

DESIGN THINKING MANUAL

FOR ADULT
LEARNING
PROVIDERS



Co-funded by the
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QUOTES

„From the very moment I got to know about the Design Thinking methodology, I started integrating it in my daily activities, emphasizing the trainings and workshops that lasted a few days, and were organised with youths as well as adults. The methodology is simple to use and it offers many possibilities for the trainer/educator, as well as the participants. I will continue to use it with great pleasure, and upgrade on this field.“

“I discovered that I could come up with ideas in a short lap of time.”

„Design Thinking Methodology leads to a constructive and concise thinking where our subconscious becomes transparently conscious when it comes to discovering an innovative solution based on a particular personal problem, or a problem in the community.“

“Working with the same group helped us to create a confident and comfortable safe space, allowing the sharing of ideas and efficient teamwork.”

“The whole experience with the process of opening up the problem case to narrowing it down and then produce the prototype to testing it. It was all very interesting and a learning experience. I like the way, that the problem case and solution is treated as a product (problem case, prototype). It makes it more simple to solve, and can be applied to different problem cases.”

“Design Thinking ... (is) a methodology which i can use in almost every activity (if not all) in my professional work.”

“Firstly, the Design Thinking methodology is a very interesting approach in creating new products/ services within our organisation. Secondly, (it) offered me a comprehensive understanding (...) where within an interdisciplinary team we managed to work and offer a solution on a particular problem for the particular category of users.”

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INTRODUCTION

What is Design Thinking?

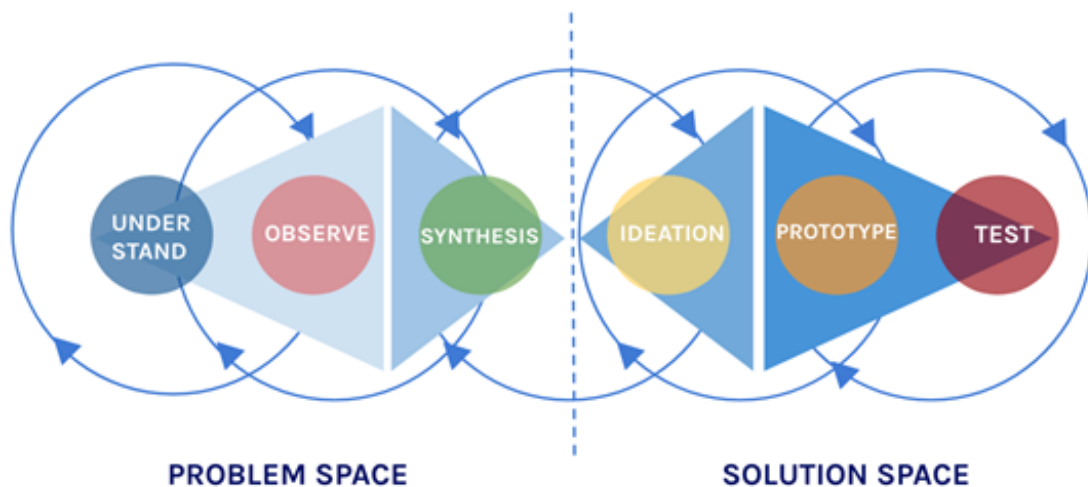
Design Thinking is a human-centred, iterative process that can be used to tackle problems. The goal of Design Thinking is to discover and understand real needs, pains and boundaries to eventually be able to develop innovative solutions. The process involves methods that enable empathy with people. The steps of the process seek a balance between analytical and creative thinking.

Design Thinking is useful, when:

- You have a problem/ challenge to tackle
- You have a lack of information
- You are ready to get rid of assumptions
- You want to get to know real needs and pains

The Design Thinking process can be divided into six steps. The first three phases UNDERSTAND, OBSERVE and SYNTHESIS shape the Problem Space in which the problem is identified and analysed. The last three phases IDEATION, PROTOTYPE and TEST can be summarized as the Solution Space, where ideas are generated, built and tested.

The Design Thinking process is iterative. This means it is not only possible but even encouraged to jump back and forth in the process.



Graph based on the Design Thinking Process by Hasso Plattner Institute, Stanford University

Why is it relevant for adult learning institutions?

In adult learning, the development and design of products and services targeting at different specific target groups' and individual learners' needs become more and more important. This includes traditional and digital teaching and learning materials, e-learning environments, education games or virtual reality based material. The challenge for educators and decision makers in adult learning institutions is how to meet these expectations by developing and providing high quality outputs. Design Thinking can strongly contribute to a better performance of adult learning offers as regards usability and acceptance by learners, thus making these offers more effective and efficient. At longer

term, this will imply a higher grade of sustainability: a better investment in terms of resources on behalf of adult learning institutions, and a better investment in terms of high quality education on behalf of adult learners.

What is the purpose of this manual?

The manual is intended to support adult learning providers in introducing Design Thinking into their work to tackle substantial problems by identifying user-oriented solutions. It has been developed in the framework of the Erasmus+ strategic partnership project D-LEARNING, bringing together representatives of organizations from 6 European countries who are actively implementing adult learning with different target groups.

The manual describes the entire Design Thinking process, suggests practical methods to complete the different iterative steps of the process, and concludes with 6 case studies from the work of the project partner organizations. Representatives from all partner organizations have been participating in an intensive training course in Design Thinking guided by a team of professional trainers who have also co-authored this manual.

The manual is complemented by a *workshop guide** that enables trainers from adult education institutions to go through an exemplary Design Thinking process with a team, thus enabling them to implement the method in their own organisation or networks.

**You can download the workshop guide from www.d-learning.vnb.de*

Design Thinking Mind Set

Empathy

Empathy is a key element of Design Thinking. In order to create solutions for other humans we need to distance ourselves from our personal assumptions and find out what individuals actually need; physically and emotionally. Empathy means stepping into other people's shoes. By finding out how they feel, think and live we will get much closer to creating solutions that matter.

Playful Collaboration

Playing is unfortunately often contrasted to working. In the Design Thinking culture playful collaboration is essential for mastering the process. First of all it embraces team collaboration. Loosening up together creates trust. A playful working culture opens up for creativity. It inspires us to take on new perspectives by tapping into other parts of our brains. Playful collaboration can be encouraged by warm-ups, unconventional brainstorming methods and flexible workspaces.

Creative Confidence

The term 'Creative Confidence' was established by Tom and David Kelley. It tackles the myth of people being born creative or uncreative. Design thinking encourages different perspectives, skills and weaknesses. Creative Confidence literally means to be confident about your perspective and learn to profit from the team's diversity.

Learning from Mistakes

Design Thinking is an iterative process. It is not only acceptable to fail and learn from making mistakes - it is essential. While going through the process, you will constantly test and iterate on what you have found out. Embrace the failing, it will only give you more relevant information on how to proceed.

PREPARATION

Stakeholder Management:

Stakeholders are people that are part of the project but are not the team. They are your sponsors, managers, CEOs etc. It is essential that they are briefed how Design Thinking works and what can be expected from the work of the team(s). Design Thinking is an iterative process, so it is hard to say when outcomes will reveal themselves. Make sure they know what is understood by prototypes: They are not solutions ready to be implemented, but concrete ideas that need to be evolved, tested and iterated.

Design Thinking is a great way to explore a problem and tackling deeper lying issues in a human-centred way, but it is not a methodology for implementing and building final solutions. The practice examples in this manual will explain the difference.

Team Members

Working with Design Thinking is different from usual working modes. Before you begin brief your participants and/or team members thoroughly. If they are familiar with Design Thinking share your planning with them, so a common understanding of the project and scope is established. If your participants are not familiar with Design Thinking it is important to brief them why you want to work with this methodology and process.

Set the tone for the project by being open and playful but structured. Enable collaboration and openness from the beginning with a longer check-in where all team members introduce their background and share their expectations and wishes.

Be clear and transparent up front how many workshop sessions they are expected to attend and what is expected of them apart from these sessions. Plan it and write it down, so there are no surprises.

What will happen with the results, what are expectations from stakeholders? In which framework is the project embedded? Take time to talk about this questions with the team and provide sufficient context.

Interdisciplinary Teams

A diverse team enables a collision of different ideas, perspectives and approaches. Working in an interdisciplinary team will broaden your horizon and create a greater range of thoughts and ideas. While putting together a Design Thinking team you should consider:

- Gender diversity
- Age diversity
- Cultural diversity
- Diverse socioeconomic backgrounds
- Diverse expertise

Flexible Space

Different phases and methods of the Design Thinking process demand different functions of a workspace. While the team will need plenty of space to collect and document their data in the Synthesis Phase, they might have different requirements while prototyping or testing. It is helpful to create a flexible workspace, which allows the team to move around, use space differently and get a change of scenery. A great way to hack a workspace is to have mobile furniture on castors and plenty of free wall space. The team should feel comfortable to use the space as needed.

Check-in & Check-out

As a team it is valuable to begin every work day/-session with a check-in where every team member can share whatever (s)he wants to share. This can be in the form of sharing personal things but also sharing expectations and to do's for the day. This tool helps us to create a safe space and empathy in our team. Knowing how our team members feel and understanding their expectations will get us closer together and avoid conflicts.

At the end of a workday/-session we can finish with a check-out. Share how things went for you, reflect on your expectations together and set to do's for the next steps. Keeping up this tool will help you create a common language and path.

Warm-ups

Warm-ups are short playful energizers. They help to loosen up the mind before getting to work and they are fun. Warm-ups are often used to start a work session in a playful way or to get the team to wake up from an afternoon-low.

Feedback

Establishing a healthy feedback culture in the team strengthens mutual trust. By talking about conflicts, suggestions and wishes they will no longer be hidden in the dark and are much more unlikely to escalate. Positive feedback is encouraging and empowering. Big workloads and little time often drives us to forget feedback, hence it is helpful to establish fixed feedback slots and formats, e.g. during check-out. Think of feedback as an essential part of the work, not as "a nice to have if there is still time".

Tools and Materials

The following tools and materials are recommended by experienced Design Thinkers. They are preferable, but not final, and users can modify them according to their needs and resources.

Time Timer

Time boxing enables teams to work in dedicated time slots. Setting a limited time for specific work steps helps us to focus as a team and stops us from getting into endless discussions. A time timer is a great tool to help us with time boxing. It exists as a physical timer or can be downloaded as an app.



Sticky notes

It is common to use sticky notes in Design Thinking. Due to their flexible usability they are an extremely helpful tool. Once they are up the wall, they can be moved around, clustered, colour coded, documented, passed on or simply removed again. Better have too many than too few. It is essential that sticky notes are easy to read (short, capital letters and / or visualized explanations).

Pens

Two sizes are needed at least: Big whiteboard and flip chart markers in multiple colours and smaller black ones for writing on sticky notes. Make sure you have enough for every participant and they have broader tips.

Brown Paper

Brown Paper lets you turn walls into canvases for working and drawing. You can prepare frameworks and templates for the teamwork on brown paper in advance, so you have them at hand in the workshop. Plus, you can easily roll them up after the workshop and "save" what the teams have worked on.

Noisemaker

Gongs or bells signal the end of working sessions and are crucial to keep teams in synchronization and offer a subtle signal to the participants to direct their attention away from the team work.

Speaker

Music works wonders, especially in phases like ideation. Have a little speaker at hand to play some soft upbeat tunes. Be aware though that sometimes it can be a bit overwhelming to have background music blasting and teams talking loudly, which might stress participants. So be mindful when and what music to play.

Prototyping Material

This is highly dependent on what the challenge is but blank white paper and cardboard boxes are always good. Pipe-cleaners, duct tape, old magazines, rubber bands, aluminium foil, scissors, glue and, of course, Lego bricks are also a good start.



Space

The room you are working in is not just necessary to give a place to the people. It is also a working tool. It needs to enable collaboration, facilitate teamwork and give inspiration for playful exploration. Mobile furniture helps to enable this. Working sessions should not be longer than necessary, so don't make it too comfortable to sit down and discuss at length. Things to look out for regarding the space you are working in:

- Have enough wall space
- Free space to move around and rearrange
- Light and friendly, windows are great, fresh air a must!

DEFINING YOUR CHALLENGE

The Design Thinking Challenge is an initially formulated sentence that serves the team as a starting point. Developing and formulating your challenge is an important part of your Design Thinking process and should never be underestimated. Your challenge provides the frame and direction of your project and should therefore be well thought out and precisely formulated.

The ideal Design Thinking Challenge:

- Finds the right combination of concreteness and openness
- Is human-oriented
- Gives a direction
- Does not provide a solution
- Is not restrictive regarding possible solutions
- Enables inspiration and emotion

The typical structure of a Design Thinking challenge

Redesign SOMETHING (an object, a service, a business model, ...)

for/of SOMEONE (target group)

to GOAL.

