story (page 94).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. It is recommended to structure the steps of the activity on the eDea digital platform, which offers the possibility to collaborate on all the proposed steps of the activity anytime and anywhere. The eDea digital platform will enhance interactivity in problem analysis and recording, ideation, idea evaluation, and recording of the final proposed solution.

Evaluation of newly acquired knowledge

Suggested:

- Presentation of each group's work after each step of the activity.
- Feedback from the teacher or coordinator after each step of the activity.
- Feedback from the members of the other groups after each step of the activity.
- Presentation of the proposed solution and justification of the choices.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.
- Evaluation by the teacher or design text coordinator, based on the results of each and all steps.
- Discussion about the new knowledge with the aim of consolidation.
- Discussion on adapting the proposed solutions to different contexts with the aim of developing analytical thinking.

Innovative solutions for circular tourism

Why is the activity interesting

Circular tourism relates to sustainability and resource management in the tourism industry. It aims to minimize waste, reduce resource consumption and promote reuse, recycling and regeneration of materials and resources throughout the tourism value chain.

Circular tourism adopts principles similar to the circular economy model, which is a framework for sustainable economic development. The circular economy aims to create a closed loop system where resources are used efficiently, waste is minimized and materials are continuously recycled back into the production process.

There are many examples of circular practices in tourism. One of them is waste reduction and material recycling. In addition, the promotion of energy efficiency through the promotion of energy saving practices, the use of renewable energy sources, and the application of energy efficient technologies in tourist facilities. Saving water through the encouragement of its responsible use, the implementation of conservation measures, and the application of efficient water use technologies in hotels, resorts, and other tourist facilities. Sustainable transport with the use of low-carbon technologies and the promotion of public transport. Use local products and services to reduce the carbon footprint associated with transportation and support local economies. Involving local communities in decision-making processes in a way that ensures that tourism benefits are distributed fairly.

Circular tourism is important for many reasons. It contributes to the protection of the environment by promoting good practices that minimize negative effects on the environment. It emphasizes the conservation of natural resources, the protection of ecosystems and the reduction of pollution and waste. By adopting sustainable practices, tourist destinations can preserve their natural beauty and biodiversity for future generations.

In addition, circular tourism provides economic benefits to local economies by generating income and employment opportunities. It often emphasizes community involvement, encouraging local businesses and residents to participate in and benefit from tourism activities. This can help diversify local economies and reduce dependence on a single industry.

Circular tourism contributes to the preservation of a destination's cultural heritage by encouraging visitors to engage with local communities, traditions, and customs with respect, promoting cultural exchange and understanding. By appreciating and

supporting local cultural practices, circular tourism helps communities maintain their unique identity. At the same time, it contributes to social development, aiming to improve the quality of life of local communities. It can lead to infrastructure development, improvements in healthcare, educational opportunities and improved social services. By involving local communities in decision-making processes and ensuring their fair representation, circular tourism can empower and uplift communities.

Finally, circular tourism contributes to long-term sustainability, as opposed to short-term profits. By considering the social, economic, and environmental impacts of tourism activities, local communities can plan and manage their resources effectively. This ensures that tourism can continue to thrive in the future without depleting resources or causing harm to the environment or local communities.

Figre 8. An example of sustainable tourism SME in Pelion, Greece.

Overall, circular tourism recognizes the interconnectedness of environmental, economic and social factors and aims to achieve a balance between them. By adopting sustainable practices, destinations can create a positive and lasting impact while providing enjoyable experiences for tourists.

Concepts covered by the activity and key words

Sustainability, environment, development, circular economy, circular tourism, reuse of resources, saving resources.

Who is the activity aimed at?

The activity is aimed at tourism professionals, design groups interested in innovation, tourism policy makers, students, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding concepts of sustainability, circular economy, circular tourism, resource reuse, and resource conservation.
- Development of critical and analytical thinking.
- Investigating the area of circular economy and circular tourism and identifying opportunities to improve services and practices.
- Collaborate in teams to brainstorm, evaluate, and synthesize ideas toward sustainable solutions that best serve the needs of circular tourism professionals, companies, and clients.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create a team spirit among the team members, to define the rules of cooperation, to familiarize the team members with each other, and to familiarize the members of different groups with each other.

Recommended activities:

1. Encourage creativity by designing an object with Use simple geometric shapes (page 11).
2. Define a team name and design a logo (page 13).
3. Description of group profile and cooperation rules (page 14).

Step 2: Investigate the problem

The goal of the step is to investigate, describe, and document the problem in a broad way, which allows the identification of opportunities to improve services and practices.

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 26).
2. Recognizing associations (page 28).

Step 3: Define the problem

The goal of the step is to redefine the problem in a way that allows the introduction of broad solutions. The definition should take into account the results of the problem investigation, the analysis of the user needs, and the understanding of the designers.

Recommended activities:

1. How can we … (page 39).

Step 4: Analysis and recording of user needs

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. Design and conduct interviews with color, promotion, and reflection (page 43).
2. Create a persona (page 46).

Step 5: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Basic ideation exercises (page 62).
2. Exercise 6-3-5 (page 64).

Step 6: Evaluation of ideas

The goal of the step is to evaluate ideas and select the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas by categorization into feasible, feasible but innovative, and not yet feasible due to immaturity of technology (page 73).

