# Team UX Design Challenge – The Switch&Slide for Aumens

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Total number of words: 3585

## INTRODUCTION

In this report the team describe their activities during the Industrial Design master course *User Experience Theory & Practice* (DDM150) at the Eindhoven University of Technology. The course started off with a three-week period in which students were given a broad theoretical background on (designing for) user experience. After that, every week another design-challenge was presented by a different company and randomly assigned to a team of four students. The report contains a description and reflection on the team-challenge, reflection on results of the other teams and a general reflection on user experience.

The challenges were two-week assignments acting as pressure-cookers, presented by three companies: *Essence, Aumens* and *Total Support Group (TSG)*. At the end of the two weeks, teams were asked to present their work in a short presentation to other students and the company. The challenges were meant to practice and apply the new-found knowledge to a real-life business case. Besides creating understanding on the how-to, this aided to experience the difficulties that could be encountered during this process. After the presentation there were feedback and discussion sessions with the whole group to learn from the other teams.

This team was assigned to the challenge of *Aumens* (Challenge II), who asked for a redesign of their current product '*The Switch*' [7]. This product was made for people with a physio-psychological illnesses such as Dementia, Multiple Sclerosis (MS) and Parkinson's disease, who wanted to do the *Switch2Move* dance therapy [2] with videos, independently at home. The redesign was meant to include the same user group but in a different context: living in a private care-facility where they would do the *Switch2Move* sessions in a group-setting.

The company had requirements of their own, being that the design had to be realistic, match their design DNA and had certain functionalities like turning the television on or off, controlling the volume and being able to switch between videos. Additionally, our team created a few more design requirements based on *Aumens'* brief and presentation, and research into the target user. These will be discussed in the next section.

## UX CHALLENGE

### Design Approach

Since the target users are (older) adults with Dementia, MS or Parkinson's disease, it was important to empathize with them before designing. According to Kouprie, M., & Visser, F. S (2009), by organizing collected information and data in the form of stories, storyboards, or personas, it will become easier for designers to empathize with the user's world and connect with them [3]. Therefore, three personas with Dementia, MS and Parkinson's Disease (Figure 1) were created, along with a user experience map (Figure 2) which helped analyze the whole experience of the users, including the users' needs when using the product and participating in the *Switch2Move* therapy, but also identifying frictions and potential areas of improvement.
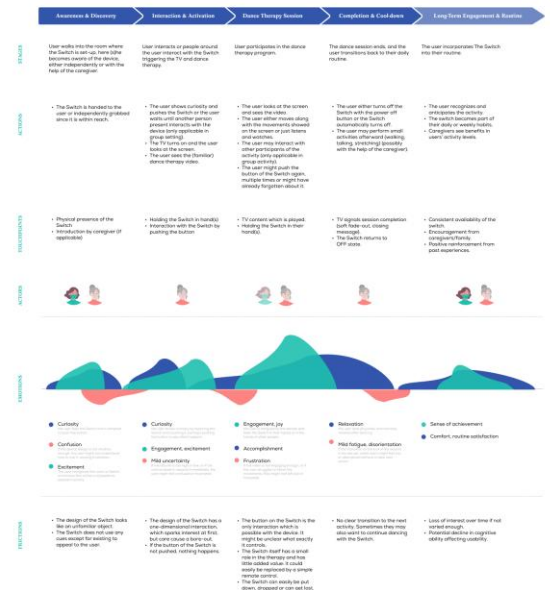


**Fig 1.** Personas



**Fig 2.** User Experience Map

From these personas and the user experience map we used overlapping symptoms and capabilities (Appendix 1) to conclude what requirements were necessary to fit the user. For instance, the interaction should be simple and recognizable. At the same time, it should be inviting, naturally encouraging people to interact with it. To support usability, the design needs to be large and easy to operate. Physical interaction is at the heart of our design, allowing users to engage through direct touch, movement, or pressing. It should also be fixed and sturdy, avoiding falling on the floor.

After that, through benchmarking, we analysed the characteristics of products designed for these diseases. However, most of these products focus on functionality, but do not explore the user experience in depth. Also, it is mentioned that most research on the experiences and needs of people with Dementia focuses on solutions for them instead of experiences [6].

