

Connecting visitors with Erasmus through his book ‘Praise of Folly’

**A new design for the Erasmus Experience in Rotterdam Public
Library using generating AI & tangible interaction to evoke self-
reflection**

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EXECUTIVE SUMMARY

The Rotterdam Public Library (RPL) houses the largest collection of works by Erasmus, a renowned humanist and scholar of the European Renaissance. To honor his legacy, RPL established the "Erasmus Experience." However, after eight years, the Experience faces significant challenges: it has remained unchanged, its collections are inaccessible and non-interactive for visitors, and its presence is largely unknown to the public. In collaboration with RPL, I undertook a design project to address these challenges and align the Experience with the library's mission: fostering critical thinking among citizens.

To guide my design process, I employed the Double Diamond Model. Initially, I conducted a literature review, interviews, and observations to explore trends in library experiences and understand visitor demographics, ultimately identifying a target audience. Next, I performed field research to identify issues and opportunities within the current Erasmus Experience. This research led to the insight of focusing on a single book to stimulate critical thinking. I then carried out desktop research on similar book-

based experiences and user engagement with historical texts, ensuring that each research stage addressed the core challenges identified at the outset.

From this research, I developed a design vision: using the contents of Erasmus's *The Praise of Folly* to inspire visitors to reflect on themselves. The final design is an interactive, "magical" old book that guides users through self-exploration, helping them discover the "fool" within themselves. After the experience, participants received a personalized poem from the book based on their responses. Throughout the interaction, users choose between two cards to receive questions, which are projected onto the book's pages. They respond verbally, and through touch, they receive their customized poem. The experience is designed to create a nostalgic, immersive environment that encourages critical self-reflection, while the personalized poem provides a unique, memorable takeaway that aligns with users' expectations. Furthermore, design elements and interactive guidance connect participants to the broader legacy of Erasmus.

Before finalizing the design, I conducted user tests with six participants. Their varied reflections indicated that the experience successfully stimulated critical thinking. The interaction flow and card-based design were well-received. I enhanced the final prototype (Figure 1) using an antique-style book and projection technology to strengthen its nostalgic atmosphere. Nevertheless, further improvements could be made, such as testing the experience within a library setting for more realistic feedback and incorporating a replica of an actual Erasmus text to deepen the connection to his work.

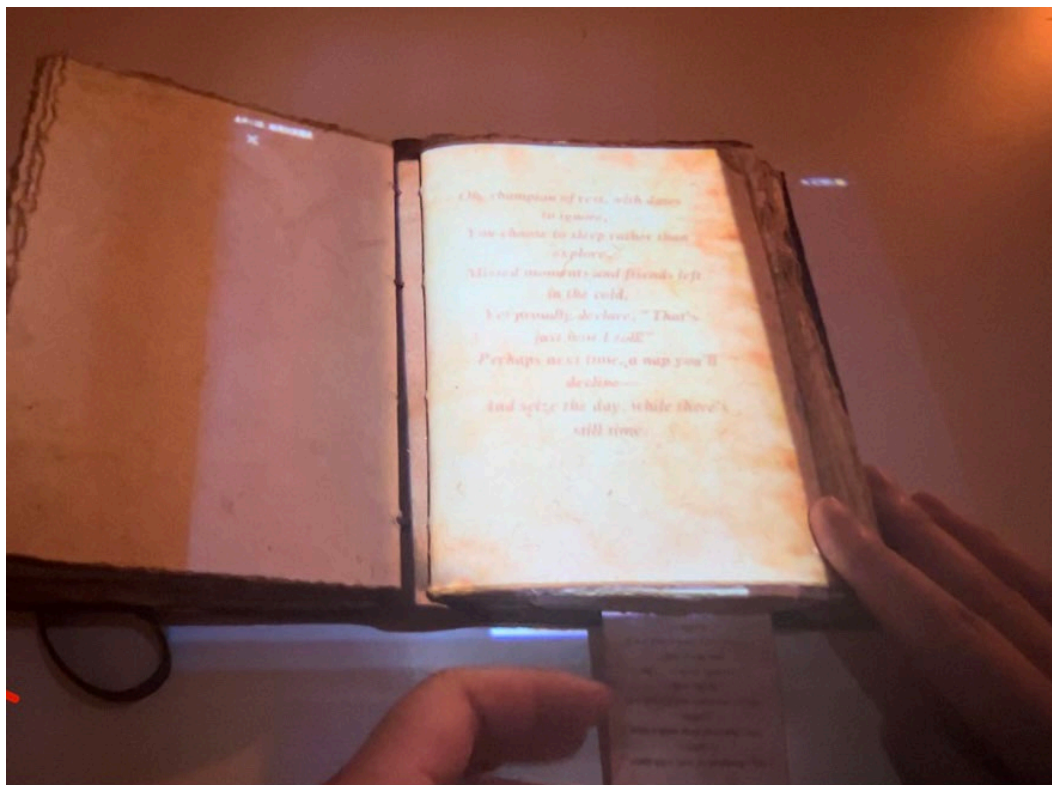


Figure 1. Getting the poem from the 'magical book'

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1. INTRODUCTION

This is a graduation project, done in collaboration with Rotterdam Public Library (RPL) (Figure 2), in which the Erasmus Experience is redesigned to make visitors think more critically and some corresponding strategies to attract more visitors to the Experience. The complete project brief can be seen in Appendix A.

Libraries were originally places where books were stored, and people studied. They are places for accessing general collections. Larger libraries frequently also house special collections, which contain rare and old books. Most of the libraries have digital databases of old books that people can get access to, but physical ones are mostly only available to scholars and (amateur) researchers to enable studying them. The chances of putting old books on display are slim as they are fragile and sensitive to light and humidity. This way these collections are not very accessible to the public. In some cases, museums or (national) libraries with museums/exhibitions use advanced technology and other interactions to give visitors experience old books in an engaging way.

1.1. Rotterdam Public Library and Erasmus Experience

As the most visited cultural institution in Rotterdam, Rotterdam Public Library (RPL) aims to help Rotterdam residents critically, consciously, and actively participate in society by providing access to reliable information and knowledge and organizing activities in the fields of culture, language, and society (*Rotterdam Public Library*, n.d.).

Besides, it houses a sizeable collection of old books, whose Erasmus collection is the largest around the world since Erasmus was born in Rotterdam.



Figure 2. The Rotterdam Public Library. (<https://www.bibliotheek.rotterdam.nl/english>). Copyright 2024 by Bibliotheek Rotterdam.

Desiderius Erasmus was a prominent figure of the European Renaissance (Figure 3), known for his extensive correspondence with key statesmen, humanists, printers, and theologians during the early 16th century. Erasmus engaged in satire, translation, commentary, and editing, having a lasting impact on Renaissance culture. One of his notable contributions was his work the *Paraphrases on the New Testament*, which garnered both acclaim and criticism. His significance lies in challenging and broadening the boundaries of philosophy, advocating for a "philosophy of Christ" that was accessible to all believers. His famous works include *The Praise of Folly*, which uses humor to show a plea for major changes to both society and the Church; *Julius at the Gates of Heaven*, showing Erasmus' criticism of the church; *Conversations*, teaching students how to read and speak Latin in the form of dialogues (Erasmus, Desiderius / Internet Encyclopedia of Philosophy, n.d.).



Figure 3. *Portrait of Erasmus of Rotterdam*, by Web Gallery of Art, 2021, Wikipedia (https://en.wikipedia.org/wiki/Portrait_of_Erasmus_of_Rotterdam). In the public domain.

Apart from its Erasmus collections, the library also owns a unique card index containing bibliographical descriptions of about 6,000 early modern editions of Erasmus's works. These encompass Latin texts as well as translations. Each edition is accompanied by

information about the whereabouts of surviving copies worldwide. To facilitate more researchers to study Erasmus, the card index was digitized and published under the name Erasmus Online Database, which has been free and accessible to the public since 2000 (*Rotterdam Public Library*, n.d.).

In 2016, an interactive Erasmus Experience was built (Figure 4). It helps visitors step into the world of Erasmus' ideas by doing more than just introducing themselves to Erasmus himself; they also learn to look at the world like he did humorously and critically. By getting a wristband at the entrance, visitors will dive deeper and deeper into Erasmus' ideas and their thoughts. Ultimately, they will learn how they see the world (*Erasmus Experience*, 2020). By scanning the wristband at certain spots in the experience to answer specific questions, visitors interact with the experience and think critically. For example, the board poses the famous saying of Erasmus: 'Words make us who we are'; visitors can scan the wristband to 'agree' or 'disagree' (Figure 5). When visitors finish three or more scans, they can go to the 'vault' (Figure 6) to see the overview of Erasmus's ideas.



Figure 4. The Erasmus Experience



Figure 5. The interaction using a wristband



Figure 6. The vault

1.2. Challenges

In an interview with the curator John Tholen, some challenges with the current experience were raised.

Staying the same

First, the experience has stayed the same for around eight years, which is a one-time experience without new interactions and content for a second discovery. According to the document provided by Charissa Hokke, the Experience coordinator, in 2024, according to the 33-week visitor statistics, there were 23 weeks with fewer than 100 visitors, with an average of no more than 14 visitors per day. The week with the least number of visitors was only 37. The total number of visitors is already minimal; if the experience has the value of a second discovery, it can welcome some loyal visitors, which can be a good contributor to the total amount, and such visitors are more willing to introduce the Experience to their families and friends.

Collections inaccessible to the public

Second, although the collections are digitalized with the help of an online database, the physical original collections cannot be accessed, whose unique bookmarking techniques, appearances, and traces of different generations of readers cannot be discovered in person and multi-sensory. The main reason is that many of the original collections were damaged and fragile, which needs more care in dry and clean environments.

Besides, most of the original collections were written in Latin, and even if they can be

accessible to the public, likely only a tiny minority would be able to understand.

Visitors not knowing the existence

Third, the experience is not very visible in other library spots, for example, with clear signs or posters. Few visitors go to the third floor and discover the experience.

1.3. The Goal of the Redesign

RPL will be renovated in 2029, and the Erasmus Experience will be redesigned. This graduation project aims to help with the redesign work.

The core value of the Experience is to develop people's critical thinking abilities, which also aligns with the library's mission. Simultaneously, the library wants to develop possibilities to make old collections accessible to visitors in the redesign, through which more visitors can be attracted to the experience. Therefore, three questions are raised:

1. How can visitors get access to or experience old collections in new ways?
2. How can we raise visitors' critical thinking abilities by redesigning the experience?
3. How to make the Experience more visible and attract more visitors?

1.4. Current Audience

Based on the interview with the curator, currently, there are mainly two types of audience: school groups from 12 to 15 years old and adult visitors (including both local people and tourists). The teenage group is one of the primary groups since they may have a program or learning goal related to Erasmus. Then, they are organized to visit the Experience together, guided by a teacher. Adult groups come to the library mostly for studying, meeting, etc. Those went to the Experience only because they passed by it. There are also specific statistics provided by the coordinator, showing that among all the visitors, children up to 12 years old account for 17.8%, young people from 12 to 25 years old account for 50.6%, and adults up to 65 years old account for 27.4%. Therefore, teenagers over 12 years old and adults account for 78%, which can be considered the leading target group.

In terms of teenagers, more opportunities to collaborate with schools and educational institutions can be explored. However, Drummond (2012) mentioned that adults may have better thinking tools due to the longer time they take to acquire information than youth. Also, the development of cognitive competence is related to developmental age and maturation (Sun & Hui, 2012). Therefore, choosing the adult group to evoke critical thinking leads to less effort, which can be a good choice at the start. Among the adult group, tourists are included. This group may find the Experience fresher but cannot have a second visit. For them, the Experience only acts as a one-time exhibition.

To conclude, my target group can be local adults in the Netherlands, with the desire to find inspiration in library. How I narrowed down the target group based on their expectations will be presented in the Discover Phase.

1.5. Opportunities

Opportunities lie in two directions: the first is about interactions with old books. Research on experience design based on old books is needed. Also, how people interact with old collections currently will be explored. Another direction is applying critical thinking to current experience, which needs evaluation of the library, the current Experience, and the people's reactions. After exploring these two directions, more specific opportunities can be found and combined; thus, a corresponding strategy to attract more visitors can be made. The design can be shown as an old collection serving as a bridge to make visitors enter Erasmus's thoughts and his middle age, then connect the past and the current days, thus starting to think critically about some phenomena and topics nowadays.

1.6. Research & Design Questions

Through understanding the context of the project, design questions became clear:

Design questions:

1. How to make visitors get access to or experience old collections in new ways?
2. How to raise visitors' critical thinking abilities by redesigning the Experience?
3. How to make the Experience more visible and attract more visitors?

Based on these three questions, some research questions were raised to be explored in advance. To answer the first question, it is necessary to explore how visitors currently engage with old collections from both appearance and context perspectives. To answer the second one, what kind of content or story can be used within the Experience for critical thinking needs to be evaluated. Then, to answer the first two questions, the visitors' expectations when they go to the library/museum/ exhibitions can be researched, which will also help choose a more specific target audience. The answer to the third question can be considered as a corresponding strategy after having a design proposal.

Then, the research questions were listed as follows:

1. What are the expectations of library visitors, and who can be the target group?
2. What kind of content can be used for critical thinking?
3. How do visitors currently engage with old collections from perspectives of both appearance and context?

The first research question can be answered through desktop research/ literature review/ interview or observation. The second one can be fixed through field research

to evaluate the current Experience. The third one can be answered through desktop research and user study.

The three design questions can be answered after fixing a design vision and explored in brainstorming in the Define phase.

1.7. The Approach

The Double Diamond Model was applied in this project (Figure 7).

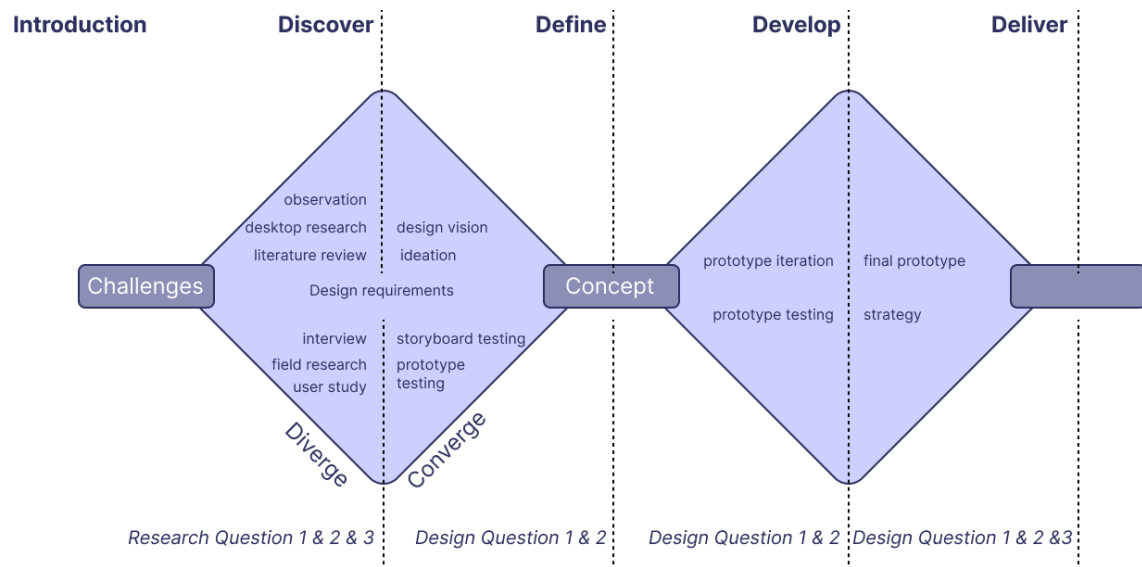


Figure 7. The Double Diamond Model

2. DISCOVER

2.1. Library and its visitors

The research on the library and its visitors is surrounded by the Research Question One: What are the expectations of library visitors, and who can be the target group?

I first did a literature review on trends in future libraries to understand the transformation of libraries and their visitors in general. Then, I did a quick interview to learn visitors' expectations in the Rotterdam Public Library, followed by an observation of visitors' actions and journeys in the library.

2.1.1. Literature review

Libraries are shifting from study and book lending spaces to community hubs centered on education.

Different libraries around the world show some similarities in trends. From the perspective of purpose, according to Gómez-Zapata and del Barrio-Tellado (2023), the library tends to become a community hub, requiring more space to host workshops, community events, and educational programs. Thus, an ample gathering space that can accommodate many people becomes a fixture in many public libraries.

According to Zang et al. (2022), education is seen as the libraries' core function, and participatory design should be used as much as possible to understand local people's information needs. The service and space should provide information and facilitate information exchange.

For instance, in a survey conducted by the Pew Research Center on visitors' expectations of libraries in America, with the widespread use of emerging technologies, most respondents (70%) hope libraries will continue to offer educational programs on how to use new technologies, such as 3-D printers (45%) including productivity tools and content creation (Horrigan, 2015), which can be conducted in the form of a workshop. In such programs, experts are also increasingly reaching out to give advice and education, especially in the technological arena. For example, the New York Public Library (NYPL) brought financial literacy experts to provide specialized services (Garmer, 2014).

In terms of space, the community hub can be divided into four overlapping spaces: inspiration space, learning space, meeting and performative space. Mixed-use, shareability, collaboration, and pop-up locations are standard features of these spaces. For example, a shared meeting space may also be temporary, with libraries organizing pop-up events within GLAM (Galleries, Libraries, Archives, Museums) (Gómez-Zapata & del Barrio-Tellado, 2023). Additionally, in these spaces, activities tend to be

segmented; for example, some spaces specialize in music, and others in other fields (Pauget et al., 2024).

Under the transformation of the library, new types of visitors also emerge. In libraries in Colombia, the highest activity returns were found for internet connection (33.86%) (Gómez-Zapata & del Barrio-Tellado, 2023). Such people, born after the introduction of personal computers and have always had access to the Internet, are called Digital Native. They are heavy social networking users and adapt to multitasking (American Library Association, n.d.). Another type of visitor is Knowledge Creators. Traditionally, visitors are encouraged to consume the information provided by libraries, but now they are shifting toward getting support and inspiration from the libraries to create and share knowledge themselves (Palmer, 2022).

To conclude, future libraries are inclined to be community hubs with different purposes, visitors, and space functions, as seen in Figure 8. Visitors come to the library because it can meet their needs, and visitors can also become contributors to the library's development of its potential. With the transformation of libraries, visitors are also transforming with different expectations and needs.

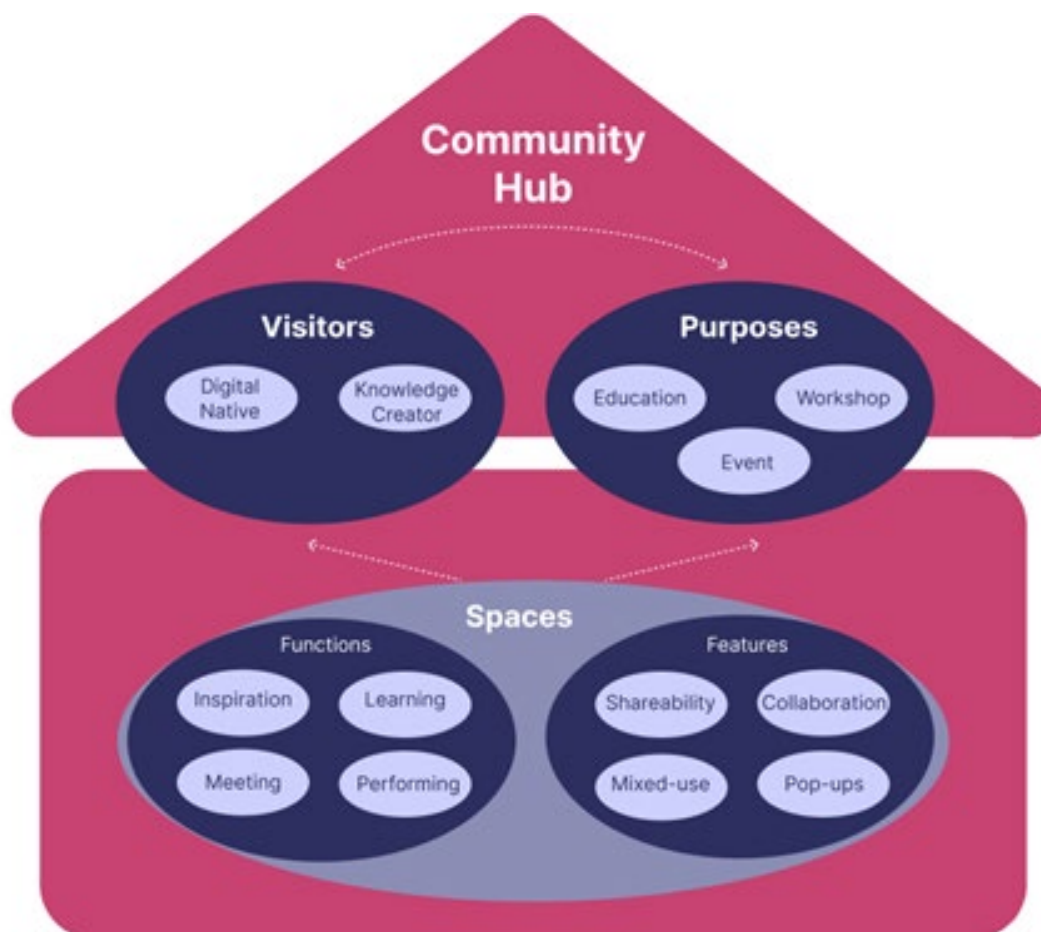


Figure 8. The transformed future library: the community hub

2.1.2. Short interview

The literature review showed a general understanding of library visitors but lacked a specific understanding of RPL visitors. Thus, I also conducted a quick interview in RPL to learn about their motivations, expectations, and knowledge of Erasmus.