Step 7: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Description of the proposed solution with the user journey (page 82).
2. Alternatively, problem description with solution poster (page 81).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. It is recommended to structure the steps of the activity on the eDea digital platform, which offers the possibility to collaborate on all the proposed steps of the activity anytime and anywhere. The eDea digital platform will

enhance interactivity in problem analysis and recording, ideation, idea evaluation, and recording of the final proposed solution.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Green IT

Why is the activity interesting

Green computing refers to a range of practices, technologies, and products that are designed and used to reduce the impact of technology on the environment and improve sustainability. Computers and related technologies often consume large amounts of energy and resources. For this reason there is a growing effort to reduce their negative impact on the environment. Green computing helps protect the environment and create sustainable technology solutions that can continue to be used at a lower cost to the environment and users.

Aspects of green computing technology are integrated into education to enhance student awareness of the importance of sustainability and responsible use of technology. Therefore, green computer technology promotes students' awareness of environmental protection and sustainability. Participants gain knowledge about the Use of green technology, as they learn how to use energy-efficient computers, apply recycling techniques, and choose green technology products.

Additionally, green computing connects technology to sustainability, helping participants realize how technology can be used to achieve sustainability and encourages the development of critical thinking as students analyze the pros and cons of green technology and consider the impact of society and the environment.

This activity can encourage discussion about green technology at an international level and understanding of global challenges in this field and can help students understand how green technology affects communities worldwide.

The green computing learning activity is interesting and educationally beneficial as it helps students understand the importance of protecting the environment and how technology can contribute to this goal. Participants learn about technology's impact on the environment and practices they can follow to reduce that impact.

This activity also provides opportunities to learn new technological skills and their application to environmental sustainability issues and presents green technology as a field with career and business development potential, preparing students for future employment opportunities. Participants additionally learn about infrastructure development for sustainable energy production and efficient technology management.

Overall, learning about green computing is not only interesting, but also contributes to the education and awareness of young people about environmental sustainability issues and the importance of applying technology for the good of the planet.

Participants are trained to make responsible decisions about the Use of technology and its impact on the environment and society.

Concepts covered by the activity and key words

Sustainability, environment, green growth, technology, computer science, energy footprint.

Who is the activity aimed at?

The activity is aimed at pupils, students, digital transformation policy makers, green growth policy makers, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding concepts of sustainability, resource reuse, and resource conservation.
- Understanding the concept of green computing technology.
- Understanding the concept of green development.
- Understanding the concept of digital transformation.
- Development of critical and analytical thinking.
- Collaborate in teams to brainstorm, evaluate, and synthesize ideas toward sustainable solutions for green computing and reducing the energy footprint of computing-based activities.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create a team spirit among the team members, to define the rules of cooperation, to familiarize the team members with each other, and to familiarize the members of different groups with each other.

Recommended activities:

1. Define a team name and design a logo (page 13).
2. Description of group profile and cooperation rules (page 14).
3. Warm-up, Step1: Story of my name (page 20).
4. Warm-up, Step2: Survival skills in a post-apocalyptic era (page 21).
5. Warm-up, Step3: Professional skills (page 22).

Step 2: Investigate the problem

The goal of the step is to investigate, describe, and document the problem in a broad way, which allows the identification of opportunities to improve services and practices.

Recommended activities:

1. Exercise observation (page 33).
2. Observation of users (page 32).
3. Describe the problem through images, videos, scientific articles, and other sources (page 26).
4. Recognizing associations (page 28).

Step 3: Define the problem

The goal of the step is to redefine the problem in a way that allows the introduction of broad solutions. The definition should take into account the results of the problem investigation, the analysis of the user needs, and the understanding of the designers.

Recommended activities:

1. How can we … (page 39).

Step 4: Analysis and recording of user needs

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. Design and conduct interviews with color, promotion, and reflection (page 43).
2. Create a persona (page 46).

Step 5: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Basic ideation exercises (page 62).
2. Exercise 6-3-5 (page 64).

Step 6: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization into feasible, feasible but innovative, and not yet feasible due to immaturity of technology (page 73).

Step 7: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Description of the proposed solution with the user journey (page 82).
2. Alternatively, problem description with solution poster (page 81).
3. Alternatively, description of the problem by creating a physical prototype (page 91).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. However, due to the digital theme, Use of the digital platform eDea is recommended for communication, interactivity, idea sharing, and collaborative design.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Discussion on digital computer technology, its positive effects, and possible solutions to reduce the energy footprint of related activities.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Green cities

Why is the activity interesting

Green cities are urban areas that have adopted practices and policies aimed at reducing the human footprint on the environment and promoting sustainability. Green cities try to combine urban development with the protection of the natural environment and the improvement of the quality of life of their residents, save resources, and contribute to sustainable development.

Green cities promote the development of constructions with low energy consumption, use of renewable energy sources, and the application of technologies such as green roofs and insulation. They promote public transport, sidewalks, and bike paths while limiting the use of the car in order to reduce road traffic and air pollution. Green cities preserve natural environments and green spaces within the city. At the same time, residents are informed and encouraged to participate in initiatives and programs aimed at sustainability.

Green cities promote the quality of life of their residents, reduce pollution, create safe spaces for walking and recreation, and combine development with the protection of the natural environment. Such cities also provide the example and inspiration for other cities and communities wishing to follow similar models of sustainability.

Green cities offer many advantages that contribute to improving the quality of life of residents and protecting the environment. Firstly, limiting the use of cars and promoting public transport contribute to reducing air pollution and improving the quality of the air that residents breathe. Also, the design of constructions with low energy consumption and the Use of renewable energy sources contribute to reducing energy efficiency and energy bills.