So during the brainstorming process, starting with the things that the elderly are familiar with (Appendix 2), we tried to find familiar interactions for them, and create an emotional connection. Since empathy tools have been described as tools that allow a product designer to feel the effects of an impairment and help with designing more inclusive products [4], we applied it into our design process and tried to simulate the interactions with different items of the target users (Figure 3).
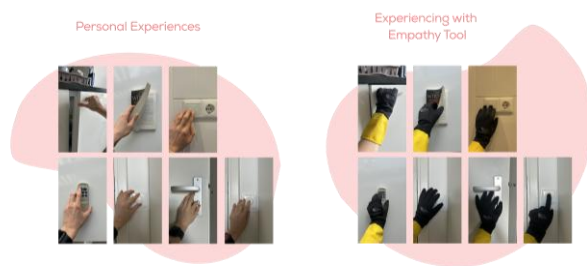


**Fig 3.** Empathy Tool

Considering all this, including the fact that the interaction had to be logically link back to the television and should include the requirements of the client, we concluded the product should consist of simple sliders and a switch. For this, the final design concept *Switch&Slide* was created (Figure 4): a large interactive board, with the dimensions of 500 mm X 200 mm. So that it would be possible to place the product on a table in front of the television, and would still be easy-to-operate for people with limited dexterity. Important, as the target user (regardless of the diagnosis Dementia, MS or Parkinson's disease), all had similar difficulties with fine motor skills.

The interaction style, and look & feel of the buttons and sliders were dictated by the research done and result of the empathy tool testing. All elements are therefore also rounded, which gives a gentle and harmonious feeling. With the switch on the left-hand side of the product the user can turn the television on or off. The slider on the right-hand side is used to increase the volume (physically) up or down, intuitively linking it to a higher and lower volume.

The sliders in the middle (Figure 5), are used to interact with the videos. By sliding the tiles up and down, a waiting list can be created by the user(s). The attached tiles with symbols, relate back to the movements of the different dances in a coherent manner. These tiles are interchangeable, which gives the care-home the opportunity to set-up a *Switch2Move* therapy session that fits the group of users doing the therapy. Caregivers can pick or help the users pick tiles for different dances, depending on the progression of their disease(s). They can also encourage them to interact with the product.

As said before, the symbols relate to the dances of the therapy, based on the movements. For the symbols we choose nature or animal elements, such as the sun, wind, birds, etc. This is because the elderly are usually more familiar with these elements and these elements also give a sense of calm [4,5]. Their playful look perhaps sparks an interest for interaction.

Through this empathy-driven design process, using insights from tools like personas, user experience mapping and the empathy tool, we created the concept of *Switch&Slide*. Although real-life testing with the user was not possible for us in the given time-span for the challenge, we believe our final design concept accommodates a target user with physical and cognitive limitations. The use of familiar symbols, round forms and simple interactions hopefully resonates with the user and enhances their participation in the *Switch2Move* therapy.
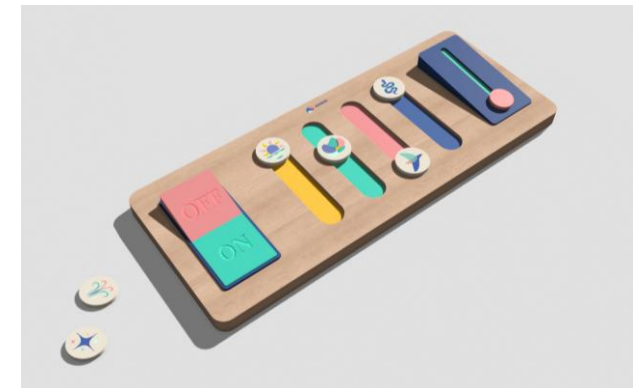


**Fig 4.** Design concept: *The Switch&Slide*



**Fig 5.** Tiles on the Product

## Self-Assessment of Results

Based on the feedback and discussion, we can identify both strengths and areas for improvement in our proposal. One of our key strengths was the choice of materials particularly wood, which was well-received for its sensory and comforting qualities [1,5]. Additionally, the balance between user choice and guided interaction was positively noted, as it maintained autonomy without overwhelming the user.