Example:

Redesign the learning incentives

of adult learners

to avoid dropouts.

(We will use this example throughout the manual to explain theory in practice)

The Scope of Your Challenge

Depending on the time you have for your project you might want to adapt the scope of your challenge:

Challenges of a more concrete nature are better suited for short projects. A concrete problem is characterised by the fact that it concerns only one specific user group, has a very specific context, has few or similar problem areas and addresses needs to a limited extent. Results are therefore easier to control and predict but the challenge may also be less interesting for the team and may hinder the novelty due to its limited scope.

A very open challenge, on the other hand, opens a wider context and a multitude of problems and needs. An open challenge is therefore better suited for longer projects with the aim of discovering unknown needs and opportunities. It offers space for more innovative ideas and thoughts. The disadvantages, however, are the difficulty of managing the project and the danger of overwhelming the team.

PHASE 1: UNDERSTANDING

To be able to solve a problem for someone, we have to fully understand their challenges. It is important to keep in mind that the people we want to design for often don't know how to define their problems themselves. Once you have a good understanding of what drives your users, you'll much more effectively generate ideas.

What is this phase about?

The first phase is about creating a common understanding about the challenge in your team. This might include sharing personal associations, stories and definitions as well as a basic desktop research and a first brainstorming about the subject. This phase is the starting point for opening up the mind for the challenge.

Why is this phase important?

This first phase of the process is important because it sets a common understanding as well as a point of departure for the team. By analysing the challenge together, the team will share their assumptions and discover first directions, which is necessary to reach a common understanding and prepare further research. The Understand phase also helps to nail down the challenge. By looking closely at the challenge, teams will often find themselves rephrasing it.

What is required for this phase?

- The whole team
- Whiteboard/ brown paper
- Sticky notes
- Pens
- Computer/ library/ expert literature

At the end of this phase, these questions should be considered in the team:

- What is our common understanding of the challenge?
- Who might be stakeholders?
- What might be fields to discover around the subject?
- What might be analogies? How do they work?

Suggested Methods

Self-reflection

Everyone in the team should take a moment to get into the subject all by her-/himself. This method can be held as a silent brainstorming in the group: Set a time timer to 5-15 Minutes and let everyone in the team brainstorm about the subject silently. Share in the team afterwards.

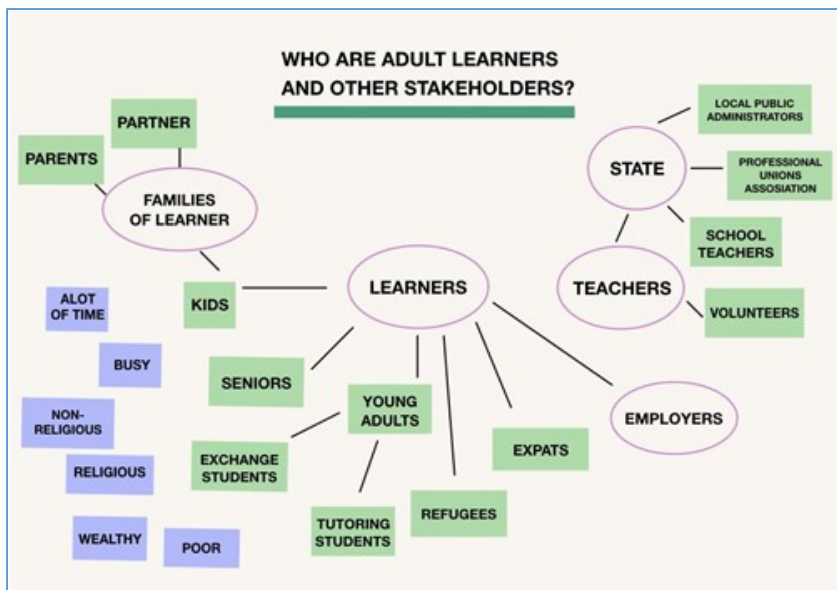
Self-reflection can also be set as a homework in advance of the project. Formulate questions about the challenge/ subject and let everyone in the team prepare them for the first meeting. For example:

- When were you a learner yourself the last time?
- Did you ever drop out of a course? Why?
- Describe your best day at school? What do you remember?

Mind Mapping

Through this method the team is enabled to link thoughts and first knowledge and to put everything that floats in the air into context. Through visualizing the data, the team will have a first overview on what they know and what they don't know about the subject. This will help getting directions for the research.

It is helpful to formulate a headline for your mind map. For example: Who are adult learners and other stakeholders?



Semantic Analysis

The Semantic Analysis is a useful method to create a common understanding about the challenge in the team. By collecting different definitions and assumptions of every team member the team will open up about the subject. It is important to share anything that comes into our minds at this stage. There is no right and no wrong.



PHASE 2: OBSERVING

What is this phase about?

The observation phase is all about learning more about the people and the context of the challenge. It creates the fundament of your ideas and the further process.

Why is this phase important?

Design Thinking is a human-centred design process. Humans are at the centre of our process. The research in the observation phase allows the team to understand the problems the people are facing and their context. It's the phase of opening the problem space.

What is required for this phase?

It is necessary to have a crisp and clear challenge and a common alignment what the project will deliver. The extent of the research depends on the project scope. A common understanding of the challenge and the project helps the team to know, what they need to address and do in the research.

At the end of this phase, these questions should be considered in the team:

- Have all research questions been answered? If not, do you know why?
- Have any new research questions emerged?
- Have we developed a broad and deep enough understanding of the challenge?
- Have we documented all interviews in a way that we can find the information again?

What to observe

We try to understand the field of our challenge. That means we are interested in the people, contexts and processes. We can learn a lot from behavioural patterns, workarounds, misuses, adjustments, unintended use cases, general different experiences and analogue situations.

The observation phase opens the problem space. To go out and observe and ask people can be uncomfortable but has its own magic. The magic flourishes when we allow us to learn other perspectives and explanations instead of trying to fit the stories of people into our own understanding of the world. The fundamental attitude is that we do not know how other people perceive and understand the world. Many perspectives do co-exist, and there is not only one true perspective.

Don't miss to observe the context: Try to collect artefacts from the context (cultural probes), observe and interview people in their context (shadowing, contextual interviews) or let them take pictures of the context (diary study).

Who to observe

Figure out who are the people affected by the challenge. Not only users but also experts and stakeholders. Users are not all alike. There might be extreme users who use the product in a very specific way. There might be beginners who do not have a clue what they are doing. There might be expert users who have used the product or service for ages and already know all other solutions for everything.

Research questions

Example challenge: Redesign the learning incentives of adult learners to avoid dropouts.

Derived question: How do learning incentives of adult learners avoid dropouts?

As you can see above, using the challenge as a research question will not lead us to the most valuable results: It is too big and addresses different aspects in one question. Good research questions though only address one topic and focus on individual key aspects of the challenge, for example: What keeps adult learners motivated?

However, this main research question alone will not deliver all the information we need to know. That's why we formulate research questions that address important related topics. They will deliver insights for answering the main question, e.g.:

- What are underlying needs of learning?
- Which goals do learners have?
- Which contexts do exist and how does the context influence the learning experience?
- What are reasons people drop out?

The next step is to understand with which method you can answer your research questions.

Research methods

There are many suitable methods to gain empathy with the people we design for. Here are some examples:

- Desk/secondary research (Existing studies, facts, discourses, political and structural aspects)
- Immersion (Gain empathy: Step in somebody's shoes.)
- Cultural probes (Exploration of context)
- Diary study (Observe a topic over a longer period of time)
- Field observation/Shadowing (Explore context and behaviour in the situation)
- Survey (Explore attitudes, facts, etc.)
- Contextual interview (Explore context and the perspective of people)
- Expert interview (Explore current discourses, good if field access is difficult)
- 1-to-1 interview (Explore understandings, worldviews, relevance systems of people)
- Focus group (Explore understandings, worldviews, relevance systems of people)

When choosing a method, think about the following questions:

- What are possible information sources? (e.g. existing studies, interviews with learners, expert interviews with scientists/trainers, diary study with training participants, ...)
- Is our focus on behaviour or people's attitude, perceptions and world views?
- How much time, resources and skills do we have?
- What are our research topics?
- How can we gain access to the field and people??
- What is our research plan?

Useful tools

Method collection - easy to filter: <http://ucdtoolbox.com/browse-methods/>

Interactive tool that helps to choose a method: <http://www.usabilityplanner.org/#home>

Limitations

People who do the research are subjective people. We grew up in a specific way, we have our perception of the world, we have preferences and stereotypes. So be aware of the high chance of your own biases.

Interviews

The aim of interviews is to bring the interviewees to a detailed presentation of their own world view/life world/constructions/relevance systems. Therefore, there is a much greater openness and less control than with quantitative methods. Great openness does not mean that the conversation is uncontrolled. However, the control takes place orally adapted to the conversation.

Knowledge, attitudes, opinions form complex structures. But they are often vague, contradictory or a mixture of knowledge and non-knowledge. In an open interview, the interviewees are thus encouraged to express what is relevant to them and in what way.

Important:

Maintain a clear definition of roles and strive for a natural situation for the interviewee if possible. That can happen by an interview in a familiar environment and by the speech you use.

What can be communicated:

- Free associations
- Metaphors, pictorial and symbolic representations
- Explanations and definition of terms
- Reasoning
- Evaluations
- Condition/situation descriptions
- Progress descriptions
- Narrations

The interviewer must know the research question and the research goal well. A constant, flexible transfer of (implicit) research questions into explicit interview questions is needed, as well as an ongoing review of the answers to their relevance to the research question (encouraging detailing or cautiously redirecting). Creating a trusting atmosphere is crucial for the success:

- Ask for permission to record sound beforehand
- Guarantee anonymity through alienation
- Encourage detailed responses

From research questions to interview questions

Research question: What keeps adult learners motivated?

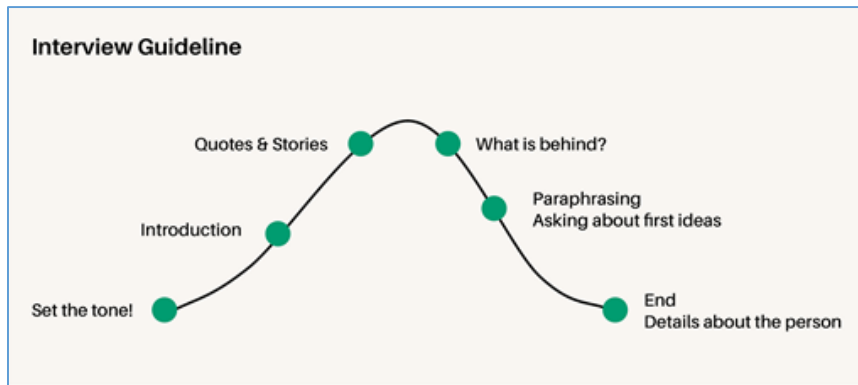
Interview question: Please tell me about the last time you took a course. How did that go?

Dig deeper if not addressed before:

- What were the reasons you took the course?
- What kept you motivated? Why?
- Did you experience any challenges? Why?

Roles

It is recommended to do interviews with two people - one interviewer, one note-taker. The separation of the roles is important, so the interviewer can focus on the interviewee and execution of the interview. The note-taker should write down everything that is said and do observations. The different roles are also helpful for the interviewee, as (s)he knows to whom (s)he should mainly speak.



A dramaturgy of an interview

Interview Checklist

- 1 person asks, 1 person takes notes
- Portrait and attributes
- Observe! Pay attention to details, behaviour, context, environment
- 80/20 rule (You do max. 20% of the talking!)
- Ask open questions
- No suggestive questions
- Ask for good/bad experiences in specific contexts
- Ask: why? Why? Why?
- Wanted: Stories, needs, surprises
- Helpful for the further process: Quotes, quotes, quotes!

Helpful Videos

Videos about difficult situations in user testings: <http://www.modsurvivalguide.org/videos/>

Good and bad interviewing: <https://www.youtube.com/watch?v=9t-hYjAKww>

Theoretical explanation: <https://www.youtube.com/watch?v=LPwO-vOVxD4>

Good interview example: <https://www.youtube.com/watch?v=eNMTJTnrTQQ>

Bad interview example: <https://www.youtube.com/watch?v=U4UKwd0KExc>



PHASE 3: SYNTHESIZING

What is this phase about?

In this phase we make sense out of all the observations we gained in the phase before. We let the data speak to us in a bottom up approach and define the stepping stone to enter the solution space with the problem statement. The team shares the observations, sorts and clusters them and then condenses them into one or multiple different problem statements.

Why is this phase important?

