

Master's Thesis

-----

# Personalizing the Multimedia Guide of the Van Gogh Museum

-----

Written by  
**Ziyi Zhang**

Supervised by  
Jeroen van Erp, Arnold Vermeeren (TU Delft)  
Sanneke Prins, Jort Slingerland (Van Gogh Museum)

MUSEUMFUTURES



Van  
Gogh  
Museum  
Amsterdam



## **Graduation Thesis**

Personalizing the multimedia guide of the Van Gogh Museum

*By Ziyi Zhang*

2018.10.01 – 2019.03.20

### **Thanks to myself:**

Ziyi Zhang

### **Huge thanks to my tutors:**

Jeroen van Erp, Arnold Vermeeren (TU Delft)  
Sanneke Prins, Jort Slingerland (Van Gogh Museum)

### **Special thanks to you:**

Zichao Lin

Qianqian Zhao

Yee Jek Khaw

Koen Snijders from Van Gogh Museum

Sarah Broekhoven from Van Gogh Museum

Anna Offermans from Fabrique

Haian Xue from TU Delft

Everyone from the MuseumFuture Lab

Every participant from TU Delft and the Van Gogh Museum



**Always huge thanks to my parents!**



# Executive Summary

Van Gogh Museum:

“To personalize the multimedia guide!”

Van Gogh Museum & The Researcher:

“Why? & How to?”

## Why personalize the MMT?

The original assignment is “personalizing the multimedia guide of the Van Gogh museum” and initiated by the museum. The challenges for the graduation project is to figure out why and how to achieve the design goal. After getting know to the current MMT, the researcher found out some personalization opportunities about the current multimedia contents. But still, the ultimate goal for personalizing the multimedia content is missing.

Therefore, the researcher conducted a brief observation in the museum and looked into visitors’ diversity. It is found out that each visitor is paying different levels of attention to each exhibited painting and making use of different “mediators” in visiting, including the multimedia guide, their phone, etc. The researcher applied literature research to investigate the theoretical explanation behind visitors’ various behaviors. It is found out that visitors pay more attention to the objects that they could perceive the higher value of; and once when they find out and engage with these exhibited objects, they could start their “minds-on” activities. Their meaning-making process generates their own interpretive stories in mind which are related to their concerns and their experience with the exhibited objects. However, the multiple elements and objects are competing for visitors’ attention in most exhibitions; therefore, visitors often need some guidance to decide what is considered important. Different personal facilitation might be required based on their interest.

By now, a rough goal for personalizing the current MMT is finally clear, which is to **facilitate visitors to engage with the collection, maximize visitors’ meaning of visiting the Van Gogh Museum, in a personal, caring and professional way.**

## How to personalize the MMT?

**1/ Firstly, a concern model is needed for understanding visitors’ diversity at VGM** - The 1<sup>st</sup> field research was conducted at the VGM, and 26 real visitors were interviewed at the VGM. According to the interviewees, they had diverse travel experience at the VGM. They engaged with and focused on diverse types of combined spots in each gallery. Even though



when they engage with the same spots, they focus on various factors in various ways. All in all, their discrepancy of activities at the museum are led by the personal concerns.

Therefore, a 2<sup>nd</sup> field research was conducted at the museum again, and this time, the initial concern model from the 1<sup>st</sup> research was validated and improved. Now, the first part of the concern model is ready. It is known that the four basic concerns at the Van Gogh Museum are **“understand Van Gogh”, “learn art techniques”, “enjoy an aesthetic experience”, and “find out the landmarks”**. After the end of the research, the researcher collected the typical “minds-on” activities and interested terms for each concern and created the first part of the concern model. This part can be used to identify visitors’ concern(s).

But how to design for different concerns based on this information? A how-to session was conducted inside the MuseumFuture Lab and came up with design solutions and principles for different concerns. It is known that visitors with a different concern would like a different facilitation design: for example, visitors who mainly want to “understand Van Gogh” would like the facilitation to enhance their personal connection(s) between them. After the end of the research, the researcher collected a facilitation principle and several activities examples for each concern and created the second part of the concern model. This part can be used to inspire the personalized design.

**2/ Secondly, a design framework is needed for personalizing the MMT based on visitors’ diverse concerns** - The researcher rethought the minimal task flow of using the personalized MMT, and discovered the basic tasks for the personalized MMT system. The system needs to collect visitors’ input first based on the concern model (e.g., about their interested terms and typical meaning-making activities); the system can then work out visitors’ concerns and select the personalized content in the backend database for them; and push the multimedia content to visitors’ MMT screens. The personalized contents are also designed and distributed based on the concern model.

When designing the data for collection, it is necessary to assure that the data are able to decide the personalized content out of general content; when designing the personalized contents from VGM, it is also necessary to assure that different contents for personalization can reflect the different data input.

A MMT can be called as a personalized MMT as long as it can collect data from visitors, and select one content out of many according to their data input; but with a premise that the content is relevant to the data input.

**3/ Thirdly, some design principles are needed for designing the input and output of the personalized MMT** - Later on, five design sets were created and tested with around 30 people from both the TU Delft and VGM. There are a lot of fails and successes: the failure designs lead to some basic design principle, and the successful designs leave many useful design elements and materials for embodiment designs. There are 17 conditions for the design principle, including seven rules for collecting input from visitors and ten rules for designing the personalized output for the visitors. For example, when designing for collecting input from visitors, the MMT should decrease the feeling of deleting because they are afraid of missing things they should know; When designing the personalized output for



the visitors, the design should strengthen the sense of personal difference because visitors like to compare their personalized product with each other.

The seven design elements which are left and proved workable for a personalized MMT, are for example, a concern quiz about swiping the options, a top-10 personal highlight paintings, a conversational MMT assistant, etc. These design elements jointed hands and formed the final embodiment design.

**4/ Fourthly, an embodiment design is created as a design example of the concern-based personalized MMT, which can facilitate visitor to engage with the collection and maximize their meaning of visit** - The final concept will collect visitors' interested terms for their daily life through a concern quiz at the beginning of their visit; visitors' input will be calculated by the Bayesian backend network, and then ten personal highlights and some personal activities will be selected for the visitors immediately; visitors can see their personal highlights on a digital map and use it for their actual visit; they will also receive invitations of some personal activities from their conversational MMT assistant during the break.

**5/ Last but not least, an evaluation test to test the scenario of using personalized MMT.** How will different visitors use and think of the personalized MMT during their visit at the VGM? Based on the test goal, the researcher invited 8 participants from TUDelft to role-play four different charterers and visited the VGM with a Wizard-of-Oz prototype for 40 minutes.

The preparation for a personalized design is more difficult than a regular test: because several personalized screens are needed for each role. The test must include different sets of personalized screens for each participant role, because only when the participants sense the connection between the data they provide to the system and the personalized content they get back from the system, can they provide their true feeling of using a personalized MMT.

The general feedback from them is positive! They like the concept of personal highlights and their personal activities, but they also think there are some small spaces for improvement: for example, some of them want a better balance between their personal highlights and the must-see highlights on the map. In general, it is a surprise to see how strong they are looking forward to the landmark paintings they should see/know, even though these landmarks might be less than 10% relevant to their actual preference.

But in general, the final concept succeeded in achieving the personalization goal in the desired way.



# Contents

<b>Executive Summary</b>	<b>3</b>
 Chapter I	
<b>The Van Gogh Museum</b>	<b>9</b>
Introduction	10
1.1 Vincent van Gogh (1853-1890)	10
1.2 The Van Gogh Museum	12
1.3 A Vision of the VGM (2018 - 2020)	16
1.4 An Assignment from the VGM	17
Conclusion	18
 Chapter II	
<b>The Multimedia Guide</b>	<b>19</b>
Introduction	20
2.1 Get to Know the Current MMT	20
2.2 The Personalization Opportunities	23
Conclusion	29
 Chapter III	
<b>Observation &amp; Literature Review</b>	<b>30</b>
Introduction	31
3.1 Observation	31
3.2 Further Literature Review	35
Conclusion	41
 Chapter IV	
<b>The 1<sup>st</sup> Research</b>	<b>42</b>
Introduction	43
4.1 The 1 <sup>st</sup> Research	43
4.2 The 1 <sup>st</sup> Data Analysis	45
4.3 Results	46



4.4 Visitors' Diversity	49
4.5 Concerns Clustering	50
Conclusion	52
 Chapter V	
<b>The 2nd Research &amp; The First Part of the Concern Model</b>	<b>53</b>
Introduction	54
5.1 The 2 <sup>nd</sup> Research Method	54
5.2 The 2 <sup>nd</sup> Data Analysis	56
5.3 Results	57
Conclusion	60
 Chapter VI	
<b>A How-To Session, &amp; The Second Part of the Concern Model</b>	<b>63</b>
Introduction	64
6.1 A Personalization Goal Recap	64
6.2 How-to Session	65
Conclusion	67
 Chapter VII	
<b>Let's Design with the Concern Model</b>	<b>68</b>
Introduction	69
7.1 Making Use of the Concern Model	69
7.2 Rethinking the Task Flow of Using MMT	70
7.2 The Core Bone of the Personalized Design Framework	71
Conclusion	72
 Chapter VIII	
<b>Research through Designs through Designs</b>	<b>73</b>
Introduction	74

8.1 General Research Goal	74
8.2 The 1 <sup>st</sup> Round	75
8.2 The 2 <sup>nd</sup> Round	76
8.3 The 3 <sup>rd</sup> Round	78
8.4 The 4 <sup>th</sup> Round	79
8.5 The 5 <sup>th</sup> Round	83
Conclusion	86
 Chapter IX	
<b>The Embodiment Design</b>	<b>88</b>
Introduction	89
9.1 A General Visitor Scenario of the Embodiment Design	89
9.2 Key Screens for the Embodiment Design	91
9.3 Task Flows for the Service System	96
9.4 Reflection on the Personalized Design Framework	100
9.5 Complex Algorithm for the Personalized System	102
Conclusion	104
 Chapter X	
<b>The Personalized Embodiment Design Evaluation Test</b>	<b>105</b>
Introduction	106
10.1 Design Evaluation Test Plan	106
10.2 In Real Scenes	111
10.3 Test Results: positive!	113
Conclusion	120
 Chapter XI	
<b>Project Wrap Up &amp; Thoughts about the Future Implementation</b>	<b>121</b>
11.1 Why to personalize the multimedia guide?	122
11.2 How to personalize the multimedia guide?	122
11.3 Thoughts about the future implementation	129
 Reference & Appendix	<b>132</b>



# Chapter I The Van Gogh Museum

The ticket office and ticket machines of VGM; a photo by Ziyi on Sep, 2018.



# Introduction

Van Gogh Museum is an art museum which mainly exhibits the works of Vincent van Gogh, a world-class genius in art and a dramatic figure in his life. The museum is one of the best and most popular museums in the world and attracts 2,26 million in 2017. (Van Gogh Museum, 2017)

The museum houses the world's largest collection of Van Gogh's paintings and nearly all his letters, which are all combined in the permanent exhibition in a chronological way. Each gallery of the permanent exhibition showcases the different stages and themes of Van Gogh's life and work. Therefore, from the perspectives of color, theme, context stories and etc., the exhibited objects in one gallery are closely related to each other; and different than exhibited objects in the other galleries. The similarity and difference of the exhibited objects can tell the stories about the characteristics and changes of Van Gogh's life stages.

Apart from the abundance of information shown in the museum space, the museum as an active research organization also publishes new research outcomes annually through books and social media. Undoubtedly, the Van Gogh Museum is one of the best places for visitors from around the world to know Van Gogh and his works. The first part of the report will talk about the genius artist with the information material provided on the museum website and unveil the inner space and collection inside the museum buildings.

## 1.1 Vincent van Gogh (1853-1890)

Vincent William Van Gogh, a Dutch post-impressionist painter, is among the most influential figures in western art. Vincent was a pioneer of expressionism and inspired people around the world from the beginning of the twentieth century until now. (Wikipedia, 2018) Known as a tortured genius today, Vincent and his dramatic stories are published and filmed in many ways and now widely known by many people in the world. Both his paintings and his stories are fascinating.

The focus of the graduation project – the multimedia guide of the Van Gogh Museum – contains a considerable amount of the multimedia content about Van Gogh's life stories. Therefore, here is a brief introduction to our main character -- Vincent van Gogh. This following stories are retrieved and adapted from a column called "Van Gogh's Life, 1853–1890" on the museum website. If you are already familiar with the artist, you can skip the part.

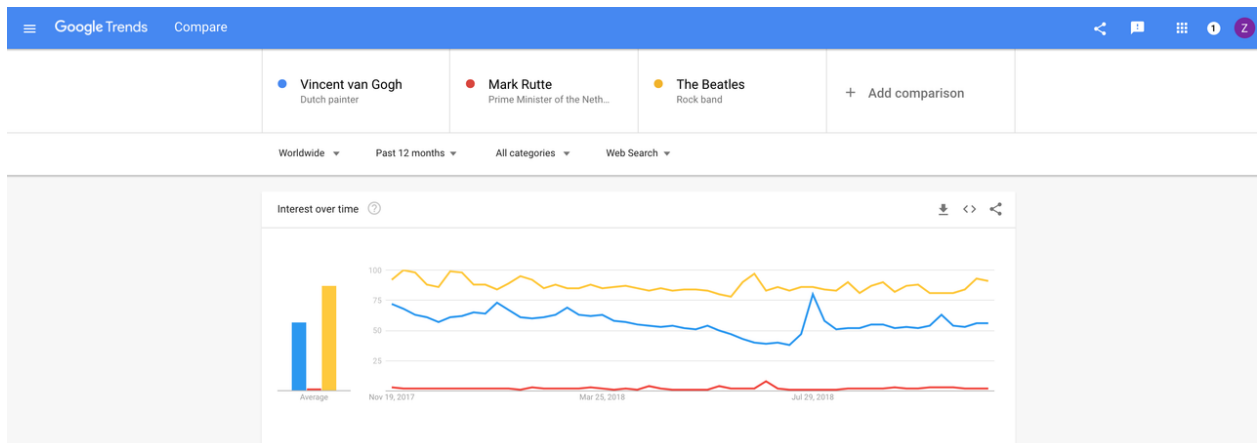
**Vincent began his artistic career late at 27 and ended when he committed suicide 10 years later.** Born in a protestant minister family in 1853, he used to be a junior clerk at an art firm, a teacher, and a preacher like his father, but none of these positions had lasted for a long. At the age of 27, Vincent finally decided to be a full-time artist owing to his strong passion for art and the full support from his brother Theo. Vincent practiced fanatically and created about 2100 paintings in 10 years, including 860 oil paintings. (Van Gogh Museum, 2018)

**Vincent suffered from mental illness and often felt emotionally unstable, but his eye remains brilliant in seeing and painting the world.** In 1888, He cut off his left ear after a fiery quarrel with his good friend Paul Gauguin in their yellow house. Afterwards, Vincent voluntarily admitted himself to a hospital in Saint-Rémy, and then had a peaceful time in Auvers-sur-Oise near Paris. During his illness, he continued progressing his personal style and kept creating masterpieces like the Almond Blossom and the Wheatfield with Crows. But his illness came back to him when he saw the financial uncertainty and fear about the future. (Van Gogh Museum, 2018) He committed a suicide in his beloved wheatfield in 1890.

**The widely recognition of Van Gogh's work came after his death.** Six weeks after Vincent's death, Vincent's best friend and lifelong supporter Theo organized an exhibition of his brother's works, which Theo aimed to prompt to more people. His wife Jo van Gogh-Bonger inherited this work after Theo's death. And so did Jo's son, Vincent Willem van Gogh, who shared the same name with his uncle and loaned his uncle's paintings to the Stedelijk Museum in 1930, later succeed in raising resources for a dedicated museum, the Van Gogh Museum we are talking today. (Van Gogh Museum, 2018)

**Vincent van Gogh created his unique way of painting: showing the world in his eyes by using his bold strokes and complementary colors.** His stories are written in the history books, in the songs, and in the movies all over the world. He inspired numerous people in their lives and their artistic creations.

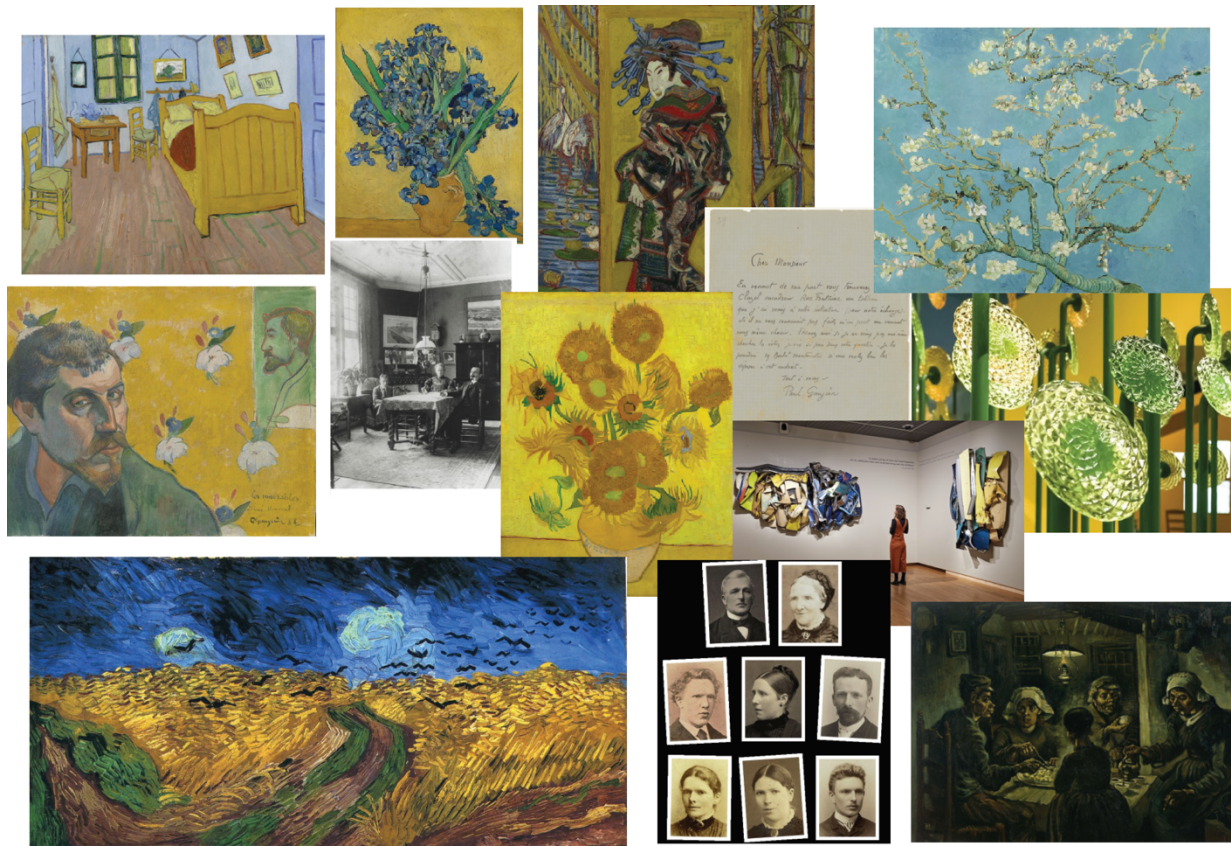
Van Gogh is still remembered by the world. The project researcher conducted a small and fun research in Google Trends: to compare the web search times among Vincent van Gogh, Mark Rutte, and the Beatles. The picture 1a can illustrate how popular Vincent van Gogh still is: the interest from the world to Van Gogh is slightly less than the best-selling band in history but much more than the current Prime Minister of the Netherlands. The Vans x Van Gogh Museum fashion line which was published in the 2018 autumn even pushed the search to a new peak.



pic 1a A small fun fact in Google Trends can illustrate how popular Vincent van Gogh still is.



## 1.2 The Van Gogh Museum



Pic 1b: an overview of the collections in the VGM

Van Gogh Museum (abbreviated as VGM) is a single artist museum which is mainly dedicated to the works of Vincent van Gogh. The museum opened on 2 June 1973 at the Museumplein 6 in Amsterdam, the Netherlands, which is close to the Stedelijk Museum, the Rijksmuseum and the Royal Concertgebouw. **It houses the world's largest collection of him, with 205 paintings, 500 drawings, and nearly all his letters; and also his family photos, his personal collection, the works from his friends, the works that are inspired by him, etc. (pic 1b).**

In recent years, the world has continually grown interests for Van Gogh. The appearance of broader ranges of media derivatives (e.g., the *Loving Vincent*) has attracted more and more visitors coming to the museum. According to the 2017 annual report (Van Gogh Museum, 2017), VGM was the most visited museum in the Netherlands and the 23rd of the most visited museum in the world, with a total amount of 2.26 million visitors throughout the year. At the same time, most visitors were satisfied with their visits here: 88% of the visitors rated their general experience "very good + excellent,". This was proved in the internal visitor research of 2017.

Van Gogh's paintings and his stories are displayed inside the museum buildings, which will be introduced thoroughly in the next part.

## Get to Know the Museum Buildings

The museum is composed by two exhibition buildings and one entrance hall (pic 1c):



Pic 1c: the Rietveld Building (right), the Kurokawa Wing (left), and the New Entrance Hall (middle) (Hans van Heeswijk architecten, 2015)

The main galleries are distributed in the Rietveld Building and the Kurokawa Wing, one for the permanent exhibitions and the other for the temporary exhibitions. These two buildings are divided spatially but connected by a glass new entrance hall. (Pic 1c) Visitors can not only see the real paintings of Van Gogh and his contemporaries but also the different forms of art that are inspired by Van Gogh in the current age. The average time of visiting the museum is 1 hour and 15 minutes (and 2 hours for the visitors with a multimedia guide) (Van Gogh Museum, 2018).

The focus of the graduation project – the multimedia guide of the Van Gogh Museum – is only used inside the museum. Therefore, here is a brief introduction about the contextual environment of the multimedia guide. The following stories are retrieved and adapted from a column called "The Building" on the museum website. If you are already familiar with the museum space, you can skip the part without worries.

### The Rietveld Building

This is a four-floors building which was designed for VGM's main and permanent collections. The works and stories of Van Gogh are curated in a chronological way here: from the time when Van Gogh started his painting career till the time when he ended his own life. Here are the abstract of the exhibition topics on each floor, the detailed explanation of which can be found in the appendix 1a.



#### 0th Floor, "Face to Face with Van Gogh"

Where you can see the #self-portraits, #a biography timeline, #some 'double-sided' paintings, and etc.



### 1st Floor, “Van Gogh, 1883-1889”

Where you can see the #peasant paintings, #the Potato Eaters, #the Dark color styles ...  
 #his color changes, #his paintings in Paris, #his city life, #his bright color ...  
 #his paintings in Arles, #The Sunflowers, #The Bedroom, #Gauguin’s chair ...  
 #the Japanese Inspiration to Van Gogh, #his Innovation, and etc.



### 2nd Floor, “Van Gogh Close Up”

Where you can see #his family relationship, #the history of the museum, #his brotherly love...  
 #his letters, #his friendship, #his dream, #The Yellow House, #The (detailed) ear incidence ...  
 #Sand in the painting, #Perspective Grid, #Draughtsman, and etc.



### 3rd Floor, “Van Gogh, 1889-1890”

Where you can see #the paintings about Nature, #the Almond Blossom ...  
 #Van Gogh’s Hospitalization life, #his death, #his final paintings, #The Roots ...  
 #His Inspiration to the world, and etc.

