

Public Summary

The Humanitarian Engineering program of the University of Twente focuses on using engineering and social science to solve problems in communities with limited resources. Community-Based Learning (ComBL) is an important educational approach in the program, focusing on the application of the knowledge in real-world scenarios.

This thesis aimed to develop an online ComBL tool that can be used independently or alongside the existing CBL tool at the University of Twente. The main focus was to create a tool to assist educational staff in transitioning their educational model to the ComBL approach. This approach emphasizes experiential learning, where students engage directly with communities to tackle real-world problems by applying the knowledge they gained in the classroom.

The research question guiding this thesis was:

How can a tool be designed to assist teachers in transitioning from their current educational approach to a community-based learning approach, and what features should such a tool include to support this process effectively?

To achieve the desired outcomes, a set of objectives was established based on the research question. These objectives included assessing the experimental CBL tool, conducting research to better understand ComBL and how it can be effectively presented, developing and testing a prototype for design and functionality, and refining the final product based on user feedback.

The analysis and research were done to gain insights from stakeholders and understand how they receive new information. Following with the evaluation on how CBL tool presents new information to the educators as well as what educational methodologies teachers apply. This allowed me to understand how to provide constructive advice on the results of the current educational approach used by teachers. Additionally, the design identity of the University of Twente was analyzed to design a tool, to underline the connection between the university and the web service.

After gaining an understanding of what ComBL is and conducting research analysis, a working prototype was created. This prototype represented a functional version of the future tool, allowing users to interact with it and experience how the tool can assist them in transitioning to the ComBL educational approach.

User testing was conducted to gather feedback on the user experience and interaction flow of the web service, as well as to determine whether the tool effectively represents the design identity of the University of Twente. This testing was crucial for assessing the tool's usability and effectiveness.

The feedback obtained from user testing identified flaws, challenges, and areas for improvement in the web service. Even though the first prototype served as a starting point, the intention was to create a tool that would require minimal improvements in the future. However, user testing revealed the opposite. The testing highlighted user preferences for how information is presented to them, with most participants expressing dissatisfaction with the informational overload they experienced. Additionally, the interaction flow of the prototype was unclear, leading to unintended use of the tool and creating misunderstandings about the web service's purpose. This feedback was then used to refine the tool, making adjustments in terms of information presentation, design aesthetics, and interaction flow.

Moreover, prototyping and user testing it allowed to polish and deliver a final version of the web service tool. The tool is intended to function as an introduction to the ComBL approach for teachers and help them by guiding them on how new approaches can be implemented in their teaching practices. The research also provides important features that the tool should have for an effective transition into a new educational approach.