I did a quick interview on the ground floor of the library. I randomly went to people standing by a board or strolling to glance at the newly launched books because I thought these kinds of people might be more willing to spare time to answer questions. Four males and six females, ten in total, were asked. Five minutes were spent for each person.

The interview was designed in a semi-structured way. I asked them questions from four perspectives, shown in Table 1. For the first two questions, I set several follow-up questions. For the third one, the example words are based on the literature review on library trends. Figure 6 shows that three of the functions of libraries in the future are for meeting, performing, and inspiration, which refers to the example words ‘social,’ ‘interactive,’ and ‘inspirational.’ The traditional but basic function of the library is ‘informative,’ so I also chose that as an example. The quick interviews ended with demographic questions, with which I wanted to see whether demographic elements would influence visitors’ expectations.

Primary Questions	Follow-up Questions
1. Why do you come to the library today?	1.1. When do you plan to leave? 1.2. Is it a general thing you do in the library? (Do you come to the library usually for...?) 1.3. How often do you come to the library?
2. Do you know Erasmus?	2.1. How do you think of Erasmus? (use a word/sentence to describe your impression of him) 2.2. Do you know there is an Erasmus experience on the third floor? - Have you been there? - How do you think of it? - Have you only been there once? - Do you want to go there again? - What makes you go there twice?
3. What do you expect the library to be?	Here are some examples; you can pick ones or generate your own: -informative -inspirational -interactive

	-social -....
4. Who are you?	4.1. Where are you from? 4.2. What is your age? 4.3. What about your occupation?

Table 1. Interview questions for RPL visitors

The result is that only two people knew nothing about Erasmus, while others used general words like scholar, philosopher, and humanist. However, nobody had visited the Erasmus Experience before. Even though one knew the experience existed, she did not know how to get there. The responses further prove the challenge: 'Visitors not knowing the existence. '

Besides, most people visit the library once or twice a month, which provides a reference for further design when considering the frequency of updating the Experience.

When it comes to expectations, 'Being inspirational' gathers the most (seven) votes (Table 2) from visitors with different occupations. Some people mentioned that 'being inspired' means that they get to know new activities and new knowledge. The only vote for 'being social' comes from a 14-year-old girl, which may explain why teenagers expect to meet friends and socialize in libraries.

Inspirational	7 votes
Informative	3 votes
Interactive	2 votes
Peaceful/ Quiet	2 votes
Social	1 vote

Table 2. Voting results for the expectations of the library

To conclude, most current visitors expect to find inspiration in RPL, which seems unrelated to gender or occupation. This is considered an element in narrowing down my target group.

2.1.3. Observation

Then, I observed to get an overview of visitors' actions and their journey inside the library. I walked around each floor to see what people were doing.

Like the trend research, the library has many kinds of spaces, including entertaining spaces like chess playing, meeting spaces with screens, discussion spaces, and silent individual spaces. Segmentations are various, with one floor spared for music and some unique corners like hip-hop (Figure 9).



Figure 9. Hip Hop Corner

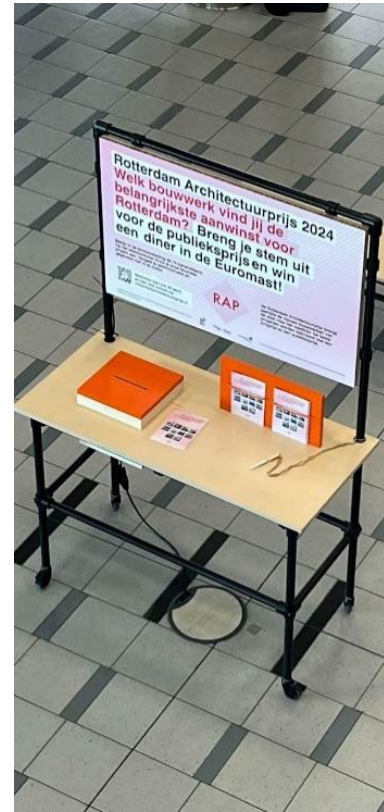


Figure 10. A voting table

At the entrance, there is space to gather suggestions on a specific topic through voting (Figure 10), where I saw some people react to it. Besides, some big boards post new events/ information in the library/ Rotterdam (Figure 11). I saw many people stand by to have a look; some did when they entered the library, while some did when they left the library.



Figure 11. Information boards



Figure 12. Newly launched books

Also, some tables displayed newly launched books in the middle of the ground floor (Figure 12), and many people stood by.

In summary, a typical journey (Figure 13) starts from staying for a moment at the

information board (can also be the end of the journey) when entering the library, then having a glance at the newly launched books (can also be the end of the journey), then going to do their own things (borrowing a specific book, studying, meeting with others), finally leaving the library.

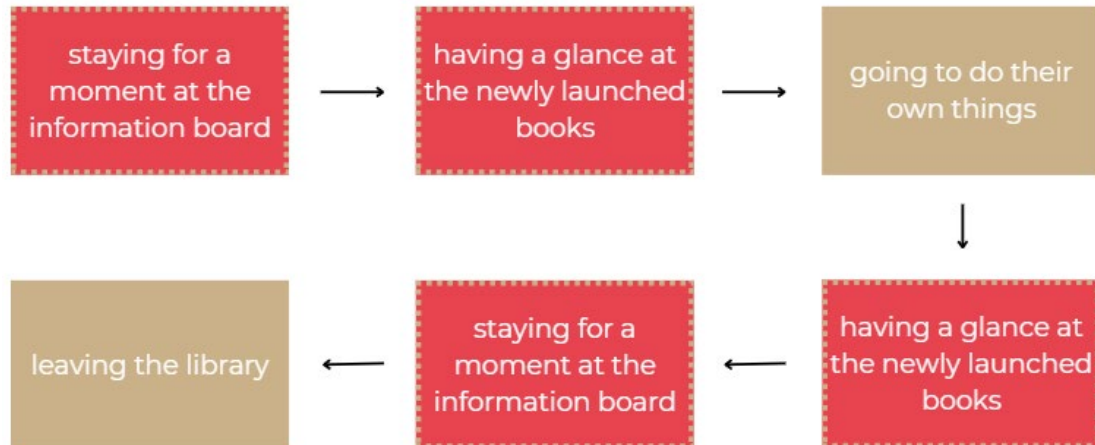


Figure 13. A typical visitor journey of the library

2.1.4. Key takeaway

The final target group is local adults who go to the RPL at least once a month and hope to find inspiration there. Design opportunities with a second visit invitation can be explored in this group. However, it doesn't mean that the teen group won't be considered. The adult group will be the focus, but making the design fun and universally understandable will also be considered.

Besides, the expectation of 'being inspirational' currently has two meanings: one is to get new information academically and socially, and another is that visitors are the knowledge creators after being inspired by libraries. However, this element can still be explored more deeply and broadly in the following stages.

2.2. Erasmus Experience

Field research on the Experience was done around Research Question Two: 'What kind of content can be used for critical thinking?', aiming to find a suitable topic or story to evoke critical thinking.

2.2.1. Field research

It is not an extensive exhibition. The main sections cover introducing visitors to Erasmus through the informative boards, the question-answering interaction using a wristband, the touch-screen panel to ask and answer questions, and showcases presenting Erasmus's famous works. Using NFC technology, visitors' answers can be typed in when they scan their wristbands to agree or disagree on one statement

(Figure 5). Figure 14 shows a typical visitor journey map (the large version can be seen in Appendix B). The emotional images I used come from Laurans and Desmet (2017).

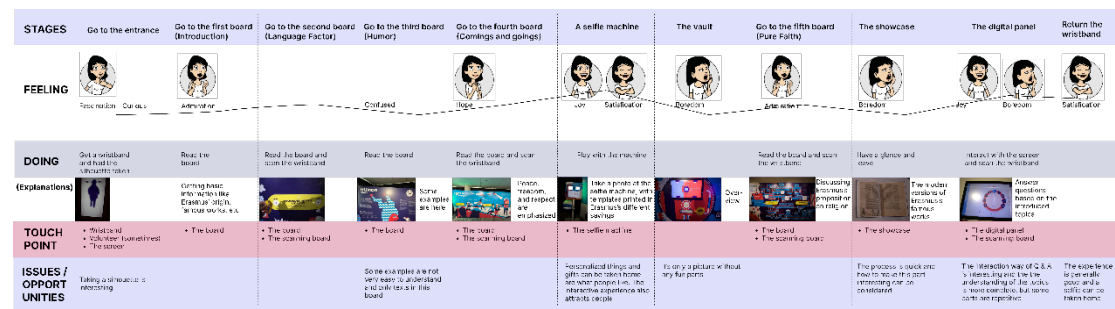


Figure 14. A Visitor Journey Map of Erasmus Experience

2.2.2. Key takeaway

It can be seen that visitors like the selfie machine a lot since it provides customization and something to take home, while the main issue is that pure texts or books are not attractive, and visitors find them dull. Finding opportunities from these two parts can be considered. Also, the Experience covers four main topics and introduces some works of Erasmus, which provides a reference for me to evoke critical thinking. I want to start with one specific topic or book since I can have a more concrete story. I first exclude some, then compare the leftover ones to choose suitable content.

Based on the four topics, I first left out the 'Pure Faith' topic due to its tight connection to religion, which is a susceptible topic. Also, the criticism is based on the old Church, while the current Church has already evolved a lot. I also omitted the 'Comings and goings' because it is more like a good vision without arguments. Two topics, 'Humor' and 'Language factor,' remained to be decided. Because the current 'Humor' board only provides some examples in texts, which is not very attractive, opportunities to make it more fun can be found. For the book, several ones are displayed in the showcase, two of them can be seen in Figure 15 and Figure 16.

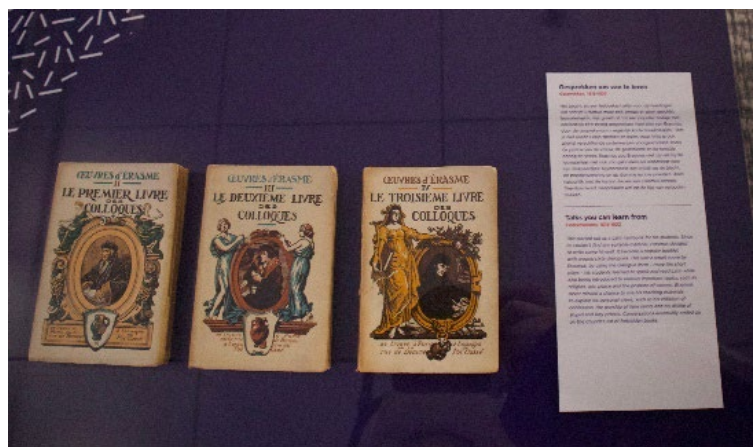


Figure 15. The book 'Talks You Can Learn From'

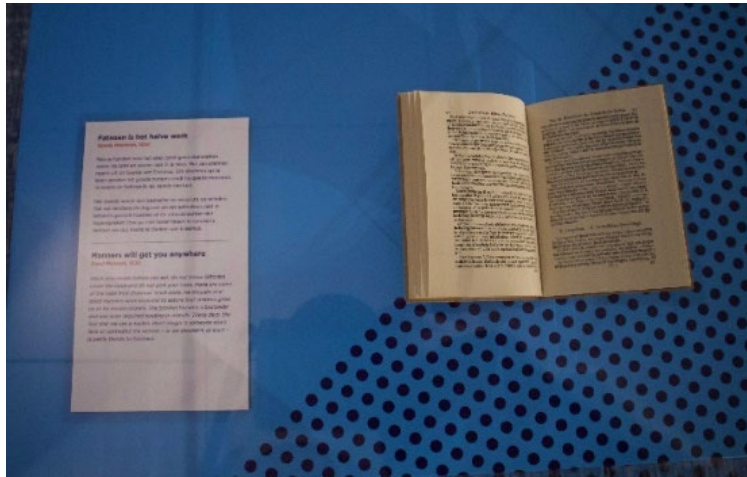


Figure 16. The book 'Manners will get you anywhere'

I think 'Praise of Folly' is a very suitable book as a content to evoke critical thinking. Erasmus personified Folly as a goddess who praised herself and critiqued various aspects of society, through which Erasmus offered a sharp yet humorous critique of human nature and societal institutions and urged readers to reflect on their actions and beliefs. This book uses a humorous writing style related to one of the two left-over topics I want to choose from. Also, many of the characteristics of a folly existed then and still exist in almost everyone nowadays. For example, people flatter their leaders, which is 'Flattery.' Students use tarot to pray for grades, which is called 'Superstition.' Some people may discard the team responsibility and pursue their happiness, which can be seen as 'Hedonism,' etc. They are not severe or fatal characteristics, but they can be eased and eliminated gradually through reflection. I think the specific characteristics can be minor entry points for design, and encouraging people to reflect on themselves can be explored in a humorous and fun way. At the same time, introducing this book is also an excellent way to introduce 'Humor' more concretely and interestingly.

2.3. Book-based Experience

Some examples were found through desktop research and literature review, and a user study was conducted to inform RQ 3: How do visitors currently engage with old collections from perspectives of both appearance and context?

2.3.1. Examples

To find some examples, desktop research, literature review, and field research were done first. I searched the terms 'interesting interactions/ experience related to (old) books,' 'experience/ exhibition using books,' and 'experience or interaction of medieval manuscripts' online to find some examples and found good examples when visiting the House of Music in Budapest, Hungary and some got some recommended from my supervisor. I picked examples from the following criteria:

1. Making me feel engaged and immersive

2. Interactions that make me surprised
3. Seeing good feedback from different media and individuals
4. Using advanced technology to reach the expected outcome

I found various examples and divided them into four types:

Design related to books combined with technologies

There are eight examples of the second type. The first is a VR experience directed by Professor Lynn Dodd and Dr. Sabina Zonno, aiming to create an immersive, interactive experience focused on a 15th-century lavishly illuminated manuscript held by USC Libraries' Special Collections (Figure 17). Through digital photography and 3D modeling, this project provides access to a virtually reconstructed, private, gendered space in early modern Belgium, enabling users to engage with this manuscript's contents and gain an appreciation for rare materials.

This project brings together specialists in art history, history, immersive experiences, 3D modeling, game design, and photogrammetry to provoke learning through an embodied experience that allows interaction with—and encourages proper handling of—the virtual version of a rare Renaissance manuscript. (*Using Virtual Reality to Explore 15th Century Illuminated Manuscripts* - XRLAB, 2023)

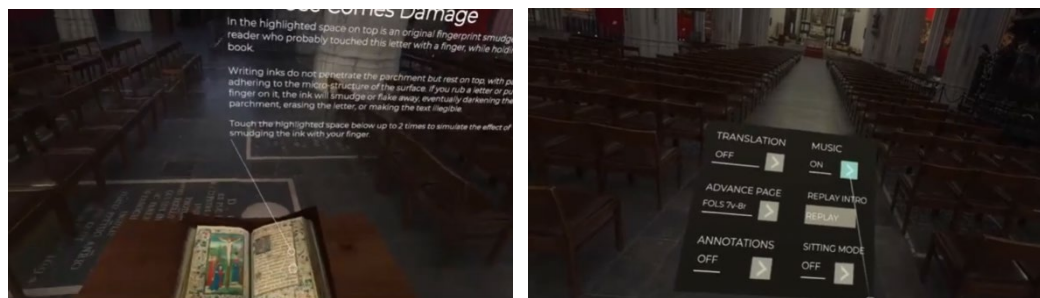


Figure 17. Screenshots of the BoH VR Demo. From *Using Virtual Reality to Explore 15th Century Illuminated Manuscripts*, by Mats Borges, 2021, XRLAB (<https://dornsife.usc.edu/xrlab/neh-vr-exploration-of-illuminated-manuscripts/>) Copyright 2024 by University of Southern California.



Figure 18. Demonstrating photo, by Luis Rodriguez-Perez (n.d.) (<https://dornsife.usc.edu/xrlab/neh-vr-exploration-of-illuminated-manuscripts/>) Copyright 2024 by University of Southern California

The second and third also use VR technology in the form of games. In the game *Medieval Scriptorium* (Figure 19), users enter a new virtual reality world where they find themselves in a dimly lit room filled with inkwells, wooden desks, parchment, and quills. If they look closer, they can see the intricate details of the illuminated manuscripts being created, with gilded accents and vibrant colors (*Medieval Scriptorium*, n.d.).

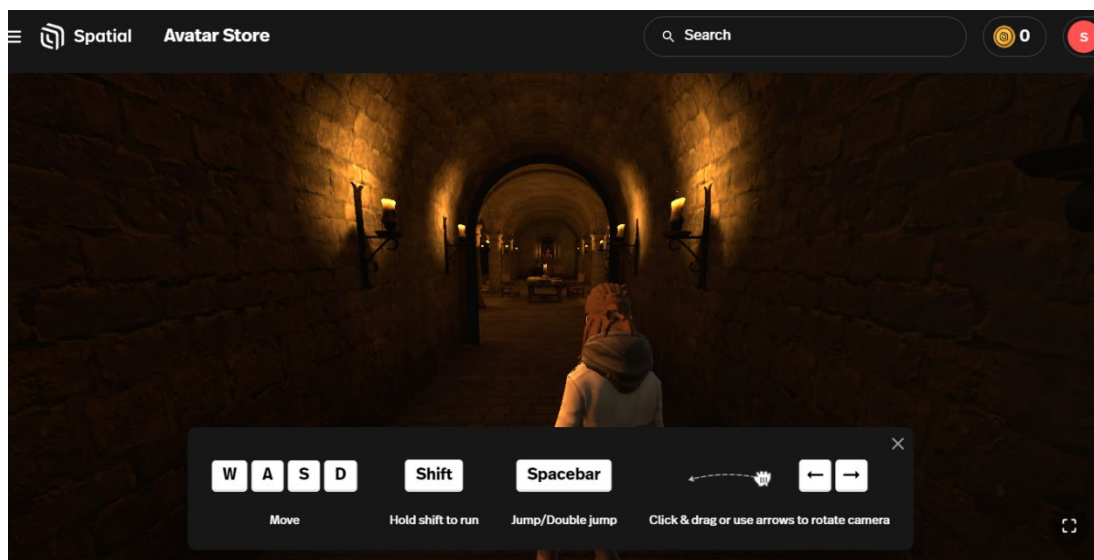




Figure 19. Screenshots of the VR game *Medieval Scriptorium*. From *Medieval scriptorium*, by Paolo, 2021, Spatial (<https://www.spatial.io/s/Medieval-Scriptorium-643c917e07adc62740c5c824?share=2766077144159755198>) Copyright 2024 by Spatial Systems

Another game is also a VR game, called ‘Dunhuang Manuscripts’ (Figure 20), which was launched by Pico in its set ‘Ancient Books Tour.’ It takes users to explore the remains of the Dunhuang Grottoes, located in Gansu Province, China, through the guidance of NPC and the users themselves processing the pigments and painting ([*Ancient Books Tour*] — *Dunhuang Manuscripts (Part 1)* - OMGXR, Metaverse, New Horizons, Virtual Reality Metaverse Base Camp!, n.d.).



Figure 20. Screenshots of The VR game ‘Dunhuang Manuscripts’. From [*Ancient Books Tour*]-*Dunhuang Manuscripts (Part 1)*, 2023, OMG XR (<https://www.omgxr.cn/community/news/1734043214289309698>) Copyright 2024 by OMG XR.

The fourth example is ‘BVLGARI History Book’ (Figure 21), an interactive installation that brings Bvlgari's historical archive pieces to life. When viewers turn the pages of the jewelry book, image objects corresponding to the jewelry depicted on each page emerge, ascend, and fade away. This design features custom software capable of real-time sensing of page turns, with individual recognition of hundreds of pages (*BVLGARI “History Book”* : LUCENT, 2024).

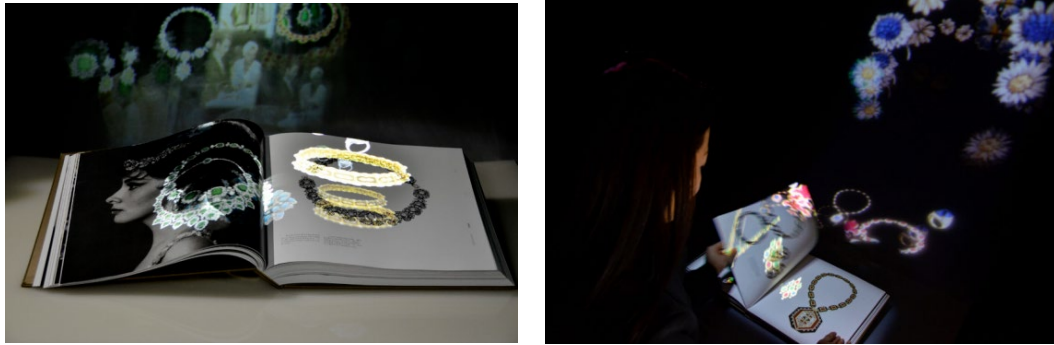


Figure 21. The 'BVLGARI History Book, 2012 (<https://www.lucnet-design.co.jp/en/artworks/bulgari-history-book/>) Copyright 2024 by LUCENT.