**The abstract of each floor reveals the abundance of the exhibited objects within the Rietveld building.** In reality, there is no abstract topics like this; but they are presented by Van Gogh's art, the information panels on the walls and the multimedia guide. The painting styles and themes on the 1<sup>st</sup> floor are discrepant from the ones on the 3<sup>rd</sup> floor: for example, there are many dark peasant paintings and bright cityscapes on the 1<sup>st</sup> floor because Van Gogh lived in Nuenen and Paris from 1883-1889; on the contrary, there are many lush countryside and open landscape paintings because Van Gogh moved to another place from 1889-1890.

A previous graduation project named “Improving the visitor flow at the Van Gogh Museum” was conducted by Coen Mulder in the early 2018. His research about the museum visit phases illustrates the basic routing of visitors to all the ten galleries within the Rietveld Building (pic 1d).

The basic routing follows the chronological galleries setup and covers every gallery. Most visitors start their journey from the ground floor and go through the 1<sup>st</sup> gallery visit in a clockwise direction. Later, they will go upstairs to the 1st floor and stroll in a clockwise direction. Then they will come to the 2nd and 3rd floor but visit in a counterclockwise direction. The research also mentions that visitors will gradually change from intensive looking at the paintings to loosely cruising at the gallery along the way. The turn-taking point lies roughly in between gallery 4 and gallery 6 (Figure 28 to Figure 31 in pic 3), though the exact spot differs for every visitor. Coen’s research result can draw us a vivid picture of the visitor flow inside the Rietveld building.



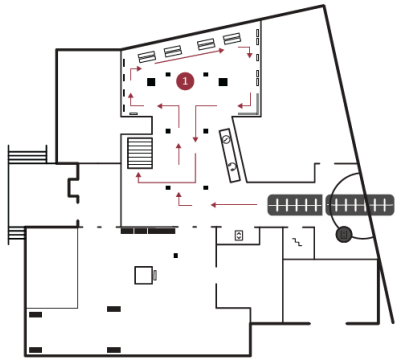


Figure 28. Ground floor - permanent exhibition

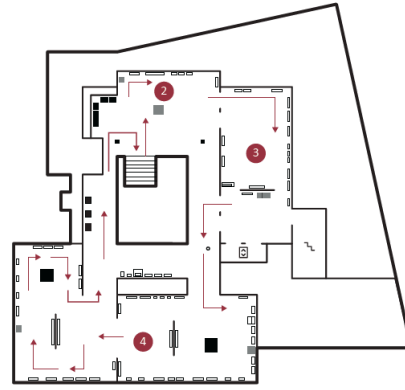


Figure 29. First floor - permanent exhibition

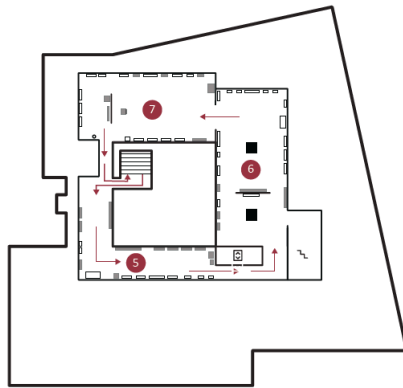


Figure 30. Second floor - permanent exhibition

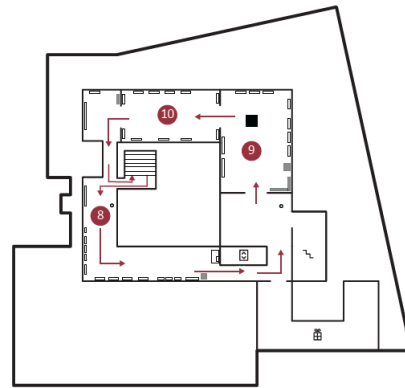


Figure 31. Third floor - permanent exhibition

pic 1d: the general visit flow on each floor at the VGM (Coen, 2018)

(the floor plans from left to right and up to them are of: the ground floor, 1<sup>st</sup> floor, 2<sup>nd</sup> floor and the 3<sup>rd</sup> floor)

Compared to the temporary exhibition, the permanent exhibition is more static: basically there will be no major change to the exhibition setup throughout the years. Therefore, the permanent exhibition part of the multimedia guide remains more static in both the product framework and the multimedia content.

### The Kurokawa Wing

This is a three-floors exhibition wing which is designed for different forms of temporary exhibitions. The exhibitions here tell relevant stories about Van Gogh and his contemporaries from various perspectives. In the year 2017, for example, four temporary exhibitions with different themes were held here from 2 to 9 months. Here is the “what’s on(s)” in December of 2018 at the VGM, the detailed explanation of which can be found in the appendix 1a.



**-1st Floor: Van Gogh Dreams (27 July 2018 - 13 January 2019)**

#A narrative installation of Van Gogh, #An immersive environment, #New media art...

#Emotions, #Dream, #From start to collapse...



**0th Floor: Gauguin and Laval in Martinique (5 October 2018 - 13 January 2019)**

#Van Gogh's friends, #Gauguin, #Exotic, #Colorful...

Because of the regular changes in the temporary exhibitions, the museum always attracts returning visitors. The temporary exhibitions display not only the traditional painting forms but also the new media art. Sometimes the paintings or settings of the permanent exhibitions will be moved to temporary exhibitions, and vice versa. Therefore, the museum at whole is not static, but full of vitality and constant new vibes. This also requires the multimedia guide to keep up with the changes of the temporary exhibition, which will be explained thoroughly in the next chapter.

### **1.3 A Vision of the VGM (2018 - 2020)**

The VGM is proud of the fact that Vincent van Gogh, the museum's collection and the programme of exhibitions continues to hold strong appeal for the visitors to the museum from more than 125 countries. (Van Gogh Museum, 2018) And the museum is keen to prepare for the future. A strategic plan for the VGM from 2018 to 2020 is made by the close collaboration between the Management Team and the Supervisory Board from the museum organization. The planning states the primary mission and core values for the museum activities; several visions are also depicted to describe the ideal situation the VGM is seeking to realize. The following statement is the most relevant vision to the graduation project:

**“The visitor is at the heart of all of the VGM’s activities and thought processes: their visit to the museum and the website should be a unique, special experience.”**

Visitors are seeking for more personal and direct contact with the museum. In the upcoming years, VGM will strive for satisfying the needs from both the physical and digital visitors. It is hoped that all the visitors could feel special during their visit (online and offline) and form a sustained and unique memory afterwards; it is also hoped that visitors should feel that everything is related to them. The number of visitors to the museum is foreseen to increase continually, so the challenges for museums are increased. It will be a hard task for the museum to ensure every visitor have a unique personal experience, especially when visiting crowds are getting bigger.

As the original strategic plan says: “visitors are given personal attention, feel at home and hold the unique collection in high regard.” The service offered in and around the museum will be responsible for showing the hospitality from the museum to every visitor and help visitors to make a personal connection between themselves, the artwork and Van Gogh. **The**

level of care that the Van Gogh Museum hopes to give is no longer limited to a group level but is expanded to the individual level. This vision provides a solid strategic background to the graduation project.

## 1.4 An Assignment from the VGM

### VGM: “To personalize the multimedia guide!”

In the current strategic context of the VGM, the concept of a personalized multimedia guide was brought up by Coen Mulder in his project named “Improving the visitor flow at the Van Gogh Museum”. Rather than just to improve the flow inside the museum space, the education department of the VGM sees the potentially bigger impact that the personalized multimedia guide might benefit both the visitors and the museum. Therefore, they initiate the independent assignment named “personalizing the multimedia guide”. Basically, the ultimate outcome of the project is known now, which is a personalized multimedia. But why and how to personalize the museum device are unknown for neither the museum nor the researcher myself.

### VGM & The Researcher: “Why? & How to?”

So, why to personalize the multimedia guide? It is widely known that almost 65% of customers are willing to pay extra for a personalized service nowadays (McKinsey, 2017). But the primary goal for the museum is not for the extra money; is for enhancing visitor’ experience. So what will the enhanced experience be like, for example, how to measure the enhancement? When the question is answered, the reason for personalizing the multimedia guide will also be clear.

If the reason for personalizing the multimedia guide is clear, then how to realize it? Personalization is known as a process that changes the functionality, interface, information content or other distinctive characters of a product/a system to increase personal relevance for a product (Blom, 2000). It is axiomatic that the opposite of personalization is “one size fits all”, which is actually what the current multimedia guide is doing now. Therefore, to change the product/service from a “one-size-fits-all” design to a “one-size-fits-N” or “one-size-fits-one” design, it is vital to understand the difference between group or individual visitors and make use of it. So what are the difference lying between the visitors and how to design for the difference? When the question is answer, the method and solution for personalizing the multimedia guide will also be clear.

The power of personalization is known to convey the right thing at the right time through a right channel to the right person (Sunikka, 2012). It is reasonable to believe that a personalized multimedia guide can enhance visitors’ experience inside the museum. In general, the challenges for the graduation assignment is to find out why to personalize the multimedia guide and how to design for it. Therefore, the whole project will be divided into two parts: the first part is to discover the goal for personalization and a second part to

investigate the design principles and practical examples for the personalized multimedia guide.

## Conclusion

Van Gogh museum is an art museum which mainly exhibits the works of Vincent van Gogh, a world-class genius in art and a dramatic figure in his life. The extensive collections are distributed in the permanent exhibition within the Rietveld building and in the temporary exhibitions within the Kurokawa wing. Apart from what VGM shows inside the walls, the museum also publishes various documentation (appendix 1b) and social media.

**Undoubtedly, the Van Gogh museum is one of the best places to know Van Gogh and his works, and a reliable information source about this genius artist.**

The average visit time of the museum is around 1 hour and 15 minutes. The museum is willing to pay attention to each visitors, facilitate them in having a unique experience inside the museum and generate a sustained memory afterward. Referring to the vision illustrated in the strategic plan for 2018 – 2020, the focus of the Van Gogh Museum is no longer limited to a group level but is expanded to the individual level. This vision provides a solid strategic background to the graduation project.

The VGM sees the potential impact that a personalized multimedia guide might benefit both the visitors and the museum. Therefore, they initiate the project named “personalizing the multimedia guide of the Van Gogh museum” for the researcher. The ultimate project outcome will be a personalized multimedia guide; but practically speaking, the reason for the personalization and the method for realizing the personalization remains unknown.

Therefore, the graduation will focus on discovering the goal for personalization and figuring out the design principles and practical examples for realizing the personalization. The next chapter will start to discuss the graduation focus - the multimedia guide – from studying what it is as a digital product/service to finding out the current personalization opportunities.



# Chapter II

## The Multimedia Guide

高更, 《静物与拉瓦尔》

开始

[short break] <

In 1887, the art  
of Martinique. T  
number of mon  
about his time c

### Gauguin

*It was only ther  
brought back fr*

### Maite

Vincent van Go  
produced on M  
that it's here, in  
displayed toge

I hope you enjo

The audio check of the MMT; a photo by Ziyi on Nov, 2018.

# Introduction

The first chapter introduces the current environmental context of the VGM, a single artist museum with rich sources of paintings and stories about the genius artist Van Gogh; and also explains the strategic context and the assignment background of the graduation project. It is clear now the project is going to study the reason and design solution for personalizing the multimedia guide. So, what is the multimedia guide? how is it working during each visitors' journey? Is there any “one-size-fits-all” features/contents can be upgraded to a personalized level?

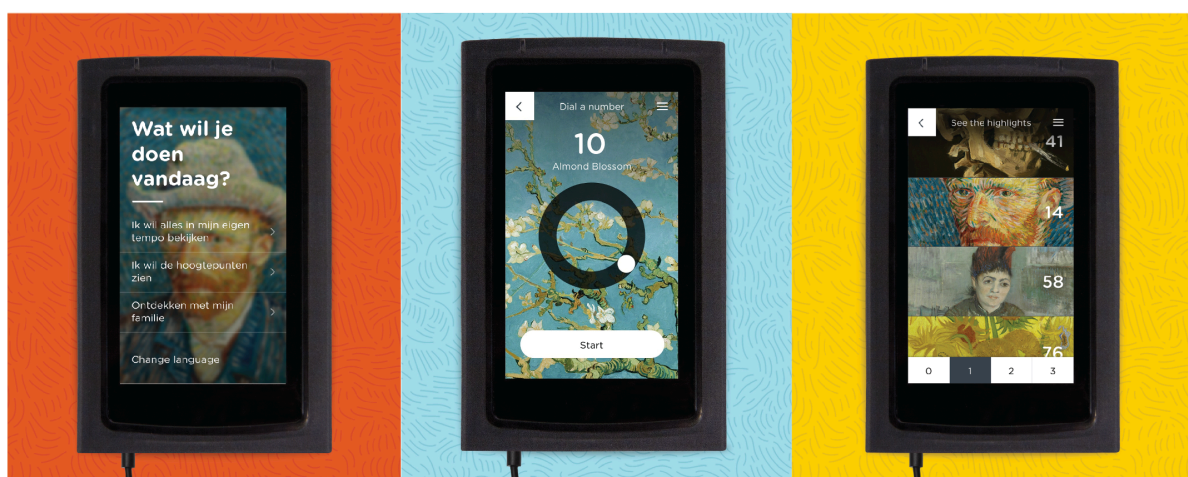
In this chapter, the researcher will study what it is as a digital product/service and find out any current personalization opportunity.

## 2.1 Get to Know the Current MMT

According to the Dictionary of Information Science and Technology (Barbieri, 2011) and the situation of the VGM, the multimedia guide here (abbreviated as MMTs) is a handheld device which is able to display multimedia (e.g., audio and video) contents related to the exhibited objects in both the permanent and temporary exhibitions.

When visitors are booking a MMT online, they will encounter a sales page saying: ***“The interactive audio guide will give you an engaging multimedia experience and reveals a Van Gogh you never knew.”*** (Van Gogh Museum, 2018)

Unlike a regular multimedia guide, the MMT of VGM undertakes the mission to enhance the visitor experience. The current version (pic 2a) was launched in November 2014 and tailored



Pic 2a: the interface of the current MMT (mw2015, 2015)

for two different types of visit: to explore at leisure or to see the highlights. The current multimedia guide was an unconventional and successful product in the museum field because of the outstanding interaction and the content design at the year of 2015, as it was granted with a Dutch Design Award in the “Service & Systems” sector. Throughout the

whole year of 2018, an average 30.9% of all the visitors picked up the multimedia guides. Among the MMT users (1/3 of all the visitors), 93% of them rated the general experience with the MMT "good + excellent".

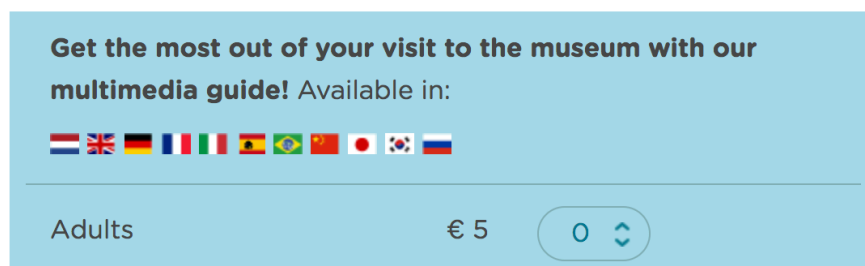
Proven in the internal visitor research (2017), the MMT achieved its original design goal of strengthened visitors' experience at the VGM: since 93% of the MMT users rated their general experience "very good + excellent" with the help of the MMT. For such a user-friendly tool, there are still rooms for improvement when the general experience breaks down into different emotional experience aspects, for example, feeling active, touched and etc.

The following sections will introduce the value proposition and the features of the current multimedia guide.

## Value Proposition

The MMT is designed for visitors who want an enhanced visit experience with the help of this alternative tool. (Museumsandtheweb.com, 2015) As a popular type of digital companion in many art museums, the multimedia guide often plays a substitutive role of a real-life museum guider and provides visitors the information about the paintings and artifacts they encounter.

Imagine being a visitor to the VGM, you will encounter the following sales page when you are booking your entrance tickets online (pic 2b):



Pic 2b: the sales page of the MMT

The sales page indicates the following attributes of the current MMT:

### **It's a paid product/service**

As an additional but optional service, the MMT costs €5 in addition to the entrance ticket (€19). It is a fixed price for every adult user. The device can be picked up in both the entrance hall and the Rietveld building. It will stay as a charged service and stay on an independent device (instead of visitors' phones) in order to maintain the current stable and excellent quality of service.

### **There are eleven languages for multilingual visitors**

The content inside the MMT is completely tailored for different languages, from the texts on the screen to the audios of all the multimedia content. Because when visitors are provided explanatory material in their native languages, they are able to



engage more deeply with the exhibition content and felt valued by the institution. (Yalowitz, 2013) Especially when all the information panels on the VGM walls are only written in Dutch and English, the multilingual multimedia contents are of great help for non-English- or non-Dutch- speaking visitors.

### **It is a way for visitors to make the most of the museum visit**

It is a marketing statement for the visitors which also reveals the ideal situation of using a MMT inside the VGM. Referring to the Longman dictionary, making the most of a visit means gaining the greatest possible value from the museum visit. In the subjective theory of value (En.wikipedia.org, 2018), the value is determined by the importance an acting individual places on a good for the achievement of his desired ends: for the MMT, some visitors might want it to help them easily find out all the must-see paintings, or give them an add-on and in-depth information resource, or so on.

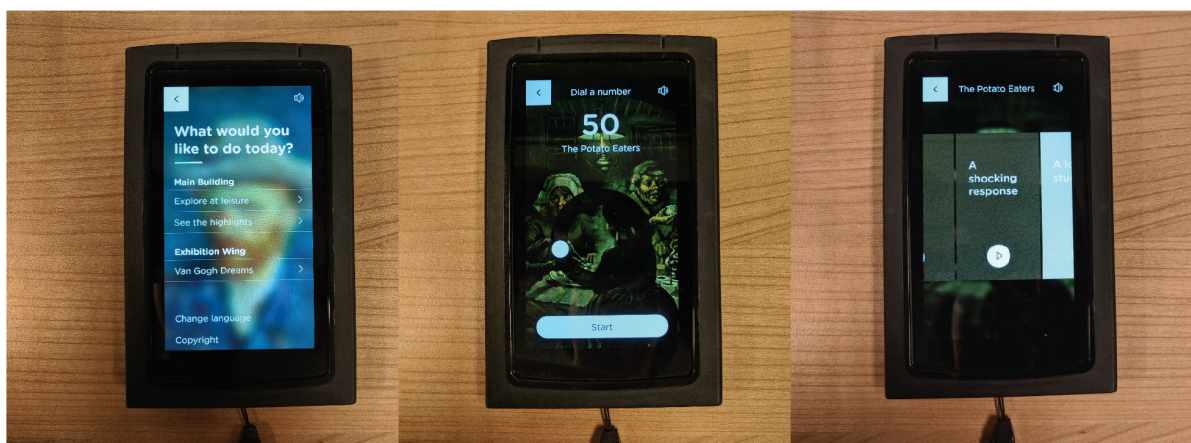
As mentioned above, 30.9% of all the visitors chose the MMT in 2018, while still 69.1% of them did not. An internal research named “Resultaten MMT Q356 en Q360” reveals the top-3 reasons for the non-MMT users about why they did not choose the MMT:

- 34% thought “I never take a multimedia tour / audio tour when I visit a museum”;
- 27% thought “I find it too expensive”;
- 10% thought “I do not think the multimedia tour has any added value”;

In short, their choice of renting a MMT or not is decided by their value balance among the costs (e.g., changing a visit habit and paying for the price), and the perceived added values (e.g., unknown now). It is assumed that, by maximizing the personal perceived added values, visitors will be more keen on choosing the MMT and then engage deeper with the VGM.

## **Features of the MMT**

Before the introduction of the current features, the researcher will teach you three important terminologies in the current MMT, they are tour, stop and segment:



Pic 2c: the tour, stop, and segment page of the current MMT, (from left to right) No.1-3



**Tour (Pic 2c - 1):** means a collective of different stops; each permanent exhibition tour can contain 20 – 40 stops inside the museum; the temporary exhibition tours may contain less stops.

**Stop (Pic 2c - 2):** means the painting with the MMT support and their identity numbers; one stop can contain 1-3 segments;

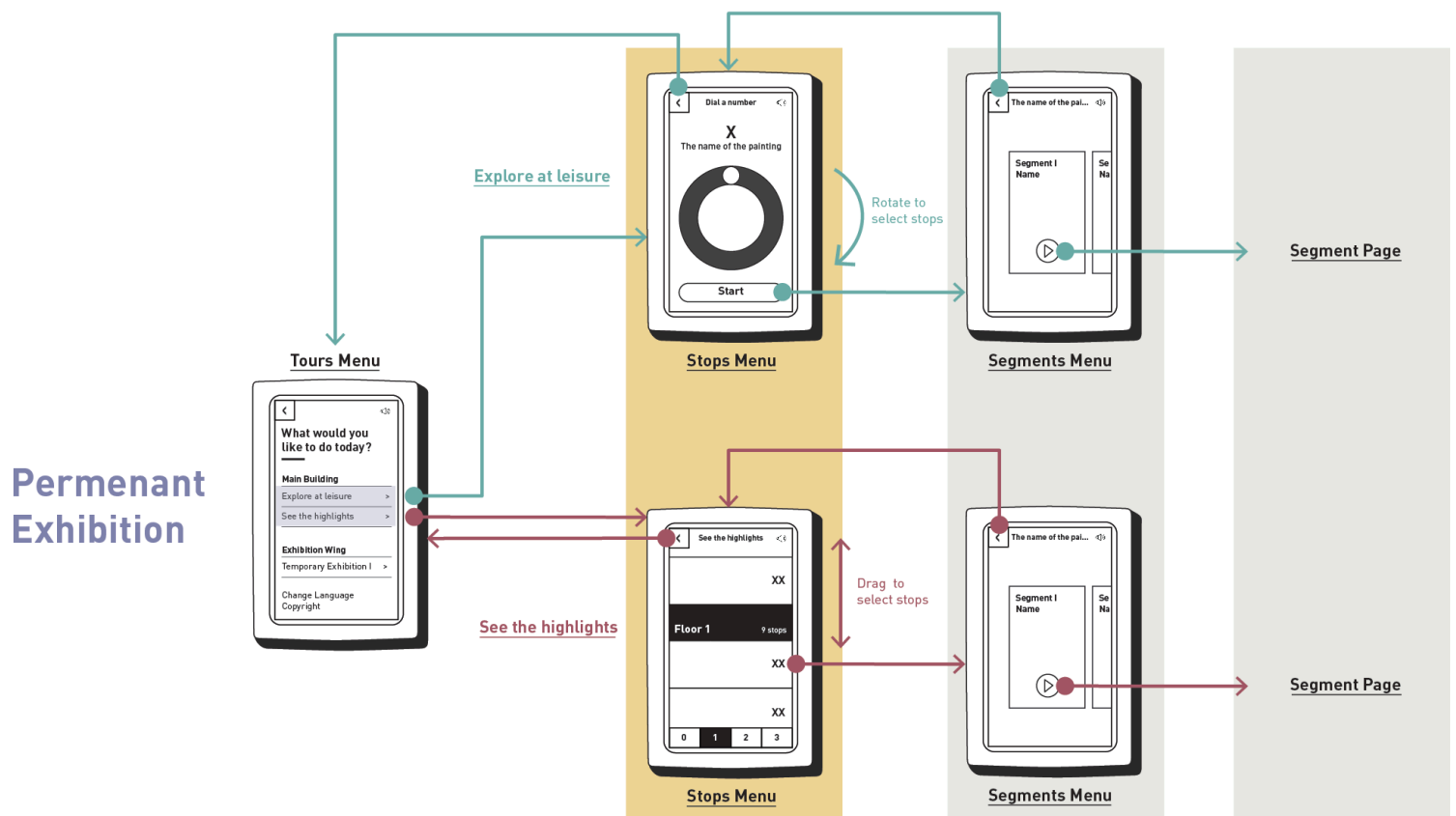
**Segment (Pic 2c - 3):** means the multimedia content for a stop; each segment can have one of the 6+ interaction forms, from audio to video to game.

