Worksheet design with visually impaired users, not for them

Introduction

This worksheet is part of the publication [“Design with visually impaired users, not for them” on Tactiles.eu](). As a preparation to the workshop we advise you to listen to the podcast on this page.

The worksheet facilitates effective **co-design** by involving end-users as active partners. Through **iterative stages** of discovery and testing, designers avoid false assumptions to solve real needs. Tactile tools and specific constraints ensure the process is **accessible**.

Required material

- A clock or a timer
- Something to protect the working area
- A set of wire core wrapped in soft fibres that are flexible and bendable (also known as pipe cleaners or twister sticks)
- Stick-on material with a variety of shapes and thicknesses
- Modelling compound
- Cardboard
- Scissors
- Paper
- Adhesives such as glue sticks, double sided adhesive dots, and poster putty. Avoid tape, it gets entangled when you don't see where it is.

Additional material

Perhaps you have pairs within this workshop who want to use a **visual idea generating technique**. This enables the method of **sketching**, rather than doing both written idea communication techniques. We suggest that you pay attention to the following:

- Have **pens** with a **varied tip thickness** available. Only use pens with a tip thickness that creates a line thick enough to view comfortably at **reading distance**. This has to be checked with the participants.
- Make sure that there is **paper** available which has a good contrast with the offered pens.
- Pay attention that **other traits than colour** are used **to differentiate**, for example by using a variety of **dashed lines**.

Tips

- Have faith in your experience to **inform your design choices.**
- **Be explicit** about what you are currently doing.
- **Express your opinions** directly instead of easily agreeing.
- **Don't give up** trying to **explain your ideas**
- If there are **visual impaired participants**, start with providing **preparation time** to allow them to find a place where they can work and organise the materials efficiently.
- There is a bit of research on designing together with visual impaired, but in our experience the documented techniques are not yet as extensively explored compared to techniques which rely on vision. Therefor **feel free to experiment by offering whichever material you have.**

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Let's start the workshop

Problem analysis: discover needs

1. **Interview**

We will start with the following. **One person** is the **interviewer**, the other is the **interviewee**. You can **reverse** the roles **later**.

Don't ask the interviewee which gift they want to get. Because this person doesn't know what gift they need. You just ask **very general things**. For example:

- Who are you?
- What do you do?
- What are you involved in?
- What do you do in your spare time?

Just try to get to know your interviewee a little.

Time available: 2 minutes.

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2. Keep asking

You probably had a pleasant conversation! Based on the conversation, try to focus on one aspect that caught your attention. Not related to a gift. For example, what you noticed a lot of enthusiasm about. Try to find out why that interested them so much.

Time available: 2 minutes.

Now that you are getting to know the interviewee so well, it can be difficult to interrupt the conversation, but we are going to do that anyway.

The following steps are just for the interviewer. Start thinking about what you heard.

3. **Filter what you heard**
   a. Write down as **keywords** their **needs or desires, things** they are trying to do or would like to do. Examples:
      i. He seems satisfied with how his life is today
      ii. He Wants his energy level to remain the same
   b. **Insights**: what have you discovered that the interviewee may not have realised themselves? Draw conclusions from what you heard, make connections. For example, between feelings and their worldview. Examples:
      i. He wants the best for his daughter, but misses her as she studies abroad

Time available: 3 minutes

   a. **Needs or desires**
   b. **Insights**

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4. Formulate the discovered need

In one sentence, try to define your interviewee's needs, desires and insights. Some examples:

- **Youri** would like to feel more in control of his weekly schedule, because currently he spends the majority of his spare time on school assignments, which makes him missing out on the fun part of student life
- **Roberta** wants to feel more secure about her upcoming driving theory exam, because at the moment she's losing her sleep about it
- **Lucy** would like to be able to make furniture for her house. She has the skills but is frustrated that her new house doesn't have a garage.

The above examples are achieved thanks to using the structure 'Name, would like, followed with their need, because/want/but, followed by your insights'.

Time available: 2 minutes

- 'Name:
- would like...
- Their need:
- because/want/but
- Your insights:

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5. **Ask your interviewee how they feel about this formulation.**

Time available: 3 minutes

6. **If this formulation does not feel right, then reformulate it together.** Example:

"I would like to finish my PC work on time because there are a lot of PC related tasks which are not my favourite."

Time available: maximum 5 minutes

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Idea generation: think of alternatives

Based on the identified need, you will work together on a solution.

7. Here are three techniques which you can use to achieve **5 solutions each**:

    a. Each of you will write down **5** names of a variety of television **characters** such as superheroes, or a variety of **jobs**. Combining them is all right! Next to each, describe **how they would solve** or fulfil **the need** of the interviewee. Example: Santa Claus delivers you the gift of elves who are with you during the day. While you are having conversations with clients they fill out your paperwork instantaneously

    b. **Write** down in detail **how the solution works**. Example: Five minutes before the end of the workday the PC announces that a timer is started to automatically turn itself off

    c. Pairs where both participants are comfortable with **sketching** are free to choose to do this.

Perform this step individually.

Time available: 8 minutes

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8. Share your ideas and listen to the reaction

Share your ideas. You will each get two minutes for this. Interviewer, pay attention to the interviewee's reactions when they explain their own ideas and gives an opinion on your ideas.

