

STORYTILES

Designing with students' perspectives: Engaging students with Academic Heritage through tangible interactions.



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Masther Thesis

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Future Libraries Lab

In collaboration with

TU Delft Library

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PREFACE

If you're reading this, it means I've completed my graduation project. After months of hard work, I'm proud to share the outcomes in this report, which marks the final chapter of my journey as a design student.

A key theme of my project is engaging students with the Academic Heritage collections, which can help foster a deeper connection between students and their institution. Ironically, it was only toward the end of my studies that I discovered more about the place I've studied for the past six years by diving into the archives and collections of the TU Delft. Throughout the design process, I had the opportunity to speak with many students who shared valuable insights into their perspectives on academic heritage, specifically related to past student life. Their input contributed not only to the success of this project but also made me reflect nostalgically on my own experiences as a student at the TU Delft.

This project brought together everything I've learned and enjoyed during my studies. I realized, almost by accident, that each part of this work reflects the skills and interests I've developed over the years. One of my favorite experiences, the Digital Delft Blue project, explored the modernization of Delft Blue ceramics through digitization and automation, a theme I revisited in this project by using Delft Blue tiles in combination with digital technology again. My passion for woodworking and furniture design, pursued alongside my master's degree, also found its way into this project through the

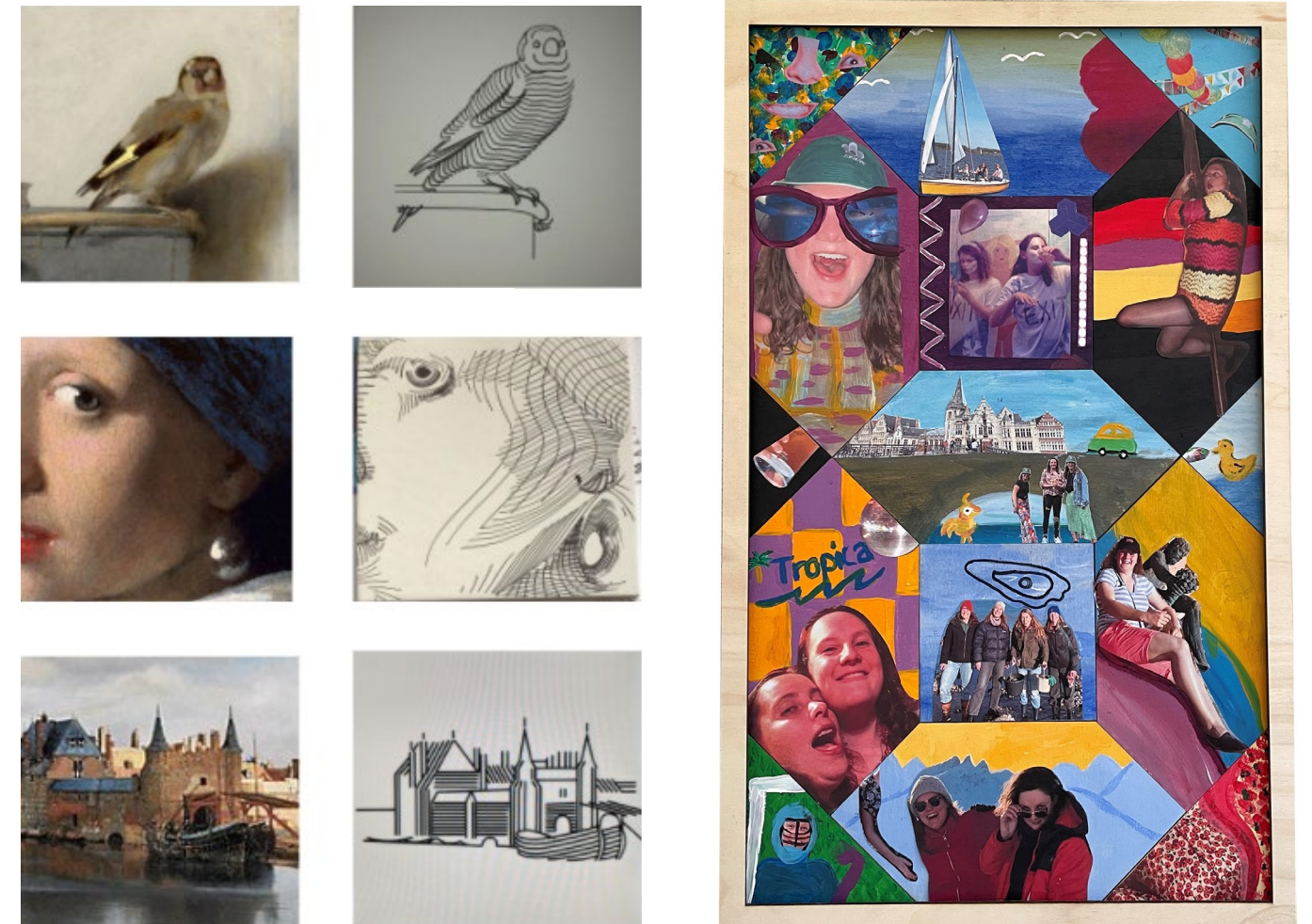
redesign of the current exhibition cabinet into the Storytiles concept, using laser-cut wooden prototypes. Lastly, incorporating the tiles as building blocks for a creative activity reminded me of a previous gift-giving project, where I designed a personal artwork by assembling painted wooden pieces. In many ways, this final project brought together the skills and experiences I've developed throughout my studies.

This thesis would not have been possible without the support of many people. I am especially grateful to my academic supervisors for their guidance, constructive feedback, and encouragement throughout the process. I also want to thank everyone who contributed to my research, including the experts and participants who provided valuable insights. Special thanks to my family, especially my mom, for the brainstorming sessions and help with proofreading. To my friends and boyfriend, thank you for your support. Lastly, a shout-out to Eline, Natanya, and Sophie, who shared this journey with me and offered encouragement along the way.

I hope this thesis inspires and informs you as much as this project has inspired me. I am excited to share the results with you.

Enjoy!

Lieneke



SUMMARY

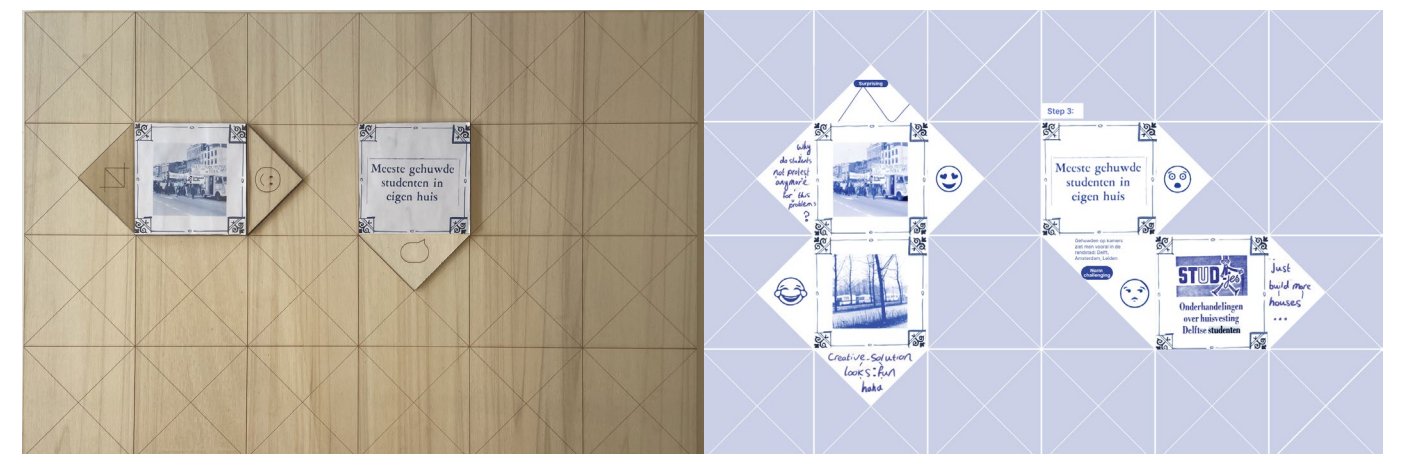
This project, in collaboration with the TU Delft Library, aims to design an interactive experience to engage students with the academic heritage collections, specifically to encourage visits to the Collection Wall. Although the library houses an extensive collection of academic heritage objects, many students are unaware of them due to limited visibility and accessibility, as the collections are stored in the basement. The goal of this project is to address this by creating a playful learning experience with academic heritage, engaging students during a study break to initiate interest in the Collection Wall.

The project's design process followed the Double Diamond method, including the phases of discover, define, develop, and deliver. In the discovery phase, museum studies were explored to understand engagement strategies and the use of digital technology in cultural institutions to inform the design of interactive experiences. A context mapping study revealed students' needs, behaviors, and attitudes toward the current facilities at the TU Delft Library, their study breaks, and the academic heritage collections. Key findings were captured in user personas and storyboards, identifying the "Determined Socializer" persona as the target group. This group seeks a mode-shifting experience characterized by: social engagement (encouraging discussion through the sharing of perspectives), playful interaction (free-choice learning through discovery), energizing activities (intuitive interaction with minimal cognitive load), attractive design (spontaneous and time-flexible engagement in the break area), and hands-on experiences (active engagement through tangible interaction). This target group expressed an interest in academic heritage content related to past student life.

Based on this research, the concept Storytiles was developed for the Exhibition Cabinet, featuring Delft Blue tiles with embedded technology. These tiles allow students to engage images and news articles, specifically provocative content related to past student life. The outcome of the activity is the creation of a digital collage displayed at the Collection Wall. The stencil machine, sourced from the museum collection, was integrated as a smart-related object. By creating a collage of old student news articles and images and turning the handle of the stencil machine, students metaphorically share opinions on ongoing student life topics, sparking relevant discussions.

The design process involved co-creation sessions and several iterations of prototyping. Feedback from these sessions was used to refine the Storytile concept and ensure it delivered the interaction qualities of a mode-shifting experience. The final design was then evaluated through user testing with students at the TU Delft Library, which showed that tangible interaction and provocative content were effective in engaging students with academic heritage during a study break. It also highlighted areas for improvement, such as enhancing the concept's attractiveness for spontaneous interaction in the break environment. Future recommendations should focus on refining these aspects and further developing the showcase at the Collection Wall.

In conclusion, this project demonstrates the potential of using interactive and tangible design interventions to engage students with the academic heritage collections at the TU Delft Library. It contributes to the knowledge on how a participatory approach can incorporate students' perspectives in designing heritage-related experiences.



TERMINOLOGY

This page provides a list of frequently used words and their corresponding abbreviations in this report. These abbreviations will be used throughout the document for clarity and brevity.

Academic heritage (AcH): Refers to the historical and cultural assets related to the academic life and history of an institution. In this report, AcH encompasses artifacts, documents, and other items that reflect the legacy and traditions of the TU Delft.

Cultural heritage (CuH): Refers to the historical and cultural assets of a group or society, with AcH being a subcategory

Collection Wall (CoW): A physical display, formerly known as the iconic book wall at the TU Delft Library, showcasing selected items from the AcH collections. It offers an interactive experience designed to inspire exploration, discovery, and serendipity. This innovative project visualizes and activates both physical and digital collections, fostering new connections and narratives for educational and cultural programming.

TU Delft Library (TUDL): The main library of the Delft University of Technology, which houses extensive collections, including AcH materials. The TUDL is primarily a place for students to study.

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INTRODUCTION

This first chapter introduces the project of designing for the students' perspective on academic heritage (AcH) in connection to the Collection Wall (CoW) at the TU Delft Library (TUDL). It discusses the project's relevance, current challenges, design goal, scope, and main research questions. Additionally, it provides an overview of the AcH collections at the TU Delft Library and concludes with a summary of the project approach and the structure of this report.

PROJECT INTRODUCTION

11

Relevance

An important aspect of being a student is feeling like you belong in your academic and social environment. In this context “belonging” is defined as students' identification with and commitment to their institution (Maunder, 2018). The AcH objects owned by TU Delft allow students to gain a better understanding of the institute's history, research, and education. By engaging students with the AcH collections, a contribution could be made to building a connection between students and their institution.

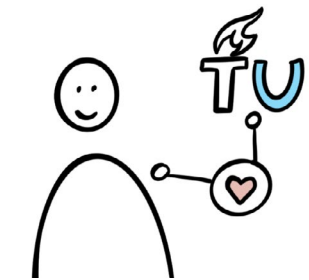
The AcH objects are stored in a depot at the TUDL, with no fixed location for exhibition. When an object is in storage, its accessibility is limited, making it relatively invisible. Due to this, most students are currently unaware of the presence of AcH collections at the TU Delft. While the aim of the special collections is to serve their visitors, including students. (Nijhuis, 2020)

The starting point of this project is to explore how to engage students with the AcH collections. Two approaches are currently pursued by the TU Delft to raise awareness for the AcH collections. The first approach involves physical displays (figure 1), while the second approach focuses on showcasing materials on a digital platform, the “heritage.tudelft.nl” website, offering access to individual objects (Nijhuis, 2020). This project will contribute to the knowledge on how to engage students through physical displays.

Current challenges

What do you think of this? Although researchers and other interested parties frequently discover the heritage collections, this service is currently not clearly communicated to students (Nijhuis, 2020). Many students remain unaware of the existence of these collections, which include the Trésor and the museum collection.

Why is it an important goal to engage students in the AcH collections?



Build a connection

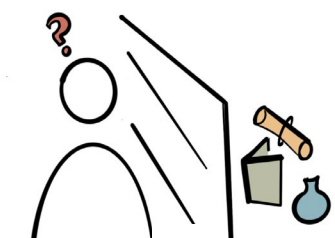


Raise awareness



Figure 1: AcH display at the CoW

What are the current challenges with AcH collections?



Limited visibility and accessibility

A key challenge identified for these Academic Heritage (AcH) collections is the issue of findability and visibility (M. Ruijgrok, personal communication, 9 February 2024). Most of the physical collections are stored in the basement of the TUDL, which makes them largely invisible to visitors. Figure 2 illustrates the depot located in the basement that houses objects from the museum collection. Access to this depot is limited for students, so visitors can only view artifacts upon request.

Context

Several projects are initiated to display the collections visibly in semi-permanent installations in the Library. Of which an important one, the Collection Wall project. The CoW project involves the iconic book wall which is being transformed into an interactive experience, designed to inspire exploration and visualize the physical and digital collections. The emphasis here is on creating the atmosphere of an open depot. (Bodanzky, n.d.)

While the CoW is known for its vast collection of books, a small section of it is dedicated to AcH. A framework has been developed by the heritage team “Exhibition Building Blocks”. Which is currently used to shape the AcH display at the CoW, displaying artifacts in vitrines (figure 1). However this framework is built on the assumption that students are already interested. The challenge remains to enhance visibility of these special collections and a key aspect of this is attracting students’ attention to visit the CoW and engage with the AcH showcased. (A. Bodanzky, personal communication, 1 March, 2024).

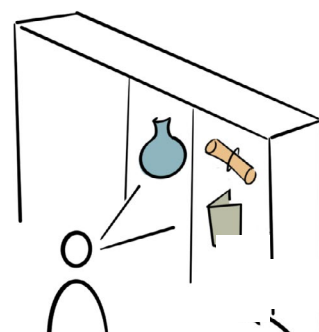
Opportunities and limitations

Every day hundreds of students visit the TU Delft library to study. Taking breaks and relaxation is part of their daily routine to energize and regain focus. However, few students take advantage of their breaks

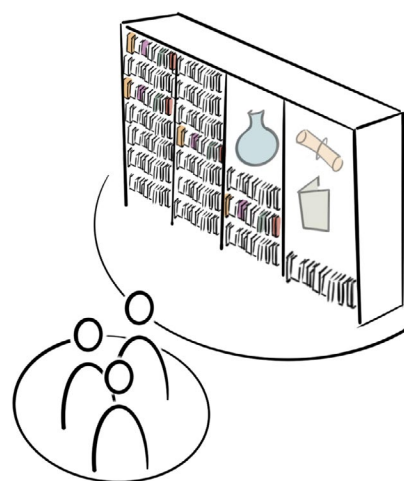


Figure 2: TUDL depot (Nijhuis and Clavel, n.d., Museumcollectie, CC copyrighted)

What is the role of the Collection Wall?



Access point for display



Attract students' attention

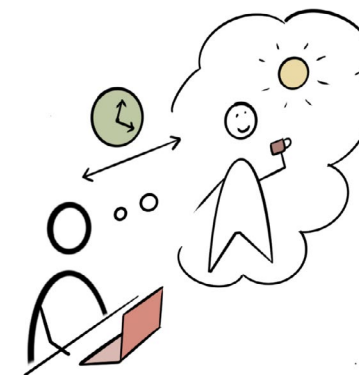
How to initiate interest in the AcH collections displayed at the Collection Wall?

to wander around and discover what the TU Delft library has to offer. Students’ need for distraction during breaks offers opportunities to improve students’ study enjoyment while engaging visitors with the AcH collections. This fits the strategic goals of the TU Delft Library for 2020 to 2024, to be an inspirational learning and working environment. Their action points include developing the library as a knowledge hub to make the physical, digital and special collections including their heritage collections – visible and accessible to their users (Van Wezenbeek, 2020).

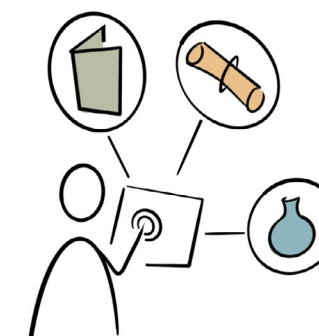
Limitations for this context include the fragility and accessibility of AcH objects. Each object requested for an exhibition requires an assessment of RCE guidelines, making exhibitions costly and time-consuming (Nijhuis, 2020). Many artifacts are sensitive to daylight, dust, and humidity, limiting the possibilities for showcasing physical objects. As a result, the Heritage Team is keen on finding ways to make exhibitions replayable or showcase collections with limited use of physical objects (S. Nijhuis, personal communication, 27 February 2024).

Aim and scope

This project aims to contribute to the knowledge on how to engage students with the TU Delft’s AcH collections during study breaks. focusing on initiating their interest in visiting the CoW. The intended effect is to enable students to learn about the heritage collections in a playful way while enjoying a break from their studies. To achieve this goal, the project will use some form of digital technology to interact with the heritage collections, as it provides the opportunity to enhance people’s understanding and overall experience. Interactive technologies offer a means to engage with heritage without direct access to the actual objects. Helping students enhance their understanding of TU Delft’s AcH while reducing the cognitive load to receive new information. The main



Engage students during their study break



Interactive technology

What is the goal of the project?

Engage students



with the academic heritage collections



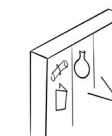
as a break from studying



through a playful learning experience



to initiate interest for the Collection Wall



objective is to design a playful learning experience that encourages students to explore the content of the AcH collections as a break from studying to initiate interest for visiting the collection wall at the TU Delft Library.

The target group for this project is TU Delft students who regularly study at the TUDL. The library serves as a central hub for students from different faculties and disciplines, regardless of their study direction or phase. By targeting all TU Delft students rather than specific subgroups, the project outcome ensures inclusivity and accessibility, including diverse interests and backgrounds represented in the university. The choice to focus solely on TU Delft students is because they directly benefit from engaging with AcH to strengthen

their connection with the TU Delft as an institution.

Radice (2014) provides a framework for a comprehensive understanding of how individuals engage with cultural institutions. This project zooms in on the active experience modes, discovery and interaction (figure 3), as these forms of engagement are most suitable for facilitating informal learning moments. The educational experience: discovery, motivates people by a desire to learn by actively engaging and discovering new information and insights in a fun way. The escapist experience: interaction, involves digital technology to create immersive experiences and interactive elements that transport visitors to different worlds or time periods.

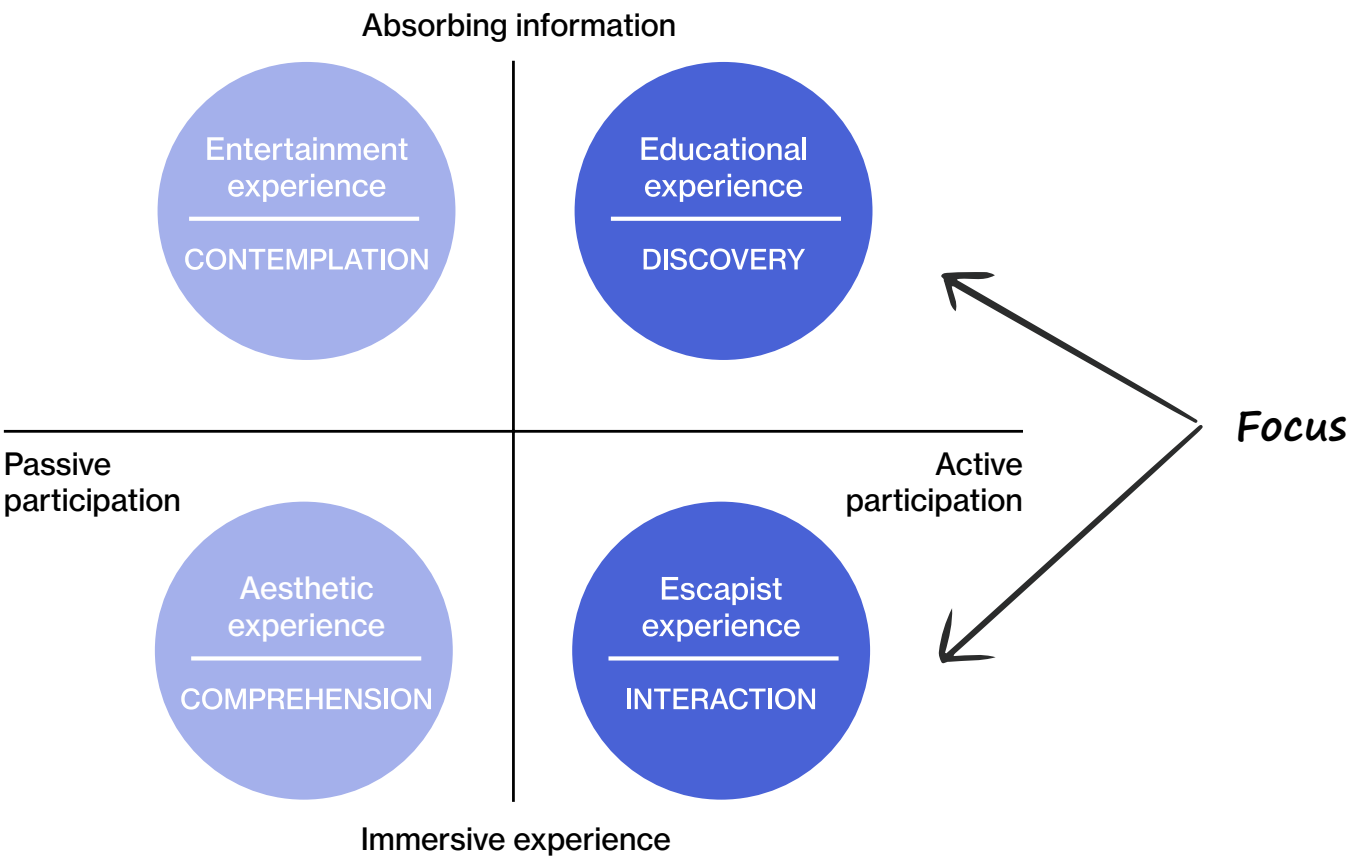


Figure 3: "Framework indicating this project's focus" is adapted from "A framework of how individuals engage with cultural institutions", by (Radice, 2014), used under CC BY

The project started with visits to the TUDL, including the CoW, break facilities, and depot, to gain an initial understanding. Depot visits involved viewing objects from the Museum and Trésor collections, along with interviews with the heritage team to understand the collections and current activities related to their management, exhibitions, and developments.

What is the content of the AcH collections?

AcH refers to the legacy of education and research at the TU Delft, encompassing objects, ideas, concepts, and stories. Figure 4 illustrates the scope of AcH and its link to the collections. A key component of AcH is the "Academic collections," which include the Museum, Trésor, and Faculty collections (Nijhuis, 2020). Since the Museum and Trésor collections are stored in the TUDL depot, they will be the focus of this project.

The Museum collection

The TU Delft Museum collection includes 6,100 objects related to the university's

history, research, or education, which no longer serve a primary purpose. However, not all faculties are equally represented, and many objects have lost their context, including documentation or narratives about their original purpose, historical significance, or cultural background. This loss of knowledge often occurred when faculties dissolved (Nijhuis and Clavel, 2022).

The museum depot was visited, and the digital collections were explored to gain insight into the variety of objects within the museum's collection (TU Delft Academic Heritage, n.d.). A small selection of the museum and Trésor collections was taken as a sample (see figures 5 and 6 on the following pages); these objects are used as sensitizing materials in the context mapping study.

The Trésor collection

The Trésor collection of the TUDL includes valuable, and/or vulnerable books, journals and maps. It consists of a wide range of

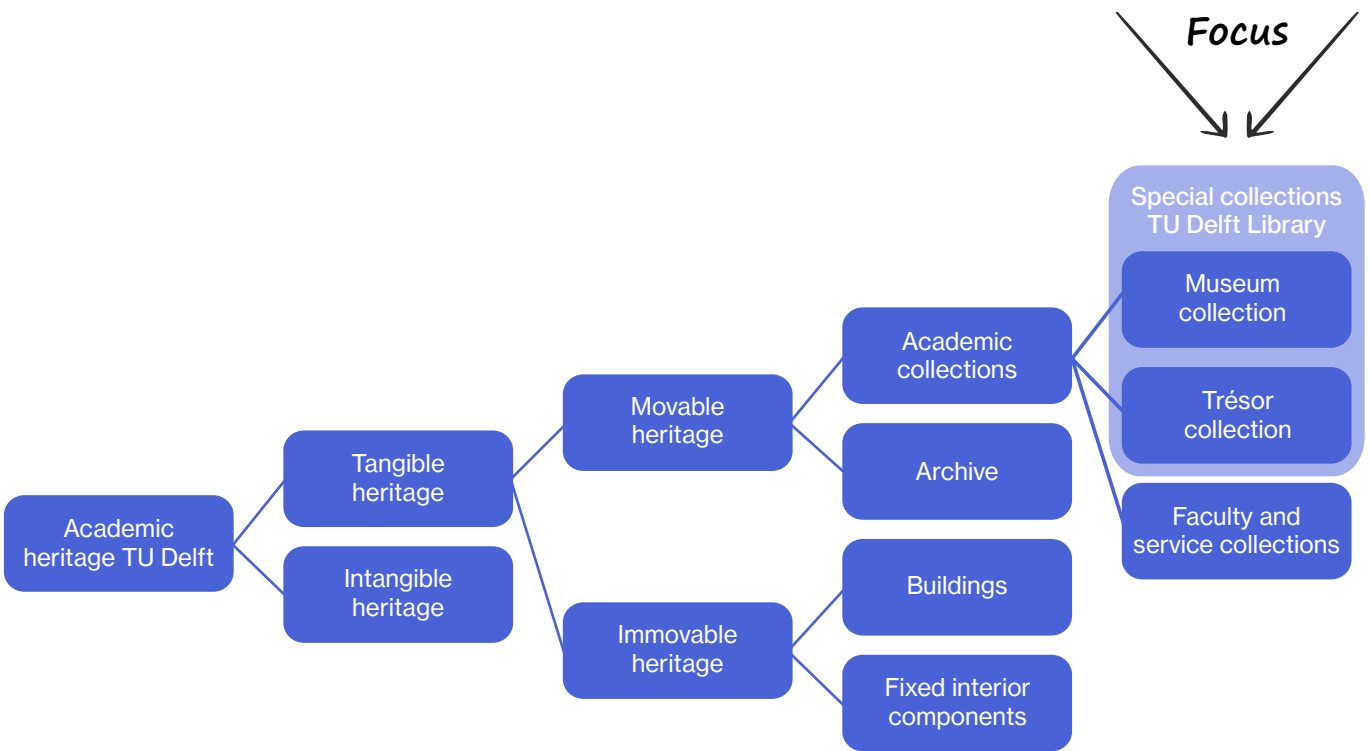


Figure 4: "Overview of collections within TU delft's academic heritage" is adapted from "Museumcollectie TU Delft Library Plan voor Gebruik, Behoud en Ontwikkeling" by (Nijhuis, 2020), used under CC BY



Figure 5: Selection of objects within the Museum collection

rare technical and scientific works. A part of the collection dates back before the TU Delft was founded as an institution. However a wide range of books and prints are connected to the institute's history, research, or education and do belong to the AcH of TU Delft itself. (TU Delft Academic heritage, n.d.)

The depot houses a collection of approximately 60,000 volumes, including news items, university matters, bundles with graduate student names and Almanacs from student associations containing stories about student life beyond university. Additionally, numerous photo albums are

stored within the Trésor collection, offering insights into the TU Delft from the 1870s to the early 20th century. These albums feature images of rectores magnifici, esteemed professors, campus buildings, students, and lecture halls. (Trésor, 2011) A visit to the Trésor depot and the reading room, along with an examination of the digital collections, provided a good understanding of the variety in books and prints. Similarly to the Museum collection, a representation has been made to give an overview of the variety in books and prints included in the Trésor collection relevant to the AcH of the TU Delft (figure 6).

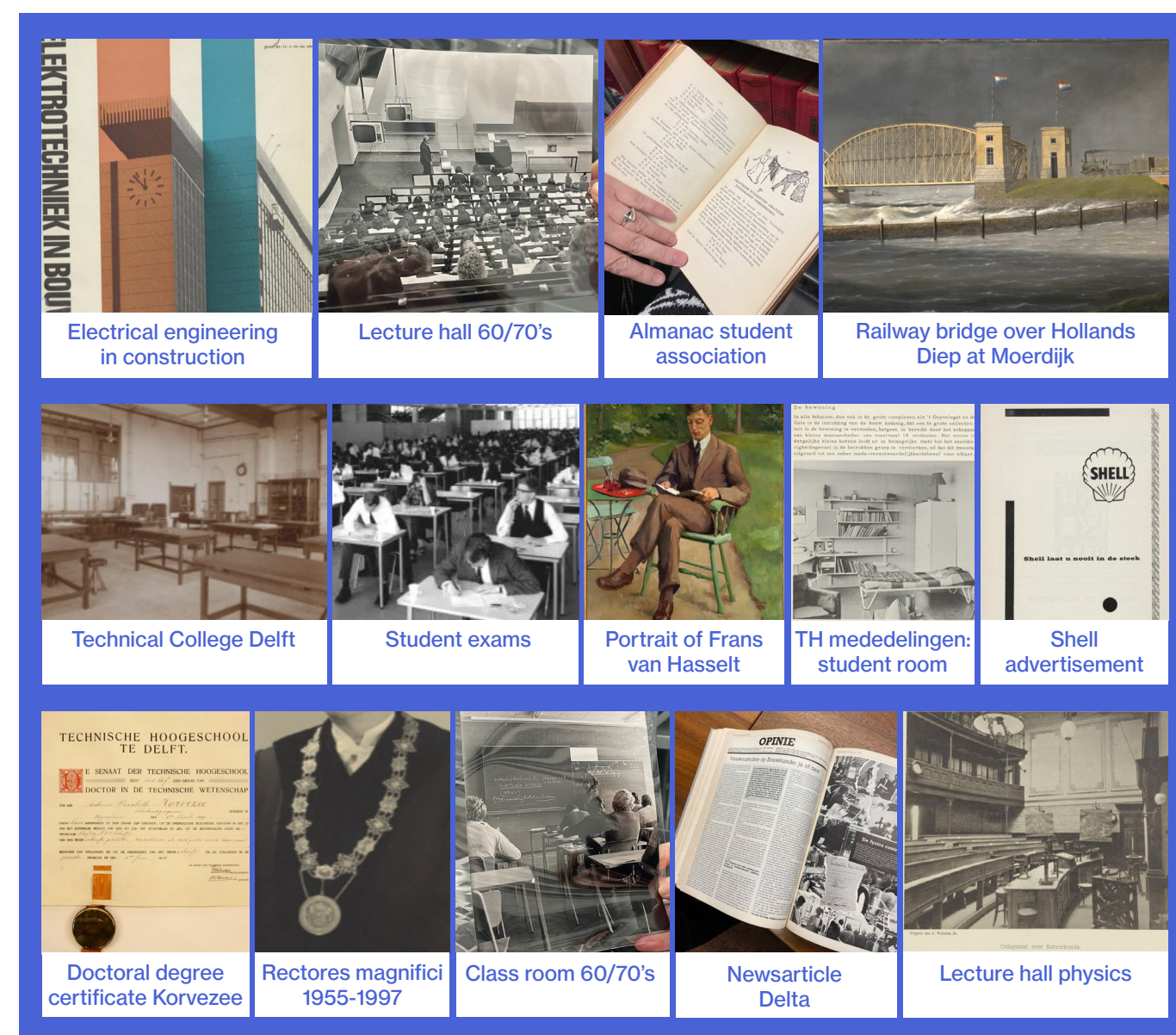
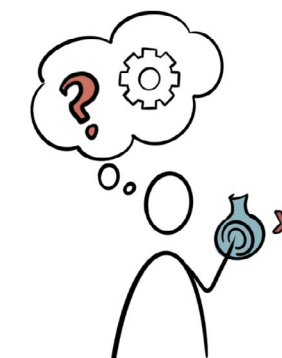


Figure 6: Selection of objects within the Trésor collection

Special collections management

During the depot visits, interviews were held with the curators of the Museum collection and the Trésor collection to gain insight in the current challenges when designing for AcH exhibition. For the Museum Collection, objects cannot be used or touched to preserve their authentic material integrity (Nijhuis, 2020). This presents challenges for some items, as their functionality must be observed to be understood. Exceptions to the "do not touch" policy are allowed if the information is carefully preserved, often through filming the object's use, which offers high documentation and presentation value.

What are the current challenges in designing AcH exhibitions?



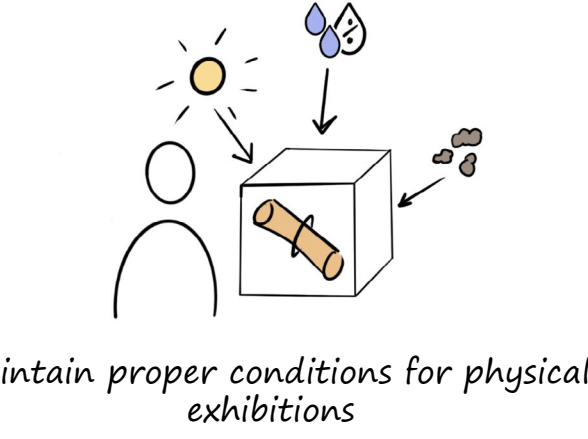
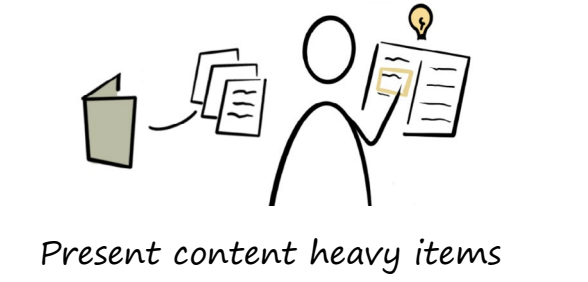
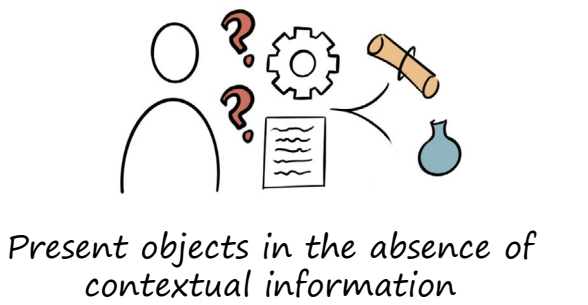
Present the workings of an instrument

Another challenge encompasses relatively unknown objects from the Museum collection. Many of these objects have lost their original context. When contextual information is missing, storytelling becomes difficult, making these objects less engaging and interesting to use in an exhibition (S. Nijhuis, personal communication, 27 February 2024).

For the Trésor collection, the situation contrasts with that of the museum collection. Books and prints can be very information-dense, making it challenging to convey all the information during a display. The challenge, therefore, is to present content-rich items in a way that makes them interesting and engaging, even within a limited time.

A key goal for the heritage team is to digitize all materials from the special collections. The TUDL started digitizing historical documents years ago, and the TU Delft Heritage website provides access to these collections with extensive information. The exhibitions section was designed as a digital counterpart to the physical exhibition system, allowing for flexible presentation in various contexts. However, fully leveraging digital platforms to present this information effectively is still a work in progress.(J. Schoonman, personal communication, 22 January, 2024).

Originals are stored in the Library's depot under ideal conditions, with the Trésor collection kept at 18°C and consistent humidity. When planning exhibitions, factors like daylight UV and dust must be considered, especially since paper, a key material in the Trésor collection, is sensitive to environmental conditions. Books and prints from the Trésor collection can be requested for viewing in a separate reading room on Fridays only. A depot visit must also be requested and accompanied by a staff member or curator (M. Ruijgrok, personal communication, 9 February, 2024).



PROJECT APPROACH

Figure 7 provides an overview of the project brief schematically. The “who, what, where, when, why, and how” checklist is used to analyze the design problem (Van Boeijen et al., 2013, p. 125). This checklist highlights the project’s context, target group, design opportunities, stakeholders,

and current challenges. The goal is to clarify the project structure and define the initial design problem. The “what?” and “why?” are phrased as questions because they highlight the design opportunities and will therefore be the focus of research and design activities.

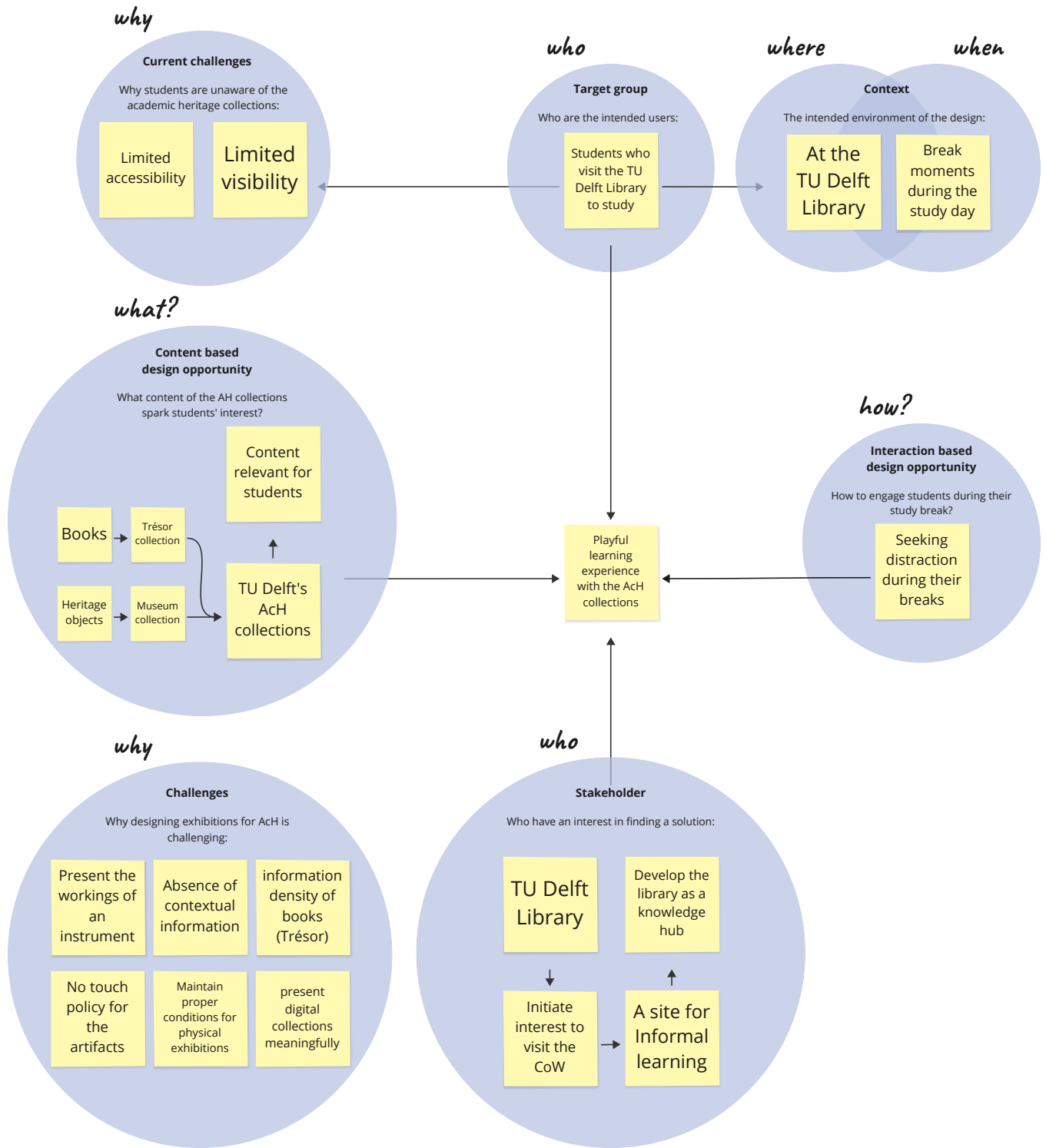


Figure 7: Schematic overview of the project outlining the main themes

General approach

The project approach is the Double Diamond method, a design thinking framework that helps guide the design process through divergent and convergent thinking stages. It consists of four phases: discovering the problem, defining how to address it, developing the design through the ideation of solutions, and in the final phase, delivering and validating the design (The Fountain Institute, n.d.). During the divergent phases, discovery and development, the focus is on exploring a wide range of ideas, possibilities, and solutions to expand the design space.

In the convergent phases, define and deliver, the emphasis shifts to generating insights, scope down the possibilities to identify a design direction and possible solutions. This project adopts the Double Diamond method to structure its main design activities. The following section summarizes the activities and outcomes of the four phases for this project, figure 8 provides an overview.

Phase A: discover

Discover related work

A review of previous literature formed the basis for how to engage students using

museum visitor strategies, digital technologies for cultural heritage, and informal learning methods. The review covered research in user engagement, heritage and museum studies, learning theory, and design. This phase offered insights to guide the project, establish baseline knowledge, and address research questions.

Discover the context

A context mapping study has been conducted with the aim to gain insights into student’s behaviours, needs and desires

related to their study breaks, as well as their experiences with the current facilities at the TUDL and their interests in the content of the Ach collections.

Phase B: Define

Define the design space

The main findings from phase A were communicated through three need-based user personas, representing the target group. These personas informed a revised design goal and helped generate initial concept directions, which were illustrated in three storyboards. The storyboards were

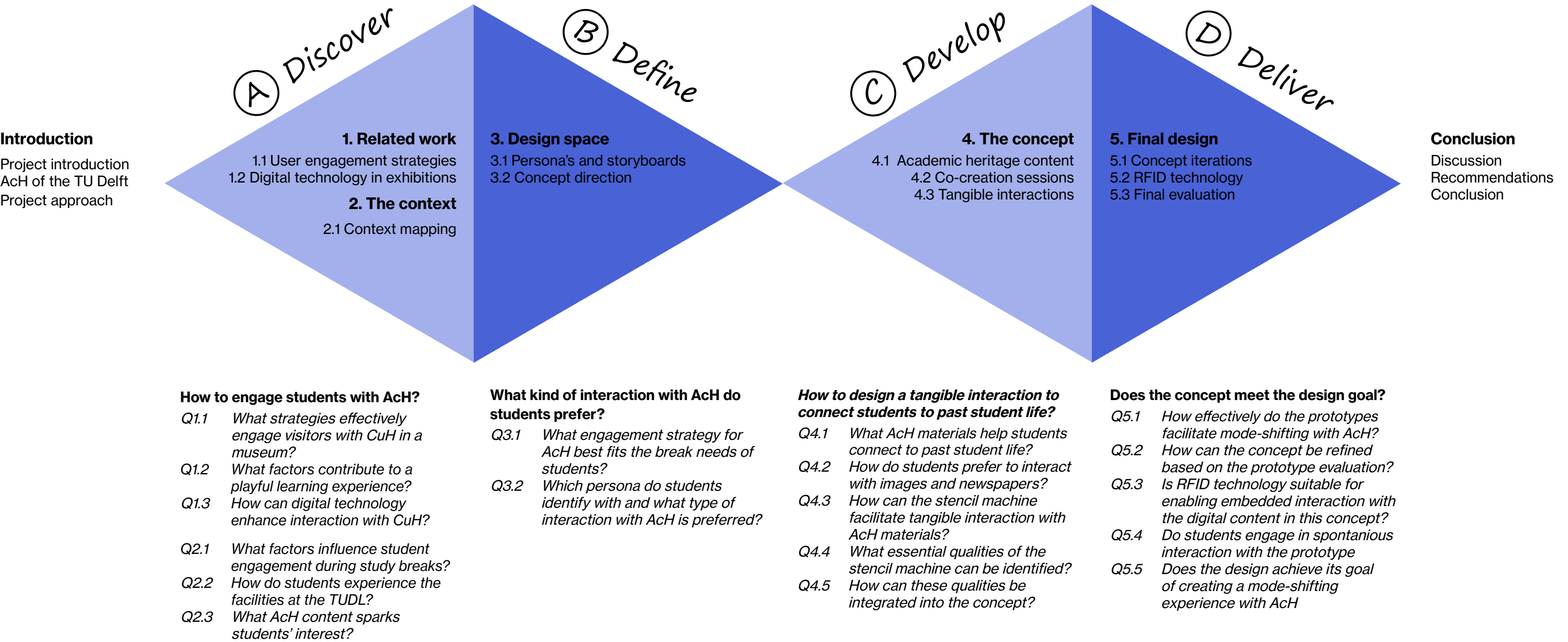


Figure 8: Project overview using the Double Diamond design approach

used to communicate and evaluate these concept directions with the target group, gathering insights into how students prefer to interact with AcH during their study breaks. Feedback from participants and the client helped define the final concept direction.

Phase C: Develop

Develop the concept

This phase focused on refining the concept of AcH as a social activity by using content from the AcH collections to help students connect with past student life. The concept was developed through a deep dive in the collections, identifying relevant AcH materials. Two co-creation sessions were held to explore which materials capture students' attention and how the user group prefers to interact with them. The concept was further detailed by linking research insights on tangible interactions and translating affective, performative, interpretive, and sensory qualities of the stencil machine into design specifications. This chapter demonstrates how key research insights informed the development of the concept.

Phase D: Deliver

Deliver the final design

The Deliver Phase focused on developing the final design through iterative prototyping. This chapter presents and evaluates the design outcomes, highlighting insights gained from prototyping and testing. An evaluation plan was created to assess the desired interactions, which informed improvements to the concept. The final concept is detailed through design requirements, a storyboard of intended interactions, and the final prototype. The design was evaluated with real users at the TU Delft Library to assess if the design goal is met. This phase concludes with a discussion of the project's outcomes and recommendations for future work.

1. DISCOVER

Related work

This chapter addresses the question:

How to engage students with AcH?

This is done by exploring related work through a literature review. The findings connect user engagement strategies in cultural institutions with heritage and museum studies, providing insights on how to engage users with cultural heritage using digital technologies to design interactive museum experiences. The goal of this chapter is to discover a wide range of user engagement strategies suitable for creating playful learning moments with AcH at the TUDL.

Heritage value

This section will discuss the engagement strategies for heritage objects. The starting point for engaging students is to determine which heritage objects are valuable to them. Therefore, commonly used criteria for defining the value of heritage objects are identified. Cultural heritage objects are evaluated based on societal, cultural-historical, and functional values (Rijksdienst Cultureel Erfgoed, 2013). The values identified in the literature relate to the project's context of engaging students with the AcH collections of the TU Delft Library, as detailed in the following section.

Societal value

This value relates to the current meaning of objects and collections, rather than their historical significance. It is assessed by evaluating the object's present-day significance for a group using experiential criteria. This involves considering the object's ability to evoke sensory sensations, emotions, and memories among observers.

Functional value

This value relates to the function and use of objects and collections within a cultural institution. It is assessed based on museal criteria, examining the object's role in exhibitions, education, and research, as well as its impact on the organization's reputation.

Cultural-historical value

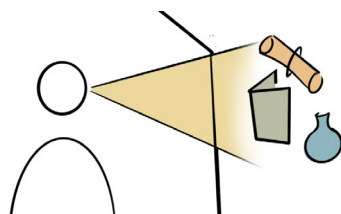
This value considers the object's association with important people, events, or periods, and its contribution to understanding history. It is determined using informative criteria, which assess the object's value for study and research, including its informational content and evidence for processes or discoveries.

For the value assessment of heritage objects by cultural institutions, the Collection Management Triangle (CMT) is used

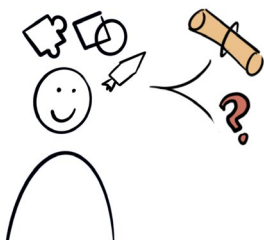
Q1.1 What strategies effectively engage visitors with cultural heritage in a museum?



Define significant or emotionally evocative objects for students.



Facilitate objects' use in exhibitions



Define objects that help connect students to the institute's history

(figure 9). This tool includes three main categories of activities: use, preservation, and development (Rijksdienst Cultureel Erfgoed, 2013). In this project, the focus is on the use and development of AcH objects. 'Using' them involves displaying them in exhibitions at the TUDL, thereby increasing their functional value. 'Development' includes gathering more knowledge about these objects and presenting them in ways that engage students, enhancing their societal and cultural-historical value.

Participatory approaches

In the past, only experts like curators determined heritage value. Now, institutions increasingly involve groups and individuals in documenting their own culture and history (figure 10). Cultural heritage participation involves various activities, including decision-making in the definition, selection, preservation, interpretation, and presentation of heritage to engage visitors (Mäkinen, 2020).

Currently, it is unknown which objects from the AcH collections are significant or emotionally evocative for students. Additionally, the objects often lack contextual information, making storytelling challenging. Participatory practices can support development by enabling individuals to contribute to the knowledge production.

Radice (2014) studied visitor involvement in cultural projects to improve visitor experiences. The framework supports designers in selecting participatory methods for heritage activities to enhance visitor involvement. Figure 11 visualizes the participatory design approach for this project based on Radice's framework. This project will use participatory design methods like Context Mapping and Co-Creative sessions to involve the target group, students, directly in the design process.

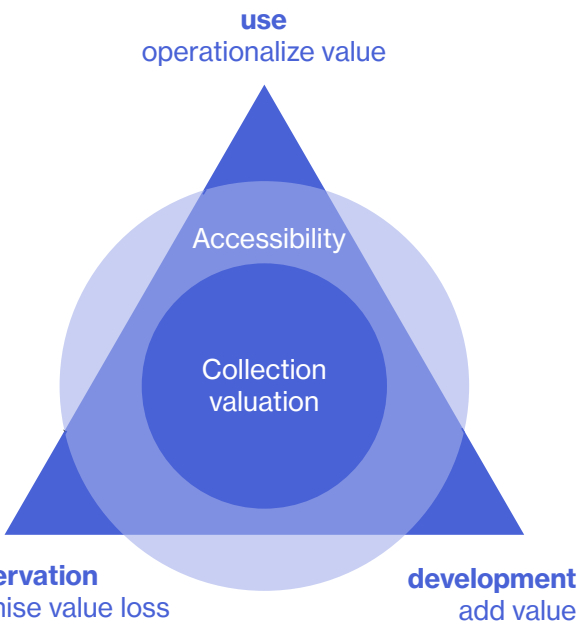


Figure 9: "CMT" is adapted from "Op de museale weegschaal" by (Rijksdienst Cultureel Erfgoed, 2013), used under CC BY

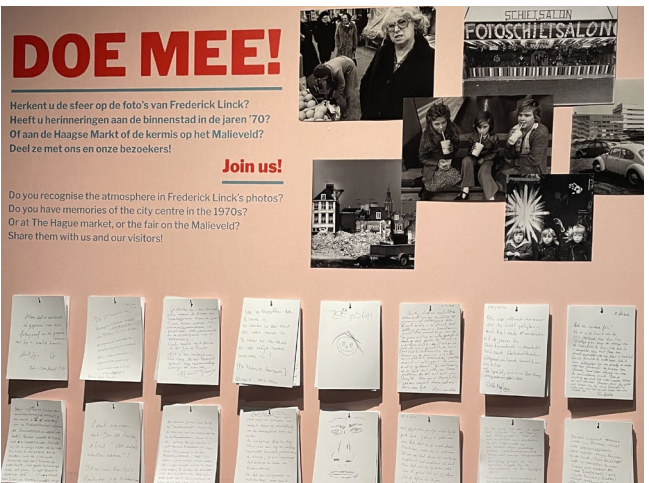
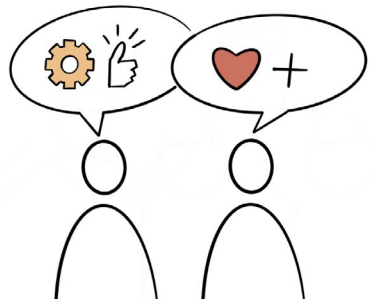


Figure 10: Haags Historisch museum asking to document personal history



Incorporate participatory practices

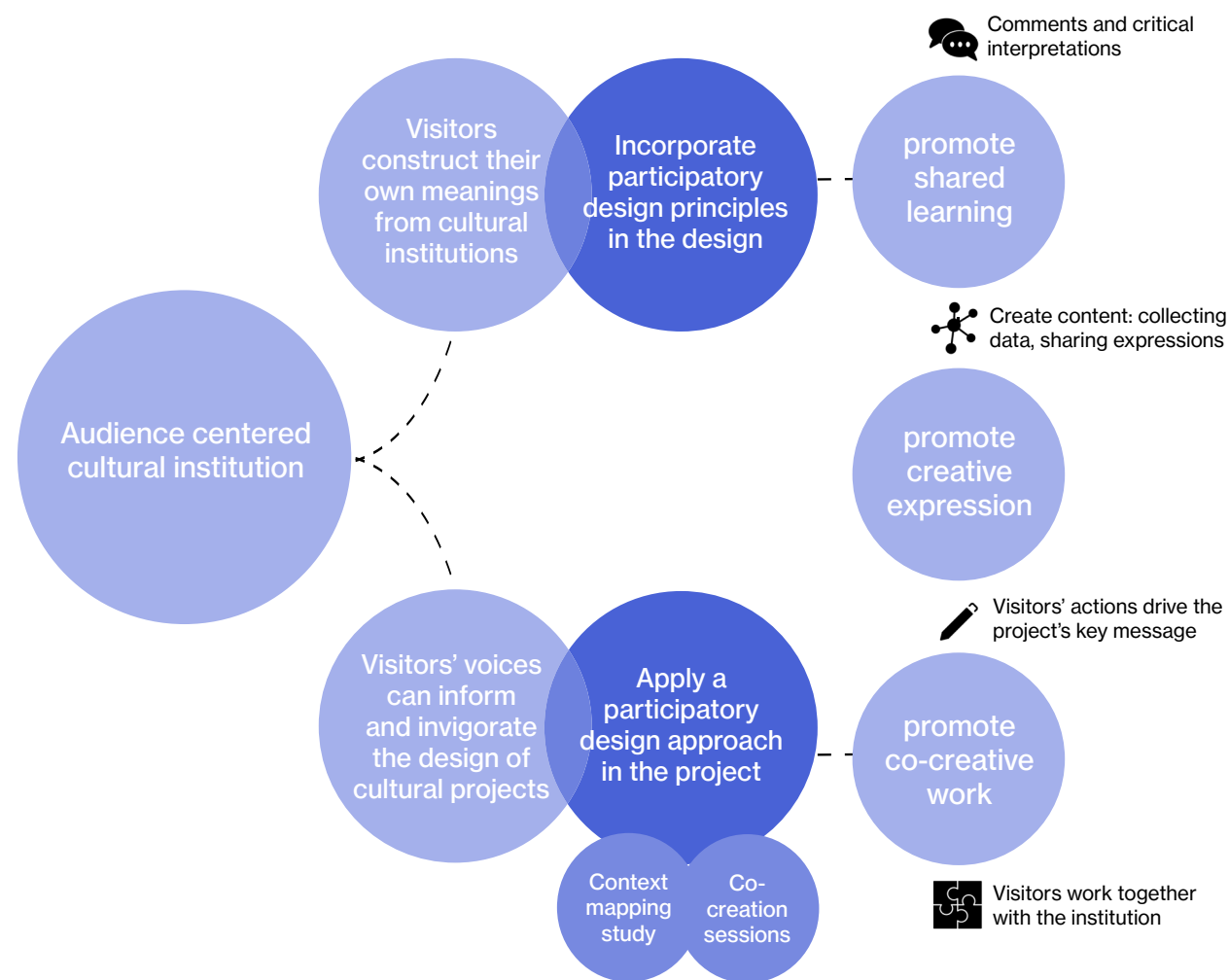


Figure 11: "Project's participatory design approach" is adapted from "Designing for participation within CuH" by (Radice, 2014) , used under CC BY

Visitors-museum interaction

Designing museum experiences requires understanding visitor characteristics, motivations, and the physical and social context of the museum environment. While the principles discussed apply to traditional museums, they are also relevant to other cultural institutions, such as the TUDL.