The concepts of tours, stops and segments formulate the framework of the current MMT: the MMT consists of two different tours; each tours contains different stops; and each stop contains different multimedia segments. The MMT does not provide a visit routing in the tour, but only the stops and the follow-up introduction segments of each stop.

## 2.2 The Personalization Opportunities

There are four main features inside the current MMT, namely: (1) two simply tailored permanent exhibition tours; (2) the abundant and random forms of segment contents; (3) the engaging audio scripts; and (4) the agile and experimental temporary exhibition tours. These features differentiate the MMT from other multimedia guide in the museum field. At the same time, each one of them provides opportunities for a deeper personalization. Here starts the detailed explanation:

### 1/ Two Simply Tailored Permanent Exhibition Tours: “Explore at Leisure” and “See the Highlights”



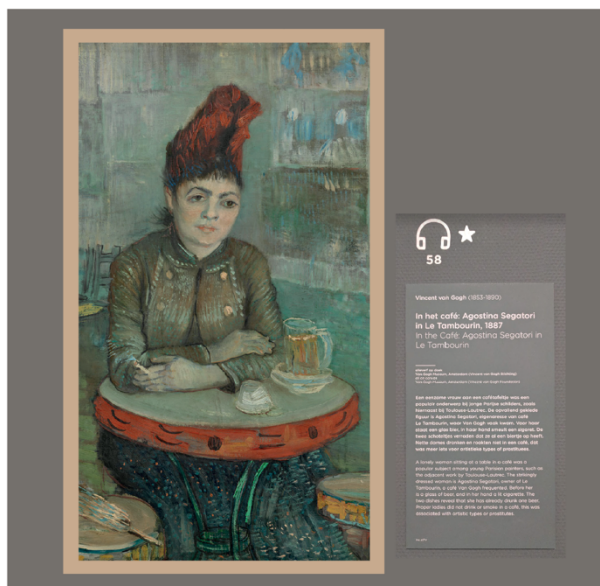
## Pic 2d: the interaction flow for permanent exhibition tours

There are two different adult tours for the permanent exhibition: a leisure tour and a highlight tour. The main differences between the leisure and highlights tour are the selection of the stops and the presentation of the stops menu; for the common stop in both tours, they share the same segment menu and contents. Take a look at the interaction flow (pic 2d):

As shown in the flow, there is a scroll wheel for the leisure stops menu, while a list for the highlights stops menu. The amount of stops are different for two tours: 20+ stops for the highlight one and 40+ for the leisure one. In general, the leisure tour contains all the stops from the highlights tour.

The tours are originally designed for visitors' different schedules. A project planning for MMT in 2016 indicates that the average time spent is 41 minutes by the highlight tour visitors, while 83 minutes by the leisure tour visitors, according to the statistics for 1 December 2015 – 31 May 2016. Therefore, when visitors are short of visit time, they can use the highlights tour. But visitors are free to switch tours in different phases of their visit.

Imagining when you are using the highlights tour in the VGM, you encounter the paintings on the left – “Agositina Segatori” (pic 2i), which it is not in the highlight list but you might want to listen to the stories about it. So you have to go back to the tour menu, enter the leisure tour menu, scroll the wheel to number 58, then play what you want to hear.

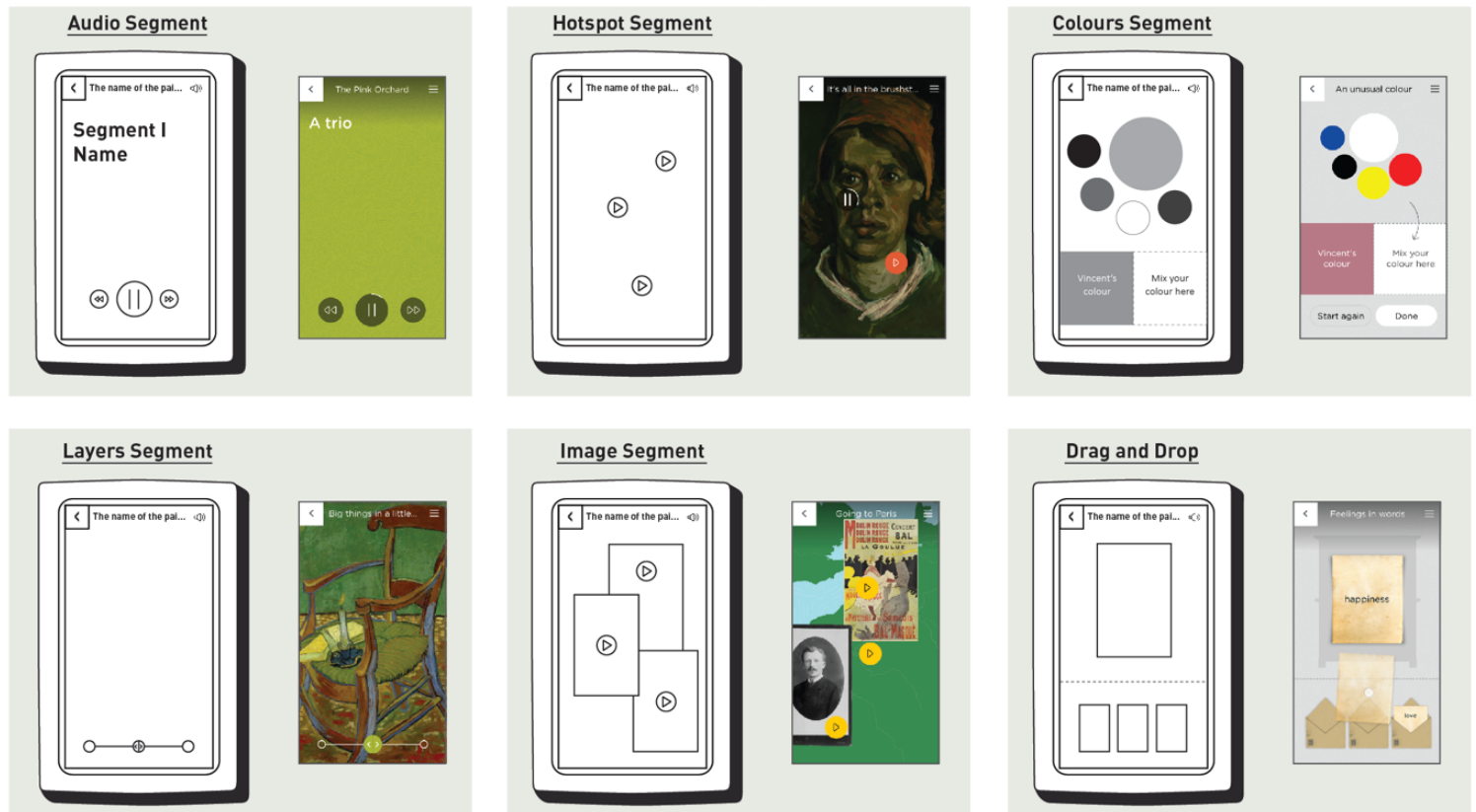


Pic 2i Agositina Segatori and its information panel

All in all, the tours are tailored for the visitors, but in a simple way. Because all the stops from highlight tours are set to tell visitors which stops they should know; and all the stops from the leisure tour are set to tell visitors which stops they could know; instead of showing which stops they would like/want to know. **So, when designing the MMT in the future, why should all the visitors have the same list of (highlight) painting stops?**

## 2/ The Abundant and Random Forms of Segment Contents: From audios to interactive games

The MMT Integrates various segment forms in the MMT. Audio is the main tool to provide visitors with a pleasant hearing experience; the accompanying multimedia segment also encourage visitors to receive extra information in an interactive way: for example, by zooming in the painting to see details, mixing colors to make Van Gogh's palette, etc. (Pic 2e):



Pic 2e: The segments examples

Each stop contains 1-3 segments that visitors can choose to open inside the stop menu (pic 2c). The interactive segments are assigned randomly in different stops and cross-disciplined: they sometimes emphasize the details of a painting, sometimes show the related facts of the painter, sometimes teach visitors the color skills, and so on.

The abundant forms of the segments prove that the MMT has a relatively delicate touchscreen and support basic interactions smoothly. The segment forms are random: the museum assigns them in different stops without a clear clue. If a visitor is very into the color segment, he/she will have no clue where to find a similar segment again. **So, when designing the MMT in the future, why should visitors receive their favorite interactive segments for just one time?**

### 3/ The Engaging Audio Scripts Not Just a Simple Painting Introduction

The audio script for each painting is not an audio version of the information written on the wall, but new words that could engage visitors to look at the real art in different ways. There are 11 detailed conditions for the MMT tone of voice (appendix 2a). For example, the script should use emotion to create lasting memories and impact. Here is an example of the painting “Agositina Segatori”, which can show how the conditions work in reality (pic 2f).

## 58

### In the Café: Agostina Segatori in Le Tambourin



#### < In the Café: A... ≡

##### An unusual setting

**NARRATOR:** There's a strangely-coloured glow to this setting. It's a café, run by this woman, Agostonia Segatori. That's quite an amazing hat she's wearing! Its fringe merges into the hair on her forehead. She's sitting at a table made from a giant tambourine; the name of this establishment was: the café Le Tambourin. She's got a glass of beer and she looks away, smoking and distracted. Her face is in focus, but around her the forms dissolve into a dream-like setting. Now Van Gogh is a more modern artist; his own artistic style is beginning to emerge. He's using colours for emotional effect, not to describe what's necessarily there. For example, he makes the straw seats of the chairs in the background bright yellow to pull our attention there, and move our eyes around the painting.

What to see in the painting.

Van Gogh's development and color skill.

Agostina Segatori displayed art at this café; in fact, this café is where Van Gogh's paintings were shown publicly for the first time. She and Van Gogh came to know each other well...but were they lovers? As you wander about this gallery you can find out...

The background story of the painting.

#### < In the Café: A... ≡

##### Van Gogh's love life

**NARRATOR:** So the answer to the question about Van Gogh and Agostina Segatori being lovers is:....yes! There are references to the relationship in a number of letters from him and others. But the relationship didn't last long. It ended badly. Not long afterwards, he seemed to have given up on love. This is what he wrote:

Van Gogh's love story with her.

**VG VOICE:** *(sighing tone) I feel I'm losing the desire for marriage and children, and at times I'm quite melancholy to be like that at 35 when I ought to feel quite differently. And sometimes I blame this damned painting....the love of art makes us lose real love.*

Van Gogh's own quote.

**NARRATOR:** Van Gogh never had much luck in love. When he was a very young man, he fell in love with his cousin. His pursuit of her caused a break with his family. Later, while still in the Netherlands, Van Gogh lived with a poor woman—a former prostitute—for a time and tried to help her, 'rescue' her, as he saw it. Again, his family was horrified.

Van Gogh's love story with her other women.

Pic 2f: The audio script examples



As shown in the example, the first segment of the audio introduces the painting and its context, and the second segment tells the general love story about Van Gogh. The female narrator asks visitors a question at the end of the 1st segment to lead them to the second segment. A male voice quotes from Van Gogh and speaks from the first-person angle. Listening to each part of the story takes around 1 minute. There are two more script example in appendix 2b.

How do visitors think about the script in reality? A internal document named “Analysis- Resultaten MMT Q356 en Q360 (2018)” reveals visitors' general acceptance to the audio scripts: the overall public opinions are positive to the script. But different visitors might hold totally opposite subjective attitudes towards their subjective emotional experience, which are not only related to the tone of the voice, but also the content of the audio.

***“I found the explanations (from the MMT) interesting and instructive.”***

*(Origins in German: Ich fand die Erklärungen interessant und aufschlussreich.)*

***“I found it (the MMT) a little superficial. Did not add much.”***

*(Origins in Portuguese: Achei um pouco superficial. Nao acrescenta muito.)*

The research plays the “Agositina Segatori” to a group of student inside the TUD MuseumFuture lab. After listening to the whole script, a DFI student finds the second part of story very interesting and informative; while an IPD student finds no interest in Van Gogh’s love story, but more about his color skills, and eagers to know more about the topic. The results represent only a small group of opinions, but they also reveal the differences in the people’s preferred story types. **So, when designing the MMT in the future, why should all the visitors listen to the same story?**

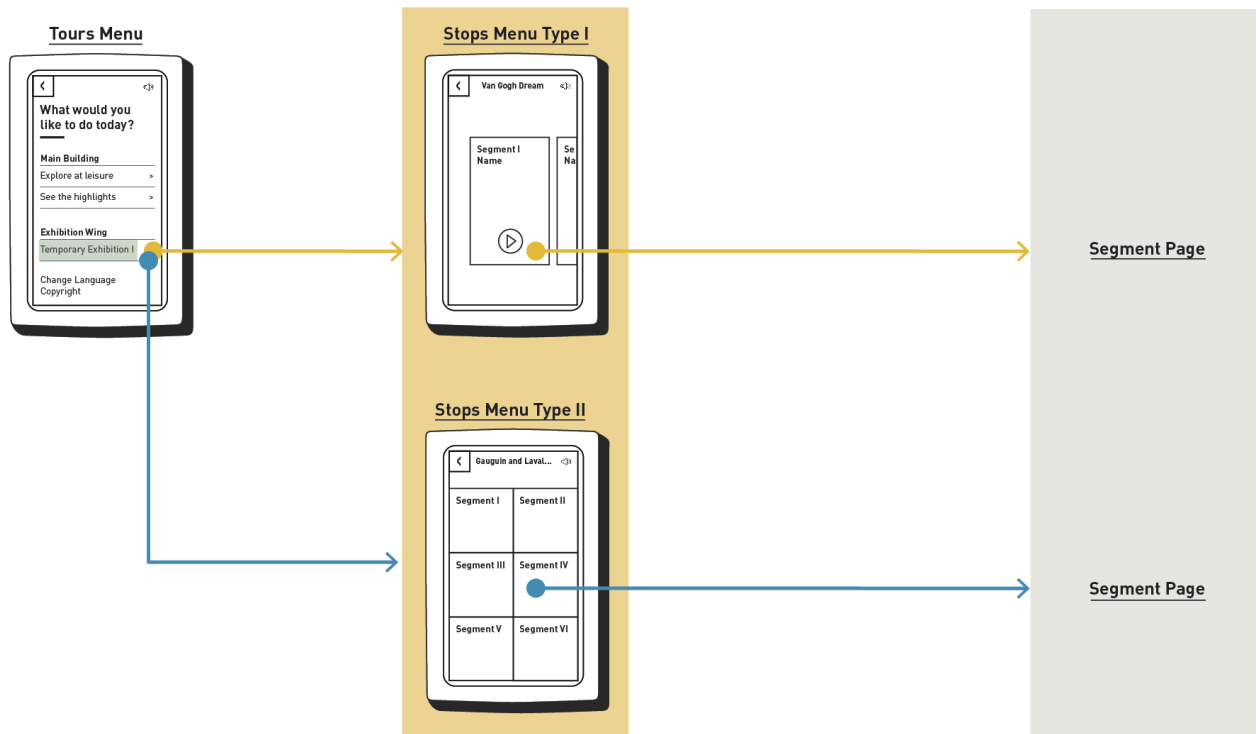
#### **4/ The Agile Temporary Exhibitions Tours:** **An Experimental Field and Regular Updates**

The last outstanding feature of the MMT is the agile temporary exhibition tours. Since 2017, the VGM starts to produce the contents of MMT for each temporary exhibition in 11 languages. According to the VGM internal visitor research (2017), for 14% of the MMT users, the MMT content for the temporary exhibitions is their first reason to rent the device.

The independent tours of the temporary exhibitions can be found in the tours menu, underneath the two adult tours for the permanent exhibition. Here is the interaction flow for the temporary exhibition tours (pic 2g):

As can be seen in the flow, the two stops menu for the temporary exhibition are different from each other, and different from the permeant exhibition tours. It is because here is like an experiment field for the VGM to try new technology that are embedded inside the Kurokawa wing. Every time when visitors step into a beacon zone, the segment will play/lighten up automatically. The backend of the MMT can also track the position of each MMT inside the Kurokawa wing.

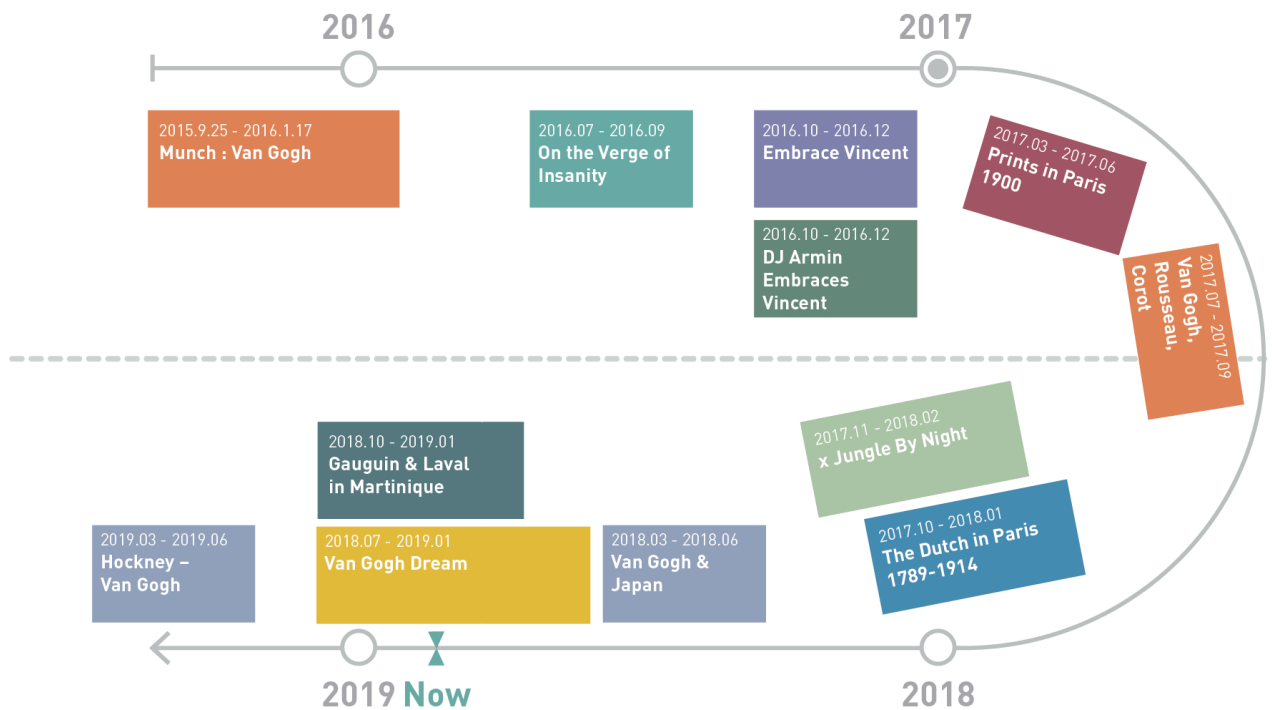
## Temporary Exhibition



Pic 2g: the interaction flow for temporary exhibition tours

The Rietveld building is also planned to embed the beacons in each gallery. **So, when personalizing the MMT, why not make use of the new technology that is placed inside the physical museum environment?**

## Roadmap 2016-2019



pic 2h the roadmap

Because of the temporary exhibitions, the MMT regularly updates for 2-3 times a year (pic 2h). Not only the separated tours will be added in the MMT, but the permanent exhibition

will also change accordingly. For example, a self-portrait of Gauguin from the Rietveld building was moved to the exhibition “Gauguin & Laval” in the Kurokawa wing; so the audio segments of “Gauguin’s chair” also adds a new part to fit the temporary change. When personalizing the MMT, it is necessary to maintain the flexibility of the regular updates.

## Conclusion

In light of the VGM vision of 2018-2023, which states that the museum will strive for creating a personal special experience for every visitor inside the museum, a personalized MMT can play a significant role in the task of showing VGM's hospitality and unique care to every visitor (who use the multimedia guide).

The current MMT is working well in enhancing visitors’ general experience at the VGM, which is proved in the internal visitor research (2017): since 93% of the MMT users rated their general experience "very good + excellent" with the help of the MMT. As a paid product/service, visitors’ choice of renting a MMT or not is decided by the balance between the costs (e.g., of changing a visit habit and money), and the perceived added values.

Four main features are found out in the current MMT, namely: (1) two simply tailored permanent exhibition tours; (2) many abundant and random forms of segment contents; (3) the engaging audio scripts; and (4) the agile temporary exhibition tours.

**Through the study of the MMT, the researcher found out that the MMT can indeed assist visitors to explore the VGM, but in a way of telling everyone what they could and should know.** This is the biggest design opportunity for the future personalized MMT. All the above-mentioned features, which are working well currently, can be upgraded to a next level. **So, based on the current MMT framework, it is good to think about these questions when designing for the future MMT:**

- 1. Why should all the visitors have the same list of (highlight) paintings?**
- 2. Why should visitors receive their favorite interactive segments for just one time?**
- 3. Why should all the visitors listen to the same story?**
- 4. Why not make use of the new technology that is placed inside the physical museum environment?**

Meanwhile, several conditions are found to be the pillars of the current MMT, which means that they need to be taken care of when personalizing the MMT:

1. Keep the multilingual content; the price; and independent device;
2. Remember the average visit time is 1 hour and 15 minutes;
3. Manage the regular and agile updates;

**The biggest design opportunity for the future personalized MMT is taking what a visitor wants for their journey into consideration.** But what visitors want could be endless. Therefore, a clearer purpose for personalization is still required. The following chapter will start researching the real visitors inside the VGM about what they want and what they want differently.

# Chapter III

## Observation & Literature Review



The visitors in front of *the Roots*; a photo by Ziyi on Sep, 2018.



# Introduction

The previous chapters introduce the current museum space and the project focus MMT. The VGM is striving for creating a personal special experience for every visitor inside the museum from now till 2020. The multimedia guide of the VGM, a paid product/service which could be one of the visitors' art companions during their visit, can assist visitors to explore the VGM in a more personalized way, for example, by asking what visitors want to know individually, instead of telling everyone the same thing what they could/should know.

After knowing the vision for both the museum and the MMT, it is time to study the current visitors' experience at the VGM. A brief observation is conducted to see how are visitors behaving and how are they behaving differently in different spots at the VGM. A literature review follows up to further investigate the observation result, and try to explain the "why" behind the "how" in a theoretical way. It is hoped that a clearer purpose for personalization can be generated at the end of this chapter.

## 3.1 Observation

An observation is made to see how visitors behave and how they behave differently at different specific spots inside the museum. The researcher chooses the method of observation to have a brief understanding about what visitors are looking at and what are their difference in looking here at the VGM.