The fifth example is called 'enlight: Augmented Reading' (Figure 22), which is a smart desk light that improves the reading experience for students, researchers, and book lovers. It utilizes computer vision, optical character recognition, a network connection to an array of data sources and projection-mapping technology to bring a wealth of intelligent features to print books and documents. Users can highlight words, search for detailed descriptions, and scan images. They can also view social highlights from other users. Everything saved is synced with the cloud and may be viewed on other devices (Enlight: Augmented Reading - SVA MFA Interaction Design, n.d.). This example finds a balance between eBooks and printed media to make them co-exist and provide an efficient, immersive, and smart reading experience.



Figure 22. *enlight*. From *enlight: Augmented Reading*, by Leroy Tellez & Sam Wander, n.d., MFA Interaction Design (<https://interactiondesign.sva.edu/projects/enlight-augmented-reading/>) Copyright 2024 by MFA Interaction Design.

The sixth and seventh are similar. Figure 23 is a physical music theory book with content and texture created through projection. When visitors turn pages, the new

content is projected. Similarly, Figure 24 shows a digital book in the National Library of Korea, 'Dongui Bogam,' an ancient Korean medical encyclopedia written by the royal physician Heo Jun. Visitors can physically touch and turn the pages of the book with the content digitally projected. Touch sensing technology and digital projection mapping are used. The contents of the book respond to touch gestures from up to 50mm away from the surface of the sensor. A single touch sensor was embedded behind the stack of paper pages and transmitted through the paper of the physical book itself (Inspired, 2022). These two designs help visitors to have a more hands-on experience and get access to historical heritage with the power of technology.

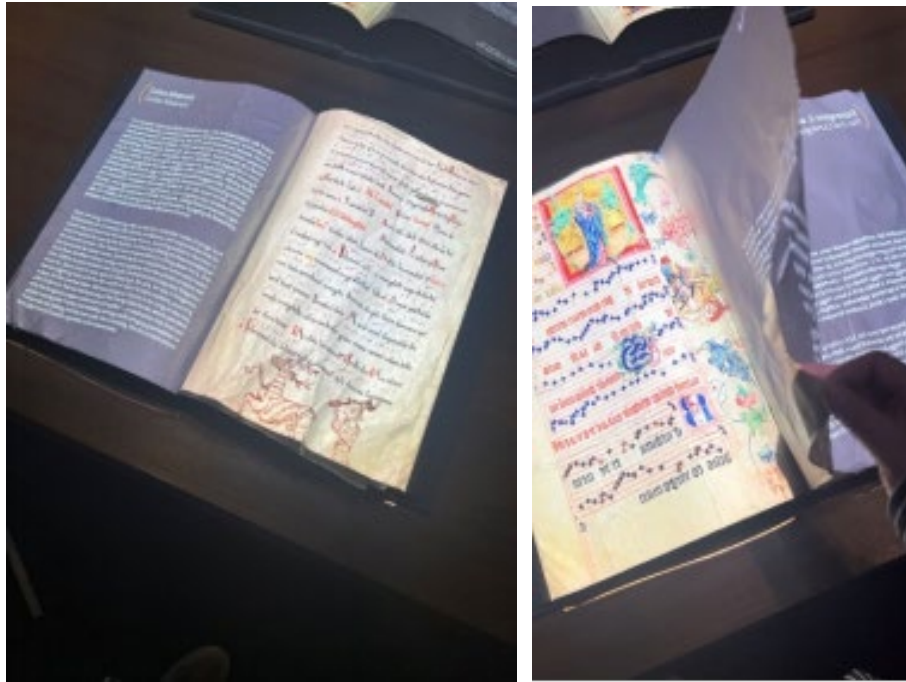


Figure 23. The projected music theory book



Figure 24. 'Dongui Bogam'. From Zytronic's ZyBrid® hover enables Korean library goers to access ancient manuscripts interactively, 2022, ZYTRONIC (<https://www.zytronic.co.uk/case-studies/detail/zytronics-zybrid-hover-enables-korean-library-goers-to-access-ancient-manuscripts-interactively/>) Copyright 2024 by Zytronic PLC.

In the final example (Figure 25), visitors can choose one music score from a digital panel; then, the portraits on the wall will play the score. Everyone in the portrait has an instrument, and they start to move and play the instrument to play the chosen music score. This example introduces the content of the book through evoking multisensory, which transforms visual sense into auditory sense. It is a personalized, multisensory, and immersive experience. It starts from the book of music scores, but the experience extends outside the physical book to the stories and content of the book, bringing visitors to the music world at that time.

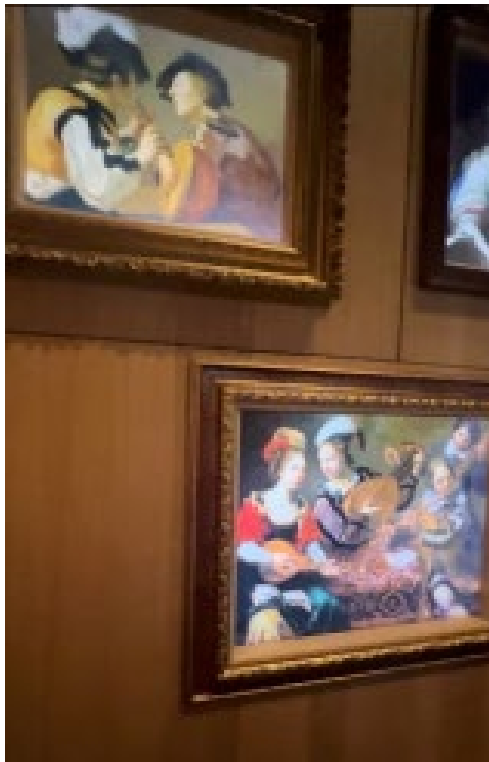


Figure 25. The interactive portrait playing music

The examples mentioned in this type use VR, AR, touch sensing technology, digital projection mapping, computer vision, optical character recognition, and Zoomify to create an interactive, engaging, and multisensory experience. In addition to these, spatial studio, apps, 3D elements, and multi-touch screens are also popular technologies used frequently currently (Johnson, 2024) (Lew, 2023).

Design on the book itself

There are three examples of the this type.

The first example is *Bucai* (Figure 26), written by Gu Shijiu. This book is a collection of essays, most of which are the author's brisk comments on life that have been published in newspapers and magazines. This book invites readers to read and cut simultaneously, which has a short break and joy and has a more aesthetic reading process and fun than the average book. When readers finish reading the book, they will find that the book's texture has changed, because the book is cut by hand, and the edges have changed from the original smooth edges to rough edges. The uneven

defects give people a visual enjoyment of incomplete beauty, and the book cut by readers belongs to themselves (*Bucai*, n.d.).



Figure 26. The book 'Bucai'. BaiduBaikē (https://baikē.baidu.com/item/%E4%B8%8D%E8%A3%81/1427884?fr=ge_al) Copyright 2024 by Baidu.

The second example is a science fiction novel (Figure 27), an artists and graphic designers collective, Fahrenheit 451, by Ray Bradbury. The book describes a dystopia where books are the objects of resistance to happiness. They are forbidden, tracked down, and burned by firemen. This special edition, appearing at first black as if carbonized, reveals its visionary content as soon as it is exposed to heat from a flame or hand. A sensitive link is drawn between the book as a material and the novel's content. The paperback goes back to black as it cools down. In the time of ubiquitous digital and screens, this edition embodies the questions raised by Ray Bradbury on the role of memory and culture in our society (*Fahrenheit 451 – Heat-sensitive Artist Book*, n.d.).



Figure 27. Fahrenheit 451. From *Heat-sensitive Artistic Book*, by Super Terrain, n.d., Super Terrain (<https://www.superterrain.fr/f451/en/>) Copyright 2024 by Super Terrain.

The third example is more like a technique expression, which is 'details close up' of manuscripts proposed in the video (Kathryn Rudy, 2021) (Figure 28). The speaker mentioned, "As Zoomify breaks down the initial resistance of the digital page view, close-up details cause surprise and get a sense of progressive discovery and revelation. Details become the experience and practice; they communicate the incommunicable,

creating a heightened perception of the surface as they instantiate new understandings of the whole.” Close-ups are mystifying manuscripts as they show unseen worlds in unfathomable detail. According to Camille (1990), close-up offers an experience better than the original while, at the same time, they are mystifying because they magnify ‘to transcendent proportions the fetish of the brush stroke by fragmenting the manuscript into a collage of vastly different scales’ details and scholarly viewpoints’, it is ‘reconstituting the page for the obsessive gaze of realistic detail.’ Digitized manuscripts and Zoomify inspire the reader/viewer to perform in their way, by reconstituting and possessing the digitized manuscript.

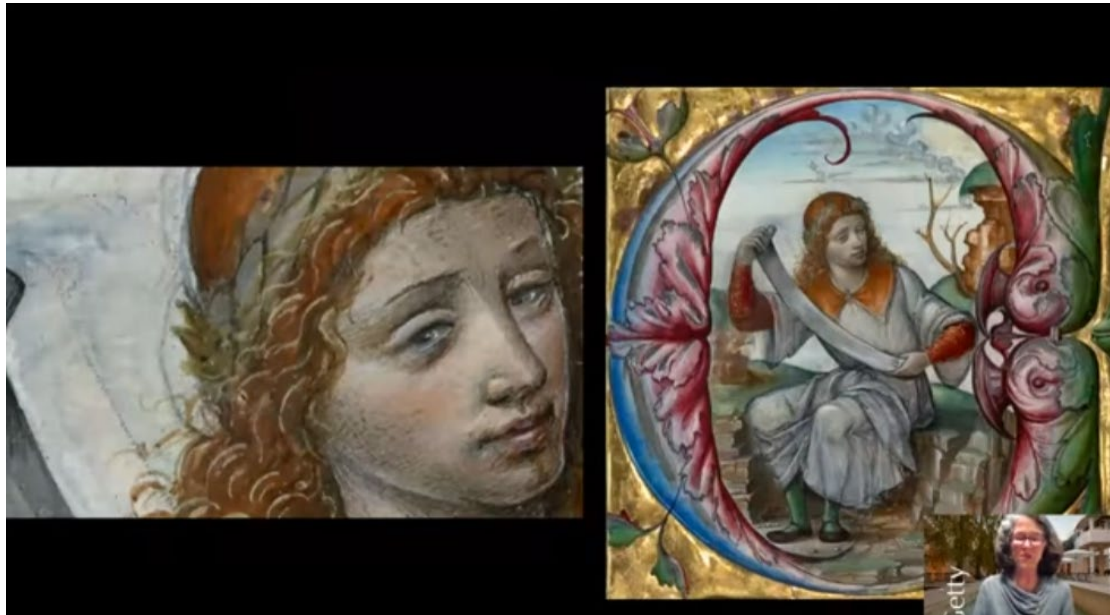


Figure 28. Screenshot of the video showing ‘Zoomify’. From Nany Turner - *Details close up: reconstituting and possessing manuscripts in the zoomify revolution*, by Kathryn Rudy, 2021, YouTube (https://www.youtube.com/watch?v=iv0fy_OD5gl). Copyright unknown.

This type focuses on the book itself (as an object) by enlarging one aspect of the book or exploring different ways to read the book besides just reading texts, thus enriching readers’ hands-on experience or evoking their emotions and thoughts.

Design started from or centered on books

The third type includes three examples. The first case is called "Your Life Confusion, the Ancients Understand," with a creative H5 (commonly used synonymously with HTML 5, which is simply another way to reference a mobile version of websites opened in a mobile browser. For example, common use cases of H5 pages include Questionnaires, Mini-games, Polling, and RSVP (*What Is H5 in China, and Do You Need It? How Chinafy Works With H5*, n.d.)) work jointly launched by Beijing News and ByteDance Public Welfare. The core design is that various aspects of life confusion, such as obsessiveness and anxiety, are displayed, which resonates with users and brings them into the scene. Then, the answers to ancient sages are displayed, and personalized posters on this topic are generated (Figure 29). Finally, users are guided to pay attention to an online reading platform related to ancient books (Your life

confusion, the ancients understand, n.d.). This design builds a connection between contemporary and ancient people by proposing some common topics, thus evoking people to think about the topic and go deeper into the ancient book.

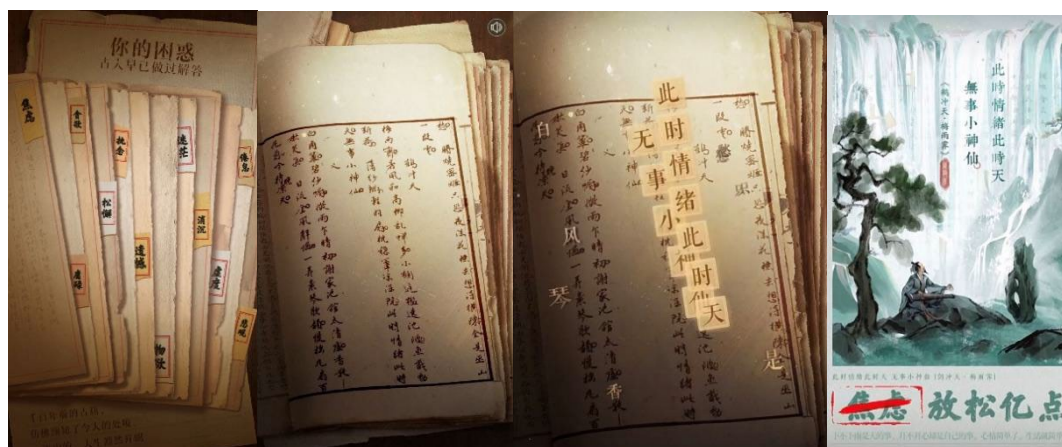


Figure 29. The interfaces and poster of "Your Life Confusion, the Ancients Understand" From "Your Life Confusion, the Ancients Understand".

Beijing

news

(<https://mp.weixin.qq.com/s?biz=MzU2MzA2ODk3NW==&mid=2247874859&idx=1&sn=69ae6f4e71e60a789cdd6373a72d8827&chksm=fc509075cb271963c53d85557163ce58cc69eb31f278c29342a8ad3cce7b211f427c868c9104&scene=27>)

The second case is an online toolkit called 'Start with a Book' (Figure 30). It connects carefully chosen fiction and nonfiction books with writing skills, hands-on activities, and other active learning opportunities. For example, when users explore the topic of 'Birds and Animals,' they are first recommended great fiction and nonfiction books. They are then guided to conduct hands-on activities like DIY birdhouses and animal home hikes. Besides, related kids-friendly websites and podcasts on this topic can also be accessed. Writing skills are also cultivated by guiding kids to write something based on a specific topic. (*Explore Topics*, 2024). This example started from a book, but exploring the topics in the book in various ways skips outside the book itself and invites children to learn knowledge from practice.

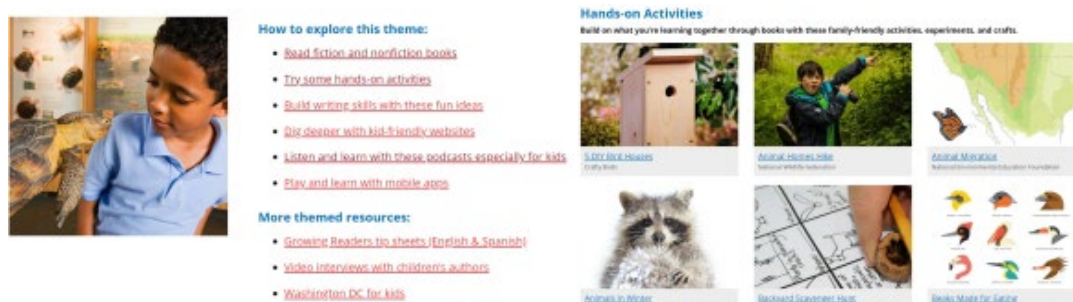


Figure 30. The website 'Start with a Book'. From *Explore Topics*, Start With A Book (<https://www.startwithabook.org/summer-reading-learning>) Copyright 2024 by WETA Washington, D.C.

The third example is part of the Montenegro Pavilion at Expo 2020 Dubai, designed by Simmetrico, which offers an immersive experience celebrating the country's rich natural resources. As is shown in Figure 31, the forest is rich in interactive installations that let visitors actively disclose information on different aspects of the country, from

its natural resources and their protection to its touristic offering and investment opportunities (*MONTENEGRO PAVILION* - *Simmetrico*, 2022). This is not a design about books but more about presenting information. I think it is a good design because it causes curiosity in visitors at first, and through interaction in an immersive context, visitors are informed of new things. Although the information is from different perspectives, due to the complete and immersive context building, presenting as a forest here, separate information forms a good story.



Figure 31. An interactive installation in *MONTENEGRO PAVILION*. From *MONTENEGRO PAVILION EXPO 2020 DUBAI*, SIMMETRICO (<https://www.simmetrico.it/project/montenegro-pavilion/>)

This type is not just focused on books but uses books as a bridge to the context behind them.

Materiality and interaction traces in medieval manuscripts

Unlike previous modern examples, the following ways of experiencing are from people in the Middle Ages. According to Rudy (2023), wax stains can be formed because readers handle books in the vicinity of lighted candles (Figure 32). It can also be formed on purpose. In some cases, the monk reading the collation may have signaled where the next day's reading was to begin by depositing a ball of soft wax in the margin and then scraping the wax off when he next progressed through the reading. In other

words, the blobs of wax functioned like temporary place markers. This phenomenon is difficult to detect since monks scrape the wax off after use, and the residue is nearly invisible in traditional photography.



Figure 32. Folio of Augustine's commentary on Psalms from Reading Abbey, with wax stains, photographed in raking light. Oxford, Bodleian Library, Ms. Bodl. 241, fol. 33v

Another behavior during reading is kissing books. People in authority performed this technique according to the types of books and places within them (as when priests kissed missals). Users often kiss books. Moisture from the mouth could deform the parchment, weaken it, and wrinkle it. Parchment may become tacky so that it adheres to whatever surface touches it. This could result in paint transfer onto the facing page. Furthermore, paint that has been moistened through kissing can become smeared or streaky. Another by-product of kissing is the inadvertent application of facial oils to the parchment, which can cause parchment to become darkened, shiny, or translucent.

Touching a mark, such as text, decoration, or image, is also common. Although a single event of touching may not register on the surface, repeated acts will dislodge the ink, paint, or gold while depositing dirt and oil so that its cumulative effects register a reader's presence in the book. Those touching it could reach into the book lying open on a lectern; they could have their eyes on a page other than the one they were touching, or they could touch a book that was proffered to them. These situations will result in different patterns of wear. Paint loss that is neat and localized or with an indistinct edge can happen depending on whether it is an individual or many people touching it. Such touching behavior in a group mostly involves publicly proclaiming group membership and physically declaring one's allegiance, which often happens in

a public setting.

Erasing and rubbing out with a finger also happened, expressing one's moral stance towards it, which is mostly directed at torturers, devils, and other antagonists, whose faces and heads are particularly destroyed. In this way, readers channel their anger and hatred.

Another behavior that I found surprising is sewing curtains to the page. In the interiors of their books, owners sewed curtains over a word, an image, or an entire page. Medieval users primarily sewed in curtains to protect metallic pigment, using silk as interleaving material, but also to cover an image. Unveiling the illumination would create a ceremonial moment of revelation. Veiling temporarily hides a specific book area, drawing attention to it. Unveiling ritualizes a gesture that parallels reading. The initial sewing and subsequent manipulation caused wear, each leaving distinct traces: rows of needle holes from the sewing, even if the curtain was removed later. There are also other kinds of sewing. Users sewed protrusions, such as parchment knots, leather, or textile or parchment tabs, to the fore-edge of a book to create a permanent bookmark. These additions indicate a deliberate use of touch to navigate through the pages. Parchment makers also repaired holes in the parchment by suturing them. One scribe sutured the hole creatively by extending the stitches to form a triangular face that appears to be sewn onto the page (Figure 33).



Figure 33. Margin in a missal with a repair, from a missal from the Knights Hospitallers, Southern Germany, 1469. 's-Heerenberg, The Netherlands, Collection Dr. J. H. van Heek, Huis Bergh Foundation, Ms. 15. Image © The Huis Bergh Foundation, CC BY 4.0

Except for touching a mark and kissing, especially for religious books, reading with the

assistance of a candle and sewing are not common today, but they can be quite interesting and nostalgic ways to introduce the context of old age to people nowadays. The link between their behaviors and emotions makes the books and the stories behind them more vivid.

Conclusion

These examples cover experiences based on the books themselves or extended experiences from the book, from different perspectives and times, including contemporary and middle age. With different technologies used, the implementation of further design has a better reference. Besides, although examples in the Middle Ages are quite different from modern examples, the contrast offers novelty and inspiration for further design. Overall speaking, the various examples provide reference and inspiration for Research Question Three.

2.3.2. User study

The above examples are mostly in museums, libraries, or exhibitions. Most of them stay in a digital context or use different media or technologies. However, how people really interact with original old books remains to be discovered. Therefore, I conducted a user study on how people experience old books without any context design or digital assistance with the help of an RPL curator. I will show the whole process of the user study, from finding basic theory support to the result.