However, we could have improved the visual aesthetic, as it was perceived as too childish. Exploring a more mature and refined design language would have made the design concept more appealing. Moreover, we focused too much on the interface itself, forgetting to zoom-out and design for the entire session experience. Integrating techniques like co-design with caregivers and users, and utilizing group dynamics analysis would have strengthened both inclusiveness and social interaction.

Some other teams took interesting approaches by creating immersive storylines and focusing on emotional engagement to make their concepts feel more personal and connected to users. Taking inspiration from these aspects could enhance our own design's impact and coherence.

## Next Steps

Looking back at the feedback provided, we concluded that we need to refine the visual style to better align with an adult aesthetic while emphasizing the strength of user autonomy and highlighting the advantage of the product's dedicated functionality. AI-driven personalization or caregiver-customized modules could enhance the personalized user experience. Adding haptic feedback to the sliders, could improve the affordance of the product.

Integrating a collaborative aspect could also strengthen the user engagement and interest, which could not only be achieved by giving the caregivers the opportunity to decide on the type of video to follow along with the user, but rather the incorporation of an interaction that requires group collaboration amongst the target users. On top of

that, visitors of the people in the care-facility, like friends, partners or family, could join the sessions if suitable collaborative elements are added.

In addition, we should investigate an automatic playback mechanism for situations where no one initiates the session. Participation could also be enhanced by allowing users and caregivers to configure more open-ended modules collaboratively. To accommodate different motor abilities, a modular design approach—such as offering both sliding and button-based interactions—should therefore be considered, along with ergonomics and tactile quality improvements inspired by similar projects.

Our next steps should shift from interface design to an overall interactive user experience, iterating on both visual and tactile prototypes, conducting user tests, and developing caregiver configuration tools. We must also ensure data compliance, balance the costs of the production with the design vision, establish a long-term user feedback and cross-disciplinary collaboration mechanism to maintain the product's focus, inclusivity, and cooperative nature.

In conclusion, according to the received feedback our main focus should be directed towards the improvements on the visual and functional aspects of the product with the contextual focus being on the maturity level of our target user group. Putting emphasis on autonomy, collaboration, and accessibility in the next iteration. Certain alterations could include the implementation of enhanced personalization through AI or caregiver input as well as collaborative and ergonomic feature supplementation which can lead to the transition of the current interface design into a more holistic interactive experience.

## REVIEW

### Challenge I: Essence – designing a personalized online shopping experience for Bol

The first challenge aimed to investigate how to effectively understand and represent the client's identity in the context of personalized recommendations. This involved analysing customer reviews, mapping the current user journey, and proposing a new journey map, taking into account all actors involved. The validation process combined quantitative and qualitative studies, reflecting on ethical aspects such as the balance between privacy and personalization.

The presented results demonstrate a comprehensive and structured approach. Notably, the inclusion of analyses from three perspectives (first-person, second-person, and third-person) proved to be insightful, as it allowed for a nuanced understanding of the user experience. Furthermore, the reworking of the challenge for each persona showcased a commendable effort to address inclusivity and diversity.

However, some aspects could benefit from further development. In particular, the ethical reflection on privacy versus personalization remains somewhat vague and would gain from a more structured resolution. Building trust in the AI assistant requires identifying ways to train it for more specific and accurate recommendations, along with fostering user confidence through transparent communication about the decision-making process.

Lastly, a critical question to address is: "What do you miss when making a choice?". Exploring this could highlight potential blind spots in the current model and support the development of more reliable decision-making tools.

### Challenge III: TSG - optimizing user experience for the Bathbobber Ecosystem

The third challenge focused on enhancing the user experience for the *Bathbobber* ecosystem, targeting different expertise levels. While some solutions demonstrated creativity and empathy mapping, they lacked clarity and focused on key aspects. The ice bathing

experience missed immersion and could benefit from a storyline. Although focusing on emotions was interesting, the connection between emotions and design choices was not always clear.

A major weakness was the over-reliance on user choice without considering that users might not always know the best option, especially for safety-related activities. Additionally, many groups emphasized app features without adequately linking them to the *Bathbobber* device. The use of storyboards as a tool to visualize the experience was a good starting point, but the presentations often lacked depth and failed to convey the process effectively. Incorporating more visual aids and structured narratives could make the proposed solutions more compelling and accessible.

An effective and innovative approach was engaging with existing online communities to gather insights from experienced users, demonstrating a strong user-centred mindset.