Green cities provide opportunities for fast, efficient, and sustainable transportation options with the goal of reducing road traffic and air pollution. They maintain green spaces, parks, and natural areas that protect the environment and the health of the residents. They promote the efficient management of water, energy, and waste by saving resources.

Participants can benefit in many ways from green city planning. They learn about environmental protection and sustainable development. This awareness informs them about the importance of conserving nature and reducing their ecological footprint. Additionally, they learn how to make sustainable consumer choices and how to reduce waste and resource consumption.

Green cities offer action opportunities for participants who can participate in recycling programs, environmental initiatives, and green development campaigns. They also

provide spaces for physical activity and recreation improving the health and well-being of students.

Participants can learn more about green computing, sustainable resource management, and environmental protection through training programs and informational materials. They develop skills related to critical thinking, algorithmic thinking, and creativity as they explore solutions to preserve the environment. More generally, educating and engaging students in green initiatives can open up professional development opportunities for them in the field of environmental science and green technology.

Overall, green cities offer rich learning and development opportunities for participants, make them aware of the environment, and equip them with skills they can use in the future.

Concepts covered by the activity and key words

Green cities, sustainable development, reducing energy footprint, quality of life, computer technology.

Who is the activity aimed at?

The activity is aimed at pupils, students, green policy makers, engineers, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding concepts related to sustainability and sustainable development.
- Understanding characteristics of green cities.
- Understanding the positive impact of green cities on quality of life.
- Development of critical, analytical and business thinking.
- Development of inquiry, evaluation, and collaboration skills.
- Collaborate in teams to brainstorm, evaluate, and synthesize ideas for green city design or individual services that contribute to green practices in a city.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Encourage creativity

The aim of the step is to encourage the participants' creativity and confidence in their ability to design innovative solutions.

Recommended activities:

1. Encourage creativity by applying the 30 shapes exercise (page 10).

1. Encouraging creativity by applying the exercise 30 shapes 30 shapes (10).

Step 2: Developing a team spirit of cooperation

The goal of the step is to create a team spirit among the team members, to define the rules of cooperation, to familiarize the team members with each other, and to familiarize the members of different groups with each other.

Recommended activities:

1. Define a team name and design a logo (page 13).
2. Table of interests (page 15).
3. Water purification (page 19).

Step 3: Investigate the problem

The goal of the step is to investigate, describe, and document the problem in a broad way, which allows the identification of opportunities to improve services and practices.

Recommended activities:

1. Visual angles (page 29).
2. Metaphors and simulations (page 30).
3. Observation of users (page 32).
4. Describe the problem through images, videos, scientific articles, and other sources (page 26).
5. Recognizing associations (page 28).

Step 4: Define the problem

The goal of the step is to redefine the problem in a way that allows the introduction of broad solutions. The definition should take into account the results of the problem investigation, the analysis of the user needs, and the understanding of the designers.

Recommended activities:

1. How can we … (page 39).

Step 5: Analysis and recording of user needs

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

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1. Design and conduct interviews with color, promotion, and reflection (page 43).
2. Create a persona (page 46).

Step 6: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Basic ideation exercises (page 62).
2. Exercise 6-3-5 (page 64).

Step7: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization into feasible, feasible but innovative, and not yet feasible due to immaturity of technology (page 73).

Step 8: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Description of the proposed solution with the user journey (page 82).
2. Alternatively, problem description with solution poster (page 81).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. Use of the digital platform eDea can contribute to effective communication, interactivity, sharing of ideas, and collaborative design especially when participants are not in the same room during their collaboration or continue collaboration after physical meetings. Activity steps can be created within the platform, offering participants a digital common collaboration space and encouraging active participation in innovation activities.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices. The audience can also include stakeholders outside the Implementations team, such as engineers, urban planners, environmentalists, and others.
- Feedback from the teacher or facilitator, members of other groups, and the audience about the proposed solution.
- Discussion on the topic of green cities, their positive effect on the quality of life, and trends of possible solutions with the use of technology.
- Discussion on sustainability and sustainable development, its positive effect on the quality of life, and trends of possible solutions with Use of technology.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Active senior citizens

Why is the activity interesting

Active senior citizens are people who are in the third phase of their life, which extends from about 60 years and beyond. Despite their age, these citizens remain active, inspired and actively involved in society. There are many ways that active senior citizens contribute to their community and society in general.

Many choose to continue working, either full-time or part-time, offering their experience in various fields. Also, many join volunteer programs to contribute to the community by volunteering in community programs and organizations. They assist with needs identification programs, educational programs, and initiatives for the betterment of their community.

Additionally, many seniors retain their love of learning and are excited to share their knowledge with younger generations. They may participate in teaching programs, become mentors, or organize lectures and workshops. They also take advantage of the opportunity to learn new things, participate in educational programs, and take classes in music, art, or other interests.

Often, with retirement, older people have more free time. This allows them to engage in activities they love, such as travel, art, sports, hobbies, and social life. Active senior citizens can participate in social groups, clubs, choirs, and other activities that allow them to socialize, make new friendships, and enjoy their free time. Seniors can maintain a rich social life by participating in clubs, societies, and social events. Active living and participation in physical activities help maintain health and fitness.

Active senior citizens can contribute to the local economy through consumption, work, and business activity. In addition, they can participate in public debates, write articles, contribute to the formulation of policies, and express their opinions on issues that interest them.

