

# REDESIGNING THE DYL TOOLKIT: IMPROVING THE COMMUNICATION OF INFORMATION

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This research describes the development process of an instructional video aimed to improve the communication of knowledge to its users from the Design Your Life (DYL) toolkit.



*Figure 1: The contents of the first version of the DYL toolkit prototype.*

The DYL toolkit (Figure 1) is a self-containing design framework composed of a variety of co-design activities aimed at supporting autistic young adults (AYA) and their caregivers in designing assistive technologies that empower the AYA in their daily life. Traditionally, a co-design activity is the creative cooperation between experts and potential users over the span of a design process. An expert is professional in their field, such as a designer. However, an expert can also be considered as an expert on their experiences, like the AYA as a potential end user of the solution. Although, when the end

users have cognitive conditions like autism spectrum disorder (ASD), this can hinder the communication between the designer and end user. Here lies a problem, as the very goal of conducting co-design activities is for designers to empathise with situations that are far removed from them, such as the experiences of an individual with ASD. However, the characteristics of ASD that create the need for co-design in the first place may also inhibit this co-operation.

The DYL toolkit seeks to overcome this pitfall by removing the need for a professional designer and alternatively involving the caregiver in the design process. The idea behind this decision stems from the fact that the caregiver has a pre-existing foundation of trust and empathy with the AYA. Moreover, the caregiver has a greater understanding of the ASD condition as well as the AYA's specific motivations and abilities, which then allows the caregiver to personalise the design approach. With the DYL toolkit, the caregiver must take the role of a facilitator. They must guide the AYA through the various co-design activities, and together develop a solution for the AYA. However, both the caregiver and AYA are not designers by profession which consequently makes undertaking an entire design process a difficult feat. Naturally, the co-design activities must be developed and selected to achieve relevant and meaningful outcomes, although, this will be rendered ineffective if the caregiver did not receive sufficient knowledge, as well as sufficient support to apply their newly gained knowledge in guiding the AYA through the design process.

This project begins with an exploration into the fundamental concepts of a design process and what it entails, as well as the knowledge and skills required to undertake such a process. Following this, an evaluation study was developed to assess to what extent the DYL toolkit is effective in communicating the necessary information and supporting the application of necessary skills to the caregiver. This evaluation was conducted between two groups: one with a design background and without. This was done to distinguish whether any usability issues identified stemmed from the design of the DYL toolkit, or the participants level of expertise in design. The first main finding which was backed by both participant groups was that the communication of necessary information is lacking. The participants all mentioned that the instructions were vague, leading them to be uncertain in terms of how to approach the activity. All participants mentioned that they would benefit from video instructions and a demonstration of the activity beforehand. The second main finding was that the structured nature of the activity was more advantageous to the non-designer group than the designer group. This led to two conclusions. Firstly, the instructions and activity need to be communicated differently. Secondly, the design of the activity sufficiently assists the application of necessary skills for novice designers, as is intended.

From these insights, the decision to offer an instructional video as the solution was made, in consultation with the participants and the involved researcher of the project. This video was developed around two instructional design theories. Merrill’s first principles of instructions (Merrill, 2002) model was used to develop effective content for the video that facilitates learning. Then, the theory of multimedia instruction (Mayer, 2014) was used in developing the design elements of the video to create an effective multimedia learning environment that promotes a deeper sense of learning. Figure 2 shows the various scenes in the video. The video sought to minimize the usability issues identified in the evaluation study, in addition to enhancing the learning process overall.

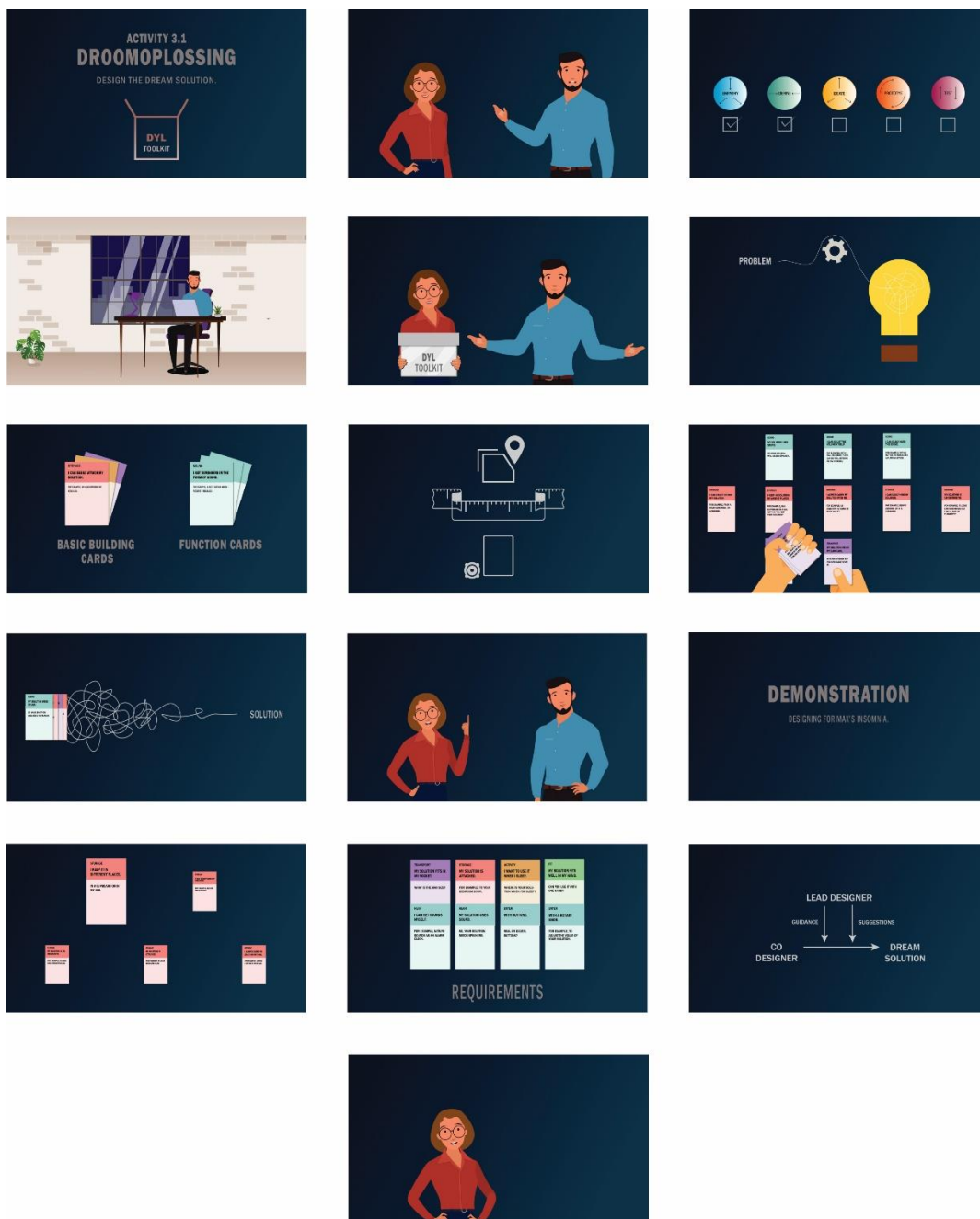


Figure 2: The various scenes in the instructional video solution.

## References

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