## GENERAL REFLECTION

### The challenges
Challenge I given by *Essence* aimed to enhance the personalized online shopping experience by analysing the service blueprint and identifying improvements along the customer journey of the current interface of *Bol.com*. *Essence* is a customer experience agency that emphasizes on the aligned touchpoints of different channels and stakeholders through a user-centred perspective. Their goal is to create a more empathetic and personal website experience through journey and stakeholder mapping in order to identify pain-points of *Bol.com's* users. They aim to achieve this by applying empathy-driven design to better understand and meet user needs, ultimately fostering deeper engagement through personalization.

Meanwhile, challenge II tackled a redesign case by *Aumens* for their product *The Switch*, a tangible interface supporting cognitive reserve training for individuals with Dementia, MS and Parkinson's disease. Designed to be a tangible support for the *Switch2Move* dance therapy videos, the product aims to stimulate both body and mind, for therapeutic everyday usage. *Aumens* takes a very well rooted user-centred approach, by not only addressing the physical and mental challenges rising from the nature of their vulnerable target group, but also keeping their emotional needs and daily routines in context. By channelling their focus on the non-stigmatizing aesthetics and intuitiveness of the designed interaction, the product lowers participation threshold, encourages routine engagement and enhances the autonomy as well as the quality of the users lives.

Lastly, challenge III focuses on *Total Support Group's (TSG)* Bathbobber, a smart timer for cold water therapy. TSG takes a holistic approach to UX by prioritizing safety, simplicity, and long-term engagement with cold-water therapy. They recognize the risks, misinformation, and limited experiences of people regarding this growing trend. The product aims to lower these barriers through an intuitive design, aiming to make it approachable for everyone. They achieve this through their integration of rotating button, LED feedback, temperature sensing, guided timers, and an app. The companion app adds to the physical device with its easy setup manual, personalized recommendations, and community features, which helps users build confidence surrounding the therapy while also keeping them safe and motivated. *Bathbobber* addresses every stage of the user journey seamlessly, from unboxing to daily use, to create a supporting and easy-to-follow experience for the users. Their integration of popular health technology, apps and devices, demonstrates their thoughtful UX strategy which aids in the building of safe, consistent habits. With the personalized story behind the company's motives and goal, they create a bond with their users which gives them a strategic and personalized advantage over their competitors as well.

In conclusion, all three companies demonstrate a strong commitment to user-centred design, each tailored specifically to their individual target audience and context. They all use different approaches and focus in regards to their respective user experiences, and areas of improvement they require from the students. *Essence* focuses on creating an emphatic and highly personalized online shopping experience through different touchpoint mappings to deeply understand the needs of their users in hopes of developing a seamless and engaging interaction. On the other hand, *Aumens* takes a specialized approach by taking on the challenge of designing for individuals with physio-neurological conditions. They address the cognitive, emotional, and physical challenges of their vulnerable target group through their intuitive, curiosity-driven design that fosters autonomy and engagement, all while maintaining a non-stigmatizing aesthetic. Lastly, *TSG* directs their focus to ensure safety, simplicity, and long-term user engagement through their integration of personalized support and data tracking. Although they differ in their challenge goals, it can be said that all of the companies prioritize making the user experience intuitive, accessible, and empowering, while also addressing the unique challenges of their individual user groups.

### Theory and practice
With the focus on challenge II - *The Switch* by *Aumens*, as it was our team challenge, the relationship between theoretical knowledge from literature and practical case can be seen from the approaches taken both by the company and our team. The given literature focuses on the emphasis of the role of affective empathy and inclusive design while creating meaningful, non-stigmatizing products for vulnerable users. In alligment with Wright and McCarthy's idea of 'feeling into a user's world', both of the approaches focus on functionality with the emphasis of emotional engagement of the user. Fostering autonomy and guiding them through intrinsic design decisions.

Additionally, the explored concept of empathic handovers as well as the usage of empathy tools become highly relevant in practice, as insights gathered from

users set the tone for the overall design process and affect the end result for better suitability. These methods ensure that the behavioural cues, certain action decision and limitations of the users form the context in which the design and redesign are formed.