Theory support

Making people experience old books raises the question of what experience means here, how to guide people to experience materials they have never experienced before, and how to analyze experience. According to Schmitt (1999), experiences are divided into five types: sensory experiences (SENSE): affective experiences (FEEL); creative cognitive experiences (THINK): physical experiences, behaviors, and lifestyles (Act); and social-identity experiences that result from relating to a reference group or culture (RELATE). Although this literature is grounded in marketing, it still makes sense since the relationship between museums/libraries and visitors is also a kind of market to customers. From the perspective of heritage, experience is a process determined by the cognitive and emotional connections between the individual and the visited place, where the meaning of a monument or historical site is very personal (Bender et al., 2021). Also, at the heritage site, experience input includes visitors' perceptions, expectations, and motivations (Bender, 2020). According to Schorch (2014), the experience of heritage is a process where people's feelings and emotions are enmeshed with their thoughts.

It is shown that the five-type-experience proposed is reasonable. There are links between emotions (Feel) and cognitions (Think), which should be explored in the study. Also, visitors' expectations matter. In the paper by Camere and Karana (2018), a toolkit, Ma2E4, was designed for the experiential characterization of materials. The toolkit aims to reveal new insights and facets of how materials can be manipulated to elicit

optimistic and novel user experiences. It consists of four experiential levels (Giaccardi & Karana, 2015):

- ✧ Sensorial level: Our first encounter with materials occurs at a sensorial level through touch, vision, smell, sound, and taste.
- ✧ Interpretive level: The interpretive level concerns how we interpret and judge materials, that is, the situated meanings we ascribe to them after the initial sensorial encounter.
- ✧ Affective level: Emotions often arise unconsciously and are triggered by our inner thoughts, beliefs, and attitudes.
- ✧ Performative level: This level is the users' response to the material. Sensorial perceptions, ascribed meanings, and emotions can affect users' performance.

The toolkit includes an experiential characterization map, which is shown in Figure 34 (with the large version of the image shown in Appendix C), and two vocabulary books (Figure 35) related to the Affective and Interpretive levels. For the interpretive level, there is also an interpretive picture set (Figure 36) with pictures related to each interpretive quality. The map can be folded into a small one (Figure 37). Users can fill in the map with words and pictures from the vocabulary books and the picture sets. After using the toolkit, the researcher created a canvas to build relations between these levels (Figure 38).

The toolkit shares a similar theory proposed by Schmitt (1999). Also, Bender et al. (2021), Schorch (2014), and Bender (2020) all mentioned the importance of visitors' cognition and emotions, which are also covered in the Affective and Interpretive level of the Ma2E4 toolkit. Therefore, the Ma2E4 toolkit is a complete and systematic way to guide the experience of materials. It is considered a toolkit to assist with the user study.



Figure 34. The experiential characterization map



Figure 35. Vocabulary books



Figure 36. The interpretive picture sets



Figure 37. The folded map

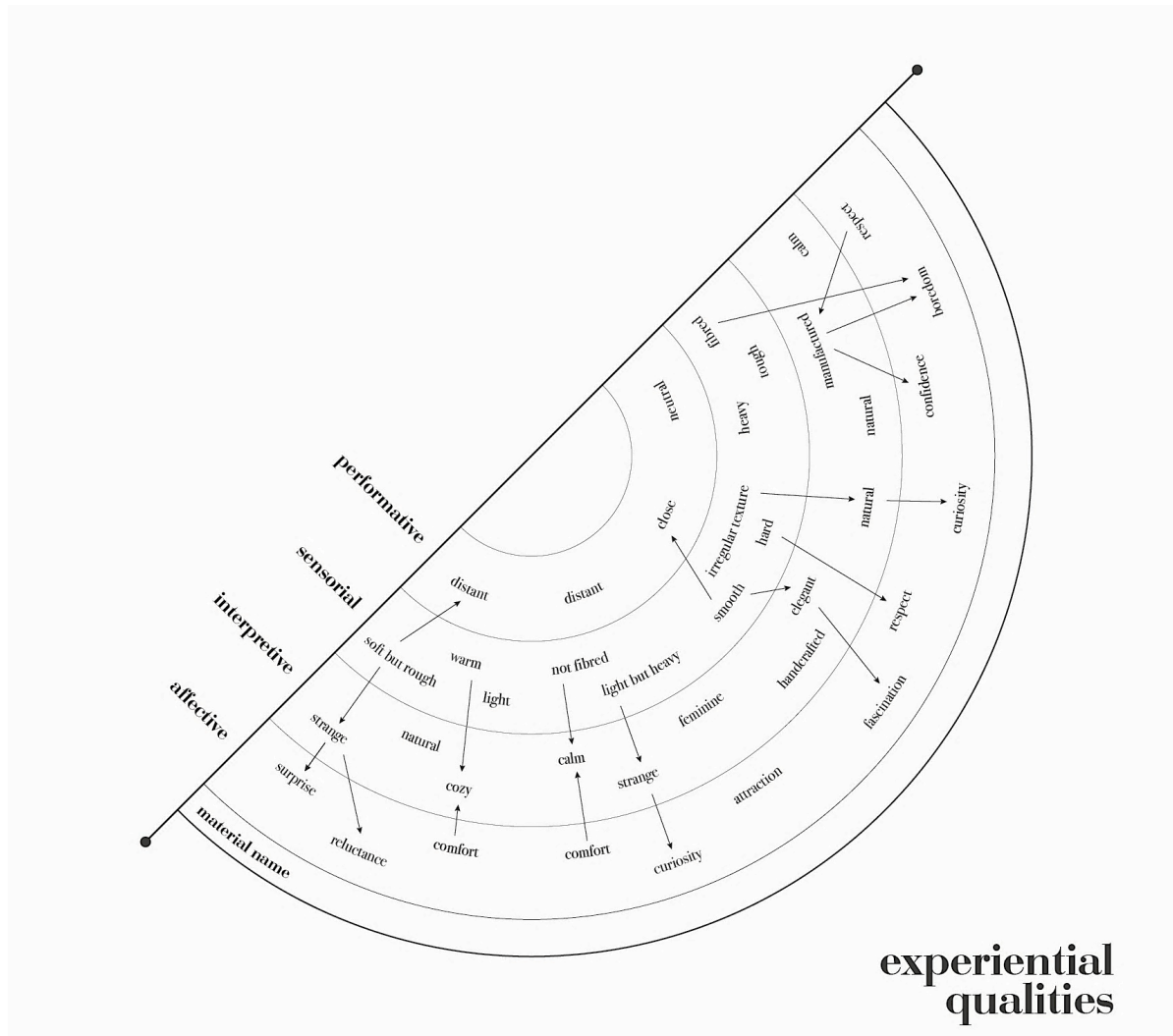


Figure 38. The canvas designed to map the materials' experiential qualities at the four levels of materials experience and their interrelationships (Figure 34-38. From *Foundations of Materials Experience*, by Giaccardi, E., & Karana, E., 2015. Copyright by Giaccardi, E., & Karana, E.)

However, because the toolkit has never been applied to a heritage field, I discussed with my supervisor to modify some elements to fit my project better. The following are what we changed:

1. Leave out the interpretative picture sets because it is limited, and some pictures are not relevant in the heritage field
2. Add a relation map for participants to fill in. The initial canvas incorporated research interpretations, which may not align with participants' thoughts.
3. Add a questionnaire including questions of 'expectation before the experience', aiming to verify whether the experience met the expectations and provide inspiration for design work; 'what else do you want to learn from today's experience', 'what they like and miss about the experience'; and 'other feedback'.
4. Modify some specific words in the map and the vocabulary books, for example, the word in performance 'weighing', two sensory elements 'brittle and ductile', and 'detailed and plain'.

The modified toolkit can be seen in Figure 39.

experiential characterization map

start

material //
participant //
age //
nationality //
date //

1. performative level, "what does the book makes you do?"

How do you respect the book?
☐ moving body around ☐ moving head around ☐ reading ☐ listening (what does it sound like?.....)
☐ showing to others ☐ pointing at... ☐ zooming in ☐ smelling (what does it smell like?.....) ☐

How do you touch the book?
☐ pressing ☐ caressing ☐ rubbing ☐ fiddling ☐ grazing
☐ pounding ☐ compressing ☐ pushing ☐ poking ☐

How do you move the book?
☐ folding ☐ flexing ☐ lifting ☐ picking ☐ weighing
☐ squeezing ☐ bending ☐ sliding ☐

How do you hold the book?
☐ holding ☐ grasping ☐ seizing ☐ clutching ☐ grabbing ☐

2. sensory level, "How would you describe the book?"
 It's about your general feeling of the book. If you have very different senses for different parts of the book, you can note them down right.

texture: 2 -1 0 1 2
 hard ☐ soft ☐
 smooth ☐ rough ☐
 cool ☐ warm ☐
 not elastic ☐ elastic ☐
 opaque ☐ transparent ☐
 bulky ☐ slim ☐
 light ☐ heavy ☐
 regular texture ☐ irregular texture ☐
 blank ☐ not blank ☐
 dull ☐ shiny ☐

notes/ further comments

If you have the action of caressing/performing the book, what does it sound like?

If you have the action of smelling the book, what does it smell like?

4. interpretive level, "what do you associate with the book? how would you describe it?"

book 1 meaning 1 meaning 2 book 2 meaning 1 meaning 2

3. effective level, "what emotions does the book elicit?"

intensity

unpleasant pleasant

5. final reflection, "why do you think the book is...? would you reflect your answers for other levels?"

what is the most pleasant quality of the book?

what is the most disturbing quality of the book?

what is the most unique quality of the book?

the map is adapted from Ma 2014 tool kit

Name: _____

**1. Imagine you enter a room with many old books from middle ages.
What is your expectation?**

2. What else do you want to learn from today's experience? (the experience here means experiencing the old books)

3. What did you like about the experience?

4. What did you miss about the experience?

5. Any other feedback?

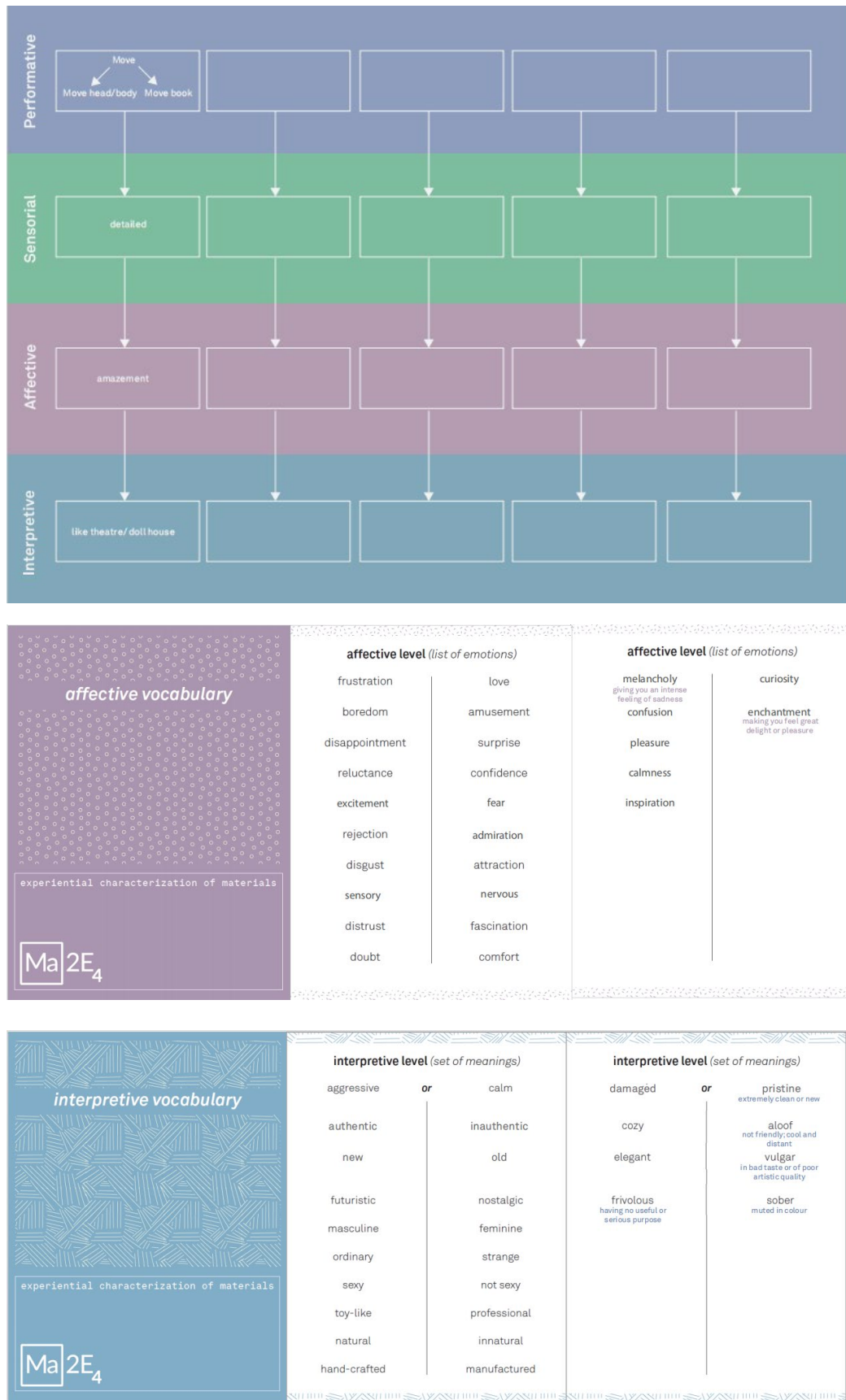


Figure 39. The modified toolkit

Based on Research question Three of my project: How do visitors currently engage with old collections from perspectives of both appearance and context? Two research questions for the user study were set:

- a. Can we characterize the material experience of cultural heritage artifacts using a toolkit?
- b. What is the influence of narrative on participant's material experience?

The first research question is asked because this toolkit was never applied to a heritage field. Unlike common materials, heritage is not just an object but also carries history and stories. I am curious about what kind of emotions and interpretations can be evoked with the help of this toolkit. The second research question is asked because the books provided for experience are written in Latin or Greek, which can only be accessible to the majority in appearance. Understanding the contents of the old books is necessary to confirm the project Research Question Three from two perspectives. Research Question Two in the user study also provides a comparative view. We then applied the between-subject method to the user study. Table 3 shows the setup with three sessions:

	Answer the question about their expectation for the experience	Fill in the map and relation map	Answer the leftover questions
Session 1: No extra information about the context or appearance was provided	"Imagine you enter a room with many old books from middle age, what is your expectation?"	√	√
Session 2: The curator offers extra narratives about material aspects (material source, fabrication, historical use, conservation)	"Imagine you enter a room with many old books from middle age and there is a person sitting to provide anything you want to know about the books, what is your expectation?"	√	√
Session 3: The curator provides extra narratives about the content/contextual aspects (writings of Erasmus, Erasmus as a person, historical context)	"Imagine you enter a room with many old books from middle age and there is a person sitting to provide anything you want to know about the books, what is your expectation?"	√	√

Table 3. Session arrangement for the user study

In all cases, participants answered the questions about expectations before the study. The expectation question varied because 'a person sitting there' functioned as a guide for knowing more--the materials and the context of the books, which aligns with the variable between the three groups, whether they get further information about the books. After answering the first question, everyone explores two books by passing them to the person on the left when they finish the first one. Then, they filled out the map, the relation map, and leftover questions in the questionnaire.

Preparation

The formal user study was planned to be conducted in RPL. First, participants were recruited both physically and online. The recruiting criteria included being fluent in English, having no prior knowledge about the original collections of the Erasmus, and expecting to find inspiration in the library.

I posted the recruiting flyer (Figure 40) in the faculty and RPL and asked visitors randomly on the ground floor of RPL whether they would like to join the session. My friends living in Rotterdam were also invited. Besides, I posted the invitation link on faculty WhatsApp, Facebook Rotterdam group, and Reddit Participant Recruitment Group. Finally, I recruited twelve participants, three males and nine females, aged 21 to 38. Each of them was provided with a 5-euro gift card for participation.



Figure 40. The flyer to recruit participants

Process

Three sessions were conducted, with four participants in the room next to the Erasmus Experience in RPL. Each session lasted around 1 hour. Everyone signed the consent form. During the sessions, I recorded the audio and took photos.

Four books were chosen for interaction. The uniqueness of each book varies from one book to another, which aims to provide different experiences for users. The first book (Figure 41) was chosen for its sewed binding. This is an Erasmus handbook on how to write letters. The second book (Figure 42) was chosen for its illustration in ink inside. It is a book paraphrasing another work by a scholar, Vala, who wrote about the Bible texts. Erasmus paraphrased his work to provide an introduction and much critique on the Catholic Church. The third book was chosen due to its reused cover material from other old books. This book contains different proverbs that can be used as study material for young scholars or young people to get an introduction to the ancient world. Because with that knowledge, they can build their knowledge system (Figure 43). The final book (Figure 44) was chosen for its luxury decoration. In this book, Erasmus also picked interesting sayings and proverbs from different Roman and Greek sources.



Figure 41. The first book on how to write letters



Figure 42. The second book on paraphrasing another writer's works



Figure 43. The third book on



Figure 44. The final book on interesting sayings

The experience was on the cushions, which served as protection (Figure 45). The following (Figure 46-50) shows some pictures.



Figure 45. Using cushions as protection

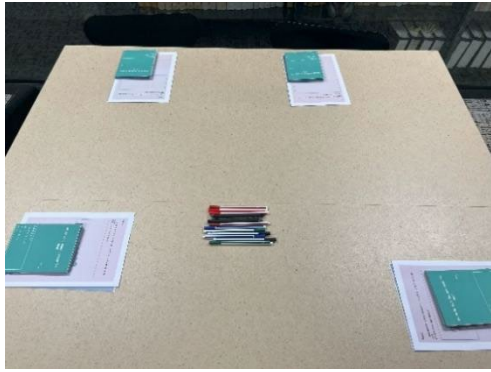


Figure 46. Preparation picture



Figure 47. The curator is talking



Figure 48. The experience process



Figure 49. Filling in the booklet



Figure 50. Filling in the relation map

Result

Participants' answers were collected and moved to the Miro board. The answers were coded and clustered. (The coding process can be seen in Appendix D). At the interpretive level, I found some specific pictures online based on participants' text explanations and rough drawings. For example, in Figure 51, the notes are what participants say, and the pictures are what I found online.

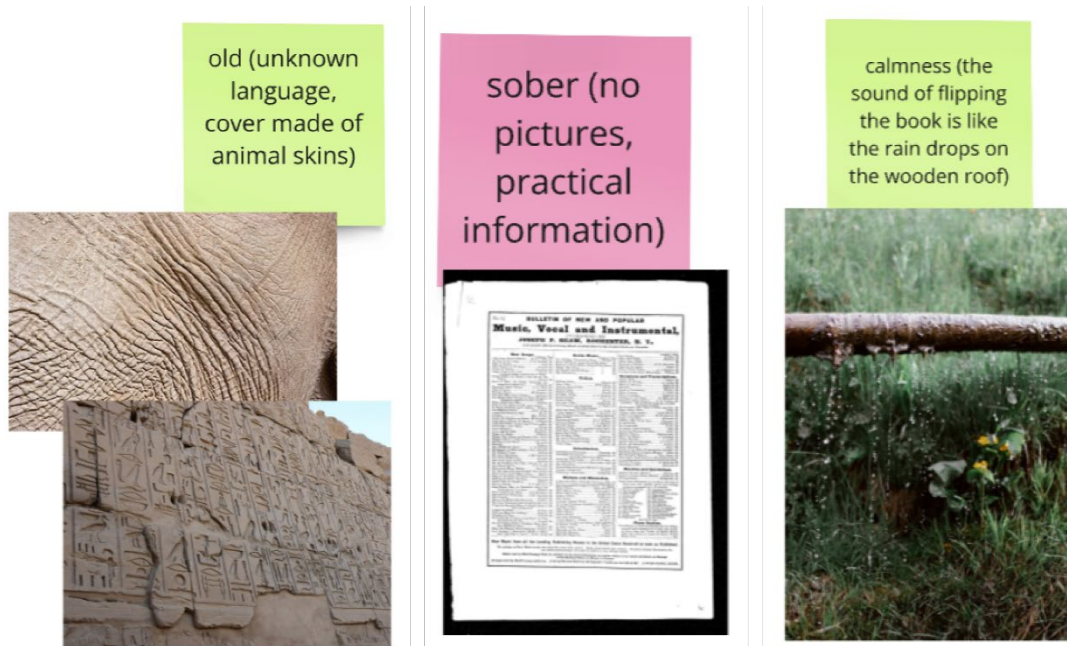


Figure 51. Pictures found online according to explanations

- The second and third groups were similar in terms of the first question about their expectations beforehand, while the first one varied.

Group 1 had the following expectations:

- 1) wooden and warm atmosphere
- 2) not touching them since being afraid to damage them
- 3) learning more about the structure design of the books
- 4) learning more about the contents, notes, and the contexts at that time (have a dialogue with the past)
- 5) learning about conservation
- 6) feeling and smelling (multisensory)

Group 2 & 3:

- 1) The person talking more about the materials and contexts of the books
- 2) The person guiding me to explore

It was concluded that people tend to ask for knowledge/ help/ guidance when they see a guide; their expectations are more about what they can get from the person. If they do not see a guide, they tend to explore the books themselves and have expectations about the environment.

