

Dansplaat: Improving the user experience of people with dementia

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Word count: 4406

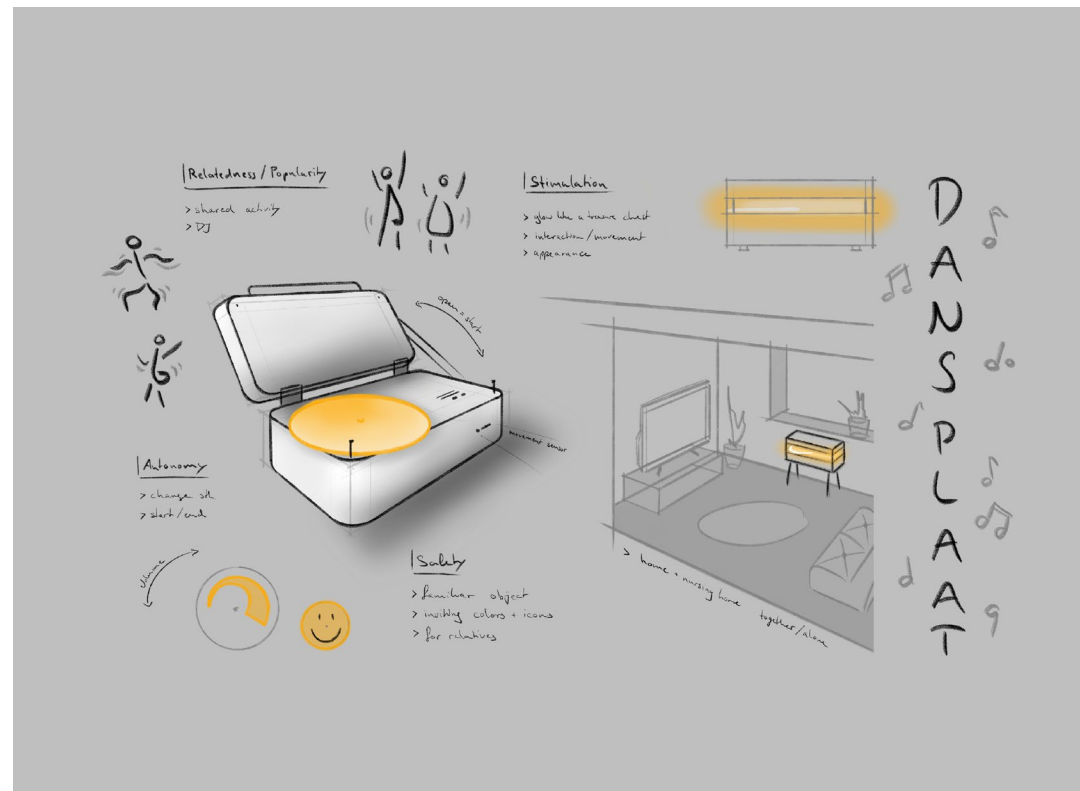


Figure 2: An old radio, representing the old days. Music brings people together, the light sparks curiosity and creates an ambient vibe.

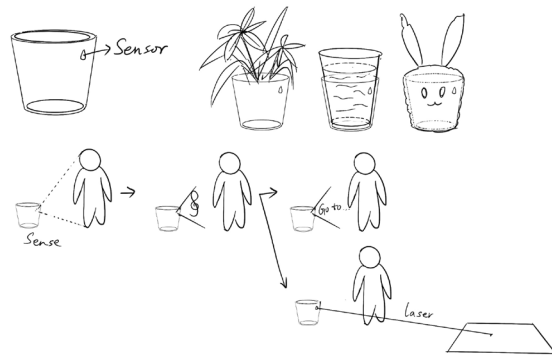


Figure 3: A cup-shaped product that can sense person and emit laser to show the position of the dance carpet

Storytelling of vinyl player

Hassenzahl describes UX as creating a meaningful story (Hassenzahl, 2010). We chose the basic human needs “autonomy, relatedness, stimulation and safety” (Hassenzahl, 2010) based on Aumens’ values and our insights, and represented these in our story by fun, music, shared activities, movement, and party, embodied by the interactive vinyl player that users know from their past. This connects the product and the dancing aspect of the therapy to construct a coherent experience story. This substantiated the choice for the vinyl player as our final concept.