Before the observation starts, the researcher selects some random spots in the museum and then observes visitors' behaviors at each spots for 10 minutes. At least one spot is selected on each floor of the Rietveld building. Here is an example of the observation spot which contains four paintings in the first gallery (pic 3a, 3b); among all, the fourth painting is a stop in the MMT:



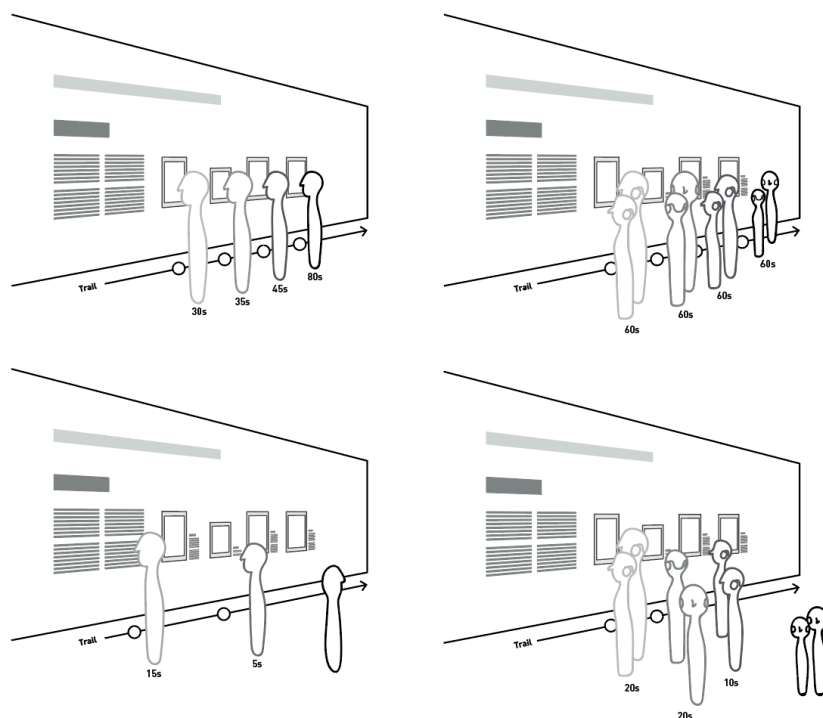
Pic 3a: the observation exempld spot



pic 3b: the real scene of the exemplified spot (3a)

## Results and Discussion

Like what Coen's project indicates before, most of the visitors follow a similar flow in each gallery. For example, most of the visitors start from left to right when they come across the exemplified spot (pic 3a). **But each visitor pays different levels of attention to each painting, and makes use of different "mediators" in front of each painting including the MMT.** Here are some individual examples (pic 3d) about what four groups of visitors did in front of the exemplified spot (pic 3a, 3b):



Pic 3d: some visitors' behaviors in front of the exemplified spot (3a)

Group 1 (upper-left): A single visitor stops by every self-portrait and spends the longest time in front of the last one;

Group 2 (upper-right): A pair of MMT visitors gaze at every self-portrait and spend the equal time in front of them; But the male companion distracts at the 2<sup>nd</sup> and 4<sup>th</sup> painting;

Group 3 (bottom-left): A single visitor firstly skims the written introduction, then take a quick look of the 2<sup>nd</sup> painting and then leave to the next part;  
Group 4 (bottom-right): A pair of MMT visitors firstly stop by the 1<sup>st</sup> painting together, then they speed up any leave the gallery;

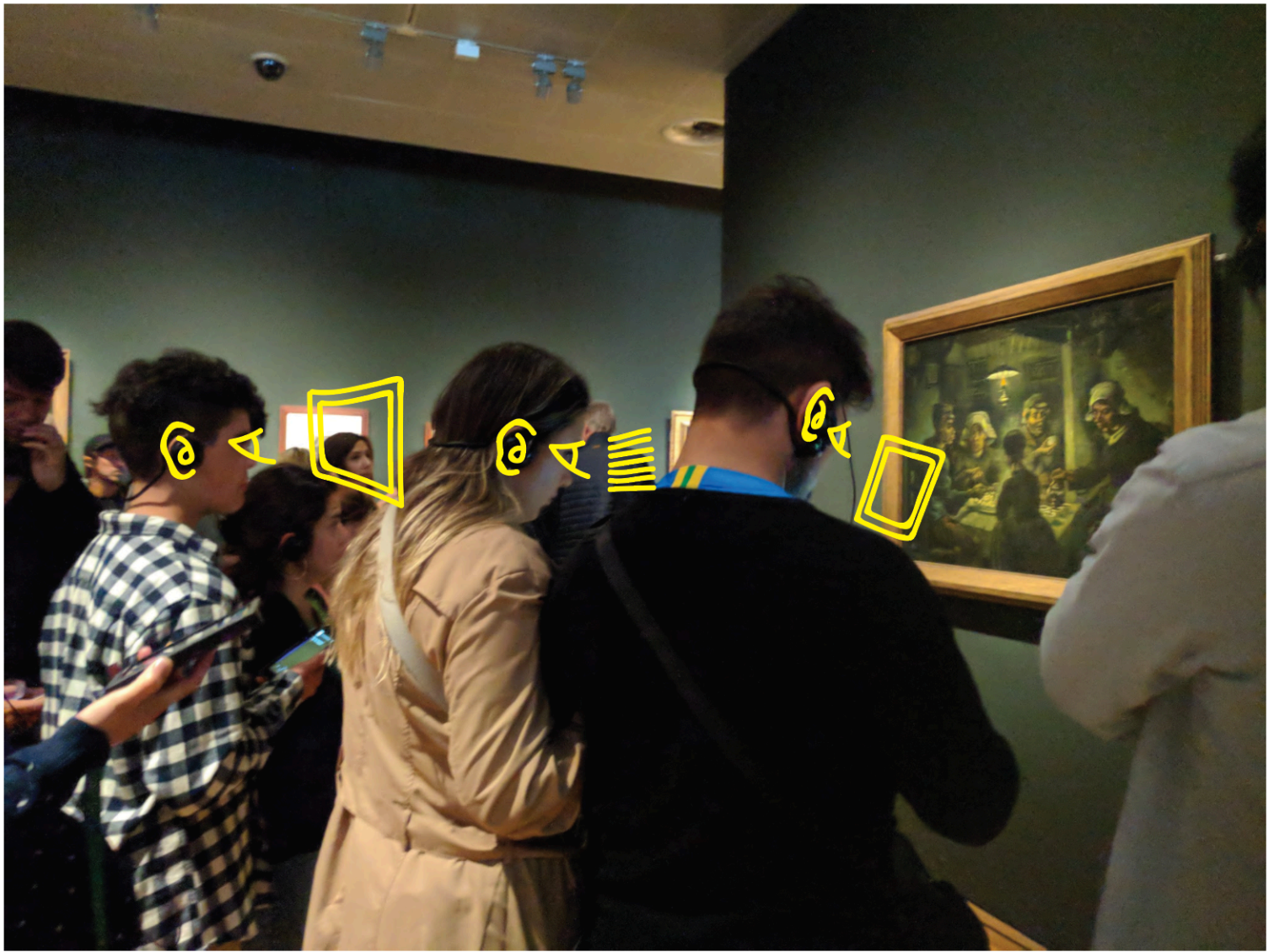
There are more types of behaviors in front of different spots, which outweigh the four types in pic 3d. Their behaviors include approaching, stopping by, staring at the paintings/story/setup, reading text, talking with others, thinking, and so on (pic 3e). **Generally speaking, visitors might be willing to pay different levels of attention to different painting/story/setup of the museum.**



Pic 3e: different behaviors at museum

**Different visitor also uses different mediators in a different way at a different spot.** Even though they use the same MMT (pic 3f), some of them stare at the paintings, some look at the information panel, some look at the digital screen when listening to the audio.





Pic 3f: different behaviors appear when using the same MMT are used at museum

Therefore, what will be the reason behind visitors' diverse behaviors? The researcher heard some conversation from the visitors. In the gallery 4 (pic 3g), for example, a visitor called upon her friends to move faster to the middle place to see the famous Sunflowers, saying: "Come! The Sunflowers is over there!" In the gallery 10 (pic 3g), for another example, a visitor whispered to her partner: "These paintings are not made by Van Gogh. Let's go." ..... **Their words reveal their varied interests to different spots: visitors might be attracted by certain qualities of the paintings/stories/setup at the museum.**



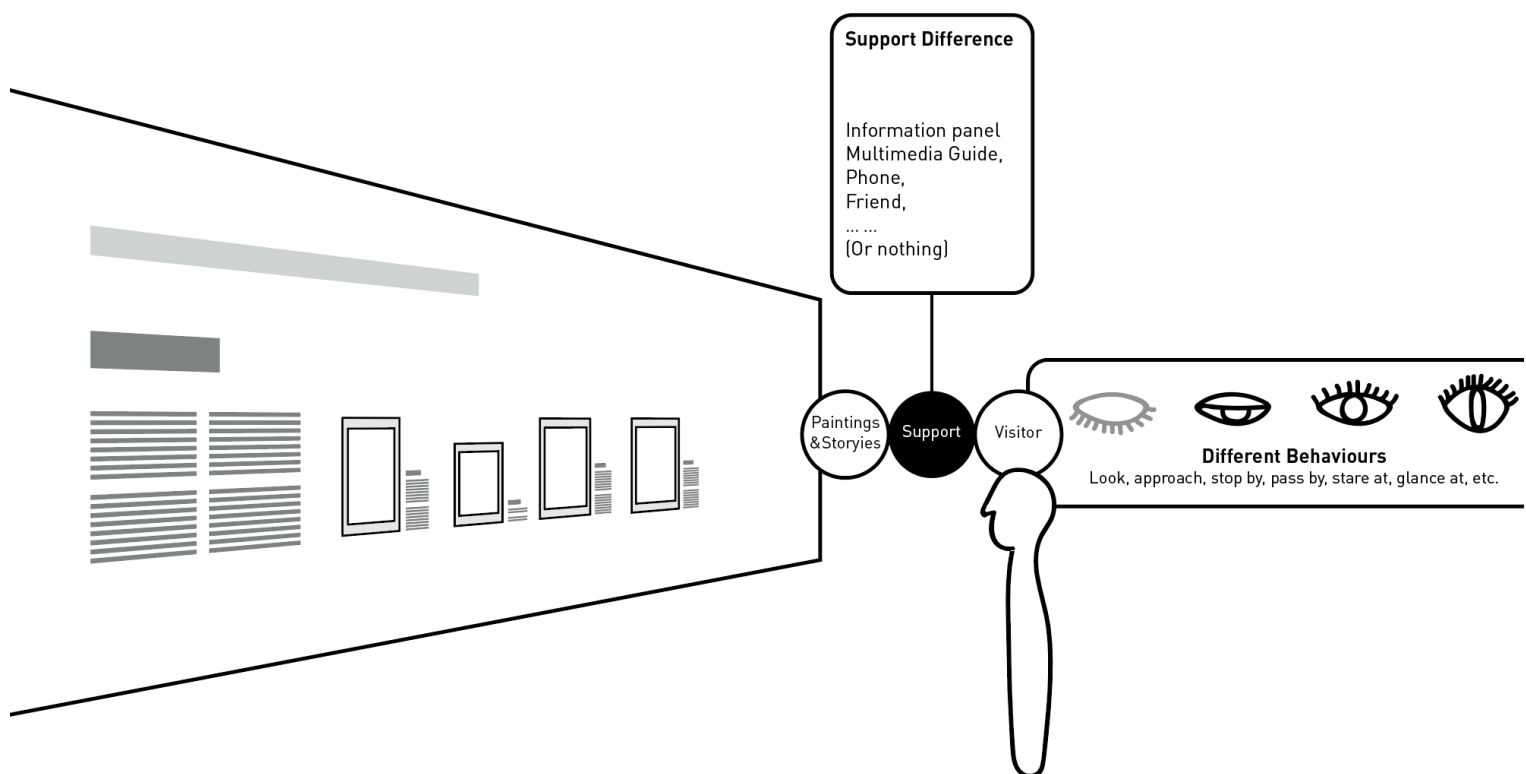
Pic 3g: the scenes where the conversations happen



## Observation Conclusion

Visitors face a lot of choices in the museum: a large amount of paintings and objects exhibited on the wall. They might approach one of them but miss the other one; they might also gaze at the painting or just skim it. The pattern is quite complex. But it is obvious that they do not pay their attention equally to different spots of the museum.

Besides, even when visitors use the same MMT, some of them stare at the paintings, some look at the information panel, and some look at the digital screen when listening to the audio. In general, different visitor uses different mediators in a different way at a different



Pic 3h: a brief visit model at VGM

spot. The relationship among the exhibited objects, mediators, and the visitors is shown on the pic 3h.

**Visitors' discussion reveals that they might be attracted/distracted by certain qualities of the paintings/stories/setups.** It is interesting to look into the reasons behind their behaviors. Therefore, the next part of the report will investigate the theoretical explanation to prove the observation and find out the reasons behind visitors' behaviors.

## 3.2 Further Literature Review

### Introduction

According to the observation at the VGM, it is found out that visitors do not pay their attention equally to different spots of the museum, while they also make use of different mediators in different ways at the different spots.

So, what are the reasons behind the visitors' diverse behaviors? It is assumed that visitors might be attracted/distracted by certain qualities of the paintings/stories/setup. The literature reviews will deep dive into the concept of visitors' attention distribution at the museum and provide a solid and theoretical explanation to the various behaviors that the researcher observed at the VGM.

## The Attention-Value Model

The attention-value model of museum visitors was first brought up by Stephen Bitgood in 2010. According to the model, visitor attention is a set of psychological and physiological processes involving three continuum phases (capture, focus, and engage); each attention phase is influenced by a combination of different independent variables. The prior motivation for paying attention is the perceived value (a ratio of utility and cost) of the exhibited objects. A visitor's interests and personal agenda are the keys to their perceived utility, and the time and effort need for achieving the utility determine the perceived costs.

**In this sense, visitors perceive a higher value of paying attention to the exhibited object which they are more interested in and easier to find out.**



According to the attention-value model, the initial **capture** stage happens when the visitor's attention is unfocused in the face of a broad number of stimulus inputs. The elements aligned with the line of sight or circulated pathway will influence the capture of attention. There are several behavioral indicators like scanning, glancing, approaching, stopping by an exhibited object.

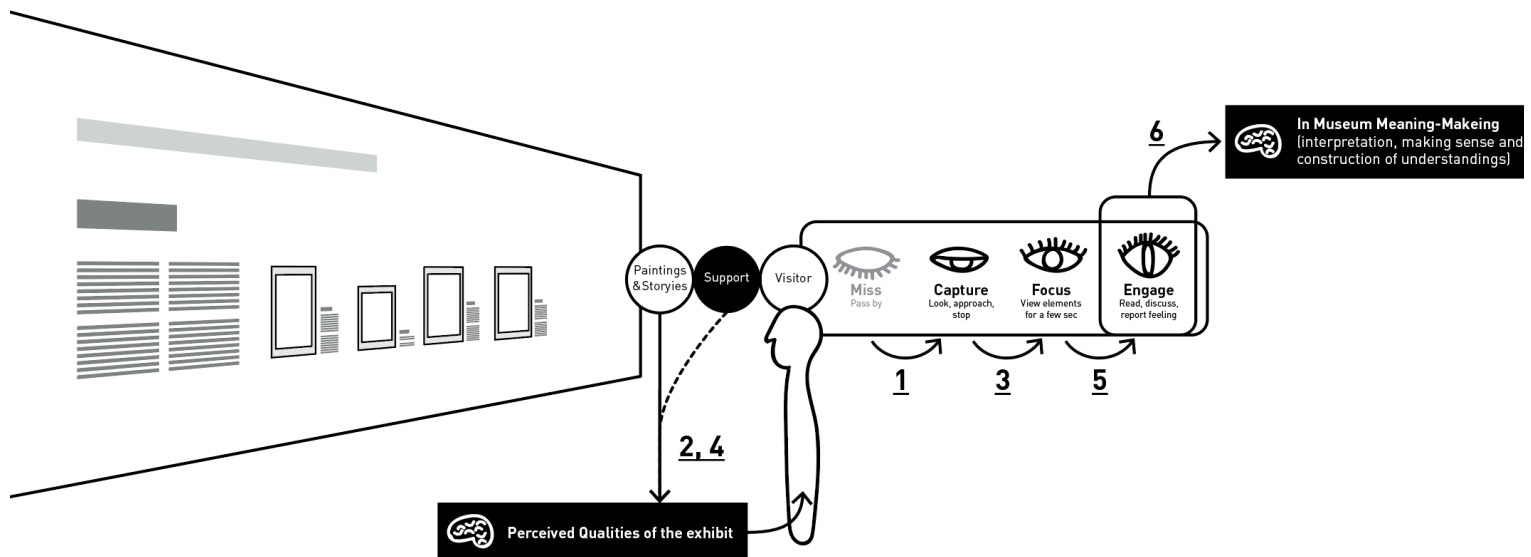


After the attention is captured, visitors might narrow down their **focus** to a single element. Focusing needs attention to one thing at a time and ignores the others. The identification label can influence the focus stage. The label can be the name, or the appearance of the object, or any element that could be perceived by the visitors. For example, the paintings belong to visitors' familiar artists can attract their attention and become their focus. When visitors are visually attracted by an exhibited element for at least two to three seconds, they could be considered as entering a focus stage.



After focusing, it is possible that visitors can **engage** with their focused elements. Engagement involves deep "minds-on" processing with exhibit content. The qualities of the exhibit elements could influence the engage stage, including the affective, intellectual qualities and additional facilitation setup. The final outcome of the attention engagement includes personal interpretation of the exhibited content (a.k.a. meaning-making) and even evoke a deep emotional response. Some direct behavioral indicators include learning, scientific reasoning, inquiry, immersion, emotional recovery, and etc.

In general, visiting a museum is not just an aesthetic apperception experience, but also a meaning-making process (pic 3i). Visitors might 1) capture the exhibit objects (like paintings, stories, and other setups), 2) perceive the evident label of the objects, 3) focus on the object for a few more seconds, 4) perceive the deeper qualities of the objects, 5) start to engage with the objects, 6) and generate own interpretation of what is shown. Different types of mediators are used for assisting the attention distribution.



Pic 3i: engagement: a meaning-making process

Many types of research indicate that visitors generate their own meanings only after their active engagement and interaction with the exhibited object in the museum (Crotty, 2003). Visitors' meaning of a museum experience might be influenced by the contextual factors of the exhibition and themselves. As a result, visitors find personal significance within museums in a range of patterned ways that could reflect their basic needs (Silverman, 1995). The next parts of the literature review will study the discern meaning layers of the main exhibited objects – the paintings at the VGM, and the contextual factors of the museum visitors.

## The Meaning Layers of Paintings

Visitors can perceive the qualities of the exhibited objects and generate their own interpretation through the “minds-on” processing. Paintings, the main exhibited objects at the VGM, are influenced by many contextual factors, for example: the wall color, the information panel, the sequencing, placement of the paintings (Paris, 2002); and the lighting, crowds, colors, and sound around it (Evans, 1995); the paintings around it and their connection; but most importantly, the form, theme and contextual stories of each painting itself.

In today's contemporary visual culture, art educators are utilizing a balanced approach that attends equally to the form, theme, and context(s) of the artwork to help learners create as well as discern layers of meaning in visual language (Sandell, 2009), as revealed in the

following equation:  $\text{Art} = \text{Form} + \text{Theme} + \text{Context}$  (Sandell, 2006). With the help of the educator and what they present on the information panel and audio script, learners can find it easier to fully understand art images and building a sense of relevance and significance in their lives.

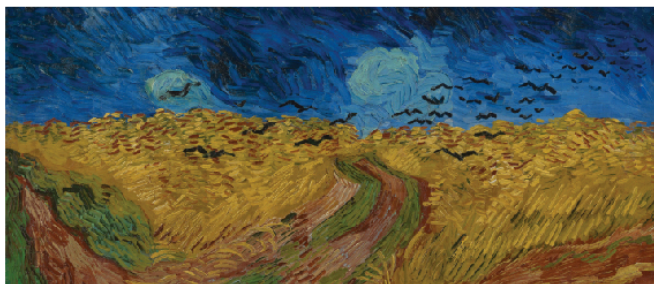
### **Art = Form + Theme + Context (Sandell, 2006)**

**Form:** how the work is, including its information about the actual composition, scale, materials, drawing methods, skills, style and etc.

**Theme:** what the work is about, including its broad subject, subject matter, art historical reference, other art connection (with music, dance, etc.), other subject area (math, science, etc.) and so on.

**Context:** when, where, by/for whom and why the art was created (and valued), including its relevance with personal, social, cultural, historical, artistic and other factors.

For example, six paintings are selected from VGM's collection and introduced according to the 1) formal, 2) thematic, and 3) contextual levels of information:



- 1- #Impasto, #Strong Contrast Colors
- 2- #Wheatfield with crows, #Auvers-sur-Oise, #Country side, #1890
- 3- #Known as the "last painting", #Sadness, extreme loneliness

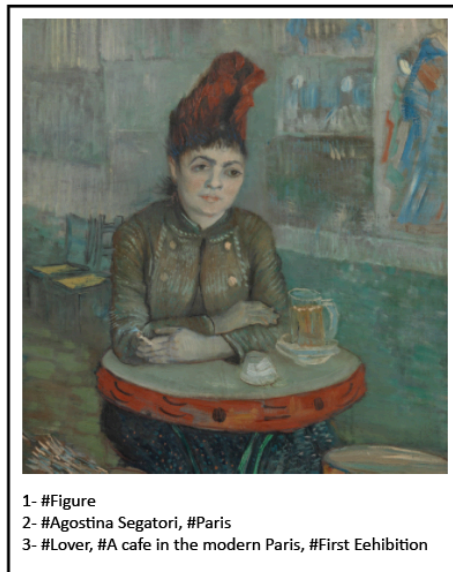
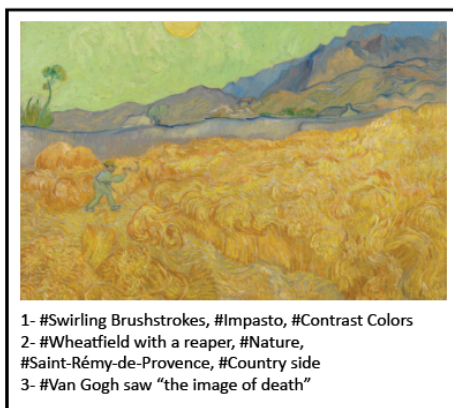


- 1- #Traditional Dutch color style
- 2- #The Bible #Still life, #Dark environment
- 3- #Van Gogh's Religion, #Van Gogh's and his father



- 1- #Contrast Colors, #Perspective
- 2- #Van Gogh's bedroom, #Inhouse, #Arles
- 3- #A room in the famous yellow house, #Where Van Gogh cut his ear, #One of the three "Bedroom" paintings





Pic 3j: six paintings

Let's take a look back at picture 3j, from the form perspective, the painting "Wheatfield with a reaper" is affiliated strongly with the painting "Cypresses and two women" due to the swirling brushstrokes used by Van Gogh; while from both the theme and context perspective, it is more affiliated with painting "Wheatfield with crows", which both depict an open landscape and relate to the "death" of Van Gogh. "Wheatfield with a reaper" is placed closed to the "Cypresses and two women", while quite far to the Wheatfield with crows". Visitors at the museum cannot look at the two wheatfields together at one glance like we do here on the screen/paper.