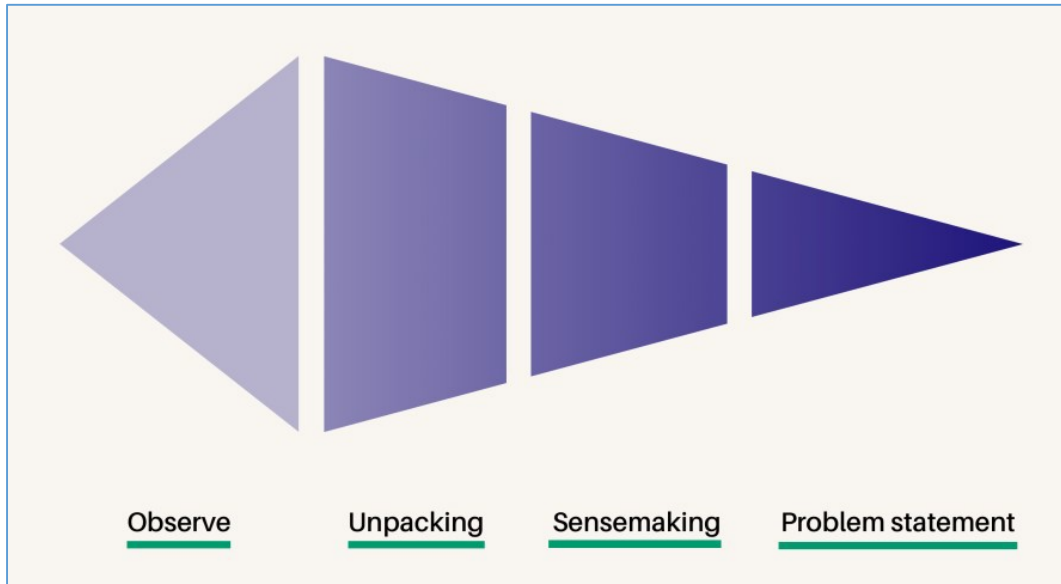
It is important to find a good problem statement because it will spark ideas and lead you through the ideation phase. A clear focus and common understanding of the team helps the team to build solutions for one problem and not for multiple ones. Furthermore, the team needs to discuss less about the problem afterwards.

What is required for this phase?

You need the research output from the observation phase. Be prepared to enter a tough phase. Sometimes the team will not know where it's heading to and will become frustrated. That's normal and ok. The mood changes immediately when the team finds a crisp problem statement.

At the end of this phase, these questions should be considered in the team:

- Is everyone happy and feels engaged with the problem statement?
- Did the team get to the core, so it's not a superficial or obvious problem statement?
- Is it an important problem of the users?
- Is it a problem statement, which has not already been solved multiple times?



Steps of a synthesizing process

Unpacking

The first step is to unpack. You want to share the observations with the whole team and to make the data visible on sticky notes on the walls. That means you share the stories of the observation phase with the team and put insightful notes and quotes on sticky notes. This process is often called storytelling. Be aware that the more you preselect the more you bias the sense making process. In the storytelling phase you are not interpreting the observations. You only retell the observations.

How to unpack

1. The team goes through the notes they took during the observation phase and marks the parts they want to share. You can use the following categories to speed up the process and do a preselection upfront:

- *We met ...*
- *The most unexpected ...*
- *The most surprising ...*
- *The most confusing ...*
- *The one most different to me ...*
- *The strangest ...*

2. One team member starts telling the story, while the rest of the team listens and adds notes on sticky notes. Tip: Write the number of the participant on each sticky note, so you can always go back to the interview.

3. The team can ask questions afterwards so everyone develops a good understanding of the interview/observation. Remember, it's not about interpretation, it's about sharing observations. The interpretation will take part in the second step, the sense making.

4. Put the sticky notes on the wall.

5. Share the next interview.

Sensemaking

Now, you have a wall full of observations. It's time to let them speak to you, to discover patterns, groupings, similarities, and tensions and to do interpretations. An observation (We saw...) plus the interpretation (I wonder if this means ...) is an insight.

What do we look for?

- Unmet or under-met needs, pain points, contradictions
- Underserved customer groups
- New questions for potential further research
- Values and beliefs
- Drivers and motivators of decision making

But what are needs and what are goals? Marc Hassenzahl differentiates in his experience design approach between (psychological) needs (the why), goals (the what) and the way we do things (the how). These are different levels of interpretation and observations. We can learn about the products/services a person uses and which barriers hinder the person to reach the goal in order to fulfil a need. An example:

A person uses a smartphone (how) to call a friend (what) to feel connected (why).

To identify patterns in the data you can use different frameworks:

The first step most of the times is to cluster. Build groupings and summarize a grouping on a sticky note. It includes an interpretation.

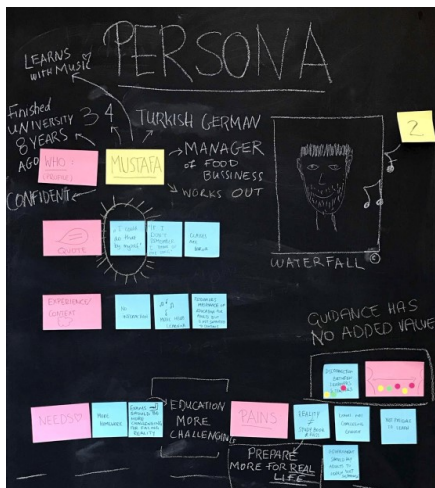
You can identify processes. There are linear and circular processes. A linear process is the visit at a restaurant: Decision for a restaurant, enter the restaurant, choose a table, choose the food, order, eat, pay, leave. A circular process is for example the cycle of people: menstrual phase, follicular phase, ovulation phase, luteal phase or easier a baby's life: eat, digest, sleep, cry, be cuddled.

To display relationships between attributes, you can use circle diagrams or 2x2 axis. When you have clustered the sticky notes and identified interesting insights and fields of opportunities you can dig deeper.

Persona

Personas are an archetypical description of a user, focussing on the usage context, goals and emotions of a person. Personas can help the team to stay focused on one user's problem and not get distracted by the problems we expect users have. A persona should not include stereotypical attributes. So your persona should answer the following questions:

- What goals does a person have?
- What motivations does a person have?
- What is a person's experience/context?



Example: Persona

How to create a persona

In a Design Thinking workshop a persona is built in a quick way. Often, we create a persona of a person we interviewed.

1. Decide for a user

- Be mindful of the challenge: Is this user relevant? How much is the user impacted by the problem you are exploring?
- Take an informed guess! Or follow your gut as a team, based on the information you have at that point.
- Remember: You can always iterate and go back to choose another user.

2. Collect the information for the persona on sticky notes/ whiteboard

- Personal information which is relevant (Be aware of not reproducing stereotypes!)
- Quotes
- Experience/ Context (What is important to know of the context in order to design solutions?)
- Needs (Which needs and goals does the person have?)
- Pains (Which pains and barriers hinder the person to reach the goal?)

3. Add pictures or draw the person/ context (Helps to remember and creates a nice atmosphere)

Problem Statement

We create problem statements because they help the team to have a common understanding, be focused and they prevent long discussions. A good problem statement is human-centered, broad enough to create freedom and narrow enough to make it actionable.

The team achieved a good problem statement if you feel that

- It sparks inspiration in the team.
- You feel you got the core.
- You can relate to it on an emotional level.

It's clear what comes next because you have a clear target and know what delivers value to the people you design for.

There are different frameworks to create a problem statement. Which one you use depends on your personal preference and what works for your team. In some problem statements, a persona is included, in some not. An often-used one is the Point of View, which includes a persona:

Point of View (POV)

We met ...((extreme) user).

We were amazed to realize... (something new).

It would be game changing if/to... (frame an inspiring challenge).

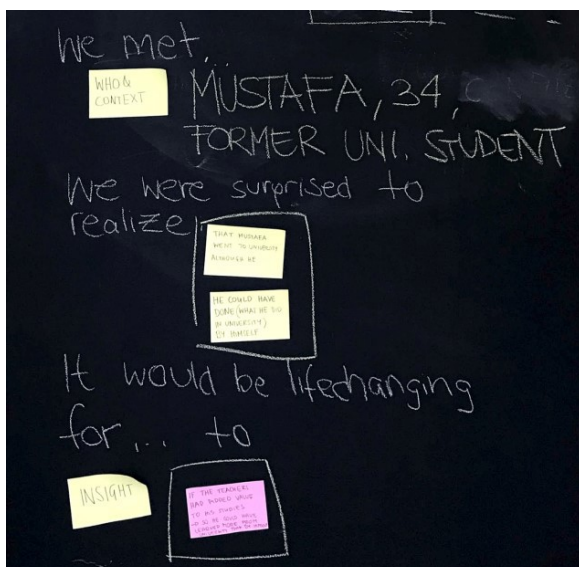
Example:

We met Ahmed who is 50 years old, from Syria and arrived in Germany two years ago with his wife and child. He attended a German course.

We were amazed to realize that he was "the only adult" in the class and he couldn't relate to the methods, topics and materials.

It would be game changing for him if he can influence the selection of methods topics and materials according to his age and background.

When we are finished with our problem statement, we are able to enter the solution space.



Example: Problem statement

PHASE 4: IDEATING

What is this phase about?

In ideation we open up our thinking again. It is about turning the problem statement into design opportunities and generating many ideas without constraints in a structured way. We filter and evaluate them at the end, we select ideas to pursue in the following prototyping phase. Ideation is very collaborative.

Why is this phase important?

Addressing a problem without ideas is not possible. It is important to explore different directions and come up with multiple ways to solve a problem.

What is required for this phase?

A crisp problem statement and a clear Point of View, so that the whole team is on the same page and knows what they are trying to solve. Make sure the team is relaxed and in a good mood, full of energy.

At the end of this phase, these questions should be considered in the team:

- Did we explore enough directions?
- Are we happy with the idea we are pursuing?
- Are the ideas concrete enough?
- Is the idea we chose really helping our user?

How Might We

This is the first step to open up the solution space. We turn the problem statement with your insights around the persona into a design opportunity. A little trick is to build sentences that start with “How might we” (HMW). In the next phase we are going to ideate on these questions. A well formulated HMW is not a solution, but enables the team to come up with multiple ways to solve it. A good HMW sparks ideas and inspires.

Be aware:

Make sure the HMW questions are not too general (HMW help the parent?) or too specific or even address two problems at the same time (HMW we get the kids to do games shortly before the flight and help the parents relax?).

You can use categories to spark the ideas for going in different routes to solve the problem. The Stanford guide for Design Thinking illustrates this: <https://stanford.io/2X2Fgdm>

HMW questions are a little psychological trick that takes the attention away from the persona and puts the action into the team. It is OUR job to create this solution FOR the user and the problem we defined.

How to:

- Revisit your Point of View
- Silently brainstorm HMW questions and share
- Cluster
- Do a second round of loud brainstorming to build on these HMWs
- Vote for 2-3 HMWs that you take into brainstorming

Brainstorming

Now it is time to ideate on your HMW questions. Brainstorming is a delicate process and how to do it is highly dependent on the team members. There is not one right way. Experiment with different techniques. To continue the process, it is important that you have all the generated ideas hanging somewhere where the team can see them. Collect and share them together with your HMW questions, so there will be no confusion, which idea is for what.

When choosing a method, be aware of the following:

Loud vs Silent

In loud brainstorming you call out your idea right away when they come to you in order for other team members to be able to hear them and build on top of them. In silent brainstorming you collect your ideas on sticky notes and share it with your team after a certain time. Silent brainstorming is a great first step into almost every brainstorming activity since you make sure that the team members have some time to reflect and also everybody has the chance to have their idea heard. Loud brainstorming is great to build on each others' ideas fast but can also push teams into groupthink, meaning that the team only explores one direction.

Individual vs. Collaborative

Brainstorming doesn't have to happen in the whole team all the time! Splitting a team up in pairs or even do it individually can be of great value when you want to explore multiple directions at the same time and enrich the solutions space.

Timing

As with all creative work, ideation cannot be controlled and forced. Brainstorming activities should not take very long. Loud methods rarely take more than 10 minutes. It is exhausting work and as a facilitator you should be aware of that. Make these activities crisp and concentrated. We have a saying for that: "Stop when the popcorn stops popping." If a method doesn't work very well, try something else or take a break.

Brainstorming principles

Build on the Ideas of Others

We do this in teams because we want to have the experience and the creative energy of many people to solve a challenge. In ideation it is important not to work alone but collectively, jump on each other's thought process and infuse your thinking on top of it.

One Conversation at a Time

It is hard to build on each other's thoughts when several discussions are going on. Design Thinking and especially Ideation is a collaborative endeavour. Make sure the team is always on the same page and that only one person speaks at a time.

Stay Focused on the Topic

We want to use our time efficiently. It is easy to get side tracked and when doing team work we need to rely on everyone in the team to be focussed and involved in the team's thinking process. With good time boxing there is time for focussed work and also focussed breaks. Respect the breaks!