- During my observation when they filled the map, their reactions did not differ from each other:

- 1) Being very careful when experiencing
- 2) Experiencing from different perspectives
- 3) Keep experiencing when filling the booklet
- 4) Being amazed by the beautiful appearance

The experience was engaging, careful, and with surprise for them.

➤ Some exciting reactions also come from sensory levels, which did not differ much in groups.

- 1) the crunchy sound
- 2) old wood smell

However, for group 2, the group receiving narratives got different reactions.

- 1) Being surprised at the roughness of the paper causing irregular texture
- 2) Heavy and hard

It was noted that participants also paid attention to the sound and smell of the book and the group that had learned knowledge before their experience would care more about the material feeling.

➤ The affective level

All the participants' affections were mapped, and Figure 52 showed the most mentioned affections. These affections didn't differ much between groups and books. The only difference is that participants found the red book with beautiful design more enchanting and the others without decorations dull. This part was looked at together with the relation map to understand the reasons behind the affections.

It was seen that being nervous and fearful, meaning being afraid to damage books here, was unpleasant affections with a lower intensity. In the opposite position, where high intensity and pleasant affections lay, curiosity was the most significant proportion, mainly caused by two reasons: the tough and somewhat irregular texture raised curiosity about the materials and stories behind them; the extremely plain or decorative appearance made participants wonder what they wrote about.

Thus, being nervous/ fearful and curious can be two affections to explore further by enlarging or minimizing them.

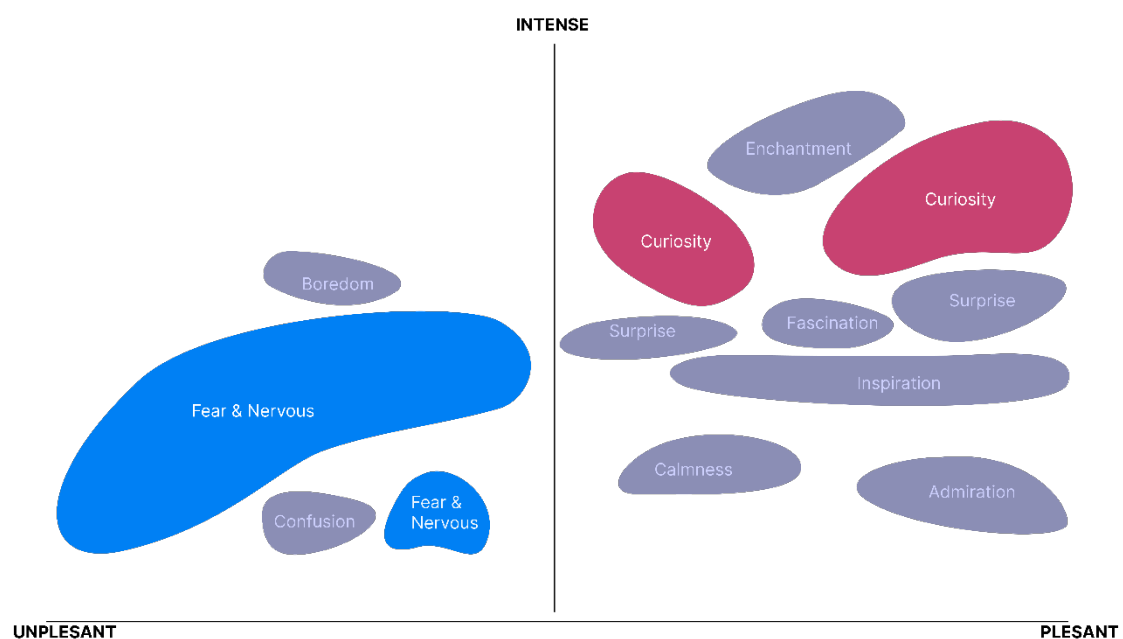


Figure 52. The most mentioned affections

➤ The interpretive level

Being hand-crafted, nostalgic, and damaged were the three most frequent interpretations here. However, interpretations of the same word varied among participants. For example, the participant from the first group asked what happened to the damaged book, while the interpretation from one person in the third group was 'being widely used by people'. The interpretation differed mainly because the former knew nothing about the book while the latter knew the contexts of the book.

For 'being nostalgic', they mentioned memory lane, grandma's bookshelf, fairytale books, and a classic old-fashioned icon, which differed significantly between individuals. For 'being handcrafted,' the interpretations were the same, that was, a personal and self-made journal.

These three interpretations are concrete elements to explore in further design.

➤ Left-over questions in questionnaires

1) Uniqueness:

All three groups mentioned 'being different from modern books', and 'beautiful decorations'. In contrast, the group who knew the material information gave more detailed explanations like 'annotations,' 'the faded color', and 'the traces of use.' The group that knew the context information mentioned 'everyday reference for current scholars' and started to think on a deeper level about the current use of the books.

2) Disturbing points

Being fragile and afraid to damage books is common.

3) Pleasant points

The focus was mostly on appearance aspects like the decoration, the binding, and the traces of use. At the same time, one participant from the third group started to consider the books' usefulness for current readers.

4) What else participants wanted to learn

It showed that if the group was not provided with some information, they tended to ask for more knowledge about what they did not know. In the third group, someone also mentioned the desire to know how other people explored ideas in Erasmus's time, who wanted to explore the contexts at a deeper level.

5) What they liked

The main four points they liked were the knowledgeable librarian, the hands-on experience, the personal notes and decorations in the books, and their interpretations.

6) What they missed

The time was limited, and the experiencing moment was temporary. The dialogues with others were also lacking.

Conclusion

The user study answered the two research questions. With many outputs and valuable insights, the toolkit proved helpful in a heritage context by using old books as material to explore. Also, some differences in perspectives and deeper levels of answers in the third group showed the influence of the context on material experience. Moreover, some insights were concluded.

To encourage more self-exploration for visitors, not having a knowledgeable person accompany them at first or providing basic guidelines is more helpful. Keeping the experience hands-on or partially hands-on, including communication with others, should be considered. It is also necessary to make participants curious and ask questions freely, which can be answered by playing games, self-exploration, communication with peers, and help from the volunteers at the later stages. It is essential to make them ask and think from a lower level to a deeper level.

Visitors liked personalized experiences and their own interpretations, and they hoped for a longer experience because it was important for them to be able to produce something themselves and take something with them for a longer time, just like the book 'Bucai' (*Bucai*, n.d.), which users co-created and customized.

For further design, affections of being nervous/ fearful and curious and interpretations of hand-crafted, nostalgic, and damaged can be used as a start.

2.3.3. Key takeaway

The examples come from contemporary books/ museums/ libraries and medieval books, providing insights into how visitors physically and digitally engage with old collections. These examples focus on the book itself and show how the experience design introduces users to the context more deeply and evokes their emotions and thoughts. The user study successfully addressed vital research questions and provided an overview of how emotions can be evoked through particular behaviors or senses. Sharing the same experience as medieval ancient books, the performance of people in the Middle Ages differs from that of people in current days, the contrast with which is interesting to explore. Also, encouraging emotions, such as curiosity about the books' materials and contexts, nervousness about damaging the books, and some personal interpretations, are crucial for future design.

2.4. Design requirements

Some design requirements were concluded based on the answers to the three research questions. Meeting all of them simultaneously is impossible, but combining and integrating some is hoped to be possible, and more opportunities can be found here.

✧ Library

- Encourage visitors to do critical thinking (Compulsory)
- Attract more visitors to the Experience (Compulsory)
- Visitors get access to the old collections/ experience them in a new way (Compulsory)

✧ Library visitors

- Need the library to be inspirational so that they can get to know new activities and knowledge (Compulsory)
- Have the possibility of transforming from the person looking for inspiration to the person giving inspiration to the library or other visitors

✧ Critical thinking

✧ Book-based experience (choose one or more from the following)

- Make visitors share and discuss feelings or thoughts with others
- Create something personalized out of the Experience that visitors can take home
- Evoke a particular affection: 'nervous/ fearful' or 'curious'
- Evoke an interpretation of hand-crafted or nostalgic or damaged
- Can make visitors ask questions freely and get responses when visitors meet something they do not know
- Hands-on experience that visitors can touch things or try things they never tried before in a physical way
- Engaging and immersive
- Introduce and inspire visitors to learn about the context behind the story/ contents of the book

3. DEFINE

3.1. Ideation

I wrote down all the requirements on one board (Figure 53). For each of them, I came up with some brainstorming, including nouns, adjectives, and verbs. For example, for the requirement ‘invoking the affection of being nervous or fearful’, I brainstormed by asking the question, ‘If you feel nervous, what will you do?’ My answer can be ‘scream,’ ‘cry,’ and ‘be afraid’ or ‘want to escape.’ I also asked, ‘What things can make you nervous?’ My answer can be ‘breaking something,’ ‘damaging something’... For each requirement, I asked about the reasons for the requirement and the consequences that the requirement can cause, which can help me to come up with divergent ideas.

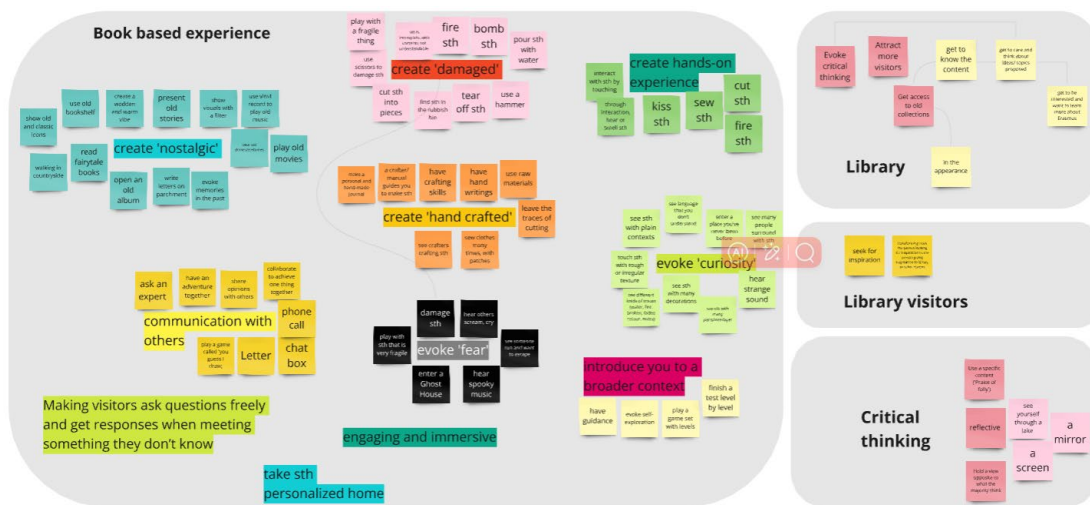


Figure 53. Brainstorming on design requirements

Then I tried to find if some can be connected and combined to achieve a common idea. I came up with four concepts. All the concepts share the common requirement: ‘Use a specific work or story centered in critical thinking to evoke visitors’. ‘Praise of Folly’ is chosen as the story since in the ‘Key takeaway’ part in 2.2.2, this book is seen as the most suitable one among all the showcases. The core word in the book is ‘Folly’, the goddess ‘Folly’. She has many ‘friends,’ the most apparent characteristics of whom

can be concluded as six types:

1. Vanity and pride
2. Flattery and hypocrisy
3. Oblivion and superstition
4. Laziness
5. Hedonism
6. Madness

✧ Concept 1: Break your mirror self

The theme of the first concept (Figure 54) is to 'Break your mirror self' by breaking a mirror using a hammer. The mirror is used here as a metaphor to reflect on yourself. The requirements I intended to meet are shown in Figure 55. All of these concepts meet the requirements from the perspective of library goals and visitors, so the figures only show variations in two other aspects.

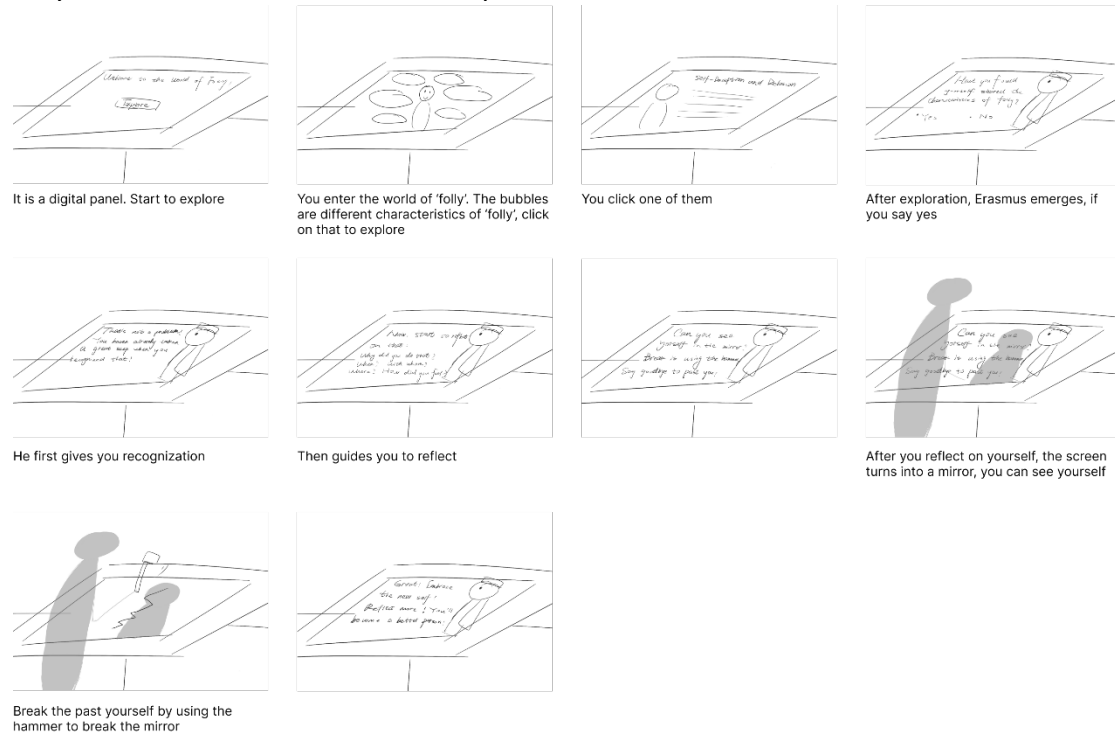


Figure 54. The first concept 'Break your mirror self'

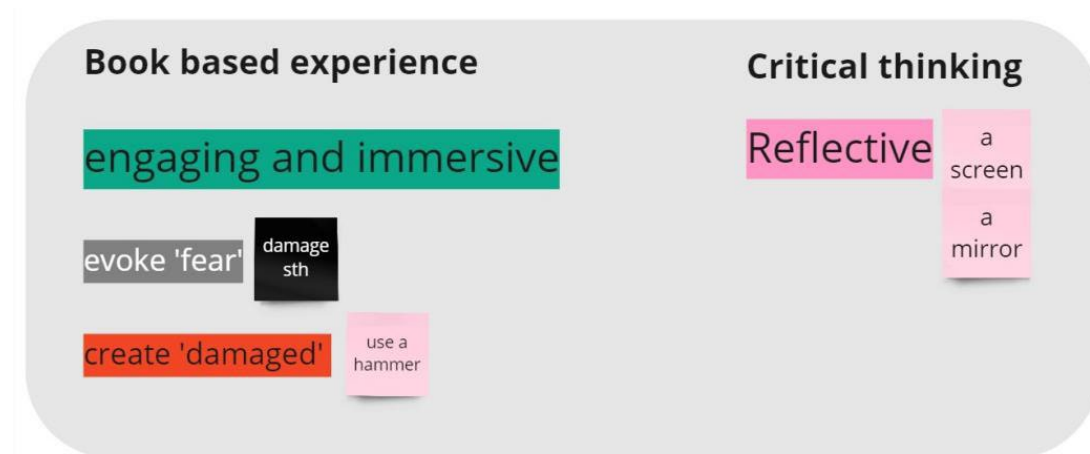


Figure 55. The design requirements for 'Break your mirror self'

✧ Concept 2: Chat with the Folly

For the second concept (Figure 56), the theme is 'Chat with the Folly' by asking questions in an online chat box. The contrast between folly and wise man and the specific story the folly mentions help evoke self-reflection. Figure 57 shows the requirements met.

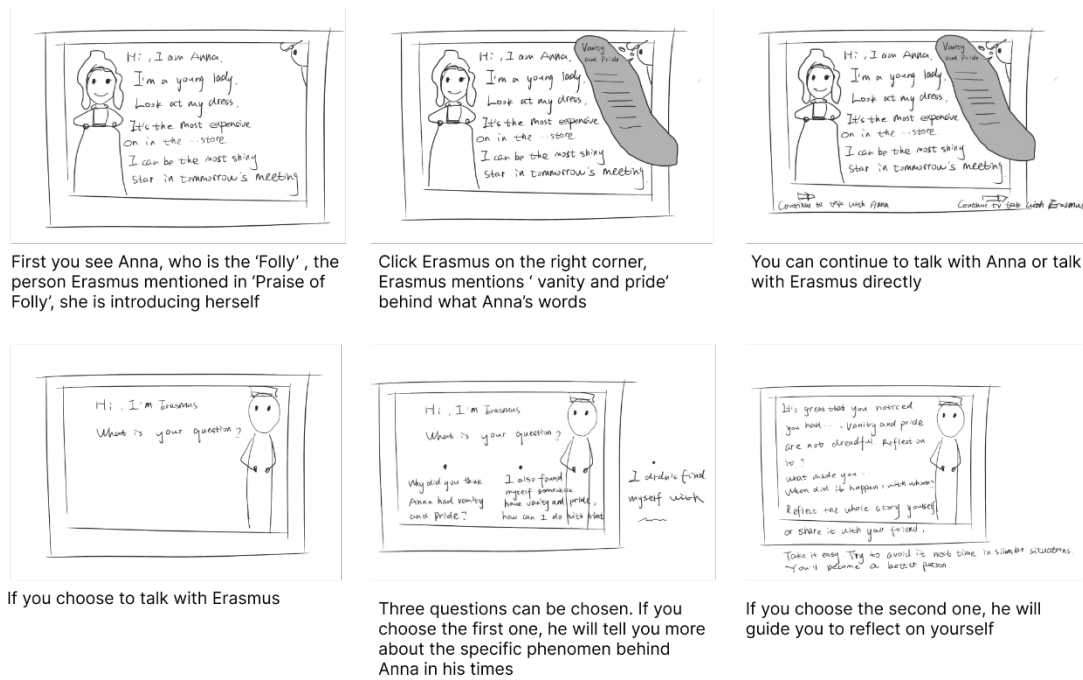


Figure 56. The second concept 'Chat with the Folly'

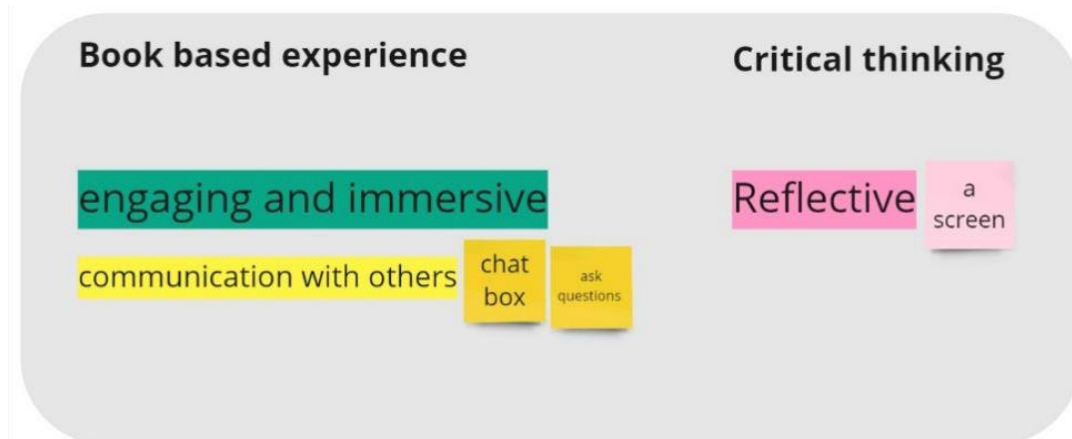


Figure 57. The design requirements for 'Chat with Folly'

✧ Concept 3: Letter to your past self

In the third concept (Figure 58), the theme is 'Letter to your past self' by writing letters. Through recalling your memories and writing letters to past you, this concept evokes a nostalgic vibe. Also, by replying to letters to others, you can act as a person who inspires others, which is different from the other concepts. The requirements are shown in Figure 59.