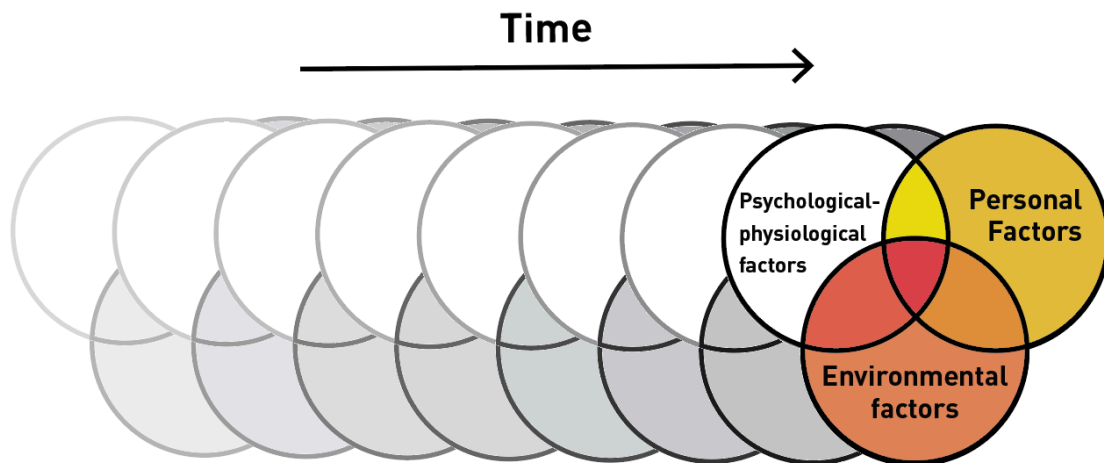
In short, a painting is not just an image with a look but also a medium containing different layers of information. Visitors can perceive these qualities of the paintings and make their own meaning if they want. Therefore, what can motivate visitors to discover the qualities of the exhibited objects? The following part will illustrate the context of visitors in a general museum. **Therefore, it is understandable that visitors often need some guidance to decide what is considered important, because all the elements and objects of the exhibitions are competing for attention in most museums (Bitgood, 2010).**

## The Context Model of a Visitor

Whether visitors capture, focus on, or engage with the exhibited objects are motivated by the interaction of visitors' personal factors (personal value, interest, past experiences, etc.), psychological-physiological factors (perceptual, cognitive, affective, decision-making, fatigue), and environmental factors (social influence, architectural and exhibit design) (Bitgood, 2015). These factors constantly work together within the attention process.

Referring to the abovementioned attention value model, visitors perceive different value of the exhibited objects which is strongly related to their personal concerns and the cost of finding the relevant qualities.

Besides, time is also an important factor for visitors (pic 3k), since every visitors has their own agenda for their trip. In general, as time goes by, visitors usually will have less energy and reach to higher fatigue levels which might decrease their willingness to engage with the museum (Bitgood, 2010).



Pic 3k: the context model of a visitor

## A Rough Personalization Purpose

It is clear now that once visitors engage with different exhibited objects that they perceive high value of, they could have their “minds-on” process and generate the meanings in mind. Therefore, to encourage visitors to engage with the collection will enhance their visit experience at last. Therefore, the researcher desires the future multimedia guide can focus on the engagement and meaning-making process of the visitors here at the VGM.

But due to the multiple elements and objects competing for attention in most exhibitions, visitors often need some facilitation to decide what is considered important. Visitors’ perceived value from the exhibited objects and their own contextual factors vary per person and time; so with personalization, it is possible to provide them with the right content in a right interactive way at a right spot in a right time. In this way, to maximize the meaning of visiting the VGM.

Therefore, a rough goal for personalizing the multimedia guide is generated, is: **to facilitate visitors to engage with museum, maximize visitors’ meaning of visiting the Van Gogh Museum.** The target and user group will be all the visitors who can use the adult mode of the current MMT inside the VGM.

After having a reason for personalization, it is time to think about how to. As mentioned in the context model of a visitor, their personal concerns are of the greatest importance to their perceived utility at the museum. Once we understand the connection between the visitors' main concern and their perceived important spots, we can lower the perceived cost to their attention activities at the VGM, in order to improve visitors' perceived value to the collection and achieve the personalization goal.

## Conclusion

**According to the literature review, visitors pay more attention to the objects that they could perceive higher value of (Bitgood et al., 2010).** Therefore, they might capture, focus on, or engage with different exhibited objects at the museum based on their concern levels. Visitors perceive different value level of the exhibited objects due to their personal concerns and the cost of finding the relevant qualities. Once they engage with the exhibited objects, they will start their "minds-on" process and create their own meanings of the visit (Crotty, 2003). By understanding the diversity of the visitors, an opportunity for personalizing the MMT will open up.

**In fact, because of the multiple elements and objects competing for attention in most exhibitions, visitors often need some guidance to decide what is considered important. Different personal facilitation might be needed based on their personal interest.** For example, the paintings, which are the main exhibited objects at the VGM, are full of distinguished layers of information behind the image. Art educators often call them the form, theme, and context layers of information.

At the same time, visitors' attention to different exhibited objects is motivated by the interaction of visitors' personal, psychological-physiological, and environmental factors with additional influence from time. Among all these terms, visitor's personal concerns are of the greatest importance to the meaning-making process at the museum. Once we understand the connection between the visitors' main concern and their perceived important spots, we can lower the perceived cost to their attention activities at the VGM, in order to increase visitors' perceived value to the collection and achieve the personalization goal, which is to **facilitate visitors to engage with museum, maximize visitors' meaning of visiting the Van Gogh Museum.**

In the next chapter, there will be a field research to explore the meaning-making process of real visitors at the VGM. Referring to the literature review, it is assumed that each visitor will have their own interpretive stories in mind which are related to their concerns and their experience with the exhibited objects. Their meaningful thoughts, engaging stops, and concerns will be studied for forming the basic concern model of the VGM, which will be used as the future MMT personalization.



The analysis materials for the 1<sup>st</sup> research data; a photo by Ziyi on Oct, 2018.

Reading  
Realize



## Introduction

According to the observation and literature review, visitors in the museum pay more attention to the objects that they could perceive higher value of (Bitgood et al., 2010). Once we understand the connection between the visitors' main concern and their perceived important spots, we can increase visitors' perceived value to the collection and achieve the personalization goal, which is to facilitate visitors to engage with museum, maximize visitors' meaning of visiting the Van Gogh Museum.

In this chapter, a field research was conducted at the VGM and 26 actual visitors were interviewed at the VGM. These interviewees are diverse from their demographic background to their interest/knowledge levels to the exhibited objects at the VGM. None of their visit experience at the VGM is the same. Therefore, they can represent the variety of all the adult visitors at this museum.

During the 1<sup>st</sup> visitor research, visitors were randomly selected from different galleries of each floor during their visit; they were asked about **“what leaves in their mind (during/after the visit)”** and **“what and why make them think so”**. Therefore, they talked about their emotions, their visit meanings in mind, their engaging spots at the exhibition their focus factors, and also their concerns. Now, let's have a look at the 1<sup>st</sup> visitor research.

### 4.1 The 1<sup>st</sup> Research

#### Research Goal

- 1/ To understand the concerns of visitors and their personal meaning at the Van Gogh Museum (what and why).
- 2/ To understand how are visitors evoked by the art and story at the Van Gogh Museum and as mediated by different types of supports or not.

#### Research Process

The target group of this research includes all the visitors who could use the adult mode of the MMT (all adults and some adolescents) and who already finished visiting some parts of the museum. They were chosen randomly among the floors and interviewed for several open questions, like **“Why do you come to the museum?”**, **“What leaves in your mind right now”**, and so on. After getting their meanings generated in mind, they were asked for **“what and why makes them think so”** for many times (pic 4a). The completed list of questions can be seen in the appendix 4a.



pic 4a A scenario of an interview happened **during their visit** between the galleries

## Interviewees background overview

The researcher interviewed 26 visitors at the Van Gogh museum from 22<sup>th</sup> to 24<sup>th</sup> October, 2018. With the help of their meanings, the researcher is able to understand what visitors are thinking and doing inside the museum and why. Here is their demographical information graph (pic 4b).

Gender		Age		Origins			
Male	14	15-20	4	England	5	Canada	1
Female	12	20-25	5	Netherlands	2	Russia	1
		25-30	5	France	2	India	2
		30-35	5	USA	3	Korea	1
		35-40	2	China	3	Israel	1
		45-50	1	Germany	1	Austria	1
		50-55	2	Puerto Rico	1	Switzerland	1
		55-60	3	Malta	1		
Group							
Individual	5						
Pair	12						
Small Group (3-8)	8						
Large Group (>8)	1						

pic 4b: the demographics of the 26 participants

According to pic 4b, 26 participants were selected across different gender, group type and age type. Most of them came from Europe, North America and Asia and visited the VGM for the first time in the last 2 years, except for a regular visitor - a Dutch museum manager - who comes to the VGM at least twice a year. Among all the visitors, five of them used the multimedia guide.

Visitors are not only diverse in their demographic background but also their levels of knowledge and affection towards Van Gogh. Most of them (19/26) considered themselves working in a very-far-from-art field, and held neutral attitude towards art.

Besides, visitors were chosen evenly from the 0-3 floor from the Rietveld building: approximately 6 visitors per floor were included in the research. In general, visitors who just finished their journey from the 0-1 floors tended to have fewer meanings than visitors from the 2-3 floors. But the amount of the meanings doesn't affect the data analysis.

In general, the interviewees in this research can represent the diversity of the adult first-time visitors at the VGM. Some research limitation and take-away can be seen in the appendix 4b.

## 4.2 The 1<sup>st</sup> Data Analysis

All the interviews were recorded and later transcribed by the researcher, the documents of which are now stored in the Project Archive in VGM's Citrix folder. Most of the data from the 26 interviewees were analyzed here, except for the data from the regular visitor who is totally not included in the target group.

There are four main phases for the data analysis (pic 4c):

### **Phase 1: Quotes Selection and Interpretation**

According to the interviews, visitors stated their thoughts and feeling when they were asked about "what leaves in your mind after the visit". Their quotes reflect their emotions and visit meanings in their mind.

### **Phase 2: Engaging spots and focus points integration**

According to the interviews, visitors explained the reasons behind their thoughts when they were asked about "what makes you think so". They mentioned the exhibited objects that they engaged with and their focus factors. Some interviewees explained their engaging spots so thoroughly that the researcher can even draw out their journey after the interview.

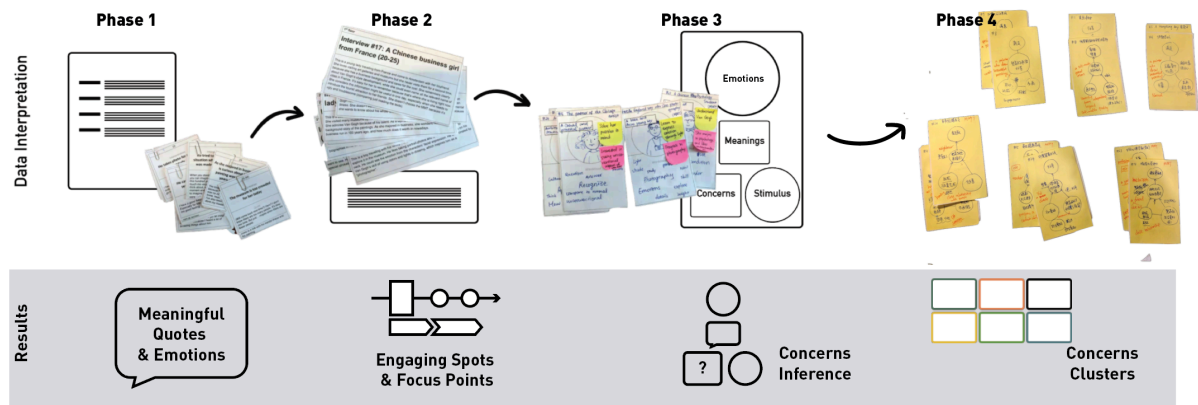
### **Phase 3: Concerns Inference (appendix 4c)**

During the interview, visitors are asked about "why the exhibited objects are interesting/meaningful/useful for you". They explained a lot of facts related to their hobby/occupation/curiosity/etc. However, very few visitors are clear about their concern. Therefore, the researcher had to apply the framework of product experience (Desmet, 2007) to infer their concerns by looking into their meanings (appraisal) and engaging spots plus focus factors (the stimulus) together. The concerns for each interviewee can be seen in the appendix 4c.

### **Phase 4: Concerns Abstraction and Clustering**

Since visitors' concerns are very personal and diverse, their concerns are streamlined to an abstract level before comparing with each other. During the comparison, 15/26 of the visitors' concerns are clustered into 6 independent groups; while the rest of the visitors' concerns still remain mixed and hard to define. The 6 concerns are saved for further research.

The analysis materials are also stored in the Project Achieve.



pic 4c The main phases of the data

## 4.3 Results

### Different visitors Journeys

As mentioned in the analysis phases, some interviewees explained their engaging spots so thoroughly that the researcher can draw their journey afterward. They are 1) a Chicago painter; 2) a Chinese Psychology student; 3) an England photographer, 4) an Israel Lady, 5) a HK young guy, and 6) a Korean radio broadcaster. They represent the 15/26 of the visitors whose concerns can be clustered into 6 groups. Here are the detailed introductions about these representatives:

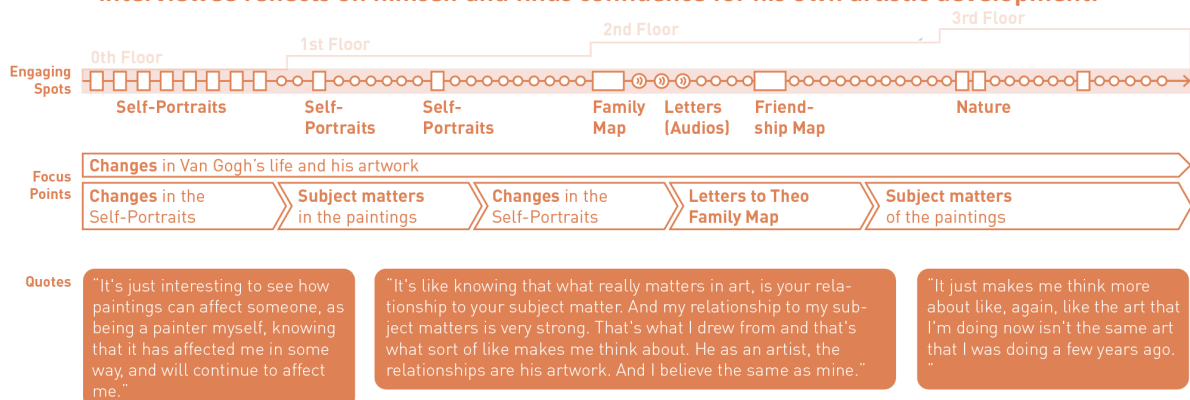


1

A Chicago Artist (travelling with his friend, without MMT user, resting at the 3<sup>rd</sup> floor)

**Main meanings:** "He (Van Gogh) as an artist, his relationships with the nature are his artwork. And I believe the same as mine."

**The biggest concern of the interviewee is to understand his own (art) development.** His previous knowledge outweighs than most of the other visitors at the VGM, that he happens to study Van Gogh as part of his art study at school and gets in touch with Van Gogh's paintings frequently in his hometown (pic 4d). As shown in the journey, the interviewee engages with many paintings and settings at the VGM. Van Gogh is a precedent for him and a similar person to him, who assists him in acknowledging himself and moving forward to the future. **The interviewee reflects on himself and finds confidence for his own artistic development.**



pic 4d



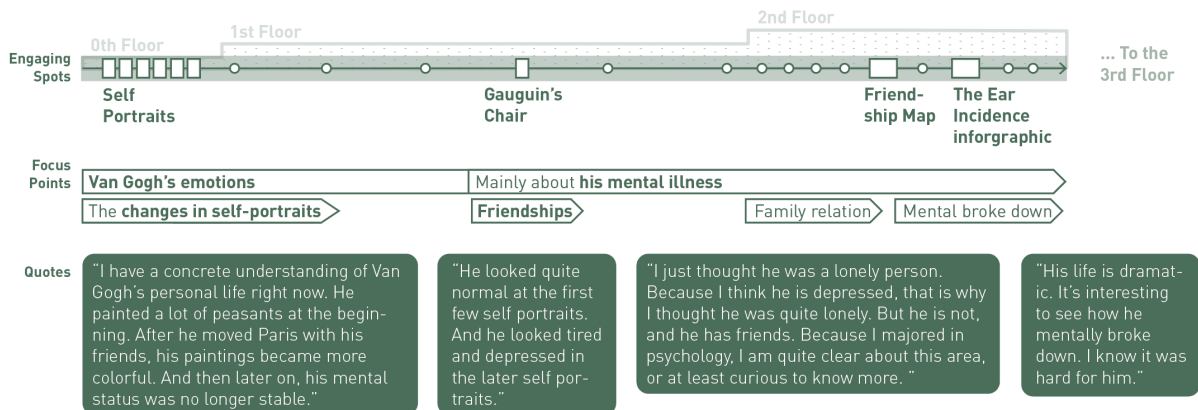


2

A Chinese Psychology student (traveling with her friend, with MMT, waiting at the 2<sup>nd</sup> floor)

*"He looked quite normal at the beginning, and then he looked tired and depressed in the later self portraits. I guess he felt lonely."*

The biggest concern of the interviewee is to understand others from a psychological view. Her previous knowledge about Van Gogh constrained to his artist fame and mental depression. She used to believe Van Gogh's loneliness resulted in his break down until she visited the VGM (pic 4e). As shown in the journey, she engages with many spots that talk about Van Gogh's mental condition and different related factors. Van Gogh is an interesting study target for her. **The interviewee finds excitement from the paintings related to Van Gogh's loneliness and mental break down.**



pic 4e

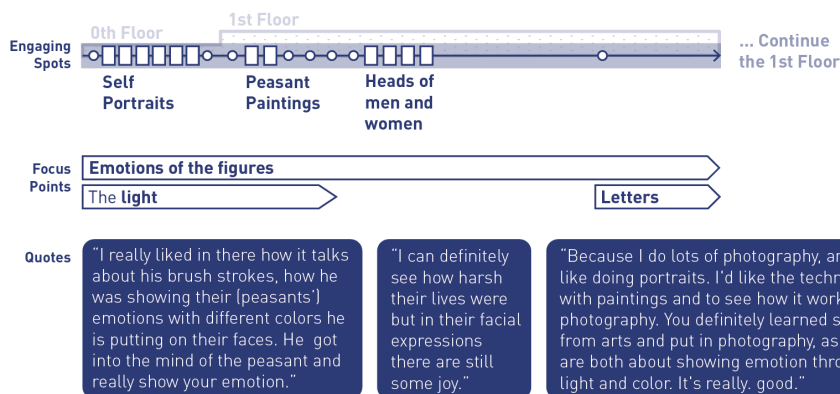


3

An England photography guy (traveling with his family, with MMT, resting at the 1<sup>st</sup> floor)

*"I'd like the techniques with paintings and to see how it works in photography. You definitely learn stuff from arts and put it in photography."*

The biggest concern of the interviewee is to progress his photography skills. His previous knowledge about Van Gogh was almost blank, and in fact, he also knows little about art and history. But he has the hobby of taking photographs in his daily life and he also brings a camera to the museum. As shown in the journey (pic 4f), he engages with many portrait paintings and looks at eyes of the figures. For him, Van Gogh is a master for expressing the figure emotions through light and color. **The interviewee feels astonished when looking at the portrait paintings and gains new insights for his hobby.**



pic 4f



4

An Israel lady (traveling alone, without MMT, resting at the 0<sup>th</sup> floor)

*"I want to know why he cut his ear. But it's something special of him and nobody did it before."*

The biggest concern of the interviewee is to see the landmark paintings and figure out the truth behind the rumors of Van Gogh. Before the visit, she already visited a lot of museums and purchasing many copies of the beautiful paintings. She already decided to buy the Sunflowers after the visit and hang it in her home. As shown in the journey (pic 4g), he engages with many settings that are related to Van Gogh's most famous master pieces and rumors. For her, Van Gogh is an interesting painter who also drew beautiful paintings. The interviewee is curious about the true stories behind Van Gogh's fame and the masterpieces in real.



pic 4g

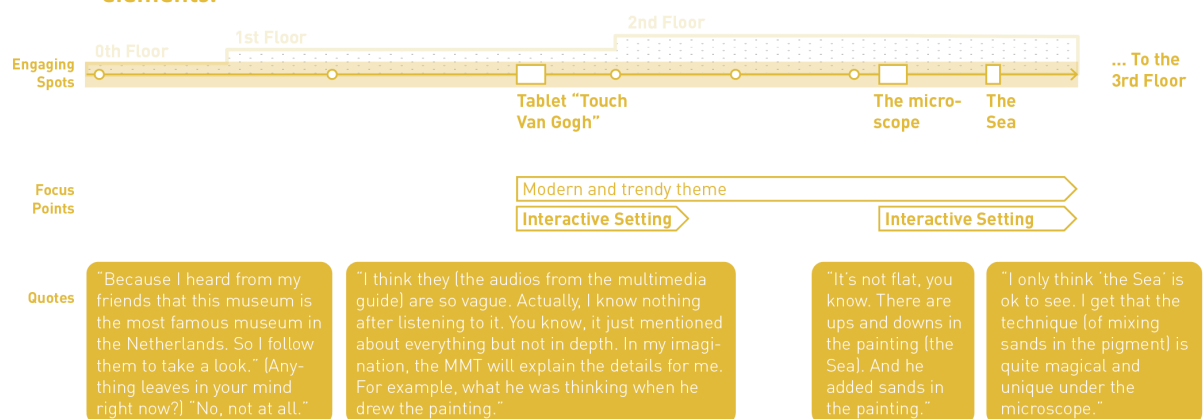


5

A HK young guy (traveling in groups, with MMT, resting at the 2<sup>nd</sup> floor)

*"I only think 'the Sea' is ok to see. I get that the technique (of mixing sands in the pigment) is quite magical and unique under the microscope."*

The biggest concern of the interviewee is to play with all the modern and trendy settings at the museum. He is not a fan of art or Van Gogh at all, especially the artworks that come from a decade ago. He moved quickly within the museum and plays phone inside the gallery. As shown in the journey (pic 4h), he engages with very few spots and most of the spots are interactive settings like the digital tablet and microscope. For him, the museum is not his ideal travel destination. The interviewee feels bored for most of the time, only find interest in the irregular elements.



pic 4h

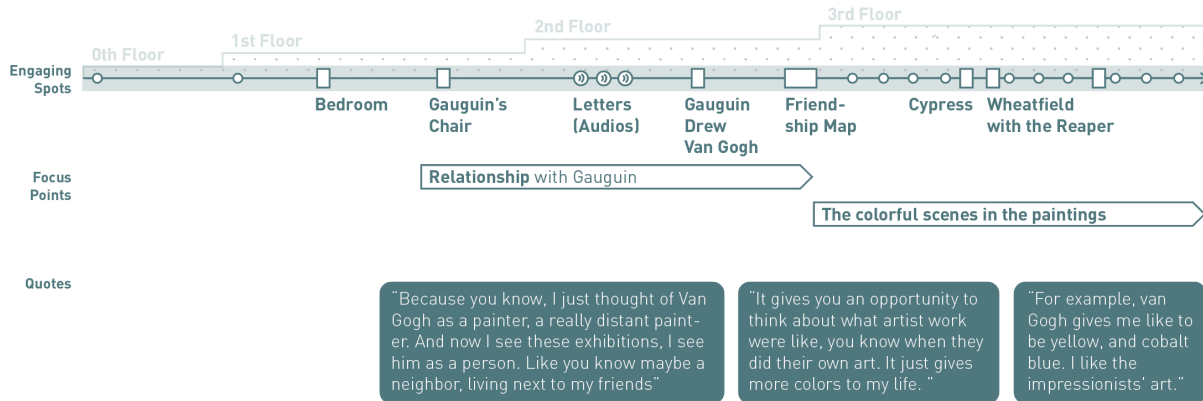


6

A Korean radio producer (traveling alone, with MMT, visiting at the 3<sup>rd</sup> floor)

*"It (art) just gives more colors to my life. For example, Van Gogh gives me like to be yellow, and cobalt blue."*

The biggest concern of the interviewee is to getting a close touch with the art created by Van Gogh. She is a fan of art even though she does not work in an art-related industry. She comes to the museum alone on purpose because she wants to immerse in the art world. As shown in the journey (pic 4i), she engages with many spots in the museum, and most of them are paintings. For her, the museum owns the biggest collections of Van Gogh and tells stories to her personally. The interviewee enjoys seeing all the paintings and opening her mind with art.



pic 4i

## 4.4 Visitors' Diversity

Evidently, these visitors behave differently: they engage with different spots and focus on different factors of the spots. For example, interviewee 1 engages with everything that are related to himself; interviewee 2 engages with many spots that talk about Van Gogh's mental condition and related factors; interviewee 5 only engages with the interactive settings at the museum; while interviewee 6 only engages with the landmark paintings and rumors-relevant spots.