Different types of museums present distinct experiences (figures 12 and 13). Science museums are known for their interactive exhibits and lively, vibrant environments that encourage hands-on exploration, where visitors expect to touch and engage with the displays. In contrast, art museums take a more reserved approach, encouraging visitors to view artworks from a distance and avoid touching them, promoting silent

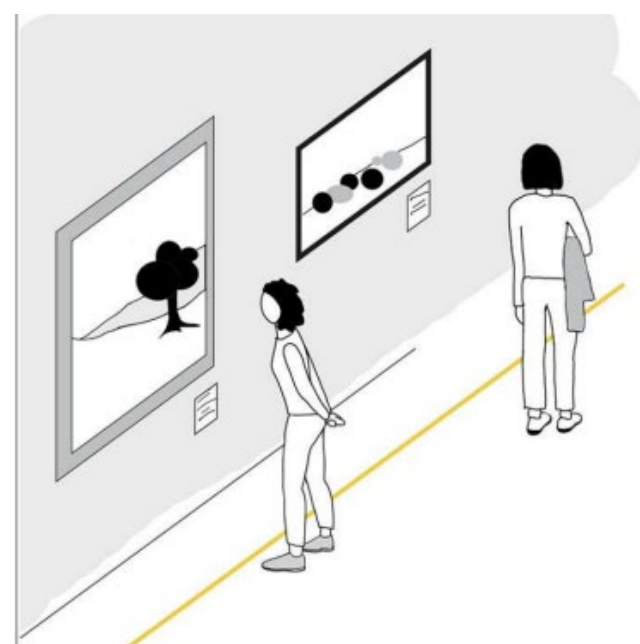


Figure 12: "Art museums" from "Human-Computer Interactions in Museums" by (Hornecker and Ciolfi, 2019), used under CC BY

contemplation. Natural history museums find a middle ground by showcasing historical artifacts alongside interactive elements like operational machinery or replicas. They use a combination of textual, visual, and audio materials to engage visitors emotionally and convey deeper ideas and values (Hornecker and Ciolfi, 2019).

Although TU Delft is a science and technology institution, the TUDL's study environment does not align with the bustling activity typical of science museums. Additionally, its focus on Ach objects with a "no-touch" policy makes the natural history museum approach more appropriate for this context (figure 14).



Figure 13: "Science museum" from "Human-Computer Interactions in Museums" by (Hornecker and Ciolfi, 2019), used under CC BY

Artifacts and Interactive display	Interactive exhibition	Traditional display
Show the workings and convey ideas	Touch and manipulate objects	Contemplate and appreciate artworks
Learn through emotional involvement	Understand through hands-on exploration	View from a moderate distance
(Natural) history museums	Science & technology museums	Art museums
Mixed style	Hands-on style	Reserved style
Artifacts often showcased in glass vitrines alongside interactive displays	Vibrant colours, no barriers around the exhibit. Lively, noisy and bustling environment	Artwork is delicate, careful movements and no touching. The environment is silent
Appropriate		Unappropriate

Figure 14: "Different types of museums with corresponding interaction styles" is adapted from "Human-Computer Interactions in Museums" by (Hornecker and Ciolfi, 2019), used under CC BY

Visitors-content interaction

Research on visitor interaction with interactive technologies in museums shows that ease of use and interactivity impact emotional responses and cognitive engagement, which in turn affect learning (Pallud, 2017). This is particularly relevant for study breaks, as students seeking distractions can be engaged through a mix of education and entertainment. The Attention Value model (Bitgood, 2013) explains that visitors are more likely to engage if they perceive high value in the exhibition. They weigh the effort needed, like reading labels, against the perceived benefits. Simplifying interaction or reducing cognitive effort can make exhibits more appealing, especially for students using breaks to recharge.

Social interactions among visitors play a crucial role in learning at exhibits. Learning is often enhanced through group discussions, as conversation helps individuals construct and elaborate on meaning. Thus, incorporating dialogue into exhibit design is an effective strategy to facilitate the learning process.

Free-choice learning

Falk and Dierking (2013) note that museum visitors engage in “free-choice learning,” where they learn at their own pace and based on their interests, unlike traditional education. This self-directed approach fosters playful learning moments with AcH by emphasizing curiosity and personal preferences, suggesting that museum experiences should adapt to individual interests. Perry’s Selinda model (2012) further indicates that understanding visitors’ different motivators can help shape these free-choice learning moments:

1. Communication or exchange of ideas
2. Curiosity to be raised and satisfied
3. To feel confident
4. To challenge oneself
5. To feel in charge and in control
6. Play

Q1.2 What factors contribute to a playful learning experience?



Minimize cognitive effort to learn through interactive technology



Facilitate learning through social interaction



Identify key motivators for students' free-choice learning

Pekarik et al. (1999) describes different types of satisfying experiences that drive museum visitors. Visitors often prefer a mix of ideas, objects, or people, combined with sensory or physical engagement. The four types of satisfying experiences are:

1. Object experiences: seeing or interacting with rare or beautiful objects
2. Cognitive experiences: learning or understanding something new
3. Introspective experiences: imagining other places and times, or feeling a connection
4. Social experiences: spending time with others



Identify preferred type of satisfying experience for students

Modern museum experiences increasingly engage the public through digital technologies. To effectively involve visitors, interactive installations must clearly convey how to interact with exhibits, using systems like tangible interactions, multisensory interactions, and extended reality. Museums now emphasize experiential engagement that incorporates visitor input, appeals to multiple senses, and fosters collaboration (Vermeeren et al., 2018).

Interactive exhibitions

This section reviews literature on interactive installations, including standalone, mobile, and assembly types (figure 15). The highlighted image indicates the chosen option for this project. In museum exhibit design, mobile installations, assemblies and standalone installations offer dynamic ways to engage visitors. Mobile installations use devices like smartphones or tablets to provide multimedia content across multiple locations, but they can lead to social isolation and distract from physical exhibits. Assemblies link interactive elements throughout an exhibition to create a comprehensive story, which is useful for complex collections but requires significant time and resources to manage.

Standalone installation

Given the complexity and resource demands of assemblies and the potential drawbacks of mobile installations, this project focuses on designing a standalone installation. Standalone installations provide dedicated interactive areas within an exhibition, integrating digital content with physical displays. These installations are more manageable within the project's constraints and align with the break needs of students (section 3.1 Context mapping findings), since it better support the social engagement students seek during breaks, without overwhelming them with screen-based content.

Q1.3 How can digital technology enhance interaction with cultural heritage?

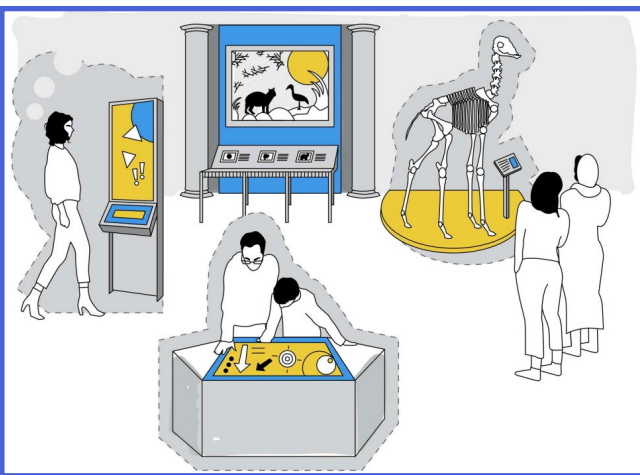
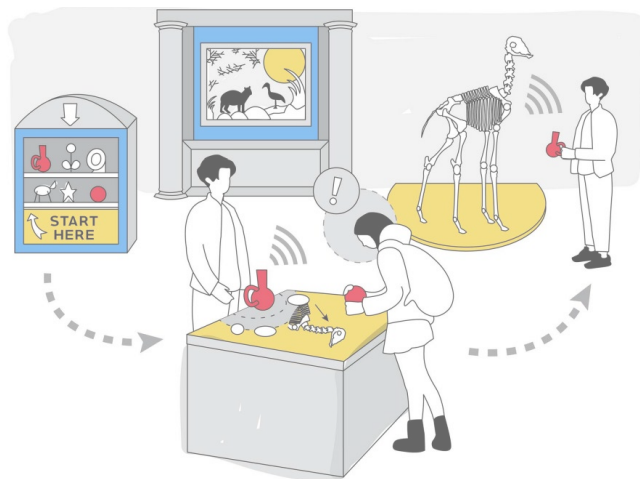
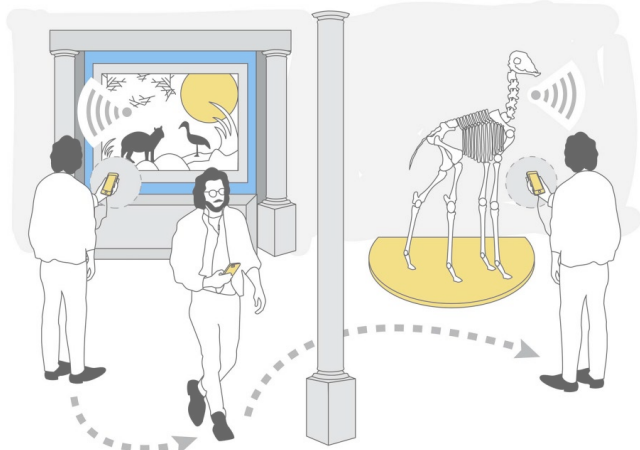


Figure 15: "Comparison of mobile (top), assembly (middle), and standalone installations (bottom)" from "Human-Computer Interactions in Museums" by (Hornecker and Ciolfi, 2019), used under CC BY

Types of interactions

Conservation and use clash. The policy of the TUDL is that the objects cannot be used anymore. However, the importance of physical engagement with heritage has been emphasized in various museum studies. Technology offers the opportunity for engagement with digital collections without using the actual object. Technology can be used in various ways to create interactive devices for engaging with heritage, which can be combined to create an interactive exhibition. This section explains different types of interactions according to three main categories: tangible and embodied interactions (TEI), extended reality (XR), and Multisensory interactions (MSI) (Hornecker and Ciolfi, 2019). These interaction paradigms seem distinct but will likely merge in the future. The highlighted image shows the chosen option for this project.

Extended Reality

Extended reality (XR) technologies include virtual reality (VR), augmented reality (AR), and mixed reality (MR). These technologies offer advanced ways to blend physical exhibitions with digital content, enhancing visitor engagement. VR creates fully artificial environments for immersive experiences, particularly useful for historical reconstructions, but can isolate users and require significant resources. AR overlays digital information onto the real world, enabling interaction with both physical and digital elements through mobile devices or projections. MR combines real and virtual elements in real time, providing dynamic interactions, though it requires a more complex setup. XR technologies present a range of possibilities for integrating digital and physical experiences in museum environments (figure 16).

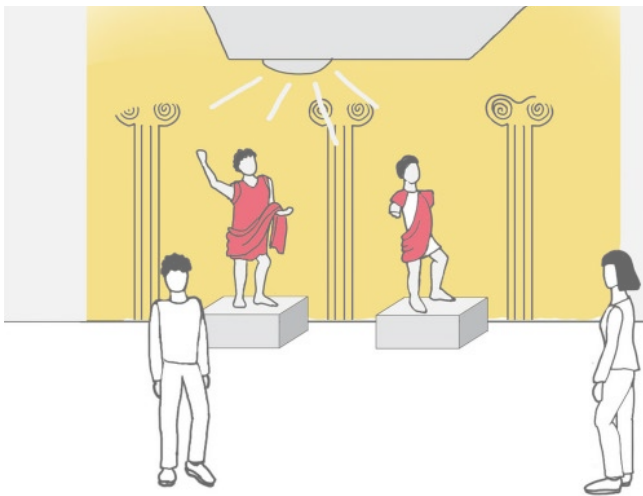
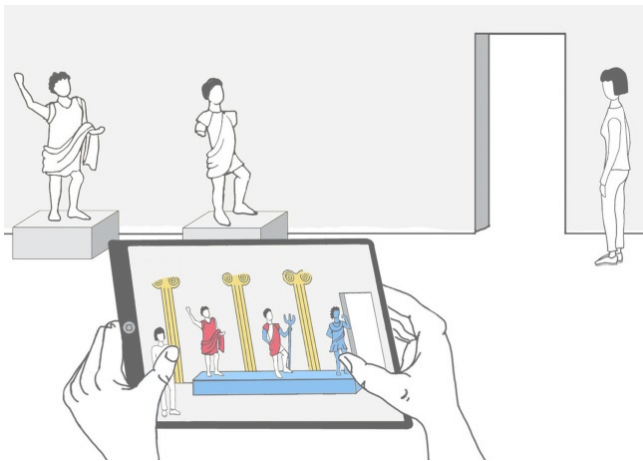
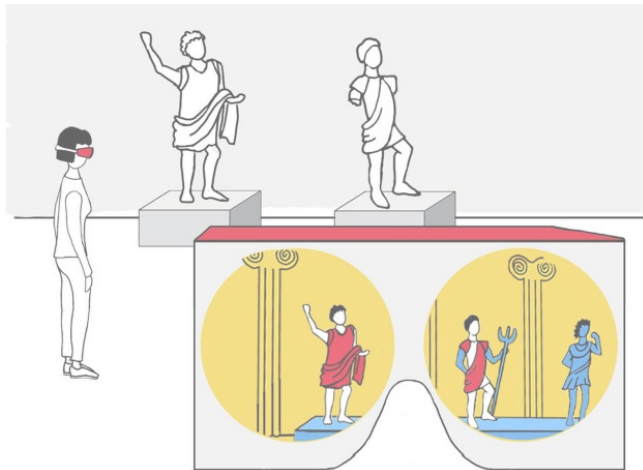


Figure 16: "XR technologies: VR (top), mobile AR (middle), projected AR (bottom)" from "Human-Computer Interactions in Museums" by (Hornecker and Ciolfi, 2019), used under CC BY

Multisensory Interactions

Museum designs often prioritize visual experiences, neglecting other senses. Research indicates that visitors engage primarily through touch, smell, and listening. Multisensory interactions not only consists of audio or visual stimuli, but involves also other senses. While touch is typically restricted in museums, advancements in 3D scanning and printing allow for the creation of replicas, offering tactile experiences. Sound is often used to enhance exhibits (i.e. audio tours), but there's potential in exploring other senses to enhance exhibition experiences (figure 17).

Tangible Interactions

Tangible interactions involve engaging with physical objects to interact with digital systems, going beyond simple touchscreens or buttons (Hornecker and Buur, 2006). This approach uses materiality to create immersive, memorable experiences, adding physical aspects to intangible values like cultural heritage. Two key strategies are “embedding meaning” and “embodying meaning” (Duranti, 2016).

Embedded Interactions: This strategy integrates sensors and ID tags into physical objects to communicate intangible values. Examples include interactive tables with tokenized objects or 3D models of artifacts visitors can handle, potentially creating a sense of “history” or memento from their interactions.

Embodied Interactions: This approach integrates meaning into physical gestures, allowing visitors to engage through their actions. It involves tracking movements, postures, or gestures to evoke emotions, empathy, or understanding of certain behaviors. Both strategies emphasize physical and bodily engagement, making digital experiences more tangible (figure 18).



Figure 17: “Multisensory interactions” from “Human-Computer Interactions in Museums” by (Hornecker and Ciolfi, 2019), used under CC BY

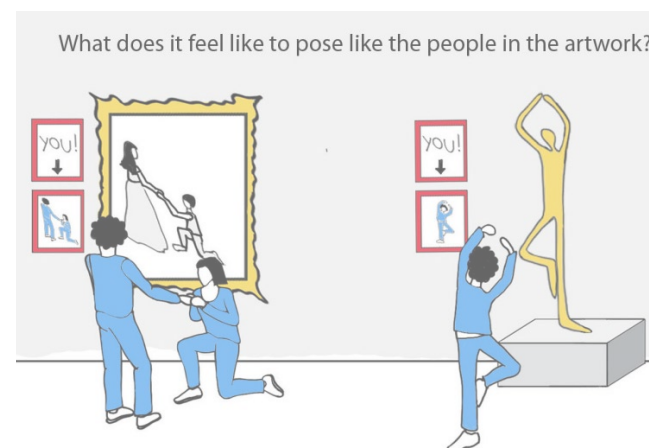
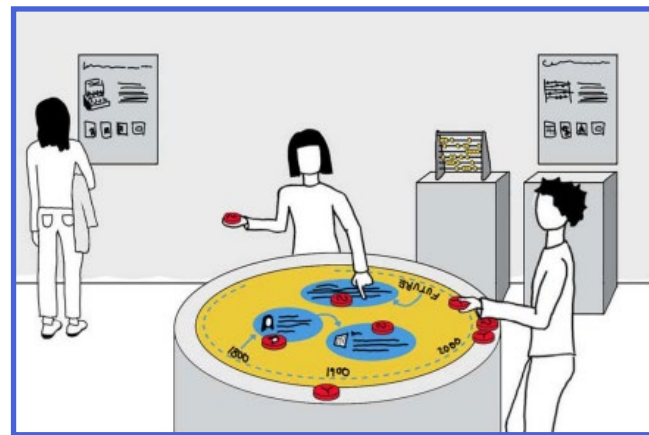


Figure 18: “Tangible interactions: embedded (middle), embodied (bottom)” from “Human-Computer Interactions in Museums” by (Hornecker and Ciolfi, 2019), used under CC BY

Based on the needs identified in the context mapping research (see section 3.1), this project focuses on tangible interactions, specifically embedded interactions. XR technologies are less suitable due to their social isolation and high resource needs, while multisensory interactions, though engaging, might be distracting in a study environment. Tangible interactions, emphasizing physical manipulation, align with students’ needs for a playful, hands-on break that supports social interaction, as described in section 3.3. Embedded interactions use sensorized objects for meaningful engagement without making students feel watched or uncomfortable, as bodily movements in embodied interactions might cause in a study environment.



Use embedded interactions to enhance engagement with Ach.

This chapter addresses the question:
How to engage students with Ach?

To answer this, the context is explored using participatory practices to uncover student preferences. The aim is to inform the design of Ach projects through a context mapping study that reveals the needs and interests of the target group. This study provides insights into students' needs during study breaks and their attitudes toward Ach. It also evaluates their current experiences with the facilities at the TUDL. Ultimately, this qualitative user study seeks to discover effective ways to engage students with Ach during study breaks.

2.1 CONTEXT MAPPING

A better understanding of the design context is gained through a qualitative user study aimed at answering the following research questions: What factors influence student engagement during study breaks, how do students currently experience the facilities at the TU Delft Library, and what content of the Ach collections sparks student interest. The Context Mapping method is used to explore the needs, desires, motivations, and experiences of the target group, gaining insights into their behaviors, feelings, and attitudes towards study breaks, the facilities, and the Ach collections at the TUDL.

Method

Context mapping is described as a collaborative design method used to address complex problems and identifying future opportunities (Sanders & Stappers, 2012). The method involves the active participation of designers, users, and other important stakeholders in the design process. The method is aimed at gaining a deeper understanding of the context for designing a future product or solution by

gathering insights from users and stakeholders. They provide valuable input on how products will be used and the factors impacting user-product interactions. Contextual insights are uncovered through exploratory techniques aimed at revealing implicit and hidden knowledge. The exploratory techniques used in this context mapping research include sensitizing materials, interviews, and generative tools, which will be further explained in the following sections.

Recruitment and participant selection

For recruiting participants the aim was to reach students who regularly study at the TU Delft Library. To make sure the participants are known with the facilities and have concrete break routines in this context. To find students willing to participate in the research a recruitment poster was displayed in the break room as well as a slide on screens throughout the TUDL (figure 19). Participants were offered a coffee coupon and a free lunch as an appreciation for their time. A total of 7 participants were recruited

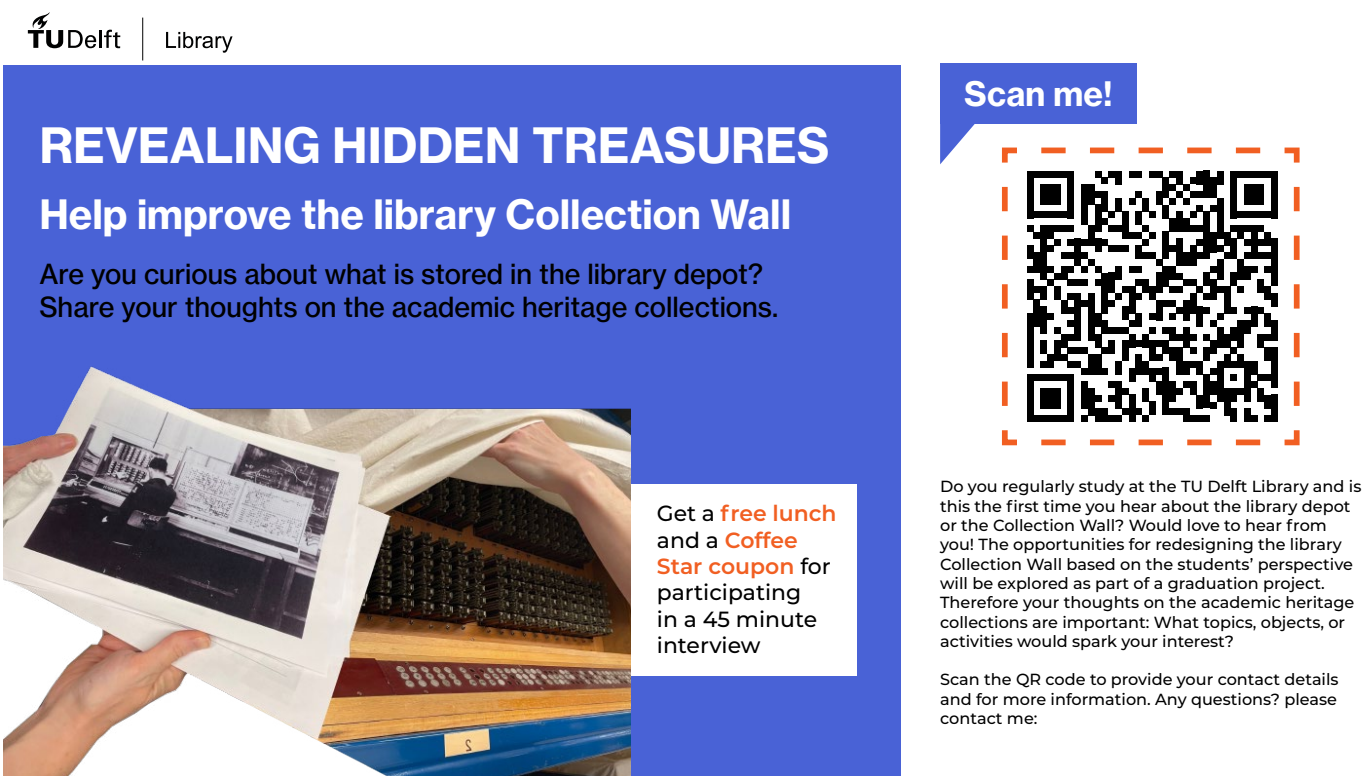


Figure 19: The recruitment slide

via the poster and personal network. All participants were previously unknown to the interviewer, to minimize biased interview responses. The recruited participants were bachelor or master students at the TUDL, between the ages of 19 and 25 years old, with 4 identifying as male and 3 as female. Three participants have the Dutch nationality and four were international students. The interviews took place in a meeting room at the TUDL. The data was collected between 26-3-2024 and 28-3-2024.

Sensitizing booklet

Sensitizing booklets are a tool to prepare

participants for the interview. The booklet consists of small exercises to help participants immerse themselves in making observations and reflecting on experiences before the interview (Sanders & Stappers, 2012). The content of the sensitizing booklet is based on literature insights and initial assumptions about the topic (figure 20, see appendix B for more details). The first part focuses on participants' current and past experiences of taking breaks and the facilities used at the TUDL. The second part explores students' perspectives on AchH. During the interview, the sensitizing booklet guides the discussion by covering



Figure 20: Sensitizing booklet

its topics in the same order as presented in the booklet. This approach serves as a conversation starter, by first asking the participants to elaborate on their written responses.

Semi-structured interview

An interview guide was prepared to ensure consistency in conducting the interviews. The guide included an introduction explaining the interview topics and goals, informed consent for participation and anticipated duration. Participant were informed they could choose not to answer questions and could terminate the interview at any time. The semi-structured interview questions (appendix B) are based on insights from literature and exercises in the sensitizing booklet. In depth questions were asked to follow up on the booklet exercises, aiming to uncover latent knowledge. The semi-structured interview allowed for follow up questions to start an open conversation. The semi-structured format allowed for follow-up questions to initiate open conversation, encouraging participants to discuss concerns and share rich personal insights and experiences.

Generative Tools

Generative tools were used during interviews to enable participants to express their emotions and experiences regarding taking study breaks. Following the user-centered design approach outlined in the study 'Mood Granularity for Design' (Xue, 2020), the aim was to understand students' moods before, during, and after breaks. Given the challenge of verbalizing emotions accurately, a pictorial emotion scale, Premo, was used during the interviews (Desmet, 2017). The participants were asked to select from fourteen different emotions depicted by a cartoon character using facial expressions and body language to express different emotions (figure 21). These emotions included positive ones like pride and joy, as well as negative ones like fear and sadness.



Figure 21: Premo, generative tool interview

Data analysis

The interviews were analysed with the 'analysis on the wall' approach; which includes transcripts, statement cards, and clustering.

Transcripts

Transcribing interviews involves converting the interview recordings into written text (appendix B), with the purpose to review and interpret the key points discussed during the interview.

Statement cards

Statement cards summarize the key insights from each interview (figure 22). They contain quotes and brief paraphrases as titles. The cards help to present interpretations and patterns in an organized way.

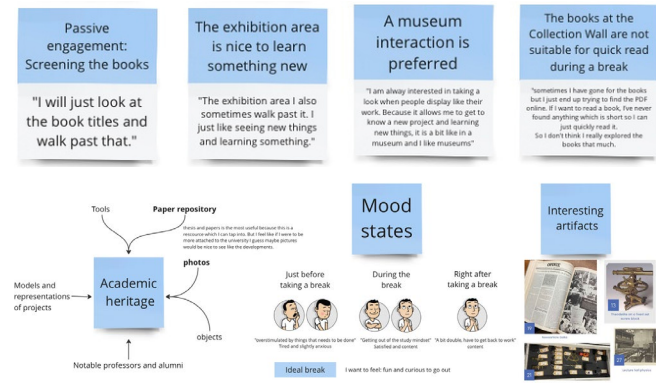


Figure 22: Statement cards participant A.

Clusters

The statement cards form the basis for the clustering activity. During this process, similar statements or interconnected insights are grouped together to establish new connections and identify overarching themes from the interviews (figure 23). Each participant's statement cards are coded

with a different color, facilitating the identification of clusters that are represented by multiple participants.



Figure 23: One of the clusters with statement cards

Context Mapping findings

The insights are organized according to the main research questions they address. Supported by explanations, quotes, and references, these insights offer well founded arguments. It's important to recognize that while this information provides valuable insights, it represents only a fraction of the broader context.

Q2.1 What factors influence student engagement during study breaks?

Looking for mental distance with study

During break moments students seek to take their mind off studies. Nearly everyone mentions three methods to achieve this: 1. a change in environment, 2. social interaction, or 3. distraction. A change in environment during study sessions and breaks involves leaving the workstation and the quiet area of the library to visit the break area, such as the coffee place or the break room with coffee machines, or going outside. Some even preferred to go home during the lunch break. All these methods reflect

students' preference for being in a different atmosphere during a break.

"It's a bit less recharging to stay at the library than going home. It definitely helps me to just be outside and walk or bike for five minutes. A big part of it is also a change of environments, not being in the same building all the time." - P6

Since studying is often an individual and silent activity, many students prefer a social moment during their study breaks, engaging in conversations with friends, whether in person or through social media. Especially when studying alone, they seek a moment of distraction during their break. Essentially, anything that actively engages them and diverts their focus from studies.

"Social interaction is important to me because when you're studying, you're already spending a lot of time by yourself, not talking to anyone. And then it's nice to be able to talk to someone." - P3

"During my break I usually take a walk and look at WhatsApp to talk to my friends who may not be here. But essentially any activity which actively engages me and takes me away from work." - P5

The primary break activities can be illustrated within a 'break triangle,' featuring three methods to achieve mental distance from studying as the main themes. This self created framework provides an overview of engagement and relaxation strategies (figure 24).

Engaging in curiosity driven exploration

Students engage in curiosity driven exploration during their break, to experience some different emotions and to be completely apart from study topics.

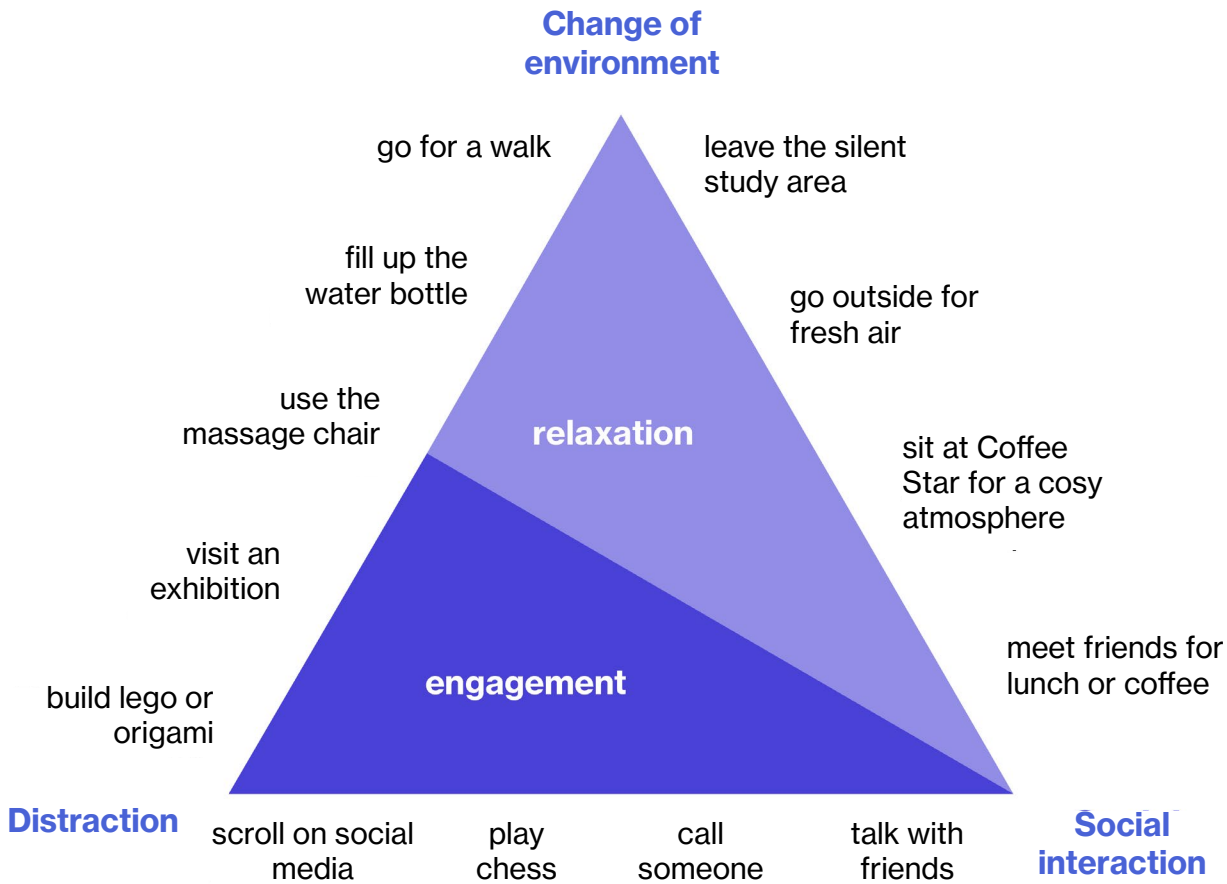


Figure 24: Break triangle methods for achieving mental distance with studies

"I like exhibitions because it's something completely apart from the topics I have studied. Or just go through some books really fast because I like new emotions in a moment." - P4

For students that engage with the exhibition n=3. They seek an element of surprise, novelty, or replayability to sustain interest during study breaks.

"what I like the most is that it changes really often. So every month there is something new. That's really nice. If you have the same for the whole year nobody will come." - P4

Serendipitous encounters and spontaneous learning opportunities appeal to students but the interaction should not be too

cognitively heavy. Because then it feels too much like studying.

"for during a break I don't want to read anymore words, like the showcase of theses, that does not feel relaxing. It is too much information and this makes me feel like I am studying." - P2

Finding out something in a playful way by actively doing something, is preferred over passive ways of receiving knowledge.

"I used to really like to play trivia crack on my phone with friends. You mainly just wanted to compete and win from your friends but through playing the game at the same time you learn to recognize paintings and certain art movements" - P1

Q2.2 How do students experience the facilities at the TUDL?

Comfortable using facilities together

Students feel more compelled to use facilities together with friends than on their own.

"I don't go and play chess unless there is someone with me who is my friend." - P5

Some students seek a sense of security when engaging with facilities by being with someone else, as they may feel uncomfortable or insecure about performing certain activities alone.

"I know people that go out to sit on the grass but because I am studying alone I would feel a bit strange to go out and sit on the grass by myself. I would feel a bit insecure about that." - P2

But for others it is about showing friends around and enjoying social interaction.

"I usually visit most of them because whenever friends come to the city I want to introduce them to the library. It is the greatest book spot so I will walk around there." - P4

Being engaged at a suitable location

The usual walking route influences their awareness and motivation to interact with certain facilities.

"I usually study at the desks close to the Collection Wall in the back and then I walk by the relaxation zone and the exhibition towards the Coffee Star. The other side I have not really explored yet" - P2

Also the break activities are associated with a certain location at the TU Delft library.

"If you think of the library as a heat map where people walk during their breaks. It's usually close to the canteen, the toilets. So in that sense those expositions that are close to the books and the book wall, people don't go there." - P4

Figure 25 illustrates the typical walking routes and the primary functions of different areas within the TU Delft Library. A distinction can be made between the back of the library, primarily used as a study area, and the front section, which is experienced as an area for taking breaks. While certain facilities, such as the relaxation zone, blur this distinction, associations with the two main areas persist.

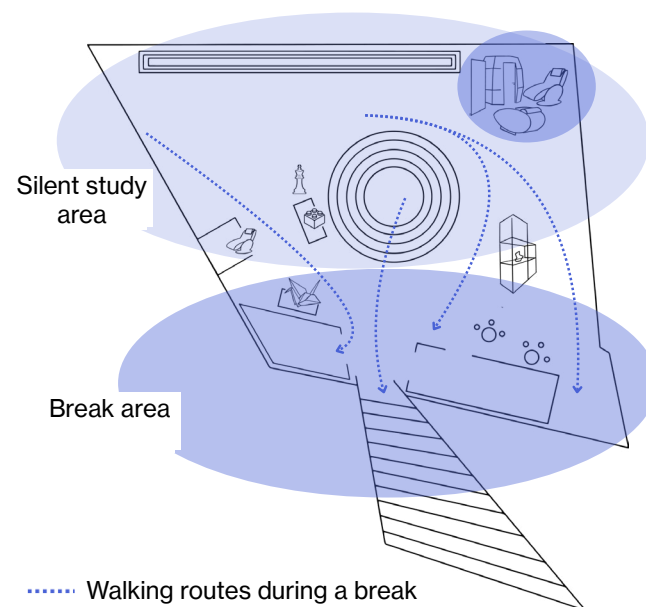


Figure 25: Typical walking routes and different areas

Facilities-study atmosphere mismatch

Many participants (n=5) mentioned a mismatch between the facilities at the TUDL and the study atmosphere, creating an awkward environment for interaction. This is caused by multiple aspects, the first being a concern about disturbing others who are studying.

"I don't feel like walking around because maybe I'm disturbing other people so I get conscious." - P5

Another aspect is the silent environment, which does not feel suitable for break activities (i.e. social interaction).

"Most of these facilities, because it's in the silent area, I don't know, it just doesn't really inspire me being in the silent part of the library." - P6

The interaction should also be unobtrusive, as students are conscious of how others perceive them.

"In a museum I always am the one who wants to try out the interactive stuff. In a museum my mindset is that everyone is here to explore, to learn new things. So then I don't feel strange. For the library there is more of a study and working mindset which keeps me from doing this." - P2

Figure 26 illustrates the current situation in which most facilities are placed in the silent study area. Which is perceived by students as an awkward environment for interaction.

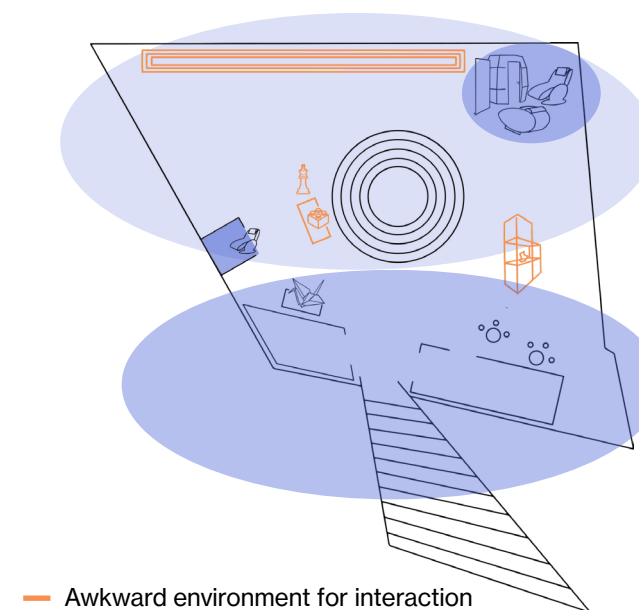


Figure 26: Awkward environment for interaction

Motivation needed to visit the CoW

Many students know and perceive the CoW still just as the book wall.

"I was not familiar with the concept Collection Wall, I knew that there was a wall with a lot of books. But I would have called it the book wall. I was not aware of the fact that there is more to see than only books." - P1

Which results in students lacking motivation to visit the CoW either due to insufficient information about its offerings,

"If you know that there's a special exhibition during the exam period, because it's announced with a poster. Then you have a reason to visit the Collection Wall." - P3

or because the current services do not align with their interests.

"I never really wandered around and explored the Collection Wall. I think that is due to a lack of motivation. Because I purely visit the library to study. I also haven't really needed a book. Mostly I just use online sources." - P7

The CoW is not viewed as suitable for a break moment.

"I visit not that often because of the duration of the breaks. If I want to read a book, I've never found anything which is short so I can just quickly read it." - P5

Most participants (n=5) were not familiar with the collections at the CoW. Even students that visited noted that the collections don't stand out both in content and visually.

"When I moved to the university, maybe one of the first days I visited the expositions at the wall, but I can't remember them." - P4

"The books and collections share the same color palette, which isn't striking. If there were banners in front of them, they'd be more visual, but currently, everything blends in with the books." - P4

Q2.3 What Ach content sparks students' interest?

Expressed potential interest in Ach

The interviews confirm the expectation that students are largely unaware of the heritage collections housed at the TU Delft Library, indicating that these collections are not sufficiently visible or accessible.

"I find it very interesting. I have not seen a single place in the TU Delft that this has been promoted or invited, nowhere." - P6

Even when students are familiar with the reading room, it is not perceived as inviting enough to encourage further engagement.

"I know that there is a visiting room for the collection because I've seen the sign when I walk in the back to go up the stairs. There's a door that says visiting collection open Friday 3 to 5 by appointment. But it does not really look inviting" - P6

Students have expressed a desire to access information about the heritage of TU Delft.

"I immediately had a lot of things to think of. Because I do like artifacts, so I could easily come up with things that I would like to see." - P6

Especially international students expressed a desire to learn about the TU Delft's Ach

when starting their studies here. But could not find the services offered by the heritage team.

"When I moved here, I searched for books on Delft and TU Delft but found none specifically about the city or the university's history. I only found research papers on individual researchers. It's discouraging not to have access to the university's history." - P4

Preferred mode of interaction

Participants (n=5) expressed a preference for interactive elements and dynamic media

"It is a lot of reading and I don't like reading. I also associated musea with boring, when I think of it I mostly imagine static objects and a lot of the same stuff. But for example the Nemo museum which is more interactive, I like that." - P1

Tangible involvement with objects is appreciated.

"At last I had written down the newspapers from that time, old paper is nice to feel in your hands and to see what topics were relevant. Something you can just browse through." - P1

Experiment and explore on your own rather than having the information explained to you.

"It would be nice to have an object in a larger or smaller scale you can interact with. To play around with it and see the mechanics." - P5

Topics of interest

Every participant chose three objects which sparked their interest. Based on their

argumentation four main themes of interest are found: Understanding the use and technical properties of instruments, relating heritage to human stories to connect with student life, connecting the past to the present and personal interest. Figure 27 illustrates the three themes with quotes and chosen artifacts.

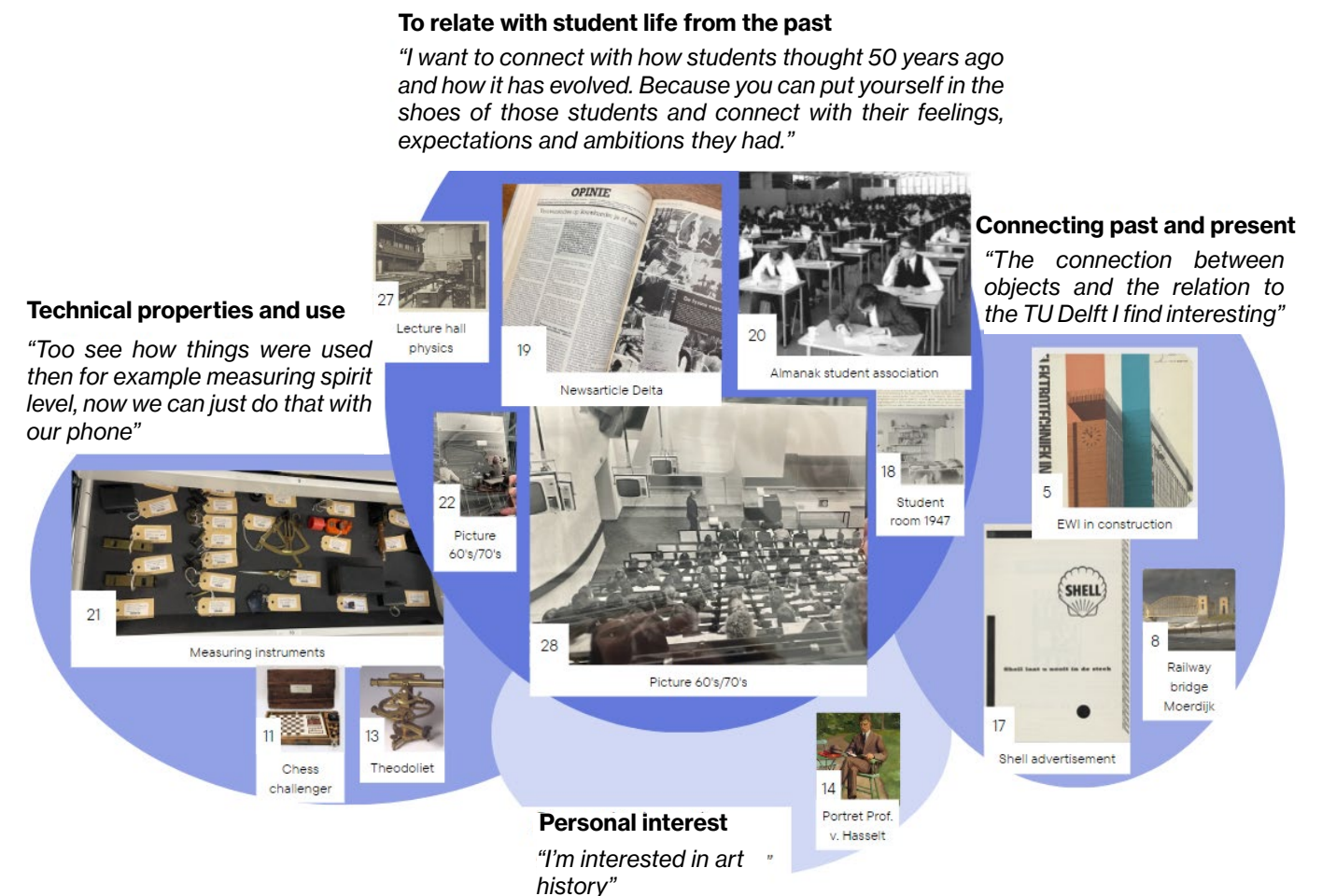


Figure 27: Topics of interest

3. DEFINE

Design space

This chapter addresses the question:
What kind of interaction with AcH do students prefer?

To answer this, the focus is on identifying strategies to engage students with AcH at the TUDL during their study breaks. Key insights from the discovery phase are summarized in user personas, which help shape three concept directions illustrated through storyboards. These storyboards are used to evaluate how students prefer to interact with AcH during their breaks. The chapter concludes with a revised design goal and a concept direction that connects student needs with theoretical insights to define the design space.

3.1 PERSONA’S AND STORYBOARDS

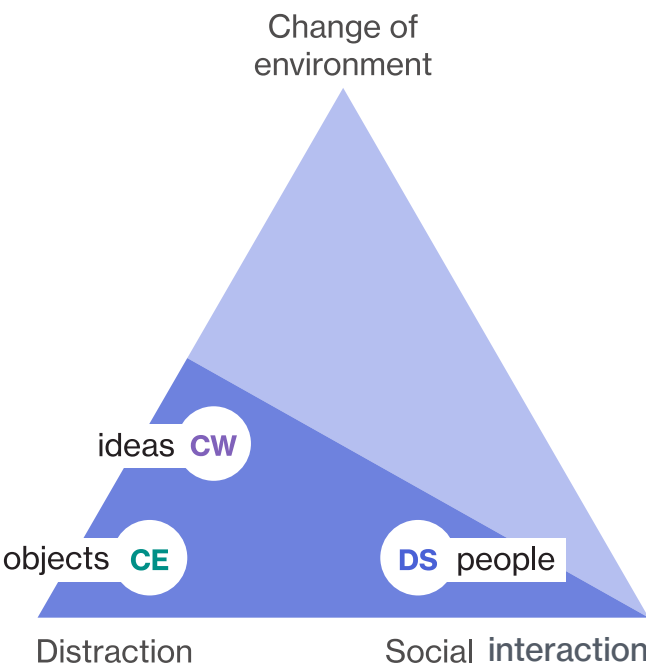
Method

Q3.1 What engagement strategy for AcH best fits the break needs of students?

Need-based personas focus on specific needs, motivations, and personal experiences rather than just demographic information (Cooper, Reimann, & Cronin, 2007). To ensure these personas are diverse and encompass the entire target group, the need triangle is used (see Chapter 3.1, Context Mapping findings), with three corners representing different approaches to achieving mental distance from studies during a break. The theory from Chapter 2.1 on visitor content interaction is applied in

the need triangle, characterizing each persona by different motivators for free-choice learning, preferred types of interaction, and experiences (figure 28). Students’ interest in AcH content expressed during the context mapping research relates to either objects, ideas, or people: objects in the Museum collection, people in the Trèzor collection, and ideas in both collections (figure 29, on the following page).

The personas (figures 31, 32 and 33 on the following pages) serve as inspiration for three distinct concept directions for interacting with AcH during a study break. Each concept direction is visualized in a



CW

Academic heritage as a walk around campus
Introspective experience: Having a feeling of belonging and imagining other places or times
Free choice learning: To be in charge and in control
Type of interaction: Participation in presentation of academic heritage

DS

Academic heritage as an initiated social activity
Social experience: Having a feeling of connection and spending time with others
Free choice learning: To exchange and communicate insights
Type of interaction: Collaborative discovery

CE

Academic heritage as an unobtrusive discovery
Object experience: seeing or interacting with rare or interesting objects
Free choice learning: To raise curiosity and satisfy it
Type of interaction: Tangible interaction with embedded objects

Figure 28: Bridging user needs and theory

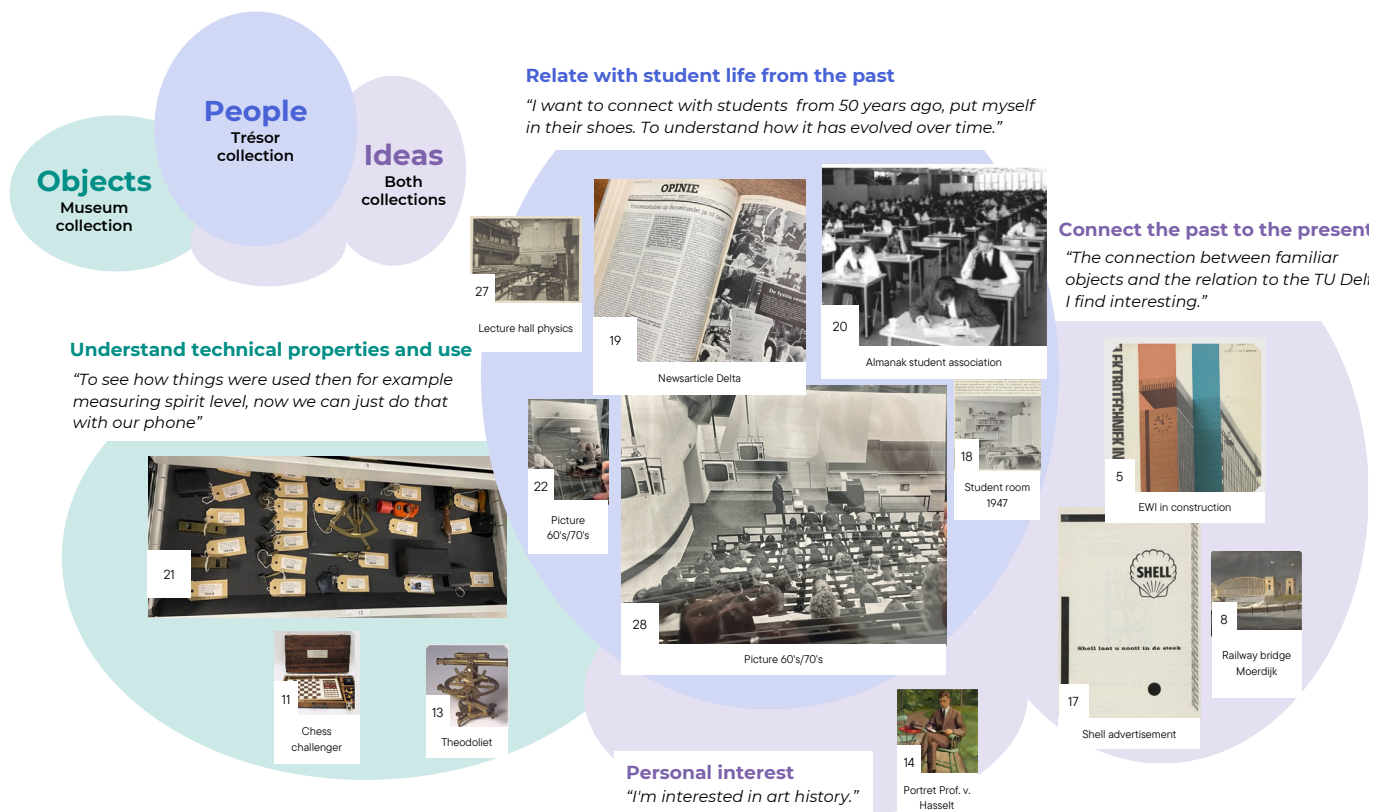


Figure 29: Bridging topics of interest and theory

storyboard, a tool used for communication and evaluation. The storyboards, which provide a narrative about the design in context, help communicate these concepts to the target group to evaluate students' preferred interactions with ACh during study breaks (figures 34 and 35, on the following pages).

Recruitment and participant selection

Participants were recruited from the Industrial Design faculty due to their familiarity with storyboards and imaginative thinking, which was expected to yield more insightful feedback. Four master's students aged 22 to 26 were selected, comprising one male and three females, all Dutch nationals. The sessions took place in the IDE faculty's main hall.

Semi-structured interview

A consistent approach was ensured using an interview guide, which included an introduction to the session, informed consent, and an outline of the topics

(appendix C). The semi-structured interview aimed to support the persona and storyboard materials (figure 30). Participants reviewed the personas, types of AcH interactions, and storyboards, followed by in-depth questions to encourage open discussion about which persona they related to, as well as their preferred interaction with AcH.



Figure 30: Participant reviewing the storyboards

Data analysis

The interviews were analyzed by listening to the audio recordings to review and interpret the key points discussed. Interesting comments related to the materials were transcribed and connected to the corresponding parts on the storyboards.

Hi, I am a DETERMINED SOCIALIZER

I visit the Library just to study. Because I only come here to study and spend my breaks with friends I don't really think about other facilities or things you could do here.



ABOUT ME

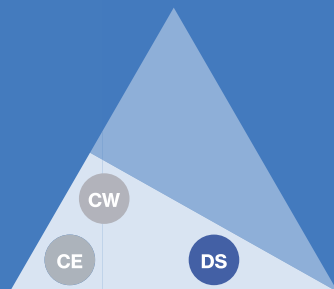
individual break social break
engagement relaxation

IDEAL STUDY BREAK

I enjoy a cozy setting for chatting with friends, to discuss topics unrelated to studies. Doing activities together during breaks is more appealing to me.