Many older people offer help and support to their family members, especially in matters related to the care of their grandchildren. They offer help and support to their children, grandchildren, and other family members.

Overall, active senior citizens remain important pillars of society and contribute to maintaining their community and promoting social solidarity. Old age can be a time of opportunity, exploration, and participation in life and community.

Concepts covered by the activity and key words

Third age, active participation, civic engagement, quality of life, intergenerational learning.

Who is the activity aimed at?

The activity is aimed at pupils, students, seniors, policy makers for social inclusion, adult educators, and the general public.

Learning or designing goals of the activity

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The learning or designing goals of the activity are:

- Understanding the challenges that discourage the active participation of older people in social life.
- Understanding the importance of active participation of elderly people in social life.
- Understanding the concept of intergenerational learning.
- Development of critical and analytical thinking.
- Developing empathy for the needs of the elderly.
- Collaboration in groups to brainstorm, evaluate, and synthesize ideas towards solutions that promote the active participation of seniors in social and business life as well as in the public.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step1º: Ενθάρρυνση δημιουργικότητας

The aim of the step is to encourage the participants' creativity and confidence in their ability to design innovative solutions.

Recommended activities:

1. Encouraging creativity by applying the exercise 30 shapes 30 shapes (10).

Step2º: Developing a team spirit of cooperation

The goal of the step is to create a team spirit among the team members, to define the rules of cooperation, to familiarize the team members with each other, and to familiarize the members of different groups with each other.

Recommended activities:

1. Define a team name and design a logo (page 13).

2. Table of interests (page 15).
3. Water transfer (page 17).

Step 3: Investigate the problem

The goal of the step is to investigate, describe, and document the problem in a broad way, which allows the identification of opportunities to improve services and practices.

Recommended activities:

1. What does this person need? (page 34).
2. Immersion for insight (page 31).
3. Description of the problem through images, videos, scientific articles, and other sources (page 26).
4. Recognizing associations (page 28).

Step 4: Define the problem

The goal of the step is to redefine the problem in a way that allows the introduction of broad solutions. The definition should take into account the results of the problem investigation, the analysis of the user needs, and the understanding of the designers.

Recommended activities:

1. How can we … (page 39).

Step 5: Analysis and recording of user needs

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. User observation (page 32).
2. Design and conduct interviews with color, promotion, and reflection (page 43).
3. Create a persona (page 46).

Step 6: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Basic ideation exercises (page 62).
2. Exercise 6-3-5 (page 64).

Step 7: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization into feasible, feasible but innovative, and not yet feasible due to immaturity of technology (page 73).

Step 8: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Description of the proposed solution with the user journey (page 82).
2. Alternatively, problem description with solution poster (page 81).
3. Alternatively, description of the problem with physical prototyping (page 91).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. Use of the digital platform eDea can contribute to effective communication, interactivity, sharing of ideas, and collaborative design. Activity steps can be created within the platform, encouraging participants to share their ideas in a common digital workspace that is also a place to record the design process.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices. People from the target group of the activity, i.e. senior citizens, can also participate in the audience.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Discussion on the needs of the elderly and the importance of their active participation in social and business life both for their own benefit and for the benefit of their community.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Redesigning the experience of a public library

Why is the activity interesting

The activity concerns the production of innovative ideas to improve the experience and services provided by a library, municipal, school, university, or other. It enables designers to work on redesigning a real service that appeals to many different audiences, such as children, students, teachers, parents, people who like to read, and others.

The activity approaches the library as an organization that provides services and value to its users. In this context, designers will familiarize themselves with the concept of service as an experience that extends over time, includes many points of contact and interaction with users or customers with the aim of providing value to specific needs or problems they face. This requires designers to demonstrate systemic and critical thinking in order to redesign a library experience. The end result of the activity can vary significantly from designing digital products and user interaction points to designing an integrated library experience that includes multiple and diverse channels, designing interior spaces, educational programs and experiences, and more.

Libraries are evolving in response to changing information needs and technological advances. The activity challenges designers to think creatively about how a library can remain relevant and vibrant in the digital age. It requires designers to come up with innovative solutions and provides the opportunity to practice and develop skills in ideation, creative thinking, and interaction in order to design a truly innovative solution that meets user needs and 21st century imperatives.

In addition, the activity provides a lot of flexibility for designers to be able to adapt the theme in the direction they find most interesting. For example, some might be concerned with how to reach audiences who do not take advantage of a library's services while others might explore alternative uses and users that libraries of the future could support in order to expand their range of services but and increase their target audience. Accordingly, within flexibility, designers can choose whether to study the experience of a children's public library, a school library, a university library, or a public library aimed at adults.

Design thinking emphasizes solving real problems and creating meaningful solutions. Libraries play a critical role in society by fostering education, culture, and community involvement. Redesigning the library experience offers designers the opportunity to make a meaningful impact on an important community organization. In the final presentations of the participating groups, library workers could also participate in order to listen and evaluate their ideas. This increases the likelihood that some ideas

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will be implemented by some libraries, giving designers the joy of seeing a piece of their work provide real value to their local community, school, or university. This reinforces the sense that designers or students can actively contribute to positive change in their community. This real-world impact adds an extra incentive for designers to successfully complete the activity, something that is often missing from exercises or tasks done in training.