From a usability standpoint, the intuitive over efficient interaction emphasis can be directly observed in the design philosophy of both *Aumens* and our team in a sense that we both acknowledge that for users with physio-neurological diseases like Dementia the interaction must be so simple and inviting that the product "switches them on" without complex instructions. The showcasing of understanding, empathy, and design thinking explored in academic theories translate seamlessly into real-world solution generation to both support user autonomy and caregiver relief.

### Insights after the challenges

At the beginning of the course, we understood UX as a broad overarching concept that was generally used as a hazy umbrella term. However, through the challenges, theories, and lectures, we came to see how nuanced UX truly is. That in application, it is a web composed of multiple sub-disciplines, perspectives, and methods that shift depending on the context, user group, and stakeholder goals.

With the unique challenges from three different companies, with various requests, we saw that there is no single correct method in both approaching and defining UX. Some of the challenges focused heavily on emotional engagement and empathy, while others prioritized business or technological integration goals. These differences demonstrated the importance of balancing user needs with stakeholder interests, technical limitations, and practical constraints during design cases and how UX is embedded in all of this.

In case of our group, working with *Aumens*, our team had to quickly adapt to working with a sensitive target group: people with Dementia, MS and Parkinson's disease. As we had no prior experience in designing for this target user. Due to limitations in user testing and time allocation, we had to rely on empathy tools, third-person research, and careful assumptions to generate empathy and gather insights to form a situated angle on the actual experiences of our target group in order to make our end product fit the given context. This exercise not only showed us how to use novel methods, but also expanded our approach to user-centred design, especially from a user experience design perspective.

These challenges revealed the fast-paced, flexible, and adaptive nature of real-world UX work, especially when acting as an external consultancy. We constantly had to respond to the rapidly evolving requirements, timelines, and user contexts as our research progressed.

Overall, our understanding of UX changed from the vague concept we assumed it was to a practical, multifaceted discipline with great importance. We now see UX as a collaborative ever evolving process that is shaped by constant negotiations between user needs, stakeholders goals, and actual feasibility.

### WEEKLY LOGBOOK

#### 27/02/2025: First Meeting

During the initial meeting the team broke down the challenge into different action steps. We first got familiarized with both the challenge brief and the rubric requirements to decide a suitable approach and start our desktop research. Influenced by the teachings of the course, we created personas and varying user canvases to form a better understanding of the user, the challenge, and the possible metrics of the new design proposal.

#### 10/03/2025: Second meeting

In our second meeting we began with our ideation phase, where we discussed several interaction possibilities, certain design elements such as materials, colours, and haptics whilst relating back to our research findings. Through sketching and discussions, we finalized our redesign and divided the tasks of generating visuals, implementing theory, and possible forms of user testing. Through Figma, we created documents to keep each other updated on the states of our individual tasks and made an outline of the presentation to build upon.

#### 14/03/2025: Third meeting

We began by presenting our findings to each other as well as the visuals we generated, so that we were all on the same page. After watching the presentations of Challenge I groups, we made a list of possible tools and visuals we may need and used them as a guide to finalize the presentation. We also discussed the division of the pitch and tasked ourselves to prepare our segments for the next meeting.

#### 17/03/2025: Last Meeting

In our last meeting before the presentation, we worked on going over our slides, adding small details, and overall refinement of our presentation. We practiced our pitch, by presenting it to each other multiple times to find missing points and to get more comfortable with public speaking.