NEED TRIANGLE

Change of environment



Distraction Social interaction

Determined socializers lack awareness of AH collections and need incentives to explore

Academic heritage as an initiated social activity

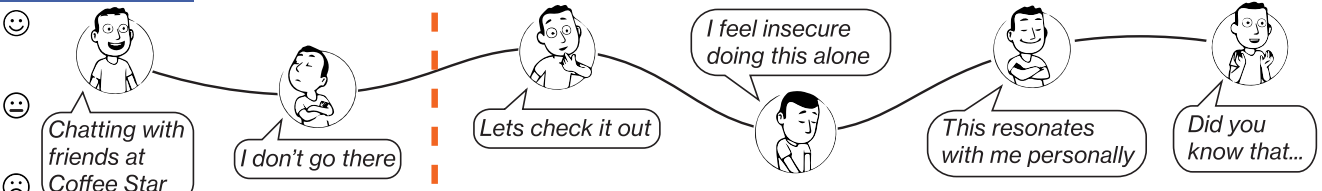
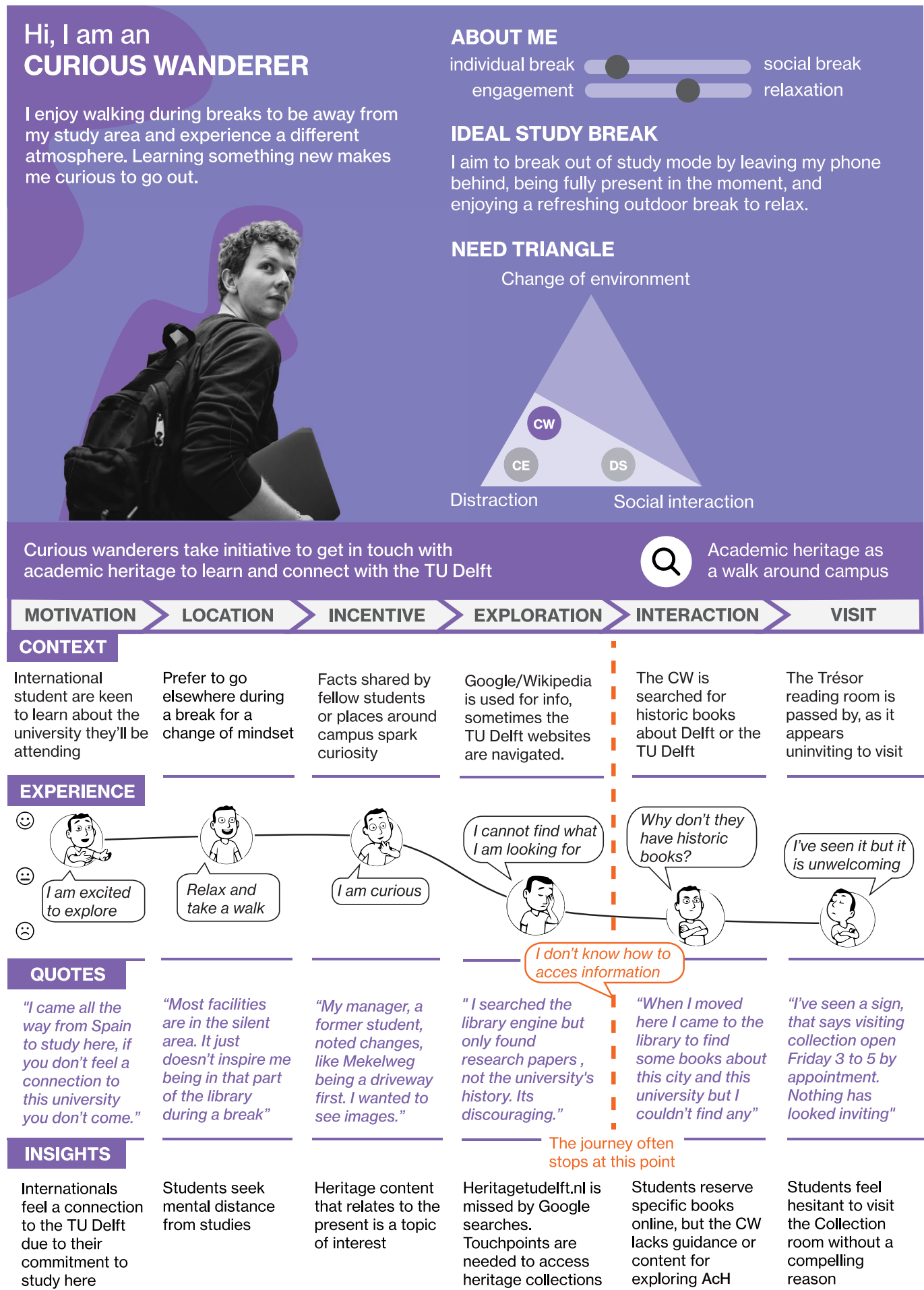
MOTIVATION	LOCATION	INCENTIVE	INTERACTION	TOPIC	INVOLVEMENT
CONTEXT Library visits are just to study. The study breaks are spent to socialize with friends	The CW is in the silent study area, opposite from the usual route to the break area.	Prefers to receive information about the AH exhibitions and activities beforehand	It feels more comfortable to visit facilities together	Feels a connection to academic heritage objects when the context is familiar	Engaging with a relatable topic through discussion or interaction
EXPERIENCE  Chatting with friends at Coffee Star I don't go there Lets check it out I feel insecure doing this alone This resonates with me personally Did you know that...	I am unaware about the AH collections				
QUOTES "I'm less interested in other facilities because I only use the TU Delft library for studying."	"I've never explored the CW, because I don't see a reason to visit. I always walk the same route so I don't go there."	"If you see a poster announcing a special exhibition you'll have a reason to visit the CW."	"when I am with a friend I will offer, hey lets look at the exhibition. But if I am alone the mindset is totally different."	"It'd be nice to browse old student magazines to compare the news with what we discuss today."	"I prefer interactive experiences, like writing or adding personal things."
INSIGHTS The break should support an effective study day to facilitate students' main goal	The facility location is important for students' engagement at a suitable spot	Initiating interest is essential to motivate visits to the CW	Students feel more compelled to interact with facilities together	Heritage content that relates to student life from the past is a topic of interest	Involve students through participatory approaches by making content, or comments

Figure 311: Determined socializer



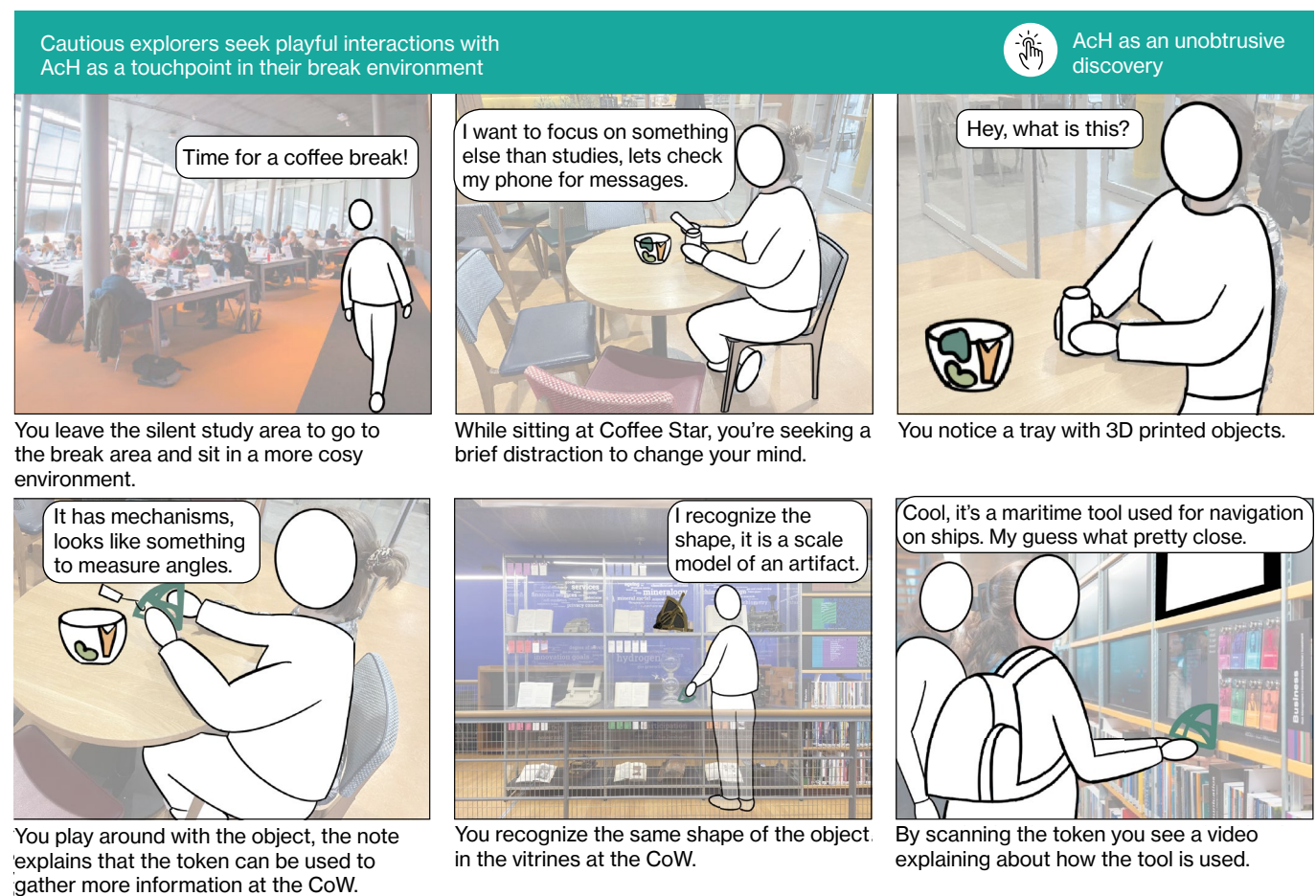


Figure 34: Storyboard determined socializer (top) cautious explorer (bottom)

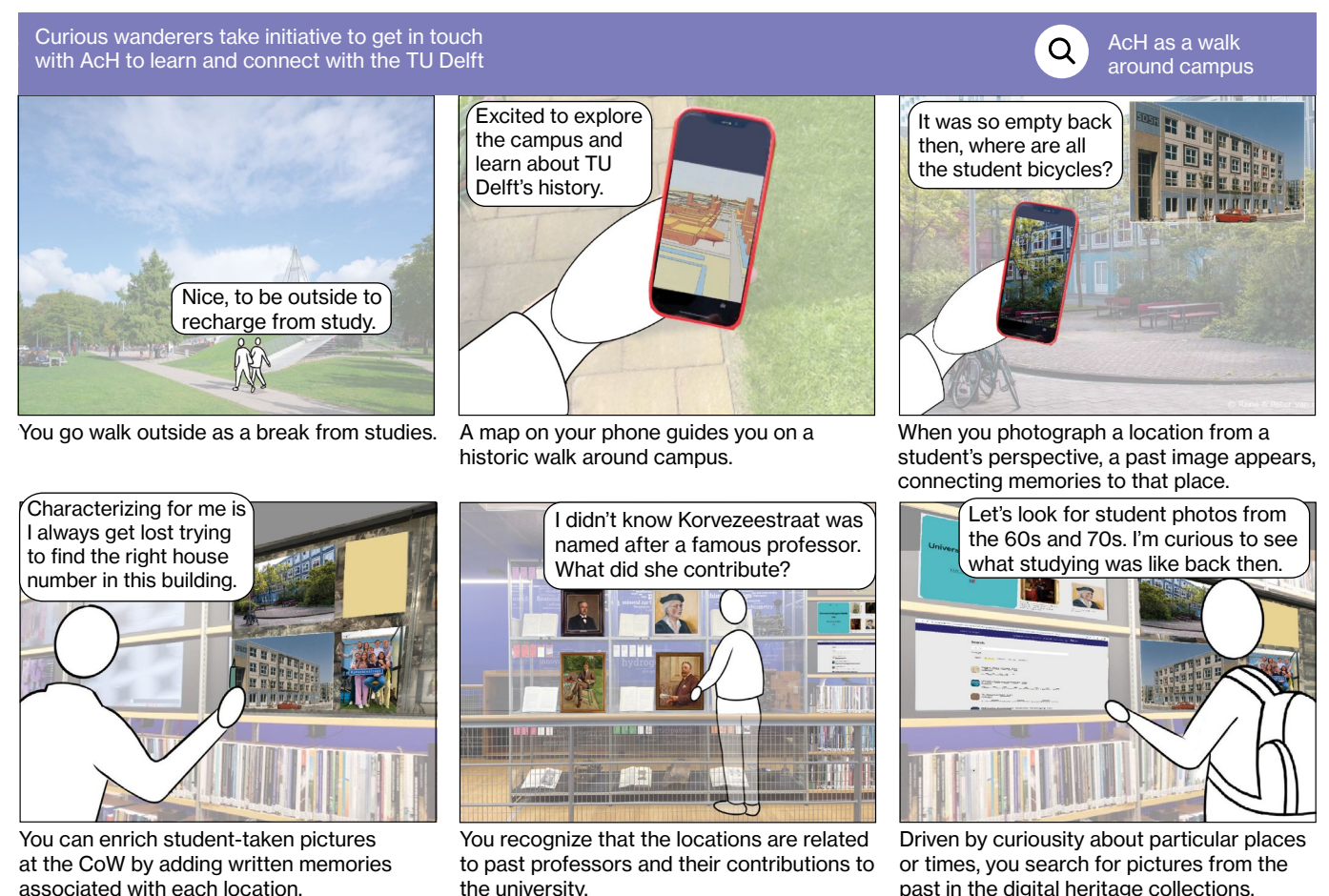


Figure 35: Storyboard curious wanderer, AH as a walk around campus

Findings

Q3.2 Which persona do students identify with and what type of interaction with Ach is preferred?

The personas and Ach interactions are rated by the participants (figure 36). The following section presents their evaluations overlaid on the storyboards, highlighting interesting quotes and key concerns about the interactions (figures 37, 38 and 39, on the following pages).

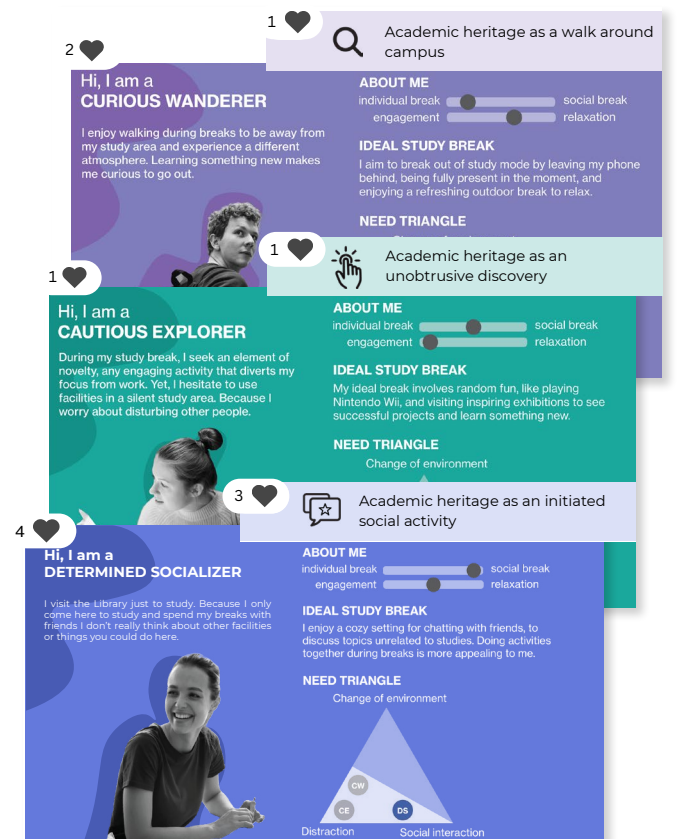


Figure 36: Persona's and Ach interactions rated



Figure 37: Storyboard overlay with participants' quotes, determined socializer

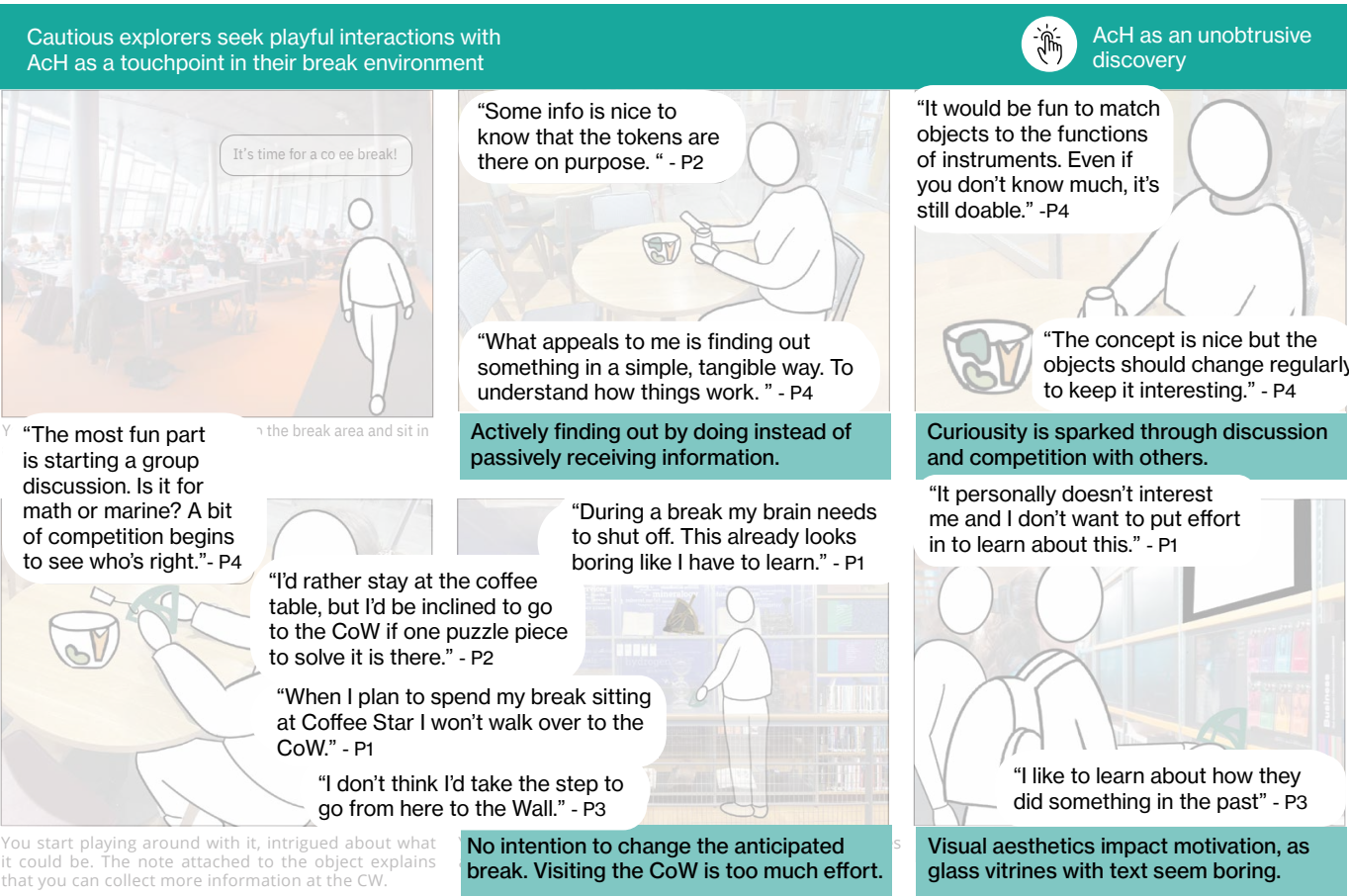


Figure 38: Storyboard overlay with participants' quotes, cautious explorer.

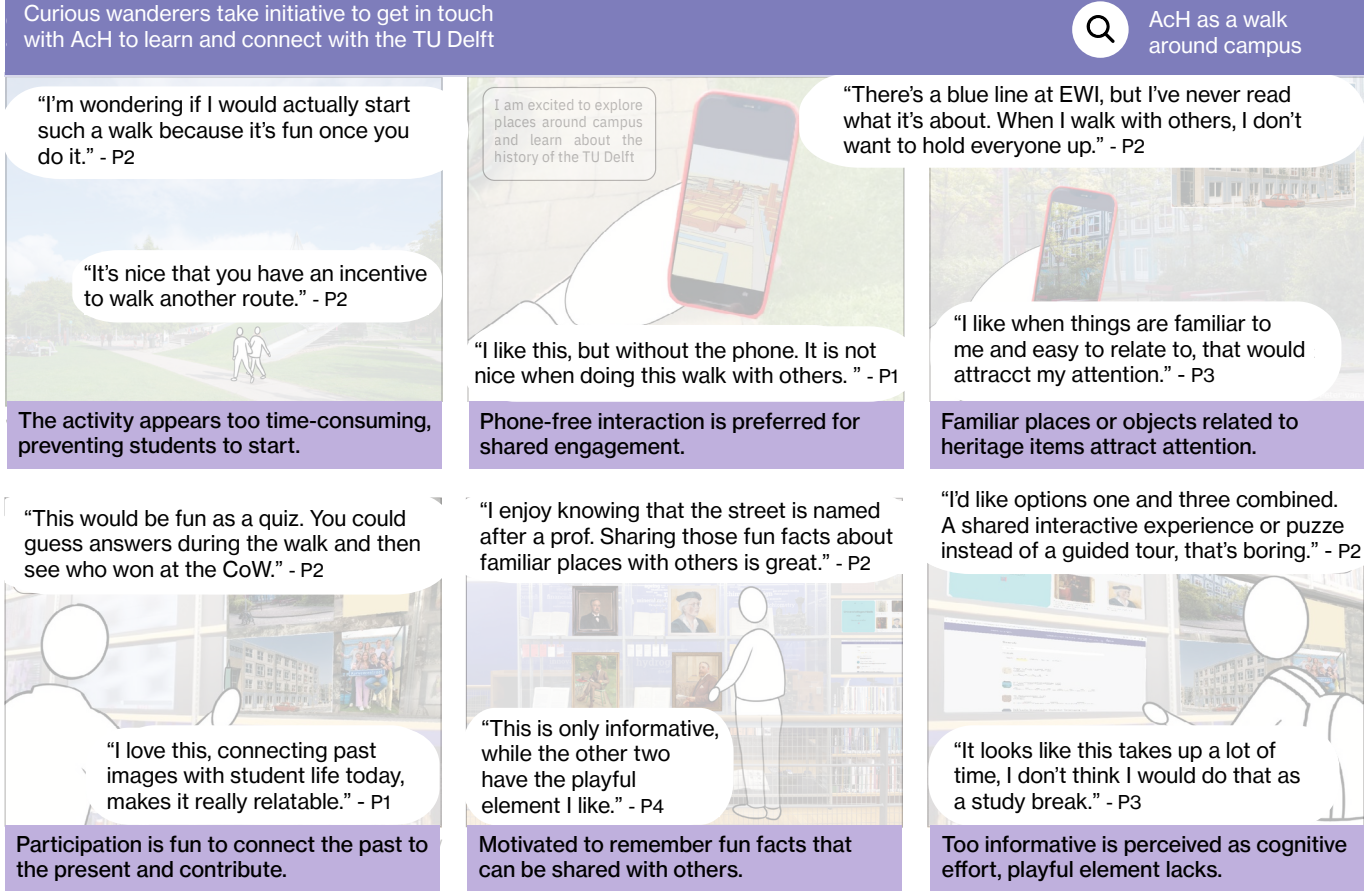


Figure 39: Storyboard overlay with participants' quotes, curious wanderer

The design space is defined by selecting the most promising concept direction. This is based on the evaluation of the persona's and storyboards by the target group and the client, to assess the desirability and feasibility of the different concept directions. Clear boundaries and goals are established for developing the chosen concept direction into a detailed design concept in the next phase, through the formulation of requirements.

Evaluation by target group

The participants related most to the determined socializer persona and favored AcH as an initiated social activity, with an emphasis on social interaction. However, three participants noted that planning in advance would be an obstacle, as scheduling breaks and activities with friends is seen as challenging. They preferred social activities that could be done spontaneously during a break.

Evaluation by client

The client's feedback on the persona's and the three storyboards indicates a preference for developing the concept direction of AcH as an initiated social activity, specifically targeting the Determined Socializer persona. They identified this persona as a significant group present in the library, with whom they currently struggle to engage effectively. The client emphasized the importance of incorporating a playful element to attract students' attention, drawing inspiration from past successes like the All Maps arcade in the TU Delft Library (figure 40).

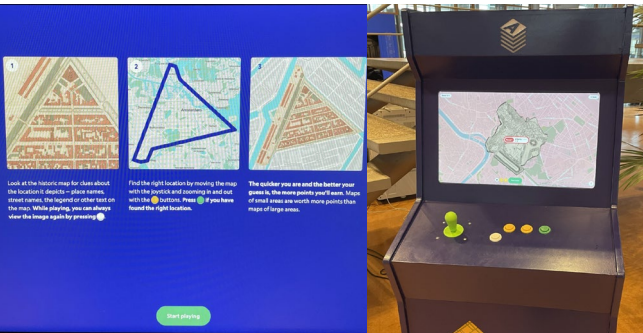


Figure 40: All Maps arcade

The storyboard for the determined socializer includes the idea of using the back of the CoW, which was well-received (figure 41). This currently unused area presents an opportunity to meet the target group's need for privacy and comfort while allowing interaction without disturbing others.



Figure 41: The back of the CoW

For the Cautious Explorer storyboard, moving the interaction to the Collection Wall was considered a critical step. Suggestions were made to approach it as a multi-break experience, sparking curiosity during initial breaks and encouraging visits to the CoW in subsequent ones.

The client recommended narrowing the project scope to the TU Delft Library building, rather than extending it to a campus walk, to ensure feasibility. However, the participatory approach of engaging students with AcH content by adding perspectives from today's students to provide context and spark discussion was seen as an interesting direction.

Conclusion

The Determined Socializer persona is selected as the target group, focusing on AcH related to student life of the past. Figure 42 illustrates potential locations for engaging students in the break area, with the plan to design one specific touchpoint to motivate visits to the CoW.

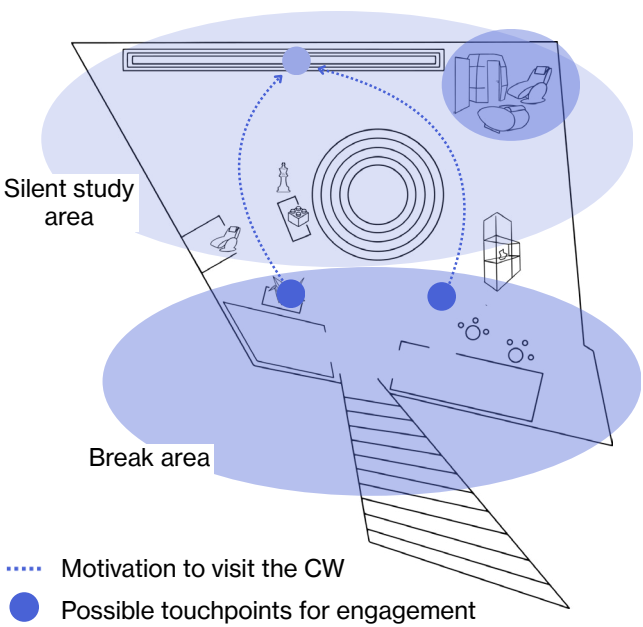


Figure 42: Touchpoints in the break environment

The term “mode-shifting” was developed from insights gained in context mapping research and evaluations of personas and storyboards. To engage students with AcH in the break area, the touchpoint must facilitate a mode-shifting experience that achieves mental distance from their studies. Mode-shifting is characterized by five interaction qualities derived from findings in chapter 3.1: playful, attractive, energizing, hands-on, and social (figure 43).

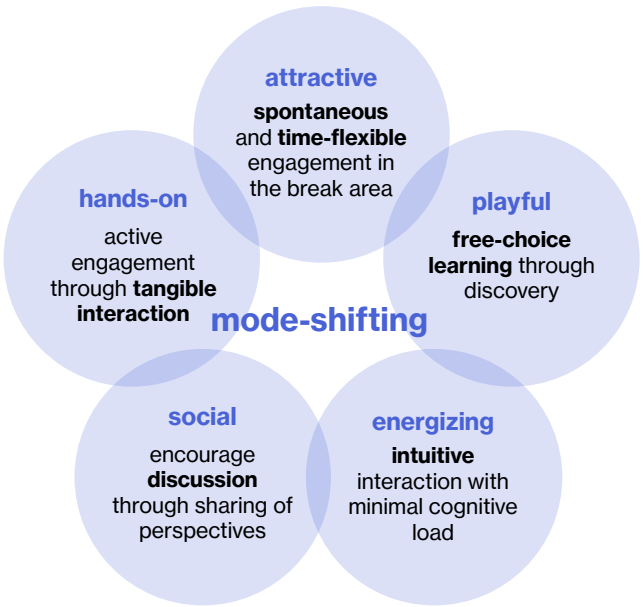


Figure 43: Interaction qualities, mode-shifting experience

There is an exhibition cabinet in the TU Delft Library that is currently unused. Placing this cabinet in the break area would create a suitable touchpoint for interaction. As a result, the cabinet will serve as the starting point for the design, providing dimensions and constraints, while also inspiring a practical design outcome that can be easily implemented (figure 44). A revised design goal is formulated to communicate the design direction and scope down the project (figure 45, on the following page).



Figure 44: Exhibition cabinet

Design a modeshifting experience



with AcH related to past student life



in the break environment



to encourage students



to visit the CoW

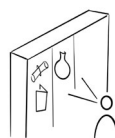


Figure 45: revised design goal

Design requirements

Based on the revised design goal and the chosen concept direction, design requirements are formulated. The list of requirements is a design method used to define the mandatory criteria that the final design must meet (Roozenburg and Eekels, 1989). These requirements are intended for evaluating the detailed concept to assess the designed outcome using measurable criteria.

Mode-shifting

1. **Social:** The design should encourage discussion by facilitating the sharing of perspectives.
2. **Energizing:** The design should facilitate intuitive interaction with minimal cognitive load.
3. **Playful:** The design should enable free-choice learning through discovery, allowing users to interpret content in their own way.
4. **Hands-on:** The design should use digital technology to facilitate active engagement through tangible interaction.

5. **Attractive:** The design should promote spontaneous and time-flexible engagement in the break area.

Intended effect

6. **Motivation:** The design should encourage visits to the CoW.

Preferences

- * **Replayable design:** The design supports a consistent exhibit with the option for changing content
- * **AcH objects:** The design minimizes the use of physical heritage objects.

4. DEVELOP

The concept

This chapter addresses the question:

How to design a tangible interaction with AcH to connect students to past student life?

This chapter discusses the activities that provided insights for developing the concept. Inspiration was drawn from an in-depth exploration of the AcH collections. Once the AcH materials related to past student life were identified, two co-creation sessions were conducted to further explore the desired interaction between the user group and these materials. The concept development is described by linking the research insights on tangible interactions, translating these affective, performative, interpretive, and sensorial qualities into design specifications. This chapter highlights the connection between key research insights and the concept development process.

To develop the concept, first the AcH materials need to be selected, since this will be the content to use for the design. The focus is on the Trésor collection, particularly collections related to past student life, aligning with the Determined Socializer persona discussed in chapter 3.1.

Method

The autoethnography method (Bowers, 2021) is used to select AcH materials represented in the Trésor collection. The term “represented” indicates that the Trésor collection contains similar materials covering the same themes. However, these materials are not explored extensively due to limited accessibility. The TUDelftAcademicHeritage website contains references to external collections with AcH materials related to past student life at the TU Delft. Therefore, additional databases such as Delpher and Stadsarchief Delft are used as alternative sources for academic heritage content.

Autoethnography combines autobiography and ethnography, using self-reflection and documentation to explore personal experiences and connect them to broader cultural contexts. In this case, the researcher embarks on a digital exploration, immersing themselves in the AcH collections. Drawing on personal insights as a student, content is identified that relates to past student life, addresses themes still relevant to current students, and encourages discussion through sharing of perspectives (chapter 3.2: design requirement 1).

Deep dive in the collections

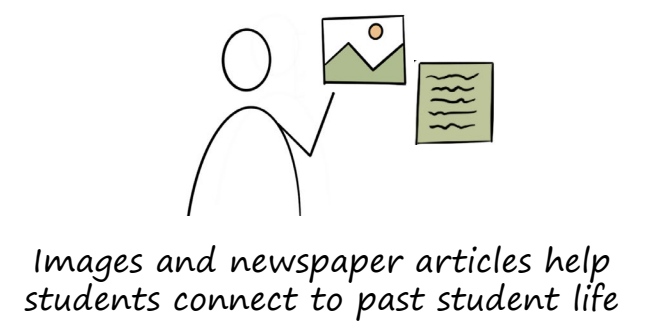
“In figure 46 on the next page, the process of the deep dive into the collections is displayed. The steps in the exploratory journey highlight the discovery of images and newspaper articles about past student life. Interesting materials were intuitively clustered, resulting in themes that address topics still relevant to current students. The process also involved sharing facts about

the articles with fellow students to initiate discussions.

Findings

Q4.1 What AcH materials help students connect to past student life?

Personal reflections indicated that images and newspaper articles help students vividly imagine historical contexts, making the past feel more relatable and immersive. This observation supports Harrison’s (2013) argument that such materials offer an intimate peek into people’s lives, making history more tangible and accessible. By revealing everyday life, emotions, and social conditions, these materials enable students to connect more deeply with historical narratives. Therefore, the decision was made to focus on images and newspaper articles as AcH materials.



The images and articles are clustered into seven themes (figure 47, appendix D). These themes are well-suited for creating a recurring break activity with varied content. By using different themes, the concept becomes replayable, maintaining student engagement (chapter 3.2: preferences). As an initial evaluation of the themes, articles and images were shared with fellow students, often sparking interest and surprise, which led to further conversations about past student life. This feedback suggests that the content could encourage social interaction. This assumption will be further explored during the co-creation sessions.

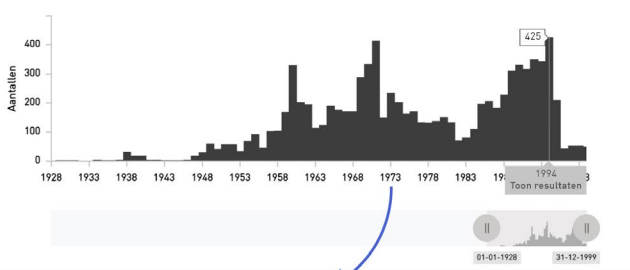
Trésor
The Trésor includes historic books, journals, maps, photographs and prints from before 1900. Their age, rarity, value or vulnerability is what makes them special. The Trésor also collects TU Delft output that is not usually included in academic journals, such as speeches, dissertations and lecture notes. Digitised objects from the collection can be found in multiple locations: the separate [Trésor website](#), [Research Repository](#), [Image Archive](#), and the [Colonial Architecture & Town Planning Repository](#). The dispersed material will be gradually brought together on this website.



Bezoek
In een aparte leeszaal kan men het materiaal bestuderen en inzien op vrijdag. De collectie omvat circa 60.000 banden. Op deze site bevindt zich materiaal wat in eigen beheer of met het Metamorfoze project is gedigitaliseerd. [Metamorfoze](#) is het nationaal programma voor het behoud van het papier erfgoed. [Delpher](#) staan de gedigitaliseerde boeken en tijdschriften afkomstig uit onze collectie.



Grafische weergave van zoekresultaten 8.836 krantenartikelen



Studenten Delft eisen kiesrecht	
Studenten Delft eisen kiesrecht (Van onze correspondent) DELFT — Zeshonderd studenten hebben op een protestmoe- ting in de aula van de Technische Hogeschool Delft geëist dat alle 2100 student	
Krantentitel	Tubantia
Datum	05-12-1973

Not found
Sorry
Oops! It looks like the page you're trying to reach doesn't exist.

External collections



ONZE COLLECTIES

ARCHIEF- EN INVENTARISBEHEER	Image collection	BIBLIOTHEEK	BOUWVERGUNNINGEN
Artikel		7.398	
Boek		20.407	
Klein drukwerk		411	
Seriewerken		2.544	
Koepelbeschrijving		5	

Objectnummer:	5650
Objectnaam:	foto
Voorstelling:	Romp van een Fokker 50 als loopbrug tussen gebo- Spiero, Kornelis Gerardus (Kees) (1996-2011)
Rechtshebbende:	Stadsarchief Delft
Datering object:	2003, juni 6

AcH focus: Images and Newspaper articles



Figure 46: Explorative journey of heritage content related to student life of the past

4.2 CO-CREATION SESSIONS

The co-creation sessions aim to evaluate the heritage content collected by focusing on how students relate to these materials and exploring their preferred ways of interacting with them.

Method

Co-creation is a collaborative design method involving users, designers, and possibly stakeholders to develop user-centric solutions (Stappers, Sleeswijk Visser, & Sanders, 2014). The co-creation method aims to facilitate a shared understanding of user needs and the context in which the design will be used. Participants contribute insights and feedback that help shape the design outcome to ensure it better aligns with their expectations.

In this project, the co-creation method is used to define which AcH materials are significant for students to connect with past student life. Techniques such as collage-making, brainstorming, and collaborative storyboard evaluation were used in two sessions with three participants each (figure 48).



Figure 48: Co-creation collage-making activity

Recruitment and participant selection

Participants were recruited from the Industrial Design faculty due to their familiarity with participatory techniques and imaginative thinking, which was expected to

yield more insightful feedback. Six master's students aged 22 to 26 were selected, comprising one identified as male and five as females. Three participants have the Dutch nationality, while the other three were international students. The sessions took place in IDE project rooms on July 19, 2024.

Co-creation guide

A guide with a script was created to ensure consistency in the sessions (appendix E). Each session starts by introducing participants to the materials, such as the magazine with AcH materials, brainstorming questions, and storyboards. The aim is to encourage participants to share their thoughts and ideas by thinking out loud.

Magazine about past student life

A magazine is used to present the AcH content to participants during the co-creation session. This format was chosen because it complements the collage-making activity. The magazine's content is based on the findings from the deep dive into the AcH collections (see chapter 4.1). The magazine contains newspaper pages organized chronologically, featuring articles about past student life, as well as random articles and advertisements that illustrate that time period. Additionally, it includes pages with news articles specifically related to past student life at the TU Delft, along with images and brief descriptions. Since all the newspaper articles are written in Dutch, the captions and main text of the articles related to past student life at the TU Delft have been translated to English (see figure 49, on the following page).

Data analysis

The audio recordings were used to transcribe notable comments and link them to the collages, brainstorming materials, and storyboards using statement cards (see appendix E).



Figure 47: Clustered news articles and images presenting 7 themes related to past student life

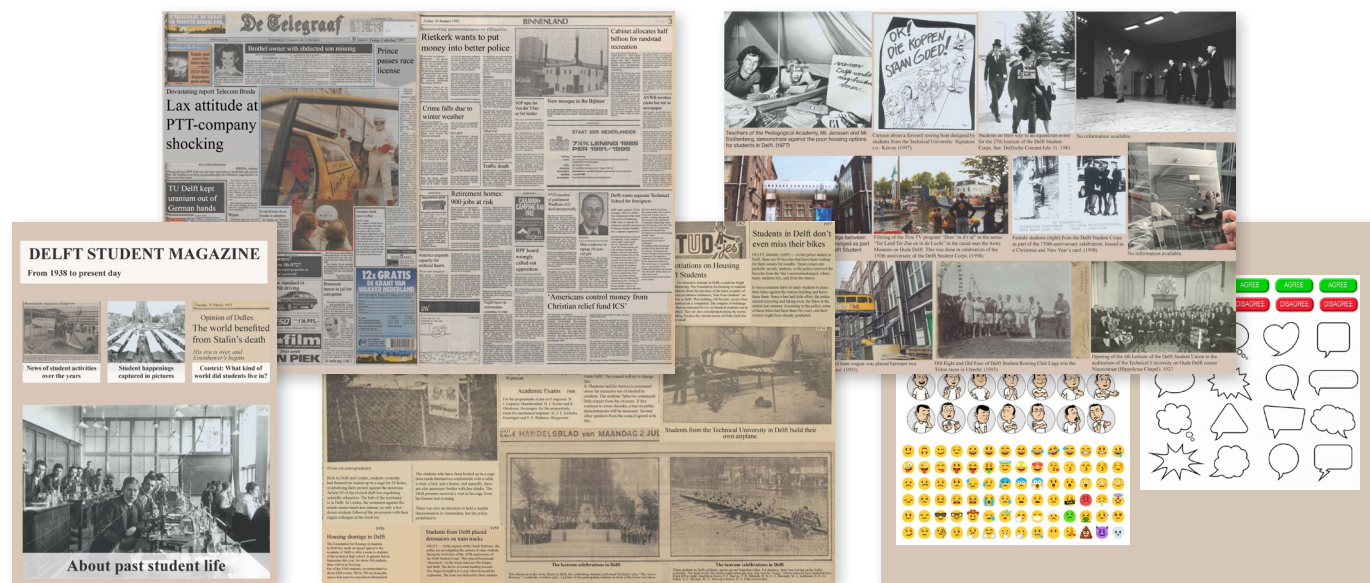


Figure 49: Clustered news articles and images presenting 7 themes related to past student life

Co-creation findings

Q4.1 What AcH materials help students connect to past student life?

Analysis of the collages revealed commonalities in the content students selected. Specifically, students were drawn to provocative material, characterized by seven key aspects: curiosity, surprise, emotion, familiarity, norm-challenging, controversy, and relevance. These aspects will be explained in the next section, supported by examples from the collages and participant comments.

Curiosity

Curiosity-inducing content sparks questions and prompts further investigation. It successfully fosters curiosity if it encourages you to learn more or delve deeper into the topic (figure 50).



Figure 50: Curiosity-inducing example, collage P2

"These are some wow things that I want to know more about. Like married students.. that was a thing back then? or Uranium kept out of German hands? It raises questions and I am curious about it." - P2

Surprise

Surprising content presents unexpected facts, perspectives, or events that deviate from common knowledge or expectations. If the information causes a strong reaction or new insight, it's likely surprising (figure 51).

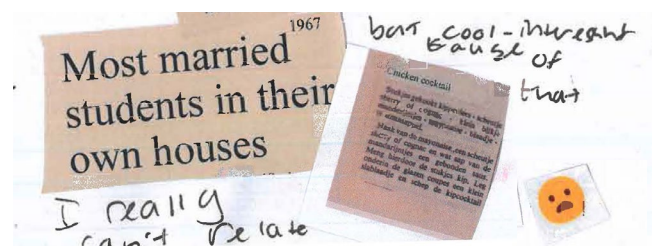


Figure 51: Surprising example, collage P1

"I have here a little corner of I really cannot relate, but I cannot relate so much that again it becomes interesting and I want to read about it" - P1

Emotion

This content evokes strong emotions such

as joy, sadness, anger. Content that elicits a notable emotional response likely has a significant emotional impact (figure 52).

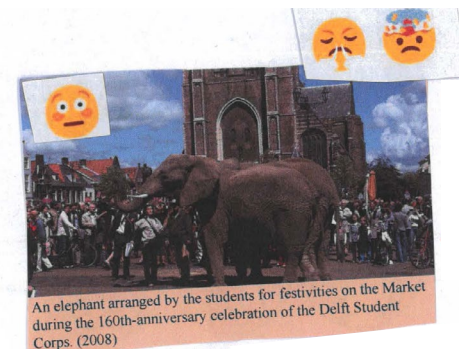


Figure 52: Emotional impact example, collage P6

"The image with the elephant is one that I had a more emotional reaction to." - P6

Familiarity

Familiar content relates to common experiences or knowledge. Content that resonates with shared memories or recognizable situations among the target audience is likely familiar (figure 53).

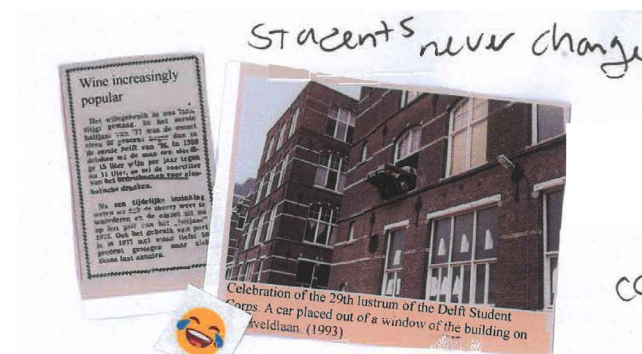


Figure 53: Familiarity example, collage P2

"Knowing the building and the knowledge that students pull off like crazy stunts, make these pictures for me feel very familiar" - P2

Norm-challenging

This is content that questions or challenges established beliefs, practices, or societal norms. If the material provokes critical thinking or debate about conventional ideas, it meets this criterion (figure 54).

"It's interesting how much things have changed. Back in 2008, this was still something people did, but now, with the focus on animal welfare, it's not okay anymore." - P6

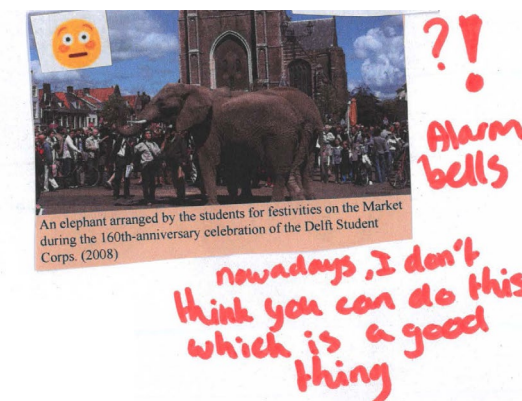


Figure 54: Challenging norms example, collage P6

Controversy

Controversial content addresses conflicting or hotly debated issues. If the material generates diverse opinions or passionate discussions, it can be considered controversial (figure 55).

"The title Delft wants separate school for foreigners, I was like WHAT?!, because at IDE we have a lot of projects with international students and I find it fun to learn from other people and cultures" - P6

"I know there is a lot of talk right now about trying to minimize the amount of exchange students coming, by the new cabinet. I think it is just a shame if there would be less exchange students" - P6

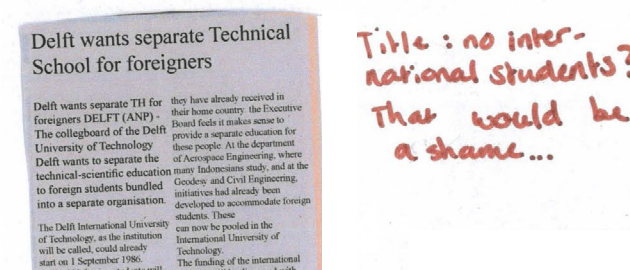


Figure 55: Controversial topic example, collage P6

Relevance

Relevant content relates to current events, ongoing discussions, or significant themes within the context, student life. If the content aligns with the interests and concerns of the target group, it is relevant (figure 56).

"I saw the protests we're having now at the library and I thought that was a really big deal because I've never seen a protest before. But from these pictures I see that students have always protested. That explains a lot" - P3

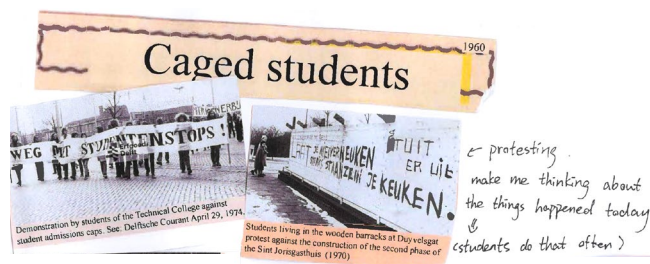


Figure 56: Relevance example, collage P3

Q4.2 How do students prefer to interact with images and newspapers?

The co-creation sessions revealed that students prefer provocative content because it stimulates social interaction. The collage-making activity itself was seen as an enjoyable way to select specific images and articles, while also reflecting on their personal meaning. The collages demonstrated that participants clustered the content and reflected on it in three main ways: by adding emoticons to express emotions, cutting out and highlighting certain parts of text or images to convey interests, and writing comments to express their thoughts. During the activity, participants were observed sharing and discussing their findings with others. The provocative content sparked conversations by encouraging the exchange of perspectives, making the activity engaging for social breaks.

"For a break it is just nice to open up a discussion about a topic" - P1

"It would be fun to use provocative headlines of the paper to start a discussion. I think that will get people to talk about it" - P3

"I definitely like to talk about this experience. The sharing part is important because the facts I found about past student life are funny and interesting." - P2

Conclusion

Provocative design is a suitable approach to engage students with the AcH collections. This will be applied in two ways:

1. The seven aspects characterizing provocative content will serve as guidelines for the TUDL Heritage Team to identify and select materials related to past student life that capture the attention and interest of today's students.
2. Provocative design principles will be applied to encourage discussion about the content through the sharing of diverse perspectives.

These provocative design principles are inspired by the collage activity, encouraging students to reflect on the content by expressing their thoughts, interests, and emotions regarding the articles and images on display. This approach aims to help them share their perspectives by connecting historical events to their current experiences.



Reflect on the AcH content

4.3 DESIGNING TANGIBLE INTERACTIONS

As discussed in Chapter 2.2, this project uses digital technology to engage students with the AcH collections. Given the context of study breaks, the most suitable strategy to support a mode-shifting experience is through tangible interactions, which are achieved by embedding meaning into physical objects.

The collage-making activity from the co-creation sessions was well received as a tangible way for students to engage with the AcH materials. During the Museumnacht Leiden, a workshop titled "Create Your Own Point" invited participants to craft stencils from magazine clippings. The TUDL museum collection also houses a stencil machine, which inspired the integration of this machine into the collage-making activity.

In the co-creation sessions, participants explored the stencil machine's use through a storyboard that illustrated how it could produce stencils from collages made with AcH materials as a break activity. However, feedback indicated that students found

the activity too time-consuming for a quick break. Additionally, using the stencil machine proved complicated and messy. Moreover, the stencil machine from the museum collection cannot be touched, making it unsuitable for this purpose.

As a result, the idea of the stencil machine evolved. Its historical significance for students was researched in connection with themes from chapter 5.1 (figure 57). This inspired a shift from using the stencil machine literally to using it as a metaphor for how students in the past quickly spread ideas through printed materials, advocating for various causes, and promoting extracurricular activities. Creating a collage of old student news articles and images, along with turning the handle of the stencil machine, serves as a metaphor for sharing stories and opinions on student topics that remain relevant today.

Q4.3 How can the stencil machine facilitate tangible interaction with AcH materials?

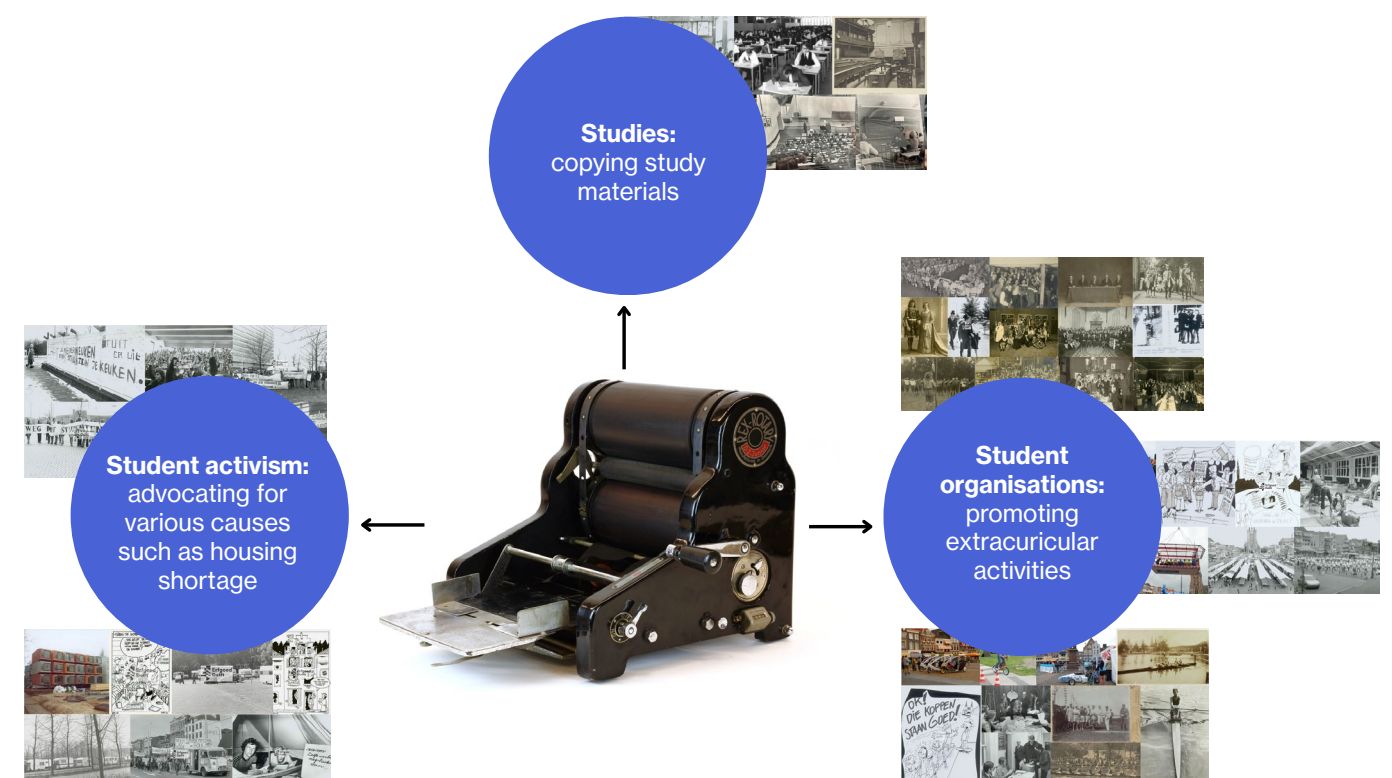
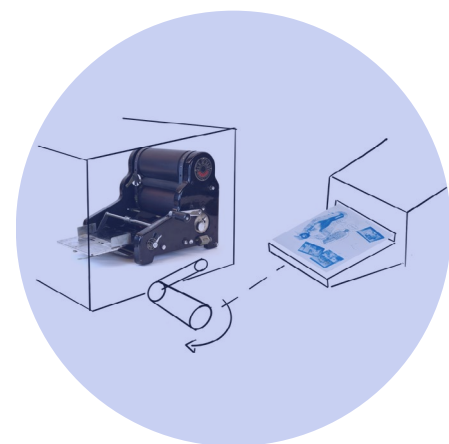


Figure 57: Historical significance of the stencil machine, illustrating themes from past student life, identified in chapter 5.1



Smart related object



Contemporary counterpart



Workshop with replica

Figure 58: Various methods for using a heritage object as a reference object

Invented in 1876, the stencil machine was widely used in educational institutions until the 1980s. It provided a quick and inexpensive way to produce multiple copies of newsletters, bulletins, flyers, and study materials (Cushing, 2010). The TUDL museum collection includes a mimeograph, a specific type of stencil machine. However, due to the no-touch policy, this object can only be exhibited inside a glass vitrine.

Various methods exist for using a heritage object as a reference object without direct interaction with the original (Duranti, 2024). For the stencil machine, three such possibilities have been identified (figure 58). Considering the requirements for a spontaneous break activity with no advance planning and the integration of digital technology (see chapter 4.2), the decision was made to use the stencil machine as a smart-related object. This chapter will explore how the stencil machine can be used as a smart-related object by applying the material characterization method to abstract its essential qualities and incorporate these into the design of the interactive concept.

Method

The Ma2e4 toolkit is a framework that can

be used to explore material properties with users through experiential methods (Camere & Karana, 2018). This toolkit was used to evaluate the mimeograph machine on performative, sensorial, affective, and interpretive levels to discover how these attributes influence the user experience. The Ma2e4 toolkit was used as a guiding framework, but adjustments were necessary since it was originally intended for material characterization. In this case, it was applied to evaluate a product, which required changes primarily to the questions related to the performative level.

For the evaluation sessions, the mimeograph machine was first introduced using slides that presented the product, named its components, and included images and videos explaining its use and the process of duplicating a stencil. Afterwards the participants were asked to fill in the hand-out. These materials can be found in appendix F.

Recruitment and participant selection

Participants were recruited from a personal network. Four master's students, aged 24 to 26, all Dutch nationals and identified as female, participated. The session was held in an IDE project room on August 14, 2024.

Findings

Affective level

Participants expressed that their negative emotions were primarily due to the product's complexity, which caused frustration and confusion (figure 59). To address the students' need to reduce cognitive load during breaks, the smart related object should be a simplified version of the original stencil machine. This design should feature easy-to-understand interactions and focus on a few appealing performative qualities.

What emotions does the object elicit?

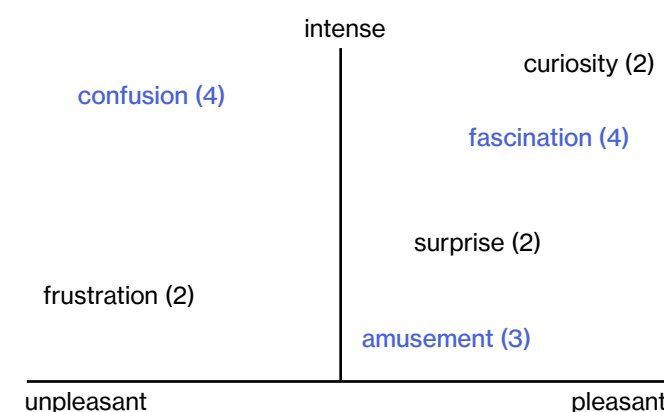


Figure 59: Affective level

Performative level

A few appealing performative qualities were uncovered. All of the participants expressed a desire to turn the handle of the stencil machine (figure 60) and create a stencil themselves to check the output (figure 61). They were mainly interested in experiencing the repetitive motion of feeding and ejecting the paper (figure 62).

a. How would you like to handle the object?

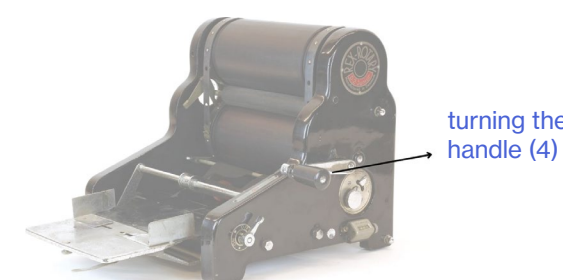
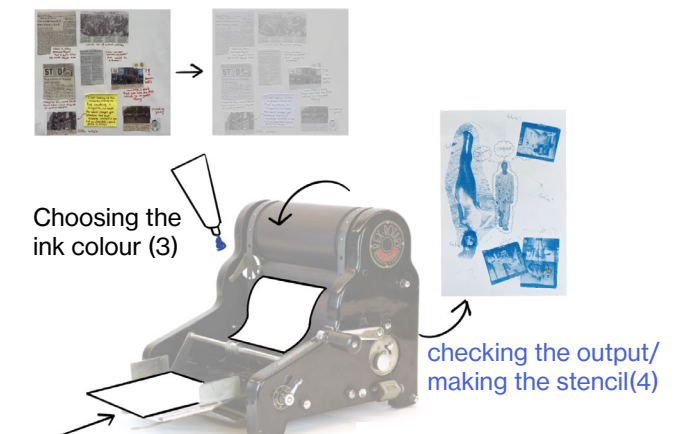


Figure 60: Performative level question a

b. How would you like to use the object?

Preparing the wax coated stencil (1)



feeding the input paper (1) serving the mechanics (2) checking the output/ making the stencil(4)

Figure 61: Performative level question b

c. How would you like to experience the object?

- Listening to the sound of the stencil machine (1)
- Smelling the ink which is used to make the stencils (1)
- The repetitive motion of feeding and ejecting paper (3)

Figure 62: Performative level question c

Interpretive level

The interpretive and sensorial qualities will determine the material and appearance of the design elements, ensuring a consistent user experience throughout the concept (figures 63 and 64).