Finally, the activity is properly designed so that designers have easy access to the audience they will need to study. They can easily engage with library users and staff in order to understand the needs and challenges facing libraries as organizations in the 21st century. The activity encourages designers to adopt a user-centered approach to learn the importance of putting themselves in the users' shoes by conducting primary research with library users and non-library users.

Concepts covered by the activity and key words

Community, organization, service, culture, education, participation, service design.

Who is the activity aimed at?

The activity is aimed at professionals and design teams interested in the redesign of services and the user experience (Customer Experience - CX), workers in public and local government bodies, workers in cultural bodies and businesses, such as museums, bookstores, publishing houses , and others, professionals involved in the field of social innovation (social innovation), students, and the general public.

Learning or designing goals of the activity

The Learning or designing goals of the activity are:

- Understanding the concept of service and distinguishing it from the concept of product.
- Understanding of basic service design principles.
- Understanding the limitations an organization places on solving issues related to its services.
- Development of critical and analytical thinking.
- Developing collaboration skills within a working group in order to jointly shape a new value proposition for a library's services.
- Develop empathy by conducting primary research with users.
- Defining design problems based on user research.
- Presentation of written and oral solutions and evaluation of the solutions by external judges.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create team spirit among the team members, define the rules of cooperation and familiarize the team members with each other.

Recommended activities:

1. Telling our stories (page 24).

2. Two truths and 1 lie (page 23).

3. Description of group profiles and cooperation rules (page 14).

Step 2: Investigate the problem

The aim of the step is to investigate various aspects related to the topic, good practices from Greece and abroad as well as problems and needs of users and other stakeholders.

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 27).

2. Exercise observation. It is suggested that the teacher starts the investigation phase of the problem with this exercise in order for the participants to practice and strengthen their observation before conducting the field investigation, so that it will have better results (page 33).

3. Observation of users (shadowing) (page 32).

4. Interviews. Conduct interviews with both Library staff and users of library services. At the same time, participants can choose to interview audiences to whom the library could expand its services in the future (page 48).

Step 3: Define the problem

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

4. How can we … (page 40).

5. Points of view (POV) (page 56).

6. User Persona (page 57).

Step 4: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Brainstorming (page 68).

2. Exercise 6-3-5 (page 64).

Step 5: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization (page 76).

2. Brainstorming (page 74).

3. Design Guidelines (page 78).

Step 6: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. The user journey (page 82).

2. Rapid prototyping from consumables such as paper, tape, stationery, and more.

3. User testing (page 86).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. It is recommended to structure the steps of the activity on the eDea digital platform, which offers the possibility to collaborate on all the proposed steps of the activity anytime and anywhere. The eDea digital platform will enhance interactivity in problem analysis and recording, ideation, idea evaluation, and recording of the final proposed solution.

Evaluation of newly acquired knowledge

Suggested:

- Presentation of each group's work after each step of the activity.
- Feedback from the teacher or coordinator after each step of the activity.
- Feedback from the members of the other groups after each step of the activity.
- Presentation of the proposed solution and justification of the choices.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Feedback from external reviewers relevant to the exercise topic, such as staff or a library director.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.
- Class discussion about the new knowledge with the aim of consolidation.

Reduction of food waste in households (food waste)

Why is the activity interesting

In a world where the sustainable development of cities and countries are one of the most topical and important issues at global level, the issue of food waste emerges as a critical problem with multiple effects on the economy, social well-being and the environment. How can we help end consumers reduce household food waste?

According to the data of the United Nations Organization (United Nations Environmental Programme, Food Waste Index Report, 2021), almost one billion tons of food is wasted annually. A large volume of food is wasted at all stages of the supply chain, from production to raw materials reaching the final consumer. The above phenomenon creates two main problems. On the one hand, there is a significant waste of raw materials and food while at the same time, according to data from the Hellenic Statistical Service and the UN, worldwide, one in nine people in the world (795 million) is malnourished, while one in three people worldwide faces moderate or severe food insecurity. On the other hand, the overproduction of food leads to the creation of a huge amount of garbage. The environment is polluted recklessly and the processing of the garbage itself worsens the greenhouse effect, increasing the so-called energy footprint. This work provides an opportunity for students and professionals to work on a contemporary challenge that has a tangible real-world impact.

The issue of food waste is a deeply systemic issue. Therefore it includes a wide range of different stakeholders, including consumers, food producers, retail businesses such as supermarkets, greengrocers, and others, social enterprises, as well as institutional bodies such as municipalities, M.K.O., and others . Design thinking thrives on complex problems, as it encourages breaking down complex problems into smaller, more manageable challenges. Through this work, the participants will analyze the multifaceted issue of food waste, identifying its root causes and consequences in the everyday lives of citizens. By breaking down a complex social and environmental problem into smaller, more manageable challenges, students and professionals will be able to understand the power and value of design thinking in managing and solving complex, systemic issues.

Although it is a global and strongly systemic issue, at the same time the problem of food waste directly affects every citizen and consumer in the context of their daily life. The issue concerns both the limitation of food waste and the management of raw materials and food discarded by households for various reasons, such as not being consumed or expired, so that there is no unnecessary waste of raw materials and food. Another aspect of the issue is the issue of informing and educating consumers about

the issue of wasting raw materials. It therefore becomes apparent that students and professionals who will undertake this work in the context of learning the methodology and principles of design thinking can direct the subject in the direction that seems most important and most interesting to them.