Figure 58. The third concept 'Letter to your past self'

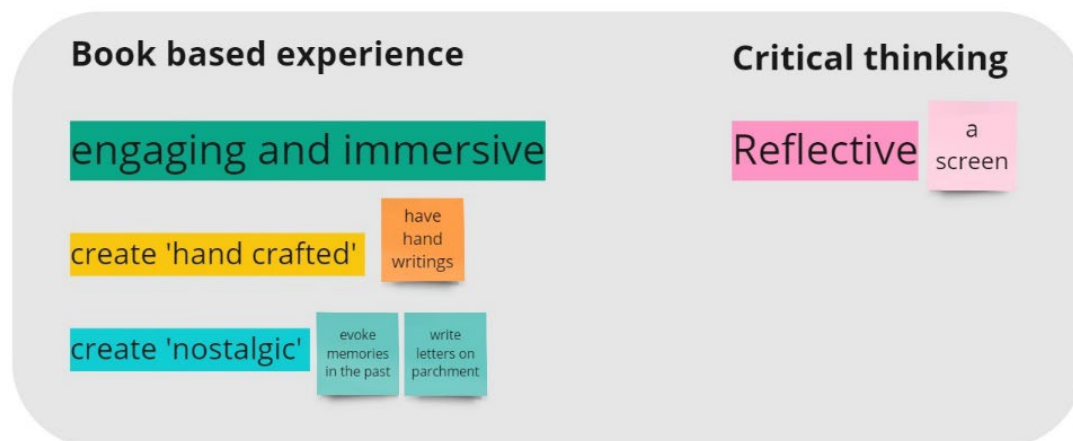


Figure 59. The design requirements for 'Letter to your past self'

✧ Concept 4: Poem of your past self

The final concept (Figure 60) is 'Poem of your past self'. It uses the mirror as a reflection way and creates something customized. Through generating a praise of folly poem for you, it evokes you to reflect on yourself in a humorous and fun way. Also, the costumes provided by the selfie machine bring you to the middle age and invoke your interest in that. Figure 61 shows the requirements.



Figure 60. The final concept 'Poem of your past self'

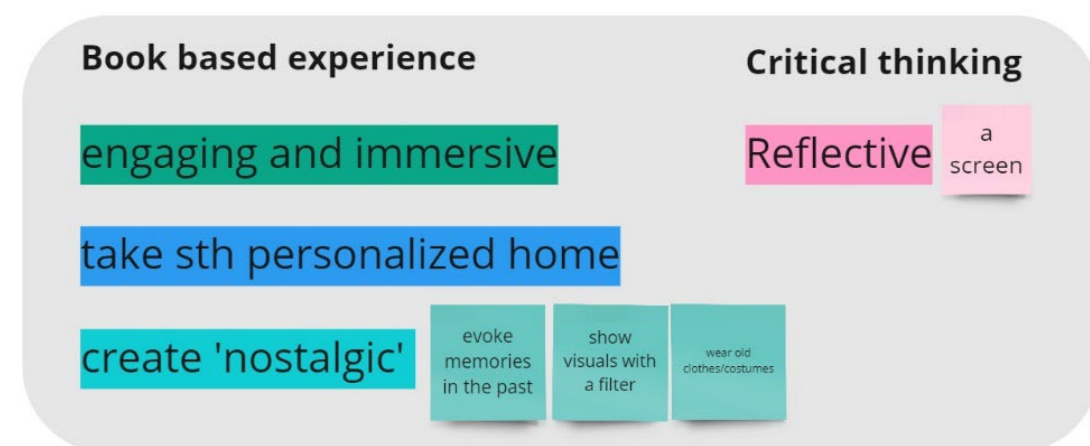


Figure 61. The design requirements for 'Poem of your past self'

After coming up with all these concepts, I found the content connection with Erasmus became a focus, and I put more effort into the content presented to the audience instead of the physical connection. I noticed that in terms of the requirement 'Visitors

get access to the old collections/ experience them in a new way', the concepts lack physical consideration, but to offer more customization, digital interaction works better. Also, since these concepts are the very first ideas coming out of the requirements mapping, I would like first to know which one users like the best so that I can choose one to elaborate on, and then I can improve it in the later stage.

3.2. Storyboard testing

I presented all the storyboards to eight people, including design students and my friends, to ask for their preferences and feedback. I asked them to choose their favorite two and explain the reasons. The top two are 'Break your mirror self' concept (4 votes) and the 'Poem of your past self' concept (8 votes).

What they liked about the 'Poem of your past self' concept lay in the following points:

1. Can take something home
2. During the experience, I can recall a specific thing,
3. Feel engaging, interactive and feel that the experience is designed for me
4. The existence of the mirror makes me call back to the experience and reflect more
5. Rich in interaction and content
6. I like the humor and satire elements. That is fun.
7. Show interest in Erasmus's works

Their further expectations for the 'Poem of your past self' concept:

1. Characteristics of folly differ a lot from each other
2. The humor being enlarged
3. More integrated experience since the book and the machine look unconnected

3.3. Concept

I started making the first draft prototype of the interface of the final concept on Figma based on the 'Poem of your past self' concept (Figure 62).

3.3.1. The design vision

The design vision here is to use the contents of 'Praise of Folly' to encourage people to reflect on themselves.

3.3.2. Content descriptions

For each type of folly, I come up with a specific question to ask audience, which acting to guide audience to reflect on this topic, at the same time, it can be done in the selfie machine without showing an extra book of folly, which is more integrated. The

questions to each type of folly are as followed:

1. Vanity and pride: "Have you ever found yourself doing something primarily to impress others or to boost your own sense of importance?"
2. Flattery and hypocrisy: "Have you ever praised someone insincerely or acted differently around them to gain their favor or avoid conflict?"
3. Oblivion and superstition: "Have you ever relied on superstitions instead of logic to influence an outcome or avoid bad luck?"
4. Laziness: "Have you ever avoided a task or procrastinated even though you knew it was important or time-sensitive?"
5. Hedonism: "Have you ever chosen immediate pleasure over your responsibilities or goals?"
6. Madness: "Have you ever acted impulsively or gone to extremes in a situation, even when it seemed irrational?"

Also, I went back to read 'Praise of Folly' to see how Erasmus described different kinds of follies, 'she with the smiling countenance, that is ever and anon clapping her hands, is *Kolakia*, Flattery; she that looks as if she were half asleep is *Lethe*, Oblivion; she that sits leaning on both elbows with her hands clutched together is *Misoponia*, Laziness...'. (Erasmus, 1876) The expressions of different types of folly can be seen clearly, which I decided to apply to my design.

3.3.3. The interfaces

The experience can be seen in Figures 62-73. However, I only used two questions to make the prototypes, and the different combinations of the answers to each question will cause a different formation of folly. For example, 'Yes' for the first question and 'No' for the second question will cause the result in Figure 71. A 'Flattery and Hypocrisy Folly' is generated for you, with the expression smiling obsequiously and clapping hands. The face of the folly will be taken from the picture you take on the last step, and the expression will be added as a visual effect. If you do not like the outfit, you can click on the left closet to change (Figure 72). Another 'Oblivion and Superstition Folly' (Figure 73) can be generated through the answer 'No' for the first and 'Yes' for the second. Finally, you can print the poem and take it home. I did not apply the idea of using a mirror to make the poem stick to it since this experience is already engaging and complete, and adding the mirror looks needless.



Figure 62. Interface 1

Figure 63. Interface 2

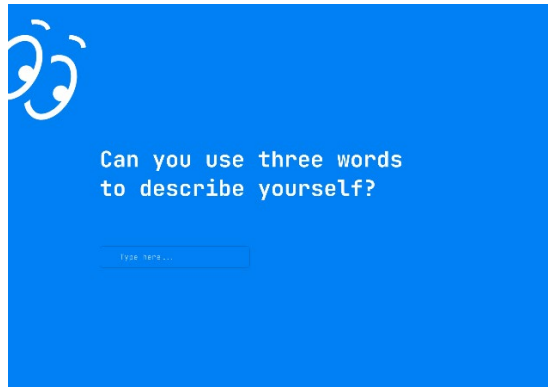


Figure 64. Interface 3

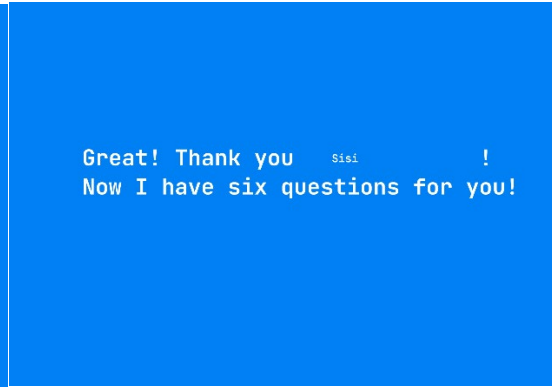


Figure 65. Interface 4

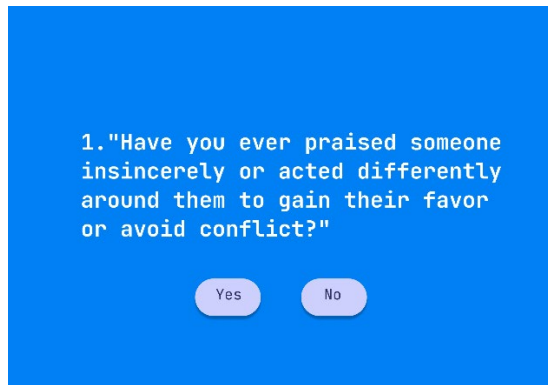


Figure 66. Interface 5

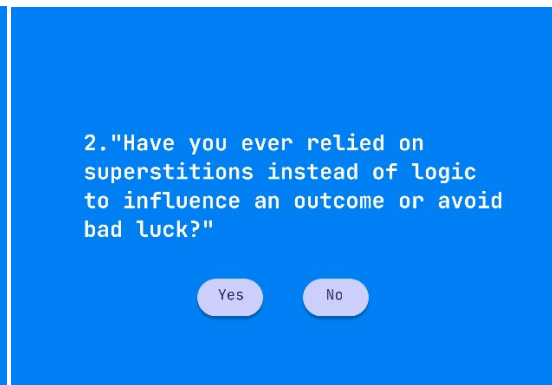


Figure 67. Interface 6



Figure 68. Interface 7

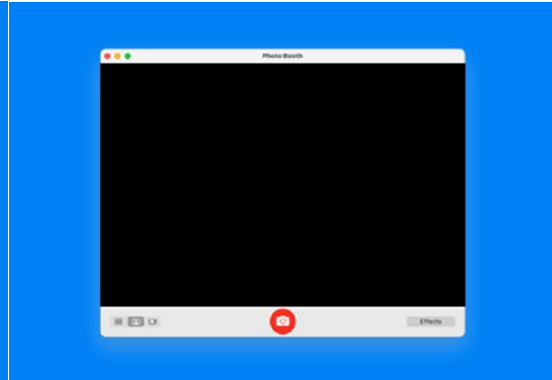


Figure 69. Interface 8

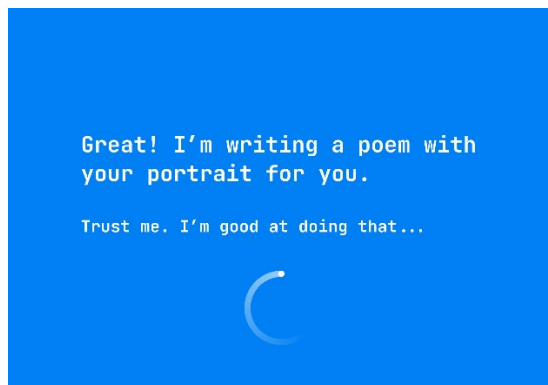


Figure 70. Interface 9

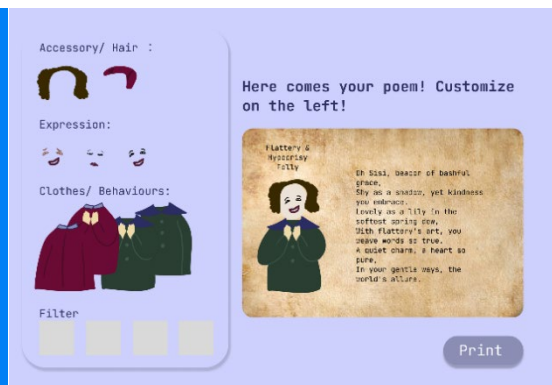


Figure 71. Interface 10-1

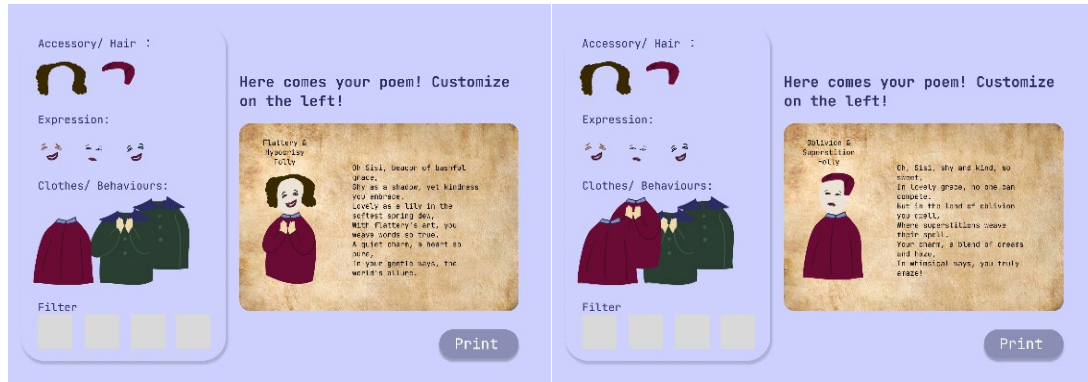


Figure 72. Interface 10-2

Figure 73. Interface 10-3

Because the final prototype will ask six questions, there will be more folly types. However, I will not put much effort into determining exactly what questions cause what type because the focus is to make people reflect when asking questions and provide something personalized (the poem with the changeable costume).

3.4. First Prototype testing

I asked four people, including design students and my friends, to test the prototype. I collected feedback by asking them to discuss their general feelings, fill in the feedback form (Figure 74), and elaborate on each point. I created the feedback form according to the requirements to be reached. The requirements related to each question can be seen in Figure 75.

1. This experience makes me reflect on myself/ think critically.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

2. This experience evokes my interest in Erasmus and 'Praise of Folly'.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

3. This experience provides me with a way to get access to old books.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

4. I feel this experience interesting and engaging.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

5. I feel comfortable to join the experience.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

6. I like the output (the poem print) of the experience.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

7. I would like to come to the experience for a second time.

☐ Strongly disagree ☐ Disagree ☐ Neutral ☐ Agree ☐ Strongly agree

Figure 74. The feedback form

1. This experience makes me reflect on myself/ think critically.	Library Critical thinking	<ul style="list-style-type: none"> Library goal 'Reflective'
2. This experience evokes my interest in Erasmus and 'Praise of Folly'.	Library visitors	<ul style="list-style-type: none"> Get inspiration (get new information and want to know more)
3. This experience provides me with a way to get access to old books.	Library Book based experience	<ul style="list-style-type: none"> Library goal 'Nostalgic'
4. I feel this experience interesting and engaging.	Book based experience	<ul style="list-style-type: none"> 'Immersive and engaging'
5. I feel comfortable to join the experience.	Library visitors	
6. I like the output (the poem print) of the experience.	Book based experience	<ul style="list-style-type: none"> 'Taking sth personalized home'
7. I would like to come to the experience for a second time.	Library	<ul style="list-style-type: none"> Library goal: attract more visitors

Figure 75. The requirements related to each question in the feedback form

I noted their answers during testing and then coded them. I clustered several themes, separated into what they liked and the problems they met.

✧ The themes under 'what they like' are:

1) 'poem being interesting with a personalized portrait' and 2) 'recalling what I did.' However, for the latter one, three mentioned they recognized something they had not done before and noticed it was not a good thing, while one mentioned she just recalled something but did not think deeply about it. Therefore, making people reflect on a deeper level needs to be considered.

✧ Besides, the themes under 'the problems they met' are:

1) abstract poem 2) poem with no apparent relations with the questions 3) the poem being kind of cynical/mean/bitter, with someone mentioning "I feel being judged" 4) new words in the questions and poem 5) the folly type being a little extreme 6) not experiencing old books (in physical ways)

Based on this feedback, I decided to improve the concept through the following:

1. Try other questions asking ways to evoke more profound reflections

2. More clear and easy-to-understand words and explanations
3. Since the audience have already interested in Erasmus and 'Praise of Folly', find ways to introduce more channels to know Erasmus to them
4. Try to formulate a more suitable, question-related and fun but not mean poem through feeding chat GPT myself.
5. Consider some different ways to do the Q&A activity that create more hands-on experience.

4. DEVELOP

4.1. First Prototype Iteration

Due to the lack of in-depth reflection and hands-on experience based on physical materials, the first iteration made the new prototypes in two separate parts: one is about how to ask questions more deeply, and another is about how to integrate the hands-on experience into the specific interaction.

4.1.1. Two different question asking ways

First, I did desktop research on how to evoke deeper self-reflection. McLeod (2023) states that introspection focuses on images, thoughts, and feelings. Eurich (2017) also mentioned that to stay on the right path with your self-reflection, it is more helpful to ask more "what" questions than "why" questions since "Why" questions can highlight our limitations and bring negative emotions, while "what" questions help keep us positive and curious about the future.

According to Part 3.3, the questions asked are yes or no without follow-up in the first concept. In this iteration, I devise two kinds of different question-asking ways and test them. The first type is based on one folly aspect and goes deeply into it:

✧ The first Type:

1. This game (experience) is based on the book 'Praise of Folly' written by Erasmus during the Renaissance. Erasmus criticized some phenomena that appeared wise but foolish and ridiculous. The 'Folly' covers various kinds of characteristics. However, folly existed not only in the past but also nowadays. Everyone can be a folly, and so do you. Choose a (potential) folly type that you want to explore about yourself:

- Vanity and pride
- Flattery (praise that is not sincere) and hypocrisy (pretend to have qualities, beliefs, or feelings that they do not have)
- Oblivion and superstition (belief in things that are not real or possible)
- Laziness
- Hedonism (pleasure is the most important thing in life)

-Madness (crazy or stupid behavior that could be dangerous)

2. Choose a scenario where you want to reflect on yourself:

- when working/ studying
- when developing relationships with others
- when spending time on entertainment

3. Great! Here is the question for you:

"Can you think of a time when you delayed doing something, even though you knew it was important or needed to be done right away when studying/ working?"

4. "How did you feel about the outcome?"

5. "What do you think you could do if this situation came up again?"

6. Thank you for your answer! I am generating a poem for you!

7. Here is your poem!

By describing their story, they had images in their mind when recalling. The fourth question asks about their feelings and emotions, while the last one asks for their thoughts, which is also a future-oriented question that evokes deeper thinking.

✧ The second type:

The second type collected broader questions, but for each of them, I asked for a specific feeling about that:

1. This game is based on the book 'Praise of Folly' written by Erasmus during the Renaissance. Erasmus criticized some phenomena that appeared wise but foolish and ridiculous. The 'Folly' covers various kinds of characteristics. However, folly existed not only in the past but also nowadays. Everyone can be a folly, and so do you. To test your 'folly type', we have six questions for you. Type one word for each question if the answer is 'yes', skip to the next one if the answer is 'no'

-The 1st question is "Can you think of a time when you did something just to make others think highly of you or to feel more important yourself? If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question."

-The 2nd question is "Can you recall a time when you praised someone without meaning it or changed your behavior to get on their good side or avoid a disagreement? If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question. "

-The 3rd question is "Can you think of a time when you followed a superstition, like a lucky charm or ritual, instead of using logic to try to change the outcome or avoid bad luck?" If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question. "

-The 4th question is "Can you think of a time when you delayed doing something, even though you knew it was important or needed to be done right away?" If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question.

-The 5th question is "Can you recall a time when you did something fun or enjoyable instead of focusing on your responsibilities or long-term goals?" If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question. "

-The 6th question is "Can you think of a time when you made a quick decision or took things too far, even though it didn't really make sense?" If the answer is yes, how did you feel about yourself? Use one word to describe your emotion or feeling. If the answer is no, skip to the next question. "

2.Great! Thank you for your answer! I am generating a poem for you!

Although it is a yes-or-no question type, it covers different aspects. Also, if it helps with the reflection, a specific feeling may emerge.

4.1.2. Three different interactions

About the specific interactive ways, I came up with three different ways:

All of the themes are 'magic book', which intends to help the audience explore the 'folly' inside them, which is like a magical moment, and the poem generated is like a magical gift from the book.

The first one (Figure 76) is an old book with a screen embedded. Caressing the left page activates the screen with Q&A. Finally, a poem can be generated through the book.



Figure 76. The first interaction

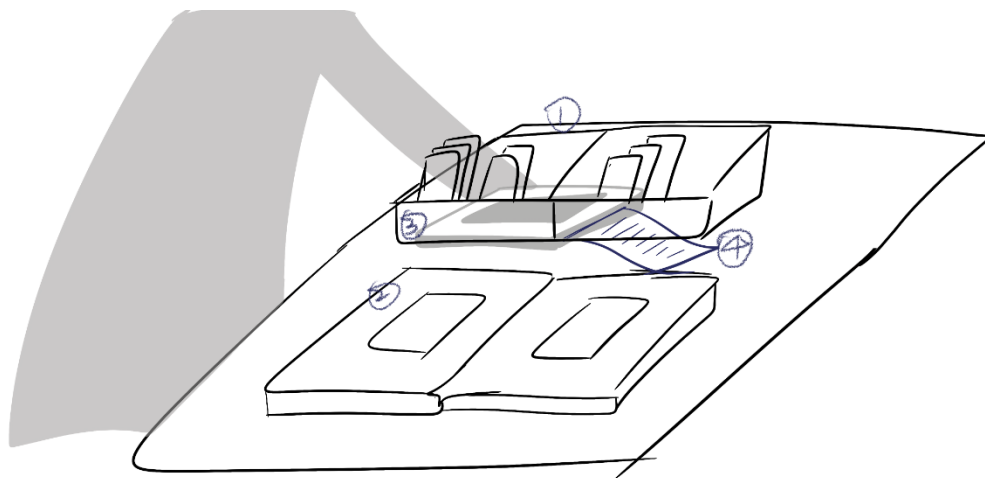


Figure 77. The second interaction

The second one (Figure 77) consists of two types of cards and an old book. People choose one card for a folly type and one for a scenario to generate questions. By scanning the cards embedded in specific positions in the book with a digital device,

they can continue Q&A on the device, with a poem to be printed at last.