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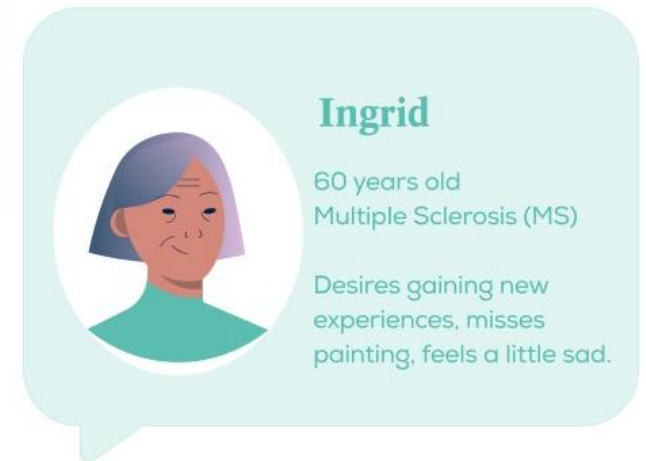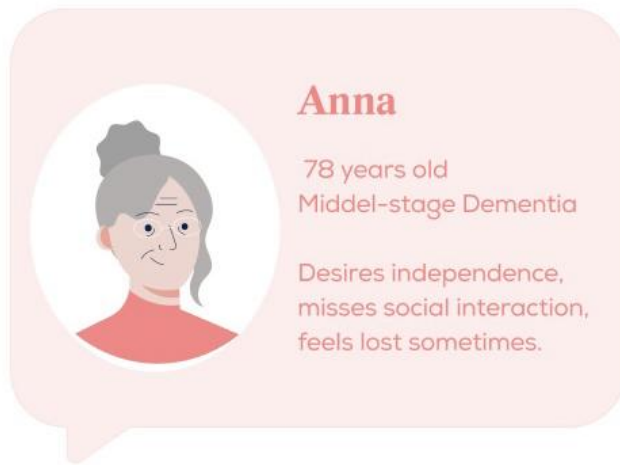ACM Designing Interactive Systems Conference (DIS '23). Association for Computing Machinery, New York, NY, USA, 1457–1471. https://doi.org/10.1145/3563657.3596017

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**APPENDIX**

**Appendix 1 – Personas**

The *personas* tool was used to represent different types of users affected by specific diseases. Each persona made it possible to: identify the specific needs related to each condition; highlight differences between user categories; and design a product adaptable to everyone's needs. This approach supported the development of personalized, user-centered solutions.

## Anna

78 years old
Middel-stage Dementia

Desires independence, misses social interaction, feels lost sometimes.

## Henk

65 years old
Parkinson's disease

Desires to exercise, misses dancing with wife, feels discouraged to move.

## Ingrid

60 years old
Multiple Sclerosis (MS)

Desires gaining new experiences, misses painting, feels a little sad.

## Overlapping symptoms + requirements

- All three diseases are chronic and progressive
- Focus and concentration issues apply to all
  - Capture attention
  - Maintain attention
- Confusion is part of Dementia and sometimes Parkinson's
  - Simple design and interactions
  - Avoid complicated actions
  - Recognizable interactions
- Immobility is part of MS and Parkinson's disease
  - Controls that need little force (for example, buttons are working when pushed softly)
  - Controls are large (simplifying movement: control with a full hand, not just a finger)
- Coordination issues are part of MS and Parkinson's disease
  - Fixed elements are important, so they cannot fall on the floor
  - Sturdy construction

## Persona based on research and experiences

### Persona Dementia (Anna)

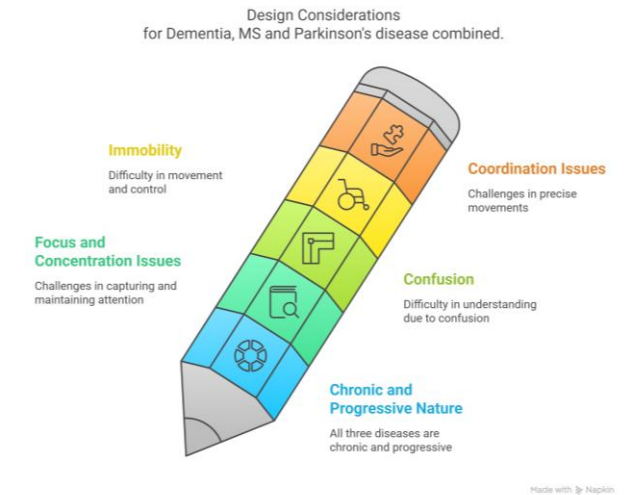| Age: | 78 |
|---|---|
| Living Situation: | Lives in a private care facility, with occasional visits from her daughter. |
| Diagnoses: | Dementia – wants to take a walk independently, but gets lost sometimes when going for a walk. Recognizes family and caregivers, but too many people talking at the same time overwhelm her. Middle stage dementia (https://www.dementiauk.org/information-and-support/about-dementia/stages-of-dementia/ ) |
| Technology Use: | Only uses a TV remote to watch the 8 o'clock news in the evening, like she always has. Other smart devices easily confuse her, so she is not very open to new 'smart' items being introduced in her household. |
| Emotional Needs: | Desires independence and fears becoming a burden to her daughter; misses social interactions from her youth (e.g., dance parties) but feels isolated due to her condition. Does not know how to start an activity and often feels lost. |