Accordingly, students and professionals can choose and focus on a specific common goal. For example some groups may design a solution focused on students and young people living alone. Other groups may focus on the daily life and needs of a family with children, or the needs of older people. Therefore, the topic is properly structured to support many different possible solutions, from designing a digital service, creating an educational platform or information campaign to designing solutions that could be integrated and provided by existing companies and organizations , such as supermarkets, catering businesses, social enterprises, and others. This is how creative thinking is strengthened and promoted.

Design thinking emphasizes developing empathy with end users or consumers as well as a user-centered approach. In the context of this exercise, participants should study and understand the needs, behaviors and motivations of the people who lead them to waste food, but also of the people and social groups who experience the impact of food waste. The paper tackles an issue that concerns us all and focuses on designing solutions that concern end consumers and households. Exercise participants will have no difficulty conducting user research to understand causes and behaviors that contribute to the issue of food waste.

In summary, this paper is more than just an academic exercise. It is a call to action, a means of promoting change in easy and simple ways that everyone can adopt. It provides participants with the opportunity to delve into the heart of a real challenge that touches the lives of millions of people worldwide.

Concepts covered by the activity and key words

Sustainable development, sustainability, environment, economy, nutrition, poverty, saving resources, recycling resources, social economy, social entrepreneurship, social economy, education, information

Who is the activity aimed at?

The activity is addressed to professionals and design groups interested in sustainable development issues, to workers in food retail companies, for example supermarkets, grocery stores, and others, professionals in the catering sector, workers in M.K.O., workers in agencies of local government, professionals dealing with the field of social innovation (social innovation), professionals dealing with marketing, students, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding the concept of sustainable development.
- Development of critical and analytical thinking.
- Development of systemic thinking.
- Develop skills to break down complex problems into smaller, more manageable challenges.
- Development of cooperation skills through group work.
- Develop empathy by conducting primary research with users.
- Familiarity with the principles of 'Behaviour Design' which is based on understanding how people think and make decisions in order to design interventions that lead to behavior change.
- Defining design problems based on user research.
- Presentation of solutions in writing and orally.
- Interdisciplinary collaboration. The work provides an opportunity for students and professionals from various disciplines to work together to find solutions to the problem of food waste.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create team spirit among the team members, define the rules of cooperation and familiarize the team members with each other.

Recommended activities:

1. Survival skills in a post-apocalyptic age (page 21).
2. Professional skills (page 22).

Step 2: Investigate the problem και καταγραφή αναγκών χρηστών

The aim of the step is to investigate various aspects related to the subject, good practices from Greece and abroad as well as problems and needs of users and other stakeholders, as already recorded in the literature

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 27).
2. Stakeholder map (page 36).
3. Observation of users (shadowing) (page 32).

4. Interviews (page 48).

5. Sharing stories (page 55).

Step 3: Define the problem

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. How can we … (page 40).

2. User Persona (page 57).

3. Metaphors and similes (page 30).

Step 4: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Brainstorming (page 68).

2. Exercise 6-3-5 (page 64).

3. Analogous inspiration (page 72).

Step 5: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization (page 76).

2. Brainstorming (page 74).

3. Design Guidelines (page 78).

Step 6: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Solution poster (page 81).

2. The user journey (page 82).

3. Rapid prototyping from consumables such as paper, tape, stationery, and more.

4. User testing (page 86).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. Use of the digital platform eDea can contribute to effective communication, interactivity, sharing of ideas, and collaborative design. Activity steps can be created within the platform, encouraging participants to share their ideas in a common digital workspace that is also a place to record the design process.

Evaluation of newly acquired knowledge

Suggested:

*   Feedback from the teacher or coordinator after each step of the activity.
*   Presentation of the proposed solution and justification of choices. People from the target group of the activity, i.e. senior citizens, can also participate in the audience.
*   Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
*   Discussion on the needs of the elderly and the importance of their active participation in social and business life both for their own benefit and for the benefit of their community.
*   Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Strengthening and supporting the mental health and well-being of students and young people aged 18-25

Why is the activity interesting

According to the World Health Organization (2022), mental health is a state of well-being in which the individual realizes his abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can contribute to the community. Mental health includes our emotional, psychological and social well-being. It affects how we think, feel and act. It also helps determine how we manage stress, build relationships with our social environment, and make healthy choices. Mental health is a basic human right and a vital condition for personal, social and socio-economic development.

In addition, according to a recent study by the World Health Organization entitled "Mental health, social inclusion and young people aged 18-29 in the European Region of P.O.Y. (2023)", in 2019, approximately 16.1% of adolescent boys and 18.6% of adolescent girls aged 10–19 years in Europe were experiencing some kind of mental health disorder. Since the start of the pandemic, the number of young people with mental health problems has at least doubled. 64% of all youth are at risk for depression and are 30% to 80% more likely to report symptoms of depression or anxiety. At the same time suicide is the second leading cause of death for teenagers aged 15-19 in Western Europe.

Protecting and promoting mental health is essential to ensuring the authenticity and well-being of young people and building human and social capital. However, mental health is one of the most neglected areas of health both at European and global level. The P.O.Y. states that countries in Europe spend, on average, only 2% of their health budget on strengthening the mental health sector. The work provides the opportunity for both students to become more informed about a very important issue that directly concerns them, to reflect on its implications and to design solutions that promote and enhance mental health and well-being for young people.