Be Visual

We rely heavily on written and spoken words in our work. But drawing and sketching gives another way of expression and further illustrates your ideas. Drawings also attract attention!

Go for Quantity

There is a saying: “If you want to have a good idea, first have a lot of ideas“. You want to put out everything that is in your team’s imagination. There is time for generating ideas and there is time for evaluating ideas. Now is the time for churning them out, in masses!

Defer Judgement

When you want to start a wild flow of ideas, the worst thing to do is to be critical of the ideas. Being critical is good, but not when you are about to start brainstorming. So, make sure everyone in the team knows, that right now everything is valuable and we will be critical of the ideas at a later stage.

Have Fun

Under pressure you cannot think freely. Make sure you and your team are relaxed but focussed on the task. Try to eliminate outside pressure like deadlines and outcome expectations. When we have fun, we are encouraged to express our opinion and also put ideas out that are uncommon. That is the goal.

Encourage Wild Ideas

Because we are looking for innovative ways to solve a problem, it is necessary to go beyond what is known, common and expected. Encourage ideas that may not be realistic now. Nothing is impossible.

Brainstorming Techniques

Hot Potato

Pick an object to throw around. Get the team in a circle. Throw the object to someone. This person has to say an idea out loud. Then this person throws the object to another person who has to say an idea and so on and so on. Remember to have somebody standing next to the circle to write down all the ideas!

Star Fish

Sometimes you need a different perspective! Lay on the floor, put your heads in the middle to form a star and start ideating on a HMW question. Do it loudly, so the others can pick up your idea. Throw the sticky notes with the ideas in the middle behind your heads.

Idea Train

Movement is great to get creative muscles going. With the whole team, start walking around in a circle in front of a board. Every time you walk by the board put an idea there. Do this loudly, so others can build on your ideas.

Negative Brainstorming

This is about exploring the radical opposite direction. For that, turn your HMW question on its head and ideate. For example, if your HMW question is: “HMW turn an airport into a playground”, the opposite would be “HMW turn an airport into a prison“ or similar. These ideas can spark new thoughts and solutions for your actual challenge.

Superhero and other analogies

Using analogies comes in handy if you have the feeling the team is stuck. It sets the team on a different mind set and also frees them from concerns about implementability. Ask “How would Superman solve that question?“. Depending on your challenge you can also use different contexts. “How would Apple solve that question?“ or IKEA or any other brand or fictional character that everyone knows and that stands for certain values.

Brainwriting or Ideatower

This is a good method for getting deeper into ideas: Everyone in the team gets a blank A4 paper. Fold it 3 times, so you have 8 different fields. Everyone picks one idea they want to evolve and puts it in the first field. Build upon this idea in the next field. Add something or come up with a variation of it. After that: give that paper to somebody else in your team, and you get a paper from somebody else. Build on the idea from the last field. In the end you have 7 rounds and 40 ideas. Take 1-3 minutes per round.

Idea Shopping

Inspiration is crucial for ideation. So also feel free to look at what other teams have been brainstorming. Take a walk around the workshop space, look at sticky notes, read random notes. You can pick up on insights, observations and ideas of others. Bring them back into your team and share *them*.

Find more inspiration for brainstorming techniques here: <https://www.youtube.com/watch?v=ECWV8rPIqqs>

Please note that due to the Covid19 situation some of these brainstorming techniques might not be appropriate.

Idea Filter and Evaluation

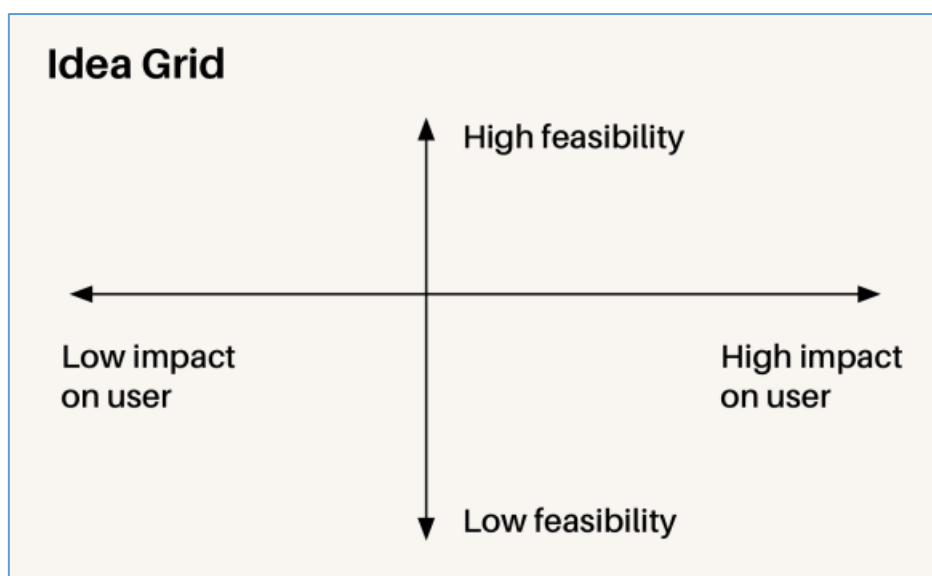
During the idea generating judgement is deferred. That means, everything is possible and valuable, so the team can go wild and explore freely. Now it is time to evaluate and filter the ideas and put them into context to make it easier to select the ones you want to continue on working with.

We use grids and funnels for this. Do one for every HMW questions and the respective ideas. If the HMW questions are closely related, you can do them in one.

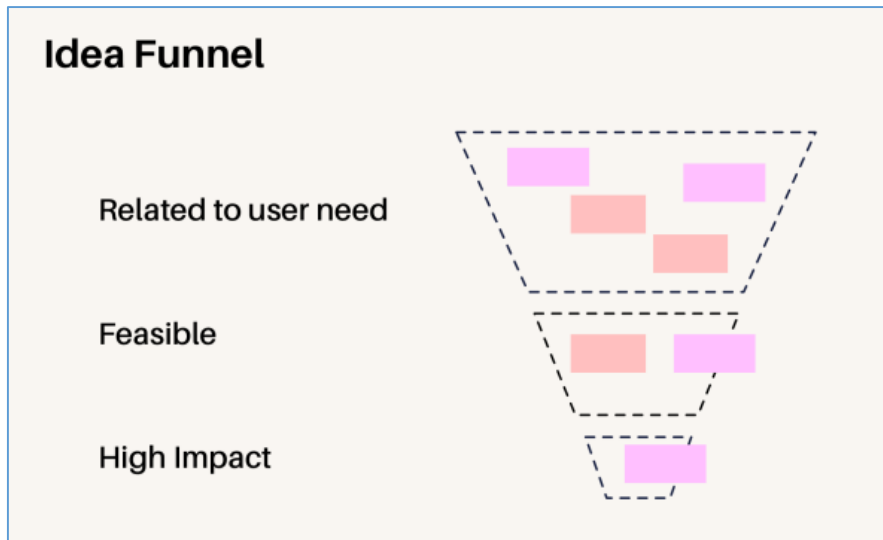
You can use tape to form these grids or just draw them on boards. The categories can be adapted to what makes sense. It is best if the team decides for them on their own.

How to

The team picks up ideas from the ideation rounds and puts them into the grid or funnel. Not all ideas have to be put into, just take the ones that are liked by the team. After a short while there should be a clearer vision of which ideas are worthy to pursue.



Idea Grid



Idea Funnel

Possible Iteration Point

This evaluation process can be a good opportunity to go back to your persona or HMW questions if the ideas are too superficial or the team has the feeling the ideas don't address the actual challenge and need.

Idea Selection

After the team filtered and evaluated the ideas, it is time to select one idea to prototype. Use Dot-Voting to make this fast and efficient. Give dots to every team member – as many as they like. You can also use categories here to make the vote more geared towards the outcomes you want to achieve. For example, red dots for radical ideas, green dots for quick wins, yellow dots for visionary ideas.

Idea Documentation

After your team has chosen one idea to take further into prototyping and testing, it makes sense to document this idea. We do this to keep track of our progress, but also to make sense of the idea in the team, add things to it and align the team, so everybody is on the same page. Also, most ideas that come out of brainstorming are still very broad and on a meta-level. Documentation is a means to put some flesh on the bone and get more concrete.

Idea Dashboards

Quick and easy way for documenting ideas. Let the team fill it out. Sketching the idea on the dashboard is crucial because you have to get concrete with drawings. The goal of this dashboard is that everybody has a clear and common understanding what this idea is about, for whom it is, how it works and why it is beneficial for the user.



Find a PDF example for the idea dashboard here: <http://bit.ly/30Jdkh1>

PHASE 5: PROTOTYPING

What is this phase about?

Prototyping is about making ideas tangible. Transform your abstract idea into something concrete and testable by adopting a build-to-think attitude.

Please always keep in mind that prototypes are not meant to last. It is not about creating the perfectly designed solution but about quickly sharing your idea with others and getting feedback at an early stage. If your prototype is too elaborate and pretty, users might be discouraged to give you critical feedback since you have already put in so much work. Hence, the "quick-and-dirty" approach is often more fruitful.

Why is this phase important?

First of all, you prototype to learn. Creating a prototype together as a team helps to develop a common understanding of what the idea is about and what needs and problems you are addressing. Through prototyping you gain empathy with your users and often discover hidden issues and possibilities. Last but not least, prototypes are a great (and cheap) tool to get feedback from users, in order to refine your solution.

What is required for this phase?

For prototyping you mainly need a building attitude, an open space that can get messy and simple materials like paper, cardboard, sharpies, pipe cleaners, foil, pens, playdough, forms, fabrics and old packaging. Legos and wigs are also always welcome!

In the first phase of prototyping it is advisable to split the team into pairs and trios, so they are more agile and can work on multiple prototypes. Avoid long discussions and get into building quickly.

At the end of this phase, these questions should be considered in the team:

- What intention do you have concerning the prototype?
- What kind of experience do you want to offer with the prototype?
- Who should experience the prototype?
- What is the critical function of your idea?

Possible Prototypes

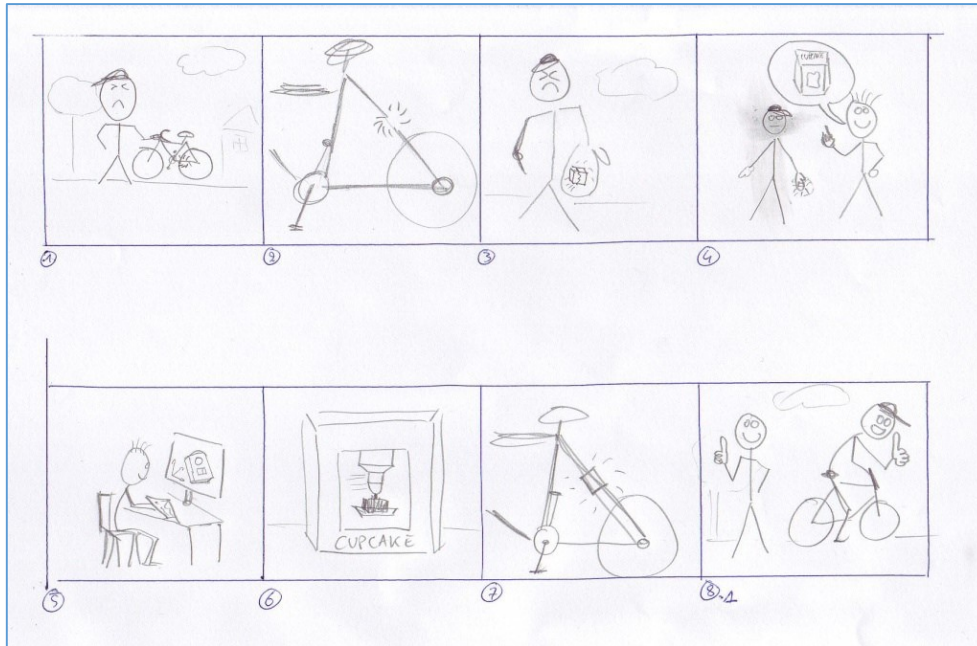
Basically your prototype can take any physical form as long as people can experience and interact with it. Here is a selection of possible prototypes:

3D Prototype

Take any kind of material and use it to build a physical representation of your idea. It doesn't have to be too detailed, a rough prototype already helps to demonstrate your concept. You can further iterate your prototype after the first testing feedback.

Storyboard

Storyboards are visual prototypes, which you can use to create user scenarios. They are a great tool for communicating an idea to other team members, since they provide a better understanding of a product's usage. You can either draw a graphic comic storyboard or create a photo storyboard.