What do you associate with the object?



hand crafted (2) toy like (2) nostalgic (2)

aggressive (1) cozy (1) masculine (1) sober (1) unsexy (1) professional (1)

Figure 63: Interpretive level

Sensorial level

How would you describe the object?

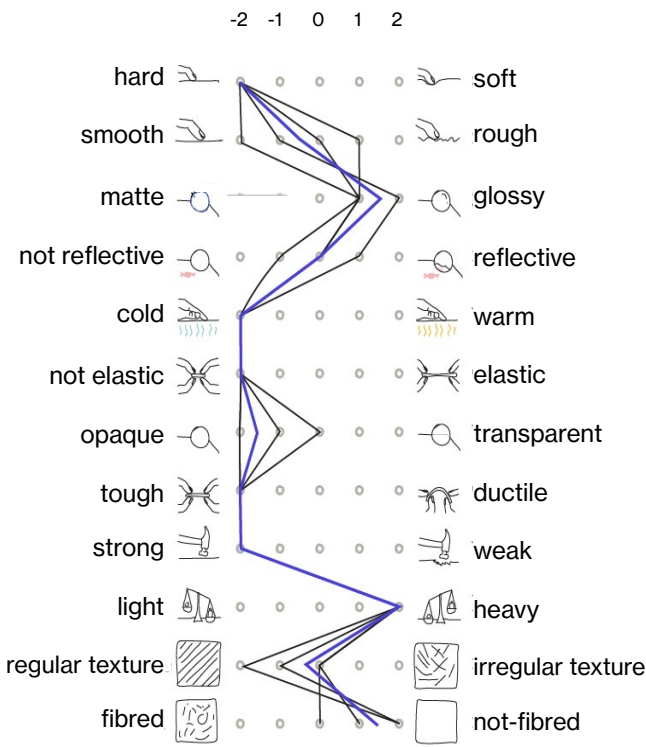


Figure 64: Sensorial level

Concept development

Q4.5 How can these qualities be integrated into the concept?

The findings inform the development of the StoryTiles concept for the redesign of the exhibition cabinet (figure 65). Insights from the affective and performative levels guide the user interaction to create a stencil from the collage with the smart-related object. The interpretive and sensory qualities of the stencil machine inspired presentation of the AcH content as Delft Blue tiles, evoking the same nostalgic, handcrafted associations. Furthermore, the toy-like quality of the stencil machine complements the playful nature of the Delft Blue tiles, enabling users to rearrange them into a mosaic to form a collage. This approach addresses a key issue identified in the co-creation sessions, where students expressed that making a traditional collage was too time-consuming and presenting the images and news articles in a magazine-style format caused information overload (figures 66 and 67).

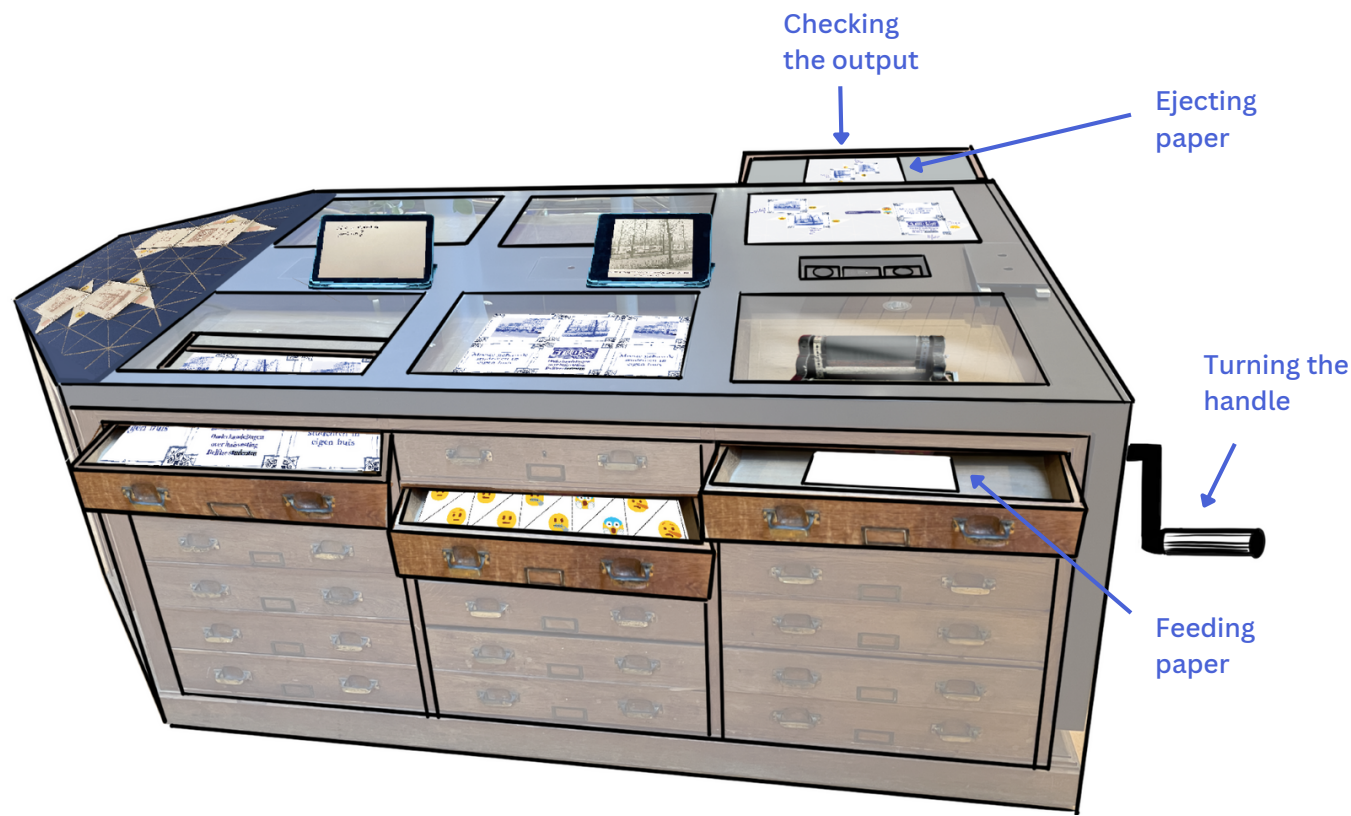


Figure 65: The interaction with the smart-related object



Figure 66: Traditional collage activity



Figure 67: Reinterpretation of the collage activity

Besides their sensory and interpretive characteristics, the historical reference of Delft Blue tiles is fitting for presenting images and newspapers related to student life of the past. Delft Blue tiles are known for ‘Tegeltjeswijsheid,’ which are short sayings or images that convey the ideas and cultural norms of their time (figure 68). This serves as a metaphor for presenting news articles and images that communicate the ideas and cultural norms of past student life.



Figure 68: Tegeltjeswijsheid

StoryTiles

To create a collage using tiles, RFID technology is employed. This section will explain the high-level tangible interactions enabled by these RFID tags. The feasibility of implementing RFID technology for this concept is discussed in Chapter 5.2: RFID technology.

AcH tiles - activate content

The AcH tiles allow users to select content of personal interest and access more detailed information, one tile at a time. Each RFID tag embedded in the tile links to the full article or a detailed image with a description. There are two types of AcH tiles related to past student life (figure 69):

- 1. Tiles with images
- 2. Tiles with headlines from news articles

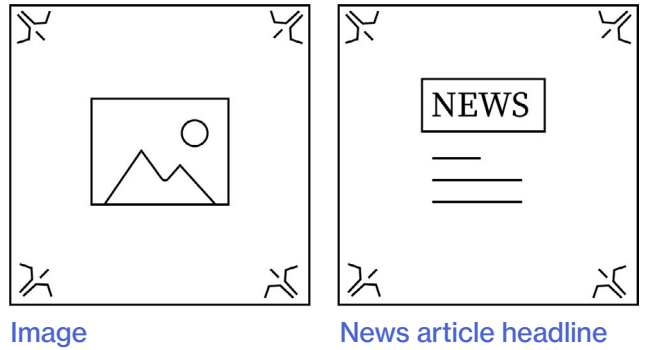


Figure 69. Content tiles allow the user to activate content about the images and news articles

Reflection tiles - produce content

The reflection tiles allow users to create content by reflecting on the AcH materials. Each embedded RFID tag prompts users

to take specific actions to engage with the materials in three different ways (figure 70):

- 1. **Comment tile:** This tile enables users to express their thoughts about the content. They are prompted to provide written feedback or opinions about the content.
- 2. **Emoticon tile:** This tile allows users to express their emotional response to the content. Users select an emoticon, enabling them to quickly convey how the content makes them feel.
- 3. **Highlight tile:** This tile enables users to indicate their interests regarding specific parts of the content. Users are prompted to highlight sections of images or text, signaling which aspect of the provocative content they find particularly intriguing.

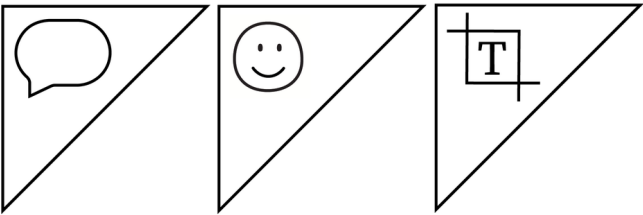


Figure 70. Reflection tiles



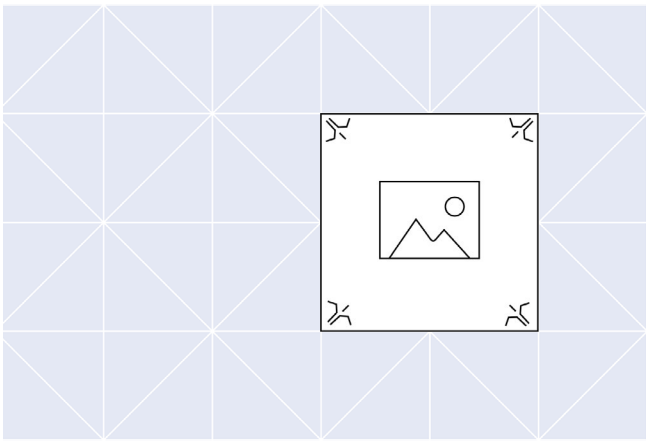
Figure 73. Digital collage

Playboard - creating a collage

The physical playboard serves as the main platform for students to arrange the tiles to create the collage. The playboard surface detects the presence and location of RFID-enabled tiles. The size of the playboard facilitates collaborative interaction to allow multiple users to work together.

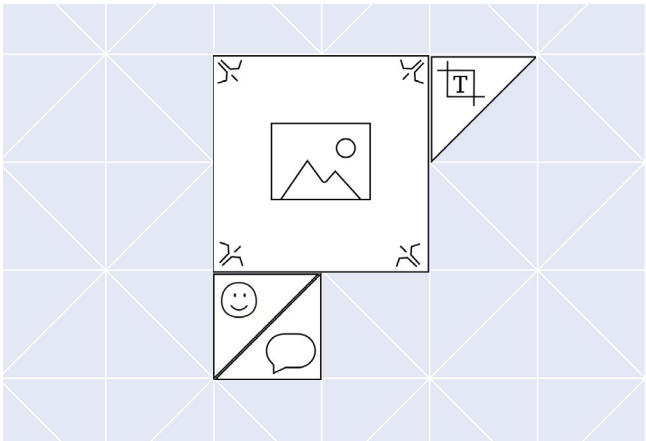
Interactive screen - getting instructions

The interactive screen provides immediate feedback during the process, ensuring intuitive interaction. When an AcH tile is placed, the screen activates and displays more information about the selected content (figure 71). Similarly, when students place reflection tiles (emoticon, comment, or highlight), the screen prompts users to express their thoughts, emotions, or interests about the AcH content through a digital interface (figure 72). For the screen to recognize the reflection tiles, they must be placed next to an AcH tile. The outcomes of the user's actions will be added to the digital collage that captures current students' perspectives on past student life (figure 73)



The playboard detects the presence and location of RFID-enabled tiles.

Figure 71. AcH content displayed on the digital screen

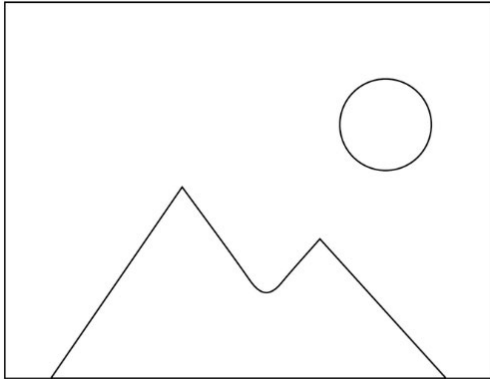


Reflection tiles can only function when placed next to a content tile.



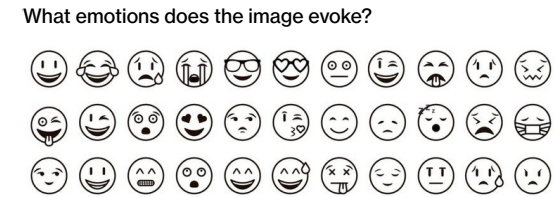
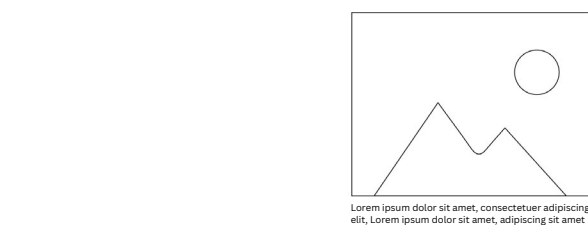
Once detected, the user can add a comment to express their ideas about the content.

Figure 72. Instructions for reflecting on the AcH content displayed on the digital screen

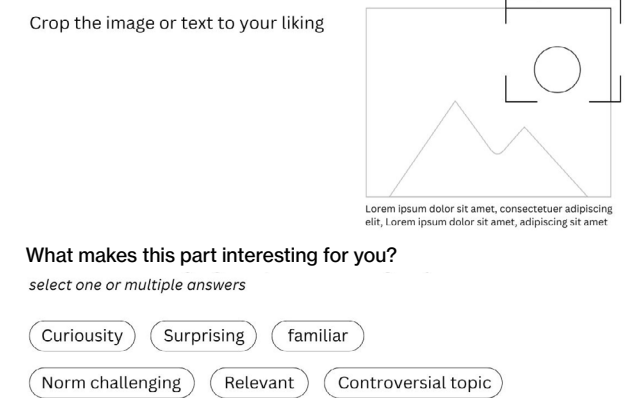


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Once detected a digital screen shows the content linked to the tile



Once detected, the user selects an emoticon to reflect their feelings about the content.



Once detected, the user can highlight the part that sparks their interest

Activating simulations

The digital collage is used as input for the stencil machine. Users turn the handle to create a stencil from the digital collage (figure 74). An animation demonstrates the process, and the physical output simulates a single-color stencil, essentially a standard copy of the digital collage. This serves as a memento for students to take home and acts as a conversation starter to share fun or interesting facts about the AcH content.

Additionally, turning the handle spreads the digital version of the stencil across the Collection Wall. With each turn, the display on the wall becomes more prominent (figure 74), mirroring the historical use of the stencil machine, where more stencils meant wider reach for spreading ideas or messages.

Students are invited to visit the CoW, which displays stencils from various users,

showcasing diverse student perspectives on academic heritage content. This concept serves as a pre-experience for the CoW, providing a touchpoint for engagement with AcH in a break area. Therefore, the Exhibition Cabinet should be relocated closer to the entrance to avoid association with the silent study area, which creates an awkward environment for interaction (figure 74). This concept supports free-choice learning by giving students autonomy over which tiles to engage with, how to reflect, and how to construct their collages. It aligns with Falk and Dierking's (2009) model, emphasizing learning driven by personal interest, curiosity, and self-directed exploration. The pre-experience sparks students' curiosity for exploring the AcH collections more deeply by browsing the digital archives and engaging with perspectives beyond their own through viewing the stencil collection at the CoW.

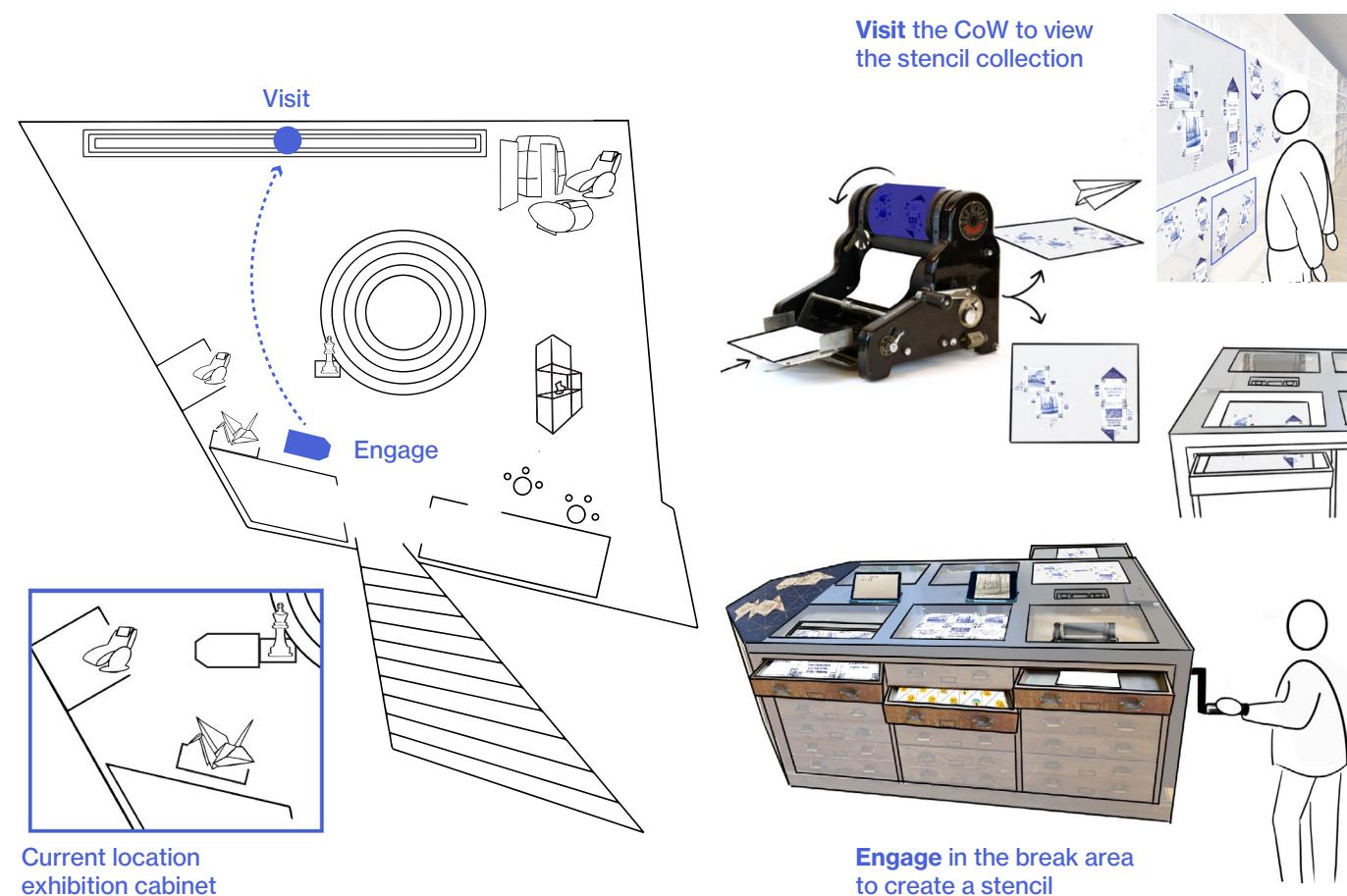


Figure 74: Relocation of the exhibition cabinet to the break area to better engage students

5. DELIVER

Final design

This chapter addresses the question:

Does the concept meet the design goal?

This chapter presents the final design of the StoryTiles concept, developed through iterative prototyping. It evaluates the design based on insights gained from the prototyping and testing phases. An evaluation plan was created to assess whether the interactions met the design requirements for a mode-shifting experience. A final prototype, including the digital interface and physical components, was tested with students at the TU Delft Library to determine if they engaged in spontaneous interaction and if the design goal was achieved. Additionally, a storyboard illustrates the complete user journey, from interacting with StoryTiles to visiting the CoW.

This section explains the iterative prototyping process to deliver the final concept. It evaluates the desired interaction qualities, defined as a mode-shifting experience (see chapter 4.2). The prototypes materialize design elements, which are tested to see if they meet the objectives.

Method

An evaluation plan was set up to provide clear objectives for prototyping and testing (figure 75, appendix G). Multiple tests and prototypes were created to assess different interaction qualities effectively. The first

INTERACTION QUALITIES	DESIGN ELEMENTS	OBJECTIVE
1. Social: encourage discussion through sharing of perspectives	Provocative content, multi/single user playboard, stencil as memento, CoW Collage collection	1.1 The interactive playboard encourages collaboration on a shared collage. 1.2 Students intend to share facts from the provocative Ach content with others.
2. Attractive: spontaneous and time-flexible engagement in the break area	Ach display as Delft Blue tiles with provocative content, Pre-experience at the exhibition cabinet	2.1 The tiles spark students' curiosity, leading them to engage in the collage-making activity.
3. Playful: free-choice learning through discovery	Variety in Ach tiles and reflection tiles	3.1. Students explore and select the content tiles of personal interest
4. Hands-on: active engagement through tangible interaction	RFID embedded tiles, Turning the handle	4.1. Students enjoy the physical interaction with the tiles to create a collage and the act of turning the handle to produce a stencil.
5. Energizing: intuitive interaction with minimal cognitive load	Content and reflection tiles, interactive screen and playboard	5.1 Students understand how to use the different tiles with minimal instructions. 5.2 The playboard and the interactive screen guides users through the collage-making and stencil-creation process. 5.3 users are able to quickly browse through the variety of tiles and select those that interest them 5.4 The tile display encourages users to store the tiles properly after use.
6. Motivation: The design should encourage visits to the CoW.	Screen prompts of the animation and collage display at the CoW	6.1 Students become aware of the CoW.

Figure 75: Evaluation plan

test involved two participants to observe the dynamics among multiple users. The second test took place at the Exhibition Cabinet in the TU Delft Library to evaluate how users interact with the design, focusing on the physical dimensions and layout of the space. The third test used multiple laser-cut prototypes for storing the tiles to evaluate their intuitiveness and usability. To evaluate the interactions, participants were asked to speak aloud during the activity while their behavior was observed to determine if the objectives were met. After the test, the following questions were asked to encourage reflection on their experience:

- How did you experience the activity?
- What part did you like most and why?
- What part did you like least and why?
- Did you understand each step of the process?

Test set up

To evaluate the attractiveness and usability of the prototype, the wizard-of-oz technique was used to simulate the embedded RFID technology. The screens were manually changed as participants interacted with the tiles. Two screens were used: one displayed the Ach content triggered by the tiles, while the other showed the interface for interaction, prompting participants to reflect on the content (figure 76).

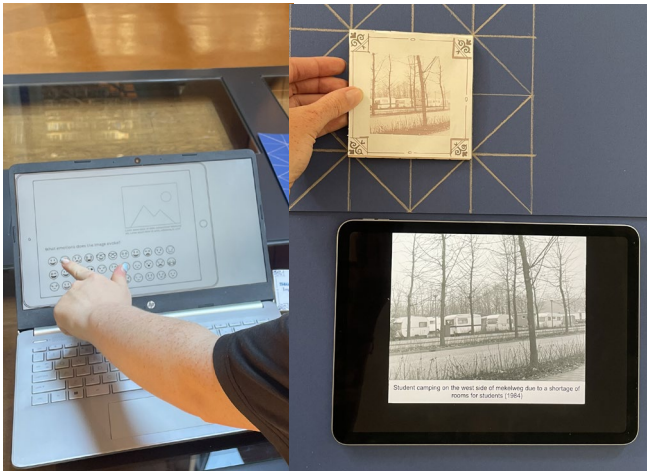


Figure 76: Test set up

Findings

The findings will be discussed in relation to the interaction qualities and objectives defined in the evaluation plan. Since objective 1.2 of the social interaction quality represents an intended effect, prototyping and testing it at this stage would be too speculative. Therefore, this objective will be assessed during the final user test in context, using an interview.

Q5.1 How effectively do the prototypes facilitate mode-shifting with Ach?

1. Social

1.1. The interactive playboard encourages collaboration on a shared collage.

Students collaborated in choosing tiles to place on the playboard and discussed notable facts about the detailed content that appeared on the screen. They preferred standing side by side to view the screen together and explore the tiles from the same perspective (figure 77).

“Lets do one more, this one seems interesting.” - P1

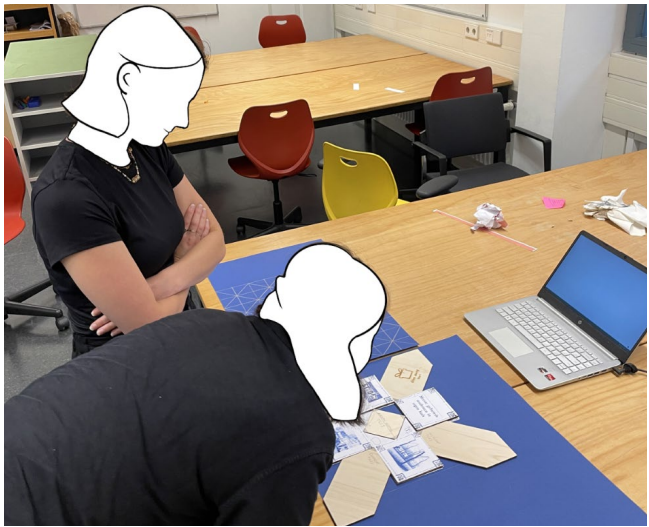


Figure 77: Standing side by side to collaborate

The exhibition cabinet allows people to use the playboard from both sides, as it is placed in the middle. However, standing opposite

from each other creates an uncomfortable distance for collaboration and discussion (figure 78).



Figure 78: Effect of dimensions on collaboration

2. Attractive

2.1 The tiles spark students' curiosity, leading them to engage in the collage-making activity.

Participants reflected on the content tiles and noted a preference for those with news article headlines (figure 79), as they sparked more curiosity than the images (figure 80).

"Headlines of news articles really make you curious and then it's interesting to read the whole text." - P2

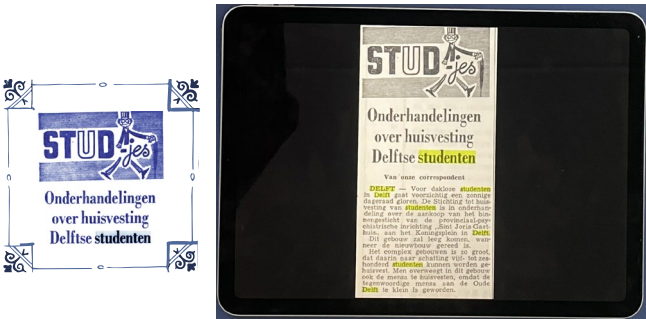


Figure 79: News article content

"Images give away most of the story, the description gives not much new information, except for the date." - P2



Figure 80: Image content

3. Playful

3.1 Students explore and select the content tiles of personal interest

Participants enjoyed browsing through the tiles. Even before exploring the playboard, they selected tiles of personal interest (figure 81). When together, they discussed which tiles to place on the playboard.

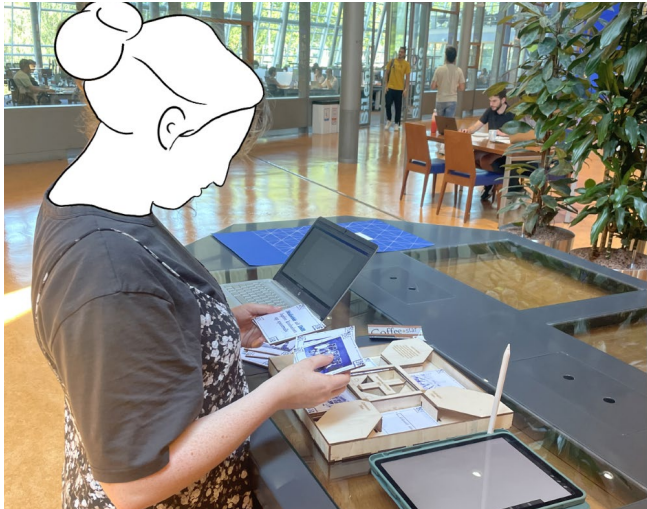


Figure 81: Selecting tiles of personal interest

4. Hands-on

4.1 Students enjoy the physical interaction with the tiles to create a collage and the act of turning the handle to produce a stencil.

The participant expressed that turning the handle would be enjoyable because it causes the stencil to come out. However, now the output comes from the other side, making it invisible while turning the handle (figure 82).

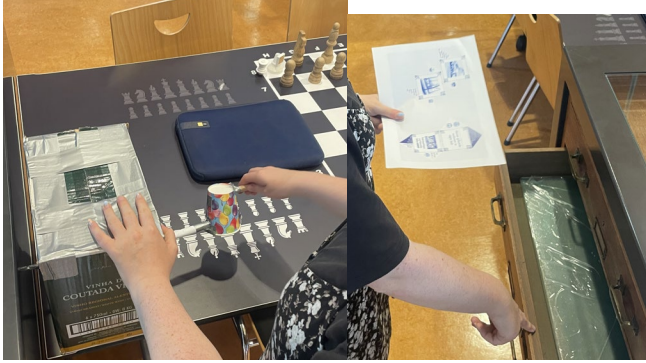


Figure 82: Stencil creation process

5. Energizing

5.1 Students understand how to use the different tiles with minimal instructions

The symbols on the reflection tiles can be placed next to a content tile in various orientations. However, this is perceived as confusing when a letter appears upside down (figure 83).

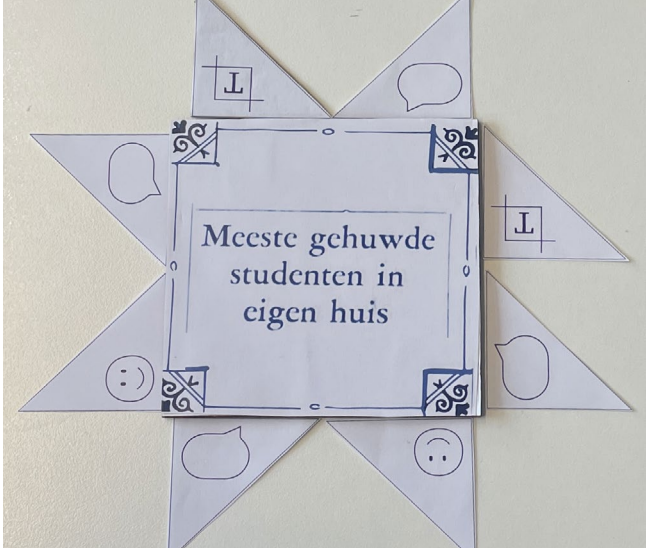


Figure 83: Figure X: Orientation reflection tiles

Participants used no more than three reflection tiles per content tile, even when working collaboratively on the collage. Currently, the playboard is designed to allow up to eight reflection tiles around each content tile, which seems excessive. Additionally, the shape of the reflection tiles allows two content tiles to connect to the same reflection tiles (figure 84), leading to confusion among participants.

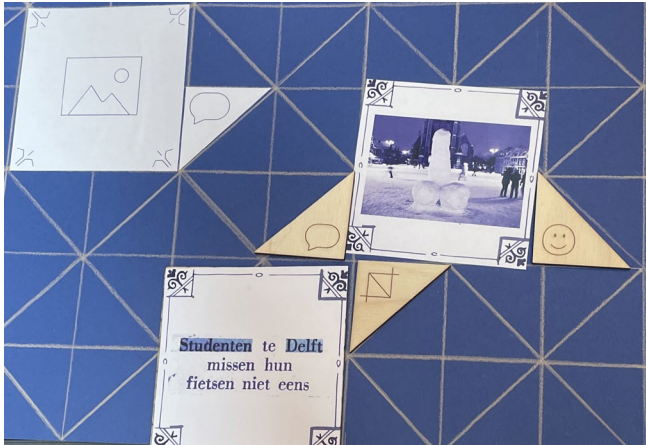


Figure 84: Tile overlap issue

It's unclear that a tile should be placed on the playboard. When placed by accident, the content on the screen appears (figure 85).

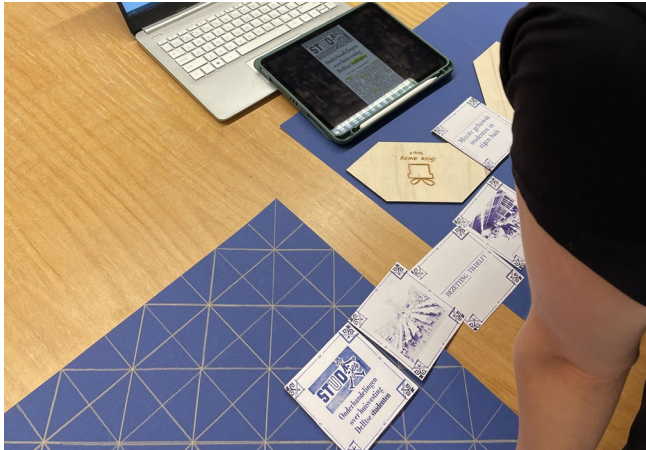


Figure 85: Tile accidentally placed on the playboard

In the second test, a content tile and a reflection tile are printed on the playboard as an example. However, due to the distance from the playboard, it is not noticed by the participant (figure 86).



Figure 86: Playboard placement too distant

Although a short explanation is provided on the tile box, mentioning the playboard, this phrasing is misunderstood. As a result, the tile box itself is mistaken for the playboard (figure 87).



Figure 87: The tile box mistaken as a playboard

The instructions are too minimal, and the phrasing of some elements is unclear. While the naming of content tiles is understood, referring to reflection tiles as “tiles” is perceived as confusing, as they are more like “shards” and recognized as smaller pieces (figure 88).



Figure 88: Instruction and phrasing of the elements

5.2. The playboard and the interactive screen guides users through the collage-making

Once participants understood the playboard, placing tiles and reflection pieces became intuitive, and the screen prompts were easy to follow (figure 89).

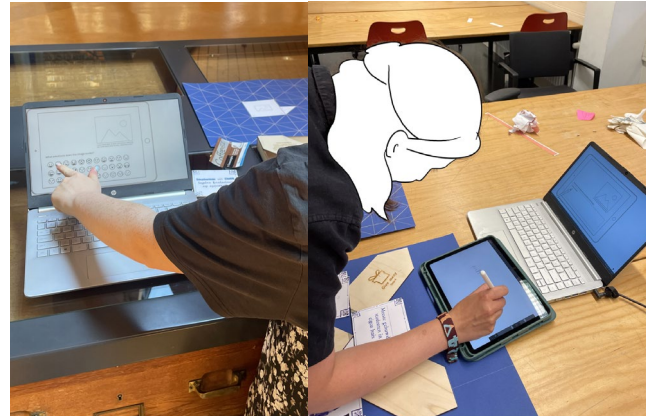


Figure 89: Users interacting with the screen

However, the prototype lacks immediate feedback, making the purpose of the actions unclear. When the collage is displayed on the screen as an example of the final outcome, participants became really excited. They noted that knowing the goal of creating a collage beforehand influences how they would place the tiles.

5.3 Users are able to quickly browse through the variety of tiles and select those that interest them

Initial user tests showed that the tile box lacked clear cues for browsing and selecting tiles. Various prototypes for storing and displaying the tiles were tested (figure 90). Users preferred prototype 3 for its easy access and visibility of all the tiles. One participant compared it to browsing through a stack of LP's, flipping through them.

“I prefer the one stacked from above better than the one stacked from the side.” - P3

“It's great if all the tiles are accessible at once, but now, you have to lift each tile out of the storage box to see what's displayed on it.” - P3



Figure 90: Different prototypes for storing the tiles (1: top left to 4: bottom right).

5.4. The tile display encourages users to store the tiles properly after use.

The content tiles in the tile box need to be unboxed to view them all, which easily creates a mess (figure 91). However the recessed compartments encourage putting the tiles back after use.



Figure 91: Users interacting with the screen

6. Motivation

6.1 Students become aware of the CoW.

The participants were shown screen prompts of the animation and collage display at the CoW (figure 92). They expressed interest in viewing their own collage but noted that the CoW's location is not clear.

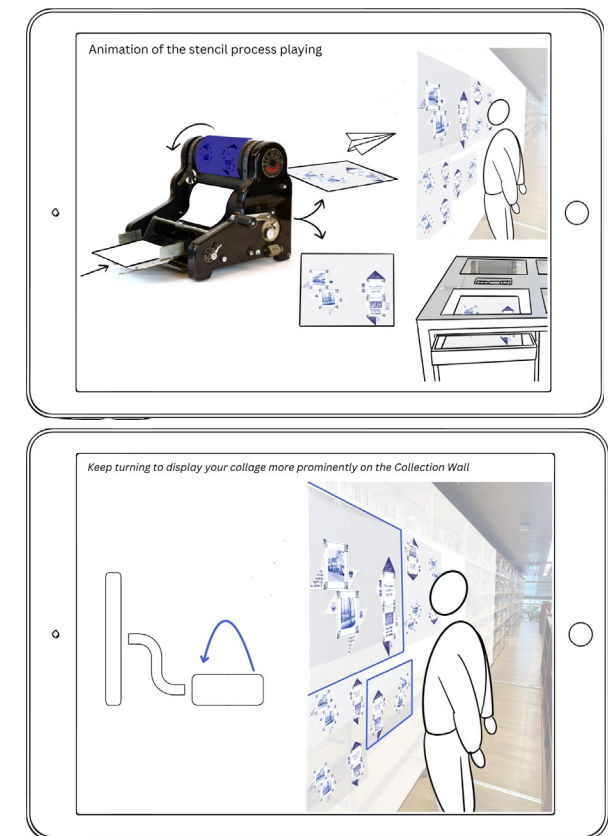


Figure 92: Screen prompts

Concept redesign

This section presents improvements to the concept based on the findings. It is organized according to the evaluated interaction qualities and objectives, similar to the findings section.

Q5.2 How can the concept be refined based on the prototype evaluation

1. Social

1.1 The interactive playboard encourages collaboration on a shared collage.

The concept setup was changed to position everything on one side of the exhibition cabinet, allowing users to stand side by side, facilitating easier collaboration and more comfortable discussions. A large interactive screen and playboard support users in creating a shared collage from the same perspective. (figure 93, on the following page).



Figure 93: Improved set up of the concept

2. Energizing

2.1 The tiles spark students' curiosity, leading them to engage in the collage-making activity

To make the image tiles more curiosity-inducing, not the entire story is revealed at once. Only a part of the image is shown on the tile (figure 94). When the tile is placed on the playboard, the complete image along with a description appears on the screen.



Figure 94: Cropped image is displayed on the tile

Since headlines from news articles spark the most curiosity, they will be used to sensitize students and draw their attention

to engage in the collage-making activity at the exhibition cabinet. Tiles with provocative headlines and questions will be displayed on the ground, so students encounter them while walking to the break area (figure 95).

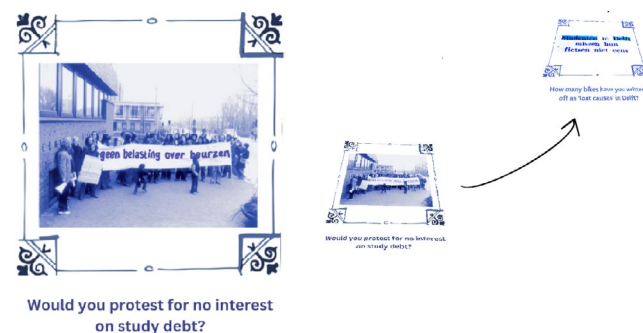


Figure 95: Provocative tiles on the ground

3. Playfulness

3.1 Students explore and select the content tiles of personal interest

Multiple tile cabinets allow several users to browse tiles simultaneously, searching for content of personal interest (figure 93). This enables individual discoveries to be shared and discussed before choosing which tile to place on the playboard.

4. Hands-on

4.1 Students enjoy the physical interaction with the tiles to create a collage and the act of turning the handle to produce a stencil.

The stencil machine is positioned so that the handle can be turned while checking the input and output. The screen on the left displays the animation of the digital collage being fed into the stencil machine, while the output can be viewed on the right side of the machine simultaneously (figure 93).

5. Attractiveness

5.1 Students understand how to use the different tiles with minimal instructions

The icon of the highlight tile is adjusted for clarity in every orientation (figure 94).

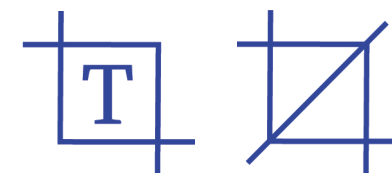


Figure 94: Adjusted icon highlight tile (right), old (left)

Due to the tile overlap issue and the excessive space for reflection tiles around the content tiles, the grid has been adjusted (figure 95). The reflection tiles have been made larger, ensuring that each tile connects to only one content tile. This adjustment also has the added benefit of providing more space for writing comments, highlighting text or images.

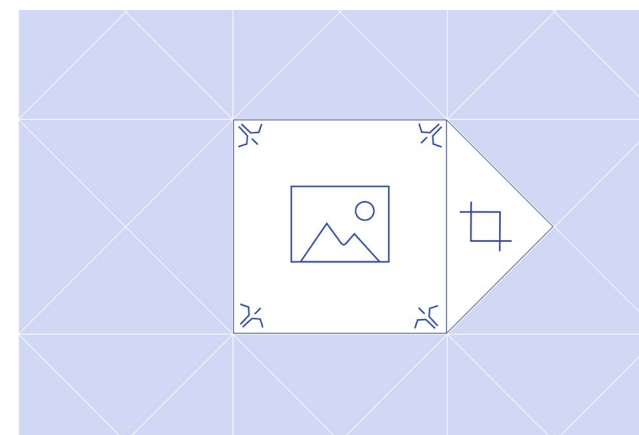


Figure 95: Improved playboard grid

The naming of the tiles has been adjusted to distinguish between content tiles and reflection pieces (figure 96).



Figure 96: Tile (left) and piece (right)

The instructions are improved by naming each component and dividing them into actionable steps linked to every part (figure 99, on the following page).

5.2 The playboard and the interactive screen guides users through the collage-making

To clarify that tiles and pieces should be placed on the playboard to create a collage, the interactive screen will display a brief preview of the interaction steps. This introduction will be shown as a short animation. Click the blue button to view the preview, and adjust the settings (top right corner) to fit the prototype to the screen width and height.



5.3 Users are able to quickly browse through the variety of tiles and select those that interest them



Figure 97: Improved display

The tile display is adjusted to allow users to browse through the tiles, inspired by a CD flip storage (figure 97). Every tile is easily accessible and visible without needing to take them out one by one.

5.4 The tile display encourages users to store the tiles properly after use.

This storage solution ensures that tiles do not need to be unnecessarily removed to prevent a mess from the start. Moreover it includes individual compartments for each tile and for the different pieces, encouraging users to return items neatly after use (figure 98).



Figure 98: Improved storage solution



Figure 99: Instructions divided into steps on every part

6.Motivation

6.1 Students become aware of the CoW

The tiles on the ground also aim to increase students' awareness of the CoW and spark their interest in visiting. They will be placed as a walking route from the exhibition cabinet to the Collection Wall. This path is designed to guide students either to visit the Collection Wall before or after participating in the collage-making activity at the exhibition cabinet (figure 100).

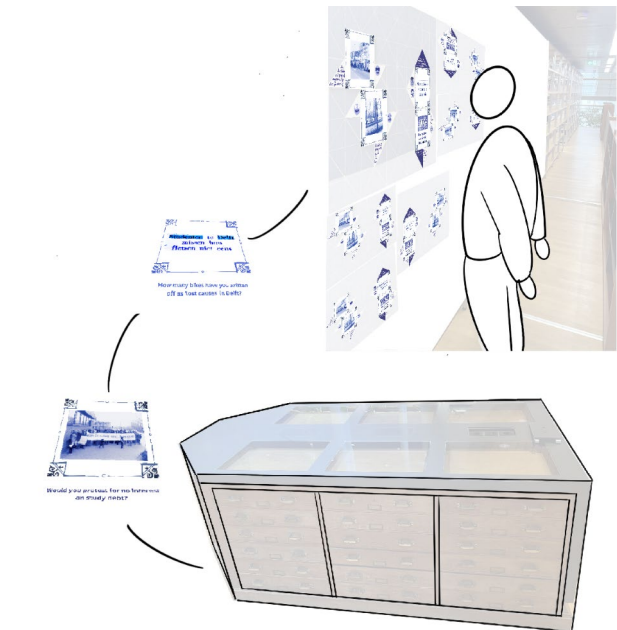


Figure 100: Provocative tiles on the ground

5.2 RFID TECHNOLOGY

The concept uses RFID technology to enable embedded interactions with digital content. This section validates RFID technology as an effective means for detecting the presence of tiles placed on a playboard and displaying the corresponding content.

Q5.3 Is RFD technology suitable for enabling embedded interaction with the digital content in this concept?

RFID technology

High-Frequency RFID (13.56 MHz) provides sufficient range and accuracy for identifying tiles on a playboard. The system can detect multiple tags and track both the presence and position of the tiles. This is essential for determining when reflection pieces are placed adjacent to content tiles. The playboard is a grid, with each square divided into four triangular detection zones, with its own antenna. Using Arduino, the system can be programmed to detect tile placement and check adjacent zones for reflection pieces. (Sanpechuda, 2008) Passive RFID tags store data that trigger specific actions, such as displaying content linked to a database (Jian, 2010). The RFID reader detects the activated antenna and triggers the corresponding screen. When a reflection piece is detected near a content tile, it prompts actions like adding a comment, selecting an emoticon, or highlighting text.

Method

The feasibility of the system is evaluated using a schematic drawing of the connected electronic components (figure 103). The overview is a simplification of the playboard, with one rectangle divided into four triangles and four adjacent triangles, forming a grid of eight detection zones. A multiplexer detects these zones, each with a small antenna, to inform the RFID reader. An Arduino prototype was built based on the schematic to test the system's ability to detect the location and presence of tiles on the playboard. Due to limited time and RFID

component availability, the Arduino was programmed to simulate the detection sequence using LED lights. The necessary components for the system include an RFID reader, RFID antennas, RFID tags, a multiplexer, a microcontroller (Arduino Lotus), a breadboard, and wiring.

Results

Figure 102 illustrates the functional scheme of the electronic components. In standby mode, the RFID reader remains passive. When powered by the ENable pin, it activates and sends 5V to the multiplexer (COM pin) to start reading through the antennas. The multiplexer (CBA pins) sequentially switches the antennas to detect if a tag is present and determine if a detection zone is occupied. This sequence is demonstrated with an Arduino prototype featuring LED lights (see figure 101 and Appendix H).

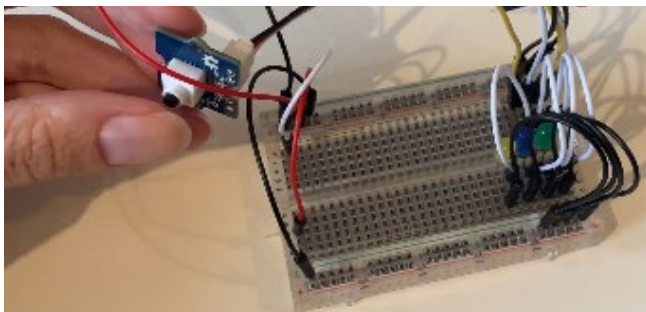


Figure 101: video Arduino prototype with LED lights

Figure 102 shows the multiplexer's functional modes, indicating the alternation of the CBA pins to check each antenna, with the Y pins serving as output and the COM pin as input.

INPUTS				ON CHANNEL
INH	C	B	A	
L	L	L	L	Y0
L	L	L	H	Y1
L	L	H	L	Y2
L	L	H	H	Y3
L	H	L	L	Y4
L	H	L	H	Y5
L	H	H	L	Y6
L	H	H	H	Y7
H	X	X	X	None

Figure 102: "Table functional modes" from "8-Channel Analog Multiplexers" by (Texas Instruments, 2024), used under CC BY

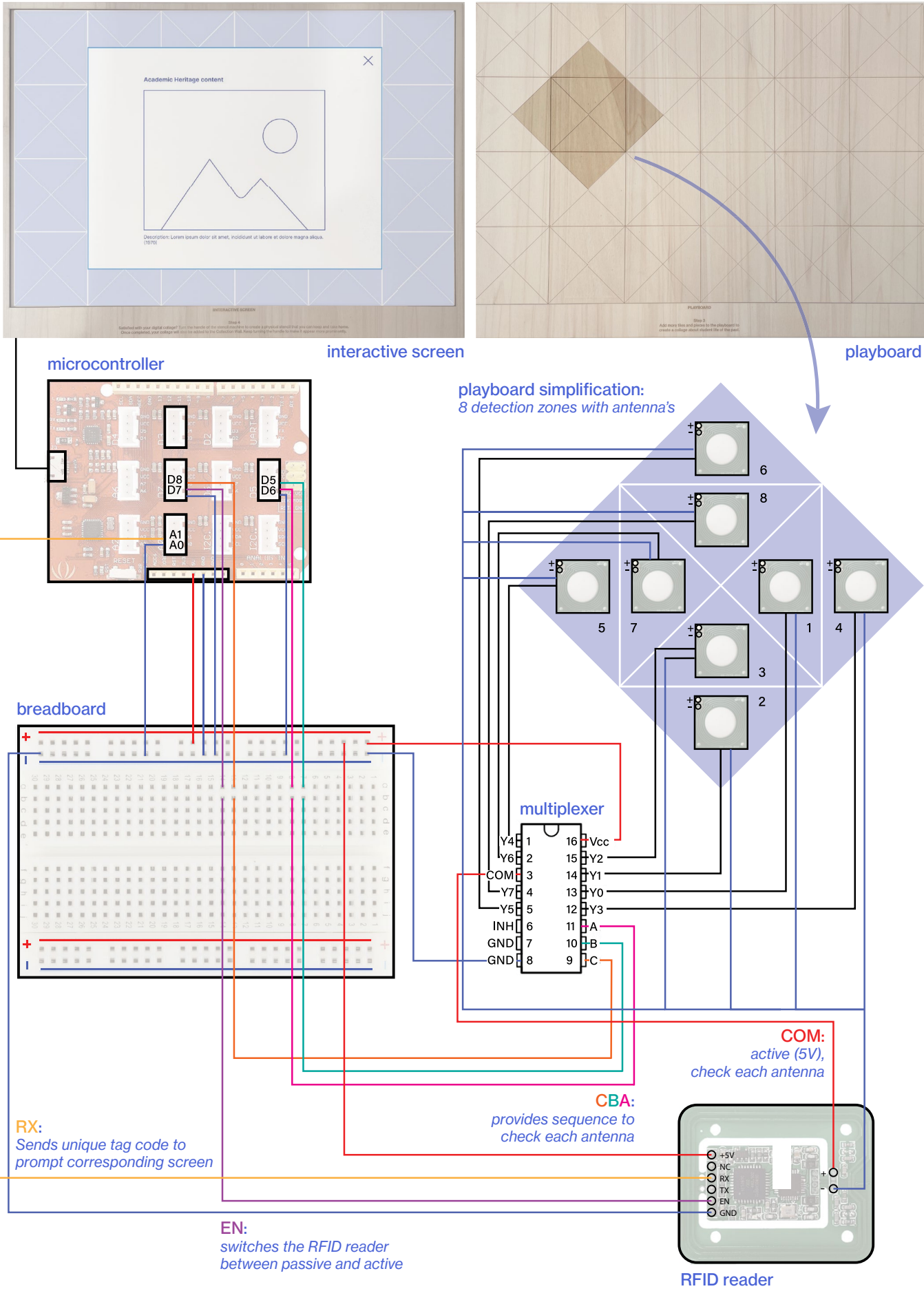


Figure 103: Schematic drawing of the connected electronic components

5.3 FINAL CONCEPT EVALUATION

This chapter outlines the steps taken to evaluate the final concept, including the design of the interactive prototype in Figma, the final concept storyboard, and the method and results of the evaluation session at the TUDL. The goal was to determine if the design goal is achieved: “To design a mode-shifting experience with AcH in the break environment, encouraging students to visit the CoW.”

Final prototype

The final prototype (figure 104) was developed by designing the interface in Figma and laser-cutting the playboard, screen frame, tiles, and storage solution. The tiles were finalized with paper prints of various images and news article headlines in Delft Blue style. This section discusses the Figma interface design. Details of the physical components can be found in chapter 5.1: Concept redesign.



Figure 104: Overview of the final prototype

Figma interface design

This section provides an overview of the interactive prototype. A digital interface was chosen to support tangible interaction with the AcH tiles and pieces by activating related content on the screen and allowing users to reflect through comments, highlights, and emoticons. Prototyping the interface was essential for testing user interactions and delivering immediate feedback as participants created their collages. Figma,

a widely used tool for prototyping websites, apps, and other digital experiences, was used for this purpose. The intended interactions with the interface and playboard for creating a digital collage are illustrated in figures 106, 107, and 108. Since a key aspect of the concept is for users to discover content of personal interest, offering a variety of AcH tiles to browse and select from is essential. Each AcH tile required 10 screens to display its content and corresponding actions for the 3 different reflection pieces in every orientation (figure 105).

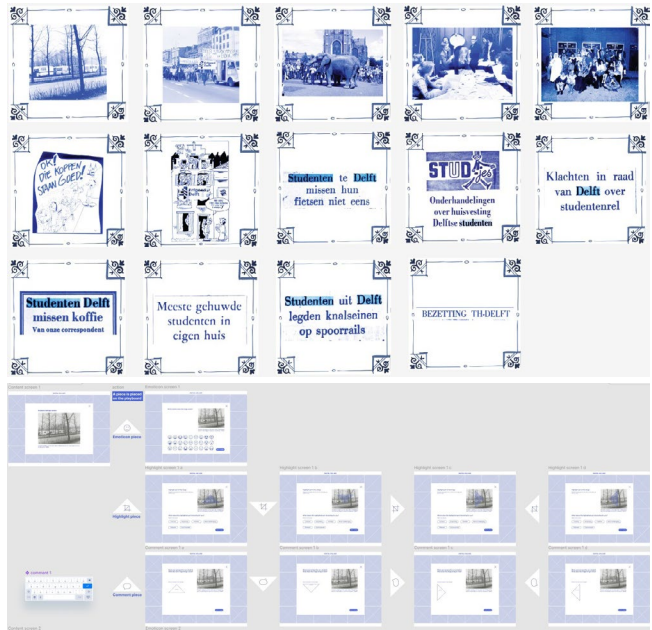


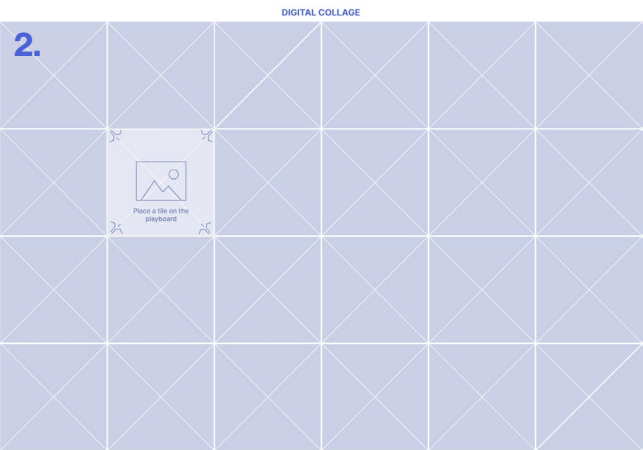
Figure 105: Overview of tiles and screens per AcH tile

Given the number of possibilities, not every interaction with the interface could be prototyped in advance. To address this, the mirror function was used to simulate interactions during testing, allowing for manual triggering of screens when participants placed a tile or piece on the playboard. The correct components were also manually dragged to create the digital collage. This process resulted in a slight delay between actions, but participants were informed of this beforehand. Press below to view the complete prototype.





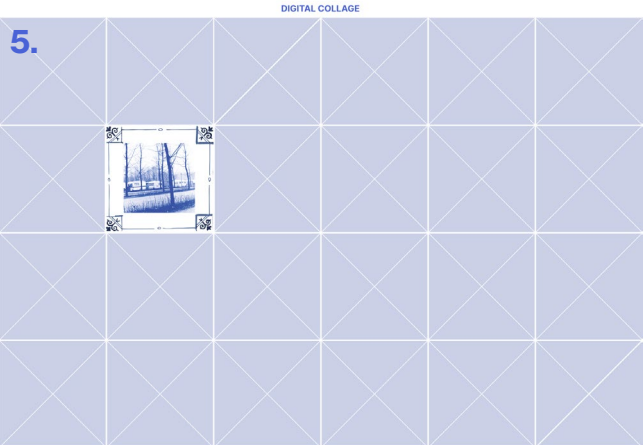
Preview: A preview loops, explaining the process and goal of creating a digital collage.