Even though they engage with the same spots, they focus on various aspects and have their "minds-on" behaviors in various ways. For example, when interviewee 1, 2, and 3 all engage with Van Gogh's self-portraits at the 0th floor: interviewee 1 compares Van Gogh's styles and thinks how time changed Van Gogh's artworks; while interviewee 2 looks into Van Gogh's eyesight' and reads his emotion and mental stage changes through all the eyes; and interviewee 3 tries to remember the light and color that are used for the emotion expression.

All in all, their discrepancy of activities at the museum are lead by the personal concerns. As can be seen in the introduction, visitors' biggest concerns empower them to engage with different meaningful spots across the floors. Their concerns are personal unique comparing with the others. For example, interviewee 2 is interested in people due to her psychological hobby, so she engages more on the 1<sup>st</sup> and 2<sup>nd</sup> floors; interviewee 3 is interested in improving his photography skills, so he engages more on the 0<sup>th</sup> and 1<sup>st</sup> floors; while



interviewee 6 is interested in appreciating the artworks, so she engages equally on the 1<sup>st</sup> to 3<sup>rd</sup> floors.

## 4.4 Concerns Clustering

Although none of the interviewees have exactly the same journey, they hold similar concerns with each other. The 6 interviewees are the representatives of the 15/26 visitors whose concerns can be clustered into 6 independent groups. **Visitors who have similar personal concerns are interested in similar kinds of exhibited objects with certain qualities and have similar meaning-making behaviors.** These concerns are to: 1) understand yourself; 2) understand others; 3) learn new techniques; 4) find the significance; 5) seek for novelty; 6) feel the art:

### Understand yourself

The concern of comparing with Van Gogh and understanding yourself.

#### WHO

A Chicago artist: who wants to understand his own (art) development;  
A UK old gentleman: who wants to reflect on his days with his artist friends; .....

#### WHAT

Exhibited objects that are related to their own life.

#### Typical Meaning-making behaviors

Compare with Van Gogh from time to time; Remember Van Gogh's life value; .....

### Understand others

The concern of understanding how Van Gogh developed into who he was.

#### WHO

A Chinese psychology student: who wants to understand people from a psychological view;  
A Porto Rico attorney: who wants to understand what make a person into a legend;

#### WHAT

Exhibited objects that could tell the painter's personal stories.

#### Typical Meaning-making behaviors

Empathize with Van Gogh; Appreciate Van Gogh's, e.g., talent and strong will; Admire Van Gogh's, e.g., achievement in his career; .....

**It is considered that visitors from the different group have their engaging factors distinct from each other.** For example, when a visitor wants to seek for novelties very much, like interviewee 5 (the Hong Kong cool guy), he/she might not like Van Gogh's personal stories like interviewee 2; when a visitor wants to feel the art stronger than any other aspects, like the interviewee 6 (the Korean radio producer), he/she might not care too much about color techniques like interviewee 3.

### Learn new techniques

The concern of learning from Van Gogh's paintings about the color, composition, and etc.

#### WHO

A UK photography boy: who wants to progress his photography skills;  
A Chinese business girl: who wants to learn how to match the color in her daily look; .....

#### WHAT

Exhibited objects that could give them new insights about the techniques.

#### Typical Meaning-making behaviors

Learn how Van Gogh, e.g., used color and light (to express characters' emotions); Remember Van Gogh's e.g., color and his color combination; Collect their beloved paintings; .....

### Find the significance

The concern of seeing the most famous painting and the truth of the myths.

#### WHO

An Israel lady: who wants to see the most landmarks and know the truth of the myths;  
A UK teenager girl: who wants to discover the stories behind the fame of the legends;  
A Canadian lawyer: who wants to appreciate the uniqueness shown inside the museum; .....

#### WHAT

Exhibited objects that are special and can not be found in anywhere else.

#### Typical Meaning-making behaviors

Find out the location of the most famous paintings (incl. the paintings like Starry Night that are not here etc.); Figure out the truth of his famous myths (being crazy and cut off his ear); Complete a task in the bucket list in mind; .....

### Seek for novelties

The concern of discovering something unexpected and trendy.

#### WHO

A HK cool guy: who wants to experience interactive and new media art;  
A UK lady: who wants to find surprise in the museum; .....

#### WHAT

Exhibited objects that are modern and cool.

#### Typical Meaning-making behaviors

Get the hands busy; Think if it is trendy; .....

### Feel the art

The concern of enjoying an artistic moment in the museum.

#### WHO

A Korean radio producer: who wants to get in touch with the art world;  
A German social worker: who wants to immerse in the suppressive art world; .....

#### WHAT

Exhibited objects that show the scene they like.

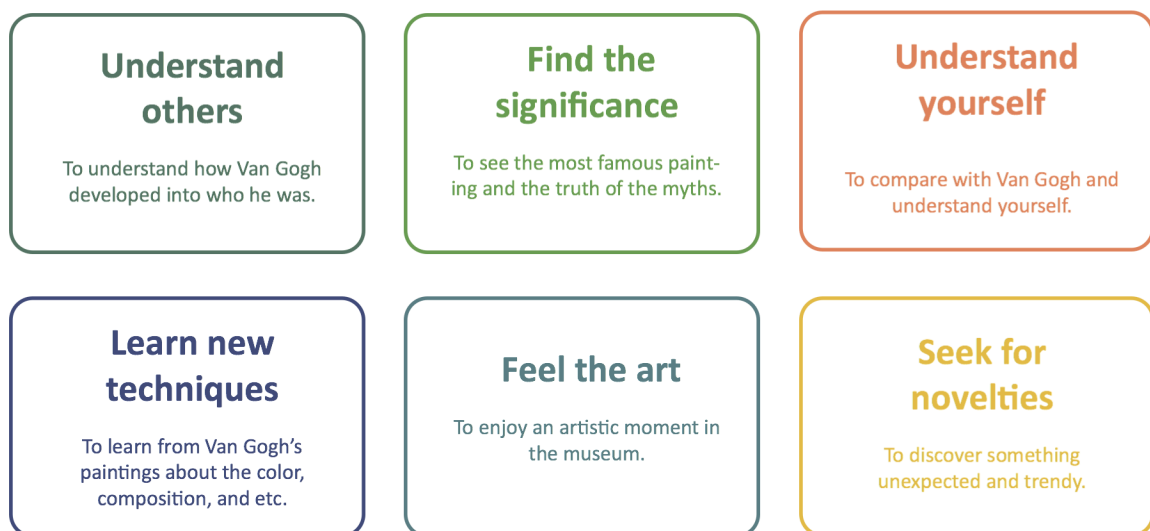
#### Typical Meaning-making behaviors

Feel the atmosphere expressed in the painting; Imagine the situation when the painting was made; Enjoy the vibe in the museum; Relax without thinking too much of the outside world; .....

**However, can the concern model work for the majority of the adult visitors?** There are still interviewees who can not be simply described with one singular concern from the list. Are there more concerns under discover? Is it common for visitors to have one strong concern or multiple mixed concerns? The current concerns model requires a validation from the visitors.

## Conclusion

A field research was conducted at the VGM and 26 real visitors were interviewed at the VGM. According to the interviewees, they have diverse travel experience at the VGM. They engaged with and focused on diverse types of combined spots in each gallery. Even though when they engage with the same spots, they focus on various factors in various ways. All in all, their discrepancy of activities at the museum are led by the personal concerns.



Pic 4j common concerns

Although none of the interviewees has the exactly same journey, they hold similar concerns with others. In general, there are 6 common concerns in the VGM (pic 4j): 1) understand yourself; 2) understand others; 3) learn new techniques; 4) find the significance; 5) Seek for novelty; 6) Feel the art. Visitors who have similar personal concerns are interested in similar exhibited objects with certain qualities; visitors from different group have their concerns distinct from each other. But a lot of questions remains about the six concerns. Is this concern model reliable? Can it be used to describe the majority of the adult visitors? The current concerns model requires a validation from the visitors. Therefore, a quick 2<sup>nd</sup> research is prepared in the next section, which is conducted to test and iterate the current concern model.



# Chapter V

## The 2<sup>nd</sup> Research & The First Part of the Concern Model

• Which faces of Van Gogh do you want to know? Why?

**a family person**  
Van Gogh and his family took care of each other.

**self-taught and self-made**  
Van Gogh started his career late but learnt and succeed by doing.

**vulnerable**  
Van Gogh is an emotional person, and sometimes too much to be admitted in an asylum.

**a committed friend**  
Van Gogh had closed relationship with several friends, and they communicated very often.

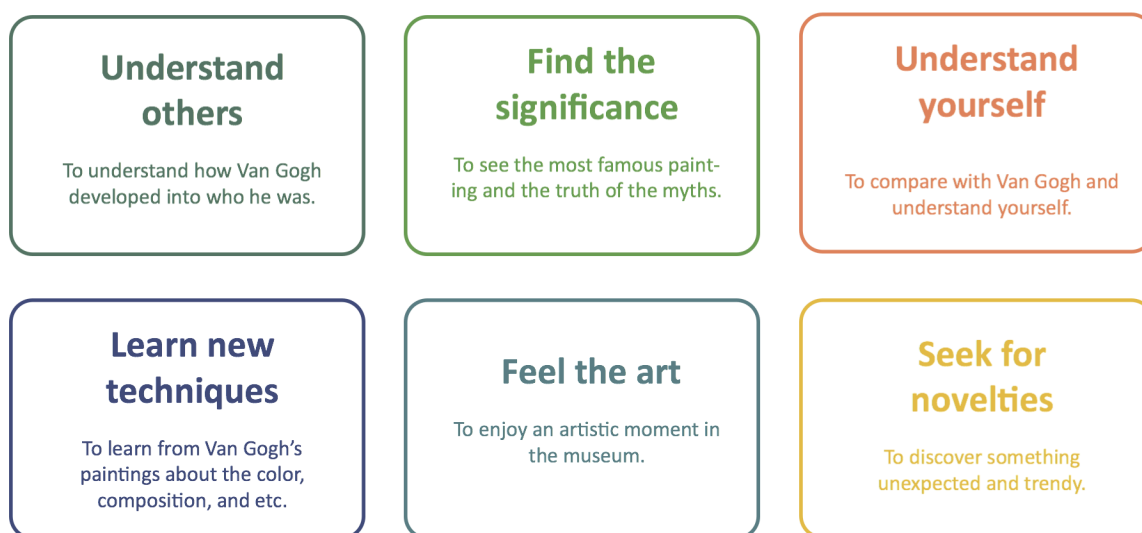
**unlucky in his love**  
Van Gogh was long for never succeed.

**saw in**  
Van Gogh found



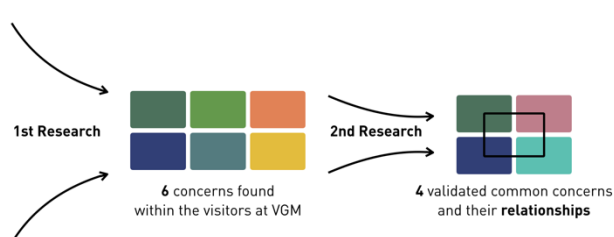
# Introduction

According to the 1<sup>st</sup> research, there are 6 common concerns in the VGM (pic 5a), they are: 1) understand yourself; 2) understand others; 3) learn new techniques; 4) find the significance; 5) Seek for novelty; 6) Feel the art. Visitors who have similar personal concerns are interested in similar exhibited objects with certain qualities; visitors from different group have their concerns distinct from each other.



Pic 5a 6 common concerns

But a lot of questions still remains about the 6 concerns. Are they reliable and completed? Can visitors find their own concern(s) from the list? How will they explain their concern(s)? The current concerns model requires a validation from the visitors. Therefore, a quick 2<sup>nd</sup> research will be introduced in this section, which is conducted to test and iterate the current concern model.



(pic 5b) Gains from the 1<sup>st</sup> to 2<sup>nd</sup> research

Based on the results from the 2<sup>nd</sup> research, the research refined the concern list: this time, only 4 out of 6 original concerns are retained (pic 5b).

Visitors also prove that they sometimes have 1 or 2 dominant concerns for their journey. At the same time, they are interested in the terms from a specific aspect that relates strongly with their dominant concerns. At the end of the research, a more validated concern list is made.

## 5.1 The 2nd Research Method

### Research Goal

To validate visitors' concerns at the VGM, figure out the combination pattern of their concerns, and iterate the concern model.

## **Research Process**

The research is divided into two phases, including a sensitizing materials preparation and the real research test and interview in situ.

### **1/ Sensitizing materials preparation**

A co-creation session was held inside the museum: with the help of a museum educator (Sarah Broekhoven) and a team leader of Multimedia tour (Koen Snijders), a map of all the different faces of Van Gogh and stories' summary (pic 5c) was made out of the session, along with all the corresponding paintings that relate to the stories. These story categories are the main presented information inside the multimedia guide and the panels on the museum walls; they are also a part of the important qualities of the exhibited paintings as well.

Pic 5c the many faces and stories' summary of Van Gogh

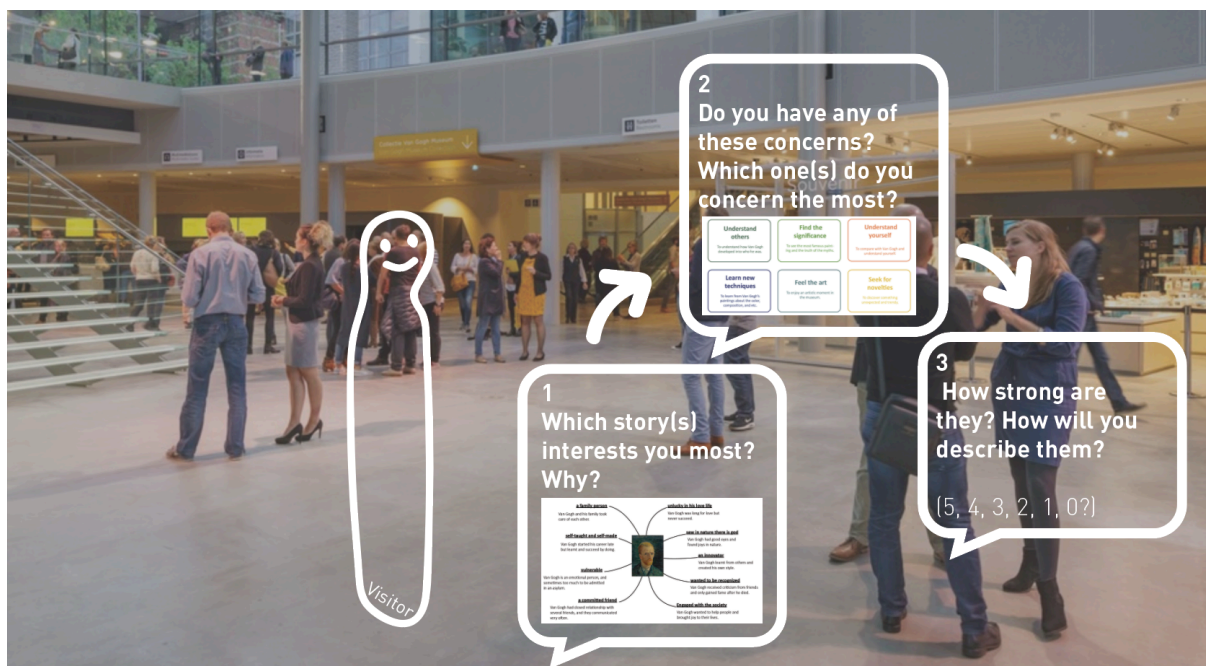
The story map will be used as a sensitizing tool for 2<sup>nd</sup> research. Because according to the 1<sup>st</sup> research, visitors always start explaining their concerns based on their engaging spots at the museum. Since the 2<sup>nd</sup> research decides to test the concern list with the visitors who are beginning their journey (which will be explained in the next part), the story map can simulate a selection activity at the actual exhibition and making visitors sensitized for their visit concerns.

### **2/ Test and research with visitors who are starting their journey**

The target group of this research includes all the first-time visitors that could use the adult mode of the MMT (all adults and some adolescents) and are going to start their visit at the

VGM. They are selected because they will have no biases caused by different things they have already encountered inside the exhibition and could also see all the options (of both the stories and concerns) equally. So the best place for finding the target visitors are the queues of the cloakroom inside the entrance hall (pic 5d), and the end of the escalator at the 0th floor of the Rietveld building.

The chosen visitors are presented with “the many faces of Van Gogh” first and asked for preference; after the sensitization, they are presented with the 6 concerns list, and asked for **“Do you have any of these concerns for your own journey? Which one(s) do you concern the most?”**, and **“How strong are they (the selected concerns) (from score 0 to 5) How will you describe them?”**. Their answers and scores are noted down by the researcher during the interviews. A brief process is illustrated in the pic 5d.



Pic 5d: a scenario of the interviews that happens inside the entrance hall

## 5.2 The 2<sup>nd</sup> Data Analysis

The researcher interviewed 7 visitors on 1<sup>st</sup> of December, 2018. They are all first-time visitors to the VGM and come from worldwide, like Japan, France, Singapore, England and so on. Their demographical information is not required for the research because it is found out in the 1<sup>st</sup> research that their concerns are more important for personalizing the MMT.

### Analysis Method

Before the research, there are already three assumptions for the upcoming results. They are created in combination with the insights from the 1<sup>st</sup> research:

- Assumption 1:** Visitors can find their own concerns out of the 6 common concerns;
- Assumption 2:** Visitors have one dominant concern that outweigh the others;



**Assumption 3: Visitors are sensitive to different faces of Van Gogh in correspondent to their concerns.**

The data from the visitors will be used for a qualitative analysis:

For assumption 1, if all the concerns can be distinguished correctly by the visitors and no extra concerns are considered missing for visitors, the 6 concerns can be proved reliable and the assumption 1 can be true. Otherwise, they need adjustments like being revised/added/deleted. **Therefore, visitors' description of the concerns will be used to compare with the preliminary definition of the concerns.**

For assumption 2, if all the visitors score only one concern that interests them the most, and score only one concern with 4 or 5 points, the assumption 2 can be true. Otherwise, the number of the dominant concern(s) need to be altered. **Therefore, visitors' selection and perceived scores to the concerns will be used to calculate the number of dominant concern(s).**

For assumption 3, if any pattern can be found in the relationship between which faces visitors are interested in and which concerns they have, the assumption 3 can be true. Otherwise, it will prove that the patterns need to be found elsewhere. **Therefore, visitors' selected concerns to the interested faces of Van Gogh will be used for finding the correlation pattern.**

## 5.3 Results

### 1/ Assumption 1 is partly wrong:

**3 concerns are clear for the visitors while the others are not**

After the sensitizing period, visitors are asked to select their strongest concern(s) that they have and explain it. Most visitors can explain 3 concerns in a way that sticks to their original definition: these concerns are “understanding others”, “feel the art”, and “understanding yourself”. Here are some explanations from visitors.

#### Understand others

(Original definition: to understand how Van Gogh developed into who he was)

“Mostly about his career I think. I’ve heard that he started as an artist at 27 or 28? I want to know how can he achieved so much in such a short time.” // “I learned something about him at school. I think it’s a good chance to know more about him. To fully understand his life.” (Visitors’ answers also show that they are interested in Van Gogh and his life.)

#### Feel the art

(Original definition: to enjoy an artistic moment in the museum)

“To actually look at real art in person. You know, unlike looking at the pictures from the internet. We can see so many details of the paintings here.” // “I want to relax here. I am already taking a rest (ha-ha).” (She is sitting on a bench.) // “The paintings from the previous century might somehow show the way of living at that time. I don’t really know art, but I would like to see what’s in the painting and imagine life at the past.” (Visitors’ answers also show that they are interested in Van Gogh’s artworks.)

### Understand yourself

(Original definition: to compare with Van Gogh and understand myself)

"I am looking forward to understanding a bit more of myself. I also created things every day. Maybe I can get some new insights."

But the other 3 concerns cause a lot of confusion to the visitors:

### Find the significance

(Original definition: to see the most famous painting and the truth of the myths.)

"I don't know art. I want just to get some basic idea of how Van Gogh differentiates than others; why is he so famous nowadays." // "I want to see the famous paintings, like the Sunflowers, the Café and the Starry Night." // "I learned something about him at school. I think it's a good chance to know more about him, but not too much." (Visitors are confused about what the significance is for.)

### Learn new techniques

(Original definition: to learn from Van Gogh's paintings about the color, composition, and etc.)

"I love Van Gogh's colors. I don't know what I want to do in the future, but I just think having a good taste is very important." // "I want to learn something new, whatever, like history." (Visitors are confused about what the new (techniques) are.)

### Seek for novelties

(Original definition: to discover something unexpected and trendy)

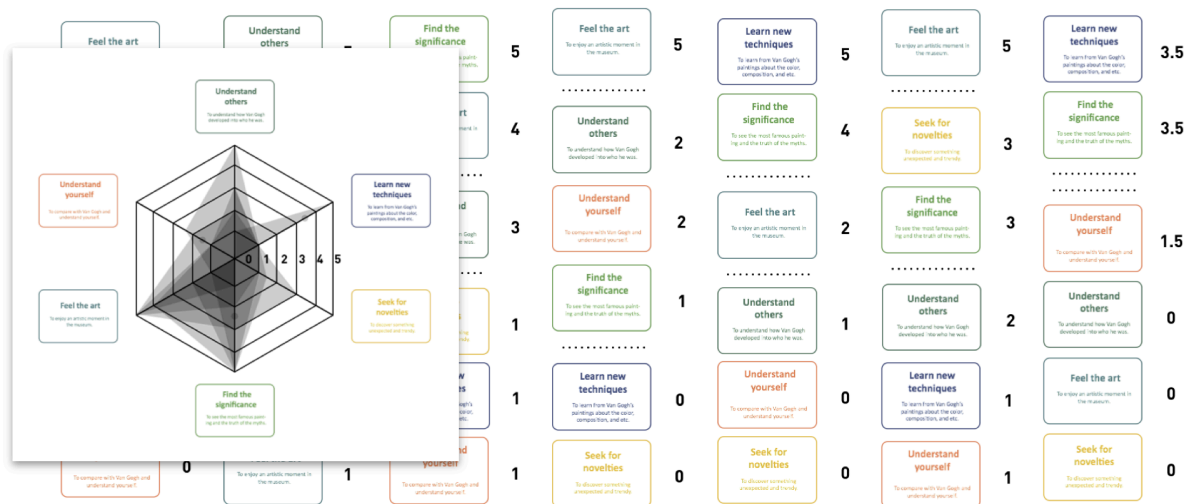
"Van Gogh is innovative. I think his paintings are novel at that time. I want to know how novel it is." (Visitors are confused about what is called novelties.)