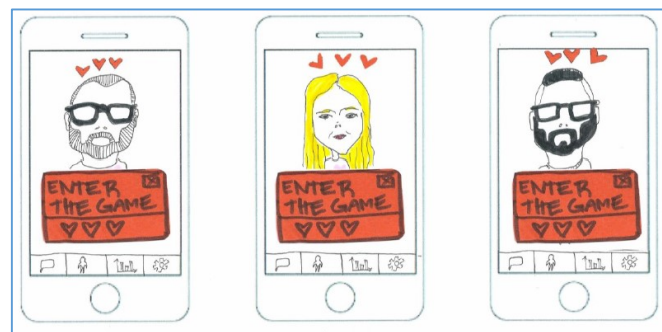
Example for a comic story board (Source: Laboratoire Ouvert Grenoblois, CC BY-SA 2.0)

Paper Prototype

If you need to test possible sizes and shapes of an idea but neither have much time nor a wide range of materials, you can make a paper prototype. Glue–paper–scissors – and ready is your prototype!

Paper Wireframe

If you have an idea for a website or an app, it is a good idea to start with a paper wireframe to sketch its content, layout and functions. A paper wireframe is not only easy to make but you can also iterate it quickly based on first testing feedback.



Example for a paper wireframe

Role Play

When your idea is not a concrete product but an experience, it is often helpful to do a role play to vividly demonstrate your solution. You can either go for an informative role play or a user-integrated role play where you invite the tester to interact with you. For both, you should think of a rough script beforehand. To get everybody in “acting mode” it is always fun to use costumes and props!

PHASE 6: TESTING

What is this phase about?

Testing is about the verification of our understanding of the user regarding the integration of the prototype in user context. It is about getting early feedback from people outside the team.

Why is this phase important?

From the Synthesis phase on we work on assumptions about our users and their needs. Testing offers an opportunity to verify these assumptions. But also Testing brings new perspectives, aspects and ideas into the process that the team has been unaware of. It provides feedback that infuses the creative process and helps you understand how to continue.

What is required for this phase?

A prototype and a suitable setting to testing. Moreover, the mind-set that feedback is a gift. It is not about verifying your solutions, so don't try to sell your idea to the testers but stay open and curious about how they interact with it and what they understand of it. Be ready to challenge your prototype, be ready to kill your own ideas.

At the end of this phase, these questions should be considered in the team:

- Does our prototype really address the user's need?
- Does our solution help solve the user's need?
- What did we learn from the testing?
- Did we test the right thing?
- How can we iterate our prototype?
- What is the next step for us?

Testing Scenario and Setting

First the team needs to figure out what they want to learn. The following three questions guide your testing scenario:

- What do you want to find out?
- Why do you want to find that out?
- How do you find that out?

The team(s) need to figure out what the tester needs to know about the challenge and about the prototype in order to understand what (s)he needs to give feedback on. Don't explain too much but provide your tester with the necessary information for valuable feedback.

Don't forget

- Prepare testing schedule and materials.
- Prepare the functions/steps you want to test
- Prepare a short introduction for your tester that helps to start using the prototype.
- Make yourself ready to observe and listen
- Prepare aspects you want to observe and questions for a short interview after the test.
- Schedule Participants
- Find fitting tester according to your prototype (e.g. non-user, extreme-user, etc.).

Create a testing environment

Prepare the space you are testing in, so it helps the tester to immerse into the testing situation. For example: If you test a new app of an in-flight entertainment system, make the seating very narrow and cramped, with people directly next to the tester.

If you are using technical equipment, make sure everything works. Make your tester feel welcome and appreciated. Also, take care about the tester's comfort. Choose a place that is generally quiet and free of disturbance, so your tester and you can concentrate on the task.

Divide the roles in the team

- Moderator: Welcome the tester and explain the context of your prototype (Important: not the prototype itself, no selling!). Help your user out and ask questions.
- Observer: Set yourself criteria you want to observe. Be open for surprises and record them eagerly.
- Interviewer: Ask open questions after the testing. Try to co-create a better version with your user. Capture main points of improvement.

Think out loud

Encourage your testers to think out loud while they interact with the prototype, so you can comprehend their perception and assumptions. It also helps to make sense of the users' behaviors afterwards.

Capture feedback

Use a feedback grid to capture the input by the testers. Talk it through with the team afterwards to reflect and figure out a route to continue and iterate.

Feedback Grid	
<u>What worked well?</u>	<u>What didn't work?</u>
<u>New Ideas!</u>	<u>Open Questions</u>

Feedback grid

Documentation

Documentation is crucial, not only for capturing the outcomes but also for making sense of your creative process along the way. The journey might seem very clearly structured on paper, but when you are in the middle of it, it is often confusing and irritating. Capturing what, why and how you have done from day to day helps tremendously to keep an overview and intensifies the reflection of the design process.

When we do projects with Design Thinking we document every team working day - or at least every step of the process.

Best Practices

Taking pictures of sticky notes is good to refresh your memory, but not sufficient. Write or sketch down your outcomes and conclusions from methods and process steps on paper. Use the photos to accompany it and to add context.

Create a shareable digital team folder with your favourite collaboration tool, like Trello, Evernote or Google Drive etc. Everyone has to be able to access it and knows where to find it.

We like to do the documentation on an A3 paper at the end of a day because it is more collaborative, as well as focussed and it has a natural limit - the space of the paper. That way you are not tempted to go into endless details. Afterwards, take a picture of it, save it to your team folder. That's it.

A basic documentation template includes the following questions:

- What did we do?
- How did we do it?
- Why did we do it?
- What worked well? What didn't work?
- What are the next steps?



PRACTICE EXAMPLES

Between March and November 2019, each partner of the D-LEARNING project consortium implemented Design Thinking processes into its daily work. Four of them decided to use actual challenges from the respective organisation, while two of the partners run workshops with external participants. In the following you will find descriptions of the work done, highlighting the possibilities of Design Thinking in adult learning environments.

AUSTRIA: VEREIN MULTIKULTURELL (INNSBRUCK)

Description of The Local Challenge

Every migrant adult is faced with language problems as soon as they come into Austria. Therefore, Verein Multikulturell works with funding from the government to offer basic education and language courses to asylum seekers, refugees and other immigrants. However, the immediate need for financial independence deters lots of immigrants from attending these courses. Also, some restrictions in studies available for refugees and asylum seekers in recent years causes lack of motivation on their part to participate in any form of adult education, leading to a lack of motivation among participants in VM's Adult Education programmes.

In order to increase their motivation and improve the number of participants in VM's training classes and to create more interesting vocational and soft skills training courses for clients, we are using the design thinking process to tackle this challenge.

The Team

The team to take up this challenge consists of four staff members from the basic education and project management fields in Verein Multikulturell. The team is also made up of people with migrant background, diverse culture and have worked extensively in adult education projects.

The team met at least 1 to 3 times every month starting from June except in August when everyone was on summer holiday. At the initial stage, the team met once every week in order to discuss each step of the design thinking process, the plans, focus and how to coordinate time because they all had different work schedules and have to agree on a time that will be suitable for everyone before starting the process.

Phase 1: Understanding

After reviewing the content from the international training held in Berlin in a 3-day workshop to bring the team in sync with one another and to adjust to the task at hand, the team started by bringing everyone's experiences together towards understanding the problem most experienced in Verein Multikulturell as an organisation, we employed the various brainstorming methods especially silent brainstorming, it was used a lot during this phase to help team members channel their personal experiences towards this project.

Another method that was employed was the think aloud, this method helped the team to rub off of one another especially Ali who was an asylum seeker until recently. His first-hand experience in the journey became imperative in guiding the team towards a more realistic and useful topic to choose for the challenge. His experience and that of others in the team led us to the problem statement:

"How might we provide vocational skills training for adult migrants that can be useful to them both now and in the future"

Phase 2: Observing

Design Thinking is user-centred therefore the team has identified users for this challenge as unskilled or unemployed adult migrants living in Austria. In order to develop a broad and deep understanding of

the challenge, the team embarked on brainstorming sessions that did not only rely on the experiences and knowledge of team members. It also utilized desk research to raise topics that will form part of the questions to be used for the interviews. It is important to note that during the observation period divergent views and opinions of team members resulted in the team occasionally going off track and discussing the experiences of migrants outside of adult education. Therefore, we had to use timing strictly and also create keywords to help keep everyone in check. The timer was very useful here.

Phase 3: Synthesizing

Since the initial use of questionnaires was not very productive, the team went back to using face to face interviews of about 30 respondents to delve deeper into the topic and understand the views of the target group. It took a few days to cover the required number, some of the interviews were done amongst groups while the most of it were face to face. During Sensemaking period of this step, we identified patterns in the data which separated the respondents into:

- The Motivated/Inexperienced
- Unmotivated/Directionless
- Those hindered by government regulations and
- The Experienced active ones.

The Persona: sieving through the data generated from the interviews gave us a clear pattern as identified in the groups above. We also looked at the most frequent challenges and suggestions proffered by the respondents to the problems faced by the asylum seekers and we were able to create a single persona who we named Mahmud (a pseudo name). He represents the general mind set of most of the respondents.

Describing the Persona:

- Name: Mahmud
- Country: Afghanistan
- Status: Asylum Seeker
- Age: 28
- Occupation: Farmer
- Educational Background: No formal Education in the past, A1 German course & less motivated.

He was surprised to realize that he is not informed about many possibilities for him to improve in his education despite the hurdles arising from government regulations.

It will be life changing for Mahmud if he gets the right direction, information, guidance and easy steps to achieving his dreams of becoming a bus driver.

His Quote: "There should be more practical examples during learning/training with more exercises and repetition of topics".

Phase 4: Ideating

Using information from the Persona identified in the previous phase we went into more brainstorming sessions to find ideas that can solve our problem. This was very challenging as we had challenges streamlining the ideas to one as all of them seemed quite interesting.

The idea funnel and the voting system created a pathway to one single idea which was born out of the need to create easy steps towards providing vocational training both online and offline.

Phase 5: Prototyping

A storyboard was used to represent a " Lifeguard platform for asylum seekers". It is an online platform that registers migrant users who are interested in finding success for themselves in a foreign country or build a career path starting with learning the language. The Platform takes them through the steps to building a profile, self-evaluation, studying and participating in various programmes, workshops,

mentorship, counselling and finally recording achievements. The app will be visual and self-explanatory with pop ups that will help explain every stage of the user's life cycle in the platform. It will be engaging and can be used both virtually and physically.

Introducing The Lifeguard Online Platform and App known here as the LG+ Platform

The LG+ platform is a web platform where both newly arrived migrants or existing ones can find and build a career path in a step by step manner. The app provides information, evaluations and tasks that will ensure the user is able to complete a language course, vocational training, attend events happening around them and also find a Buddy.

It will be built with lots of visual representation and clearly defined functions and tabs that will act like a lifeguard for anyone who is not a local to find their feet. It's objective is to create passion, provide knowledge and a motivation for success.

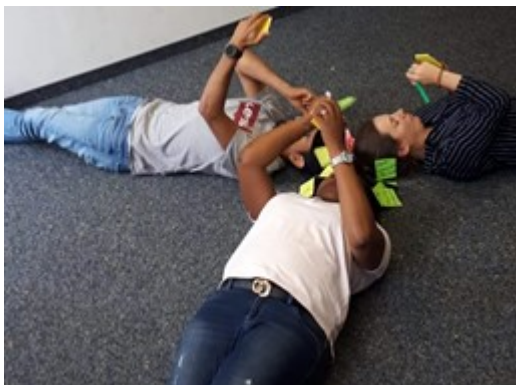


Phase 6: Testing

The prototype was tested with both stakeholders and adult learners and they all found it amazing, though the majority of refugees felt that their situation was hopeless if they are not sure their hard work will be put to use here in Austria. However, they still agreed that it was necessary for personal development not only for residing in Austria but also to help them in the future regardless of the place of residence.

About 10 of the respondents of the interview conducted earlier were brought in to test the idea of a platform that has a step by step instruction on following a particular career path (The LG+). This testing could not be done within one day because not all the testers were available at the same time. It took us a couple of days in a period of one month to bring in people to test the prototype. We also recognized that the responses though similar, each person had a way of pointing out a new perspective on how the idea can be better presented as well as additional functions that will be useful in the platform. They all liked the idea generally, made some input and suggestions too. The iterations that were made to the product are as follows:

- Including a clear support system for those who are not internet savvy
- Use more visuals than shown on the story board.
- Include Peer to Peer training as part of the extra-curricular activities provided by the platform.
- Ability to send SMS from user mobile phones to the dedicated number on the platform.
- Include gamification as one of the offerings to keep subscribers engaged



CYPRUS: SYNTHESIS (NICOSIA)

Overview

The Local Challenge Workshop for the D-Learning project took place on the 13th of June 2019, and it lasted for 4 hours. The event attracted 14 participants of various backgrounds (teachers, trainers, architects, personal & professional coaches). The main goal was to familiarize participants with the Design Thinking Methodology and introduce the main principles of it, so that it would spark an interest in people to learn more and think creatively on how to apply this methodology on their personal and professional lives.