Start: The user is prompted to place a tile on the playboard



Ach Content: Placing a tile, displays the information screen with Ach content.

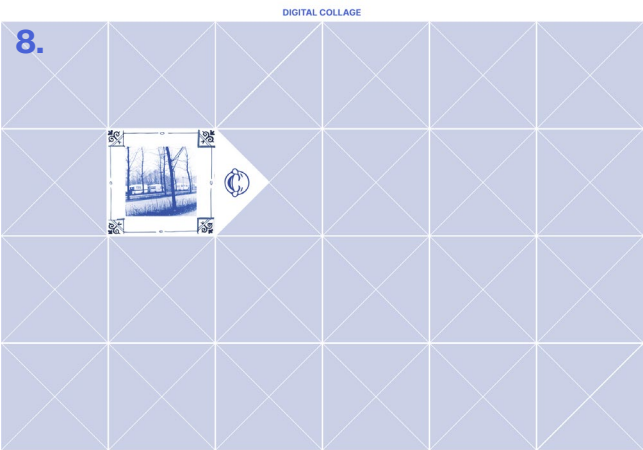


Collage: The outcome will appear on the digital digital collage screen.

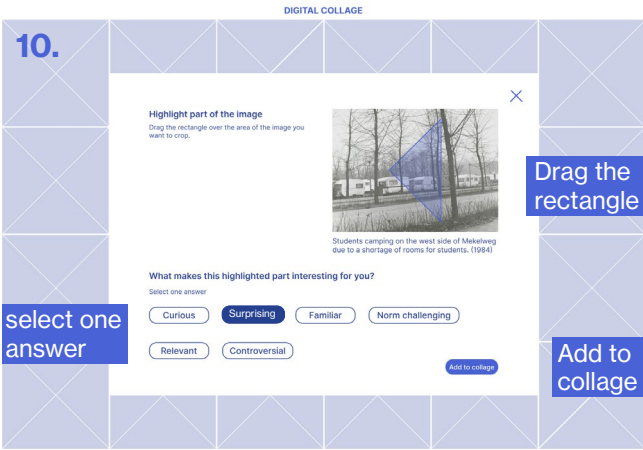
Figure 106: The intended interaction with the interface and the playboard for creating a digital collage part 1



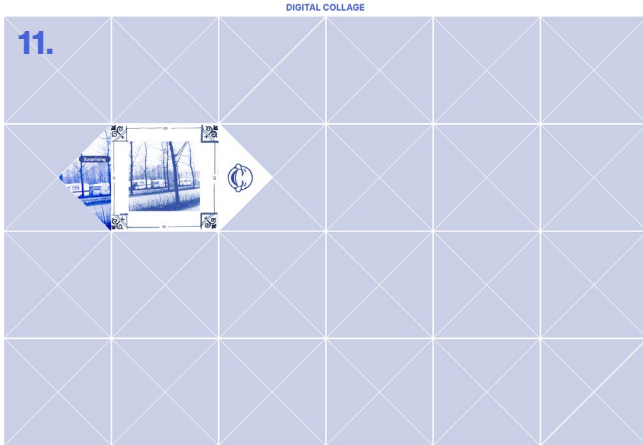
Emotion: The user is prompted to express their emotion about the content.



Collage: The emoticon piece is added to the digital collage



Highlight: The user is prompted to highlight their interest about the content.



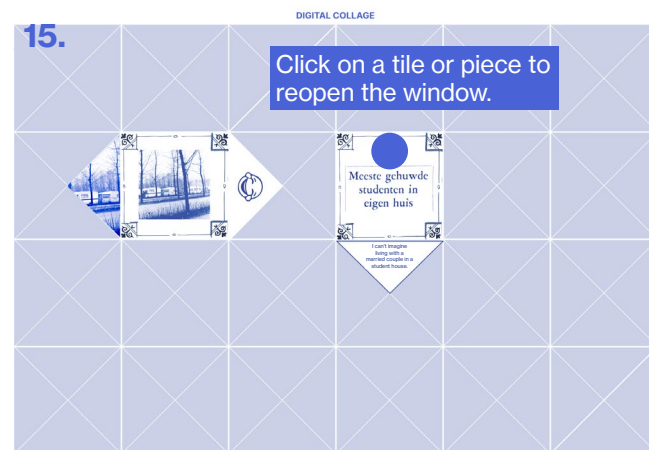
Collage: The highlight piece is added to the digital collage



Figure 107: The intended interaction with the interface and the playboard for creating a digital collage part 2



Comment: The user is prompted to express their thoughts about the content.



Collage: The comment piece is added to the digital collage

Figure 108: The intended interaction with the interface and the playboard for creating a digital collage part 3

Method

The final evaluation took place in the main hall of the TUDL, enabling the prototype to be tested in its intended environment. The prototype was positioned at the Exhibition Cabinet in its current location and tested with visitors (figure 109). While earlier tests (chapter 5.1: Concept iterations) were conducted with students at the Industrial Design Faculty, and one at the TUDL, these did not involve actual visitors nor the final prototype. This final evaluation provided an opportunity to observe how real TUDL visitors, specifically students, interacted with the prototype. The evaluation focused on assessing the design goal: 1. Is a mode-



Ach Content: Clicking a tile, displays the information screen with Ach content.

shifting experience with Ach achieved and 2. Does this encourage visits to the CoW?



Figure 109: Presentation of the prototype

As defined in chapter 4.2 A mode-shifting experience is characterized by specific interaction qualities (figure 110). To evaluate this goal the evaluation session was set up in two phases:

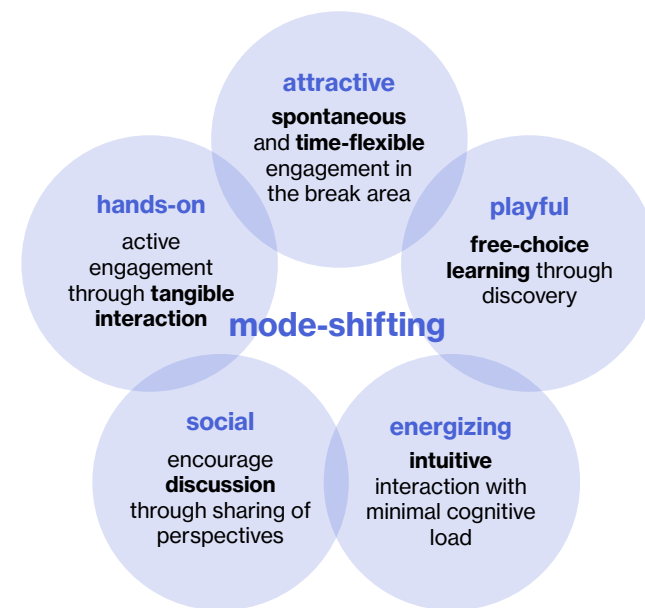


Figure 110: Mode-shifting interaction qualities

Phase A: This phase evaluates whether TUDL students engage in spontaneous interactions with the prototype through an observational study, specifically focusing on the interaction quality of attractive.

Phase B: This phase evaluates the interaction qualities of social, playful, hands-on, and energizing by actively recruiting participants to interact with the prototype, followed by a brief interview to gather feedback on their experiences and intentions regarding visiting the CoW.

Phase A: Observational study

An initial hour was spent observing visitors to see whether they approached and engaged with the prototype. Visitors were observed from a distance to minimize any direct association with the prototype. The aim was to determine if passing students would spontaneously engage with the interactive experience and feel in control of their break time, whether choosing a brief interaction with the tiles or a more elaborate

one. The main research questions guiding this part of the evaluation were:

- Does the prototype attract attention?
- Do TUDL visitors interact with the prototype?
- Do participants feel in control of their engagement time, choosing to complete the experience or stop midway?

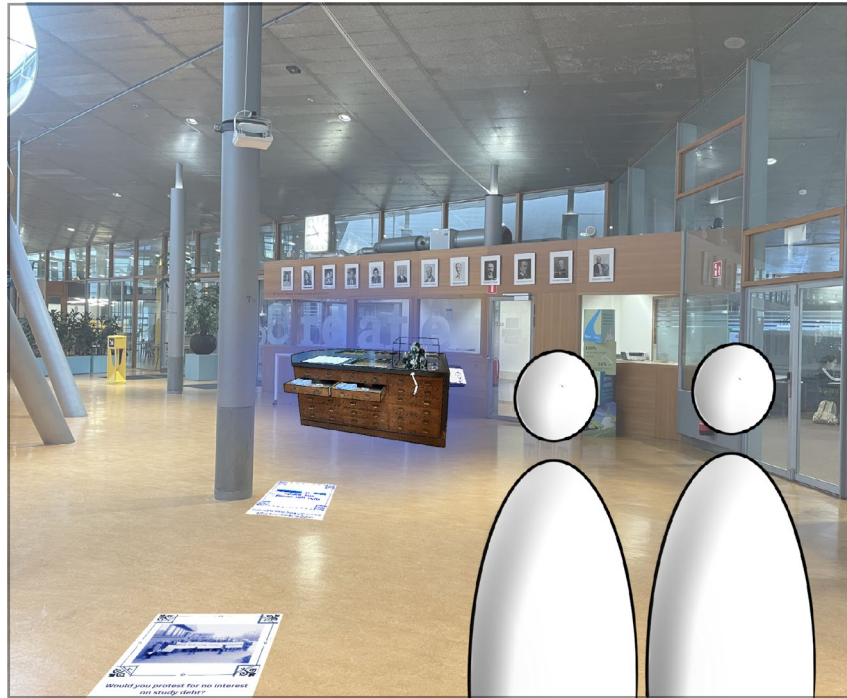
Their behavior was noted, and after engaging with the prototype, four individuals were approached to answer a few qualitative questions aimed at understanding their level of interest and engagement (appendix G).

Phase B: User interaction and interview

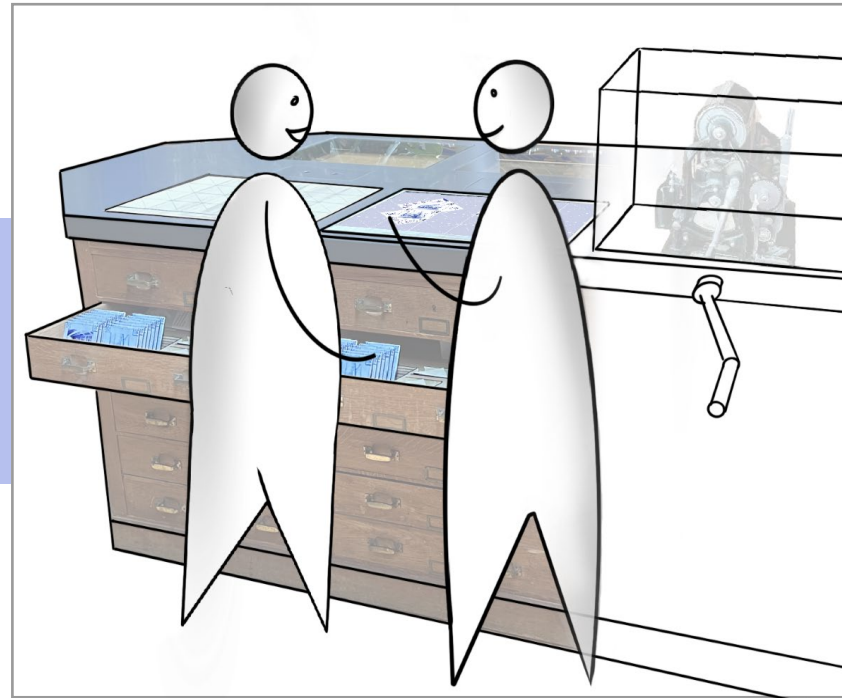
In the next phase, participants were recruited to test the prototype. While the interaction qualities of a mode-shifting experience had previously been tested with specific objectives (chapter 5.1: Prototypes), this test focused on observing the interaction qualities in a more open context. Notable problems or recommendations that emerged during the test were documented. The final concept prototype was evaluated with six individuals, including one pair, and their interactions were captured through photographs and audio recordings. After interacting with the prototype, feedback was gathered on participants' experiences through a brief interview (appendix G). The questions focused on their overall experience, enjoyment, understanding of the process, and whether they engaged in free-choice learning and if students felt encouraged to visit the CoW after the activity by presenting the complete concept through a storyboard.

Storyboard

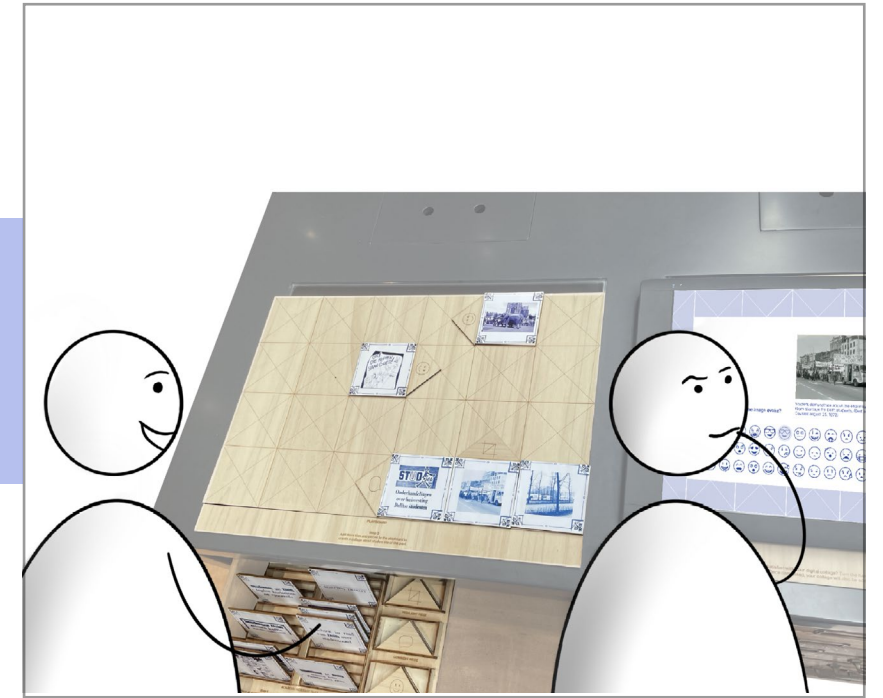
The complete final concept is illustrated in a storyboard (figure 111). This includes both the prototyped features and additional elements that were not physically prototyped but are essential to the overall user journey. The storyboard visualizes how all components come together to create the desired interaction.



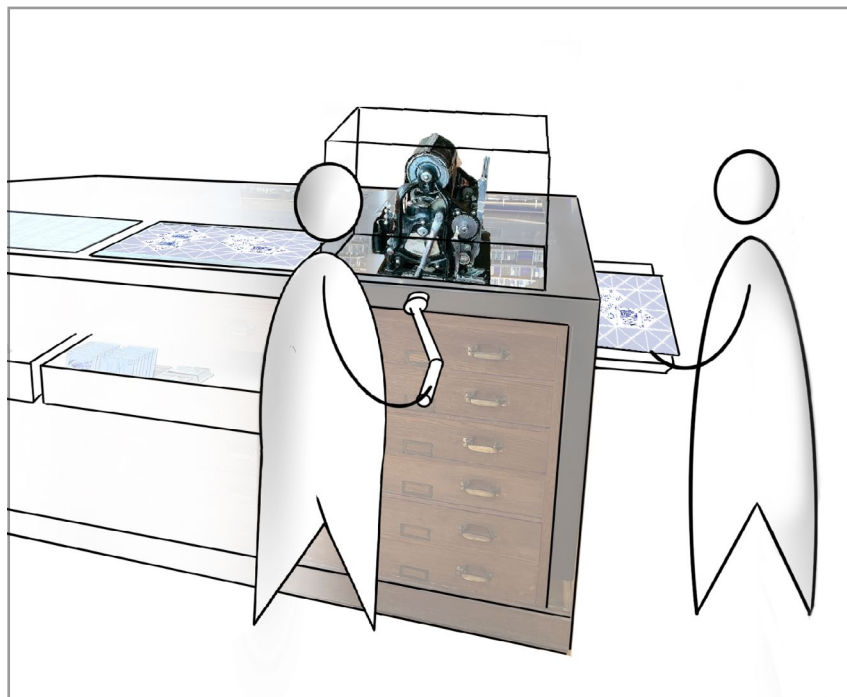
Sophie and Eline are studying at the TU Delft library. During their break, they notice the tile displays on the ground. "I wonder what that's about? Let's check it out!" they say.



Intrigued by the screen preview, they browse the tiles. "Haha, this says 'Students miss their coffee,' exactly what I'm thinking!" Together, they pick an interesting tile. "Let's see what happens when we place it on the playboard."



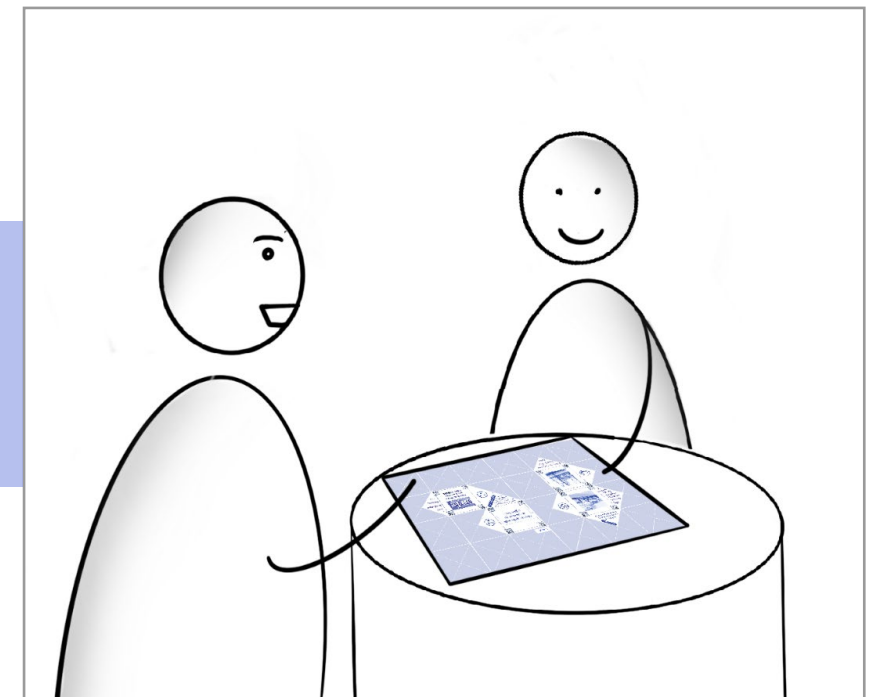
As they interact, Sophie and Eline receive information about the Ach tiles and reflect by placing pieces next to the tile. The screen prompts them to share their thoughts, interests, and feelings about the content.



Once satisfied with the collage, they turn the handle. An animation shows the digital collage being fed into the machine, and Eline grabs the stencil that comes out, thinking it might be fun as decoration.



The screen invites them to explore the Stencil collection at the CoW. Curious about the collages of others, Sophie decides to follow the tile path on the floor to check it out during her next break.



Later at home, Eline finds the stencil in her backpack and shares it with her roommate. "Did you know the surveillant used to give everyone free coffee during exams? They should really bring that back!"

Findings

Phase A: observational study

Q5.4 Do students engage in spontaneous interaction with the prototype?

Attractive

Over one hour, around 30 students passed by, most heading to the lecture or study space, with most walking by without noticing the prototype, even when nearby. Four individuals did take notice, but their engagement was brief; two students paused to examine the tiles but quickly moved on.

"I thought it looked interesting, but I wasn't sure what it was for." - P1

"I noticed this wasn't here before, so I was curious to check it out. But I'm on my way to get a coffee, so I didn't really want to start anything right now." - P2

However, when the tiles were placed on top of the exhibition cabinet instead of in the drawer, a student stopped to browse within two minutes.

"I wanted to see what it was; the tile of the elephant caught my eye, and I recognized it was at the Markt, which is funny to see." - P3

One visitor began to engage by viewing the preview on the screen but felt overwhelmed by the information presented.

"I was intrigued by the preview on the screen, but the goal of the activity wasn't clear to me. I saw the steps and their explanations, but I didn't want to read through everything." - P4

They felt also unsure about the time commitment required for the experience therefore most visitors observed the tiles but did not proceed.

"Without knowing how long it would take, 5 minutes, 10 or more than that? I wasn't sure if I wanted to dive in." - P4

To assist visitors, a tile was placed on the playboard, prompting the screen to display related information. The next person, explored it and placed another tile on the board, understanding that corresponding content would appear. However, this participant did not engage further by adding comments or creating a collage.

"I really enjoyed picking out the tiles and learning about them, but I didn't feel the need to do more than that." - P3

Phase B: user interaction and interview

Q5.5 Does the design achieve its goal of creating a mode-shifting experience with Ach?

Social

Two students preferred to see other students' reflections before sharing their own as a starting point for reflection.

"What helps in reflecting on these topics is to first think about them yourself and see what other people think before leaving a comment." - P5

Four participants responded enthusiastically to the idea of sharing their discoveries with others. Regarding takeaways, most preferred an individual piece rather than a complete collage, as it's easier to match their style or find a fitting place for it.

"Absolutely, I would share these facts with others, like that photo of the elephant. I'm not sure if it's online, but I'll definitely share that anecdote with my roommates when I get home." - P3

"As a memento, I prefer to have one article. I'd find it nice to place this tile about students missing their coffee next to the coffee machine. I wouldn't do anything with the whole collage." - P5

When students engaged with the prototype together (figure 112), they collaborated on choosing which tiles to place on the playboard. The content about the tiles served as a conversation starter, prompting stories that friends or couples enjoy sharing.

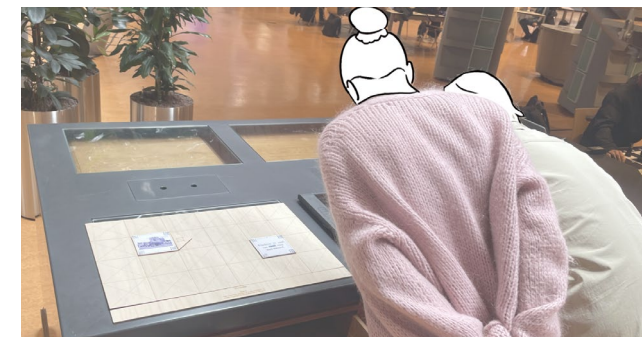


Figure 112: Shared interaction with the prototype

"This reminds me of that story about a bear at the DSC society that everyone could wrestle with. If you managed to get the bear out of the ring, you won a year of free beer." - P3

Energizing

One participant confused the digital screen with the physical playboard, leading them to place the tile on the screen instead of the playboard (figure 113).

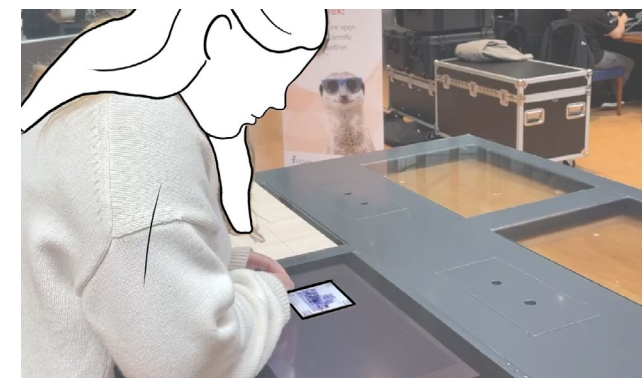


Figure 113: : Tile placed on the screen

When students finished the activity, none of them returned the tiles and pieces to the storage (figure 114). However, leaving the tiles on the playboard helped the next participant understand the use of the playboard. Any tiles not preferred by them were just removed from the playboard.



Figure 114: tiles and pieces left on the playboard

Hands-on

One participant, who had taken part in a previous test, noted that during their initial experience, the focus was on understanding how the system worked. However, during their second interaction with the prototype, the approach shifted toward a more deliberate and creative process of building the collage. This aligns with the participant's tendency to first select multiple tiles that resonated with them before placing them all on the playboard clustering and positioning them in a specific way. (figure 115)

"I'd like to do this more often. The first time is about exploring how the tiles and pieces work, but the next time you're more focused on creating a collage, placing everything on the playboard and starting the process." - P2

"With a collage, I first want to choose relatable tiles and lay everything on the playboard and then click the tiles to check the content and make comments." - P2



Figure 115: Accommodate different interaction styles

Playful

Four participants mentioned that discovering the AcH tiles was perceived as the most enjoyable part of the experience (figure 116).

"What I like most is placing the tiles. I just like to read about the topics and it's fun to discover these facts about the past." - P1



Figure 116: Discovering the AcH tiles

Since learning outcomes are challenging to measure directly, questions were selected to guide participants into thinking about what did they take-away from reflecting on the AcH content? without directly asking them. (Appendix X)

"Due to this concept I realized that I did not know that there were so many student protests it gave me new insights that I did not expect." - P2

As defined by Falk and Dierking's (2009) model, free-choice learning occurs when a participant goes beyond merely absorbing information and actively constructs their own understanding of the AcH content provided in the experience, often by relating it to their own life.

"I like the connection between the past and the present you realize that not that much has changed, for example the party with outfits in 1930 could have been a photo of me from 2 weeks ago." - P1

Word cloud

After using the prototype, participants selected words to describe their experience, resulting in a word cloud where frequently chosen words are displayed in larger font (figure 117 and appendix X). The interaction qualities "hands-on" and "playful" were mentioned often. Additionally the terms "thought-provoking" and "discovering" reflect the playful interaction, characterized by free-choice learning through discovery.

"With my international boyfriend here, I realize I can't share much about the city or student life since I don't know the facts. I like that this offers an easy, accessible way to connect with it and its enjoyable to do." - P2

The social aspect was only captured by the word "connected," The energizing quality was partially represented by the word "guiding," while the "energizing" quality was mentioned only once. Overall, students found the experience enjoyable, as evidenced by the words "enjoyable", "fun", and "surprising".

"I Really enjoyed the activity. I see myself doing this." - P1

The negative words used to describe the



Figure 117: Word cloud describing the experience.

experience, such as "confusing," "doubtful," and "difficult," were attributed to participants struggling in the initial stage to understand the steps in the preview and the purpose of the tiles and pieces. Additionally, some participants did not find creating a collage to be a meaningful activity.

"I do feel like I need a purpose; right now, it's just placing images on a board." - P4

"I enjoyed adding pieces but struggled with their placement. The collage concept didn't appeal to me." - P5

Encouraging visits to the CoW

After interacting with the prototype the participants were shown the storyboard to explain the complete user journey, including the collage and those created by other students, would be showcased at the CoW. The design of this showcase was intentionally left open to gather input from participants on what additional information might encourage them to visit. Participants find the reflections connected to the tiles more valuable than the visual aspects of the individual collages. They want to compare their own selection of tiles with those of

others to identify popular topics among students and to understand different perspectives on the same issues.

"Viewing the collages of others is mostly interesting because of their comments, values, and opinions, which can be a bit contrasting with your own." - P2

"I don't care much about the others' collages because I'm less interested in the tiles they've chosen. However, I would enjoy seeing others' pieces next to the tiles I've selected to understand how other students think about the topic." - P5

Participants appreciate having a new theme with different tiles each period to engage with relevant content. They provided the example of the long-study penalty to explore how historical issues relate to present challenges.

"I like that there's a new theme every month; as long as it's relevant, I'd check it out. For example, with the long-study penalty, there may have been similar issues in the past." - P4

Participants showed interest in accessing more information and preferred personalized recommendations related to the tiles they selected or to explore other tiles they didn't choose.

"I'd like to have more information on things, and I'm not sure if you can find that at the CoW. Maybe you could add something like, 'Want to know more? Read about it at the collection wall.'" - P6

"It seemed that many tiles were related. It would be valuable if someone could highlight an interesting tile and recommend it. Or perhaps the system recommends interesting tiles based on your choices like here is a similar story from 50 years later." - P3

I find that photo of the elephant very funny. I'd like to see if I can find it and frame it. Maybe there could be a link to a website where I can read the stories of the tiles I didn't use, since you can't stand here and look at all the tiles. I'd really like to explore them further." - P3

CONCLUSION

This chapter concludes the project by discussing its outcomes, limitations, and areas for improvement, along with recommendations for future work. It evaluates the strengths and weaknesses of the StoryTiles concept in engaging students with AcH during study breaks, addressing challenges such as limited visibility and spontaneous interaction. Potential implementations of the StoryTiles concept in various educational contexts are also explored, emphasizing its adaptability and potential beyond the TU Delft Library.

The recommendations focus on enhancing the interaction qualities of a mode-shifting experience, with specific advice on improving engagement at the CoW. The conclusion summarizes the key findings on how StoryTiles successfully connects students to AcH and highlights the project's broader contribution to interactive design in educational settings.

This project aimed to create a tangible interaction with AcH through the “StoryTiles” concept to engage TU Delft students with past student life. The goal was to create a mode-shifting experience that would encourage students to interact with AcH content during their study breaks and visit the CoW. The evaluation of the final prototype at the TUDL assessed whether this goal was met. This section will discuss the strengths and weaknesses of the StoryTiles concept based on the evaluation results and research limitations. Finally, insights from discussions with the Heritage Team and Studium Generale will be shared, exploring potential adaptations and uses for the concept, concluding with the project’s contribution.

Strengths and weaknesses

Mode-shifting experience with AcH

Attractive: *Did students’ spontaneously engage with the prototype and feel in control of their break time?*

The observation session showed that the prototype struggled to capture students’ attention, indicating a need for better visibility. Interaction improved when the tiles were placed on top of the cabinet, emphasizing the importance of the placement and display of the AcH tiles in attracting students attention. Additionally, students expressed uncertainty about the activity’s time commitment and purpose, feeling overwhelmed by the number of steps in the preview. To improve this, the design should simplify the communication of interaction steps and offering different levels of engagement. Emphasizing the outcome of the collage could also help communicate the goal of the activity more clearly.

Social: *Did students engage in discussion and share their perspectives?*

Students preferred seeing other students’ reflections before sharing their own, suggesting that providing examples could

encourage adding reflections. Comments like, “This reminds me of that story about a bear at the DSC society,” demonstrated the prototype’s potential to start a discussion facilitating social breaks preferred by the target group. However, the idea of taking home a physical stencil of the collage received mixed responses. While many participants were enthusiastic about sharing their findings, opinions varied regarding the collage; some found it visually unappealing and preferred individual images, news articles, or tiles. This feedback suggests that while students liked the concept of a memento, adjustments to its form may be necessary to better align with their preferences.

Energizing: *Did students intuitively interact with the prototype?*

The negative feedback from students, using terms like “confusing” and “doubtful,” indicates that the intuitiveness of the prototype needs improvement. Participants faced challenges distinguishing between tangible and digital elements; for example, one participant mistakenly placed a tile on the screen instead of the playboard, leading to confusion about the tiles’ functions. This highlights the need for clearer visual cues to differentiate between physical and digital interactions. During the evaluation it was noted that none of the participants returned the tiles to storage after use. However, leaving the tiles on the playboard helped guide the next user by demonstrating the purpose of the tiles and their arrangement. This strategy also fosters a collaborative environment, allowing users to build on each other’s contributions.

Hands-on: *Did students enjoy the tangible interaction with the prototype?*

Comments such as, “What I like most is placing the tiles” indicated that the tangible interaction with the tiles and playboard was well-received. The focus on creating a collage emerged during a second interaction, when participants shifted from

understanding the system to creatively assembling the collage. Although the concept assumes that users will place tiles individually, it also allows for creating the entire layout before adding reflections. However, adjustments could be made to better support both interaction styles.

Playful: *Did students engage in free-choice learning.*

Participants described their experience with terms like “playful,” “thought-provoking,” and “discovering,” indicating that the prototype successfully fostered curiosity and open-ended exploration. While some embraced this freedom, one participant noted a lack of a clear goal, suggesting that clearer prompts could enhance motivation. Despite this, all participants reflected on the activity by identifying specific content of interest and connecting past student life events to current societal issues or personal experiences. This indicates that the prototype effectively encouraged meaningful reflection and sense-making, demonstrating its success in engaging students in free-choice learning.

Encourage visits to the CoW

Participants preferred the reflections associated with the tiles over the visual elements of the individual collages. By allowing students to compare their tile selections with those of their peers, they can identify trending topics and gain insights into different perspectives on the same issues. Spotlighting these reflections at the CoW, may encourage students to visit. Participants also showed interest in accessing more information and highlighted the need for personalized recommendations. This reflects their desire for deeper engagement with AcH, allowing them to explore more content through a digital archive at the CoW.

Students expressed a preference for the tiles to be regularly updated with relevant themes and even suggested topics they

would like to explore. The CoW could serve as a suitable platform for them to suggest or vote on themes for the upcoming tiles.

Limitations of the evaluation

The prototype evaluation encountered several limitations. It took place during a lecture in the main hall, likely reducing interest as many visitors were headed to the lecture rather than taking a break. The Exhibition Cabinet was also not positioned in the suggested break area near the entrance, which may have further limited engagement. Most participants interacted individually, making it difficult to assess social interaction. Additionally, the absence of a Collection Wall prototype prevented students from viewing others’ collages and perspectives. Finally, the evaluation was conducted over just one morning, meaning a longer observation period could have provided deeper insights into users’ interaction with the prototype.

Potential implementation

The StoryTiles concept is versatile and adaptable for various purposes. During discussions with members from the Heritage Team and Studium Generale, its potential application for Studium Generale was highlighted. This initiative aims to enhance students’ academic development and promote discussions about technology and engineering through cultural activities. They have a designated space, The Nook at the TU Delft Library (figure X).



Figure 118: The Nook at the TU Delft Library

However, they face challenges in creating a physical exhibit to present their topics. Previous attempts to use a glass wall for student reflections often resulted in misuse, with inappropriate comments and drawings (figure X). A member from the Heritage Team emphasized that the strength of the StoryTiles concept lies in encouraging personal reflection and expression while also guiding responses, which minimizes the need for extensive curation.



Figure 117: Glass wall for students reflections

StoryTiles encourages students' participation by prompting reflections on content and interests in provocative topics. The Heritage Team faces difficulties responding to relevant themes quickly due to time investments of setting up an exhibition, though Studium Generale actively seeks students' feedback on relevant themes and can integrate it into their programming. A member of Studium Generale expressed enthusiasm, saying,

"I'm really excited about the potential applications of this concept, I will take a picture to suggest it at the next meeting."

Potential adaptation

Experiences with successful strategies for attracting students' attention to exhibitions were also discussed, such as offering popular take-away items like postcards. This form could be used to refine the memento that better fits students'

preferences. For the purpose of Studium Generale, a vertical display was preferred to enhance visibility, with suggestions to use magnets to secure tiles for a cleaner aesthetic. There was excitement about the potential of the playboard allowing for a continuous discussion between visitors, where one student's tile would stay in place, and subsequent students could add tiles or elements to continue the dialogue, creating also collaborative collages. This highlights the adaptability of the concept to various settings.

RECOMMENDATIONS

This prototype serves as a foundation for a pre-experience aimed at encouraging students to visit the Collection Wall (CoW) or can function independently to facilitate a mode-shifting experience, engaging students with the AcH collections during a study break. With this in mind, the following recommendations for further development are presented.

Content accessibility

Presentation of materials

Explore different presentation styles for images, news articles, and supporting descriptions to engage a diverse student audience, including international students. A member of the Academic Heritage team pointed out that TUDL's policy mandates accessibility for all, requiring news articles to be translated into English while maintaining their authenticity. However, creating appealing bilingual text without overwhelming users can be challenging. One potential solution is to use a screen that lets users switch between Dutch and English content, along with separate storage for tiles in each language, ensuring clarity that English translations are not the original text.

Collaborative partnerships

Consider partnerships with external institutions, such as Delpher and Stadsarchief Delft, to enrich the heritage materials related to past student life. Collaborative efforts could enhance the variety and depth of content available to users.

Tile materialization

Tile Materialization: Since the tiles are handheld and loose, there is a risk of students taking them home, which could limit the available content for exploration. Research into suitable materials can help address this issue. If the tiles are designed with a low value, the focus can shift from prevention to accepting potential losses and replacing them as needed. A cost-

effective option is to produce laser-cut tiles with printed fronts, offering an affordable yet visually appealing design. Alternatively, using closer replicas of ceramic Delftware tiles can enhance authenticity and tactile engagement, enriching the overall user experience.

Interface development

Focus on developing a user-friendly interface that incorporates RFID technology to link database content. While this may require significant time and resources, the other components, such as the large touchscreen, are straightforward and manageable.

Privacy considerations

When exhibiting collages at the CoW, establish a clear curation process to manage privacy concerns regarding displayed reflections of visitors.

Mode-shifting

Attractive

- **Display of AcH Tiles:** Experiment with various presentation styles to ensure the tiles are prominently displayed and easily accessible, as user interaction increased when the tiles were showcased rather than stored away. One potential solution is to change the playboard to a vertical display, as preferred by Studium Generale, to enhance visibility.
- **Flexible interaction paths:** Allow users to choose between different levels of engagement, ranging from brief interactions with the tiles to more in-depth collage creation, including personal reflections on the content. This flexibility fits different user preferences and time constraints.

Social

- **Reflection examples:** Share reflections from peers or provide curated examples

to help students feel more comfortable sharing their own thoughts. This could be achieved through digital displays or printed materials that showcase diverse perspectives.

- **Memento form:** Align the memento format with user preferences by focusing on creating stencils from specific images, articles, or tiles, rather than the entire collage. Additionally, use popular take-away formats, such as postcards, for the stencils. This allows students to take away a meaningful piece of their interaction.

Energizing

- **Guided interaction steps:** Create a streamlined introduction that clearly outlines the steps and objectives without overwhelming users. Focus on showcasing the collage's outcome to communicate the goal effectively. Introducing the first step upfront and progressively revealing subsequent steps can make interactions more manageable.

Hands-on

- **Use cues:** Establish a clear distinction between the physical playboard and the digital collage. Since both display the same grid, changing the size of one could help clarify that the tiles fit only on the playboard and not on the screen. Additionally, a vertical setup where the tiles snap into place with magnets would enhance the clarity of the cues for tangible interaction.

Visits to the CoW

Deeper engagement

- **Digital archive:** Create an accessible digital archive at the CoW for users to explore additional content and personalized recommendations for articles and images based on the related to the tiles they selected.

- **Periodic theme:** Encourage student participation by allowing them to suggest or vote on themes for the upcoming tiles at the CoW, focusing on topics relevant to their interests. This approach enables a replayable concept, allowing students to engage with new content continuously.
- **Hot Topic Tiles:** Highlight popular topics by featuring the most frequently chosen tiles and their associated reflections, which participants value more than the visual elements of the collages. Allowing students to compare their tile selections with those of their peers enables them to identify trending topics and understand diverse perspectives. An enhancement to this feature could involve presenting opposing opinions side by side. When a student adds a specific opinion, the system could display contradicting views, fostering reflection and discussion while promoting critical thinking

Figures 118 and 119 illustrate what the interaction at the CoW could look like when implementing these recommendations.



Figure 118: Interaction at the CoW

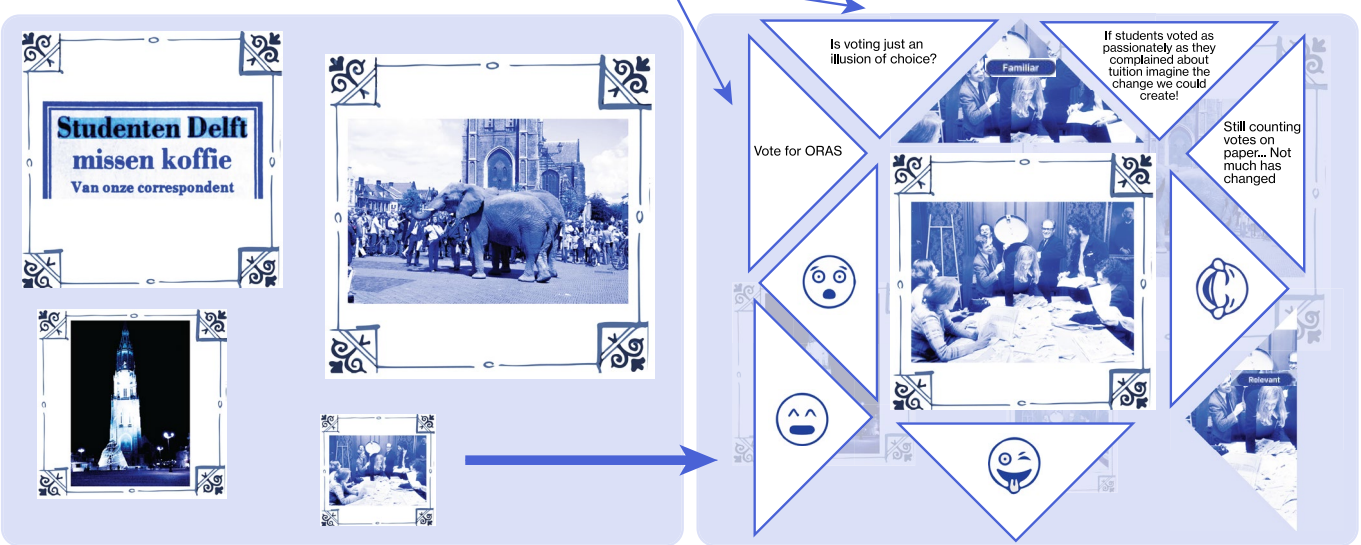
Digital Archive

Recommendations based on your tile selection



Hot Topic Tiles

Trending topics



Periodic theme

Vote! Which tile topic related to past student life would you like to see next?



Figure 119: Details of the interface

The goal of this project was to create an interactive experience that connects TUDelft students to AcH through the “StoryTiles” concept, ultimately encouraging visits to the CoW. A participatory design approach was employed to design with the students’ perspectives on AcH rather than for them. This approach revealed that to effectively engage students during study breaks, the touchpoint for interaction should be situated in the break environment. As students need a clear incentive to visit the CoW. Thus, the StoryTiles concept was designed as a pre-experience in the break environment, using provocative content to spark curiosity and sensitize students for visits to the CoW.

The findings emphasize the importance of incorporating student feedback to develop meaningful heritage-related experiences that align with the context of study breaks. The evaluation demonstrated that tangible interactions effectively engage students with the content while accommodating their needs for a mode-shifting experience that is social, playful, energizing, attractive, and hands-on.

Future research should focus on enhancing these interaction qualities by experimenting with the display of the AcH tiles to attract students’ attention. Developing flexible interaction paths can stimulate spontaneous engagement, while providing reflection examples can support sharing perspectives. Additionally, aligning the memento format with students’ preferences and clearly communicating interaction steps with use cues will create a more intuitive experience.

In conclusion, this project has demonstrated the potential of the StoryTiles concept to achieve its design goals by engaging students with AcH and promoting critical reflection. It connects past student life with present student experiences while encouraging exploration of related content. Looking ahead, the project highlights several implications for future work.

While the pre-experience has been prototyped and evaluated the intended effect on visits to the CoW remain speculative. Recommendations for the CoW experience include providing access to digital archives, creating opportunities for students to suggest periodic themes for changing tiles, and meaningfully presenting the outcomes of StoryTiles collages by showcasing hot topics through frequently chosen tiles and associated reflections. These elements should be designed and prototyped to evaluate the complete user journey and assess their effectiveness in motivating student visits to the CoW.

Contribution

Ultimately, the StoryTiles concept has demonstrated its ability to engage students with academic heritage while fostering reflection and dialogue. This project illustrates the potential of participatory design approaches to effectively incorporate student perspectives into the development of heritage-related experiences. Furthermore, it shows that tangible interactions can facilitate free-choice learning through discovery.

Additionally, the concept has potential for implementation beyond AcH, extending to other content areas such as those offered by Studium Generale. By adapting the tiles to various topics, the concept can support broader discussions around technology, engineering, and societal issues relevant to students.

This project also examines how interactive experiences can address the TUDL’s strategic goal of developing the library as a knowledge hub. It does so by enhancing accessibility to AcH, fostering reflection through provocative content, and encouraging discussion among students during study breaks.

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TU Delft

IDE Master Graduation Project

Project team, procedural checks and Personal Project Brief

In this document the agreements made between student and supervisory team about the student's IDE Master Graduation Project are set out. This document may also include involvement of an external client, however does not cover any legal matters student and client (might) agree upon. Next to that, this document facilitates the required procedural checks:

- Student defines the team, what the student is going to do/deliver and how that will come about
- Chair of the supervisory team signs, to formally approve the project's setup / Project brief
- SSC E&SA (Shared Service Centre, Education & Student Affairs) report on the student's registration and study progress
- IDE's Board of Examiners confirms the proposed supervisory team on their eligibility, and whether the student is allowed to start the Graduation Project

STUDENT DATA & MASTER PROGRAMME

Complete all fields and indicate which master(s) you are in

Family name

Cazemier

Initials

L.

Given name

Lieneke

Student number

IDE master(s)

IPD

☐

Dfi

☒

SPD

☐

2nd non-IDE master

Individual programme
(date of approval)

Medisign

☐

HPM

☐

SUPERVISORY TEAM

Fill in the required information of supervisory team members. If applicable, company mentor is added as 2nd mentor

Chair

Jeff Love

dept./section

SDE/HCAI

mentor

Willemijn Elkhuisen

dept./section

SDE/MD

2nd mentor

client:

TU Delft Library

city:

Delft

country:

Netherlands

optional comments

! Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why.

! Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter.

! 2nd mentor only applies when a client is involved.

APPROVAL OF CHAIR on PROJECT PROPOSAL / PROJECT BRIEF -> to be filled in by the Chair of the supervisory team

Sign for approval (Chair)

Digitally signed by Jeff Love
Date: 2024.03.28 15:35:12 +01'00'

Name

J.S. Love

Date

Signature

CHECK ON STUDY PROGRESS

To be filled in by SSC E&SA (Shared Service Centre, Education & Student Affairs), after approval of the project brief by the chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total _____ EC

Of which, taking conditional requirements into account, can be part of the exam programme _____ EC

★	YES	all 1 st year master courses passed
	NO	missing 1 st year courses

Comments:

Sign for approval (SSC E&SA)

Robin den Braber
Digitaal ondertekend door Robin den Braber
Datum: 2024.04.11 10:06:33 +02'00'

Name Robin den Braber Date 11 apr 2024 Signature

APPROVAL OF BOARD OF EXAMINERS IDE on SUPERVISORY TEAM -> to be checked and filled in by IDE's Board of Examiners

Does the composition of the Supervisory Team comply with regulations?

YES	★	Supervisory Team approved
NO		Supervisory Team not approved

Comments:

Chair: Willemijn Elkhuisen, Mentor: Jeff Love

Based on study progress, students is ...

★	ALLOWED to start the graduation project
	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Monique von Morgen
Digitaal signed by Monique von Morgen
Date: 2024.04.11 11:00:23 +02'00'

Name Monique von Morgen Date 11 Apr 2024 Signature



Personal Project Brief – IDE Master Graduation Project

Name student Lieneke Cazemier Student number

PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT

Complete all fields, keep information clear, specific and concise

Project title Designing for the students' perspective on the academic heritage collection in connection to the Collection Wall

Please state the title of your graduation project (above). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

Introduction

Describe the context of your project here; What is the domain in which your project takes place? Who are the main stakeholders and what interests are at stake? Describe the opportunities (and limitations) in this domain to better serve the stakeholder interests. (max 250 words)

Every day countless students visit the TU Delft library to study. Taking breaks and relaxation is part of their daily routine to energize and regain focus. For the course Context Mapping Skills I worked with the TU Delft library as a client to investigate how best to support students in feeling fully relaxed when needed. Insights showed that students seek distractions from their studies during their breaks to relax (Figure 1). A quote from one of the participants: "If there would be some sort of exhibition you can walk through during your break then I think that can be really relaxing; you focus on something different and you can walk a bit."

However, few students take advantage of their breaks to wander around and discover what the TU Delft library has to offer. A current problem that is mentioned for the academic heritage (AH) collections, such as Trésor and the museum collection, is the findability and visibility. Most of the physical collection is stored in the basement (figure 2) and students can view works on request only. Although a section of the Collection Wall is dedicated to academic heritage, displaying artifacts in vitrines located within the central hall (figure 3). The framework of Exhibition Building Blocks are used to shape this exhibition focused on student engagement. However this framework is build on the assumption that students are already interested. While the challenge is to attract students attention to visit the collection wall, sensitize them to interact with academic heritage and find relevant information.

Students' need for distraction during breaks offers opportunities to improve students' study enjoyment while engaging visitors with the AH collections. This fits the strategic goals of the TU Delft Library for 2020 to 2024, to be an inspirational learning and working environment. Their action points include developing the library as a knowledge hub to make the physical, digital and special collections including their heritage collections – visible and accessible to their users (Van Wezenbeek, 2020). Limitations for this context that need to be taken into account are the fragility and accessibility of heritage objects and potential challenges in matching students' study mindset with a museum-like experience to engage visitors with the AH collections.

Source: van Wezenbeek, W., Heijmans, H. G., Klok, I., & Clavel, K. (2020). Working together to ensure a free flow of knowledge: TU Delft Library Roadmap 2020-2024.

Using distraction to relax

Needs at the Library

Need for mental distance with study

Need for social interaction as a break

Need for playful activities

Need for physical movement to relieve tension



image / figure 1 Research into the needs of students regarding relaxation (left). Figure 3 Artifacts in vitrines (right).



image / figure 2 Museum collection (left), Trésor collection (right), in the basement of the TU Delft Library



Personal Project Brief – IDE Master Graduation Project

Problem Definition

What problem do you want to solve in the context described in the introduction, and within the available time frame of 100 working days? (= Master Graduation Project of 30 EC). What opportunities do you see to create added value for the described stakeholders? Substantiate your choice. (max 200 words)

Currently, the TU Delft library functions mainly as a study place for students. While the library wants to fulfill the role of a guide, helping to find valuable knowledge that can take study, research and society to the next level. A key issue with the collection wall lies in the misconception that students will naturally navigate and engage with it independently. However, without a compelling reason to visit the collection wall, we can't be sure they actually will. I see an opportunity to enhance the library's guiding role by drawing students' attention to the collection wall and improving the visibility of the heritage collections by engaging students during their study breaks. Certain break needs like: playful activities, social interaction and physical movement can determine how the exhibition is displayed.

There is a gap of knowledge about the students' perspectives on TU Delft's academic heritage. In order for an exhibition to be meaningful for students, the user should have a personal connection with it. Therefore it will be valuable to find out what topics do students engage with in their daily lives. To connect themes that are relevant for students today to the content of the AH collection at the TU Delft library.

Assignment

This is the most important part of the project brief because it will give a clear direction of what you are heading for. Formulate an assignment to yourself regarding what you expect to deliver as result at the end of your project. (1 sentence) As you graduate as an industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green text format:

Design a playful learning experience for students to explore the content of the academic heritage collection as a break from studying to initiate interest in the collection wall at the TU Delft Library.

Then explain your project approach to carrying out your graduation project and what research and design methods you plan to use to generate your design solution (max 150 words)

This will be achieved by relating the content of the academic heritage collection to current topics students engage with and displaying the exhibit in such a way that satisfies students break needs.

The approach for the project will be to start with literature research to scope down the project focus. The framework of the Exhibition Building Blocks will be analyzed to find opportunities for incorporation/improvement within my project. Desk research, as well as interviews with heritage team members and visiting the collection depots will be done to explore the content of the academic heritage collections and the guidelines for exhibiting physical artifacts. To understand the students' conceptions of university heritage and what values they hold, interviews with students will be conducted. The insights from the interviews will be linked to the content of the academic heritage collection. The context mapping method will be used to find out what ways of showcasing the content of the collection fits best with the (break) needs of the students visiting the TU Delft library and what current ideas, values and experiences students have with the collection wall. Field research will be done to look at existing exhibitions in museums to explore the different possibilities of showcasing content and physical artifacts. At last the concept and prototypes will be based on these findings and tested in context with real users to evaluate the interaction.

APPENDIX B: Context mapping

Recruitment poster



REVEALING HIDDEN TREASURES

Help redesign the library collection wall

Are you curious about what is stored in the library depot? Share your thoughts to improve the Collection Wall for students.



Participate in a 45 minute interview and receive a Coffee Star coupon for your help

Do you regularly study at the TU Delft Library and is this the first time you hear about the library depot or the collection wall? Would love to hear from you! The Library Collection Wall will be redesigned based on the students' perspective, as part of a graduation project. Therefore your thoughts on the academic heritage collections are important: What topics, objects, or activities would spark your interest?

Scan the QR code to provide your contact details and for more information. Any questions? please contact me:

Scan me!



Project planning and key moments

To make visible how you plan to spend your time, you must make a planning for the full project. You are advised to use a Gantt chart format to show the different phases of your project, deliverables you have in mind, meetings and in-between deadlines. Keep in mind that all activities should fit within the given run time of 100 working days. Your planning should include a kick-off meeting, mid-term evaluation meeting, green light meeting and graduation ceremony. Please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any (for instance because of holidays or parallel course activities).

Make sure to attach the full plan to this project brief. The four key moment dates must be filled in below

Kick off meeting 1 Mar 2024

Mid-term evaluation 16 May 2024

Green light meeting 27 Aug 2024

Graduation ceremony 1 Oct 2024

In exceptional cases (part of) the Graduation Project may need to be scheduled part-time. Indicate here if such applies to your project

Part of project scheduled part-time	✓
For how many project weeks	20
Number of project days per week	4,0

Comments:

I will be on vacation from July 4 till August 12
The schedule of the project can be viewed by clicking on this link:

Motivation and personal ambitions

Explain why you wish to start this project, what competencies you want to prove or develop (e.g. competencies acquired in your MSc programme, electives, extra-curricular activities or other).

Optionally, describe whether you have some personal learning ambitions which you explicitly want to address in this project, on top of the learning objectives of the Graduation Project itself. You might think of e.g. acquiring in depth knowledge on a specific subject, broadening your competencies or experimenting with a specific tool or methodology. Personal learning ambitions are limited to a maximum number of five. (200 words max)

For this project I prefer to get people involved. Therefore I am doing this project for a client, the TU Delft Library, to ensure a relevant and useful outcome. But also to learn how to manage a project and share insights in an effective way. To achieve this, I will structure my activities and goals through a project planning but also set clear goals for every sprint of 2 weeks. This way I can communicate my project results and discuss the project approach for the next two weeks during the scheduled coach meetings. The client will be managed by keeping them up to date of important project results via email.

For me as a designer it works best to be in close contact with the target group to get inspired. Therefore I plan to do interviews, apply the context mapping method and do a cocreation session to develop user research skills and gain valuable insights from different perspectives.

This project topic appeals to me since I want to design for the physical presence of the special collections of the TU Delft Library to develop my prototyping skills. Since the location and target group are easily accessible the concept can be evaluated in context. As someone who likes a hands-on approach, I prefer quickly testing my ideas to get new insights. Therefore I plan to try out a fast prototyping technique I read about in a paper: "Prototyping Tangibles: Exploring Form and Interaction". This paper explains different fast prototyping techniques to simply use off the shelf technology to create fast prototypes by: embedding, cracking it open or collation. This will help me improve my skills in prototyping with technology, since it can be expected that the outcome of the project will be a concept with an interactive or digital element.



Students view on academic heritage

Please fill in this booklet in preperation for the interview. I am are curious to your ideas, experiences and feelings around the topic of academic heritage and taking breaks.



Thankyou!

The interview is planned on:

Date -----

Time -----

Who are you?

Name

Age

Nationality

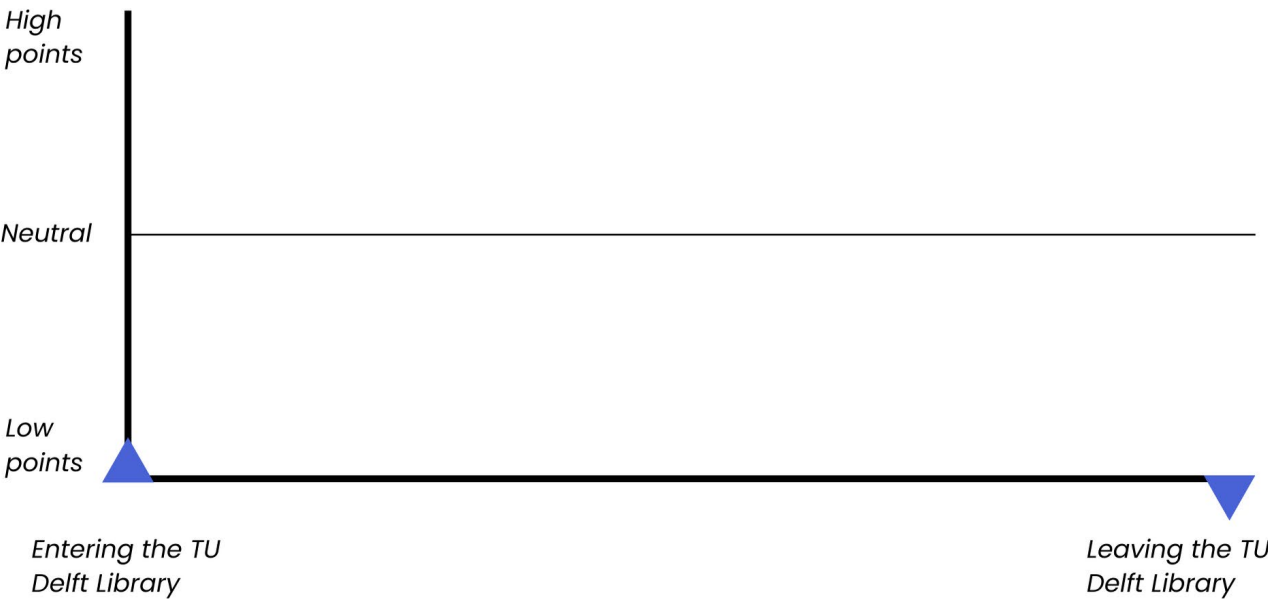
Studyphase (bachelor/master)

Study

1. A regular study day

Exercise: draw on the timeline an emotions chart of a regular study day at the TU Delft Library.