It is shown that visitors are confused by some ambiguous terms, for example, the significance, new (technique), the novelties; They also need more effort to understand the vague and unspecific terms, for example, the "others" from understanding others, and the "feel" from the "feel the art". But luckily, visitors can find their concerns from the lists and no newer concerns are raised up. Therefore, the concerns will be renamed to a sharp and accurate level.

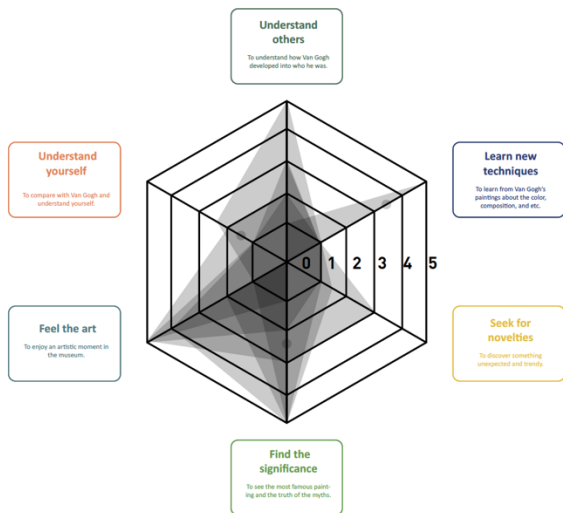
## 2/ Assumption 2 is also partly wrong:

**Most visitors have 1 or 2 dominant concerns!**

Visitors are told about the original ideas of the concerns and asked to give grades to all the concerns based on how strong they can feel them for their own journey. During the grading, some visitors give 4/5 stars to one and more concerns (pic 4e 1 & 2). For example, for some visitors, learning new techniques is very important for them, but they also want to find the significant in the exhibition. In this sense, visitors can find 1 or 2 dominant concerns from the concern list. There are more examples in appendix 5a.



pic 4e-1 the grading for the concerns and a summary graph



pic 4e-2

According to the results (pic 4e-2), there are also 4 concerns that are popularly recognized by the visitors, they are “feeling the art”, “understanding others”, “learning new technique”, and “finding the significance”. However, the other 2 concerns are ignored by the visitors for most of the time: they are “understanding yourself” and “seeking for novelties”. “Understanding yourself” is widely considered as a byproduct of understanding Van Gogh and not one of their primary concerns; “seeking for novelties” can add value to their visit but not very necessary. Therefore, they will be excluded from the basic concern list.

### 3/ Assumption 3 is still partly wrong:

The terms that visitors are interested in are in correspondent to their concerns

When visitors were asked for preference about the storylines, they also stated the reasons behind the choices. A visitor who is interested in Van Gogh’s innovation might be concern about “understanding others” but also “finding the significance”. But surprisingly, the terms they are interested in are more related to their concerns. The visitors who concerned about “understanding others” are interested in Van Gogh’s successful qualities, and the visitors who concerned about “finding the significance” are interested in Van Gogh’s specialty comparing to the others. Here are more examples (pic 4f-4h) to show the correlation between visitors’ concern and the terms they are interested in.



#### **Engaged with the society**

Van Gogh wanted to help people and brought joy to their lives.

"I would like to know how Van Gogh engage with the society. I think painters, they drew what they saw in real life, and they help us understand how to live in 19th century in Paris."

(pix 4f)

The data comes from a visitor who concerned mostly about "**feeling the art**". As can be seen in the picture 4f, he chose the topic about Van Gogh "engaged with the society" because he is interested in the scenes that are depicted by Van Gogh in his paintings.



#### **wanted to be recognized**

Van Gogh received criticism from friends and only gained fame after he died.

"Because I feel a bit sad for him (as he only became famous after he died). Maybe he tried to express his sadness in his paintings."

(pic 4g)

The data comes from another visitor who also concerned mostly about "**feeling the art**". As can be seen in the picture 4g, she chose the topic about Van Gogh "wanted to be recognized" because she is interested in the sad atmosphere that is conveyed in Van Gogh's paintings.



#### **self-taught and self-made**

Van Gogh started his career late but learned and succeed by doing.

"I always appreciate this quality."

(pix 4h)

From a visitor who concerned mostly about "**understanding Van Gogh**". As can be seen in the picture 4h, he chose the topic about Van Gogh "was self-taught and self-made" because he is interested in this quality of a person.

Visitors' interested terms are collected and clustered based on their concerns. According to the new insights from these visitors, the researcher looked back to the quotes from the 1<sup>st</sup> research and realized the patterns. In a combination of the data from the 1<sup>st</sup> research, visitors' interested terms are enriched and will be shown in the conclusion.

## Conclusion

### **1/ Assumption 1 is partly wrong: so let's adjust and rename the concerns now**

According to the results, the concerns will be renamed to a sharp and accurate level. Since 2 out of 6 original concerns can not be widely recognized by the visitors, namely: "understanding yourself" and "seeking for novelties", they are excluded in the following basic concern list. However, the wording of the other concerns sometimes confuses the original definition. Therefore, they are rephrased with less ambiguous words and form a new concern list:

**Understand others -> Understand Van Gogh**



Learn new techniques -> Learn Art Techniques  
 Feel the art -> Enjoy an Aesthetic Experience  
 Find the significance -> Find Out the Landmarks

## 2/ Assumption 2 is partly wrong: so one visitor might have 1 or 2 dominant concern(s)

Just as the highlight says, one visitor might have 1 or 2 dominant concerns (if they can choose by themselves). The insights can also explain why some of the visitors from the 1<sup>st</sup> research cannot be understood by only one of those 6 concerns. Visitors might feel interested in part of the exhibited objects that tailored for one concern, but also the others that tailored for another concern. **The concerns do not conflict with each other: visitors are only interested in them for different levels.**

## 3/ Assumption 3 is partly correct: but we can still have a more elaborated concern model

Based on the new concern list, and in combination with the information from the 1<sup>st</sup> research (who are the visitors have the concerns and why; what are their typical meaning-making behaviors), a new and more settled concern list is created. This time, the interested terms for different clusters are also added based on the quotes from visitors from both the 1<sup>st</sup> and 2<sup>nd</sup> research.

Here is the preliminary concern model:

Understand Van Gogh		Learn Art Techniques	
Visitors who have this concern are curious about <b>Van Gogh and his life</b> . They might be big fans of Van Gogh; or someone interested in people in their daily life.		Visitors who have this concern are interested in <b>Van Gogh's art techniques</b> . They might work in the art-relevant industries; or they want to improve their artistic appreciation.	
<u>Typical Meaning - Making Process</u>	<u>Interested Terms</u>	<u>Typical Meaning - Making Process</u>	<u>Interested Terms</u>
<p><b>Understand</b> Van Gogh's experience;</p> <p><b>Empathize</b> with Van Gogh;</p> <p><b>Appreciate</b> Van Gogh's, e.g., talent and strong will;</p> <p><b>Admire</b> Van Gogh's, e.g., achievement in his career;</p> <p>.....</p>	<p><b>Van Gogh's –</b></p> <p><b>1/ Personalities</b> (e.g., being bold, vulnerable, etc.)</p> <p><b>2/ Personal qualities</b> (e.g., his strong will, being self-taught, progressive and innovative, etc.)</p> <p><b>3/ Experience</b> (e.g., travels, troubles, success, influence, etc.)</p> <p><b>4/ Surroundings</b> (e.g., , family, friends, etc.)</p>	<p><b>Learn</b> how Van Gogh, e.g., used color and light (to express characters' emotions);</p> <p><b>Remember</b> Van Gogh's e.g., color and his color combination;</p> <p><b>Collect</b> their beloved paintings;</p> <p><b>Practice</b> in the future;</p> <p>.....</p>	<p><b>Van Gogh's skills of –</b></p> <p><b>1/ Artistic Styles</b> (e.g., Dutch styles, Parisian modern art, Japanese ukiyo-e style, impressionism, etc.)</p> <p><b>2/ Personal Styles</b> (e.g., impasto, vivid brushstrokes, color mixture, etc.)</p> <p><b>3/ Details</b> (e.g., color, light, emotion, lines, perspectives, etc.)</p> <p><b>4/ Form</b> (e.g., draughts, landscape, figures, etc.)</p>

## Enjoy an Aesthetic Experience

Visitors who have this concern are interested in **Van Gogh's paintings**. They might want to look at the paintings in real; or love artistic objects and places in their daily life.

### Typical Meaning-Making Process

**Feel** the atmosphere expressed in the painting

**Imagine** the situation when the painting was made

**Enjoy** the vibe in the museum

**Relax** without thinking too much of the outside world;

.....

### Interested Terms

**Van Gogh's paintings' –**

**1/ Themes** (e.g., nature, animal, social life, peasants, wheat fields, etc.)

**2/ Atmospheres** (e.g., suppressive, quiet, peaceful, cool, sad, rebellious, religious, etc.)

## Find Out the Landmarks

Visitors who have this concern are interested in **the must-sees** of Van Gogh Museum. They might be not interested in Van Gogh's or art in general; or they are just interested in something they should know.

### Typical Meaning-Making Process

**Find out** the location of the most famous paintings (incl. the paintings like Starry Night that are not here etc.);

**Figure out** the truth of his famous myths (being crazy and cut off his ear);

**Compare** Van Gogh with other people;

**Complete** a task in the bucket list in mind;

.....

### Interested Terms

**The must-sees of VGM -**

**1/ The Landmarks** (e.g., the Sunflowers, the Bedroom, the Starry Night, the Almond Blossom, etc.)

**2/ Rumors** (e.g., the ear incidence, the last paintings, the secret behind Van Gogh's suicide, etc.)

**3/ Fame and Specialty** (e.g., why is Van Gogh so famous, what is he special for, etc.)

This part of the concern model can be used to identify visitors' concern(s). When a visitor has typical meaning-making behaviors or interested terms about one main aspect, he/she have a concern like similar visitors.

For example:

When a visitor tries to **remember** Van Gogh's e.g., color and his color combination or has his/her interested terms about the skills, for example, the artistic styles; he/she has the concern of learning art techniques.

When a visitor tries to **feel** the atmosphere expressed in the painting or has his/her interested terms about the paintings, for example, the themes; he/she has the concern of enjoying an aesthetic experience.

By comparing the condition of the visitors, for example, what their most typical "minds-on" behaviors are and what their main interested terms are about, it is possible to identify visitors' dominant concern(s).

But how to design for different concerns based on the current information? What will be the difference? A how-to session will be introduced in the next chapter. Based on the ideas generated within the TUDelft MuseumFuture lab, the preliminary concern model is enriched to a more practical level.

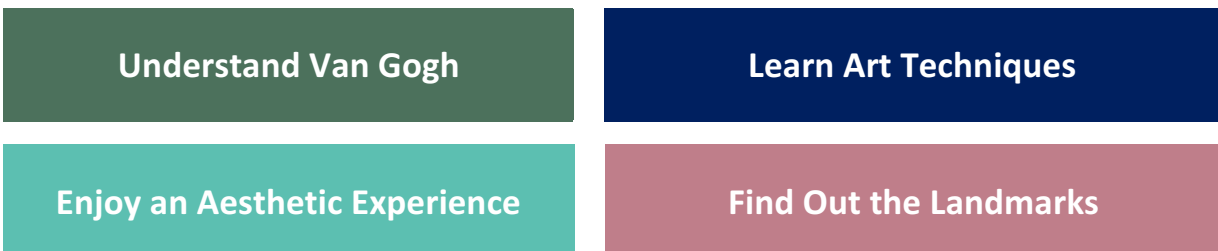
# Chapter VI

## A How-To Session, & The Second Part of the Concern Model

The How-to session inside the MuseumFuture Lab, TUDelft; a photo by Ziyi on Dec, 2018.

## Introduction

After the 1<sup>st</sup> and 2<sup>nd</sup> research that was done at the VGM, four major concerns that could be found from the visitors inside the museum are identified, along with some popular “minds-on” activities and their interested terms from different main aspects. The concerns are:



But how to design for different concerns based on the current information? What will be the difference? The personalization goal is presented again as a recap, along with an interaction vision. A how-to session is conducted within the TUDelft MuseumFuture lab. By co-creating new solutions for different concerns outside the environment of the VGM, the preliminary concern model is enriched to a more practical level.

### 6.1 A Personalization Goal Recap

#### What?

Design a personalized multimedia guide:

**To facilitate visitors to engage with museum, and maximize their meaning of visiting the Van Gogh Museum.**

#### Why?

Once visitors engage with the exhibited objects that they perceive high value of, they could have their “minds-on” process and generate the meanings in mind. But due to the multiple elements and objects competing for attention in most exhibitions, visitors often need some facilitation to decide what is considered important. With personalization, it is possible to provide different visitor with the right content in a right interactive way at a right spot. In this way, to maximize the meaning of visiting the VGM.

#### For whom?

All the visitors who can use the adult mode of the current MMT.

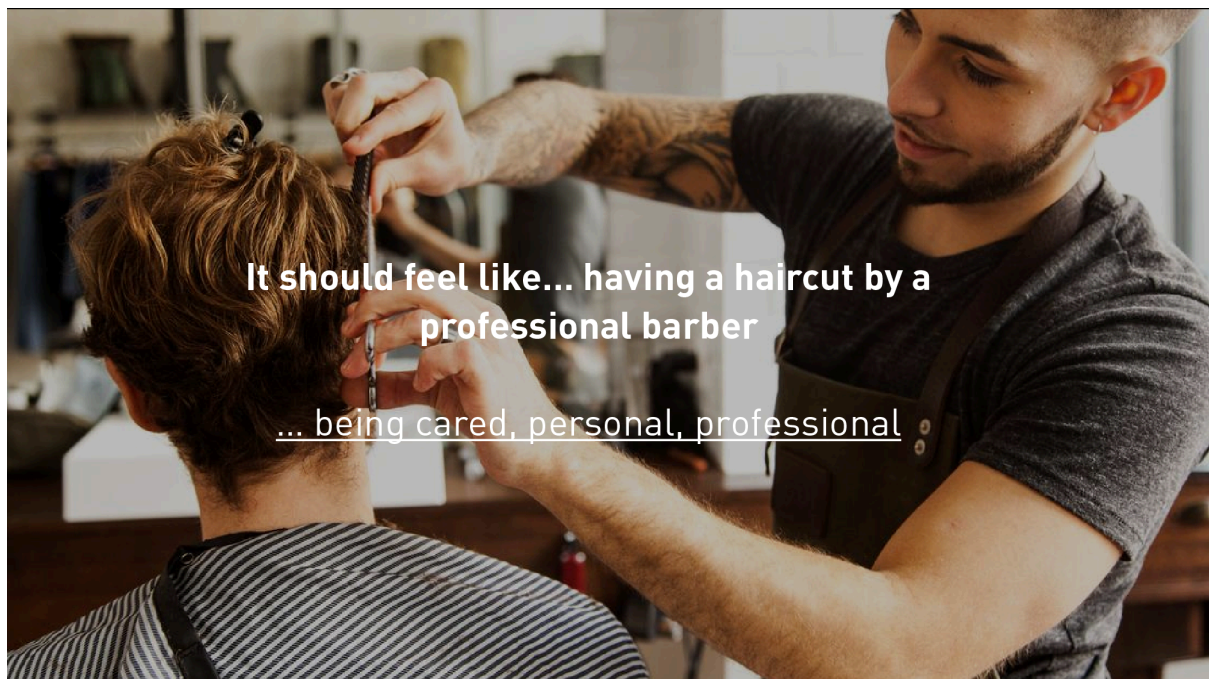
#### How to?

By tailoring different service to different visitors based on their concern(s).

It is clear now that by using the current part of the concern model, we can identify visitors' concern. However, it is still not clear yet that how to design for visitors with different concerns? Therefore, a how-to session was held to enrich the model with more practical ideas.



Meanwhile, an interaction vision (pic 6a) is also created for the design goal. The interaction vision is normally used for expressing and identifying the qualities of the interactions, which can guide the how-to session as well. When thinking of the future multimedia guide, the scene of having a haircut by a professional barber jump into researcher's mind. When visitors make use of the personalized MMT at the VGM, they are expected to feel being care, personal, professional just like having a simple and professional haircut. The interaction qualities are concluded from the strategic plan of VGM (2018-2020).



pic 6a the interaction vision

## 6.2 How-to Session

### Session Goal

To co-create different designs ideas for different concerns and get the concern-based design principles.

### Session Process

Four MuseumFuture lab members were invited to the how-to session in TUDelft. The session includes two phases: a 20-minute-long co-creation in rounds, and a follow-up discussion.

#### 1/ Co-creation in rounds

Each participant was assigned to one template with a how-to question. They were encouraged to write down their ideas on the paper in 5 minutes and then switched the paper to a next how-to question. Each participant can give ideas to all four how-to questions and build up their ideas on others'.

The questions are:

Imagine you are designing for a single artist museum, how to facilitate visitors in

“..... understanding the artist and his life?”

“..... learning art techniques from the artist?”

“..... enjoying an aesthetic experience?”

“..... finding out at the landmark exhibited objects in the museum?”

VGM is not mentioned in the session so that participants can think out of a box. But the context of the questions is still restricted to a single artist museum so that they can have a general idea about the exhibition objects.

## 2/ The follow-up discussion

After a 20-minute-cocreation, each participant had an idea map in front of them. They were asked to explain the ideas and the general principles for designing them. Their ideas were summarized by the research at last and put into the second part of the concern model.

## Results



Pic 6b

Four maps of creative ideas are generated (pic 6b) (when photos in big size are in appendix 6a). Some of the ideas are already realized inside the VGM, (Isn't it amazing?), for example, a voice of Van Gogh reading the letters to whom is interested in him/her, a digital palette letting visitors who want to progress their skills to D.I.Y a Van Gogh's color. These ideas including many activities that visitors might want to do in a single artist museum.

**During the discussion, it is also found out that all the designs are mainly constructed according to one principle.** For example, for visitors who are concerned about “understanding Van Gogh”, they might be more keen to the exhibited objects or activities that can “enhance their (Van Gogh and the visitor) personal connection”; for visitors who are concerned about “finding the significance”, they might be more keen to the exhibited objects or activities that can “expand the unmissable glory”.

## Conclusion

Here is the new part of the concern model:

When a visitor is identified having a dominant concern X, he/she would like to engage with exhibited objects/activities that contribute to a specific facilitation; for example, here are some activities.

### Understand Van Gogh

**They would like the facilitation to enhance their personal connection(s)**

**They might like activities like:**

Talk to Van Gogh;  
Touching the objects of Van Gogh;  
Reading Van Gogh's handwritten letters;  
Find "me" in Van Gogh;  
Find "Van Gogh" in "me";  
.....

### Learn Art Techniques

**They would like the facilitation to improve their knowledge acceptance**

**They might like activities like:**

Take an art class;  
D.I.Y a Van Gogh's color palette;  
Travel with a screenshot tool;  
Recreate a Van Gogh's work;  
Join the drawing competition;  
.....

### Enjoy an Aesthetic Experience

**They would like the facilitation to strengthen the artistic vibes**

**They might like activities like:**

Sitting in a room with a painting;  
Reading a poem for a painting;  
Smell the flavor of the pigment;  
Listen to the background music of the drawn scene;  
.....

### Find Out the Landmarks

**They would like the facilitation to expand the unmissable glory**

**They might like activities like:**

Compare the famous paintings with the infamous paintings of similar subject matters;  
Collect the puzzles for a truth;  
Follow a collective recommendation;  
.....

For example:

When a visitor has a dominant concern of "learning new techniques", he/she would like to engage with exhibited objects/activities that can improve their knowledge acceptance; for example, take an art class at the VGM and etc.

When a visitor has a dominant concern of "enjoying an aesthetic experience"; he/she would like to engage with exhibited objects/activities that could strengthen the artistic vibe; for example, listen to the background music of the drawn scenes.

When personalizing the multimedia guide, the facilitation activities can be tailored to a specific direction that could fit different individual's need. Before starting the design phase in the chapter VIII, there will be an overall explanation on how to make use of the concern model and the ready goal for personalizing the multimedia guide based on the concern model.



## Chapter VII

# Let's Design with the Concern Model



The Yellow House (Van Gogh Museum, 2018)



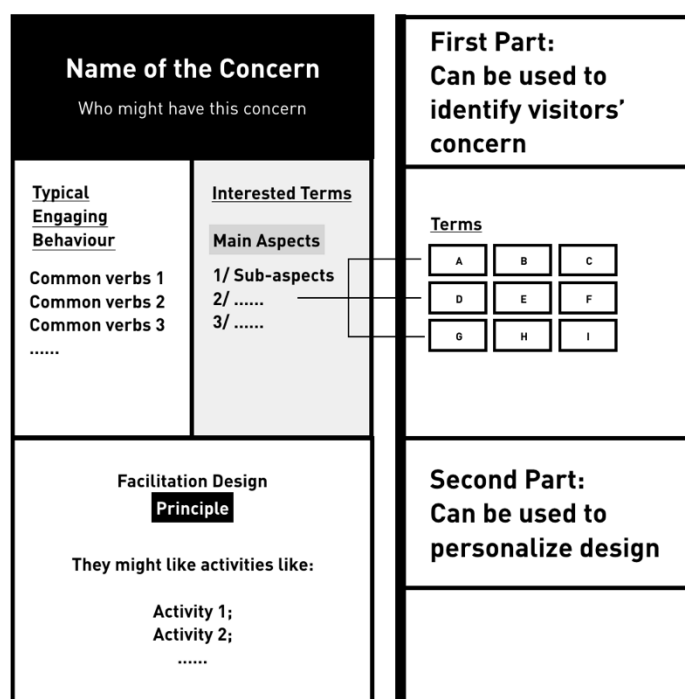
# Introduction

According to the previous study on the secondary materials from the VGM, it is shown that the both the museum space and the MMT contain rich information for both the paintings and stories of the genius Van Gogh. An observation and literature review prove that visitors pay different levels of attention to the exhibited objects at the VGM. Once they engage with an exhibited object, they will start their “minds-on” meaning-making process. The engaging points vary from each visitor, and relate to the quality of the exhibited objects and the concerns of the visitors. In fact, because of the multiple elements and objects competing for attention in most exhibitions, visitors often need some facilitation to decide what is considered important. Therefore, the personalization goal of the future MMT is **to facilitate visitors to engage with the museum and maximize their meaning of the visit.**

Therefore, two in-situ research were conducted inside the VGM. Visitors who have similar meaning-making process and their interested terms from the same aspects are clustered. The clusters reveal 4 common concerns among the adult visitors, namely: to understand Van Gogh, to learn art techniques, to enjoy an aesthetic experience, and to find out the landmarks. With the help from the MuseumFuture lab members from TUDelft, many creative facilitation ideas were generated. Based on the rich information, the concern-based personalization facilitation design principles were refined. The concern model for personalizing the multimedia guide of VGM is completed now.