Preparation

One of the main challenges of organizing a Design Thinking workshop (as our local challenge) was to attract enough participants. Design Thinking is not well known in Cyprus, and the mere mention of the name was not sufficient to incite interest. Therefore, we opted to make the local challenge a familiarization event, that would introduce people into the process of this methodology. Our main channel was Social Media, and we used both professional pages and accounts, as well as our personal ones. Overall, there were 54 people who expressed an interest in the workshop, and 15 attendees.

Venue

The local challenge was hosted in our premises, in an accredited training room that was set up to include chairs in a semi-circle, one big flat TV screen where the presentation was seen, and a “care package” that included printed material, the event schedule, some chocolate (!), and sticky notes, notebooks and pens. In order to make the space more welcoming we used scented candles, fresh flowers and some music during the welcome and coffee breaks. Snacks and beverages were available throughout the training.

Presentation

We used a PowerPoint presentation to introduce the main concepts and stages of the Design Thinking Process, along with Q&A sessions, mini exercises, and lots of discussion and brainstorming. Due to the short duration of the event and space constraints, (compared to the areas we had to cover) we did not include a lot of physical activities that required from people to move around. There was a lot of interaction with the trainer and among participants and discussions continued into the coffee breaks.

Content

The workshop started with an ice breaking activity that aimed at identifying an issue that would later be used to exemplify and test the Design Thinking methodology. Participants were instructed to write on a small piece of paper, an issue, problem or concern that was on their minds on that day. It didn't need to be professional or personal, it could also relate to everyday life. Then they folded the paper and they placed it in a box (without indicating their names on the piece of paper). After all participants had placed their papers into the box, they started to pick pieces randomly and read out loud the problem/issue/concern that was written on a piece of paper and comment on it. Some of them, said that they wouldn't consider what was written as an issue/problem, while others offered solutions and ideas. Some of the issues/problems/ concerns were also used as examples in later stages of the training to increase engagement and relatability of the content. A small amount of time was also spent in setting and discussing expectations of the training and a reiteration of the premise that this was an introductory workshop, rather than a full working presentation about Design Thinking.

We introduced the definition of Design Thinking and some examples of organisations that have been using it with great results. We also discussed the types of problems (and the variety of problems) in which Design Thinking can be used whether in a personal or professional context. We then addressed the particular applicability of design Thinking onto educational and training issues, problems, and concerns, and engaged participants into commenting, adding, or debating about different uses and different problems.

The next session was spent on introducing and discussing the 3 components of Design Thinking (the process, the team, and the space) and highlighting the importance of each one, and how they each contribute heavily to a successful result. The 6 steps of Design Thinking were then presented, one by one, through examples or brainstorming of different scenarios. At this stage, some of the issues and problems that participants had introduced through the ice-breaking activity were reintroduced into the discussion in order to serve as practical applications for the steps or as examples. Participants worked in teams and presented their views and comments to each other, exploring different viewpoints and different contributions.

The following session, discussed some of the peripheral issues to Design Thinking and offered insights into how to get people in the right frame of mind (the team), what kind of tools, methods, practices, concepts, processes should be in place (the toolkit) and what kind of resources (materials) are required for an application of Design Thinking methodology. Self-reflection, mind mapping, semantic analysis, user charette were presented and briefly discussed, followed by a practical examples section that gave way to the introduction of further tools and methods. The workshop closed with a brief summary and a few words from each participant regarding their feedback (which was also documented through a questionnaire) but mainly their questions and further interest into the topic of Design Thinking.



Feedback

When the participants were asked about the three most important topics they learned during the training “design thinking” was mentioned three times, “process of design thinking” was mentioned 4 times and “where design thinking can be used” was mentioned 3 times. “Open-minded approach” was pointed out three times and the “importance of not assuming” was reported twice. Respondents also mentioned the notions such as “prototype”, “test”, “diversity”, “empathy” and “creativity”. “Need to take time”, “6 stages of design thinking”, “study the user well” and “reflexion on previous experiences” were also mentioned.

Five participants reported that their knowledge and skill on the topic have been enhanced “greatly”, 4 trainees reported that they were on the introductory level after finishing the training. Two participants reported that they gained a different point of view and one stated that they are on the average level after completing the course.

When asked about the difference the participants expect this training to make in their job or everyday activities, 6 people stated that they plan to implement the acquired skills in their work or other activities. People also mentioned that they will now listen more, have better problem-solving skills and empathy. One person noted that they met new people which will always make a difference in their life.

In the conclusion of the questionnaire participants were asked to list other topics they are interested in to attend. Design thinking as training and sustainable development & environmental issues were mentioned twice. Rest of the topics were listed once: neuroplasticity, design thinking: how to start business, how to engage students in class & improve their learning, design strategy, design for social change, effective workshop facilitation, social inclusion, ethnicity, gender, equal rights, participatory design.

DENMARK: VIFIN / VEJLE KOMMUNE (VEJLE)

The local design thinking process in Denmark has been conducted by the same people who were present at the D-LEARNING staff training, with the addition of one new member. That meant that the process was moving rapidly between the different stages, and we did not have to be introduced to the Design Thinking concept as a part of the process. The group met 5 times with the following topics:

- 1st meeting: Understand - The exact challenge to work with – interview questions
- 2nd meeting: Unpacking the information from the interviews and sense making
- 3rd meeting: Persona to work with and How might we
- 4th meeting: Idea filter and evaluation, idea documentation and Prototyping
- 5th meeting: prototyping and testing

The challenge that we wanted to work with was in relation to another Erasmus+ project that VIFIN is coordinating: V-PAL – Video based Peer Practice among Language Teachers. This project works with the concept of teachers using video to record their own teaching, and getting feedback from other educators in order to better reflect on their own teaching. This method is called Peer Practice

This process requires some technical skill, time and openness towards letting other teachers inside your teaching environment. The experience was that most people used quite a lot of time on the technical editing process, in order to present their teaching in a way that they felt comfortable with.

We decided in the Design Thinking process to take a look at how we might lower the barriers for using video as a reflection tool for teaching.

Understanding

The exact question we wanted to work on got formulated as:

How do we make Peer Practice attractive as a mean to increase the level of teaching competences in Danish as a Second language for adults?

To understand this better and to move towards an interview guide we did a semantic analysis, then brainstormed on the following questions:

- Why is Peer Practice difficult to use? What is the resistance?
- Why should you use Peer Practice? What are the special possibilities?
- What are the special "Qualities" and advantages of Peer Practice?

The interviews were recorded to be able to share later. Two managers and four teachers were interviewed. Both managers knew about the Peer Practice method. Some of the teachers knew and had experienced the Peer Practice method. The brainstorming process did give ideas for the interview guide. In our case the perspective of the different stakeholders gave new thoughts about the challenge.

Unpacking

The unpacking process were done through the following steps:

- Listening to the recordings (shorter interviews - max 5 minutes).
- Story telling for the longer interviews (approximately 20 minutes)

In the unpacking process we looked for key words, wrote them on sticky notes and categorized them in positive and negative statements, and prior experiences. The interview techniques could have been improved by focusing on elaboration answers and not just accepting a vague answer that would be hard to work with in the later process. In this crucial face the interviewer should not be afraid to ask the questions in different way in order to get the valuable quotes that are so important in the process.

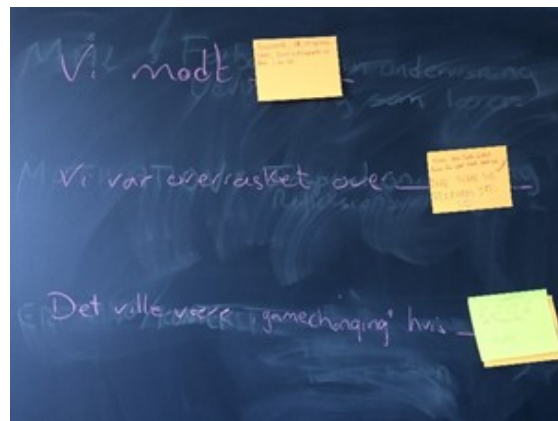
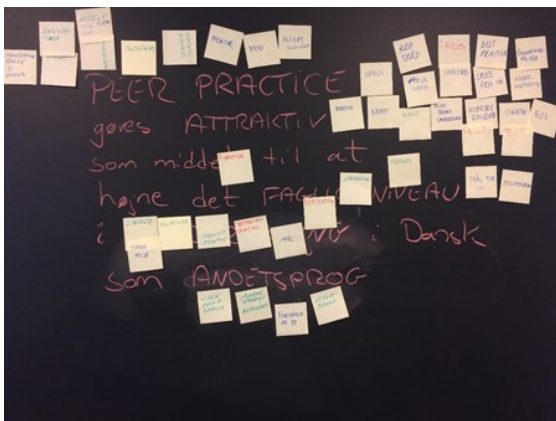
Sensemaking

After the unpacking, we ordered the statements in clusters that had similar topics. This could be lack of time, lack of technical knowledge, self-awareness issues towards other teachers, self-awareness issues in relation to see yourself on video. Then we did another clustering, this time into:

- Unmet needs
- Under met needs
- Drivers and motivations
- Values and believes

We then voted to select the most important statements for further work, using dot voting, and came up with 4 central statements to move forward with. This was: Valuable as tool for reflection, Benefits vs use of time, Technical abilities, feeling exposed

Be sure while listening to the recordings and/or story telling which kind of information you are looking for. And train how to give the most important key words so that you both have the essence and do have the understanding of the wider perspective. It might had been worthwhile to start clustering according to unmet needs, under met needs etc. from the start. Making sure to indicate on each sticky note which interview person the statement belongs to is important.



Persona and problem statement

We had trouble finding a natural choice of persona among the interviewed persons. But we decided that we would try to work with a persona that had some issues with the technical aspects of Peer Practice. Recording and editing video is considered to be a specialized competence among teachers, and working with this tool is not very common among teachers themselves. It is more often that they tell their students to record and edit themselves, but not the teachers.

Based on the above we created the following problem statement:

We met XY, teacher at the language school. She had used recordings from her students in her teaching. We were amazed to realize that she didn't remember the last course she joined and the relevance it had for her teaching. It would be game changing if she had enough time to use skills acquired at the course when she went back to her class.

We did not have enough background information on the specific person, who we used to build our persona. In relation to the lesson learned mentioned above, it did also mean, that it would be necessary to remember - and have time for - be iterative. It would have been good to be able to go back and ask further questions. New questions did also come up.

Ideating

In this process, we tried to figure out how to come up with solutions to counter the anxieties and barriers that our persona might experience. We sorted our statements into how might we sections.

- Boost the good - Use more video
- Remote the bad - Remove the uncertainty - why is it relevant to use video?
- Explore the opposite - Minimise time usage - does it have to take so long?
- Question an assumption - Can we remove the time factor - one take?
- ID unexpected resources - Can we make peer practice Videos a part of the teaching?
- Create an analogy from context or need - Film production is a part of the normal teaching modality

It is important to form the right "How might we?" (HMW) to get relevant brainstorm. It has been great to use different kind of brainstorming techniques. We especially liked the Idea Train and Star Fish. We all found that the Hot Potato did generate more focus on getting further on, being very quick than actually getting ideas. Our focus was on moving on instead of getting ideas.

Idea Filtering

After this process we voted for all the important ideas. The Idea Funnel worked very well for us as a tool to sort the statements into three categories: Relevance to users' needs, feasibility and impact. From the ones that made it through all 3 categories we dot-selected 2 statements that ended up as our main focus for the Documentation Phase:

- Easy or no editing procedure
- Be the best teacher ever



Idea Documentation

We started out with an Idea Tower brainstorm for the two ideas. From there we decided that each of us would select the idea that we felt closest to and make an idea dashboard each. We ended up with four basic product ideas, and voted to select one of them. We ended up choosing "The App" an automatic Peer Practice recording device that will record all of your Peer Practice videos and collect them with no editing needed. After the process we did better understand the different parts of the dashboard.

Prototyping

Before we prototyped on "The App" we decided which was the critical function to get tested/the critical question to get answers for. This was to have a ready to share Peer Practice video when you leave the class room.