Tip: draw smileys or use words do describe your mood for different moments/acitivities during the day i.e. how do you feel in the morning, just before lunch, during/after a break.



2. Taking breaks at the library

Exercise: Describe your current break moments during a study day at the library. Also describe what your ideal break would look like.

Current break

What do you do?

How much time do you spend?

Where do you spend your time?

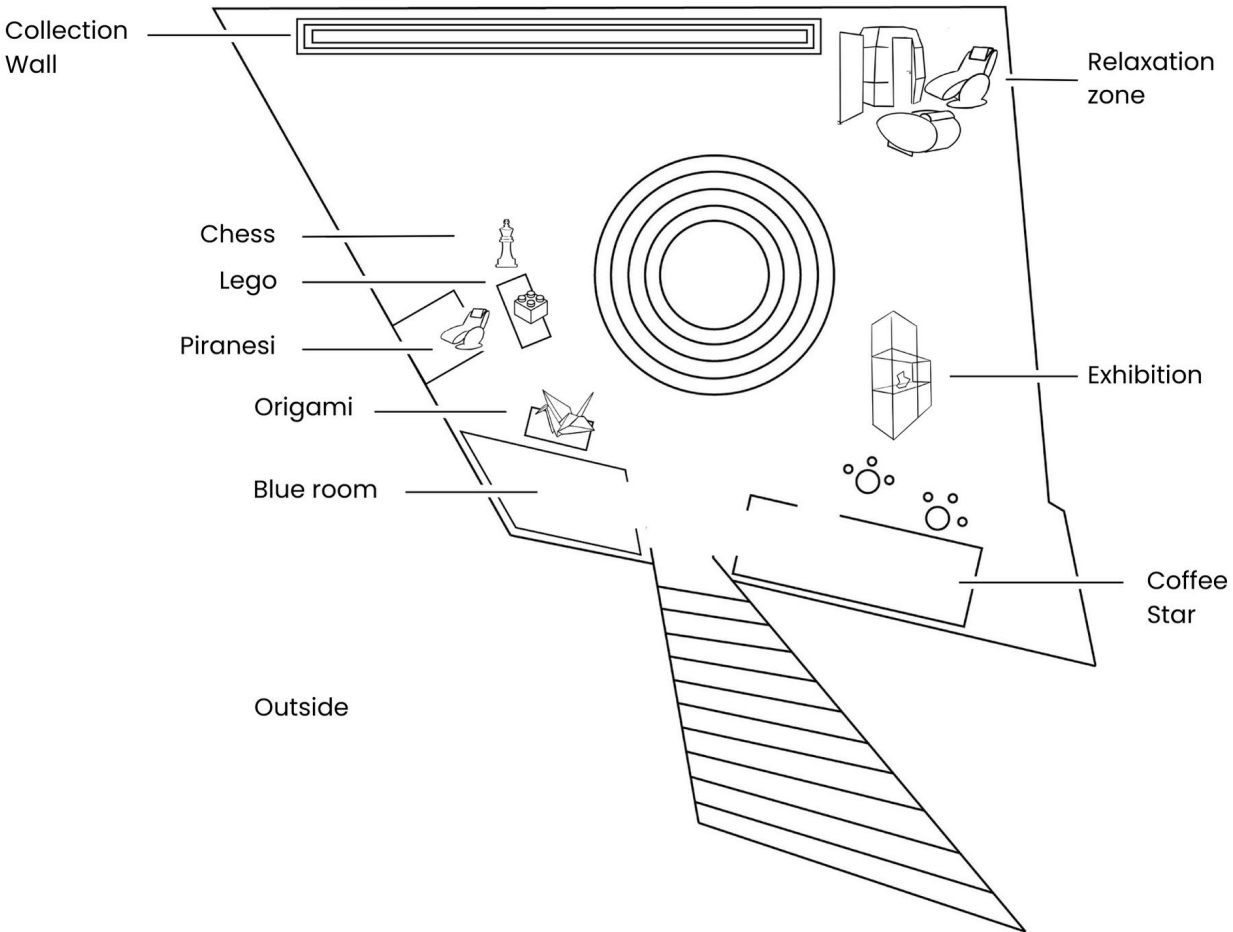
Ideal break

What kind of activity would you prefer?

What feeling would it give you?

In what kind of surrounding would you want to be?





3. Facilities at the TU Delft Library

Exercise: show on the map on the next page what facilities at the TU Delft library are important to you.

Tip: draw a heart on the places where you want to be in terms of taking breaks and a cross on the places where you don't want to be. A question mark can be used if you are unfamiliar with the facility.

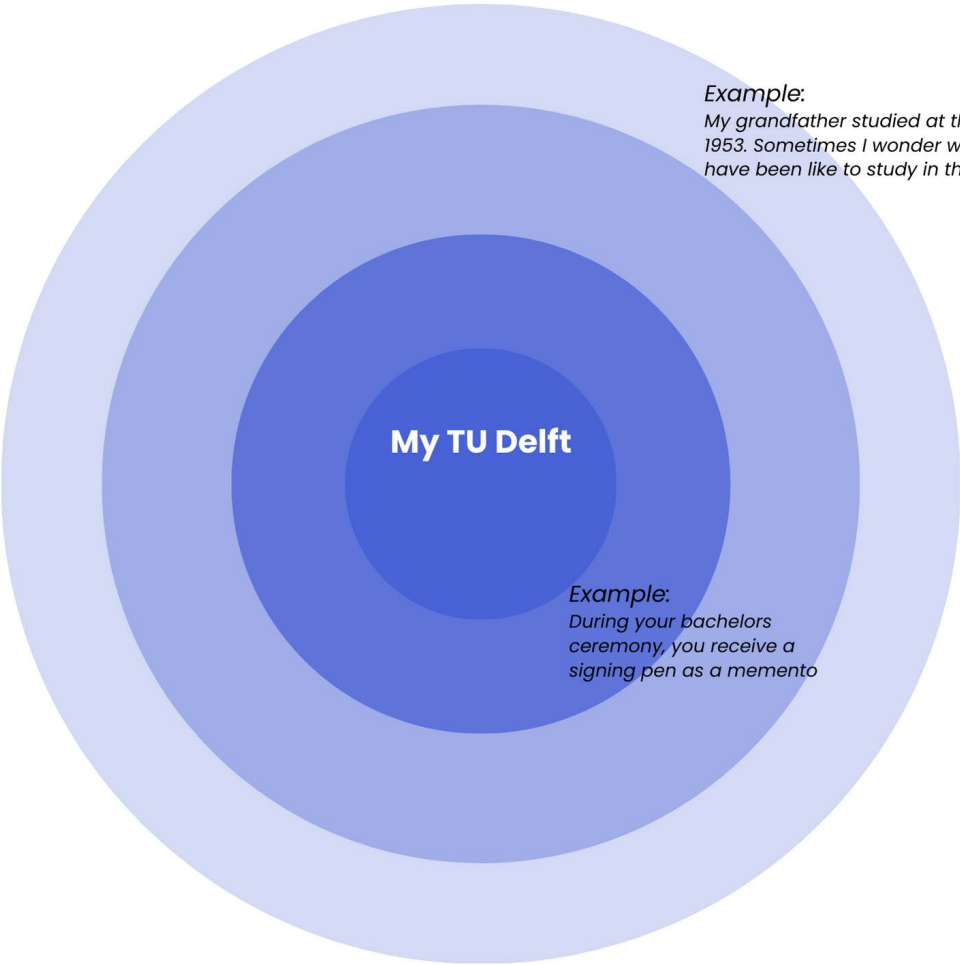
4. My TU Delft

What happens today will be tomorrow's history. As a student, you are part of the university's heritage. What modern objects, activities or stories do you think are interesting related to the TU Delft?

Exercise A: Map out who/what is important for you and your studies in the circle on the next page.
Tip: think about things you want to remember or save when you graduate. Place the most important stuff in the middle.

Exercise B: Choose two stories or objects from Exercise A and describe why they are important to you.

This story/object is important to me:	This story/object is important to me:
_____	_____
_____	_____
Because:	Because:
_____	_____
_____	_____
_____	_____



Example:
My grandfather studied at the TU Delft in 1953. Sometimes I wonder what it would have been like to study in that time.

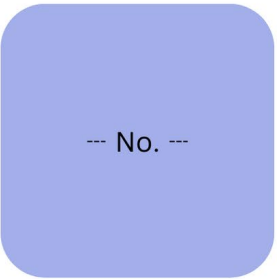
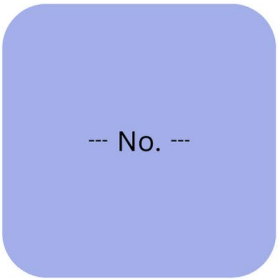
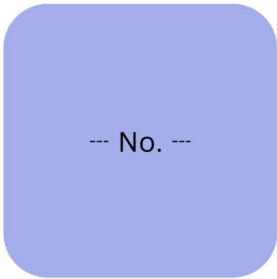
Example:
During your bachelors ceremony, you receive a signing pen as a memento

6. Artifacts that interest me

What catches your interest? On the next page images are shown of artifacts that are part of the academic heritage collections.

Exercise: Choose from the images the artifacts that catches your eye, write down the image number and why you chose that one.

I chose these artifacts:

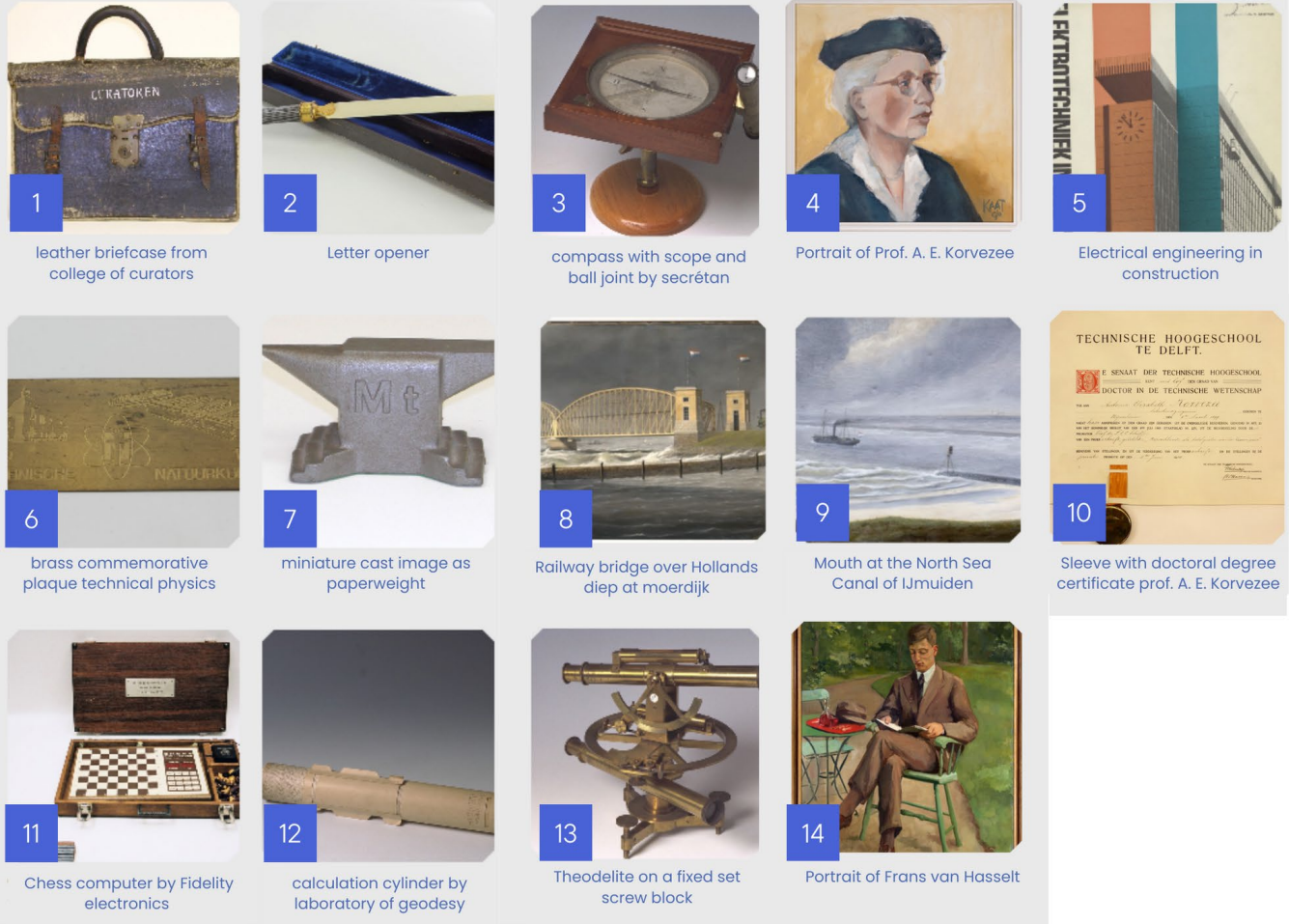
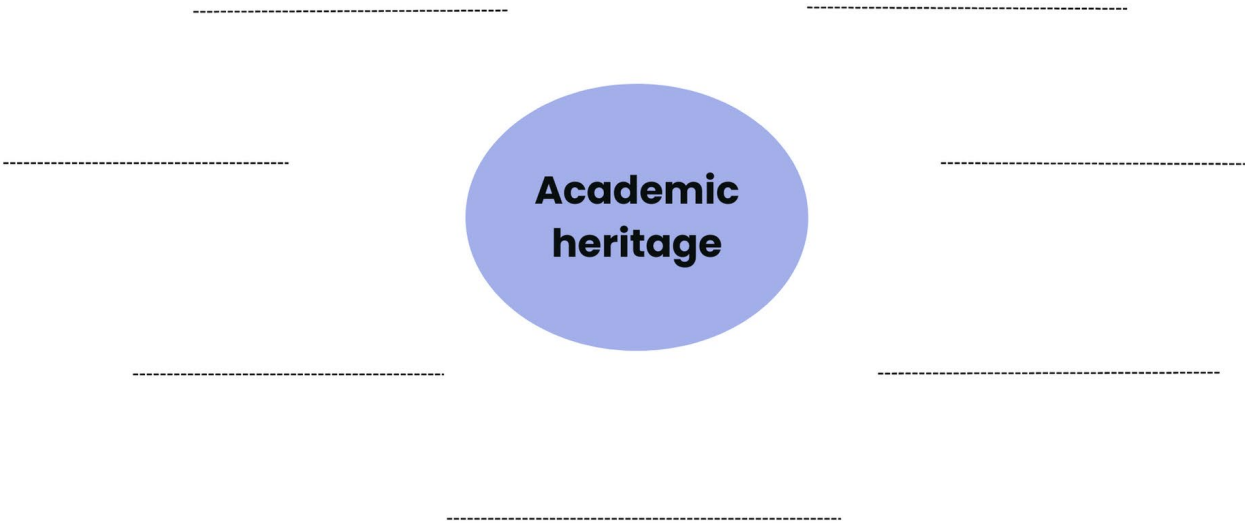


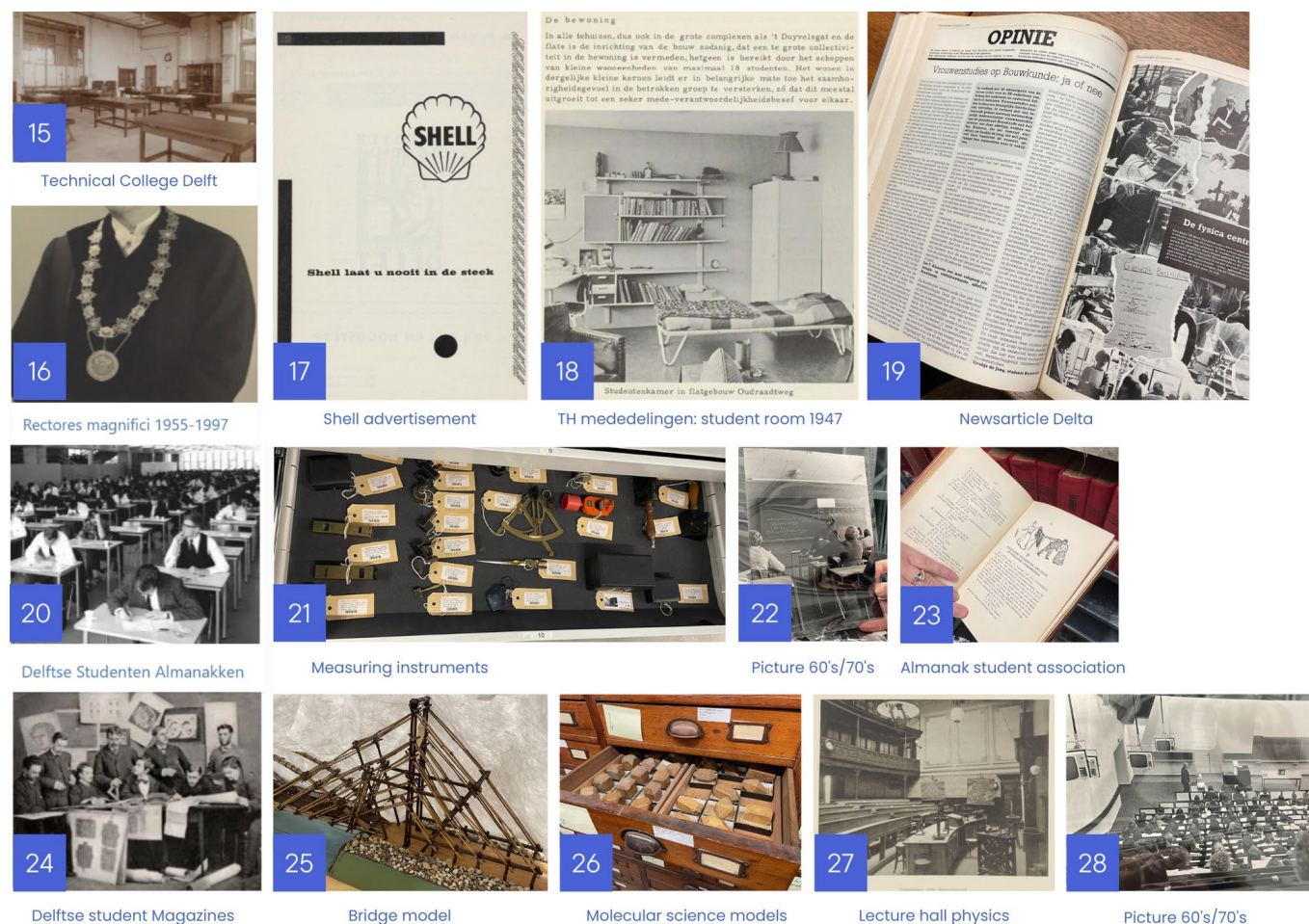
Because:

5. Mindmap

What are your associations with academic heritage? What do you think is collected?

Exercise: Write down your thoughts in the "Academic heritage mindmap" presented below, you can draw extra lines if needed.





Thank you for filling in this booklet!

Please take this booklet with you to the interview.

Any thoughts you would like to share?

Interview script

Interview script

Intro (5 mins)

Hi, welcome!

My name is Lieneke. Nice to meet you and thank you for joining this research. I am a master student of IDE and for my graduation project I am doing research on how to display academic heritage in a way that aligns with the interests of students. Therefore I am curious to the students' perspective on academic heritage and the break routines of students during a study day at the TU Delft Library. With the aim to find out what students would want and need to engage in a playful learning experience during their break. The client for this project is the TU Delft Library which will use the insights to improve the Collection wall at the TU Delft library.

First of all, thank you for taking the time for this interview. The interview will take around 45 minutes. I would like to ask you to sign a consent form in which you give your permission for this conversation to be audio recorded and that I can take some pictures during the interview. In the consent form is described how this data will be stored and used during the course of this project.

The interview will be done based on the sub-topics in the booklet. Did you manage to fill in the booklet? How did you feel about filling in the booklet? Was it difficult or easy?

The topics of the booklet are:

- A regular study day
- Taking breaks at the library
- Facilities at the library
- My TU Delft
- Associations with academic heritage
- The artifacts that interest me

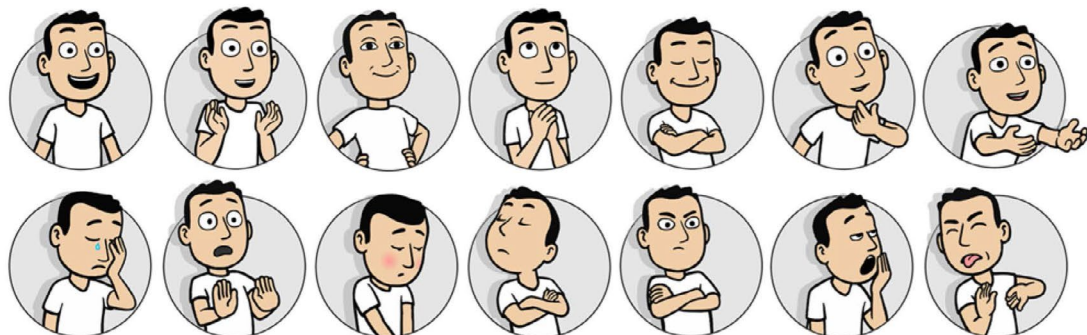
Before we start, I want to check how much time you have scheduled for this interview? At what time do you have to leave? At last I want you to know that there are no right or wrong answers to the interview questions, you can share whatever you feel comfortable with and you can stop whenever you feel like it! Do you have any questions? Then we will start with the interview.



Topic 1: A regular study day (6 mins)

Let's start with the first topic of the booklet: Associations with academic heritage. In the booklet you had to draw an emotions chat. I would like to go through the exercises together to gain a better understanding of what you meant

- What specific times of the day do you feel most energized and productive, and conversely, when do you feel least motivated or focused?
- When you're feeling down or demotivated, what strategies or activities do you find helpful in lifting up your mood?
- Which of these illustrations do you feel best describe your mood? Just before taking a break, during your break and right after? Explain why.
- Do you want to add anything?



Topic 2: Taking breaks at the Library (6 mins)

Then let's move on to the next topic: Taking breaks at the TU Delft Library.

- Can you describe your usual break to me?
 - What do you do when taking a break?
 - How much time do you spend?
 - Where do you spend your time?
- When do you realize that you need to take a break?
- Can you describe your ideal break to me?
 - What kind of activity would you prefer and why?
 - What feeling would it give you?
 - In what kind of surrounding would you want to be?
- Why do you need this kind of break?
- If you were at another location would you prefer a different kind of break?
- Anything you would like to add about this topic?

Topic 3: Facilities at the TU Delft Library (6 mins)

Let's move on to the next topic: Facilities at the TU Delft Library

- Can you explain how you evaluated the different facilities at the TU Delft library?
 - On which spots did you place a heart and why?
 - On which spots did you place a cross and why?
 - On which spots did you place a questionmark and why?
- With what purpose do you generally visit the TU Delft Library?
 - How does this influence your interest for certain facilities that the Library has to offer?
- Are you familiar with the Collection Wall at the TU Delft Library?
 - Have you visited the Collection Wall before?
 - How often do you visit the Collection Wall?
 - What is the reason for your visit / what keeps you from visiting?
- What would make the Collection Wall more attractive to you?
- What do you think of the exhibitions at the TU Delft Library?
- Is there anything you would want to add?

Topic 4: My TU Delft (6 mins)

Then let's move on to the next topic: My TU Delft.

- Could you explain why these two objects or stories are important to you?
- Do you follow any news or content related to your studies or the TU Delft university?
 - Where do you find this content and what articles or kind of information interests you?
- What preconceptions did you have about studying and the TU Delft university when you first became a student here?
- How does being a student at the TU Delft shape your perspective on topics you engage with?
- How do you personally experience a sense of belonging at the TU Delft?
 - What specific factors or experiences contribute most to that connection for you?
 - What aspects of TU Delft make you proud or not proud to be a student here
- Do you want to add anything?

Topic 5: Associations with academic heritage (6 mins)

The next exercise you had to fill in a mind map on your associations with academic heritage.

- If you had to choose one of your answers, which one describes academic heritage best for you?

Interview transcript

Transcript Light

Interviewer: Lieneke Cazemier [L]

Location: Europe Project Room, TU Delft Library

Date and Time: 26/03/2024, 10:30-11:20

[L] starts with a short introduction of herself and explains the goal of the study. [M] is thanked for his participation in the study and signs the consent form after [L] has explained its details in short and has given [M] the time to read it carefully. [M] managed to fill in the booklet he said that the questions were clear and not really difficult to fill in, just that he was not familiar with all the facilities at the TU Delft Library.

Topic 1: A regular study day

Question: What specific times of the day do you feel most energized and productive, and conversely, when do you feel least motivated or focused?

[M]: I am most productive just after lunch, between 13:30 and 16:00. In the morning I am usually still a bit sleepy, then I work towards lunch and am not quite in the flow yet. During lunch, you're eating, socialising, interacting with people then you've really had an hour's rest that you think now I'm going to have a good work session.

Question: When you're feeling down or demotivated, what strategies or activities do you find helpful in lifting up your mood?

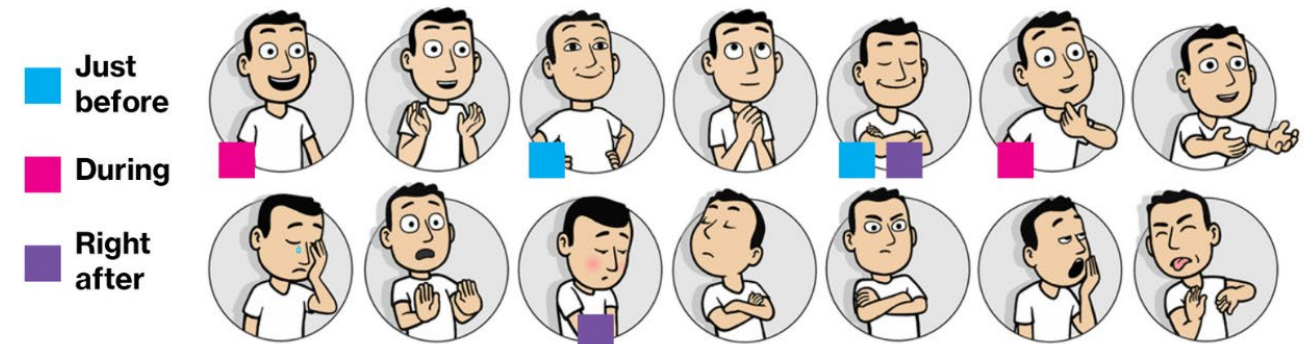
[M]: After 16:00 then often my motivation drops, because I've been working hard for a while. Then I think I deserve a break and start walking around and looking for snacks. Or I ask others if they want coffee and like to talk to other people.

[L]: Especially social interaction is what you are looking for then.

[M]: yeah, sure.

Question: At the beginning of taking a break and at the end, which of these illustrations do you feel best describe your mood?

[M]: *Just before*: It's a bit in between these 2. Then I think, I've worked really well now, so then I feel proud of myself and content.



- Are you familiar with the library depot or the academic heritage collections?
 - If not, what do you think is collected at the library depot?
 - How did you first come across TU Delft's library repository or academic heritage collections?
 - What is your attitude towards academic heritage?
 - Would you be interested in visiting the TU Delft Library depot?
- How much do you know about the history of the TU Delft?
 - What aspects of its history caught your attention?
- In your free time when do you find yourself most interested to explore heritage or history related topics?
 - For example certain books, games, movies, podcasts, holidays
- Anything you would like to share/add?

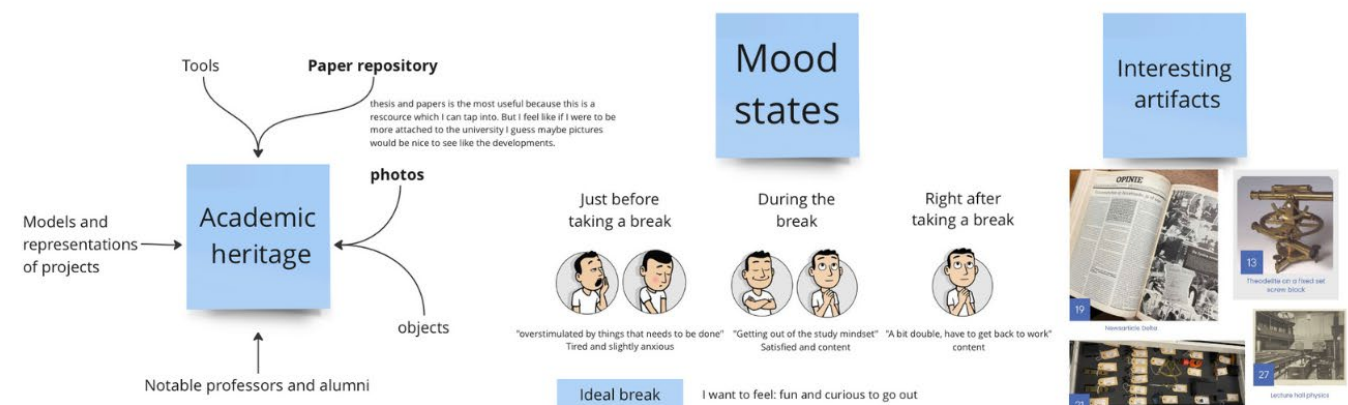
Topic 6: Artifacts that interest me (6 mins)

Let's move on to the last topic: What artifacts interest you?

- Could you explain a bit more in detail why you chose these 3 artifacts from the collection
 - Why did these artifacts caught your attention
 - What makes these objects interesting for you
- If you could know more about these objects, what information, interaction or context would you consider important to add?
- If you could add things to the library's heritage collection, what would you want to collect for the future?
- Anything you would like to add?

This was the end of the interview. Thank you so much for your time! Your answers will help me a lot. Do you have any questions? You can always contact me via email. I have a Coffee Star coupon and lunch for you as a thank you.

A.



Finding out something in a playful way

"for example the Nemo museum which is more interactive, I like that. Also games, I like finding out something in a playful way."

Open to learning about the history of the TU Delft but there is no incentive

"No I barely know anything. I would be open to learning more about it. But until now it did not occur to me and also did not really have an incentive to delve into that myself."

Seeking an informal learning experience

Need to interact with an object to understand how tools are used

"like tools can be cool to look at but you cannot hold it in your hands and use it. But you can only look at it. Well if there is some way to interact with the object, that would make it definitely more interesting. I find it way nicer to do stuff than only look. Or at least see animations of the tools used."

The exhibition should not feel like study but relaxation. A lot of reading feels like studying.

"for during a break I don't want to read anymore words, like the showcase of theses because that does not feel like relaxing. Now they have all the text included which is too much information, this makes me feel like I am studying."

Experiences learning through a game as fun

"Trivia game during your break with friends about objects from the library. I used to really like to play trivia crack on my phone with friends. You mainly just wanted to compete and win from your friends but that through playing the game at the same time you learn. For example, with certain art movements you could recognise paintings. Then you gained knowledge by winning from your friends in a playful way. I really enjoyed that."

Is interested in heritage but the barrier to explore it by myself is too high

"Not so much, it is not that it does not interest me. Mostly art history I like. I do think, I would want to know more about it but the barrier to explore it myself is too high for me."



■ Consent form

You are being invited to participate in a research study titled “Exploring academic heritage at the Collection Wall as a break from studying”. This research is being done by Lienneke Cazemier from the TU Delft in collaboration with the TU Delft Library.

The purpose of this research study is to gain insights on how to display academic heritage in a way that aligns with the interests of students. Therefore I am curious to the break routines of students during a study day at the TU Delft Library in order to find out what students would want and need to engage in a playful learning experience during their break. It will take you approximately 30 to 45 minutes to complete.

The data will be used as a starting point for improving current facilities or creating new facilities for the Collection Wall at the TU Delft Library. The results will be used for my graduation project which will be published in the education repository of the TU Delft. During the interview I will ask you to think about the activities you undertake as a study break, your experiences with the facilities at the TU Delft Library, what it means for you to be a TU Delft student and your associations with the academic heritage collections.

As with any online activity the risk of a breach in data storage is always possible. To the best of my ability your answers, taken photos and audiorecordings from this study will remain confidential. I will minimize any risks by safely storing the data using “One Drive” and removing all identifiable data from the files (photos will be blurred).

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to refuse to answer any questions. All personal data will be removed after finalizing the graduation project in approximately 7 months.

For more information, questions or comments contact me, Lienneke Cazemier by email:

Please tick the appropriate boxes	Yes	No
A: GENERAL AGREEMENT – Research goals, participant tasks and voluntary participation		
1. I have read and understood the study information dated [/ /], I have been able to ask questions about the study and my questions have been answered to my satisfaction.	☐	☐
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	☐	☐
3. I understand that taking part in the study involves: • Written notes derived from the interview as well as audio recording • Photos taken during the interview	☐	☐
4. I understand that I will be compensated for my participation by a coffee star coupon and lunch.	☐	☐
5. I understand that the study will end [/ /] at hour	☐	☐
B: POTENTIAL RISKS OF PARTICIPATING (including data protection)		
6. I understand that the following steps will be taken to minimise the threat of a data breach, and protect my identity in the event of such a breach: • Transfer the phone data to "One drive" for safe storage and delete it from my phone afterwards • Removing identifiable data and blurring of any taken photos	☐	☐
7. I understand that personal information collected about me that can identify me, such as [my name, photos taken], will not be shared beyond the study team.	☐	☐
8. I understand that the (identifiable) personal data I provide will be removed after finalizing the graduation project in approximately 7 months.	☐	☐
C: RESEARCH APPLICATION		
9. I understand that after the research study the de-identified information (i.e. blurred photos, anonymised quotes) I provide will be used for (re)designing the TU Delft Library Collection Wall, a graduation report and presentation.	☐	☐
10. I agree that my responses, views or other input can be quoted anonymously in research output.	☐	☐

D: (LONGTERM) DATA STORAGE, ACCES AND REUSE		
11. I give permission for the de-identified information that I provide to be archived in the TU Delft education repository so it can be used for future research and learning.	☐	☐

Signatures

_____	_____	_____
Name of participant	Signature	Date

I, as researcher, have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

_____	_____	_____
Name of researcher	Signature	Date

APPENDIX C: Persona’s and storyboards evaluation

Interview script



Interview script

Intro (3 mins)

Hoi, welkom!

Voor mijn afstudeerproject doe ik onderzoek naar hoe academisch erfgoed van de TU Delft tentoongesteld kan worden op een manier die studenten aanspreekt. Het moment dat ik de interesse wil wekken van studenten is tijdens hun studiepauze. Daarom ben ik benieuwd welke interactie met academisch erfgoed jou het meeste aanspreekt en hoe jij graag je pauze spendeert.

Ik heb persona’s gemaakt en 3 storyboards die ieder een mogelijke interactie met academisch erfgoed tijdens een studiepauze beschrijven . Ik ga je wat vragen hierover stellen om erachter te komen met welke persona jij je het meeste identificeert, hoe jouw ideale interactie met academisch erfgoed eruit zien en welke aspecten van de storyboards bij jou aansluiten.

Heb je nog vragen? Dan beginnen we met het interview.

Topic 1: Persona’s

- Laten we beginnen met de 3 persona’s, lees ze rustig door
- Met welke persona identificeer jij je het meest, en waarom?
 - Zijn er aspecten van de andere persona’s ook herkenbaar voor jou, zo ja welke?
 - Zijn er aspecten waar jij je helemaal niet in kan vinden, zo ja welke?
 - Zijn er nog andere dingen die je wil benoemen?

Topic 2: Interactie met academisch erfgoed

- Dan gaan we door naar het tweede onderdeel, ik heb hier drie formuleringen van een een interactie met academisch erfgoed
- Welke spreekt jou het meest aan, en waarom?
 - Als je bij elke van deze 3 een voorstelling zou moeten maken van hoe zo’n interactie eruit zou kunnen zien, waar denk je dan aan?
 - Zijn er nog andere dingen die je wil benoemen?

Topic 3: Storyboard 1

- Dan gaan we door naar het volgende onderdeel, dit gaat over storyboard 1. Lees deze even rustig door. als je vragen erover hebt hoor ik het graag.
- Zie jij jezelf dit doen, waarom wel of niet?
 - Welke aspecten van het verhaal spreken jou aan en welke niet?
 - Kun je beschrijven hoe deze activiteit wel of niet aansluit bij jouw behoeften tijdens een studiepauze?
 - Zijn er nog andere dingen die je wil benoemen?

Topic 4: Storyboard 2

Oke dan ga ik dezelfde vragen stellen voor storyboard 2, lees deze ook eerst even rustig door

- Zie jij jezelf dit doen, waarom wel of niet?
- Welke aspecten van het verhaal spreken jou aan en welke niet?
- Kun je beschrijven hoe deze activiteit wel of niet aansluit bij jouw behoeften tijdens een studiepauze?
- Zijn er nog andere dingen die je wil benoemen?

Topic 5: Storyboard 3

Oke dan ga ik dezelfde vragen stellen voor storyboard 3, lees deze ook eerst even rustig door

- Zie jij jezelf dit doen, waarom wel of niet?
- Welke aspecten van het verhaal spreken jou aan en welke niet?
- Kun je beschrijven hoe deze activiteit wel of niet aansluit bij jouw behoeften tijdens een studiepauze?
- Zijn er nog andere dingen die je wil benoemen?

Topic 6: Storyboards

Als laatste onderdeel ben ik benieuwd hoe je deze storyboards ten opzichte van elkaar zou plaatsen.

- Welke spreek jou het het meeste aan?
- Als je een storyboard nummer 4 zou kunnen maken die jouw ideale interactie met academisch erfgoed tijdens een studiepauze weergeeft, welke aspecten zou je dan kiezer om daar in te verwerken?
- Zijn er nog andere dingen die je wil benoemen?

Consent form

■ Consent form

Title of Project: Exploring engagement with academic heritage at the TU Delft Library

Researcher: Lieneke Cazemier

Introduction:

I am conducting a research study as part of my graduation project, focusing on exploring ways to engage students with the academic heritage collections at the TU Delft Library. I am curious to your preferred ways of interacting with academic heritage during a study break. Therefore this research entails persona's and storyboards about which I will ask questions to find out with which aspects you identify with, what parts of the storyboard appeal to you and what type of interaction fits your preferred study break.

Purpose:

The purpose of this research is to gain insights on how to display academic heritage in a way that aligns with the interests of students. The purpose of this consent form is to seek your permission to record our conversation and take photographs during the session. Your participation in this study is voluntary, and you have the right to withdraw at any time without consequence. Participation will take approximately 15 to 20 minutes.

Permission request:

I would like to record our conversation for accuracy and reference purposes. The recordings will be transcribed and anonymized for analysis.

I give permission to record the conversation: Yes ☐ No ☐

I may take photographs during our interaction. These photographs will be used in an anonymized manner to complement the findings in my graduation report and presentations.

I give permission to take photographs: Yes ☐ No ☐

Confidentiality and participation:

Any information shared during our conversation, including recordings and photographs, will be confidential. Your name and any identifying information will be anonymized in all materials.

Contact Information:

If you have any questions or concerns about this research project or your participation, please feel free to contact me: l.cazemier@student.tudelft.nl

Consent:

I have read and understood the information provided above, and I consent to participate in this research project.

Participant's Name:

Participant's Signature:

Date:

APPENDIX D: Academic heritage content

Clustered images presenting 7 themes related to past student life

Student stunts



Introduction week



Student associations



Studies



Extracurricular activities



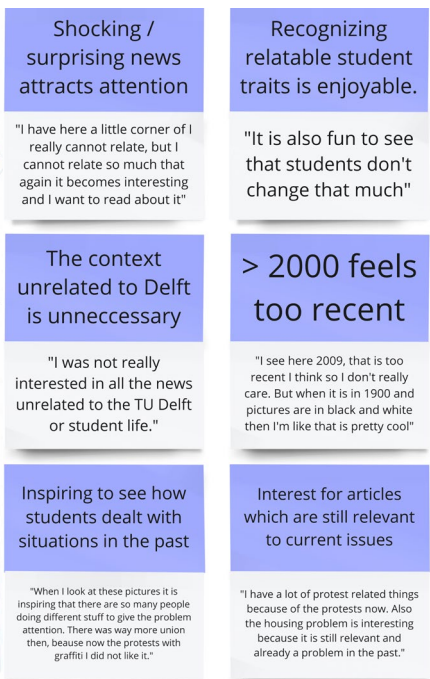
Student housing



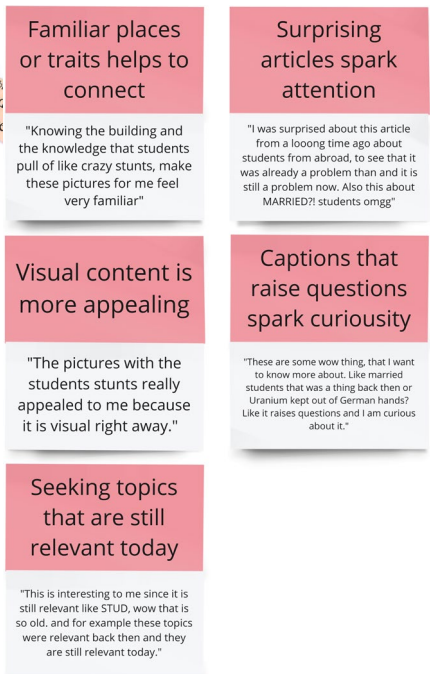
Student protests



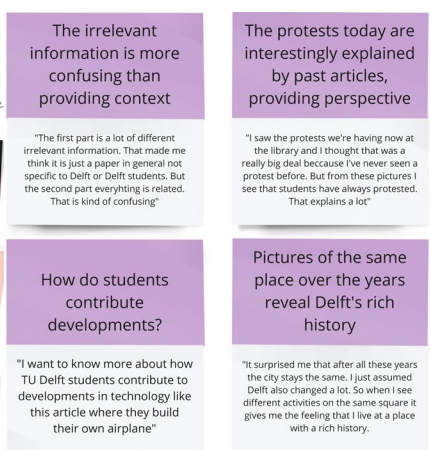
Collages with statement cards



P1 - Collage with statement cards



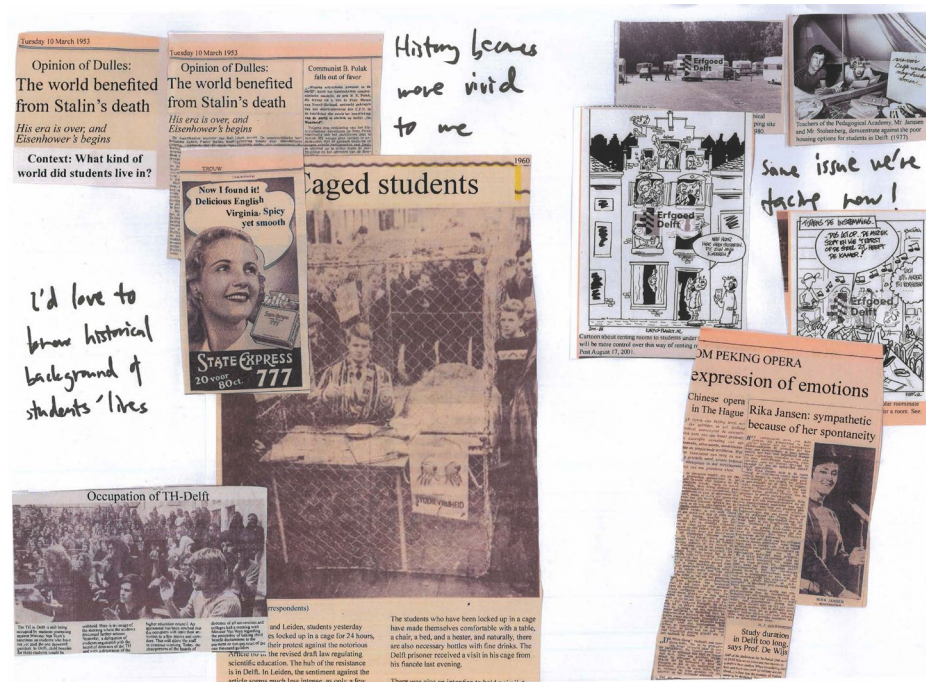
P2 - Collage with statement cards



P3 - Collage with statement cards

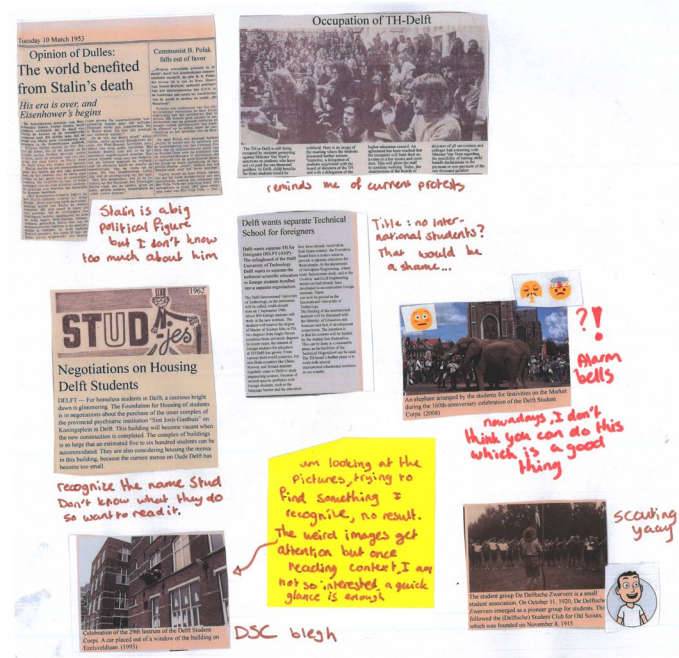


P4 - Collage with statement cards



The student stories make the historic context of other events more relatable "When I first saw this magazine this title grabbed me: What kind of world did students live in? So far, for me, those histories are kind of far away from my life now (like Stalin's death). To relate it to how students lived in that time makes me feel more connected to these history topics, they become more vivid to me."	recognizable news items grab attention "The things that are more familiar to me grab my attention, for example this advertisement about cigarettes to attract women I read about that before. It feels part of that time so I added it"
Content that reflect still relevant issues for students "I chose articles on the right because they reflect our current life now, for example the issue of the housing."	Relatable content evokes strong emotions "I was quite surprised when I saw that students of the past experienced the same situation"
Guided by personal interests "The last part is the news about music, which is more related to my personal interests therefore I chose it."	

P5 - Collage with statement cards



P6 - Collage with statement cards

Expressing opinions, feelings important I liked the emoticons to use in the collage	Familiarity: It reminds me of current protests "The protest article is grabbed my attention because now there are protests going on as well"
Triggers emotions The image with the elephant is one that I had a more emotional reaction to.	The amount is overwhelming, the titles are mainly important "All the articles it was a lot, but I mostly scanned through the titles to see what grabbed my attention"
Personal associations and opinions about the topic "The title Delft wants separate school for foreigners, I was like WHAT?, because at IDE we have a lot of projects with international students and I find it fun to learn from other people and cultures"	Looking for content to have personal connection with "I'm not necessarily interested in other student associations. I am part of aegee Delft, I was actually looking for something from them in here."

Storyboard with statement cards and brainstorm

STORYBOARD COLLAGE EXHIBIT



While you sit at Coffee Star and enjoy a coffee, you're looking for a moment of distraction. Essentially anything that actively engages you to change your mind.



You notice a magazine on the table. It contains an invitation for a stencil collage workshop at the back of the Collection Wall.



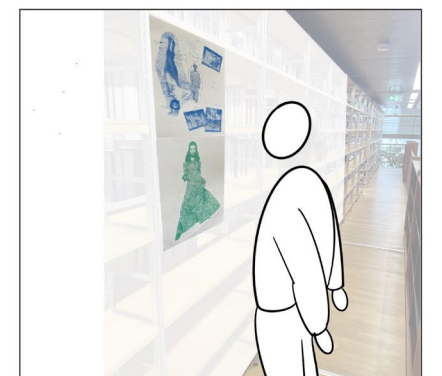
You share the activity with your friends to ask if they would like to do this and plan a moment.



The magazine is used for the collage making activity to show your perspective on (past) student life.



With a stencil machine, coloured copies can be made, to take home and to contribute to the exhibition.



The stencil collages are exhibited at the back of the Collection Wall for students to visit during their break.

Enjoyable to try this because it is something new "I would definitely do this, I think it would be super fun. Also because I've never done something like this."	Repetitiveness is questionable "But I also think this is fun for once or twice"	It should be something that can be done at any moment, no planning necessary "I personally think I would not plan for this, so maybe if this is already there and I can just go there I would do it."	More clear idea of the workshop has to be provided to attract students "I don't think the invitation would attract me, maybe if there are images of the Collection Wall than it attracts more attention, because when you showed the stencils here I was like ohhh wow that's cool."	appealing to take home but size is important "I like that you can take the stencil home, but I would not want it to be a huge poster."
Make it a product intended for student homes "But if you make something student related, it would be super fun if it is something like a calendar for example. That it's an item which is in all student houses. Students anyway like to hang up weird stuff in their houses."	A bit long for a break activity "With 20 minutes I would feel a bit rushed for the collage making activity. I now felt a bit rushed which kind of takes away some of the nice things about the activity"	Should be a shared activity "For me I would only do it when I share it with my friends and we plan a moment for it to do together"	The printing room could possibly be a permanent location for the stencil machine "If I print my files in a printing room, then I would be interested in trying out such a machine there. Because I have a lot of time when I'm waiting for my files."	Rather view during a break than do it yourself "Now I am really on a tight schedule so if I knew about it I would want to go to the Collection Wall to view it but not do it myself."
improve accessibility: no tools and less time "Also now you need all kinds of tools: cut it and glue it. But if you make it stickers it is less time effort."	Talking important to share the funny facts with others "I would definitely like to talk about this experience. For example the things I found right now about past student life I'm sure I will share that with someone. The sharing part is important because it is funny and interesting"	Prefer to take the collage home "I would love to have a collage home then when you have people over you can show them and talk about it."	Making collages is an enjoyable experience "The collage making, is very relaxing actually to do"	What is a stencil collage workshop? "For the invitation it would be nice to see a video of people doing this workshop and operate the machine to know what it actually entails"

STORYBOARD 2



You are going to study today and you just entered the TU Delft library.



Your eye catches the screen with announcements showing a poster about a break activity. You decide to scan the QR code.



You share the activity with your friends to ask if they would like to do this as a study break and plan a moment.



You walk to the location of the game, at the back the Collection Wall.



How to play a game you with heritage materials (images and news articles?)



Afterwards you discuss the experience with eachother.



Important to have a choice to discover your own interests "selecting interesting images or articles is something that we did now when browsing through the magazine. I think that is really important to let people choose because everyone has their own interest, so you want to have a broad scope to go through and select what you like"	Browsing the magazine and selecting images or articles feels like a personal exploration "My own exploration process makes me more likely to remember the information"	Let students fill in their own present experience to connect with the past "I don't know if you want students to fill in their own present experiences or show articles of the present but making this connection with the past is something I would like to see."	Game board to guess the connections and make it tangible "For children you have those circuit boards where they have to connect things, maybe you can use that principle to make connections between the past and the present."	Provocative headlines to start a discussion Use provocative headlines of the paper to start a discussion
Guessing game is this image from the past or the present? "Maybe you can make a game out of it where its the image you see is always black and white. Then you have to guess if it's from now or from ten years ago. For example "negotiations on Delft housing" is that now or from ten years ago?"	Recurring themes relevant to current events "I would be really interested if it is a recurring thing that it is just relevant in than moment. For example now with the demonstrations or housing as long as it is relevant I think people would be interested"	Talk about it rather than just looking "Yeah I think that will also get people to talk about it rather than just looking at it. What is your opinion on the things that happened in the past and are still relevant now. Like have we gotten further than 50 years ago?"	For a break opening up a discussion is nice "For a break it is just nice to open up a discussion about a topic"	Break: get your mind off study and do something social not cost energy "I feel like the goal of the break is to get your mind off study and do something social and not cost energy. I think this is maybe too much effort."

Brainstorm activity introduced by a storyboard with statement cards

Delft Student Magazine

DELFT STUDENT MAGAZINE

From 1938 to present day



News of student activities over the years



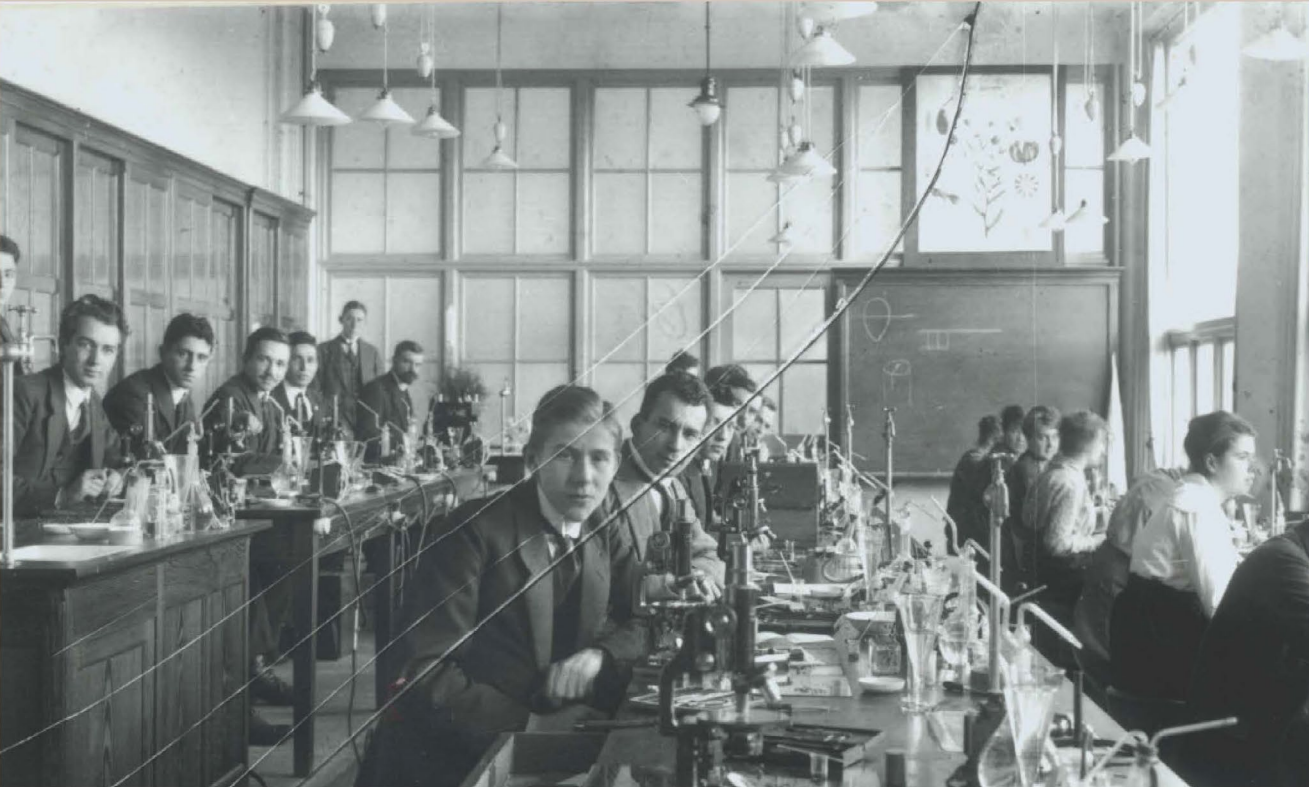
Student happenings captured in pictures

Tuesday 10 March 1953

Opinion of Dulles:
The world benefited from Stalin's death

His era is over, and Eisenhower's begins

Context: What kind of world did students live in?