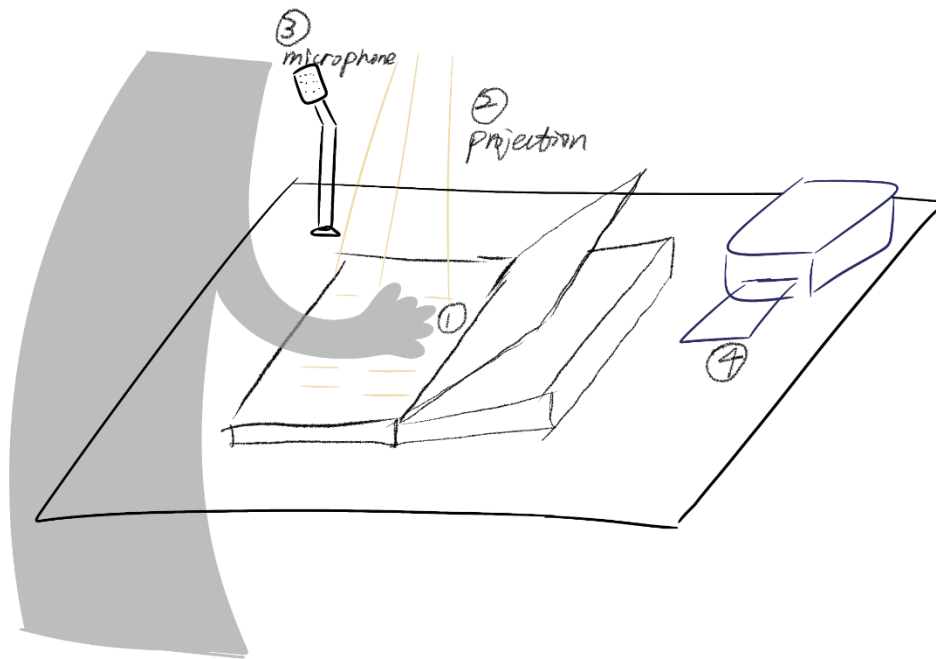


Figure 78. The third interaction

The third one (Figure 78) is an old book with questions shown in the projection. The audience gives their answers by talking and activates the following question by caressing and turning pages.

All three add specific actions, like caressing or card playing, to add a sense of magic. Also, according to a previous user study, the action of caressing rough pages brings the emotion of curiosity, which also aligns with exploring the unknown folly type in current concepts.

4.2. Second Prototype testing

I asked four people to test the questions and the interactions separately. I coded their answers and got some results.

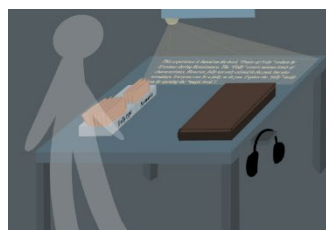
The first type of question-asking creates a deep and specific reflection. Some of them think about the reasons behind their behaviors and recall what they did well before to help them the next time. Some others stick with themselves and think their situation is inevitable. These are very deep and different reflections. However, the second type creates abstract and vague reflection. They did not think very deeply about that. Although they came up with a feeling, it is unrelated to a specific scene. Their answers tended to be intuitive. In terms of the poem, they think it is amiable and, to some extent, reflective. For example, someone mentioned, "I like the poem ending with a

question, and it hits the point". Another person mentioned that this poem reminds me I need to be more courageous sometimes. Therefore, the first question-asking way was chosen as an improved one.

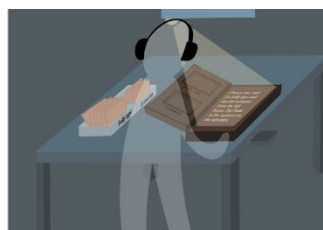
They like poem printing and projection for the interactions, which creates a ritual and magic element. They also like being customized, choosing cards themselves, and having poems belong to them. They also like touching books, which creates an exploration that is more about themselves. However, the whole design needs to be more integrated. Therefore, to keep a magical atmosphere, projection and card playing are combined, with the printing function embedded in the old book to create an integrated design.

4.3. Second Prototype iteration

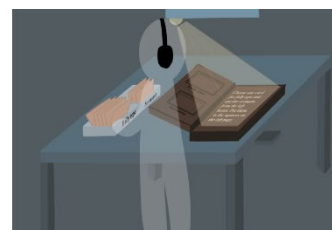
The following is the storyboard of the iterated prototype, which was planned to be tested in a physical form.



A person enters the area, the introduction of this experience is activated through projection.



The person opens the book, who asking to choose cards from the left boxes.



The person is choosing cards.



The person chooses 'Hedonism' and 'When working or studying', which activates the question: "Can you recall a time when you did something fun or enjoyable instead of focusing on your responsibilities or long-term goals when working or studying?"



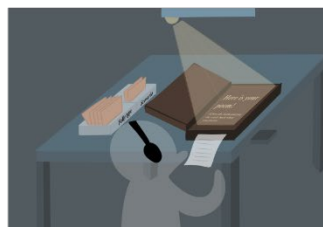
The person says the answer and turns to the next page, seeing another question: "How did you feel about the outcome?"



The same as the last step, the next question is : "What do you think you could do if this situation came up again?"



After answering these questions, the book asks the person to caress it to generate a poem for him/her.



After caressing, a poem is generated through the book.



After closing the book, there is an invitation to explore more about Erasmus that is projected.

Figure 79. The storyboard for the second prototype

4.4. Third (physical) Prototype testing

4.4.1. Preparation



Figure 80. The cardboard prototype

I made the physical prototype with cardboard and the iPad as the projected content (Figure 80). I created the cards for folly types and scenarios, with illustrations and descriptions for folly types on the other side. All the illustrations take reference from what the goddess 'Folly' said about her friends (Erasmus, 1876):

"This, who goes with a mincing gait, and holds up her head so high, is Self-Love." I take this sentence to illustrate 'Vanity and Pride'.



Figure 81. Vanity and Pride

"She that looks so spruce, and makes such a noise and bustle, is Flattery", which provided inspiration for 'Flattery and hypocrisy'.

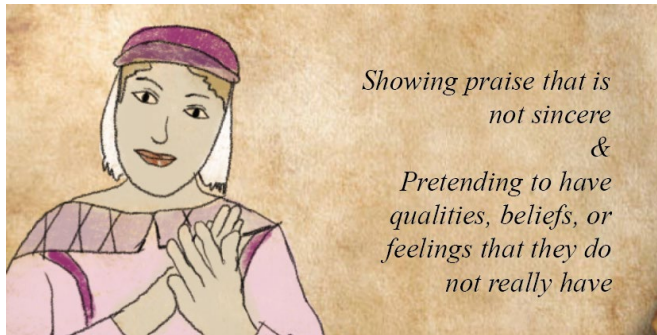


Figure 82. Flattery and hypocrisy

"That other, which sits humdrum, as if she were half asleep, is called Forgetfulness."
---'Oblivion and Superstition'

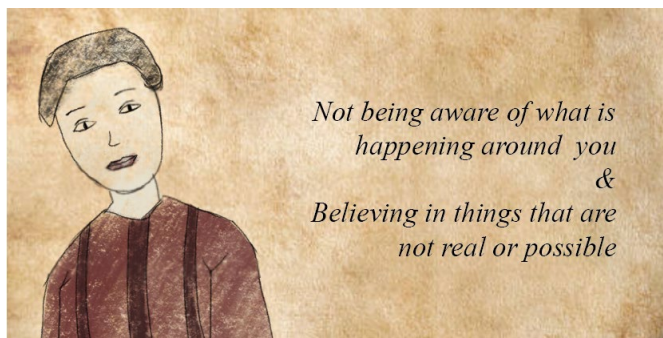


Figure 83. Oblivion and Superstition

"She that leans on her elbow, and sometimes yawningly stretches out her arms, is Laziness." ----'Laziness'

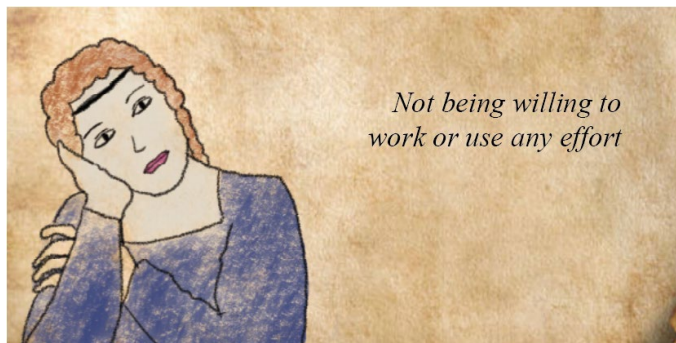


Figure 84. Laziness

"This, that wears a plighted garland of flowers, and smells so perfumed, is Pleasure."
---'Hedonism'



Figure 85. Hedonism

“She that stares so wildly, and rolls about her eyes, is Madness.” ----Madness

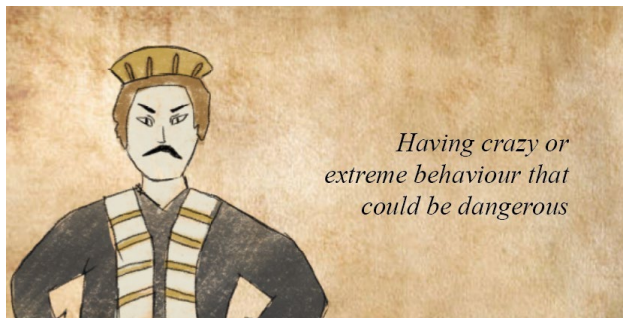


Figure 86. Madness

Besides, the colors of the folly types were also specially chosen based on the words. Although there are not absolute colors for all the folly types mentioned here, I chose the colors based on potential relations. For example, according to Archetti (2023), yellow shows optimism, while pride and vanity can be seen as extreme optimism about oneself, so I made this card yellow. Also, grey represents dullness and lifelessness, which I think relates to laziness, so I made it grey.

Besides, tracing paper is covered on the iPad to create a rough and nostalgic feeling. Turning the frames here is seen as turning pages to activate questions. Also, a mini photo printer is embedded inside the book to print poems.

A paper with an introduction and an invitation to explore more about Erasmus was shown before and after the experience. A headphone was provided, with clam and magical music playing, and they could talk through it.

4.4.2. Process

I tested six participants, each lasting 30 to 60 minutes. I controlled the process, including question generation and activation and poem printing, through another device, so there was some delay, which was mentioned before each test. However, the input and output were clear, so the participants' general experience was not disturbed. Some of the processes can be seen in Figure 87.

I first let participants start to experience themselves and observe their reactions and when they stayed too long. After they finished the experience, I asked 1) their general feeling about the experience to get overall feedback on their most intuitive feeling; 2) to fill in the form (Figure 74) and explain their answers; 3) their feeling about the specific interactive ways; 4) their feeling about the visuals.

I recorded their answers and coded them (the complete coding process can be seen in Appendix E). Some themes were clustered and can be divided into three large groups: what they like, their problems, and their expectations.



Figure 87. Testing process

4.4.3. Result

They showed appreciation in several aspects: 1) reflections from diverse perspectives; 2) the playful cards with lovely illustrations; 3) the customized poem that can be taken home; 4) bringing them to know Erasmus through an interactive experience, and some of them want to know more deeply about Erasmus and his works; 5) the action of 'caressing' brings more magical feeling and hands-on experience

The main problem is about missing explanations, shown in the following aspects: 1) they do not know the word 'caress', 2) some explanations in the card are not neutral and transparent, 3) they are too long texts, 4) the card design is not integrated into style, which also causes the problem that people forgot to read another side of the card, 5) some of them have no idea of what to do after choosing the cards, which is also a kind of unclear explanations. Except for the main problem, there are also two mentioned by only one person, that is, wearing headphones causes intense feeling, and the experience shows more entertainment than reflection.

Moreover, they had some further expectations: 1) more customized poems like added signature and illustration; 2) sharing with accompanied friends; 3) more choices according to scenarios; 4) wanting to see connections with Erasmus times

Based on these themes, I have concluded some points that need to be improved in the final concept:

1) Regarding text and visual explanations, use clearer, more neutral, and more common language and a complete introduction before the experience. Also, add some small visuals according to 'turning pages', 'speak', 'close the book',

- 2) About the card: Make the cards align in style, with pure color on one side and text on the other. Also, differences between the two types of cards should be more obvious, like in colors or shapes
- 3) Consider how to connect the audience with Erasmus throughout the experience, not just at the end.
- 4) Confirm a more immersive and comfortable way to offer the experience, which can be considered from the perspectives of sound design, space layout, and social connections.

5. DELIVER

5.1. The final prototype

The final prototype was made with an old journal, assisting with projection and guiding self-reflection (Figure 88). By choosing a 'Folly Type' card and a 'Situation' card (Figure 89), people get a specific question. For example, if you choose 'Laziness' and 'When developing a relationship (with friend/ family/ lover)', you get the first question: 'Can you think of a time when you delayed doing something, even though you knew it was important or needed to be done right away when developing a relationship (with friend/ family/ lover)?' Then, turning the page will activate the next question: 'How did you feel about the outcome?' The third question is, 'What do you think you could do if this situation came up again?' People answer all of questions through saying, since the table has an embedded microphone. Finally, the book asks people to touch it to generate a poem (Figure 90), created by AI according to your answers, performing gently satirical and praisingly.

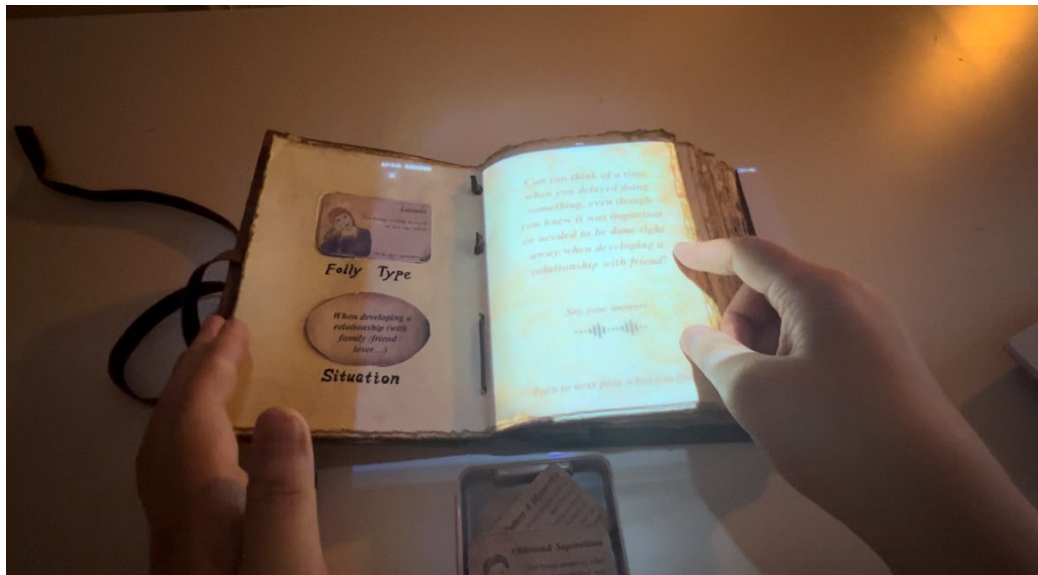


Figure 88. The first page

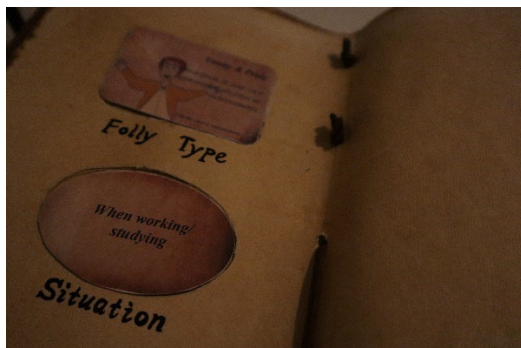


Figure 89. Inserting the cards

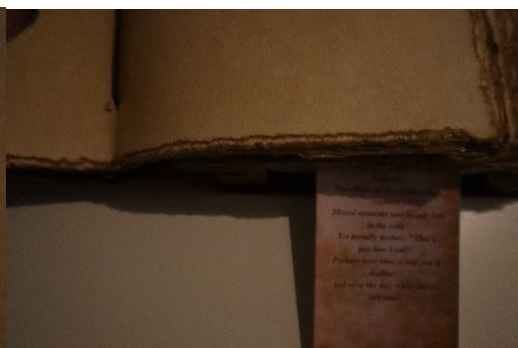


Figure 90. Printing the poem

1) About text and visual explanations:

First, the original introductory paragraph for the experience is clearer and more attractive: “This game (experience) is based on the book ‘Praise of Folly’ written by Erasmus during Renaissance, in which Erasmus criticized some social phenomena humorous way. The ‘Folly’ mentioned in the book is related to fools who have various kinds of characteristics. However, ‘folly’ not only existed in the past, but also nowadays. Everyone can be a fool, and so do you. Explore and reflect on the ‘Fool’ inside you by opening the ‘magic book’! At last, you can get a magical gift!”

I added some visuals for the questions to assist in performing in GIF in the video. Figure 91 shows the examples.

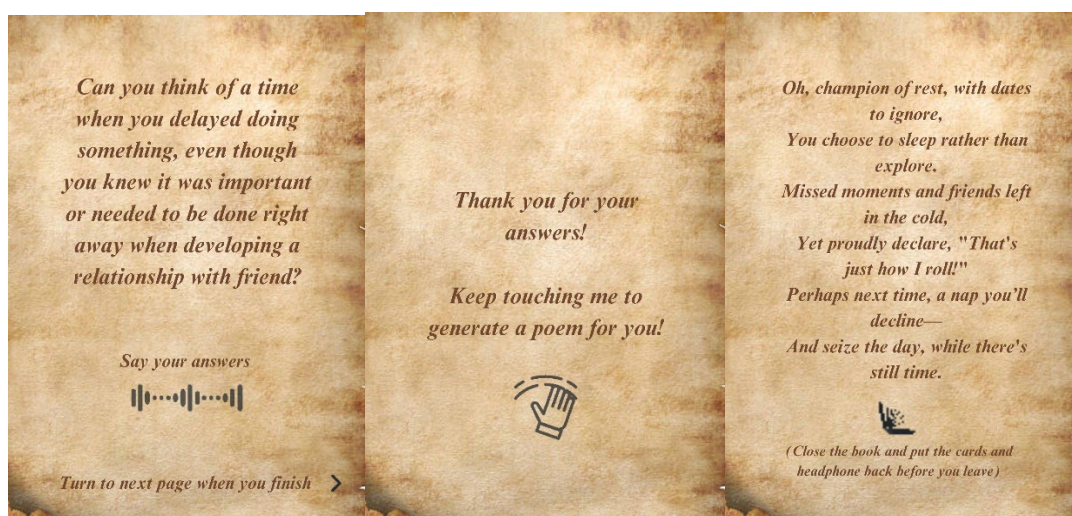


Figure 91. The pages with visuals

2) About the cards: I put all the texts on one side and another side with the same background to integrate the style (Figure 92 & Figure 93). The ‘Folly type’ is in the shape of a rectangle, while the ‘Situation’ is in the shape of the oval, so they can be distinguished very obviously. ‘Situations’ are extended into 6 types:

1. When working or studying
2. When developing a relationship (with family /friend / lover...)
3. When exercising
4. When travelling
5. When joining social or cultural activities
6. Others (Explain it later)



Figure 92. The cards

3) About the way to connect with Erasmus, I went back to the original book 'Praise of Folly' (Erasmus, 1876) to see whether there are some stories that can be related to the folly type mentioned. "Another hypocritically weeps at the funeral of one whose death at heart he rejoices for", is a kind of 'flattery and hypocrisy'.

"There a lazy wretch sits yawning and stretching, and thinks nothing so desirable as sleep and idleness", shows 'laziness'.

"A third by all means must travel a pilgrim to Rome, Jerusalem, or some shrine of a saint elsewhere, though he have no other business than the paying of a formal impertinent visit, leaving his wife and children to fast, while he himself forsooth is gone to pray.", represents 'oblivion and superstition'.

"Next to these come the philosophers in their long beards and short cloaks, who esteem themselves the only favourites of wisdom, and look upon the rest of mankind as the dirt and rubbish of the creation", which is vanity and pride.

I didn't find all the relevant stories for all six folly types, but I think providing three to four stories is enough because the focus of the experience will still be the reflection process, and I don't hope the audience spends too much time on it.