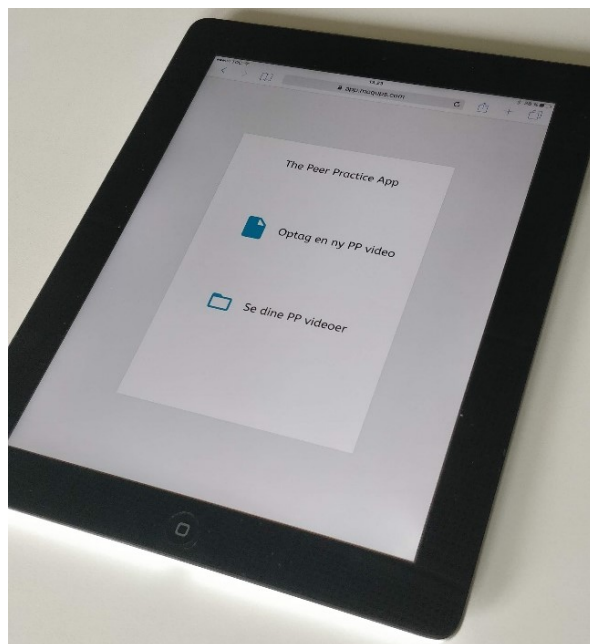
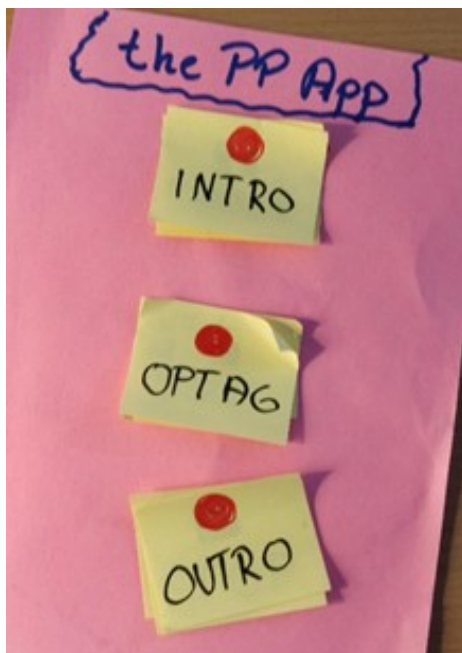
"The App" prototype was at first drafted in paper, where the buttons and dialogue boxes were made with sticky notes. It was not very user friendly, but it had the effect of pointing out some initial user interface questions that quickly could be fixed. The second version of the prototype was made in a mock-up software and tested on an iPad. Moving the prototype from a sticky note design to a mock-up design meant that we gathered of new aspects to test for and be aware of. So even that relative small change in prototype meant a difference for our understanding of needs to meet the "goal".

Testing

We decided only to test the basic functionality of the software not the actual recording of a Peer Practice Video. We did also choose to test "The app" in a role play. Before the test, we decided on our roles (moderator, observer and interviewer) during the test and defined the questions to be answered during the testing. The test was done using a colleague that was acting out a teaching scenario using "The App" to record her teaching practice. We had one test person, two extras that simulated students and one tester that documented the process.

The result of the test was then collected and discussed, and we had some useful ideas for improving the product and set of another round of prototyping. Having a mock-up software prototype possibility meant that we got questions, which we wouldn't have got otherwise - for instance: can I record at home? What will happen if my phone calls during my recording?

We found that it worked very well to have defined roles during the testing - and at the same time to have the possibility to support each other - for instance by asking questions inspired by questions from the interviewer and the test person. A consideration was when and how much you can tell about your prototype before the testing - which of course have to be seen in relation to your critical questions to be answered.



Lessons learned

For us it worked well to have three hours working meetings with one to two weeks in between. It meant that we kept a flow and at the same time we could work in between the meetings - for instance doing interviews, prototyping etc.

It is important not to have too much time between meetings - we had a summer break in between the process, which did make it a bit hard to get back.

It worked well to start each meeting creating an agenda and define how much time we could use on each of our processes.

For us it worked well only to use the time, we had decided - and then move on no matter if we agreed or not, but stick to the solution in the end we got valuable results anyway.

It is important to remember to time the processes. You do not need as much time as you can easily use!

It is important we a team with different competences, skills and background - it secure necessary different perspectives.

It is important to end every day with a summing up on the process (this qualifies the further work):
What did we do? How did we do it? Why did we do it? What worked well? What didn't work? What are the next steps?



GERMANY:

VEREIN NIEDERSÄCHSISCHER BILDUNGSINITIATIVEN (VNB)

Description of the local challenge

The VNB (Association of Education Initiatives in Lower Saxony) is an officially acknowledged state-wide adult and youth education institution, and an umbrella organisation with a network of more than 200 education partners. To extend and refresh its network, the VNB is seeking for new educational cooperation partners, e.g. from new social movements in order to ensure the future viability of the association. This is as well due to the fact that the financial commitment of the state of lower Saxony to the VNB work is depending on the number of lessons provided by the network. Increasing the network would as well mean to secure the amount of lessons needed. This is laid down in the Lower Saxony Adult Education Law (Niedersächsisches Erwachsenenbildungsgesetz, NEBG).

Team

To solve this problem, a team of 6 VNB staff members from different disciplines (pedagogic, general management, project management, administration) was formed to implement a Design Thinking process. The team met 5 times between May and October 2019; each session lasted between a half and a full day. Between the meetings, the team members were engaged individually, i.e. in collecting information through interviews and desk research. The work in the team was constantly reviewed by a team member as regards the contiguity of the Design Thinking process.

Phase 1: Understanding

The team started with a general introduction into the process of Design Thinking with its six iterative steps. After gaining a common understanding of these steps, the actual Design Thinking process started with different brainstorming methods (silent and open brainstorming, mind mapping) that were applied to understand and frame the problem, leading to the following defined challenge:

How can we foster cooperation in the NEBG framework more appealing and profitable for education partners?

This problem statement as the guiding question was then again reviewed in a semantic analysis in order to ensure its relevance for the entire Design Thinking process, and regarded as feasible.



Phase 2: Observing

In this phase, the team members collected information, i.e. by desk research, e-mail requests, or personal interviews. This could be done individually during the summertime in July/August, taking into account the different time schedules of both team members and i.e. interviewees as regards holiday breaks. The respondents were persons from current, former and potential future education partner organizations, former staff members, representatives from VNB member associations, and external experts from different educational fields. It was interesting that while collecting the information, the interviewers and researchers from the team had to reflect on the topic themselves, thus changing their own perspective towards a more emphatic position of the end users. As well, quotes from respondents could be collected to highlight the problem.

Phase 3: Synthesizing

To find a common point of view, it was necessary to unpack the collected information and statements. This was done by clustering and categorizing the information, thus identifying patterns in the collected data, and finding interesting statements that were worth to be investigated more deeply. It was possible to create two personas, representing different types of users. These personas led the team to the following problem statements, partly synthesizing the collected information:

- *It would be great for ABC (future potential user), if the VNB would accompany the regular activities of her organization in a supportive way.*
- *It would be game changing for DEF (experienced user), if the administrative procedure of the NEBG cooperation were clear, simple and practical enough to start immediately.*

With these statements representing many of the issues named by respondents in the observing phase, it was now possible to enter the solution space of ideation.

Phase 4: Ideating

Being focused by the problem statements, the team members started to brainstorm on problem solving ideas. This was done by using different techniques, particularly the idea train, silent brainstorming, hot potato, and individually drafting ideas between meetings. With a broad variety of possible solutions, it was again necessary to cluster and filter ideas and to select at least two ideas that should be prototyped. This did not mean to leave all other ideas behind; some of them were so easy to realize (i.e. creating a simple information leaflet for potential education partners), that they were documented on the idea dashboard for later use.



Phase 5: Prototyping

In this phase the team split in sub groups, developing two prototypes linked to the above problem statements:

- Explainer videos as a tool to facilitate the administrative procedure of the cooperation, and
- A networking conference model to enable direct contact, support and exchange with and between both existing and potential education partners

For the development of the explainer video prototype, a content list and a storyboard was drawn by the respective sub group. The conference model group was able to use a lot of materials from pipe cleaners to Lego bricks to design a model for presenting their idea to the entire group.

Phase 6: Testing

The prototypes were initially tested twice: once internally in the Design Thinking team towards the respective other sub group, and later on externally to the management board of the VNB. Since the prototypes were not meant to be final products, it was interesting to see that the presentation of very brief models was again leading to an open reflexive discussion, generating even more ideas how to improve, develop and finalize these ideas to tangible outcomes. It is foreseen to incorporate users (in particular current and potential cooperation partners) into the next testing period in order to gain feedback from the target group on the feasibility of the outcomes.



Lessons learned

At VNB, using Design Thinking as a means to problem solving has proved to be successful, specifically by involving a multi-disciplinary team, by relying on data provided by the users of the intended products and services, and by keeping the entire process playful and enjoyable for the participating team members. The outcomes were reviewed quite positive internally, resulting in further activities to develop tangible products and services basing on the prototypes and other ideas.

It has been obvious that using Design Thinking in adult learning institutions is possible and leads to positive outcomes, although it must be considered that a Design Thinking process need time to be realized properly. The iterative process takes as long as it takes, eventually needing to be prolonged in case it is necessary to step back. Therefore, Design thinking should be used to solve problems that need a specific attention, and should not be seen as a tool to create an immediate final solution.



**Verein Niedersächsischer
BILDUNGSINITIATIVEN e.V.**

ITALY: CESIE (PALERMO)

The D-LEARNING Local Challenge in Palermo had a duration of 6 months (April-September 2019) and was composed by various meetings. The team consisted of three members, all of which participated in the Design Thinking staff training that took place in Berlin in March 2019.

Phase 0: Setting up the topic

One of the most important steps to go forward with a challenge is to define what the challenge is about. Usually, the Design Thinking methodology is applied as soon as the general 'problem' is defined. In the case of the local challenge, we had to designate the general problem ourselves. The umbrella topic of the challenge fell under Adult Education so, the team of CESIE decided to create a questionnaire and distribute it among the colleagues that work on the topic of adult education. Thirteen questionnaires were answered and the information collected was then demonstrated on a flipchart. During this process it was detected that one of the main challenges that adult educators face in CESIE and the city of Palermo is "How to reach the right recipients of each training opportunity, arriving to the actual target group of each project". As a result, this phrase was chosen to be the topic of the local challenge.



Implementing the methodology

During the first meetings that were held, after specifying the challenge, time was allocated to plan the activities and go through the design thinking methodology, so as to ensure that all the members of the group were on the same page. It was vital to follow closely the methodology during the first steps in order to create as little confusion as possible.

Phase 1: Understanding

During the 'Understanding' phase, the group brainstormed and traced the potential users of the local challenge. As the challenge itself was created after consolidating with the adult educators working in the organization, that was also the end-user of it. Most of the process related to this phase was completed in the earlier stage.

Phase 2: Observing

A set of interview questions was set, focusing on understanding the experience that adult educators had with the challenges they faced concerning the participation of their adult learners in the trainings that they have organised. The interviews were held with 20 colleagues, who have worked or are currently working in adult education. The team tried to always conduct interviews in two (one person asking the questions and the other person taking notes) so as to be able and collect as much accurate information and quotes, as possible. Considering the time restrictions that can exist in the workplace, this phase took almost one month to be concluded.

Phase 3: Synthesizing

While holding the interviews and collecting the information is important, unpacking it and sharing with the group as close to the reality as possible, can make all the difference. The unpacking took place in two ways, in some of the interviews there were already sticky notes created, which were stick directly to the flipchart, while in the rest, the sticky notes were created on the spot, when the interviewer was reading through the notes that they kept. After a lengthy procedure, the wall was filled with the quotes of the users interviewed.

The unpacking process was followed by the Sense-making process, which was probably the longest during the whole design thinking challenge. During the Sense-Making process, the goal was to choose two to three quotes that would then lead to the creation of the persona.

So, the members of the team chose the quotes or phrases that interested them the most (specifically unmet or under-met needs, pain points, contradictions etc.) and put them on another wall. After that, they grouped all of them in sub-categories with the topics that were in common. The next step was for each member to vote on ten of the phrases/quotes that interested them the most, with a bullet voting system. Those who collected more points were then transferred to another board, separated into categories related to the "nature" of the challenge (for example, related to the visibility, colleague interaction etc.).

In the new board that was created, the different categories were linked to each other in an effort to demonstrate better how these needs or pains of the various interviewed users, are connected. It is here that the team had to discuss and vote again, as regards to the quote that they wanted to choose in the creation of the persona. Three green (less important) and three red dots (most important) were given to each member, and a voting process started in order to have the persona. As the opinions were mixed as to which quote to choose, the team moved forward with a debate where they listed the reasons for which each of the quotes should be chosen. This process led to deciding on one of the quotes and proceeding with it in the creation of the persona. The topic was "Alcune volte siamo slegati fra di noi" which translates into "We are sometimes disconnected between us".