### Persona Parkinson's disease (Henk)

| Age: | 65 years old - source (p.7) |
|---|---|
| Living Situation: | Lives in a private care facility, his wife visits a few times a week. |
| Diagnoses: | Parkinson's disease – needs regular assistance with day-to-day tasks because of his declining motor skills. Sometimes experiences 'freezing'. Also experiences early signs of dementia like forgetfulness and misunderstanding. |
| Technology Use: | Uses technology with large buttons, so they are easier to push. Shakiness can cause him to easily drop devices. Because of muscle stiffness he struggles to grab onto things and move, although exercise is good to counter this muscle stiffness. |
| Emotional Needs: | Misses his wife, and thinks about how they used to dance together when they were young. Has limited ability to move around and feels sad knowing this. Restrictions of his movement discourage him to exercise and he needs a good motivator. |

### Persona MS (Ingrid)

| Age: | 60 years old - 80% is younger than 65, also the chance woman get MS is 2,5 times higher than men. |
|---|---|
| Living Situation: | Lives in a private care facility, her son visits once a week for company. |
| Diagnoses: | Multiple Sclerosis (MS) – has trouble walking around, but is aware of her surroundings. Has some trouble remembering where she left the TV remote, but knows her son visits every Tuesday. |
| Technology Use: | Controls her own television in her room. Can also pick up the phone, but uses one of larger models, with bigger buttons so it is easier for her to control the phone. |
| Emotional Needs: | Desires new experiences, as she was an adventurous woman and loved to travel and experience new cultures. She also misses painting, which makes her sad, as she is no longer able to use fine-motor skills like she used to. |

## Visualization



Design Considerations for Dementia, MS and Parkinson's disease combined.

Immobility — Difficulty in movement and control

Coordination Issues — Challenges in precise movements

Focus and Concentration Issues — Challenges in capturing and maintaining attention

Confusion — Difficulty in understanding due to confusion

Chronic and Progressive Nature — All three diseases are chronic and progressive

Made with Napkin

Created with Napkin.
https://app.napkin.ai/page/CgoiCHByb2Qtb25lEiwKBF BhZ2UaJDFmY2FmMzRiLTBlMTgtNGI5ZS04ZjhkLT gzNGYyODlkNGE4NQ

**Appendix 2 – Brainstorming**

Brainstorming was used in the initial phase to generate design ideas inspired by familiar objects. This method made it possible to: stimulate group creativity; explore accessible and intuitive solutions; and encourage the association between product functionality and recognizable items. The result was the development of concepts closely connected to the user's everyday experience.