About past student life

An ailment as old
as the world.

“From heath village to industrial city

Interesting exhibition on the history of ancient Tilburg

You learn a lot about your city

Neatly organized

TILBURG, 12 November — De geschiedenis van Tilburg is meer interessant. Iedere Tilburger en ook vele mensen van elders zullen graag wat vernemen over deze industriestad, die vroeger slechts een heidorp was, wiens naam voor het eerst in 799 is genoemd, doch dat 2006 jaar vóór Christus reeds was bevoond, zoals met opgegraven uren, munten en andere voorwerpen is te bewijzen.

Reer op keer is een en ander over de geschiedenis van Tilburg bewaard gebleven en daaruit kan men vernemen hoe het met onze goede plaats in vroeger eeuwen was gesteld. Een echte Tilburger interesseert zich voor de geschiedenis van zijn stad en het zal hem daarom verblijden te vernemen, dat in het Paleis-radhuus van heden 12 November tot en met 4 December een tentoonstelling wordt gehouden, die „Van heidorp tot industriestad“ is genoemd.

de tentoonstelling ook zien onder andere aan de hand van afbeeldingen en een plattegrond. De moustruun en een keik uit de 17e eeuw, die in de schuurkerk te Steenvoort werden gebruikt, (het eigenendom van de parochie Gorkse) kan men op de expositie bewonderen. Kerkelijke registers en dopboekken, portretten en akten treffen men ook van mgr. Zwijnen, mr. J. A. Mutsaers, minister van Eredienst en van Perken Donders.

In de tijd, dat mgr. Zwijnen de Congregatie van de Zusters van Liefde stichtte (1822) kon men niet doen wat men wilde. Men was aan allerlei bepalingen gebonden. Mgr. Zwijnen maakte er een firma van. De Zusters van Tilburg zijn

daarom gesticht als de „Firma Verbunt en Co“. De tentoonstelling bewijst dat niet een officieel stuk.

Topography
Aan de topografie (plaatsbeschrijving) van Tilburg besteedt deze beelst interessante en interessante tentoonstelling groot aandacht. Zo ziet men er grote kaarten van de heerlijkheid Tilburg en Gorkse, die gemaakt zijn door de scholieren ter Diederik de Zijnen (1700) en Hendrik Verhees (1780). Verder zal men er graag 'n aandacht besteden aan stadsgezichten als gravures en foto's, uithangborden enzovoort. Portretten, publicaties, couranten en gamletten uit de Franse tijd, die vrijheid, gelijkheid en broederschap preekte, (1789) vind men er verschilt.

Wool industry
Een tentoonstelling over Tilburg en dan de wol vergeeten is ondenkbaar. Daar om toont deze expositie ten aanzien van de wolnijverheid diverse architectuurstukken en voorwerpen als een schietpoel, verfoeken, ordonantien en regimenten van de ambachtsgilden.

Omdat koning Willem II het industriële en agrarische leven van Tilburg sterk bevorderde en aldus veel deed ter bestrijding van de armoede wordt onder de rubriek „Wolnijverheid“ eerbiedige aandacht aan deze voorst geschonken.

Men ziet er ook de gezamenlijke inzendingen van de Tilburgse textielafdelingen op de internationale tentoonstellingen te Parijs (in 1848), Wenen en Philadelphia. De stalen van toen laten zien, dat we nu weer dezelfde stijl als hoogste mode gaan dragen!

Beginning and end
De tentoonstelling laat als begin het doerentruif van de oude Germanen zien. Zij eindigt dienovereenkomstig door iets te tonen van de folkloristische begripnigebouken, die tot in deze eeuw in Tilburg hebben voortleefd (strotensnede, Willem van de Wierde, prof. P. C. Donders), men treft er een en ander aan van de muziekinstrumentmakers van de

Het zal vele Tilburg, ra goed doen te zien hoe hun stad op het gebied van kunsten en wetenschappen al reeds in vroeger dagen. Men ziet derhalve werken van de schilders Gerardus Cornelius van Spaendonck, Adriaan de Lelja, J. A. Knip en anderen; het portret en een 'werk van de wereldberoemde schilder prof. P. C. Donders, men treft er een en ander aan van de muziekinstrumentmakers van de

Adrian and science
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DE PRINCESS-LINE

Heel veel Tilburgers zullen, als ze deze tentoonstelling bezoeken, voor het eerst in hun leven brokken van Tilburgs geschiedenis zien. Zij zullen dan ook voor het eerst ontdekken hoe interessant die bloedeigen historie is.

We willen een greep doen uit hetgen is gepubliceerd.

In de praehistorie heeft Tilburg al bestaan, zoals blijkt uit vondsten in de bodem. Men krijgt hier te maken met het steentijdsperk, de bronstijd, ijertijd en de Romeinse tijd. Deze periode omvat de jaren van 2000 vóór Christus tot 500 na Christus.

Dan komt men in 799 terecht, het jaar waarin Tilburg voor het eerst in de geschiedenis wordt vermeld, namelijk in een schenkingakte aan St. Willibrordus van de acte niet men op de tentoonstelling.

Van 799 tot 1167 swijgt de geschiedenis over Tilburg.

In 1229 verkoopt Jan II, hertog van Brabant, de „gemene gronden“ van Tilburg aan de inwoners voor gemeenschappelijk gebruik. De geschieden en gedrukte tekst van deze acte kan men op de tentoonstelling lezen.

De Brabantse heersers bleven ook belastingen, zoals men kan zien uit een cijnsboek van 1340 en andere stukken.

In 1387 verpand hertogin Johanna van Brabant de dorpen Tilburg en Gorkse aan Pauwels van Haestrecht. De akte van handtekening kan men er zien.

Originele perkamenten met regel uit 1453 betreffende het historisch gebeuren, waardoor Tilburg een eigen scheepshank en daarmee zelfbestuur kreeg, ziet men op de tentoonstelling, alomteer een schilderd, die deze gebeurtenis voorstelt.

Men leest er een en ander over de samenstelling van „Tilburgs dorpsbestuur“: schout, schepenen, borgmeester en geworvenen, een bestuur dat Tilburg kende tot 1860, waarna Tilburg werd. Betreffende schout en schepenen met men schepensprotocol, criminele rol kollier, 100e penning enzovoort op de expositie aanwezig.

In 1612 werd Tilburg met Gorkse door de aartsbisschop Albert en Isabella verkocht. Sindsdien vormden beide dorpen één heerlijkheid. Uit genoemd jaar 1612 ziet men betreffende deze verkoop het originele perkamenten charter. Men treft de familiepapieren aan van de geslachten Van Haestrecht, Van Malsen, Van Grobendonck, Van Hesseu Kassel en Van Hogenroep-Hofwegen, die heer van Tilburg zijn geweest.

Deze heren liepen schuttersgilden in het leven: St. Floris, St. Sebastiaan en St. Dionysius, waarvan men het zilver en andere attributen aantreft.

Church history

Ook betreffende de kerkelijke geschiedenis van Tilburg laat deze tentoonstelling een en ander zien.

Men treft er charters en boeken aan betreffende deze kerkgechiedenis waarmee de Witheren van Tongerlo zoveel te maken hebben gehad, van 1231 af terugverden namelijk de Witheren zes eeuwen lang als pastoren van de kerk te Tilburg. Zij hadden ook hoeven in Tilburg, waarvan de Tongerloer Hofsstraat nog herinnert.

De geschiedenis van het kerkgebouw te Tilburg door de eeuwen heen laat

‘Choked on the gin’

AMSTERDAM 11 Nov. — Onder de gebruikelijke stroom van hotel-briefjes, die de politie van Amsterdam 'enacht te verwerken krijgt, was er vanmorgen, dat de wachtkommandant van het bureau Warnouestraat zijn bril iets vast ter op zijn neus deed zetten. Er stond nl laniokniet op geschreven: „In de jevever gestikt“.

Er werd een onderzoek ingesteld. Daaruit bleek, dat in het betrokken logement niemand was overleden, maar wel dat daar de mededeling was binnen gekomen dat „Tinus in de jenever was gestikt“.

De logementhouder had gemeend er goed aan te doen de politie in kennis te stellen. Na wat heen en weer gerant kwam aan het licht: voor „Tinus“ na enkele glaasjes te hebben geleegd, zich tegoe had gedaan aan een heerscheid gebelivies en daarna in moeilijkheden was geraakt“, aldus de politie. In het Binnengasthuis, waar de man voor medische hulpverlening naar toe was gebracht, is hij vanmorgen overleden.

Ook verschillende Londense ontwerpers lieten hun keus vallen op complete met ¾ of ½ mantels. Frederik Starke ontwierp dit model van zwart-blauw geteefte wollen stof waarvan de ¾ mantel op de rug een lage afhangende eintuur kreeg. Hij liet dit ensemble vergoed gaan van een bloekbare wagenwiel-hoed.

De hiersgeenode heer van Tilburg, Willem van Hesseu Kassel wilde het kasteel aan de Hasselt laten afbreken.

Preschooler of the week



Dit is het confertiel van de 20 maanden oude Angelina van Dijk uit Bostel. Met haar pittig en tegelijk vriendelijk smetje won Angelina het plet en werd ze tot Kieft van de Week uitgeroepen. Het tieltje voor Angelina's spaarpot is per postwissel onderweg naar haar ouderlijk huis, Koppel 4 te Bostel.

You were right

toen U zei: „Dat hoesten moet nu maar eraf afgeblazen zijn, ik pak PACTOLAN“. Maar weten Uu hoestende vrienden en kennissen al van Uw wonderbaarlijke genezing? Of moeten zij maar blijven doorsukkeln?

Uw advies maakt meer indruk dan de aanbeveling van de fabrikant. Zeg het hun dan:

PACTOLAN

zeelgemene snotsielbitten koopt U bij Uw eigen apotheker of droger.

Prijzen: 6.75 - 1.35 - 2.25

Minister Staf to Canada and the United States

DEN HAAG, 10 Nov. — De minister van Oorlog en van Marine, ir. C. Smit, zal 19 November voor veertien dagen naar Canada en de Ver. Staten vertrekken. Zijn bezoek aan Canada heeft als voornaamste doel, aan de Canadese regering de dank van Nederland over te brengen voor de aanzienlijke hulp die het in de opbouw van zijn strijdkrachten van Canada heeft gekregen, zowel in de vorm van wapens en andere uitrusting, als door de beschikkingen van zijn vliegers. Minister Staf zal voorts met de Canadese regering van gedachten wisselen over gemeenschappelijke belangen en problemen in de NAVO. Hij zal ook een bezoek brengen aan een basis waar Nederlandse vliegers worden opgeleid, en - nabij Toronto - enkele belangrijke, voor de defensie werkende industrieën bezichtigen.

Op 26 November gaat de minister Staf naar de Verenigde Staten waar hij te Washington met regeringsvertegenwoordigers besprekingen zal voeren over de samenwerking in NAVO-verband op lange ter geiden. De minister zal op 3 of 4 December in Nederland terugkeren.



No information available.



Postcard, photomechanical print, celebrating the XIIIth lustrum of the Delft Student Corps. Location: Market. (1913)

A sad fate for the rescued Gerhard Lozie



New student housing on Leeghwaterstraat. These so-called space boxes, stackable single-room apartments especially for international students, are rented out for €330 per month. (2003)

DORDRECHT, 11 Nov. — De maar Canada, geëintrigde Dordtse Gerard Lozie, die in October tien dagen op de vliegtuig van het vreemdelingen vliegtuig waarin hij tweede vlieger was, is nijdende kon en zonder voetvel heeft gesten wordt op het ogenblik verpleegd in het Royal Alexandra Hospital in Edmonton.

De jongeman zal beide benen, die waren bevroren, moeten missen. Een reeds gearmputeerd en zeer binnenkort zal de jeugdige vlieger die in December zijn examen voor het gezagvoersdiploma zat, afleggen, een tweede operatie moeten doorstaan.

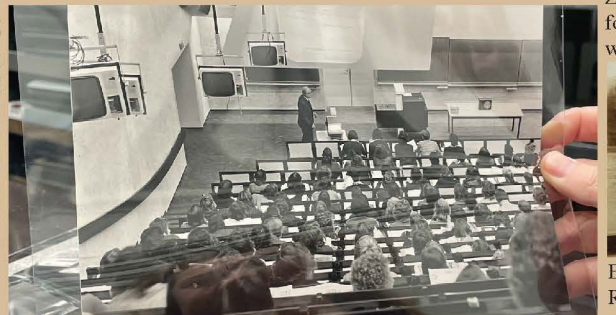
Dit medeleven met zijn ouders en beaan met het lot van Gerhard hebben enkele Dordtsearen een comitè gevormd, dat zich ten doel stelt, gelden in te zamelen om de ouders in de geleghenheid te stellen per vliegtuig naar Edmonton te reizen. De werksamheden bij dit comitè worden aanbevolen door enkele voornamstaande bewoners van Dordrecht, onder wie de burgemeester Mr. J. A. H. J. van der Dussen. De voor de reis benodigde som bedraagt fl. 6500,-.



Introduction of new students to the Technical University, the so-called OWEE week on the Market (2008)



The Board of the DSB - Delft Student Union. From February 1912 to February 1913.



No information available.

Holland in Gloria (Swanson Style)

De befaamde filmactrice, Gloria Swanson, die kort geleden ons land bezocht om er een artikel over te schrijven, heeft tijdens haar reis in Nederland diverse foto's gemaakt. Enkele grepen uit het verhaal tonen aan hoe zij 'ederland ziet.

In Amsterdam zijn 100 km grachten en 400 bruggen. Elke week rijden er twee auto's in de grachten, waarlangs aan weerskanten gepareerd wordt, al zijn er geen leuningen langs. Getrouwde vrouwen werken zelden, alleen thuis. De sloepen en rannen glimmen en moeten de schoone van de wereld zijn. Alle huzen hebben een grote haak aan een balk die uit het dak steekt.

Natuurlijk heb ik zwaare haring gegeten, want ik geloof in de stelregel, dat men in ieder land wel moet doen als de inwoners.

Voetbal is in Holland heel anders dan in Amerika. Het lijkt er wel zo veel op als ping-pong op tennis. In Holland wordt de bal vrijwel helemaal met de voeten gespeeld. Wie zijn handen gebruik wordt gedisciplineerd. Het hoofd wordt echter wel gebruikt. Als zij de bal met het hoofd van de een naar de ander koppen lijken zij niet gedresserde zeeluiwen. Ik heb Nederland-Noorwegen gezien. De Hollanders women met 3-0. Er waren doelvordergers bij en de bal bleef men altijd zien."

Gloria had grote waardering voor de regel dat vrouwen en jonge mensen beneden de 21 jaar voor oudere mensen moeten optaan. De Amerikanen konden in Holland iets leren: eerbied voor de ouderen.

De politie in het gebied van Constantine (Algerie) is een klopfacht begonnen op elf ter dood veroordeelde Algerijnen verstaalenden, die Dordrechtse van uit een gevangenis te Constantine zijn ontspan. Onder hen bevindt zich Mostapha Ben Boelal, de leider van de opstand van verleden jaar November in het Aures-gebergte, die nog steeds 20.000 man Franse troepen bindt. Een twaalfde ontspane brak zijn been bij de sprong uit de gevangenis op straat en werd spoedig voor gevat.

TE BRUSSEL is een hockeywedstrijt gespeeld tussen militaire afdelingen van België en Nederland. De Belgen women met 1-0. Deze stand was reeds bij de must bereikt.

Vers Molnar, de beroemde filmster bewijst door haar enthousiasme over VL, die zij geregeld gebruikt, dat goede Lipstick niet altijd duur behoort te zijn.

'n Product van ROSE KOLN fl.195

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„Voor veel mensen“, aldus dr. Hirsch, „betekent het sociale gebruik van een beetje een betere verlichting dan enig ander middel. Het draagt bij tot verbetering van de spijvertering en van de rust, welke van vitaal belang zijn voor een goede gezondheid“.

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CH

What will the Viet Cong do after the ceasefire in Vietnam?

(Van een speciale verslaggever)

SAIGON — Ook na een bestand zal de Viet Cong nog een zeer belangrijke macht hebben in Zuid-Vietnam. Het is waar hebben zij de laatste jaren zware verliezen geleden maar niemand weet hoeveel leden er precies zijn. Wel behalve een goed gedisciplineerd leger zijn Viet Congleden ook geïnfiltreerd in regeringsorganen, in lokale besturen en — met geheime agenten — in de gebieden die in handen van de Zuidvietnamese regering zijn. Men schat dat er nu tussen de 40.000 en 60.000 actieve leden zijn.

Militair presteren ze nog veel, omdat zij opereren vanuit de jungle en gehard zijn in dat terrein. Politiek weet op dit ogenblik niemand wat hun strategie zal worden na een bestand. Zullen de Viet Cong direct proberen hun macht te versterken? Krijgen ze onder het akkoord een kans om de macht te gaan delen? Of hebben ze het gevoel alles af te wachten en dan misschien pas te voorschijn te komen?

Want de inlichtingendiensten zo wel van de Amerikanen als van de Zuidvietnamese regering en van het leger zijn er zeker van dat er meer politieke officieren van de Viet Cong deel uitmaken van het gewone dagelijkse leven in steden en dorpen dan men vermoedt. Het afnemen van de terreur is een voorbe-

Nixon's new ministers will be even more controlled by the White House than his previous ones

(Van onze correspondent)

WASHINGTON — President Nixons nieuwe kabinetbenoemingen, door hem van te voren aangekondigd als een poging om de regering meer te stroomlijnen en aan te passen aan de belangen van het Amerikaanse volk, blijken achteraf eerder het tegenovergestelde te beogen, en op zijn best het schudden van hetzelfde spel kaarten te zijn geweest. De keuze van de nieuwe ministers duikt op een grotere machtsconcentratie in het Witte Huis, en op minder bevoegdheden voor het kabinet.

Na de verkiezingen van november, waarbij de president ogenschijnlijk het vertrouwen werd geschonken door de overgrote meerderheid van de kiezers, stond ook onder zijn critici een afwachtende houding: zou Nixon niet de suggestie van de verkiezingsuitslag interpreteren als een zwaa naar links, naar rechts of als een volharding in het conservatief gerichte politieke midden. Nog voordat de verkiezingsuitslagen bekend waren had de president echter al een hint gegeven in een vraaggesprek met een correspondent van het conservatieve avondblad van Washington, de Evening Star.

Nixon legde daarin de nadruk op de deugden van het verleden: wie hard werkt, wordt beloond, wie niet werkt (of hij dat nu zo wil, of niet anders kan) wordt gestraft met minder inkomen, wie etc. De boodschap was duidelijk: Amerika is geen land voor socialistische ideeën, er moet orde zijn en recht.

En wie niet gehoorzaamt moet boeten.

Ministers

Een weerspiegeling van deze opvattingen is terug te vinden in Nixons keuze van ministers voor zijn tweede ambtperiode. In de plaats van zulke onafhankelijke persoonlijkheden als minister van defensie Melvin Laird en de minister voor de huisvesting George Romney (beiden politieke persoonlijkheden), benoemde Nixon resp. de diplomaat Elliot Richardson en de voormalige onderminister voor de handel James Lynn.

Peter Brannigan, de leider van de bouwvakkers, die Nixons aandacht trokken toen zij anti-oorlogsdemonstraties twee jaar geleden aanvielen, werd minister van arbeid. Frederick Dent (een vriendje van de aarts-conservatieve zuidelijke senator Strom Thurmond) werd aangesteld als minister van handel, en oekening Claude Brannan, voorzitter het ministerie van transport. Richard Kleindienst, de onstreden ministe van justitie, werd in zijn functie gehandhaafd en twee voorafgevoerde Witte Huis-assistenten kregen belangrijke posten in de ministeries van binnenlandse zaken en transport.

Front

De algemeen gevolgde lijn van benoemingen duikt er op dat president Nixon, in plaats van meer macht te delegeren aan zijn kabinet, ministers heeft aangesteld die zich meer verplicht voelen aan het Witte Huis dan aan hun ministeries. De bedoeling hiervan is kennelijk om vanuit het Witte Huis een gemeenschappelijk front te scheppen tegenover het overwegend democratische Congres. Maar met de overwinning van de democraten in de afgelopen verkiezingen in de Senaat en in het Huis van Afgevaardigden, is het op zijn minst twijfelachtig of president Nixon er in de komende

partij — om Wilson tot andere gedachten te brengen, haalde Nixon argumenten was dat Labour door de boycot de socialistische en de democratische invloed binnen de EEOG niet verpaid the one thousand guilders. In Delft, child benefits for these students would be

Labour is not sending a representative to Strasbourg

(Van onze correspondent)

LONDEN-DEN HAAG — De Labour-lagerhuisfractie heeft op voorstel van de partijleiding besluiten genomen twaalf maanden na de toetreding van Groot-Brittannië tot de EEG (op 1 januari) — zeer tot verdriet van de pro-EEG-vleugel die het Europees parlement te boycotlen. Wilson acht dit de enige manier om de partijleider te handhaven.

Het Britse besluit wordt betrouwd door de Nederlandse socialist Van der Poel. Pogingen van de zijde van Europese socialist — bonds-kanselier Willy Brandt en op het laatste moment nog van de Franse

Nothing seen in Greenland

KOPENHAGEN — Het Deense ministerie van defensie heeft uit Greenland vernomen dat een militair transportvliegtuig dat enige uren boven de Disko-baai heeft gevlogen op zoek naar de geheimzinnige onderzeeboot, die daar ergens onder het ijs zit zitten, niets heeft gezien.

Leburton appointed as formateur in Belgium

(Van onze correspondent)

BRUSSEL — Koning Boudewijn heeft de Franse Waalse socialist Edmond Leburton belast met de vorming van een regering.

Leburton wordt een van de twee voorzitters van de Waalse Socialistische Partij — de andere is de Vlaamse partij — dat de politieke leiders pas actief worden enige tijd na het bestand maar vroegtijdig geëindigd worden om de macht over Zuid-Vietnam op te eisen. Dat zal de zwaarste voorproef voor president Nixon worden en, niemand kan voorspellen hoe de bevolking als de groepen zijn afgelopen, zal reageren op de nieuwe oproep tot verzet.

Three fired at Gijsen

ROERTMOND — Drie priester-ma-droewerkers van de dienst pastoral groepeerde van het bladom Roermond hebben definitief ontslag genomen. Het zijn H. Meertens uit Sein, W. Nohlmans uit Roermond en B. van Delden uit Valkenburg.

Plan for a Jewish city in Sinai

JERUSALEM — De Israëlische minister van defensie Moshe Dayan, heeft gisteren in het parlement verklaard dat er plannen bestaan voor de bouw van een joodse plaats op de noordkust van de Sinai, het door Israël bezette deel van Egypte en kosten van het Sudaan. De plannen zijn nog niet ter goedkeuring aan het kabinet voorgelegd.

Suicide by a minister in Mozambique

GENEVE — De 60-jarige portugese rijkse kerkleider Zedekia Mangabela heeft zichzelf in een gewa-nis in Mozambique van het leen beroofd, nadat hij een half jaar afzondering had doorgebracht.

Barnard patiënt in eigen ziekenhuis

KAAPSTAD — De Zuidafrikaanse hartchirurg Christian Barnard is ween vrouw Barbara zijn gisteren in het Groot-Schuur ziekenhuis genomen, nadat ze bij het ontsien van het ziekenhuis door een an waren geschept. Barnard kreeg w-wondingen aan de borst en vele slij- en schafwonden. Zijn voet heeft slij- en schafwonden.

Students protest at the Faculty of Architecture of the Technical College against a salary reduction for student assistants. Delftsche Courant December 1, 1976.

Masquerade on the occasion of the 12th lustrum of the Delft Student Corps. (1930)

Counting of the votes for the elections of the Delft Student Council. Location: Oude Delft 95. (1970)

Due to the shortage of rooms, students from the Technical College are housed in caravans on the temporary camping site on Mekelweg. See: Delftsche Courant September 9, 1980.

A Starfighter jet displayed in front of the former faculty building on Oostplantsoen for the 150th anniversary of the Delft Student Corps. (1998)

Demonstration by students of the Technical College against student admissions caps. See: Delftsche Courant April 29, 1974.

Group of students in the microscope room of Professor Van IJsteron of Technical Botany at Julianalaan 67 (1930)

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For the youth

Reforestation is desperately needed



DE MENSEN hebben het prachtige evenwicht in de natuur - zoals dat door de grote Schepper geschapen is - al heel vaak verbroken en ze doen het nog steeds. Denk aan de verschrikkelijke gevolgen van de vervuiling van rivieren, meren, zeeën, lucht en bodem. Denk ook aan de vergiftigen in de land- en tuinbouw (waardoor voor roofvogels sterven) en het uitroeien van de natuurlijke vijanden van hazen, konijnen en eekhoorntjes (vossen, marters, e.d.).

De steeds meer uitroeiende steden dringen het groen, het rustige landschap steeds verder terug en het vruchtbare land dat graan moet produceren. De bossen moeten steeds meer loof leveren (voor woodpulpindustrie) maar vooral ook goede papierindustrie) of plaats maken voor landbouwgrond.

DE BOSSEN in de wereld krijgen de steeds harder te verduren. In Afrika, in grote delen van Europa, Azië en Noord-Amerika hebben de gevolgen van de ontbossing zich reeds doen kennen. De Oude Chinezen, die de bossen kapten en verbrandden, hebben aan hun nakomelingen een land achtergelaten waarin overstromingen, droogteperiodes en wervelingen elkaar voortdurend afwisselen. In het Midden-Oosten, waar het al niet zo veel beter. Denken we slechts aan het kale Griekeland, het troosteloze karstgebied van Montenegro en de dorre streken van Spanje.

DE ONTBOSSING wordt met het doel de grond „in cultuur“ te brengen. Maar gering vakmanschap, onoordeelkundige behandeling met als gevolg enorme erosie, en herhaalde oorlogen maakten dat steeds weer gebieden aan de schapen werden prijsgegeven en de oorspronkelijke ontbossing werd voortgezet.

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At boiling point

door A.M. Schuil-van Walraven

TWEE VOLSLAGEN verschillende zaken als vlees en vruchten kunnen ommekeerd gecombineerd worden. Dat weten de Chinezen al heel lang en zij maken er een dankbaar gebruik van in allerlei exotische gerechten.

Een drank echter niet zo ter gea. Ook in ons land is de combinatie van vlees met vruchten niet helemaal onbekend. Appelpoels met een bal gekookte vlees en een zeer geliefd.

Een drank maar aan een plak gekookte bloedworst of rolpen met een schijf gekookte appel. Ook van een hamburger met een schijf aan appels kjen we niet meer vreemd op.

Indertijd, vlees (ook kippevlees) en vruchten kunnen elkaar soms heel goed aanvullen. Nog meer voorbeelden volgen hieronder.

Ham with rice in spicy sauce

4 plakken gekookte ham - 4 plakken ananas - stukje margarine - 2 flinke eetlepels bloem - 2½ dl bouillon - 1 gesnipperde ui - wat peper, mosterd, paprikapoeder, tomatenketjap.

Bak de plakken ham en om in min 10 minuten in de koekenpan. Neem ze uit de pan en houd ze warm. Bak daarna de plakken ananas vlak om en om in dezelfde pan, ook warmhouden. Fruit nu in de achtergebleven boter het flingehakke ui, voeg de droge bloem toe en roer dit mengsel glad. Giet de bouillon er in gedeelten bij, steeds glad kloppen tot een gebonden saus is ontstaan. Giet er iets ananasap in en maak de saus pikant met de kruiden.

Leg de ham erin met een schijf gekookte ananas op. Dit bij gerecht b.v. rijst en sla even.

Chicken salad

Resten koud kippevlees - 2 appels - 1 plak tomaat - mayonaise - hardgekookt ei - sla - eventueel augurkjes en uijes.

Snijdt het kippevlees in stukjes, de gekookte appels eveneens. Vermengen met mayonaise en op smaak afmaken.

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With Advice

and assistance

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Chicken cocktail

Strukjes gekookt kippevlees - scheutje sherry of cognac - klein blikje mandarijntjes - mayonaise - blaadje - ½ sinaasappel.

Maak van de mayonaise, een scheutje sherry of cognac en wat sap van de mandarijntjes een gebonden saus.

Meng hierdoor de stukjes vlees onderin de glazen coupes en een klein blaadje aan schep de kippevlees

This autumn, an exhibition focused on winter sports enthusiasts

DEN HAAG [ANP] - Ook het komende najaar zullen in Den Haag, Arnhem, Amsterdam en Rotterdam weer tentoonstellingen worden gehouden, die zich richten op de wintersporters en zich presenteren onder de naam ski-happy (happening). Men kan zich hier oriënteren op de laatste ontwikkelingen en snuffjes op wintersportgebied.

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When the morning came



76) Boudewijn stapte eens naar buiten en zag de roeiboot liggen, waarmee zijn gastheer was komen aanvaren. De kleren van Maarten waren nu helemaal droog. De smid nam ze mee en bracht ze naar het slaapkamertje.

Maarten bleek juist te zijn ontwaakt. Hij kleepte zich aan en onderwijl vertelde Boudewijn hem over de komst van de hutbewoner.

Toen ze een poos later samen het woonvertrek binnen stapten, had de vreemde man juist de maaltijd gereed. Hij nodigde hen aanstonds aan tafel.

Ze kregen brood, bier en gevogelte en lieten zich alles goed smaken. Boudewijn verdeelde op zijn beurt de eendeieren, die hij gekookt had.

Terwijl ze aten, zei hun gastheer plotseling: „Ge zijt dus op de vlucht voor de bloedhonden van de inquisitie. Nu als het aan mij ligt, zullen ze u niet te pakken krijgen!“

De smid, die niet gauw van zijn stuk te brengen was, keek nu toch wel even erg raar.

„Hoe weet ge... waarom denkt ge dat?“ stamelde hij verbaasd.

De man lachte. „Dat is heel eenvoudig. Wie naar het noorden wilt en zijn weg kiest door deze bijna onbegaanbare rietvelden, die wij niet gezien worden. Ge zijt dus vluchtende voor de een of andere vijand. En verder: vóór het eten hebt ge beiden de ogen gesloten en de handen gevouwen om te passen, maar ge hebt geen kruis geslagen, zoals de paapse gewo-

te is. Dus behoort ge tot de hervormden. Er is werkelijk niet zoveel scherpzinnigheid voor nodig om daar een gevolgtrekking uit te maken.“

Boudewijn had zijn kloofdeigheid weer herkennen. Hij keek de vreemde recht in het gezicht en vroeg: „En jij? Waartoe behoort jij zelf?“

Even was het doodstil. Ook Maarten was opgehouden met eten en luisterde ademloos toe.

ER was een trek van grenzeloze verbittering op het gelaat van hun gastheer gekomen. Hij tastte naar de littekens terzijde van zijn hoofd en vroeg snijdend: „Dacht ge dat ik zo ter wereld ben gekomen?“

Da heeft de beul van de inquisitie gedaan, hoewel ik toen nog goed rooms was! En dat was niet het eerste. Mijn vrouw hebben ze vermoord en om kleine kind laten versmaakt tot het stierf. Daarom haát ik ze, die bloedhonden, en zal ik hen afbreken dood waar ik kan!“

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Brothel owner with abducted son missing



De 2-jarige Franky die samen met zijn vader, bordelhoudster Frank K., al twee weken spoorloos is.

MAASTRICHT, vrijdag
Bordelhoudster Frank K., die tot voor kort een seksclub leidde in het Limburgse Oirschik en daarvoor op 22 september werd veroordeeld tot negen maanden cel, is al twee weken voortvluchtig met zijn tweejarige zoon Frankie. Justitie heeft Interpol ingeschakeld.
De moeder van Frankie, Bertina Dorman, deed op 25 september aangifte bij de politie in Zandvoort van ontvoering van haar zoon Frankie. K. had de jongen daags daarvoor opgehaald in Koningsbosch.
De advocaat van de vrouw, mr. G. Winters, droeg de jongen toen bij een snackbar over aan K. De volgende dag zou de raadsman Frankie om acht uur 's avonds ophalen bij motel De Valk in Urmond. K. is daar nooit komen opdagen en is sindsdien met de jongen spoorloos.
De politie vermoedt dat de man met zijn zoon naar Oost-Europa is gevlucht en onderdak heeft gevonden bij bevriende relaties van de prostitutiewereld.
K., zonder vaste woon- of verblijfplaats, werd op 22 september wél vrijgesproken van vermeende vrouwen- en slavenhandel met prostituees uit het Oostblok. In zijn bordeel werkte een aantal Russische vrouwen. In afwachting van zijn zaak in hoger beroep verkreeg hij op vrije voeten.
Bertina Dorman is moeder-voogdes van het kind. K. is toezien voogd. Het gescheiden echtpaar was in onderhandeling over de bezoekregeling van K. voor Frankie. Bij wijze van proef kreeg K. Frankie twee weken geleden twee dagen toegewezen. Nadat K. met Frankie niet verscheen heeft Bertine meteen de politie ingeschaakeld.

Prince passes race license



Van onze Teleport-redactie
ZANDVOORT, vrijdag

Prins Willem-Alexander mag zich sinds gisteren een echte autocoureur noemen want onze snelle kroonprins — die ook al in bezit is van het vliegbrevet — slaagde glorieus voor zijn race-licentie.
Onder toezicht van de examinatoren Fred Frankenbuit en Pim Kijles reed hij vele ronden op het circuit van Zandvoort.
Nadat zijn theoretische kennis van de racerij zelfs zeer goed werd genoemd, liet hij daarna op de baan ook een goede indruk achter. Zowel alleenrijdend als in groepsverband ging Alex, zoals van Oranje, zoals op de Citroën-racewagen, stond aangeduid, snel genoeg en strak over het circuit.
De kroonprins had op eigen verzoek op een eerlijke beoordeling aangedrongen. „Als ik zou zakken, heb ik pech gehad en probeer ik het een volgende keer weer“, had hij zijn examinatoren van te voren laten weten. Die konden echter gisteravond de vereiste formulieren met een rein getuigen bij het bondsbureau indienen.
Of prins Willem-Alexander aanstaande zondag in de slotrace van de Citroën AX GT Cup, ook zijn racedebuut maakt, is zeer twijfelachtig. Om al te grote publiciteit te vermijden zal hij komend jaar mogelijk een keer bij verrassing meedoen.



Foto onder: Na de racestap op Zandvoort krijgt prins Willem-Alexander te horen dat hij geslaagd is en een race-licentie ontving.

South-Korea closes borders to adoption
De adoptie van Zuidkoreaanse kinderen door buitenlanders zal vanaf 1996 verboden zijn, aldus het Zuidkoreaanse kabinet.
Het verbod geldt niet voor gehandicapte kinderen of kinderen van een gemengd ras, omdat zij weinig kans hebben op een adoptie door Zuidkoreanen.
Volgens het ministerie is het aantal adopties door buitenlanders sinds 1985 verminderd van 8.837 tot 2.045 in 1992. (AP)

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tv film
DE JONGSTE TV-GIDS VAN NEDERLAND
Deze week
ÉÉN PEK

Students Delft miss Coffee
DELFT, Friday
Angly students at Delft University of Technology want coffee to be served again at exams.
According to the head of the housekeeping department, in the past, canteen staff got overworked due to high demand. Every year, students drank 40,000 litres of coffee during exam periods. The stressed students now miss their cup of comfort so much that they have proposed to start brewing and serving coffee themselves.

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Prijzen alleen geldig in Nederland en België.

Friday 18 Januari 1985 Rietkerk wants to put money into better police

Samenwerking gemeentekorpsen en rijkspolitie
Van een onzer verslaggevers
UTRECHT — De ministers van binnenlandse zaken en van justitie hebben het kabinet voorgesteld tot een regionale samenwerking tussen rijkspolitie en gemeentepolitie te komen. Korpsen die gaan samenwerken mogen op een ruimere geldelijke vergoeding rekenen.
Rietkerk wees erop dat de plannen van de zogenoemde politie-ministers in grote lijnen worden gesteund door de burgemeesters, het openbaar ministerie en de politie zelf. Eind december hebben de Vereniging van Nederlandse gemeenten, het openbaar ministerie en de politiefachs laten weten dat zij samenwerking tussen gemeente- en rijkspolitie dringend noodzakelijk achten.
De nieuwe politiewet voorzag in

Crime falls due to winter weather

Van onze verslaggevers
AMSTERDAM — De criminaliteit in de grote steden is als gevolg van het winterweer de afgelopen twee weken belangrijk gedaald.
In Amsterdam en Utrecht is het aantal aangiften van inbraken zelfs gehalveerd. Ook in Rotterdam en in minder mate in Den Haag wordt de politie met minder inbraken geconfronteerd. Een van de belangrijkste oorzaken daarvan is waarschijnlijk dat potentiële slachtoffers thuis blijven in verband met de kou.
De politie heeft overigens niet stil te zitten. Er wordt op het ogenblik veel meer dan normaal een beroep op assistentie gedaan wegens aanrijdingen en verkeer op de snelwegen. Tussen

Traffic death
ARKEI (ANP) — De 76-jarige G. van der Beek uit Arkel is gisteren door een verkeersongeval in zijn woonplaats om het leven gekomen. Volgens de politie werd de man op zijn fiets geschept door een personenauto. Het slachtoffer overleed later in een ziekenhuis te Rotterdam.

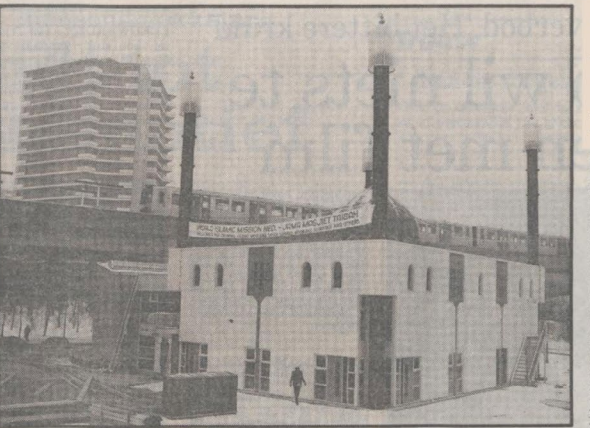
Retirement homes: 900 jobs at risk

Van een onzer verslaggevers
DEN HAAG — De bejaardengerechten vreesden dat er een tienduizend negenhonderd arbeidsplaatsen verloren gaan.
Minister Brinkman van welzijn wil veertig miljoen gulden, die hij voor een nieuw ambtenarenapparaat moet worden ingezet, in een brief aan de minister. Acties worden niet uitgesloten. Dat er een nieuw ambtenarenapparaat moet worden ingezet, wordt voort uit de wijziging van wet op de bejaardengerechten.
Om het geld te innen en over de tehuizen te verdelen zijn bij de provincies en grote gemeenten in Noord-Oostpolder VVD-naalden en fractievoorzitters. Daarnaast was bij voorzitter van de slachting Fievelhof in Biddinghuizen.

America expands capacity for artificial hearts
buitenlandse zaken werd verzorgd voor een aantal Europese ambassades. Symbion heeft het kunsthart ontwikkeld, waarmee de eind november geopenarde William Schroeder nu door het leven gaat. Het kunsthart biedt volgens Jarvik het voordeel, dat patiënten niet op een donorhart behoeven te wachten.
Jarvik voorspelde bovendien dat het binnenkort mogelijk zal zijn bij daarvoor in aanmerking komende patiënten een kunsthart te plaatsen in afwachting van een donorhart. Het grootste probleem dat zich echter nog steeds voordoet is het hart 'passen' in de nieren. Vooral bij kleinere vrouwen en kinderen is dat nog een groot probleem, stelde de directeur van Symbion Inc.

Night buses in Amsterdam continue to run
AMSTERDAM (ANP) — B en W van Amsterdam willen, evenals de gemeente Amsterdam, de nachtbussen in de hoofdstad blijven rijden. De nachtbussen kwamen naar aanleiding van de drie incidenten waarbij chauffeurs werden mishandeld. De medezeggenschapscommissie van het gemeentelijk vervoerbedrijf wilde de nachtbussen opheffen, maar 'politiek Amsterdam' is daartegen, omdat ze een belangrijke functie vervullen en er niet mag worden toegegeven aan intimidatie.
Er komt echter wel een wijziging in de dienstregeling als de gemeenteraad daarmee instemt. In de stille uren (met uitzondering van vrijdag- en zaterdagnacht) rijden de bussen niet tussen half drie en half vijf. De chauffeurs kunnen dan in de garages eten in plaats van op de eindpunten.

BINNENLAND



SGP opts for Van der Vlies as list leader
In de Amsterdamse Bijlmermeer wordt zaterdag de eerste authentieke moskee die in Nederland is gebouwd, geopend. De moskee krijgt tevens de functie van Islamitisch cultureel centrum.

Van onze parlementaire
DEN HAAG — Het Tweede-Kamerlid ir. B. van der Vlies wordt bij de komende Kamerverkiezingen lijsttrekker van de SGP.

Van onze verslaggevers
Het hoofdbestuur en de raad van advies van de Provinciale Staten van Noord-Nederland hebben de provincie van provinciale vertegenwoordigers hebben hem daartoe voorgedragen. De algemene vergadering van de SGP neemt in februari een definitieve beslissing. Nog nooit in de geschiedenis heeft zij echter afgewezen van een voordracht.

Van der Vlies (42) volgt ir. H. van Rossum (65) op, die vanwege zijn leeftijd terugtreedt. De nieuwe lijsttrekker kwam in 1981 in de Tweede Kamer, waar hij opvolgde door zijn zoon, die in de Tweede Kamer werd benoemd. Hij werd in 1981 lijsttrekker van de SGP en werd in 1982 de eerste Kamerlid van de SGP.

De terugtrekkende Van Rossum zit sinds 1987 in de Tweede Kamer. Hij werd in 1981 lijsttrekker van de SGP en werd in 1982 de eerste Kamerlid van de SGP.

VVD member of parliament Waalkens (62) died unexpectedly

Van onze verslaggevers
DEN HAAG — Het Tweede-Kamerlid Harry Ph. Waalkens is in de nacht van woensdag op donderdag overleden in het Sophia Ziekenhuis in Zevenhuizen. Waalkens, die 62 jaar werd, woonde in Tollebeek in de Noord-Oostpolder en was lid van de Kamer sinds augustus 1971.

De liberale was een typische vertegenwoordiger van wat wordt genoemd, het groene front, de landbouwsector. Waalkens was in de gemeenteraad van de Noord-Oostpolder VVD-naalden en fractievoorzitter. Daarnaast was hij voorzitter van de slachting Fievelhof in Biddinghuizen.

Buiten de Kamer bekleedde hij vele bestuursfuncties in de landbouwsector. Waalkens was in de gemeenteraad van de Noord-Oostpolder VVD-naalden en fractievoorzitter. Daarnaast was hij voorzitter van de slachting Fievelhof in Biddinghuizen.

Versperd. De autovervoer Venlo-Eindhoven is gisteren ter hoogte van de Poot van Mets drie uur verpord geweest. Door een botsing waarbij een vrachtwagen en twee personenauto's betrokken waren, was de weg in beide richtingen geblokkeerd. Er deden zich geen persoonlijke ongelukken voor.

Volgens het bestuur vormen getuigen en zakelijk politiek optreden één geheel. Het betrouwt dat er de afgelopen jaren een gerechtigd tussen beide is gecreëerd. In de notitie wordt gezegd, dat op deze manier een karikatuur is gemaakt van het verschil in stijl tussen vertegenwoordigers van de RPF in Kamer, staten en gemeenteraden.

In het conflict tussen Leerling en Wagenaar, dat het afgelopen najaar opnieuw fel oploofde, speelde de tegenstelling een voorname rol. Leerling wordt beschouwd als representant van een uitbundige getuigenpolitiek, terwijl Wagenaar geldt als vertegenwoordiger van een sobere, zakelijke aanpak.

Volgens het de federatiebestuur rijkste tegenstander van de notitie wordt gezegd, dat de verschillen in stijl bestaan en moeten worden aanvaard. Vertegenwoordigers van de RPF moeten bepaalde accenten in hun optreden niet bindend aan een partij opleggen. De federatie raad van de RPF zal op 9 maart over de de notitie een beslissing nemen.

Cabinet allocates half billion for randstad recreation

Van onze verslaggevers
DEN HAAG — Het kabinet wil tot het jaar 2000 bijna een half miljard gulden uittrekken om het tekort aan recreatiebied in de randstad te verminderen.
Met dat geld, dat voor een groot deel van het ministerie van landbouw komt, moet grond worden aangekocht en ingericht onder meer als bosgebied. Met het aanleggen van bossen moet tevens de houtproductie worden opgevoerd. Het rijk rekent bij uitvoering van de plannen voor 65 miljoen gulden op bijdragen van de gemeenten.
Een en ander blijkt uit de nota van het kabinet over de groenstructuur in de randstad, die gisteren openbaar werd gemaakt. Het gaat in totaal om het aanleggen van 6.400 hectare bos- en recreatiegebied, waarmee het tekort aan recreatie- en houtproductie in het westen van het land overigens slechts met een derde wordt teruggebracht.

De nota vormt een uitwerking van eerdere stukken over ruimtelijke ordening. Een deel van de grond is al in de handen van de overheid en ook zijn al vele plannen in voorbereiding. Er worden drie doelen gesteld: Beschermen van de groengebieden, een beter gebruik van deze gebieden en verhoging van de houtproductie.

ANWB revokes claim but not in newspaper

DEN HAAG, AMSTERDAM — De ANWB herroep zijn bewering, in de paa verschenen nieuwere reisgids, dat zijn vakantieruizen naar Griekenland en Spanje de goedkoopste zijn. De bond doet dit echter niet in de landelijke dagbladen, maar in de eigen bondsgedrukte.

Zowel de Konsumenten van de Vaa, Frits Bos, als Necker-mann-directeur R. Klavwer had een landelijke herroeping getild. Ze nemen beiden geen genoegen met het gebaar van de Toeristenbond, die om haar steeds reizen klacht bij de Reclamecodecommissie en Klavwer zijn plannen een kort geding tegen de bond aan te spannen.

Hun argument is dat de ANWB naast de vakantiegids ook een vakantiekart in een oplage van 4,5 miljoen exemplaren huis-aan-huis heeft laten bezorgen. Ook deze lezers, onder wie velen die geen lid van de ANWB zijn, moeten weten dat de informatie onjuist was, vinden zij.

In de herroeping van de Toeristenbond staat, dat het niet juist is dat de ANWB steeds reizen tegen de laagste prijzen aanbiedt. Er bestaan goedkopere, overvloedige aanbieder van anderen, aldus de bond.

Delft wants separate Technical School for foreigners

Delft wants separate TH for foreigners DELFT (ANP) — The collegeboard of the Delft University of Technology Delft wants to separate the technical-scientific education to foreign students bundled into a separate organisation.

The Delft International University of Technology, as the institution will be called, could already start on 1 September 1986. About 800 foreign students study at the new institute. The students will receive the degree of Master of Science MSc or PhD, two degrees from Anglo-Saxon countries from university degrees. In recent years, the interest of foreign students for education at TH Delft has grown. From various third-world countries, but also from countries like China, Norway and Ireland students regularly come to Delft to study engineering courses. Because of several specific problems with foreign students, such as the language barrier and the education

they have already received in their home country, the Executive Board feels it makes sense to provide a separate education for these people. At the department of Aerospace Engineering, where many Indonesians study, and at the Geodesy and Civil Engineering, initiatives had already been developed to accommodate foreign students. These can now be pooled in the International University of Technology. The finding of the international institute will be discussed with the Ministry of Education and Sciences and that of development cooperation. The intention is that the courses will be funded by the student fees themselves. This can be done at a reasonable price, as the facilities of the Technical Hogeschool can be used. The TH board's further plans is to work with several international educational institutes in our country.

'Americans control money from Christian relief fund ICS'

Van een onzer verslaggevers
NAARDEEN — „Al het in Nederland ingezamelde geld voor het Internationaal Christelijk Steunfonds (ICS) komt op één internationale bankrekening, waarover de Amerikaanse ICA-directeur Joe Bass het vetorecht heeft.“ Dit zegt een medewerker van 'Vervold Christendom', de organisatie die een onderdeel vormt van de in Naarden gevestigde ICS.

De ex-medewerker reageerde hiermee gisteren op een verklaring in het NOS-journaal van ICS-secretaris J. P. Kalf. Deze zei dat het ingezamelde geld onafhankelijk van de Amerikaanse mededelingen van het Internationaal Christelijk Steunfonds (ICS) naar Ethiopië is overgemaakt. Kalf gaf commentaar op de in Amerika gelanceerde verkenning dat de Amerikaanse hulporganisatie in de VS in

Devastating report Telecom Breda Lax attitude at PTT-company shocking

door Alfred Monterie
BREDA, vrijdag
Personeel van PTT Telecom dat niet wil werken, heeft dat ook niet te doen. De leiding is zo slap en gemakkelijk dat iedereen ongestoord z'n eigen gang kan gaan.

TU Delft kept uranium out of German hands

DELFT, Friday
Employees of Delft University of Technology managed to keep 6.7 tonnes of uranium out of the hands of the Germans during the Second World War. Prof. J. A. Goedkoop recently revealed to this newspaper. The life-dissolving stuff was stored in 200 wooden barrels kept in a bricked-up basement of the former chemistry building on Julianuslaan.

According to Goedkoop, former scientific director of ECN in Petten, the 6.7 tonnes of uranium posed posed no danger to the surrounding area. 'It would have fallen on the building, it would have caused more damage. At most, some uranium would have been released.' The German officers searched the chemistry building because it had a military destination. Employees, however, told them there was dry yellow dye in the barrels.

Zie verder pag. 6 kol. 1

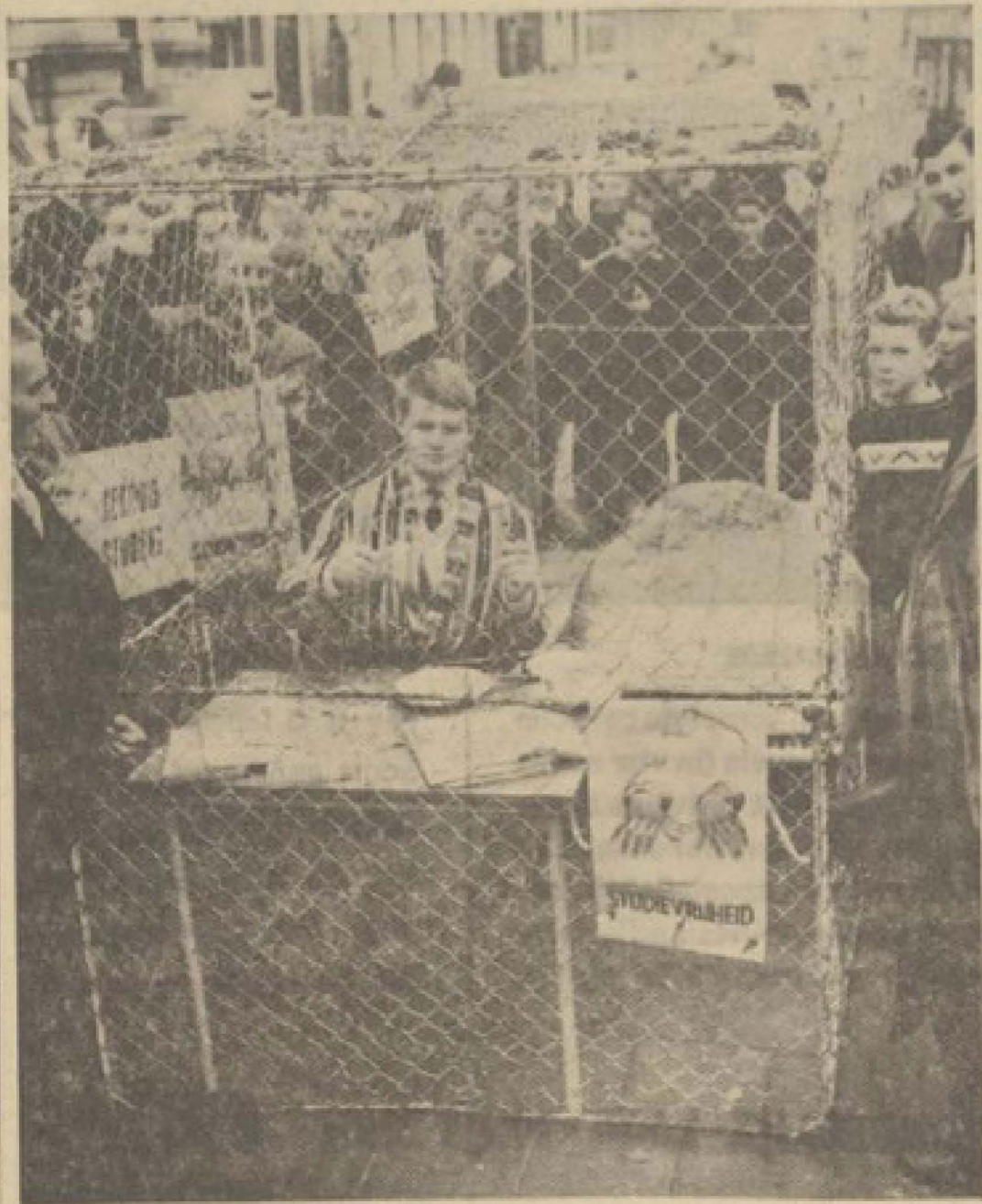
Moving

Wakker Nederland
EXCLUSIEF
HET BABYGEHEIM VAN CAROLINE VRUCHTBAAKHEIDS-OEFFENINGEN IN ZOUT WATER
BRUIJGOM VINGEN WIL SNEL EIGEN KIND
MOET DAT NOU DE SCHOK VAN DE SEX-DIAAMANT
NIECHT VAN WAKKER NEDERLAND
BEJARDE SEXBOM ZORGT VOOR SCHANDALEN
CORY KONINGS TROUWPLANEN EN HAD NIEUWE MIJLENREIS VILLA

Divorce scandals
famous parents earn millions from children
LEES JE WEEKEND, WEET JE ALLES

Caged students

1960



(From our correspondents)

Both in Delft and Leiden, students yesterday had themselves locked up in a cage for 24 hours, symbolizing their protest against the notorious Article 60 of the revised draft law regulating scientific education. The hub of the resistance is in Delft. In Leiden, the sentiment against the article seems much less intense, as only a few dozen students followed the procession with their caged colleague at the forefront.

1956

Housing shortage in Delft

The Foundation for Housing of students in Delft has made an urgent appeal to the residents of Delft to offer a room to students of the technical high school. It appears that in September this year, for about 300 students, there will be no housing. Out of the 3200 students, accommodated in about 2200 rooms, 500 to 700 are housed in spaces that must be considered substandard.

Most married students in their own houses

1967

(From our correspondent) Delft, August 24 — A housing survey by the Dutch Student Council (NSR) has shown that by far most married students have their own independent housing. Married students living in rooms are mostly found in the Randstad: Amsterdam, Leiden, and Delft. Fifteen percent of the married students — less in some places, much more only in Amsterdam — have to settle for a total area of thirty square meters or less. An area of fifty square meters is the most common.

Those living in rooms have much less space than those with independent housing. Some married students have to share washing facilities with others — there are also those without their own washing facilities and without a toilet. In Delft, five students spend more than fifty percent of their income on housing. The largest group, namely one-third, pays 20 to 30 percent.

Academic Exams 1948

For the propaedeutic exam civil engineer: N. J. Cuperus, Idaarderadeel; H. J. Koster and K. Oterdoom, Groningen. for the propaedeutic exam for mechanical engineer: H. J. E. Keikahs, Groningen and S. S. Wadman, Hoogeveen.

1923

EEN HANDELSBLAD van MAANDAG 2 JUL

Complaints in Delft council about student riot

1956

DELFT, Thursday (ANP) — “Students are too attached to traditions that no longer have substance. The strong idealism of earlier years has turned into cynicism and nihilism. Although the student organizations feel the need for a new style, they have not yet found it.” Thus spoke the mayor of Delft, Mr. D. de Loor, in the council meeting yesterday. Ir. G. Plantema, a member of the council for the PvdA, had brought up the events of last week. At that time, newly initiated members of the Delft Student Corps (DSC) attacked the society of the Delft Student Union. During this, damage occurred. Initially, there was no malicious behavior from the students, according to the mayor. However, due to the actions of some older DSC students, difficulties arose, which the mayor condemned. For the residents, the incident was very unpleasant. Unfortunately, the society of the DSB is located on the Oude Delft. The council will try to change this. Ir. Plantema said his faction is concerned about the excessive use of alcohol by students. The students’ behavior commands little respect from the citizenry. If they continue to cause disorder, a ban on public demonstrations will be necessary. Several other speakers from the council agreed with this.