After choosing the quote, the team was led to the user and then created a flipchart with all the characteristics and knowledge that there was regarding them. At this point the team also decided to ask the user to have a supplementary interview, without telling them that they were chosen as the persona, in order to ask more questions in relation to their character and choices. With the persona and the problem statement defined, the team could move forward to the next step.



Phase 4: Ideating

Starting off with this phase, the team created "How Might We" (HMW) questions, which were related to the problem statement that was previously defined. The HMW questions that were formulated were the following:

- HMW know and share more our mutual goals?
- HMW be aware of our role/competencies within the team?
- HMW benefit from the skills of our colleagues?
- HMW make collaboration a common team goal?

The team then proceeded in some brainstorming sessions, searching for ideas that could respond or resolve to the HMW questions. During this process a lot of different brainstorming methods were used, such as: Hot potato, Star Fish, Idea Train, Negative Brainstorming and Superhero method.

Since the brainstorming process was completed, the group looked through the different ideas that had been developed (under each specific HMW or in general) and moved the ones that they liked or believe to be valuable for the user into the "Idea Grid". The group then voted and arrived to six ideas, with each member of the group choosing one to be developed in the "Idea Dashboard". After that, they took 20 minutes each and developed the ideas that they had chosen and then presented them to one another while doing some more brainstorming and adding aspects to each dashboard. This is how, the decision was taken to move forward with the "profile pubblico condiviso" or "Public shared profile" as an internal process, since it was expressed that this solution could impact the user and the challenges that they are facing.

Phase 5: Prototyping

With the idea ready, the team looked through the various methods of prototyping and decided on using the paper prototype option. Having the "Idea Dashboard", it was rather easy to move forward with its creation. The prototype of the "Public Shared Profile" looked like this:



Phase 6: Testing

Entering the final stage of the process, the team discussed who should be the users to test it with and what should be the way of doing so. Each of the members had a different role during the testing (one presenting what the whole challenge was about, the other presenting the prototype and the third writing down notes of the feedback that was collected). At the same time, it was decided that the prototype should be tested on a range of users so as to cover more points of view.

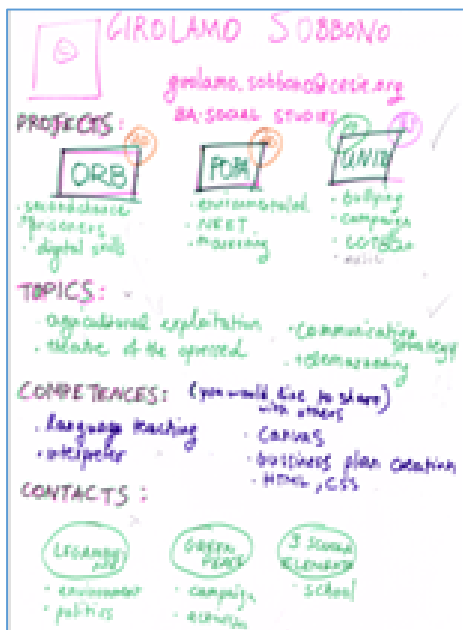
The testing phase took place in six different sessions, with feedback that was collected on a grid (What is good, what is bad, new ideas, questions). With the feedback collected the team decided to proceed to some minor changes as regards to the information that would be provided in the Shared profile, its management options and the function that it could have.

Conclusions

The results of the local challenge were really unexpected as regards to the functionality, the creativity and the product that was created. Taking into consideration the feedback and the reactions of the testers it became obvious that working with design thinking provided a user-friendly approach that satisfied the needs set from the beginning. Throughout the process there were a lot of challenges, especially connected with time management and motivation but the team managed to surpass them by evaluating internally the process and following up with the guidance and knowledge that was passed through the training in Berlin.

Some general feedbacks to keep in mind for further design thinking processes that aim to assist on organizational development are:

- Include people of different levels and expertise, this can help with the ideation process and with combining various points of view. External people can be also a good idea as they can bring out of the box ideas.
- Use time management tools and be strict with time, sometimes spending less time on something can be more productive.
- Create a team of four to five people in order to be able to surpass easier mental blocks.
- Plan the meetings ahead of time, make sure that you have a specific timeframe for the whole process and follow up on it.
- Have a space dedicated to the group and a meeting in order to feel comfortable and use up all the spaces in it.
- Ask the users to come back and give you more context or information especially if you are having difficulty on moving ahead.



NORTH MACEDONIA: ECO LOGIC (SKOPJE)

Design Thinking Workshop during the Sustainability Camp

The Sustainability Camp is an integral part of the “School for Sustainable Development” which enables learning of the SDG’s (Sustainable Development Goals) through non formal, innovative and game based approaches. One camp was delivered in November 2019 as part of the D-Learning project. The camp was supported by the city of Skopje and the Friedrich Ebert Foundation. Participants came from High Schools across the City of Skopje. The total duration of the camp was 4 days, where usually high efforts are made during the very first day – the arrival of participants where intensive ice breaker activities were presented in order to bond the group together. Once this was achieved, the process of presentation of the Design Thinking process in all phases could start.

Presentation of Design Thinking Process, Phase Understanding, and Observing

The second day started by explanation of the whole Design Thinking Process, in a session of 90 minutes. Taking the fact that the participants, as part of the application procedure, already had defined challenges prior to their arrival on the training, the start of the process was with the phase of “Understanding”. Probably one of the most important phases, in which the goal is to have a common team understanding of the challenge. In this session the participants were divided in groups, made by similarity of already individually defined challenges (example: air pollution group, waste management group, environmental education group, etc.). In this first phase the participants managed to quite effectively plan their project and research steps. As it was noticed, Internet usage with certain given guidance to the participants (links from various related pages) was a completely adequate and useful tool. This session was divided in two separate sessions, in total duration of 4 hours.



Entering the “Observing” Phase

In this phase, several user, expert, and stakeholder interviews were made by simulation methodologies, through their initial identification by the introduction of the “Values Toolbox” (Edition on Sustainable Development), developed by Eco Logic. The process continued with introduction of the methodology of immersion where the participants were motivated to enter someone else’s shoes and try to experience the whole process from user point of view. All of the sub-phases in the delivery of the phase of Observation were accompanied by desk research. At the end of the day, discussions on what was made and how did the participants felt occurred as an interactive session of Q & A.

Starting the phase of “Synthesizing”

This phase started by clustering all of the so far gained observations and moving them into the direction of a clear problem statement. During this phase a lot of going back and forth within the process occurred, and it is worth mentioning that often the groups had to be brought to the reality of the fact that the Design Thinking process is user centred. Taking into account that in every group there

were a lot of initially proposed problem statements the rule of voting was introduced. Additionally, in this phase personas were developed by all of the groups.

Introducing the Phase of “Ideating”

On the third day, it was time to enter the solution space of the process, which at any times was started by the participants, but due to the phases of the Design Thinking process the solutions were left to be started at the phase of “Ideation”. Variety of discussions, and variety of directions were taken into consideration by the groups, thus seeing the tip of the iceberg of what they really want and what they really think the users will need as a solution to their problems and/or needs.

“Prototyping”

Day 4 started with using various materials and a lot of creativity, probably the phase in which the participants had the most enjoyment. Below there is description of the prototypes made during this phase.

Team 1 – Eco Plast / Slogan: Our goal - your action

The goal of this prototype is to form a social enterprise that will provide education for garbage pickers (licensed and non-licensed), and on the other hand, total usage of the municipal solid waste as resource. The reason for which this idea was born is the fact that the waste management system in Macedonia is not adequately set, and the people working in this sector are not adequately trained, nor adequately payed for the job they deliver. Through the forming of such a company it is expected that street garbage pickers will be employed for gathering of plastic waste which afterwards will be shredded and sold to companies in need of such a resource.

Team 2- Wastedonia / Slogan: Wasteland or Macedoland

The idea was triggered by the illegal burning of illegal wastelands with mixed waste. The team proposes a pack of solutions based at raising awareness activities within the secondary schools, led by secondary school professors. The idea is to develop an environmental educational programme by the student’s union, for all of the students in the secondary schools across Macedonia.



Team 3: Robohop / Slogan: Reuse!

Innovative machine for shredding of plastic and paper waste generated at the educational institutions from every level – kindergartens, elementary and high schools, universities. The team made a complete scheme and budget orientation for full realization of such a project.

Team 4: Online app – pickme.up

The goal of this app would be to improve the existing municipal waste collection and selection system. Through the app, more green jobs are expected to be created, as well as forming of new small and medium enterprises that will work on selection and usage of specific fractions of municipal solid waste. As a result, the users, individuals or families, can have their waste sorted, and picked up from their

place of living, and receive a small reimbursement (material and/or financial), by a matter of several simple phone operations.



“Testing”

During this phase the participants had the chance to get feedback among themselves, by giving presentations and receiving feedback by all of the other groups (introduction of World Café methodology and basic Q & A session). In this phase the participants after the received initial feedback had the chance to additionally work on their prototypes and how they want to present them. The session was wrapped up by a presentation of each group and their solutions.



BIBLIOGRAPHY AND LINKS

On Design Thinking in general:

Frameworks/Toolkit: <https://medialabamsterdam.com/toolkit/>

Frameworks/Toolkit: <https://designthinkingforeducators.com/>

Information about the Double Diamond: <http://bit.ly/2VN6MKq>

Human-Centred Design field guide IDEO: <http://www.designkit.org/resources/1>

Design Thinking critique: <http://bit.ly/2VN6fYW>

Literature on interaction design: <https://www.interaction-design.org/literature>

Methods: <https://methods.18f.gov/>

Design Thinking Bootleg: <https://dschool.stanford.edu/s/9wuqfxx68fy8xu67khdiliueusae4i>

On Warm-ups:

Warm-up Chatbot on Facebook: <http://bit.ly/2HyZ2Yl>

HPI Academy Warm Up Set: <https://bit.ly/2wgskVp>

Some tips on facilitating warmups <http://bit.ly/2WmiUX8>

On Observing:

Talk on extreme users by Molly Wilson: <http://bit.ly/2HzeTpZ>

Method collection - easy to filter: <http://ucdtoolbox.com/browse-methods/>

Interactive tool that helps to choose a method: <http://www.usabilityplanner.org/#home>

Videos about difficult situations in user testings: <http://www.modsurvivalguide.org/videos/>

Good and bad interviewing: <https://www.youtube.com/watch?v=9t-hYjAKww>

How does a good interview look like? Theoretical explanation:
<https://www.youtube.com/watch?v=LPwO-vOVxD4>

Good interview example: <https://www.youtube.com/watch?v=eNMTJTnrTQQ>

Bad interview example: <https://www.youtube.com/watch?v=U4UKwd0KExc>

On Synthesis:

Molly Wilson explains sensemaking: <https://vimeo.com/231931538>

Article "Kill Your Personas": <http://bit.ly/2JHN7tZ>

The Story of Spotify Personas: <http://bit.ly/2M7ZbXf>

Video on JTBD: <https://www.youtube.com/watch?v=1R8rqdWEQx4>

On Ideation:

Guide for creating HMW-Questions: <https://stanford.io/2X2Fgdm>

Inspiration for brainstorming techniques: <https://www.youtube.com/watch?v=ECWV8rPIdqg>

Template for Idea Dashboard: <http://bit.ly/30Jdkh1>

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Hasso Plattner Institut (2013): Design Thinking Prototyping Card Set.



ABOUT THE PROJECT

The D-LEARNING project is about adapting and transferring the methodology of Design Thinking into adult learning institutions, providing educators with a state-of-the-art methodology to support the development of high quality learning opportunities and educational products (such as didactic materials, e-learning environments, educational games and more).

Design Thinking is a tested methodology for the practical and creative resolution of problems with the intent of producing a constructive result for the future. With the application of this tested methodology as a human-centric approach to innovation that allows for a deeper understanding of the customer's issues, the project strongly contributes to a better performance of adult learning offers as regards usability and acceptance by learners, thus making these offers more effective and efficient.

Main outputs of the project are a D-LEARNING manual to Design Thinking in Adult Education, and a D-LEARNING workshop curriculum addressing adult educators and decision makers in adult learning institutions and training them basically in the application of the methodology.

The consortium is bringing together six partner organizations from different regions across Europe, combining experience in collaborating on the level of European cooperation with the broadest possible spectrum of activities in educational strategy and practice at local, national and transnational level:



Verein Multikulturell (Austria)
www.migration.cc



SYNTHESIS Center for Research and Education (Cyprus)
www.synthesis-center.org



Videncenter for Integration / Vejle Kommune (Denmark)
www.vifin.dk



Verein Niedersächsischer
BILDUNGSINITIATIVEN e.V.

Verein Niedersächsischer Bildungsinitiativen e.V.
(Germany)
www.vnb.de



CESIE (Italy)
www.cesie.org



Eco Logic (North Macedonia)
www.eco-logic.mk



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