The target group of the work is directly accessible so both students and professionals who will deal with the specific issue will be able to easily approach users to conduct research. In the context of understanding users' needs, participants in the work need to analyze and provide answers to various questions such as: what are the causes, behaviors and motivations that lead young people to seek help, what means or services they use to seek help, for example a private mental health professional, friend, relative, or family, helpline, community services or mental health centres, apps, online forums, and others, what prevents or prevents young people from to seek help, what

reasons lead them to stop treatment. The specific topic is suitable for participants to experiment or combine different types of research to record user needs and behaviors and also to experiment with co-design methods with users, for example organizing a creative co-design workshop with fellow students their.

Mental health services evolve (and must evolve) in response to changing information needs and technological advances. The assignment challenges students to think creatively about how technology can assist and enhance the field of mental health. At the same time, it requires the participants to think about the role that can be played both by the universities, as institutions as well as by the professors and fellow students themselves. In addition, an important aspect of the issue worth considering by the participants is the issue of prevention, that is, how we can not only help young people who are already experiencing some mental problems, but also prevent the onset. The work provides the possibility for students to produce innovative solutions that will be able to be used by the Universities. These solutions can move in many different directions, either by more strongly integrating the technological element into the solution, or by following a more communal approach.

Concepts covered by the activity and key words

Health, mental health, prevention, welfare, university, students, community or social services.

Who is the activity aimed at?

The activity is aimed at professionals and design groups interested in health and specifically mental health issues, professionals in the wider health sector, for example doctors, psychologists, nurses, social workers, and others, trainers and educators of sustainable development, companies and professionals who develop software for the health sector, workers in food retail companies, for example supermarkets, grocery stores, and others, professionals in the catering sector, workers in M.K.O., workers in local government bodies, professionals involved in the field of social innovation, marketing professionals, students and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:
- Understanding the concept and importance of mental health for personal, social and socio-economic development.
- Understanding the concept and mechanisms of prevention in the health sector.
- Development of critical and analytical thinking.
- Development of systemic thinking.

- Develop skills to break down complex problems into smaller, more manageable challenges.
- Development of cooperation skills through group work.
- Develop empathy through user research.
- Familiarity with the principles of behavioral design based on understanding how people think and make decisions in order to design interventions that lead to behavior change.
- Defining design problems based on user research.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create team spirit among the team members, define the rules of cooperation and familiarize the team members with each other.

Recommended activities:

1. Group profile description and collaboration rules definition. In the context of the activity and given that the work touches on mental health it would be interesting for team members to place particular emphasis on discussing what stresses them and what they need to feel emotionally safe and calm during the Duration of the work (page 14).

2. Professional skills (page 22).

Step 2: Investigate the problem και καταγραφή αναγκών χρηστών

The aim of the step is to investigate various aspects related to the subject, good practices from Greece and abroad as well as problems and needs of users and other stakeholders, as already recorded in the literature.

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 27).

2. Stakeholder map (page 36).

3. Color, promotion and reflection (page 44).

4. Empathic Interviewing (page 48).

5. Sharing stories (page 55).

6. User Persona (page 57).

Step 3: Define the problem

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. How can we … (page 40).

Step 4: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Brainstorming (page 68).

2. Exercise 6-3-5 (page 64).

3. How could we … (page 66).

Step 5: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization (page 76).

2. Brainstorming (page 74)

3. Design Guidelines (page 78).

Step 6: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Solution poster (page 81).

2. The user journey (page 82).

3. Rapid prototyping from consumables such as paper, tape, stationery, and more.

4. User testing (page 86).

5. Wizard of Oz (page 88).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. Use of the digital platform eDea can contribute to effective communication, interactivity, sharing of ideas, and collaborative design. Activity steps can be created within the platform, encouraging participants to share their ideas in a common digital workspace that is also a place to record the design process.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices. People from the target group of the activity, i.e. senior citizens, can also participate in the audience.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Discussion on the needs of the elderly and the importance of their active participation in social and business life both for their own benefit and for the benefit of their community.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

Redesigning the experience of buying consumer products (retail experience)

Why is the activity interesting

The work concerns the production of innovative ideas to improve the experience of buying consumer products. It refers to the retail trade sector (Business-to-Customer / B2C) which includes a wide range of businesses such as, for example, businesses that sell food, books, furniture, household goods, technology items such as computers, mobiles, and others. clothing and footwear products but also businesses that sell cars, jewelry, and more.

The retail industry is a dynamically evolving industry that is called upon to respond to ever-changing consumer preferences, technological developments and global trends. According to a recent survey by EY (2022), the priorities of consumers in Greece, the motivations and criteria that influence their behavior and decisions have changed drastically in recent years. Specifically, it is reported that 58% of consumers in Greece consider whether the product is healthy as a key selection criterion in the consumer product market, 71% of consumers prefer businesses whose actions have a social impact and 64% of consumers express an interest in environmental impact of business

As in the rest of the world, Greek consumers, especially younger ones, are also looking for enhanced experiences and personalized services and products. The shift to e-commerce caused by the pandemic and successive lockdowns is being strengthened, pushing businesses to omni-channel service and distribution models, enabling consumers to enjoy the advantages offered by both physical stores and online searches and purchases, combined. Given this fact, businesses should improve the level of service and upgrade the customer experience, both in physical stores and in online channels.