Final proposition

We specified the design of the vinyl player, in which we included features of the other concepts: the sensor registering movement and the treasure chest glow-effect. The vinyl player is placed in the room near the television, either the shared living room in a nursing home or at someone’s house. When someone enters the room, the sensor senses their movement, and a subtle glow will emit from the space between the bottom and the lid of the vinyl

player – this is the idea of the treasure chest that is supposed to draw the user’s attention and evoke curiosity, basically representing the invitation of the system. This initiation of interaction relieves the caretaker from their duty to motivate the inhabitants of the care home to start the dance programme.

When the user walks up to the vinyl player, they can lift the lid on a big handle. It is supported by a small gas spring of sorts that enables even those with little strength to open the lid. This opening of the vinyl player is the next step in the interaction – some form of accepting the invitation. When the lid opens, a soft sound plays – this might be a tune or a voice that says: “Shall we dance? I’ll turn on the television.” – and the television will start with the dance programme. If the user accepts, they merely have to get into starting position. If they do not wish to take part, they can shut the lid of the vinyl player.

The volume of the dance videos can be attuned by turning the vinyl disk either way, supported by known icons and common, intuitive direction. The videos will play in succession. If the user should not agree with the video and wants to select a different one, they may use the button on the surface to the right of the vinyl disk, which is similar to the functioning of the current Switch remote control. After a determined number of videos, a similar tune or voice to the first one may indicate the end of the session. The lid will shut automatically.

Variations to final proposition

A timer could be implemented in the vinyl player so that it starts by itself after a set time. If, for example, there is very little movement in the vicinity, the sensor might not provide a cue for the vinyl player to start. The glow could increase or maybe softly flicker to draw attention to itself.

If this product were to be placed in someone’s home, it would work the same way. However, since participants to the Switch2Move live dance sessions indicated that they enjoy the social aspect of being and dancing together, it would be a strong addition to include that social aspect in this concept. Therefore, “individual use” could work

similarly to the LuvLink friendship (LuvLink®, n.d.) lamp. Individual users may be connected through their vinyl players: if someone starts the dance at their home, the vinyl player in another’s home will light up. It might even be possible to create a co-dance on the TV screen, where people will show up when they dance together. Implementing this social translucence solves not only possible problems like starting the stimulation glow, but also includes the desired, social aspect of the users.

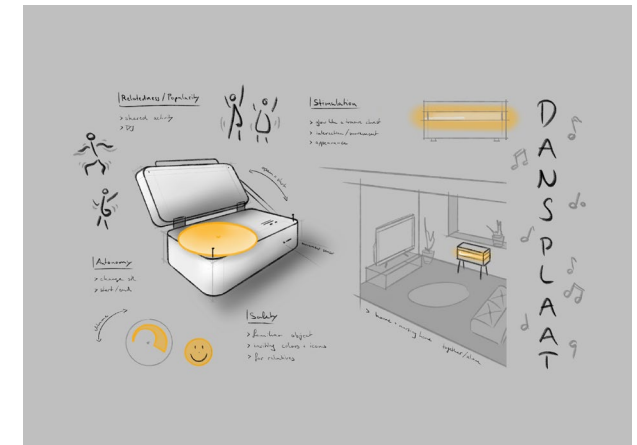


Figure 4: Dansplaat is a smart vinyl player that focuses on autonomy, relatedness, stimulation, security and popularity. It gives an invite for the dance therapy by lighting up and evoking curiosity.

SELF-ASSESSMENT OF RESULTS

The next step in the design process was presenting the final proposition to Aumens, the professors and the class. This presentation offered a great chance to evaluate whether our vision aligned with that of Aumens’.

Starting strong, the main design concept revolved around a smart vinyl player, resembling an object familiar to our target user’s age group. By creating empathy for our target user through the empathic

handover (Smeenk et al., 2017), our team was able to look through the eyes of people with dementia. Remaining close to what they do remember, are familiar with, and have a positive attitude towards, allowed us to stay close to the basic human needs (Hassenzahl, 2010). The lighting aspect of this design, which evokes a feeling of curiosity and resembles a treasure chest, was well-appreciated. Aumens commented that in a previous study with Fontys, the vinyl player was recommended when designing for people with dementia – this feedback strengthened our design concept. Providing a feeling of security, popularity, self-esteem, autonomy, and relatedness are of great importance when designing for people with dementia, as they often become dependent on others and may lack self-esteem.