Time available: 2 times 2 minutes

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Idea selection: adapt based on the feedback

9. **Together, you reflect and come up with a new solution. Describe your idea and write down details.**

Based on the feedback, you will combine the positive elements of the ideas into something new. Example:

a. audio recording and photo's of handwritten notes as input for AI to turn into digital notes.

b. Use the PC's agenda function for specify dedicated time for administrative tasks.

c. The PC shows a countdown timer at the end of the day. But without automatically turning off the PC. Instead it gives an annoying audible and visible alarm.

Time available: 4 minutes

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Idea communication: build and test

10.   **Communicate your ideas, part one!**

It is and it is not: This part helps you to describe the gift to avoid misunderstandings.

Time available: 5 minutes

- a. **It is**. List up here what the gift should fulfil. For example:
    - i.   The final idea is possible today
    - ii. It's possible to deactivate if needed
    - iii. It's usable without administrator rights
- b. **It is not.** List up here what the gift shouldn't be. For example:
    - i.   It is not something which prevents me to work when I want to do so outside of school hours
    - ii. Is not something which disturbs me when it is active, except for the timer and the end of the day.
    - iii. It is not something which doesn't respect GDPR regulation

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11. **Communicate your ideas, part two!**

Storyboard: Together write a short story that presents the use or added value of the gift. Write from the perspective of the person being interviewed and the environment of use. What happens before, during and after using it? For example:

a. **Before usage**
   i. I check with the IT department the functionality
   ii. If the IT department agrees they help me make it available on my smartphone and PC
   iii. I structure my agenda into timeslots. I choose the mornings for the talks and afternoon for the administrative work. I mark it in my agenda as "please do not disturb".
   iv. The moment that I start my workday I specify in the alarm clock when I will end my workday.

b. **During usage**
   i. I just finished a conversation with a student. During the meeting I made some notes. I take a photographs with my phone. This is converted into digital text format.
   ii. I make an audio recording of my evaluation, based on the structure of the administrative tasks which I have to perform. After recording this is also converted into digital text format.
   iii. After a morning of conversations with students I'm back in the office.
   iv. On my phone I turn off sound and vibration
   v. I access the folder where the IT department told me to find the by AI generated text documents.

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      vi. I open the website where I have to fill out the reports for each student. I check the generated text files for mistakes. Then I copy the information into the report.

c. **After usage**

a. 15 minutes before the end of my workday the PC displays a timer which is counting down.

b. I make sure that I saved all relevant documents and closed all programs.

c. At the end of the timer it starts to blink and make a beeping noise. I can already imagine my colleague their faces. That's the signal for me to turn off my PC and go home!

Time available: 5 minutes

12.   Make the gift

The interviewer makes a physical version of the gift! The interviewee leaves the room for 10 minutes.

Time available: 10 minutes

13.   Give your gift and listen to the reaction

   a. What worked?
   b. What could be better?
   c. Questions?
   d. Ideas?

Time available: 5 minutes

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Conclusion

In about an hour, we went through the **co-design process**. The important thing about this story is that you can also apply this process to challenges related to **customising** and **designing assistive devices.**

You may not have found the ultimate gift. You undoubtedly made something that the interviewee appreciated in some way. What led to it is that we **worked in stages**.

Imagine if you were tasked with "talk to each other and come up with a solution", that probably wasn't going to go smoothly.

You designed something thanks to the different **stages** where you first **listened** to each other, **gained insights**, came up with ideas, **then selected ideas** and then **designed** something **together**.

For more information about the science behind the workshop, read the last part of the publication "Design with visually impaired users, not for them" on Tactiles.eu

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Project details

- Name of the project: Enhancing Life Effectively for the Visually impaired with Affordable Assistive Tools and Empowerment (ELEVATE).
- Start and completion dates: first of September 2024 up to the twenty eight of February 2026.

Project goal

With Erasmus+ support, we aim to further develop and share our prototyping expertise, focusing on Assistive Devices in daily living activities (ADL). Using a bottom-up approach, we will address client challenges, abilities, and needs through accessible prototyping techniques.

This project aligns with Erasmus+ values, including inclusion, diversity, civic engagement, and enhancing staff competencies. Our goal is to promote equal opportunities, increase social engagement, and empower staff to better support people with disabilities.

Partners

- [Blindenzorg Licht en Liefde](#), Belgium (coordinator)
- [Berufsforderungswerk Düren](#), Germany
- [Centre pour le Développement des compétences relatives à la vue](#), Luxembourg
- [Hilfsgemeinschaft Der Blinden Und Sehschwachen Osterreichs Verein](#), Austria
- [Staatliches Sonderpädagogisches Bildungs- und Beratungszentrum mit Internat Förderschwerpunkt Sehen Schloss-Schule Ilvesheim](#), Germany

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Info and contact

1. Websites:

   - [Project results will be shared on www.tactiles.eu, a database of resources aimed at visually impaired.](#)
   - [Erasmus+ project result page](#)

2. social media channels:

   - [Facebook Elevate Erasmus+](#)
   - [LinkedIn ELEVATE Erasmus+](#)
   - [Youtube ELEVATE_ErasmusPlus](#)
   - [Instructables ELEVATE_ErasmusPlus](#)

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