1962

Negotiations on Housing Delft Students

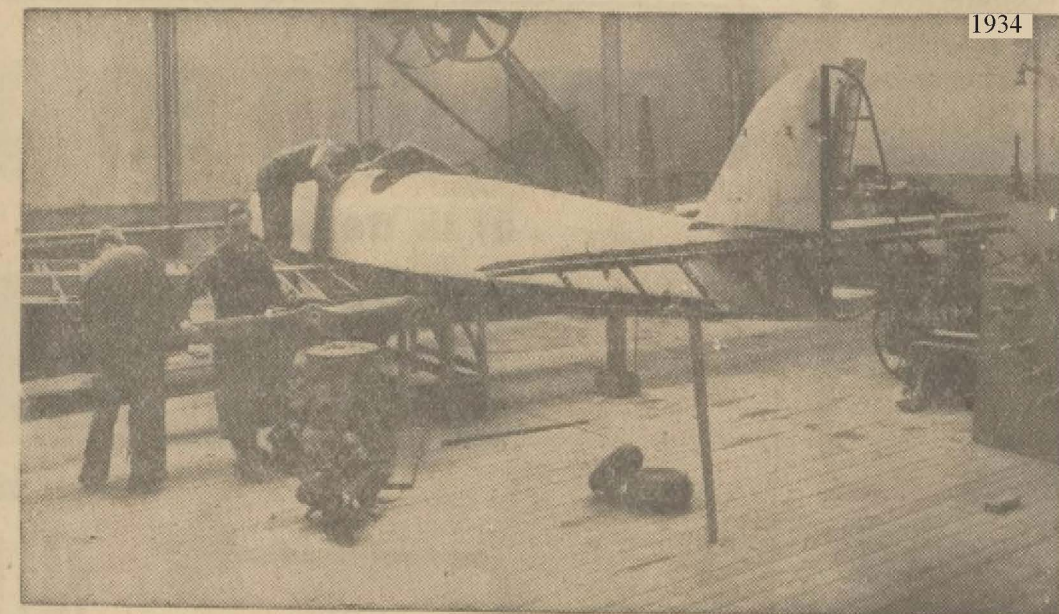
DELFT — For homeless students in Delft, a cautious bright dawn is glimmering. The Foundation for Housing of students is in negotiations about the purchase of the inner complex of the provincial psychiatric institution “Sint Joris Gasthuis” on Koningsplein in Delft. This building will become vacant when the new construction is completed. The complex of buildings is so large that an estimated five to six hundred students can be accommodated. They are also considering housing the mensa in this building, because the current mensa on Oude Delft has become too small.

Students in Delft don’t even miss their bikes

1957

DELFT, Monday (ANP) — At the police station in Delft, there are 49 bicycles that have been waiting for their owners for months. These owners are probably mostly students, as the police removed the bicycles from the Van Leeuwenhoeksingel, where many students live, and from the station.

It was a common habit of many students to place their bikes against the station building and leave them there. Since a ban had little effect, the police started removing and taking away the bikes at the station last summer. According to the police, some of these bikes had been there for years, and their owners might have already graduated.



1934

Students from the Technical University in Delft build their own airplane.



The lustrum celebrations in Delft

This afternoon at the Grote Markt in Delft, the celebrating students performed Teirlinck’s play “The Tower Stormer,” a symbolic, wordless play. A picture of the participating students in front of the tower was taken.

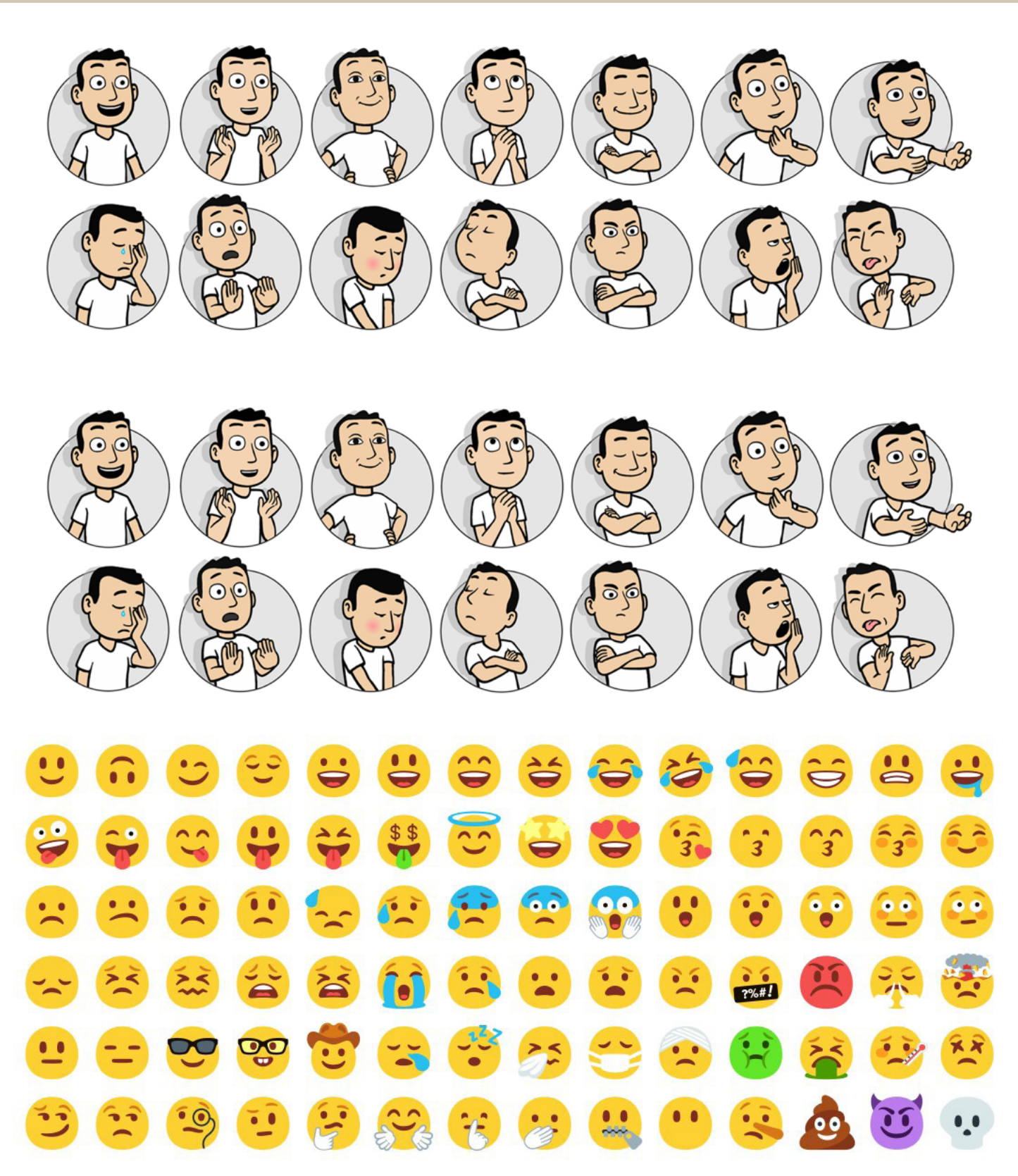


The lustrum celebrations in Delft

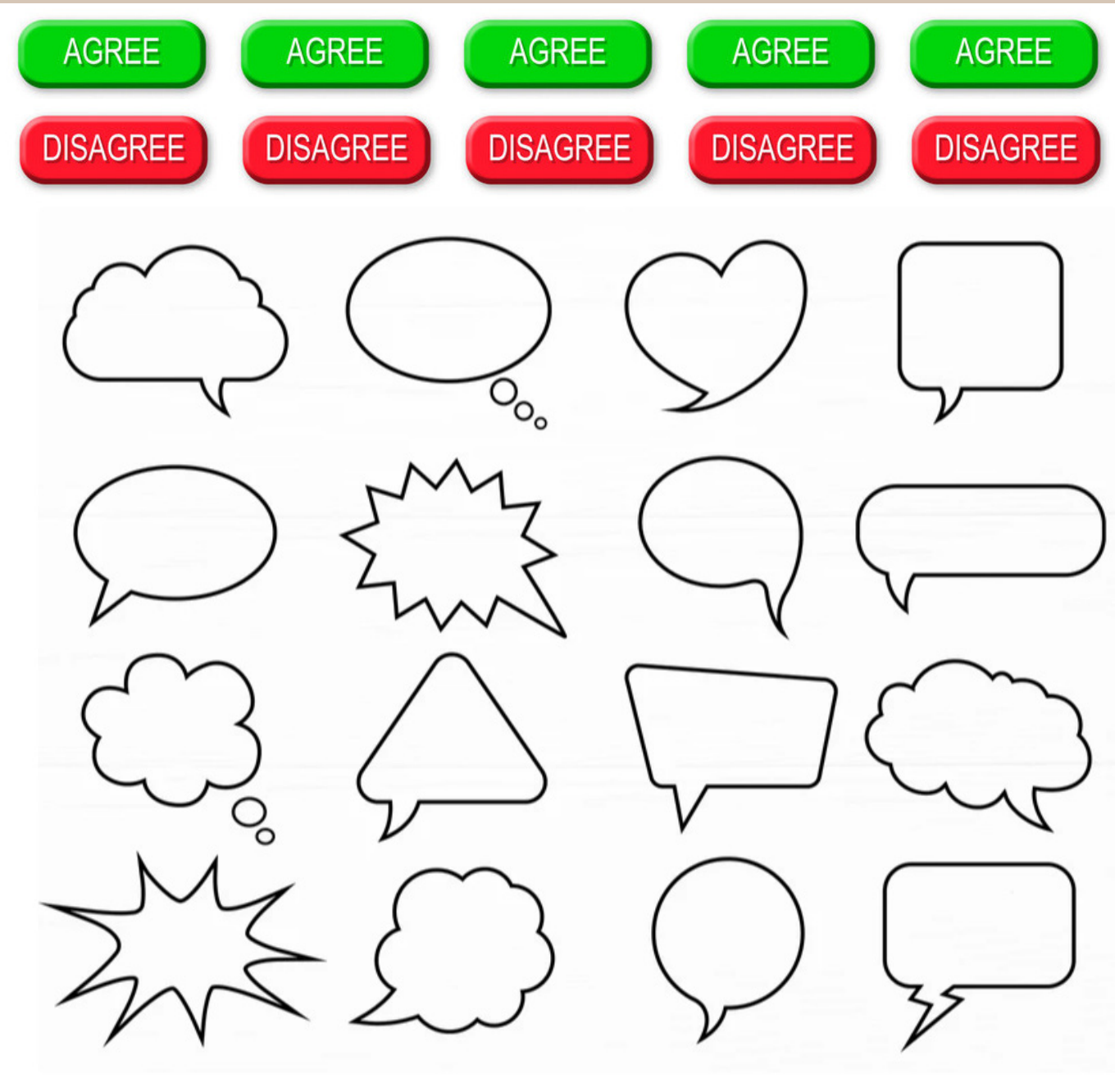
When students in Delft celebrate, sports are not forgotten either. For instance, there was rowing on the Schie yesterday. The main event, the senior eight-oared gig race, was won by “Laga,” whose team we have depicted here. From left to right: Jonckheer (bow), P. J. Duyvis, T. B. Ekhardt, W. H. C. E. Rösingh, M. L. Kalkman, A. G. G. Schot, A. C. Beynen, W. A. Terwogt (stroke), D. A. Gaai (coxswain).

Extra materials for the collage

To express your emotions:



To comment:



■ Co-creation script

Intro (5 mins)

Hi, welcome!

Thankyou for participating in this session, I brought some snacks so take whatever you want during or after the session. I will first give a short introduction about my project and explain the goal of today.

For my graduation project, I am researching how the academic heritage collections of the TU Delft can be exhibited in a way that appeals to students during a study break. Which is in collaboration with the TU Delft Library to redesign the Collection Wall. Most of you will probably know the Collection Wall as the book wall at the back of the Library.

We will start the session focusing on the content of the exhibition by making a collage using materials of the collection related to student life of the past. After that we will focus more on the interaction of the exhibition. Therefore I will introduce you to my design direction which is worked out in two different concept ideas visualised in storyboards. I will ask you to share your thoughts on the concept ideas and we will brainstorm about one storyboard more in depth trying to fill in the blanks, by using the brainstrom method: How To's

Do you have any questions? Then we will start with the first activity.

Acitivity 1 (20 mins): Making a collage

I will ask you to create a collage about your personal view on student life of the past. I chose to focus on images and newspapers as academic heritage content related to student life of the past and created a magazine from this. You can browse through it and select materials that spark your interest. I also brought some pens, glue, coloured paper whatever you need to express your thoughts. The newspapers of that time are in Dutch, therefore I translated all the articles related to the TU Delft and the other titles for context. We will take 20 minutes for this activity

I encourage you to write down any thoughts, personal memories, associations, or questions on the collage that pop into your mind during the process.

Wrap up activity 1 (10 mins): Evaluate! Storyboard of the stencil collage

Can you tell me briefly about your collage? What did you think of this activity? I will hand out the storyboard which explains the concept that is related to this activity. Plase read it and then we will have a short discussion because I am curious to your thoughts on this.

Activity 2 (20 mins): How to? storyboard of the study-escape game

I will hand out the next storyboard, please read the storyboard of the study-escape game concept. There is a blank in the concept with a How to question. We will brainstorm together to generate ideas about how to tackle this question. I brought some probes to brainstorm about possible game interactions

I encourage you to share everything that pops into your mind about what an escape game inspired exhibition with heritage materials could look like.

Wrap up activity 2 (10 mins):

I shared with you two possible concepts this session. I am curious which one appeals to you most and why?

Thankyou for your help. The session was really inspiring for me and will give me insights to develop my concept further regarding content and interactions that fit students needs.

Do you have any questions or feedback for me, to improve the next session?

■ Consent form

Title of Project: Co-creation session discovering students' perspective on past student life and developing the concept

Researcher: Lieneke Cazemier

Introduction:
I am conducting a research study as part of my graduation project. The Co-creation session focuses on exploring ways to engage students with the academic heritage collections at the TU Delft Library. I am curious to your perspectives on past student life and preferred ways of interacting with academic heritage during a study break. Therefore this research entails participatory activities: Making a collage and a Storyboard with How To's to brainstorm together.

Purpose:
Te purpose of this research is to gain insights on how to display academic heritage in a way that aligns with the interests of students. The purpose of this consent form is to seek your permission to record our conversation and take photographs during the session. Your participation in this study is voluntary, and you have the right to withdraw at any time without consequence. Participation will take approximately 1 hour.

Permission request:
I would like to record our conversation for accuracy and reference purposes. The recordings will be transcribed and anonymized for analysis.

I give permission to record the conversation: Yes ☐ No ☐

I may take photographs during our interaction. These photographs will be used in an anonymized manner to complement the findings in my graduation report and presentations.

I give permission to take photographs: Yes ☐ No ☐

Confidentiality and participation:
Any information shared during our conversation, including recordings and photographs, will be confidential. Your name and any identifying information will be anonymized in all materials.

Contact Information:
If you have any questions or concerns about this research project or your participation, please feel free to contact me:

Consent:
I have read and understood the information provided above, and I consent to participate in this research project.

Participant's Name:

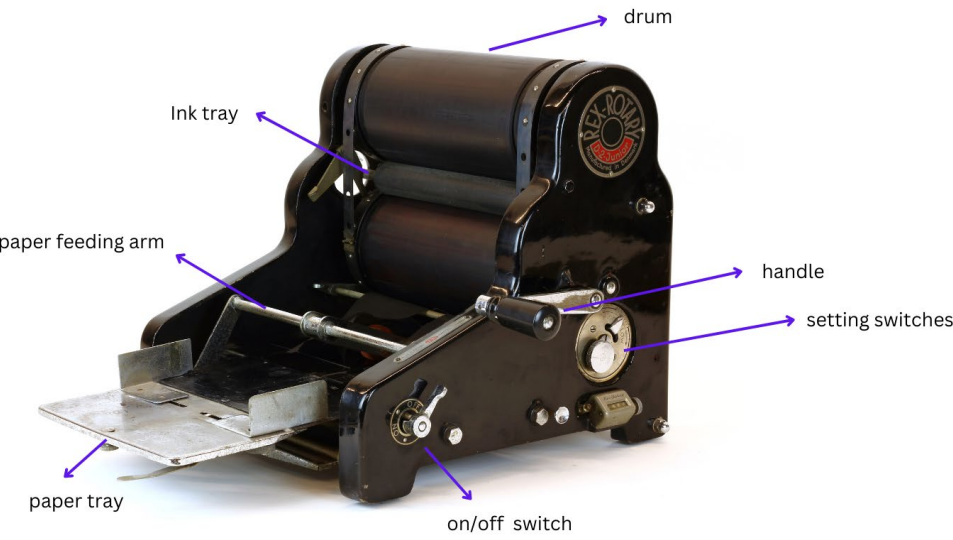
Participant's Signature:

Date:

APPENDIX F: Test experiential characterization

Introduction slides

Mimeograph machine (type of stencil duplicator) used in the former bindery of the TU Delft 1930 - 1948



1. Creation of wax coated stencil with a special copy machine

2. add ink colour

3. make stencils



EXPERIENTIAL CHARACTERIZATION MAP

1 PERFORMATIVE LEVEL *How would you like to interact with the product?*



2 SENSORIAL LEVEL



How *would you like to handle* the *object*?

- Rotating the switches
- turning the handle
- feeling the material
- grazing the drum
- fiddling the parts
-

How would you *like to use* the *object*?

- observing the mechanics
- lifting the object
- feeding input paper
- checking out the output copies
- Choosing the ink colour
- Preparing the wax coated stencil
-

How *would you like to experience* the *object*?

- listening to the sound of the machine making copies
- smelling the ink used to make the stencils
- the repetitive motion of feeding and spitting out paper
-

How would you describe the *object*?



4 INTERPRETIVE LEVEL What do you associate with the *object*?

How would you describe it?

meaning 1	meaning 2	meaning 3

5 (unfold the map and open sidewings)

3 AFFECTIVE LEVEL What emotions does the *object* elicit?



5 FINAL REFLECTIONS Why do you think the *object* is..?

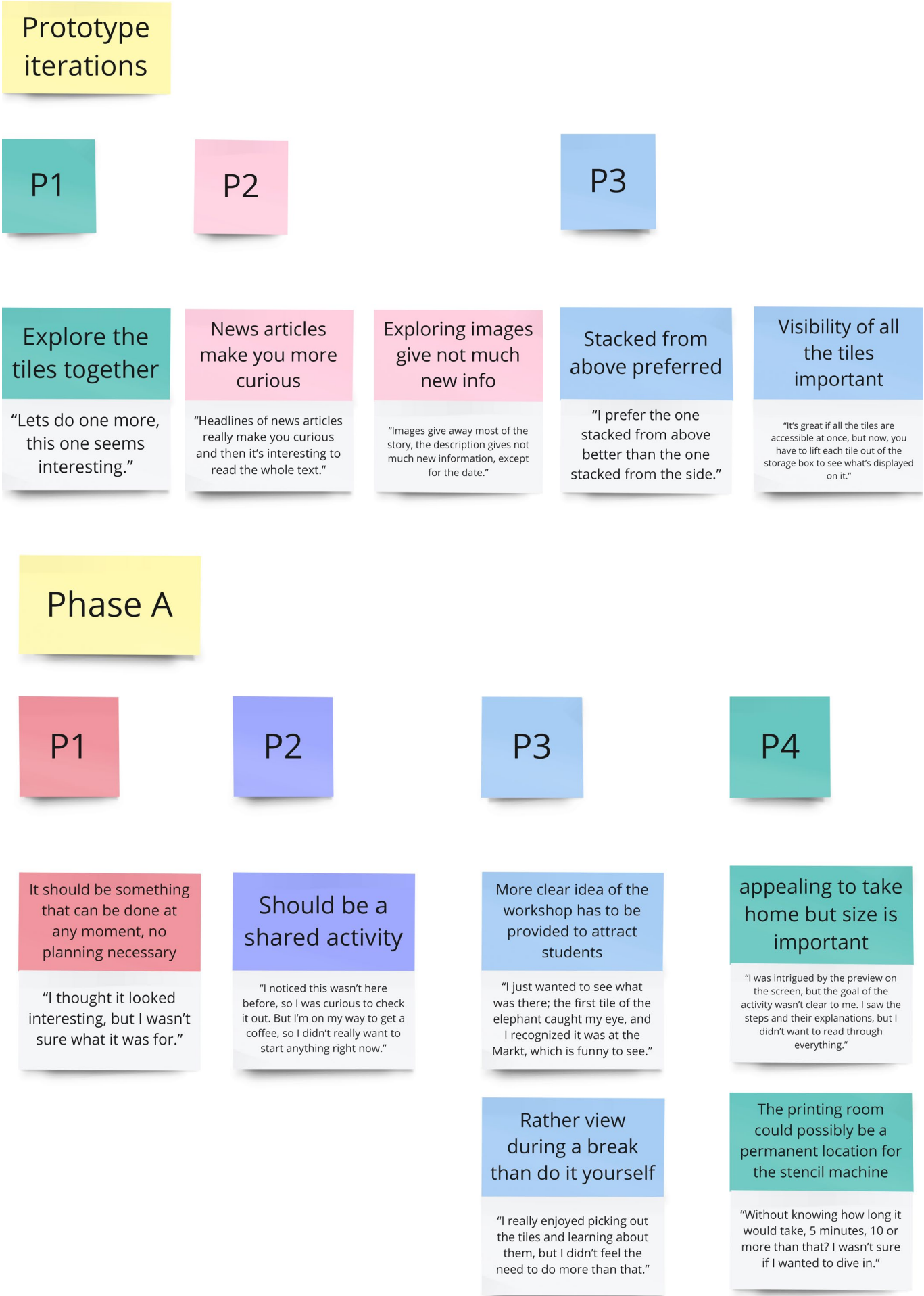
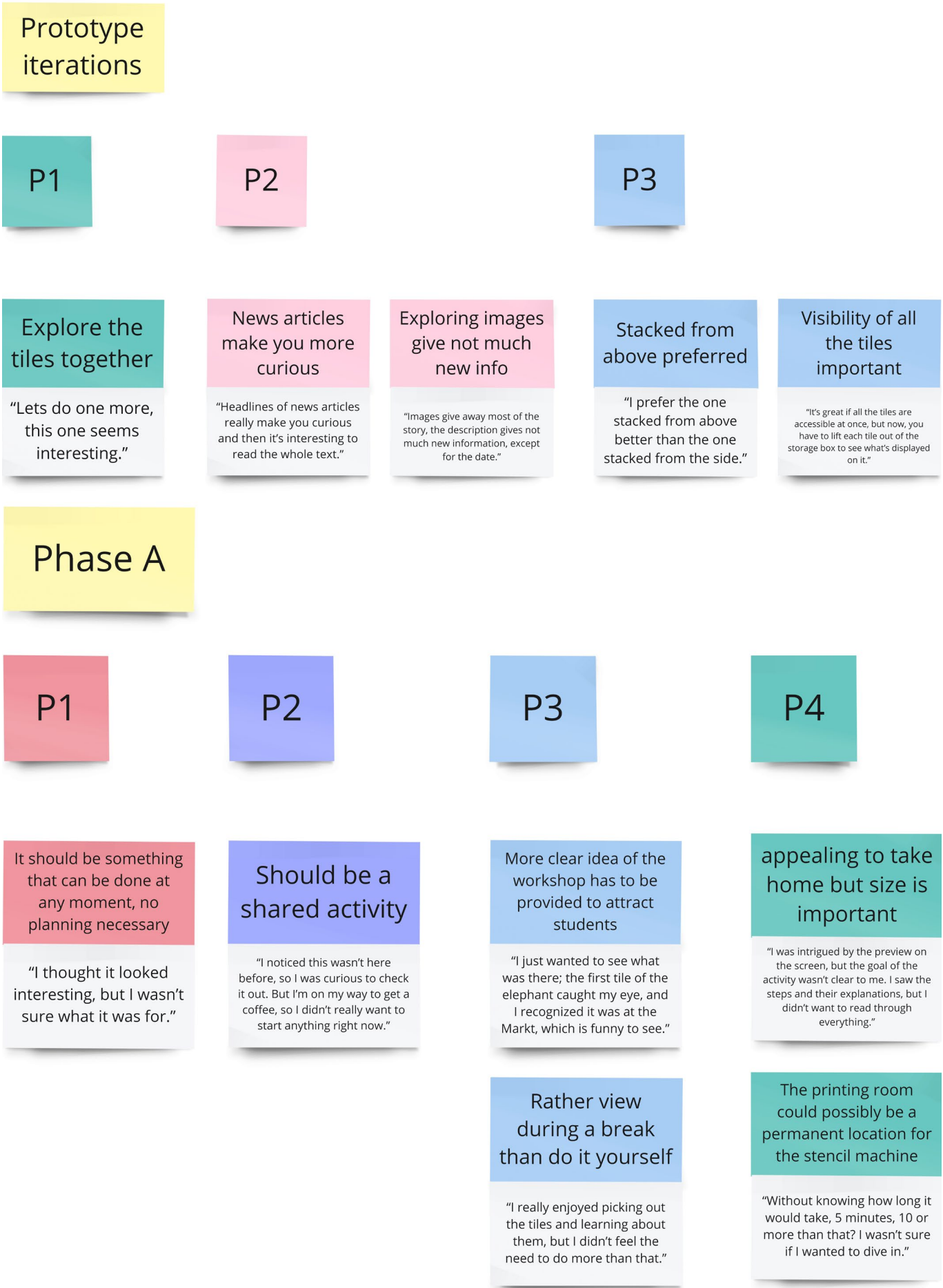
What is the most pleasant quality of the *object*?

What is the most disturbing quality of the *object*?

What is the most unique quality of the *object*?

APPENDIX G: Tests prototype iterations & final evaluation

Statement cards



Phase B

P1

Content tiles are most enjoyable

"What I like most is the content tiles. I mostly just like to read about the topics and it's fun to discover these facts about the past"

Doesn't feel the need to reflect on the content

"I don't have an opinion about everything that much. so I don't feel the need to comment on it."

At the CoW

At the CoW I'm more interested to see wat tiles students chose instead of their opinion about it.

Memento in another format

I would like to take an interesting newsarticle home but I don't think in the collage format, rather just a tile or article itself, that fits also better in a student home to display on the toilet or something, or more a folder of the articles and images.

Reflection / learning

I like the connection between the past and the present you realize that not that much has changed, for example the party with outfits in 1930 could have been a photo of me from 2 weeks ago, however other topics like missing bikes, they talk about 45 bikes, now we talk about 500 bikes probably.

P4

A goal is missing

"I do feel like I need a purpose; right now, it's just placing images on a board."

learning / reflection

"I find the tiles related to the student housing issue interesting because it's still very relevant today. It's happening again, just as it did in the past, and it remains a problem."

Revelent themes every month

"I like that there's a new theme every month; as long as it's relevant, I'd check it out. For example, with the long-study penalty, there may have been similar issues in the past."

not actively go to the CoW

"I wouldn't feel like searching for the collages, but if they were displayed somewhere, I'd look at them. I just wouldn't actively seek them out."

memento for the toilet

"I think the collage would fit perfectly on the toilet wall at home."

P3

The protests today are interestingly explained by past articles, providing perspective

"It seemed that many tiles were related. It would be valuable if someone could highlight an interesting tile and recommend it, allowing the story to continue. Or perhaps the system recommends interesting tiles based on your choices like here is a similar story from 50 years later."

Pictures of the same place over the years reveal Delft's rich history

"I don't really care to take the collage home, but I find that photo of the elephant very funny. I'd like to see if I can find it and frame it. Maybe there could be a link to a website where I can read the stories of the tiles I didn't use, since you can't stand here and look at all the tiles. I'd really like to explore them further."

How do students contribute developments?

"I find the student life of the past very interesting. I like to hear about stories from former students in Delft."

Pictures of the same place over the years reveal Delft's rich history

""I find it less interesting to see the collages of other students and their thoughts on certain topics. I enjoy learning about these subjects, but I don't need to know others' opinions."

How do students contribute developments?

"The funny thing is, I once heard a story about an animal in Delft—there was a bear at the DSC society that everyone could wrestle with. If you managed to get the bear out of the ring, you won a year of free beer. I've heard a story like that before, so that's why I found this photo so enjoyable, because it relates to that"

"Many tiles are interesting, but the system needs to be fast. I'd select 5 more if it were quicker."

"Many of the tiles here are interesting. It's important that the system works quickly. I'd like to choose 5 more tiles I found interesting if it can be done quickly."

The protests today are interestingly explained by past articles, providing perspective

"Absolutely, I would share these facts with others, like that photo of the elephant. I'm not sure if it's online, but I'll definitely share that anecdote with my roommates when I get home."

The irrelevant information is more confusing than providing context

"I think it would be great for international students to learn about what student life in Delft was like in the past, maybe by translating it into English."

P2

Replayability

"In a while you would have seen all the tiles and then I would like to see new tiles with new facts that are relevant to that period that it relates to something of today."

Surprising insights

"Due to this concept I realized that I did not know that there were so many student protests it gave me new insights that I did not expect."

Attractiveness, It fulfills a need

"With Axel here, I realize I can't share much about the city or student life since I don't know the facts. I like that this offers an easy, accessible way to connect with it—it's a nice concept and enjoyable to do."

Prefers to arrange tiles first for a collage layout, then review and comment on content.

"With a collage in mind I first want to choose relatable tiles and lay everything on the playboard and then click all the tiles to check the content and make comments."

Prefers to explore tiles and pieces initially, then focus on creating a collage by arranging on the playboard.

"Honestly, I'd like to do this repeatedly. The first time is more about exploring how the tiles and pieces work, but the next time you're more focused on creating a collage, placing everything on the playboard and starting the process."

Memento is nice

"I like the fact that you get a physical copy to display somewhere at home or at the office and when someone asks what is this that I can explain that I made it and share some facts about student life of the past."

Enjoyable

"I Really enjoyed the activity. I see myself doing this."

Learning / reflection

"I realized that not much has changed. I relate to these articles, like missing coffee or not noticing my bike is lost. But with the elephant article, for example, you realize that this is no longer acceptable—it's sad that they hired an elephant."

At the CoW

"Viewing the collages of others are mostly interesting because of their comments, their values and opinions a bit confronting."

Evaluation script

Part 1: Observation

Observation from a distance to evaluate the attractiveness of the concept

Do students at TU Delft Library engage with the interactive experience on their own?

Actively invite people to participate

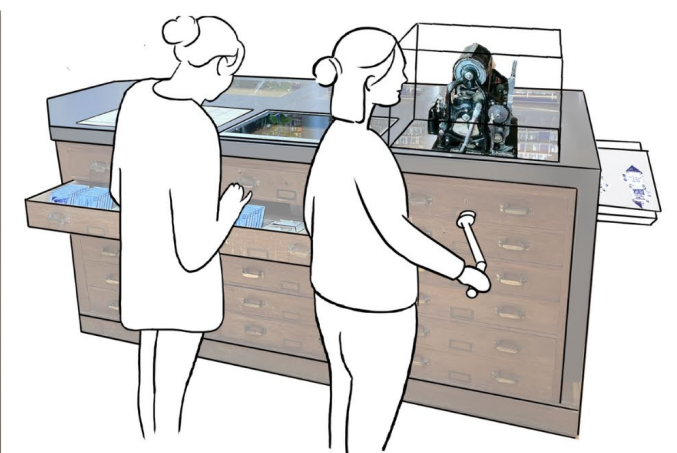
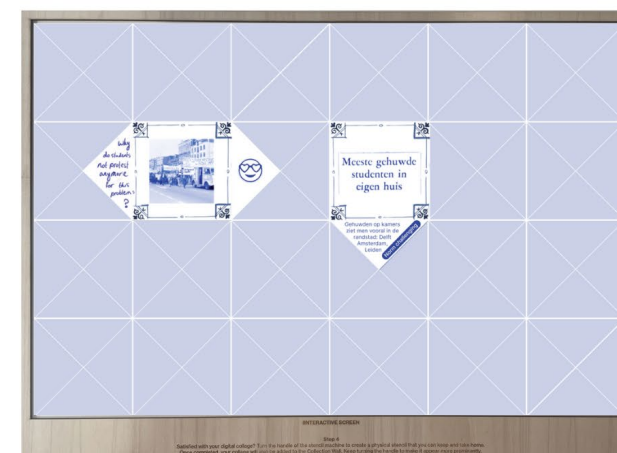
Is the process of creating a collage with the tiles both enjoyable and intuitive?

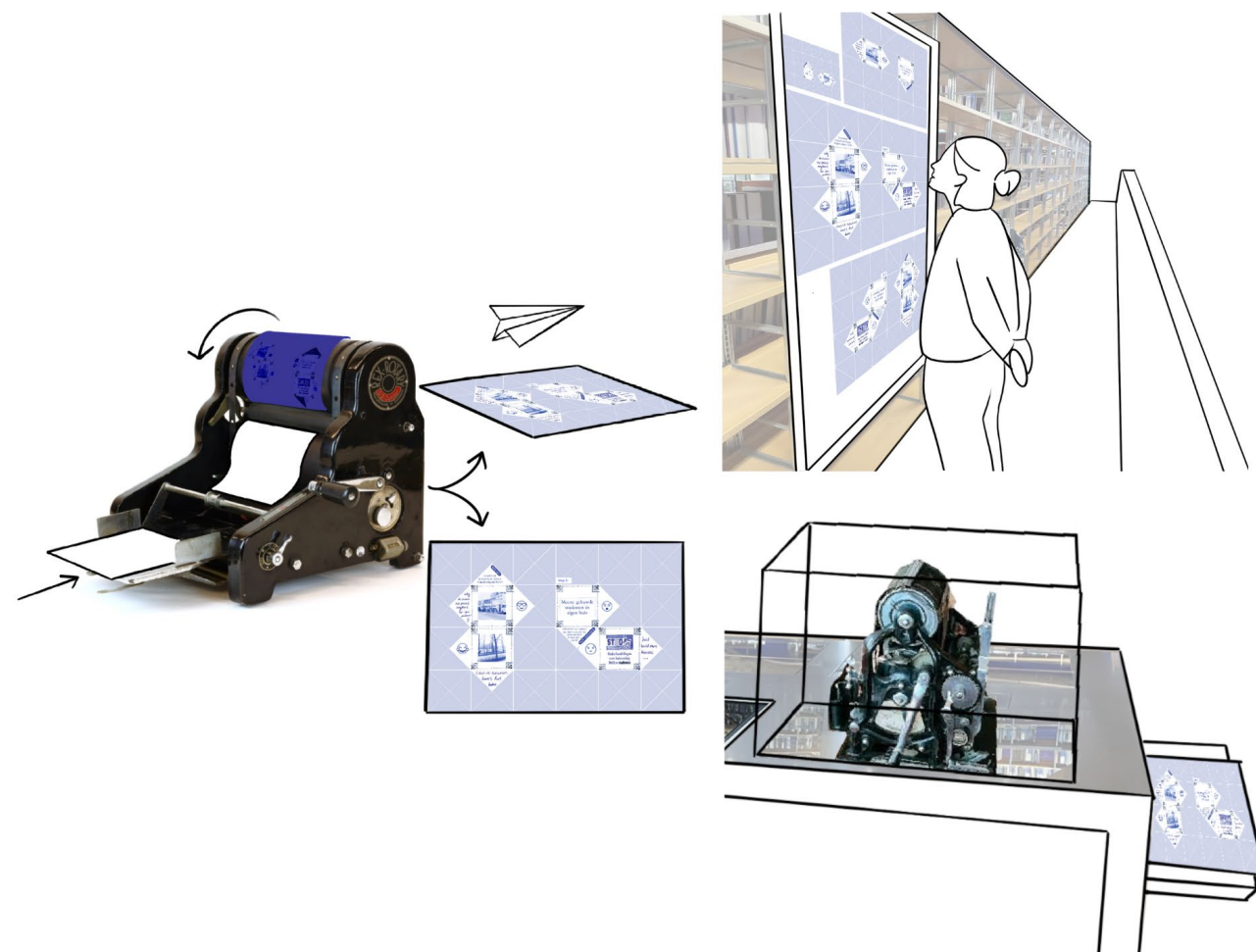
Hands-on:

1. Do the participants actively participate?
2. Do they seem to enjoy the activity?
3. Do the participants collaborate and communicate during the activity?

Part 2: Explain the CoW

Do students become aware of the Collection Wall and feel encouraged to visit during a break to view the collage collections?





Interview

Questions

How did you experience the activity?
Hoe heb je de activiteit ervaren?

What, if anything, did you take away or learn from this experience?
Heb je iets uit deze ervaring gehaald of geleerd? zo ja, wat?

What part did you like most and why?
Welk onderdeel van de activiteit vond je het leukst, en waarom?

What part did you like least and why?
Welk onderdeel van de activiteit vond je het minst leuk, en waarom?

Interview

Questions

Are you interested in exploring others' collages? What aspects are you curious about?
Wil je de collages van anderen verkennen? Welke aspecten interesseren je?

Would you be interested in discussing your collage with others? Why or why not?
Zou je geïnteresseerd zijn om je collage met anderen te bespreken? Waarom wel of niet?

Did any particular themes of the tiles stand out to you?
Zijn er bepaalde thema's van de tegels die je opvielen?

Are there any themes or topics you'd be interested in learning more about?
Zijn er thema's of onderwerpen waar je meer over zou willen weten?

How do you feel about having the opportunity to suggest themes each month?
Hoe voel je je over de mogelijkheid om elke maand thema's voor te stellen?

Questionnaire

Word list

1. How would you describe the activity?

Circle the words that best describe the experience for you.

- | | |
|-------------------|---------------------|
| • enjoyable | • connected |
| • boring | • (un) engaging |
| • guiding | • energizing |
| • confusing | • (un) creative |
| • discovering | • playful |
| • (un) surprising | • (un) amusing |
| • fun | • hands-on |
| • difficult | • (un) inspired |
| • comfortable | • memorable |
| • challenging | • (un) attractive |
| • (un) sure | • (un) helpful |
| • encouraging | • thought provoking |
| • doubtful | • valuable |
| • collaborative | • other ... |
| • awkward | |



Consent form

Title of Project: Students' perspective on academic heritage

Researcher: Lieneke Cazemier

Introduction:

I am conducting a research study as part of my graduation project. The project is focused on exploring ways to engage students with the academic heritage collections at the TU Delft Library. This is the final evaluation session of the concept therefore I am curious to the user interaction and experience with the concept.

Purpose:

Te purpose of this research is to gain insights on how to display academic heritage in a way that aligns with the interests of students. The purpose of this consent form is to seek your permission to record our conversation and take photographs during the session. Your participation in this study is voluntary, and you have the right to withdraw at any time without consequence. Participation will take approximately 15 minutes.

Permission request:

I would like to record our conversation for accuracy and reference purposes. The recordings will be transcribed and anonymized for analysis.

I give permission to record the conversation: Yes ☐ No ☐

I may take photographs during our interaction. These photographs will be used in an anonymized manner to complement the findings in my graduation report and presentations.

I give permission to take photographs: Yes ☐ No ☐

Confidentiality and participation:

Any information shared during our conversation, including recordings and photographs, will be confidential. Your name and any identifying information will be anonymized in all materials.

Contact Information:

If you have any questions or concerns about this research project or your participation, please

Consent:

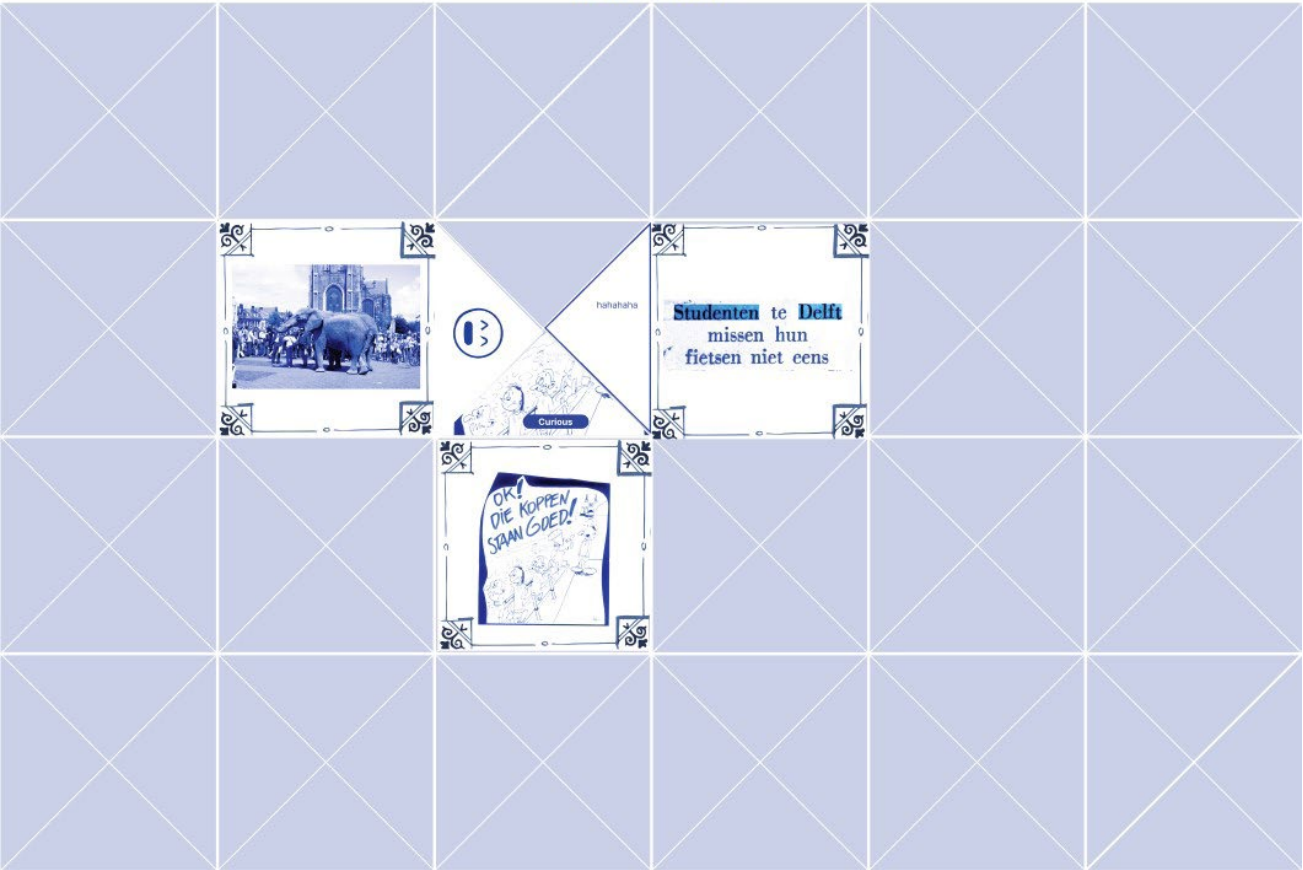
I have read and understood the information provided above, and I consent to participate in this research project.

Participant's Name:

Participant's Signature:

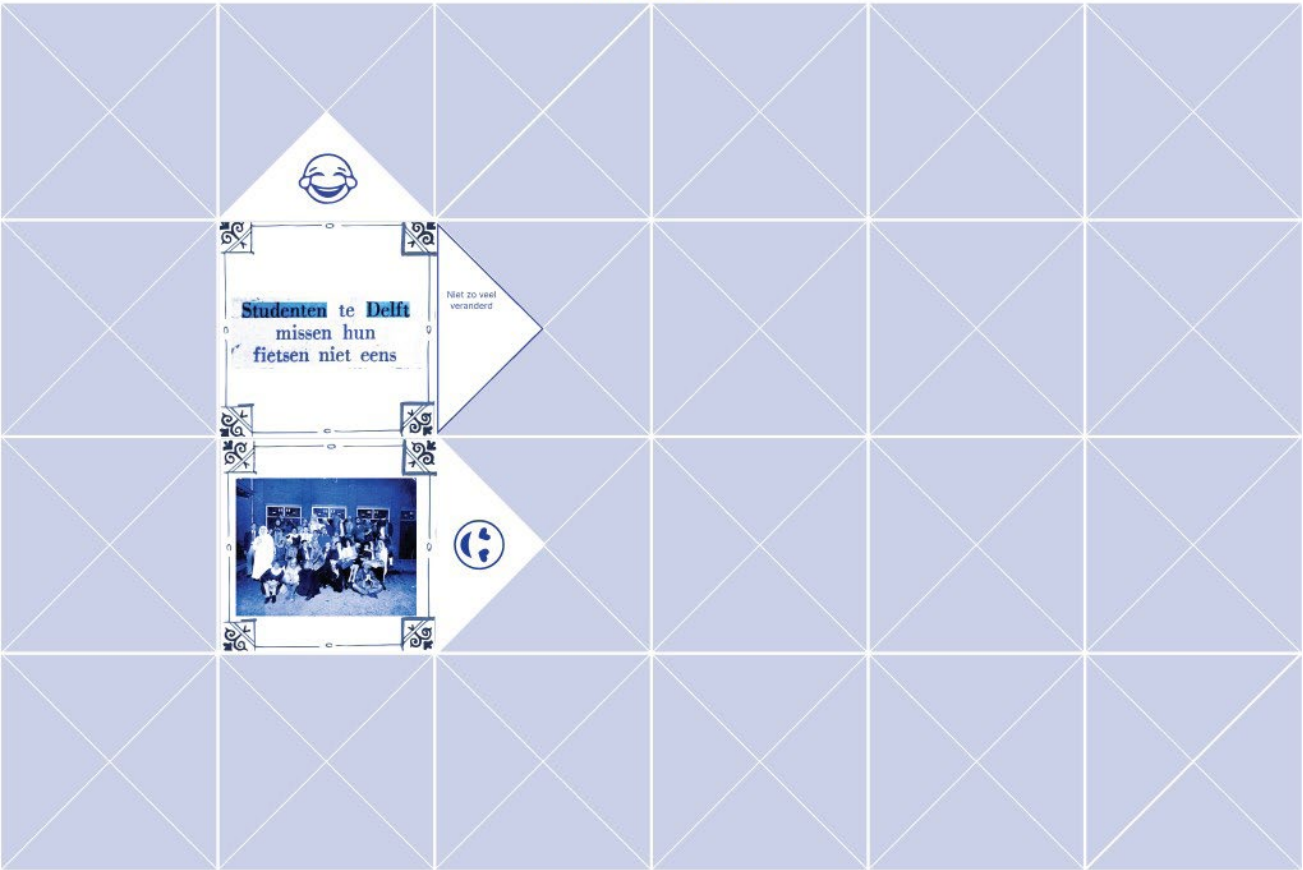
Date:

DIGITAL COLLAGE



P6 - Collage

DIGITAL COLLAGE



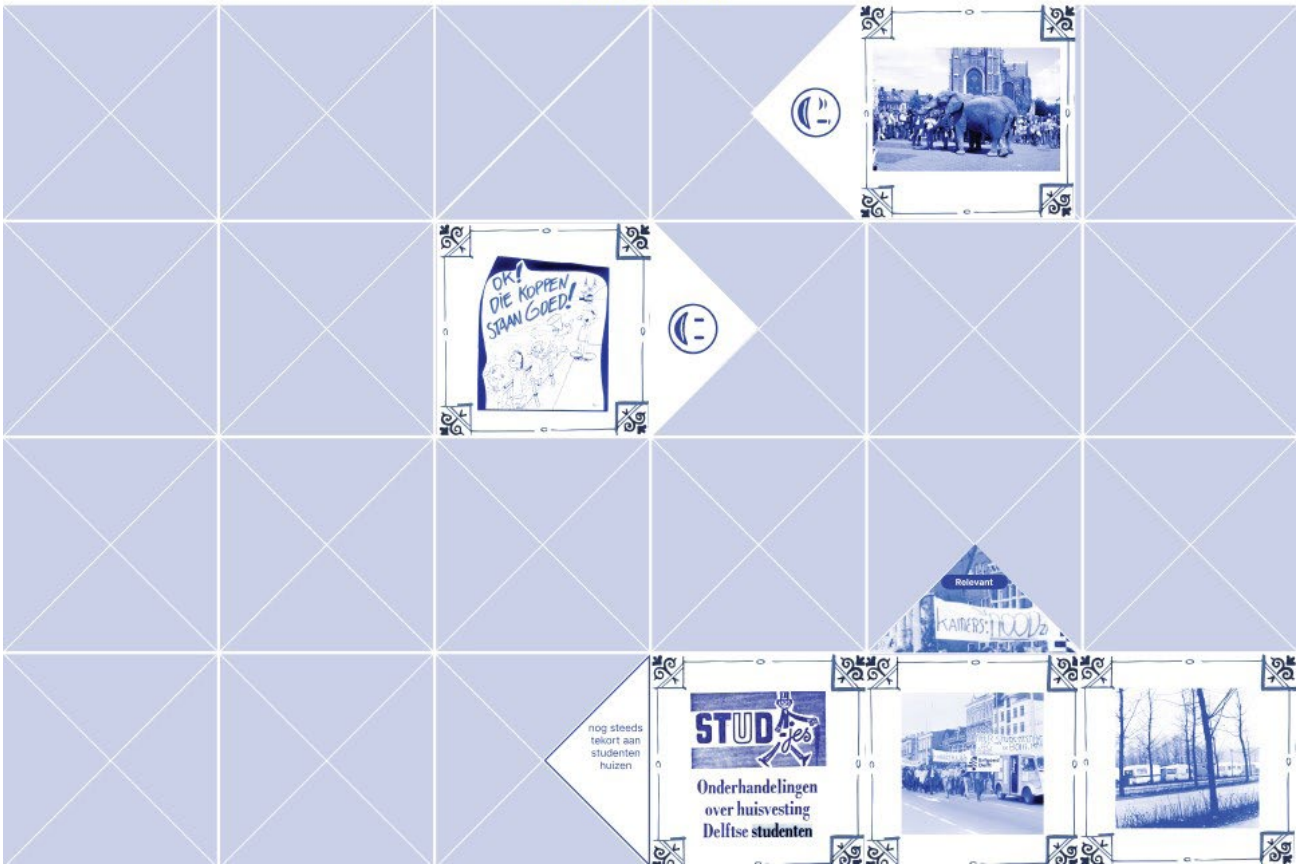
P1- Collage

DIGITAL COLLAGE



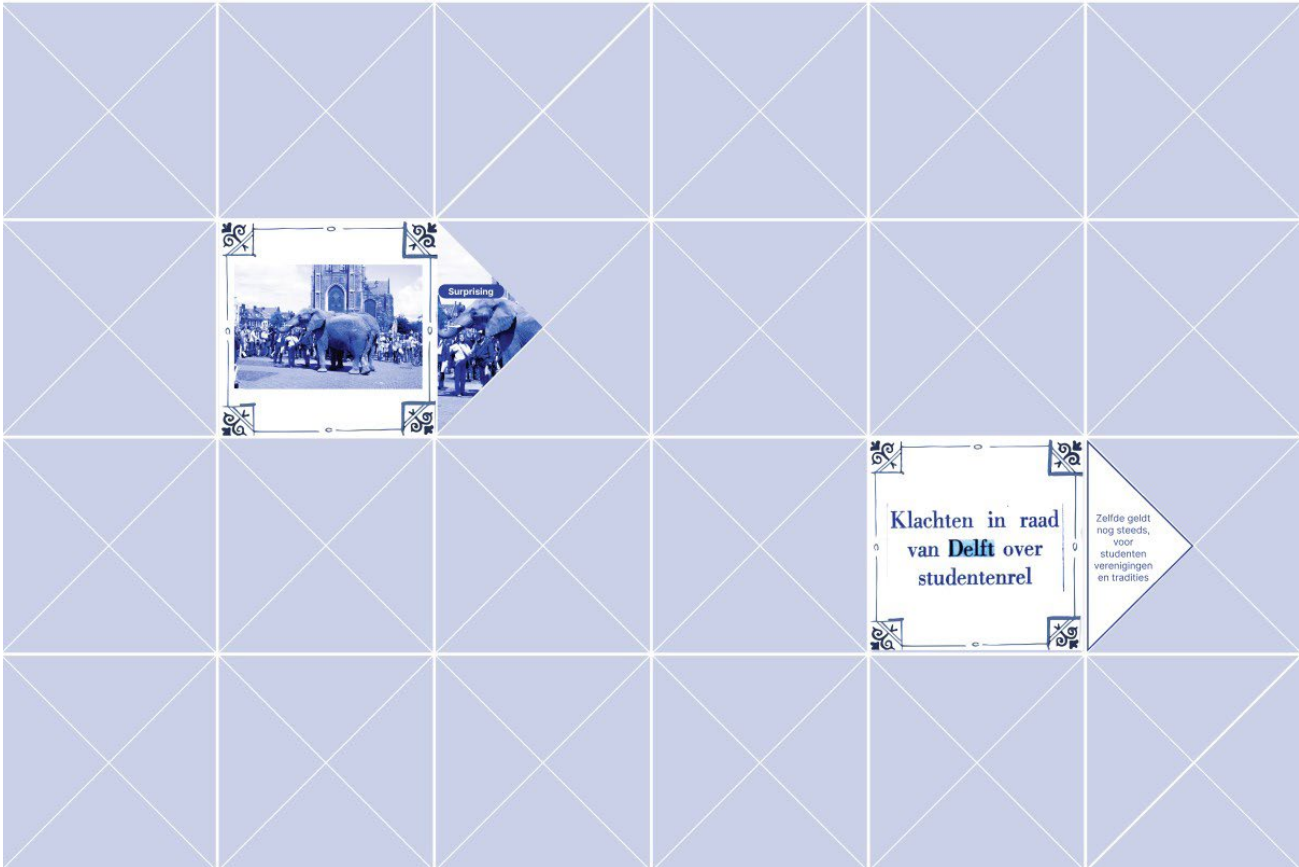
P2 - Collage

DIGITAL COLLAGE



P4 - Collage

DIGITAL COLLAGE



P3 - Collage

DIGITAL COLLAGE



P5 - Collage

APPENDIX H: RFID technology

Arduino code

```
/*
Custom Output Sequence on Button Press

This sketch cycles through a custom sequence of outputs connected to pins 5, 6, 7, and 8
when a button connected to pin 3 is pressed. Each output state lasts for 1 second.

Sequence:
1. [8]
2. [5, 8]
3. [6, 8]
4. [5, 6, 8]
5. [7, 8]
6. [5, 7, 8]
7. [6, 7, 8]
8. [5, 6, 7, 8]

Make sure to connect the button between pin 3 and GND,
and enable the internal pull-up resistor.
*/

// Define the pins
const int buttonPin = 3;          // Pin connected to the button
const int outputPins[] = {5, 6, 7, 8}; // Output pins
const int numOutputs = 4;         // Number of output pins
const int numSteps = 8;           // Number of steps in the sequence

// Define the output states for each step (bits correspond to pins 5,6,7,8)
const byte outputStates[numSteps] = {
  B1000, // Step 0: [8]
  B1001, // Step 1: [5, 8]
  B1010, // Step 2: [6, 8]
  B1011, // Step 3: [5, 6, 8]
  B1100, // Step 4: [7, 8]
  B1101, // Step 5: [5, 7, 8]
  B1110, // Step 6: [6, 7, 8]
  B1111  // Step 7: [5, 6, 7, 8]
};

// Variables to store the button states
int buttonState = HIGH;          // Current state of the button
int lastButtonState = HIGH;      // Previous state of the button

// Variables for cycling outputs
bool isCycling = false;
int currentStep = 0;
unsigned long lastOutputChangeTime = 0;

void setup() {
  // Initialize the output pins as outputs and set them to LOW
```

```
  for (int i = 0; i < numOutputs; i++) {
    pinMode(outputPins[i], OUTPUT);
    digitalWrite(outputPins[i], LOW);
  }

  // Initialize the button pin as an input with an internal pull-up resistor
  pinMode(buttonPin, INPUT_PULLUP);
}

void loop() {
  // Read the button state
  buttonState = digitalRead(buttonPin);

  // Check for button press (transition from HIGH to LOW)
  if (buttonState == LOW && lastButtonState == HIGH && !isCycling) {
    // Button pressed, start cycling
    isCycling = true;
    currentStep = 0;
    lastOutputChangeTime = millis();

    // Set outputs for the first step
    setOutputs(outputStates[currentStep]);
  }

  if (isCycling) {
    // Check if 1 second has passed since last output change
    if (millis() - lastOutputChangeTime >= 1000) {
      // Move to next step
      currentStep++;
      if (currentStep < numSteps) {
        // Set outputs for the next step
        setOutputs(outputStates[currentStep]);
        lastOutputChangeTime = millis();
      } else {
        // Finished cycling through outputs
        // Turn off all outputs
        for (int i = 0; i < numOutputs; i++) {
          digitalWrite(outputPins[i], LOW);
        }
        isCycling = false;
      }
    }
  }

  // Save the current button state for comparison in the next iteration
  lastButtonState = buttonState;
}

// Function to set outputs according to the bits in outputState
void setOutputs(byte outputState) {
  for (int i = 0; i < numOutputs; i++) {
    if (outputState & (1 << i)) {
```



```
    digitalWrite(outputPins[i], HIGH);  
  } else {  
    digitalWrite(outputPins[i], LOW);  
  }  
}  
}
```