Furthermore, the discussion created a new perspective on usability as well as involving stakeholders. Firstly, as coordination often deteriorates and struggles occur, the usability of our design concept should be intuitive. During the discussion, it was questioned whether the lid of the Dansplaat is automated. It was not originally planned to do this, though we think it could be an improvement. However, we argued that choosing to open the lid is part of the experience, like accepting the invitation, and it should be that action that triggers the beginning of the therapy session. This way, everyone can independently start or decline the session. In addition, the location of Dansplaat evoked a new discussion: where would it be placed? In our initial design (figure 4), Dansplaat is put near the television, as this is where the therapy video will be played on, and it won't scare people when the TV turns on. Someone commented that opening the lid of Dansplaat and thus accepting the invite for the therapy session, while not directly looking at the television, might scare the user because the sounds of the television might not match with that of Dansplaat. Furthermore, another comment added that it might be counterintuitive if the television was not controlled through a remote control. On that matter, it was counterargued that putting Dansplaat next to the television might actually work well and create a

connection– it was compared to TV games and how their controls are usually around the TV. Finally, we were questioned about the involvement of the stakeholders: how can we involve partners and caretakers? Can they initiate the dance? The main focus of our design in relation to the other stakeholders was on freeing more of the caretaker's time by improving independence and thereby autonomy among people with dementia. We designed the user journey so that caretakers would no longer be needed to initiate the dance therapy session, but it is not out of the question that they could incidentally join the dance. Especially for partners and those who still live in their home, it could be a wonderful bonding moment. However, this question posed a reflection on our process and new views unfolded, such as the caretaker initiating the dance session when they are in need of time to do their duties. When time is tight, initiating the dance could be a distractor so that the caretaker can do other obligations and spend their time more effectively. This suggestion could evoke future design iteration and would definitely be considered when the concept is refined.

Other teams

Team 6 really stood out in a particular phase: creating empathy. Their team went a step further than we did: where we created empathy through personal experiences, they simulated it to experience dementia and old age themselves. By wearing thick gloves, they gained an adequate view of what it is like to be older and have coordination and strength struggles. This could have been an important experience that could've helped us to gather valuable insights and create empathy for our target user.

Team 7 created an extensive empathy map for their persona. Through this extensive empathy map, they created a deeper understanding of people with dementia. This clear overview provides a quick understanding of the problems we were dealing with and the goals that needed to be taken into account. Team seven's design had a very similar foundation as our design concept.

However, they took personalisation much more into account. This will be elaborated upon in the next section.

Finally, team 8 decided to redesign the current product. Therefore, they created a proper visual overview of the current situation and problems, and also guided the audience through their design process, which was clear and easy to understand and thereby really strong. Something that made them stand out was that they focused on the emotional experience, integrated in the redesign of the Aumens switch.

Next steps

One of our feedback points was the available opportunities for personalisation. As mentioned, we appreciated how team 7 approached this need. As their concept is similar to ours, it is interesting to envision how this could be implemented into our design, but also how to alter this. For future design iterations, we would still prioritise coordination, familiarity and strength issues in the development of our concept, but following, personalisation will be taken into account in order to improve our concept.

Secondly, one of the comments in the class discussion was about rounding off the user journey. As we mainly focused on initiating the dance, this was a valid comment. For further steps, we would focus on the dance, as well as, and mostly, on what happens after the dance. We have been brainstorming about the ending of the dance and what it should look like. A clear cut-off ending so that people know the dance therapy is over is one option, or a swift transition of the music into nature sounds for a soothing end is another. Both might create different feelings or emotions; we would like to explore this in a future iteration.

For further development of our design, testing with the vulnerable user group is necessary. As time and resources were limited, it was difficult to gather actual user experiences of the current product, as was testing our new product with the target group for validation and UX

evaluation. Considering the dynamic nature of UX, it would be interesting to conduct momentary evaluation to check the individual aspects of the concept and accumulated evaluation for the whole UX over time. However, with these vulnerable groups, it is difficult to test through questionnaires or interviews, which is why co-creation would be appropriate in the first place to avoid big barriers and, secondly, to observe and interpret users' actions, behaviour and inputs. These would allow us to optimise our design concept, as well as identify pain points.

OTHER CHALLENGES

Challenge 1 – Bol.