At the same time, in order to enhance the overall customer experience (customer experience), many businesses that market products develop and provide value-added services around these products. This trend is recorded worldwide with the term "servitization of products". For example, companies that sell furniture provide interior design and decoration services. Accordingly, companies selling household appliances, such as washing machines, kitchens, or refrigerators, technology items, and others, develop a network of partners with the aim of maintaining these appliances, as well as easy and quick repair in case of damage, providing additional after sales services.

As part of the assignment, participants are first asked to choose a specific retail industry, such as clothing or furniture, and then propose innovative solutions that will help companies operating in that industry become more competitive. Among other

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things, participants can investigate and propose solutions to the following individual issues:

Store experience. Study and proposals for improving the store's physical space. These proposals may concern the layout of the space, the way the products are organized and presented, the information provided about the products. In this context, the use of immersive technologies can be studied, such as virtual reality (VR), augmented reality (AR), and digital media, such as smartphones, tablets, and others, which can be used in addition to interacting with the space and the products.

Experience of digital channels and online store. Study of the digital channels of businesses and proposals to improve the digital communication of the business as well as the online shopping experience.

Sustainability and social responsibility. Study of how businesses can incorporate sustainable practices or play a more active role in product-related social issues.

Value-added services that complement the purchase of the product. It can be services provided in the store, during the Duration of the purchase or services related to the after sales phase and will be used by the consumer in a second time, for example product return, maintenance, repair, and others.

Concepts covered by the activity and key words

Consumer product, store experience, interior design, online shopping, corporate social responsibility, sustainability, after sales services, omni-channel experience.

Who is the activity aimed at?

The activity is aimed at professionals and design teams interested in issues related to the retail trade of products, entrepreneurs and retail store owners, marketing professionals, professionals dealing with VR / AR technologies, students, and the general public.

Learning or designing goals of the activity

The learning or designing goals of the activity are:

- Understanding the concept of omnichannel experience.
- Familiarity with virtual and augmented reality technologies (VR / AR).
- Understanding how the configuration and organization of the interior space affects the overall user experience.
- Familiarity with interior design principles.
- Understanding the concept of corporate social responsibility
- Development of critical and analytical thinking.

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- Development of systemic thinking.
- Develop skills to break down complex problems into individual ones. smaller and more manageable challenges.
- Development of cooperation skills through group work.
- Develop empathy through user research.
- Defining design problems based on user research.
- Presentation of solutions in writing and orally.

Structure of the activity by applying design thinking steps

Step 1: Developing a team spirit of cooperation

The goal of the step is to create team spirit among the team members, define the rules of cooperation and familiarize the team members with each other.

Recommended activities:

1. Table of interests. This activity can be used not only to develop team spirit among the participants but also to possibly help the groups to choose a specific category of consumer products to deal with. For example if in the interest board a participant has written 'Reading books' the team could redesign the experience of buying books or the experience of a bookstore (page 15).
2. . Team profile description and collaboration rules definition (page 14).

Step 2: Investigate the problem και καταγραφή αναγκών χρηστών

The aim of the step is to investigate various aspects related to the subject, good practices from Greece and abroad as well as problems and needs of users and other stakeholders, as already recorded in the literature.

Recommended activities:

1. Describe the problem through images, videos, scientific articles, and other sources (page 27).
2. Observation exercise (page 33).
3. Observation of users (shadowing). It concerns both the experience of buying products from the physical store (observation of both users and the store space itself) as well as the experience of online shopping (page 32).
4. Empathic Interviewing (page 48).
5. End User Interviews (page 53).
6. Sharing stories (page 55).

7. User Persona (page 57).

Step 3: Define the problem

The objective of the step is to identify the user groups that will benefit from the proposed solution as well as to investigate their real needs, as opposed to those that are perceived at first glance.

Recommended activities:

1. Route map (page 46).

2. How can we … (page 40).

Step 4: Ideation

The goal of the step is to introduce as many ideas as possible towards designing a possible solution.

Recommended activities:

1. Brainstorming (page 68).

2. Exercise 6-3-5 (page 64).

3. I like, I would, what if… (page 71).

Step 5: Evaluation of ideas

The goal of the step is the Evaluation of ideas and the selection of the one that will be implemented as a prototype.

Recommended activities:

1. Evaluation of ideas through categorization (page 76).

2. Brainstorming (page 74).

3. Design Guidelines (page 78).

Step 6: Prototyping

The goal of the step is to design a prototype that can be used by users to generate feedback.

Recommended activities:

1. Solution poster (page 81) or alternatively Wizard of Oz (page 88).

2. The user journey (page 82).

3. Rapid prototyping from consumables such as paper, tape, stationery, and more.

4. Scenes / sets / roles (page 85).

The way to build the prototype or present the idea depends on the type of proposed solution.

Use of the digital platform

The activity can be implemented both digitally and in traditional classroom contexts, without the use of digital tools. Use of the digital platform eDea can contribute to effective communication, interactivity, sharing of ideas, and collaborative design. Activity steps can be created within the platform, encouraging participants to share their ideas in a common digital workspace that is also a place to record the design process.

Evaluation of newly acquired knowledge

Suggested:

- Feedback from the teacher or coordinator after each step of the activity.
- Presentation of the proposed solution and justification of choices. People from the target group of the activity, i.e. senior citizens, can also participate in the audience.
- Feedback from the teacher or coordinator and members of other groups regarding the proposed solution.
- Discussion on the needs of the elderly and the importance of their active participation in social and business life both for their own benefit and for the benefit of their community.
- Repeating the steps of the activity with the aim of improving the proposed solution and presenting new results.

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