Light Switch

Book/ Library

Moving something along a Path or Predefined Maze
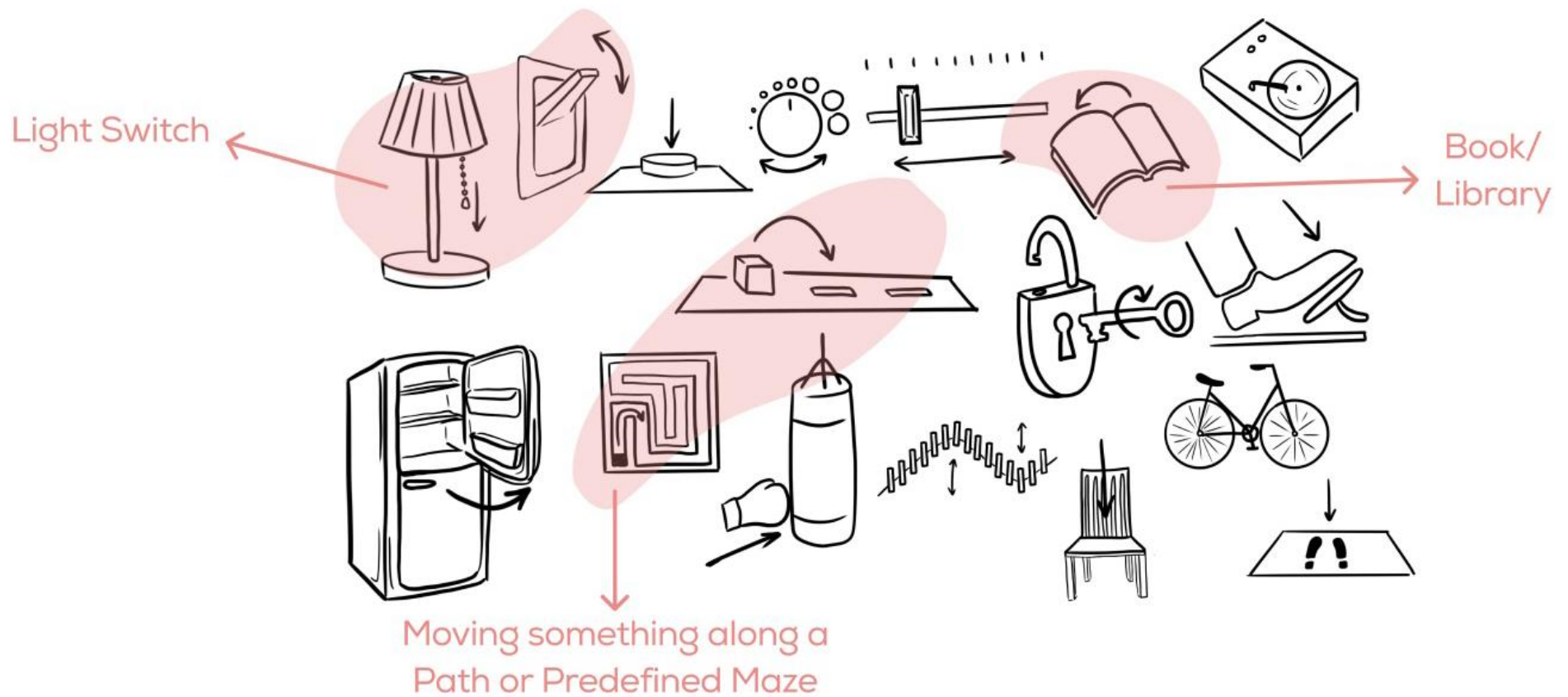
**Appendix 3 - Storyboard**

Storyboarding was used to represent real-life usage scenarios of the product. This tool made it possible to: visualize user–product interaction; identify critical issues and opportunities for improvement; clearly communicate the intended user experience. It helped maintain a user-centered approach throughout the design process.
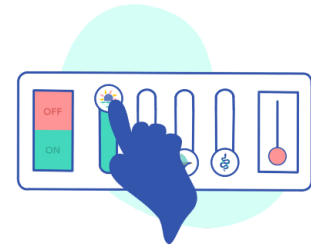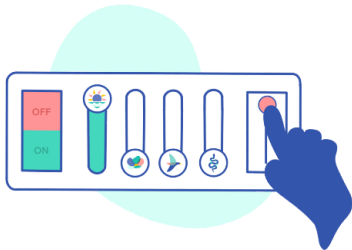
**1**
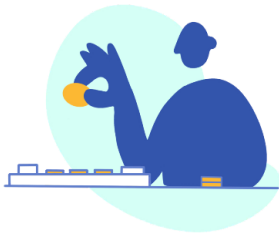


The caregiver selects the tiles to insert

**2**
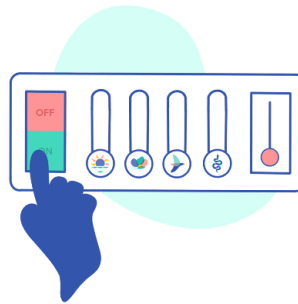


Turn on the TV using the ON/OFF switch

**3**



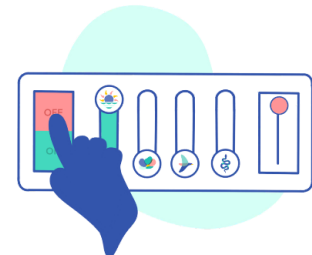Choose a video by moving the tiles

**4**



Set the volume using the sliding control

**5**



The video plays, encouraging the user to dance or move

**6**



Turn off the TV when finished

**Appendix 4 - Movement–Symbol Association**

To ensure accessibility across different ability levels, we designed a movement–symbol association. Depending on the progression of the disease, selection can be guided by the gesture–symbol connection or by personal preferences or emotional responses.

These are just a few examples of the graphic translations we explored during the process.