In the first challenge, the UX of Bol's customers during different touchpoints, from deciding to choose Bol to receiving the product and customer service, should be improved. Ideas like adjusted AI support or personalised decision profiles aimed to facilitate user website navigation focused on the UX of Bol's interface and its features rather than on a meaningful story, classic UX according to Hassenzahl (2010). Other results offered more control over delivery procedures via individual settings and instructions, and how to improve customer influence and empowerment during the return process.

Generally, the groups did a good job in researching and identifying problems, using mixed perspectives, 1st, 2nd and 3rd person, to avoid bias or misleading designers' assumptions. They also analysed the company's values to ensure the real-world business relation of the challenge, which can be compared and evaluated with the economic paradigms for value creation (Brand & Rocchi, 2011).

Using personas to facilitate empathising during designing for UX is a common tool, but defining their characteristics can be difficult: the teams either described them too general, too extreme or varied in scope, which led to unclear positioning or unrealistic outcomes that are not valuable to use in the user journey or design process. Especially in terms of upscaling, it can change the whole

UX for the general public. It would have been better to research customer behaviour and identify the personas characteristics in a reverse way, supported by the integrated behaviour model (attitude, norms, agency) (Montaño and Kasprzyk, 2008).

Many groups chose personalisation options to consider the individual nature of UX but did not envision downsides of tools like AI, which can raise distrust and does not suit all stakeholders. The same goes for consequences of implementing decision profiles or choice strategies: for instance, if you select maximiser to get the "best" result, does it mean you don't care about sustainability like an eco-seeker? Even though the idea is interesting, a critical mindset or switching perspectives is always useful when designing for UX.

An unclear need or empathy investigation or too many "major points" also make it harder to specify the UX, which affects proper evaluation. It is necessary to consider closing feedback loops that some groups did not do, either via mock-ups, questionnaires or comparison with current alternatives, to iterate UX and understand the influence of holistic factors.

Challenge 3 – Bathbobber

The TSG group's challenge consisted of optimising the UX of a health monitoring device during ice bathing for different user levels and from first interaction to end usage. The teams delivered mostly digital ideas like adjusted apps that focused on guiding new users, providing data insights for experts or facilitating community building, in addition to supporting TSG's physical device.

The groups investigated and identified users' specific needs via mixed perspectives and in relation to the bathbobber usage through well-developed personas and summarised them in basic human needs to upscale the ideas. But, as this is an "extreme" activity, it would have been more valuable to empathise as a novice and try the procedure yourself, e.g. in the shower. This can highlight small nuances that are very valuable in the design process

as you can analyse and understand behaviour, motivation, and attitude in the first-person perspective. Additionally, it could also serve as a kind of evaluation method for the concept as a novice to test security. Nevertheless, strong ideas, the "why" and "what", like dry practice, were discovered by only using the classic empathy methods and tools, which proves their effectiveness and appropriateness.

Furthermore, the aim to create rituals or habits that designers could use to steer and influence user behaviour (Montaño and Kasprzyk, 2008) is a valid reason to continue this „extreme“ practice and keep the motivation up.

Some groups included a social aspect in terms of communities to tackle the basic human need relatedness for exchange and development. In this case it is important to consider the individual aspect of UX, not everyone experiences this the same due to different personal characteristics. Therefore, either a profound user evaluation or critical empathising should be conducted to specify this aspect.

A good way to evaluate UX in a quick way, in relation to the two-week challenge, and to practice understanding is the comparison with benchmarking products or systems and strategically analysing their qualities, holistic factors, and UX. In terms of expert personas that have specific expectations of the provided features and UX, this can help to check if these expectations can be fulfilled and how other products or services tackle these aspects. As it exceeds the first, maybe one time, use of novices, it focused on the dynamic nature of UX, therefore, profound evaluation should not focus on momentary, but more on episodic or accumulated UX evaluation techniques as these build through memory and multiple experiences to check if and how experts can keep the motivation to stick with the Bathbobber system.

GENERAL REFLECTION

Differences between the three challenges

Challenge 1 is to design a unique and personalised user experience for the Dutch e-commerce platform Bol to increase customer loyalty and satisfaction. It needs to be designed through a user journey or service blueprint, combining user preferences with brand identity, and also consider cross-departmental collaboration (such as logistics, customer service, IT) and ethical issues (data collection boundaries). The focus of the design is on data-driven interface optimisation. It treats the user experience as a means of coordinating online and offline touchpoints to achieve the goals of the online experience.