Therefore, I decided to print these small stories on the other side of the related cards (Figure 94), with a QR code of the website (Erasmus, 1876) (Figure 95) about 'Praise of Folly' provided at last, together with the invitation to meeting room collecting Erasmus works. The website not only includes the English version of 'Praise of Folly', but also provides contemporary works related to it and introduces people in Erasmus times who have relations with him.



Figure 93. The back side of the 'Folly cards'

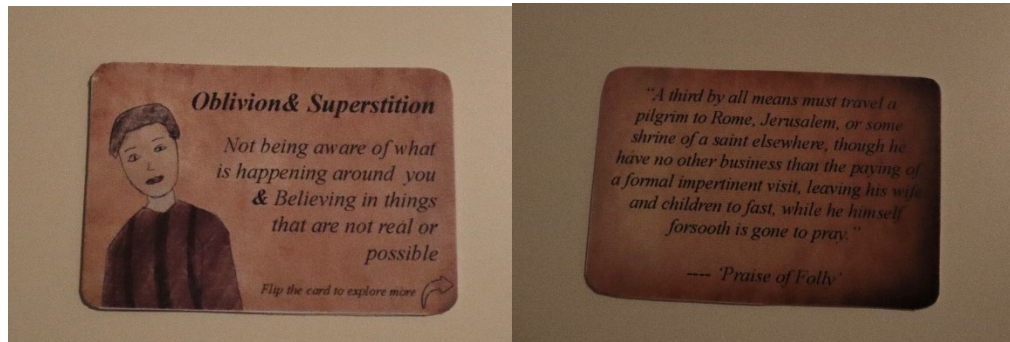


Figure 94. The modified 'Folly card'

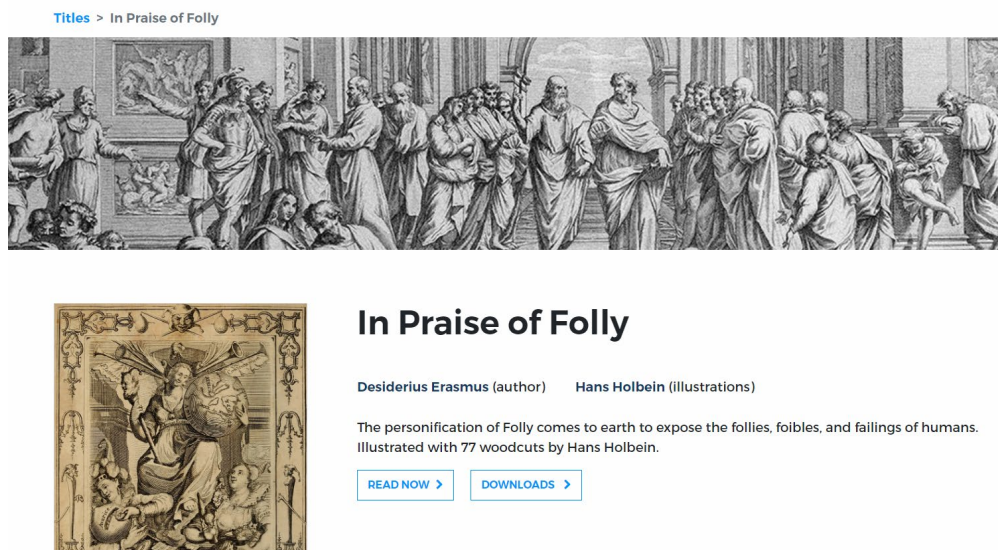


Figure 95. The website introducing 'Praise of Folly'. From *In Praise of Folly*, The Online Library of Liberty (<https://oll.libertyfund.org/titles/erasmus-in-praise-of-folly>) Copyright 2024 by Liberty Fund, Inc.

4) Confirm a more immersive and comfortable way to offer the experience:

Since background music can make some people feel intense through wearing headphones and lacks the function of sharing experience with others, it is considered in the form of sound showers. However, the cost for a sound shower can be around 1,000 euros (Interpretation Shop, 2024), which is not cost-effective based on the scope of the space. I think it's better to make a table with embedded speakers and microphones.

Then, I started to think from the perspective of space design. Figure 96 inspired me since it creates a semi-open space, and the showcases beside it can place things related to the experience. Since the current Erasmus Experience already has some showcases placing different Erasmus works, I think it can be a choice to move the showcase, placing 'Praise of Folly' close to the table with the magic book. The other side of the showcase can be covered with sound-proofing material to make the experience more immersive. Also, two chairs will be provided at the table if some people want to explore the book with a friend nearby. From this perspective, people can also choose cards for their friends, helping each other to reflect on themselves

and get to know each other better.



Figure 96. Exhibitions in Yorkshire Museum. From *Sound Shower (stereo)*, The Interpretation Shop (<https://www.interpretationshop.co.uk/product/sound-shower-stereo/>) Copyright 2024 by The Interpretation Shop from blackbox-av.

5) Technique

Different technologies are used in this experience. First, when people get close to the table with the book placed, the introduction projected onto the table will evoke them. A proximity sensor can be embedded under the table.

When people open the book, another sentence will be projected. The action of opening the book will be detected. A hinge sensor embedded in the spine can do this. The hinge sensor can also control turning pages and closing the book to evoke different questions.

Besides, people need to choose cards to generate their questions. NFC technology can be used here. Each card has an NFC chip inside, and an NFC reader in the book detects which two cards are chosen and evokes the question to be projected.

The action of caressing the book needs a capacitive touch sensor embedded in that page, so the generated poem will be projected when people touch it.

Speech-to-text technology will be used to receive the answers through the microphone. All the answers will be installed in a microcontroller. NLP (Natural Language Processing) technology can help generate the poem based on the built AI model.

Once the final poem is generated, a small thermal printer embedded in the book prints it for the user.

After the final invitation is projected on the table, the projection should end automatically. A microcontroller initiates a countdown timer of 30 seconds when the final projection starts and then sends a signal to turn off the projector. This controller can also be embedded on the lower face of the table.

5.2. The strategy

To respond to the design proposal and answer Design Question Three: “How to make the Experience more visible and attract more visitors?”, a strategy was proposed to attract more visitors:

1. According to the ‘observation’ in part 4.1, there are several information boards (Figure 11) at the entrance, so a related board showing the redesign of the Experience can be made to invite people to the experience at the entrance (see Figure 97).



Figure 97. The board at the entrance

2. A set of the Folly types of illustration can be used to design bookmarks (Figure 98) to evoke visitors' curiosity, which can be placed on tables like chess and discussion areas.



Figure 98. The bookmarks

3. Update the redesign in the official website of the Experience
4. In the first two years, the redesign can focus on the physical experience. In 3-5 years, in the second horizon, the self-reflection system can be developed into an app that can be used anytime and anywhere and becomes a toolkit in daily life. In the final horizon, a community can be developed where people can share their reflections and thoughts online and hold sharing groups onsite, where people become knowledge creators who inspire others instead of just seeking inspiration.

5. RECOMMENDATION

In the Discover Phase, I conducted a short interview to understand visitors' expectations. Instead of asking them their expectations directly in an open way, I gave them some choices, which may limit the result. Also, the sample is not large since I interviewed only ten people. When many chose 'inspirational,' some told me the reason, and some did not. Also, I did not actively ask for their elaboration, which may also limit the interpretation of 'being inspirational.'

For the final prototype, I did not do systematical testing, but I asked three friends to experience it and share their feelings, which can be concluded as follows:

✧ Nostalgic vibe:

The book offered a nostalgic feeling through its similar-to-parchment appearance, paper scent, and rough-touching sense. Also, the projection was integrated with the book style. To make the interaction with the old book more real and make the connection with Erasmus tighter, a replica of 'Praise of Folly' can be made as the carrier of the reflection process.

✧ The form of the cards:

Users liked the cards a lot due to their hard texture and excellent printing. However, the cards are small, and the guide to flip the card is not very clear to see. Also, small cards with many texts make users unwilling to read. In the future, a bigger book with bigger cards can be provided to make the experience more comfortable.

✧ The spot of testing

I did the prototype testing at home. It was a pity there was no test in the Erasmus Experience. Testing there can be considered in the future to provide a more varied sample, a better environment related to Erasmus, and more realistic feedback. However, further improvements can be considered in the future, such as testing in the library to get a more realistic feedback it also revealed several areas that require further improvement

6. CONCLUSION


Through continuous research and project processing, the final prototype, centered around Erasmus's *The Praise of Folly*, designed to inspire self-reflection, generally achieved the mission of the library and answered the design question I raised at the beginning.

Although the prototype succeeded in creating a nostalgic and engaging environment that encourages self-reflection and critical thinking, the project still requires further development. Testing in a more relevant setting, revising the card and book designs for excellent usability, and conducting more comprehensive research could improve the final product significantly. These refinements will help ensure that the Erasmus Experience effectively connects visitors to Erasmus's legacy and achieves the library's mission of inspiring critical thinking among citizens.

7. APPENDICES

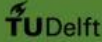
APPENDIX A :

The project brief



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	Wang	IDE master(s)	<input type="checkbox"/> IPD	<input type="checkbox"/> Dfi	<input checked="" type="checkbox"/> SPD
Initials	S	2 nd non-IDE master			
Given name	Sirui	Individual programme (date of approval)			
Student number	5768896	Motivation			

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

Chair	Arnold Vermeeren	dept./section	HCD/HICD	<div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> ! Ensure a heterogeneous team. In case you wish to include team members from the same section, explain why. </div> <div style="border: 1px solid #ccc; padding: 5px; margin-bottom: 5px;"> ! Chair should request the IDE Board of Examiners for approval when a non-IDE mentor is proposed. Include CV and motivation letter. </div> <div style="border: 1px solid #ccc; padding: 5px;"> ! 2nd mentor only applies when a client is involved. </div>
mentor	Willemijn Tholén	dept./section	SDE/MD	
2 nd mentor				
client	John Tholen			
city	Rotterdam	country	The Netherlands	
optional comments				

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

Sign for approval (Chair)



Arnold Vermeeren

Digitally signed by
 Arnold Vermeeren
 Date: 2024.04.08
 10:42:50 +02'00'

Name Arnold Vermeeren

Date 8 Apr 2024

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

<input type="checkbox"/>	YES	all 1 st year master courses passed
<input type="checkbox"/>	NO	missing 1 st year courses

Comments:

Sign for approval (SSC E&SA)

Name

Date

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	<input type="checkbox"/>	Supervisory Team approved
NO	<input type="checkbox"/>	Supervisory Team not approved

Comments:

Based on study progress, students is ...

<input type="checkbox"/>	ALLOWED to start the graduation project
<input type="checkbox"/>	NOT allowed to start the graduation project

Comments:

Sign for approval (BoEx)

Name

Date

Signature




Personal Project Brief – IDE Master Graduation Project

Name student Sirui WangStudent number 5768896**PROJECT TITLE, INTRODUCTION, PROBLEM DEFINITION and ASSIGNMENT**

Complete all fields, keep information clear, specific and concise

Project title Design for Rotterdam Public Library to connect visitors with heritage of Erasmus

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)

The project takes place mainly in the domain of museum and heritage studies. It is collaborating with Rotterdam Public Library, which has the biggest collection of works of Erasmus. Born in Rotterdam, Erasmus is a Dutch Christian humanist, Catholic theologian, educator and philosopher. Through his numerous works, he is considered one of the most influential thinkers of the Northern Renaissance. He developed a biblical humanistic theology in which he advocated concord, tolerance and free thinking on matters of indifference. His famous works include The Praise of Folly, Adages, etc.

Within the library there is an interactive Erasmus experience, relating to the works of Erasmus. It focuses on introducing Erasmus' main ideas and invoking visitors' own thoughts. It was installed in 2016. The main use of technology is NFC by providing visitors a wristband.

The main audience is high school students between 12 to 15, who come on a class visit. Other groups include adults and tourists.

For the library, they are going to renovate the building and the experience will be redesigned in 2029, through which they hope more visitors will come to the Erasmus experience, engage more within the experience, thus being a citizen with more critical thinking.

→ space available for images / figures on next page

introduction (continued): space for images



image / figure 1 The Erasmus Experience



image / figure 2 The Erasmus Experience



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)*

There are some issues with the Erasmus experience. First, the experience has stayed the same for around 8 years, which is a one-time experience without new interactions and contents for a second discovery. Second, due to the requirement of the specific circumstances for original collections, visitors cannot have a sense of the actual physical connection with Erasmus works and all of the original collections were written in latin. Third, the experience is not very visible in other spots of the library, unabling to attract visitors automatically to the third floor. Adult group with long-term residence in the Netherlands will be my target group. General visitors in RPL can be the first inter view targets to help me to figure out a more specific target group. Moreover, making the physical collection available to the audience is challenging, but if related contexts are known, the ways to present them can be quite interesting to explore. Th rough physical connections, visitors can not only get access to Erasmus' thoughts, but also the world on those days, and find t he connections between those and current days. What they think about current situations and how they prefer to interect w ith these materials can also be an interesting point. Therefore, the opportunity seen here for the Erasmus Experience is to make engagement with the old materials be a new int eraction way, which can be a focus. A strategy related to the design can also be made to attract more visitors to the experien ce.

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 a industrial design engineer, your assignment will start with a verb (Design/Investigate/Validate/Create), and you may use the green report format:

Design a new Erasmus experience for RPL that connects visitors with the old book collections and a corresponding strategy t hat attracts more visitors to the experience.

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)

Discover: 1) literature review and desktop research about people' s expectations of libraries/ museums and exhibitions, and future library/ museum trends 2) read papers about experiencing materials, start to plan and do research on 'characteriz e the material experience of the old books' 3) interviews / questionnaires to know audience' s motivations and needs 4) analyze and characterize audience to figure out a clear target group 5) start to study Unity/ Shapes XR 6) read some works of Erasmus 7) come up with a design vision
Define: 1) generate ideas through brainstorming 2) make a collage to see how my ideas are placed in a context 3) make draf t prototypes and do the storyboarding with prototypes 4) report of the progress, including basic structures (thesis)
Develop: 1) user testing with prototypes and iterating it based on user feedback 2) make a visitor journey map 3) experienc e prototyping in the library
Deliver: 1) a 3D physical Model 2) a corresponding strategy related to the concept that attracts visitors to the experience 3) a short video showing interactions with the prototype (optional) 4) a paper

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	19 Mar 2024
Mid-term evaluation	11 Jun 2024
Green light meeting	20 Aug 2024
Graduation ceremony	17 Sep 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	<input checked="" type="checkbox"/>
For how many project weeks	26
Number of project days per week	4

Comments:
In the first six weeks, 40 hours a week are spent for other courses. Besides, 1 day are spent for holiday (official+unofficial ones)

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)

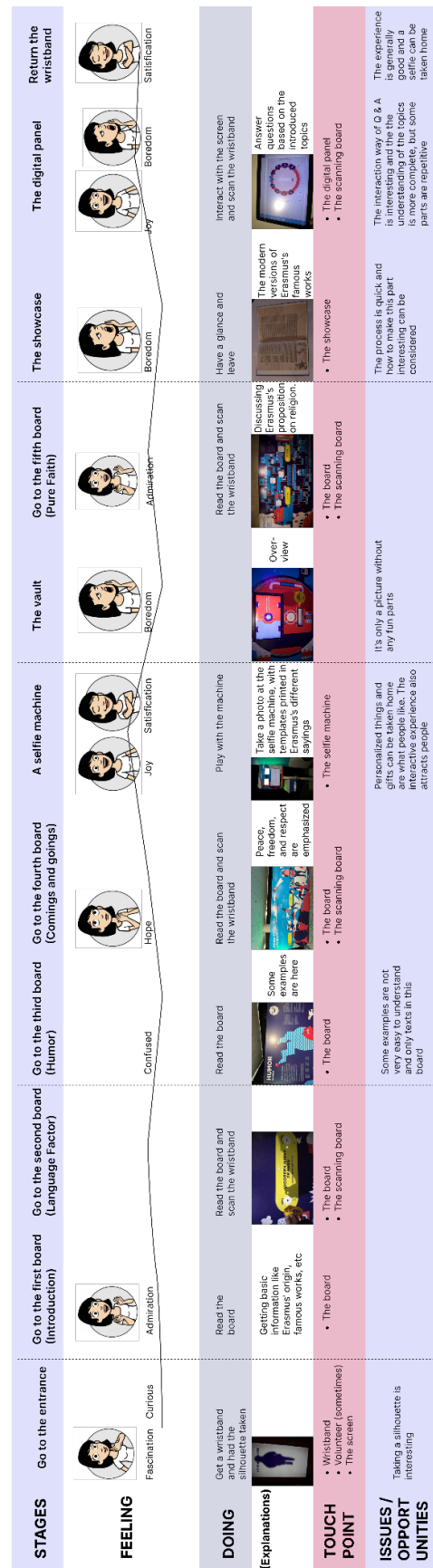
I want to start this project because I have a profound fascination for exploring diverse cultures, heritage, and the methods of communicating them to wider audiences. This graduation project provides a completely different cultural background from my own. I am genuinely enthusiastic about the opportunity to immerse myself in this new context, eager to learn and explore opportunities.

As a SPD student, I want to apply what I learnt about qualitative and quantitative research and systematic thinking for strategy making. Also, I want to develop my skills in physical/ digital prototyping.

Since this project might apply AR/VR technologies, which is what I didn't try before, this is a chance for me to take a step in to this area and learn some skills.

APPENDIX B:

The large version of the Visitor Journey Map



APPENDIX C:

The large version of the experiential characterization map

experiential characterization map

start →

material //

participant //

age //

nationality //

date //

1. performative level _ "what does the material make you do?"

How do you touch the material?

- ☐ pressing
- ☐ rubbing
- ☐ grazing
- ☐ compressing
- ☐ poking

How do you move the material?

- ☐ folding
- ☐ flexing
- ☐ lifting
- ☐ weighing
- ☐ bending

How do you hold the material?

- ☐ holding
- ☐ grasping
- ☐ seizing
- ☐ pinching
- ☐ grabbing

How do you move the material?

- ☐ flexing
- ☐ picking
- ☐ squeezing
- ☐ smelling

2. sensorial level _ "how would you describe the material?"

hard

smooth

matte

not reflective

cold

not elastic

opaque

tough

strong

light

regular texture

flared

soft

rough

glossy

reflective

warm

elastic

transparent

ductile

weak

heavy

irregular texture

not-flared

3. affective level _ "what emotions does the material elicit?"

intense

pleasant

4. interpretive level _ "what do you associate with the material? how would you describe it?"

meaning 1

meaning 2

5. final reflections _ "why do you think the material is....? would you reflect on your answers for other levels?"

what is the most pleasant quality of the material?

what is the most disturbing quality of the material?

notes / further comments

this map is part of the MAZE toolkit by

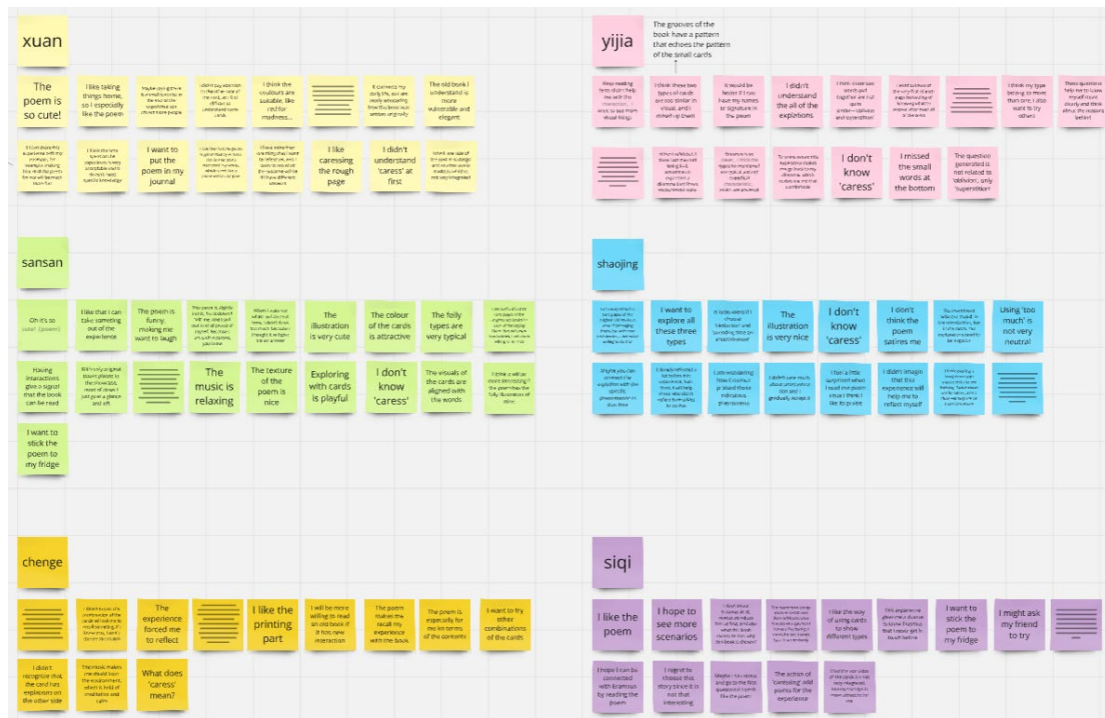
Appendix D_The User Study:

The coding process:



Appendix E:

The coding process of the third prototype testing





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