Challenge 2 aims to improve the user process reliability of the dementia dance therapy (Switch2move) device through design. It requires a design that is as intuitive as possible, ensuring safety and entertainment, and is adaptable to different environments (home/institution). The focus of the design is on the emotional appeal of physical interaction. It uses the user experience as a tool to optimise the product experience, rather than as a design basis for redefining the concept.

Challenge 3 aims to optimise the user experience of Bathbobber, covering novices, regular users and experts, to promote safe and scientific health practices. It requires designing the user journey for first-time and regular use, integrating app functions (timing, breathing guidance, community platform), and building a user ecosystem. The focus of its design is on the collaboration between software and hardware and the construction of a community ecosystem. It uses the user experience as an optimisation tool for iterative product function improvement, focusing on multi-device collaboration.

In summary, the three companies that took on the challenge used user experience in different ways, but they all focused on optimisation rather than designing new products. In particular, challenge 1 focused more on connecting online and offline touchpoints and processes, challenge 2 focused more on optimising the product

experience through empathy, and challenge 3 focused on iterating product features.

Relation between literature industry

We can see that they are supported by theory, although there are differences from pure user experience theory. As all three challenges focus on optimisation rather than the construction of new products, we can see that the user journey is a core tool of customer experience management (CEM) in the process, which identifies pain points and optimises the experience by visualising the interaction points between users and brands and products (Lemon & Verhoef, 2016). The user journey can be used as a source of optimisation in all three challenges. This concept is more oriented towards the company's goals than purely the perspective of the target user. At the same time, service blueprinting is a good way to connect user experience design and service design by distinguishing between front-end and back-end processes and coordinating cross-departmental collaboration. In this case, it is more effective than user journeys (Bitner et al., 2008). In addition, the importance of empathy is also demonstrated in challenges. Through immersive user research (such as observation and interviews), you can maximize the capture of users' implicit needs (McDonagh, 2004).

Therefore, literature focuses more on constructing theoretical models of user experience, such as the multi-dimensional concepts of experience perception, emotion and cognition. It emphasises studying experience from the perspective of users' internal emotions, expectations and cognitive load, and is more concerned with whether the product can meet deep-seated human needs. The industry, on the other hand, is concerned with how to quickly enhance user satisfaction in actual use through product design and iteration. This often requires designers, product managers and development teams to achieve efficient user experience improvements within a limited time. In addition, literature often uses rigorous experimental design, quantitative analysis and statistical verification; while industry tends to prefer a combination

of rapid iteration, practical data verification and user research feedback. The combination of the two can make the thinking of user experience designers more complete.

Insights

User experience is very important and is an indispensable part of design optimisation and product iteration. It helps to build user portraits, and user portraits are no longer constructed for target groups, as we once thought, but are based on models of the research groups. This means that for the optimisation of new products rather than design, it may be better to follow the user groups that launched the original product rather than the target group of the original plan, because the audience for the product to be optimised may not be the same as the target group in the original plan. It also made me realise the importance of empathy, which we didn't think was part of user experience. In addition, for user research, implicit needs are more important than verbal expressions, and the focus should be on what users do rather than what they say (Paul, 1993), because users sometimes don't express their true thoughts. They have given us a more comprehensive understanding of user experience.

WEEKLY LOGBOOK

During the challenge week, first of all, we fully exchanged our respective backgrounds, areas of expertise, RDD goals, etc. We met and co-designed every Tuesday at lunchtime and every Thursday morning. Our division of labour was clear, and our cooperation flowed.

After clarifying the theme of the challenge, in order to have a clear understanding of the entire design project and goals, we conducted research on the company's DNA, user journey, and disease types. However, due to time constraints, the research phase may not have been sufficient, and the validity of the conclusions derived from it may not be sufficient.

After summarising the research conclusions, we explored the target population from multiple perspectives and defined a user profile. Limited by the inconvenience of

finding the user population, our research was not comprehensive enough.

We then brainstormed to generate potential design ideas. During the carnival holiday, we developed and transformed the design concepts into sketches and texts, conducted a simple analysis of the functions, advantages and disadvantages of these design concepts, and selected the final solution. We then visualised the previous user journey and user profile, and based on this, derived a new user journey based on the new design concept. Again, due to time constraints, the main part of our design ended with the solution, and we were unable to complete an evaluation of our final design.

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APPENDIX 1
Personas



APPENDIX 2

User Journeys