Before starting the design phase, here will be a brief conclusion about how to make use of the concern model and rethinking the task flow of using the MMT.

## 7.1 Making use of the Concern Model

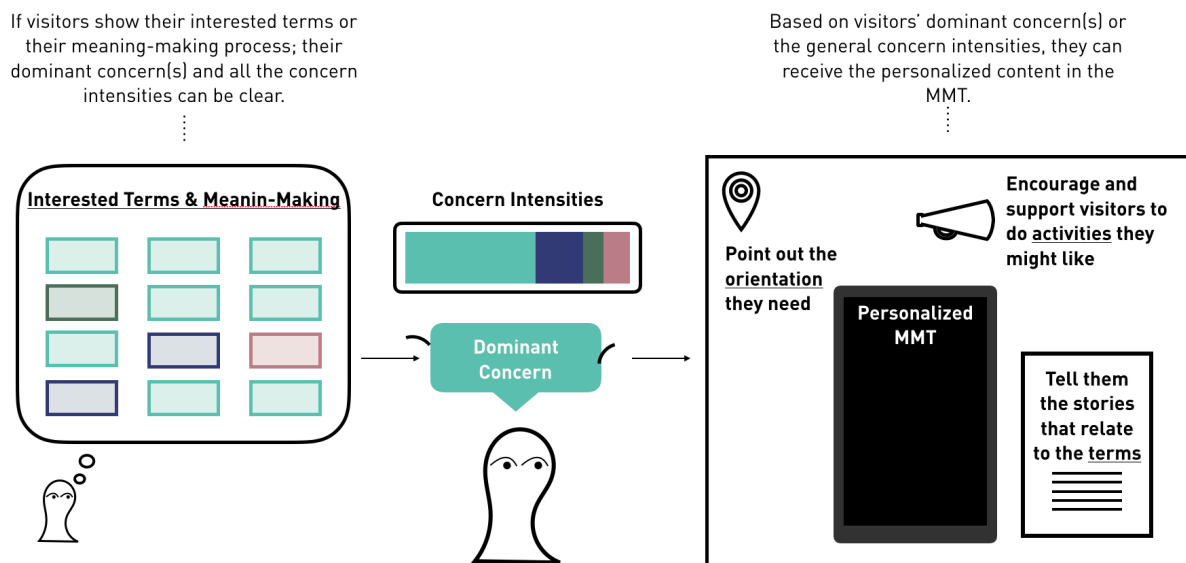


As shown in the previous chapters, the concern model is currently divided into two parts: the first part contains the information from the visitors, and the second part from the creative designers. In fact, by combining the two parts together, we can have the completed concern model: here is the structure of the model (pic 7a). The first part contains the typical engaging behaviors and interesting aspects and terms from the visitors who have the concern; the part can be observed or tested for identifying the concern (and the intensity). The second part contains the concern-based facilitation design

. Pic 7a the structure of concern model

principle and some examples from designers in the museum field; the part can inspire personalized design.

According to the first part of the concern model, if visitors show their interested terms or their, new visitors' concerns at the museum and their intensities will be clear; according to their dominant concern(s) or concern intensities, visitors can receive their personalized content in the MMT which are designed based on the second part of the concern model. Here is the ideal working mechanism of using the concern model (pic 7b).

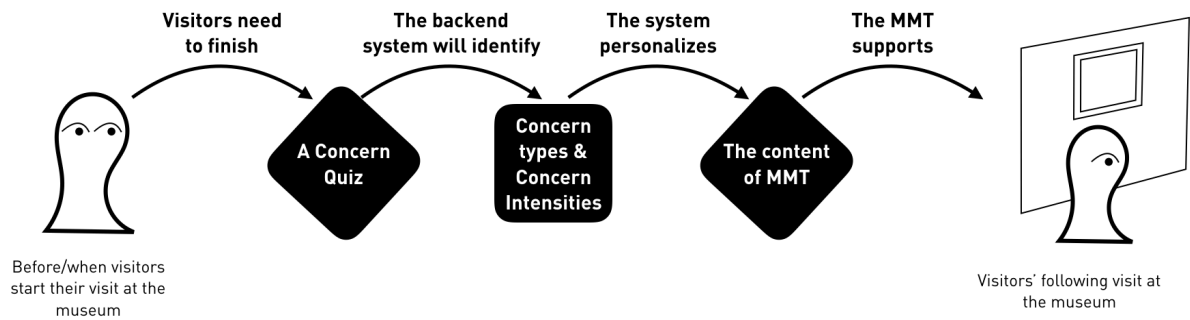


pic 7b the ideal working mechanism

Theoretically, there are 3 challenges for using of the concern model: 1/ the challenge to collect visitors' interested terms or meaning-making behaviors; 2/ the challenge to calculate the intensities of the concerns; 3/ the challenge to distribute the personalized content.

## 7.2 Rethinking the Task Flow of MMT

Considering visitors' journeys at the VGM are not long, the concern identification should start before visitors begin their journey. In general, before the journey, visitors will face a concern quiz; the backend system of the MMT can then identify visitors' concerns and intensities based on the concern model; and then it can distribute the content of MMT and facilitate visitors in the following journey (pic 7c).



pic 7c rethinking the task flow of MMT

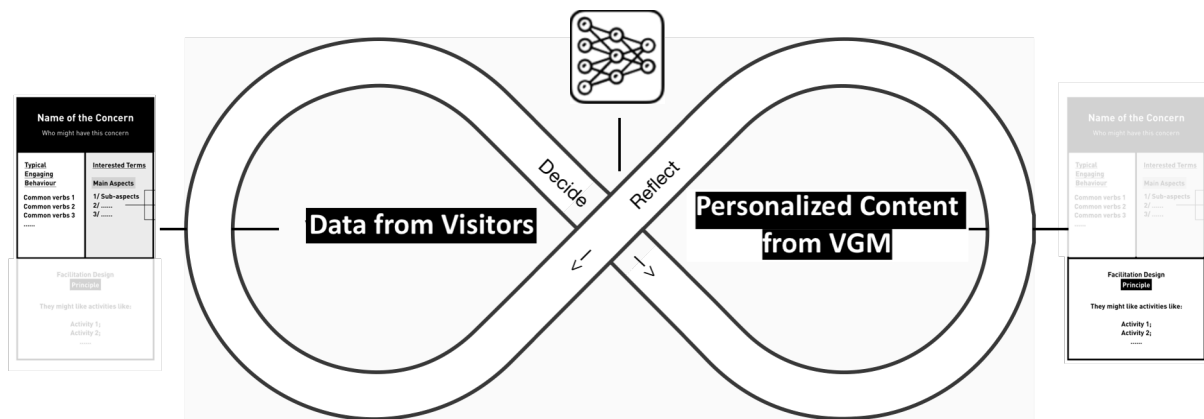
The form of the concern quiz is not known yet, so as the required interaction with it; therefore, the mechanism for identifying the concern types and intensities are also not known yet; neither do the personalized content and possible interaction with it.

Therefore, the “concern quiz” does not just mean a form of questionnaire, but any form that can reach the same goal like a questionnaire; and the “content of MMT” does not just mean the information itself, but also include the media that delivers the information (channel/information access), and what the user can do to the system (function). The concern quiz might also appear again during the journey if necessary: which means the whole task flow might be a circulate loop at last.

But there are too many unknowns right now. The task flow here will work as initial guidance for the following design. It is hoped that the flow can be iterated as well.

### 7.3 The Core Bone of the Personalized Design Framework

Though the design direction is not unknown yet, it is actually clear that visitors need to face two key interactions with any form/channels of the personalized MMT, namely providing input to the system and receiving output from the system. The purpose for the system to collect the data input is clear: which is to identify visitors’ concern; the purpose for the system to personalize the content output is also clear: which is to facilitate visitors in their visit and meaning-making process according to their personal concern. The realization of the both interaction and content design can refer to the first and second part of the concern model. The realization will need a robust algorithm to realize the data analysis and content distribution. Hereby, an abstract core bone of the personalized design framework is made (pic 7d):



Pic 7d the core bone

This core bone is the basis of all the personalized MMT. When designing the data for collection, it is necessary to assure that the data are able to decide the personalized content out of general content; when designing the personalized contents from VGM, it is also necessary to assure that different contents for personalization can reflect on the different data input.

A MMT can be called as a personalized MMT as long as it can collect data from visitors, and select one content out of many according to their data input; with a premise that the content is relevant to the data input. The abstract framework can guide the research through design in the next chapter, and also the final embodiment design in Chapter IX.

## Conclusion

This is a transition chapter between research and design. Therefore, the chapter discusses about the basic guideline of using the concern model for designing the data collection and the content personalization. The usage flow of the future personalized MMT is also brought up. The core interaction between the system and visitors are specified to collecting concern-relevant data from visitors and providing correspondent content back to them. A concern quiz and several forms of the multimedia content are temporarily set up as the basic form for collecting input and presenting output.

So what will be the concern quiz? And what will be the personalized multimedia content? This questions will be worked out after several rounds of research through design in Chapter VIII. Different sets of quick and dirty personalization systems are created as well. Let's enjoy the design funs now.



# Chapter VIII

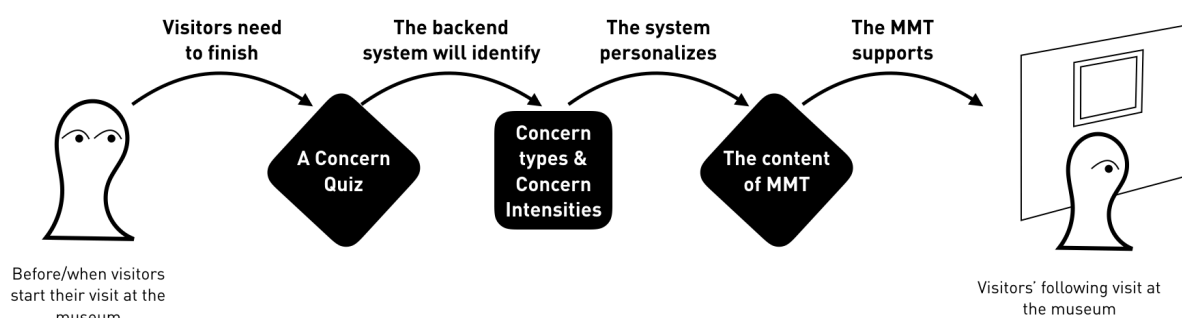
## Research through Designs through Research

During the 4<sup>th</sup> prototype test at the VGM; a photo by Ziyi on Feb, 2019

# Introduction

The personalization goal of the future MMT is to facilitate visitors to engage with the museum and maximize their meaning of the visit, in a caring, personal and professional way.

Considering visitors' journeys at the VGM are not long, the concern identification should start before visitors begin their journey. Therefore, visitor will face a concern quiz before the journey and providing **input** data for personalization; the backend system of the MMT can then **process** the data and identify visitors' concerns based on the previous model; and then the system can personalize the design **output** in the form of the MMT content and facilitate visitors in their following journey (pic 8a).



pic 8a rethinking the usage flow of MMT

In this chapter, five design sets (which include five different ways of collecting input and personalizing output) are created and tested with around 30 people from both the TUDelft and VGM. There are a lot of fails and success: the failure designs lead to some basic design principle, and the successful designs are iterated for many times and leave many useful design elements and materials for embodiment designs.

## 8.1 General Research Goal

The follow rounds of research through design is to figure out, how to

1. .... **set up the concern quiz for collecting visitors' concern input?**
2. .... **calculate visitors' concern types (and intensities)? How to distribute the personalized design?**
3. .... **design the content of MMT to provide the personalized output?**

To achieving the research goal, five quick and dirty design sets are created. Participants from different places are invited to play with the paper prototypes and have interviews with questions like this:

For the collecting input part:

1. How easy/hard for you to choose between the options? Why?
2. How do you think of the workload? Why?

For the personalized service:



1. By comparing with the service that personalize for the other visitors, how much do you think it (your personalized service) fits you? Why?
2. How much do you the design is caring you? Personal? Professional? Why?

These questions are prepared to evaluate the design effect. Let's start to take a look at the designs!

## 8.2 The 1<sup>st</sup> Round



pic 8b the first design set (zoom-in pictures in appendix 8a)

### Brief Introduction

This is the first design set for this chapter (pic 8b). Visitors will be presented with several questions and each question contains four options on a digital screen. The questions are testing visitors' preferred "minds-on" activities and preferred terms, for example, which description of a gallery that interest you most? (The quiet and peaceful gallery, the Dutch-style gallery, the gallery of the remarkable <Potato Eaters> or the gallery of Van Gogh's beginning.) The options are designed with the terms that tailored to different concerns interests (see appendix 8x). Visitors are supposed to select one option for each question.

It is assumed that based on all the visitors' choices, the backend system can calculate the concern proportion of the visitor. One tailored description for each gallery will be presented according to their most dominant concern on the MMT. Five potential visitors (students) from TUDelft were invited to test the paper prototype at school. Their overall impression of the design set was neutral, and comments are listed below.

#### ➡ Comments on the input

##### 1. Too many words: users are generally tired of thinking.

"It is easy to choose, but it is better to have less words. I don't feel like thinking too much." ---- Participant C1

"What is the meaning of '... imagine how the painting was painted 100 years ago'? I can't get it." ---- Participant D1

##### 2. Deleting options is hard and unpleasant

"I don't like deleting. It feels like I am losing things." ---- Participant A1

"OK, I want to choose these two (options)." ---- Participant B1

### 3. The result is not accurate

"I chose it because this is the only option I can understand right now." ---- Participant E1

"It is just for the sunflowers. Maybe my mind will work differently towards the other paintings." ---- Participant D1

## ☞ Comments on the output

### 1. The sense of personalization is weak.

"I don't think the menu is personalized for me: it's for everyone who has the same order of concerns." ---- Participant A1

"It looks good. But I need to compare with others to see whether it's really personalized for me." ---- Participant C1

### 2. The sense of advance is weak

"That's it? Not a big change. It doesn't matter if they (the description) stays the same." ---- Participant B1

## Discussion

Users' comments show their expectation to the personalized service clearly. Here are some precautions for designing the future tool.

When designing for collecting input from visitors, the setup should

Principle 1: ..... let visitors think less because most of them are on vacation.

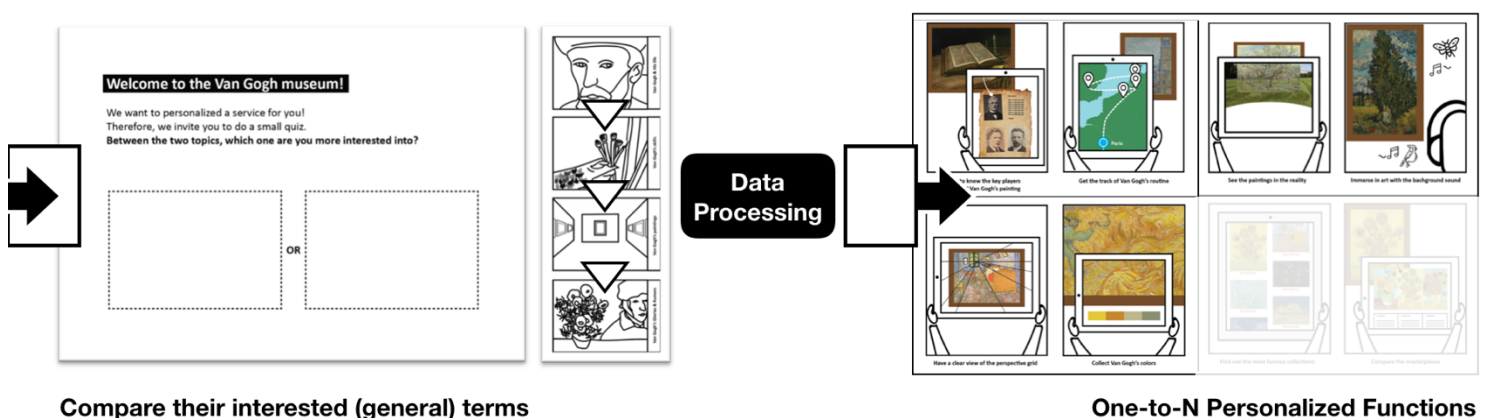
Principle 2: ..... decrease the feeling of deleting because they are afraid of missing things they should know.

When designing the personalized output for the visitors, the design should

Principle 1: ..... strengthen the sense of personal difference because visitors like to compare their personalized product with each other.

Principle 2: ..... strengthen the sense of advance because visitors like to know how it is special from the original non-personalized product.

## 8.3 The 2<sup>nd</sup> Round





### **Brief Introduction**

This is the second design set for this chapter (pic 8c). Visitors will be presented with a series of comparison among four abstract terms on a digital table, they are: Van Gogh and his life, Van Gogh's art techniques, Van Gogh's paintings, and the landmarks of Van Gogh and the museum. Visitors are assumed to have a preference on these abstract terms based on the concern model. They have to compare the terms until the order of the term is clear for them.

Based on the sequence of their concerns, the backend system knows which concerns are the least attractive one for the visitor. Inspired by the 1<sup>st</sup> design set, this time there are four advanced interactive toolkits (by using AR and beacon location techniques) that are tailored for each concern type. The system will assign all the toolkit except the ones that tailored to visitor's least important concern inside the MMT. Another four potential visitors (students) from TUDelft were invited to test the paper prototype at school. Their overall impression of the design set was still neutral, and comments are listed below.

#### **Comments on the input**

##### **1. The comparison is so abstract and hard**

"I don't know what I am interested in more. Can you introduce me some basic idea of the museum first? So that I know what I really interested in." ---- Participant B2

##### **2. The goal of the comparison is missing**

"Why am I making the choice? What can I get with my answers?" ---- Participant C2

"If I know I can have the color palette if I prioritize the techniques, I will choose it first in the comparison." ---- Participant D2

#### **Comments on the output**

##### **1. The more interactive tools the better, though not all of them will be used**

"It is hard to say if this is personalized. They are not very necessary for my visit. It is interesting to use them. And I think all of them are interesting." ---- Participant A2

"They all look interesting. I want them all." ---- Participant D2

### **Discussion**

Users' comments show their expectation to the personalized service clearly. Here are some precautions for designing the future tool.

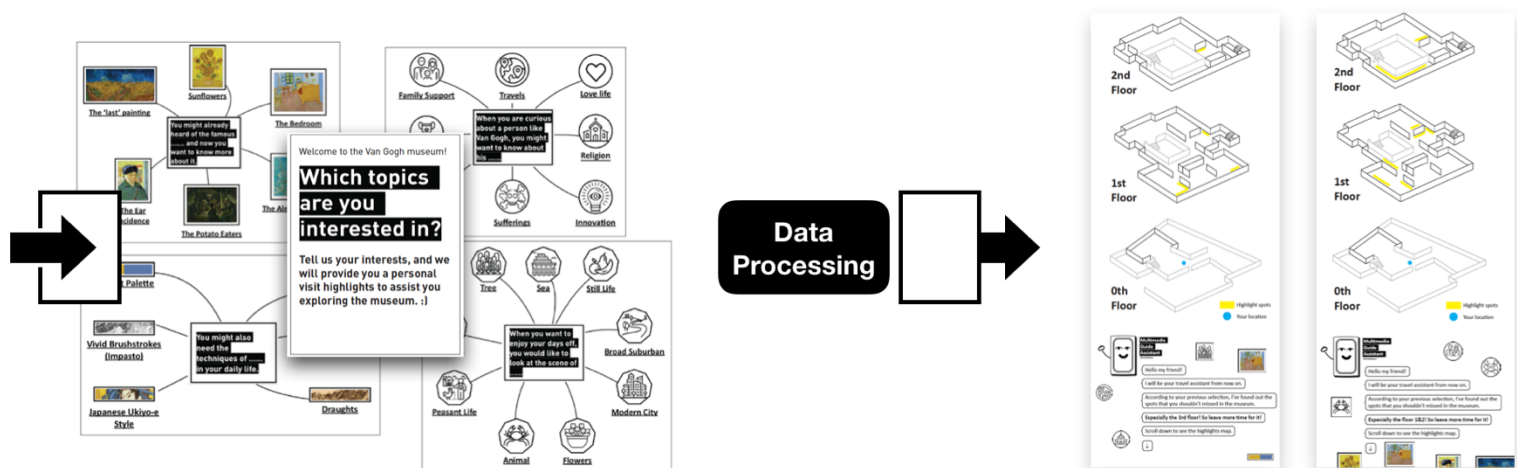
When designing for collecting input from visitors, the setup should

**Principle 3: ..... communicate about the personalized outcome because visitors don't want to feel regret about their choice afterward.**

Principle 4: ..... communicate about the personalized outcome so that visitors are more willing to put effort to the data collection.

When designing the personalized output for the visitors, the design should  
Principle 3: ..... first personalize the core functions, then the bonus functions.

## 8.4 The 3<sup>rd</sup> Round



Select their interested (specific) terms

One-to-One Personalized Information

pic 8d the third design set (zoom-in pictures in appendix 8c)

### Brief Introduction

This is the third design set for this chapter (pic 8d). Visitors will be presented with all the specific terms that belong to each concern category on a digital table and can choose as much as terms that they are interested into. The backend system will collect the terms and calculate the most matching areas for them inside the museum. For example, if a visitor is interested in nature, he/she are supposed to have more engaging spots on the 3<sup>rd</sup> floor; if a visitor is interested into Van Gogh's innovation, he/she is supposed to have more engaging spots on the 1<sup>st</sup> floor. and he/she will receive a suggestion from an anthropomorphic MMT and a map with all the highlight areas. Another six potential visitors (students) from TUDelft were invited to test the paper prototype. The overall impression of the design set is almost positive (the almost positive design set ever!), and comments are list below.

#### ➡ Comments on the input

#### 1. A lot of options to take in, even though the options are distinguished with each other

"Oh wow, that's a lot." ---- Participant C1

"Although it is not hard to choose, there look a lot." ---- Participant C5

#### 2. They might worry about time

"Imagine that I pay the multimedia guide for 5 euro, I want to have as much personalized service as I can within my timetable." ---- Participant C4

"I almost selected everything, am I? How long can I finish the journey?" ----  
Participant C1

#### ☞ **Comments on the output**

##### **1. Nice avatar! Nice suggestion!**

"It feels very personal, especially the emoji and the suggestion." ---- Participant C3

"It is obviously unique for me. I will like to spend more time in exploring the highlight places." ---- Participant C2

##### **2. They want not just highlight areas, but also the spots and basic navigation**

"Ok, now I know the area. But what should I do after I enter the area?" ---- Participant C5

"There are many gates and stairs, where should I go?" ---- Participant C6

##### **3. They want to see the connection between their choice and result**

"I want to know why these areas are highlighted. Why are they special for me?" -  
--- Participant C1

"How are the highlight area related to my previous selection. It is good to have an explanation here." ---- Participant C3

#### **Discussion**

Users' comments show their expectation to the personalized service clearly. Not a lot of failure this time. Therefore, here are only a few precautions for designing the future tool.

When designing for collecting input from visitors, the setup should

**Principle 5: ..... never let visitor worry about the time.**

When designing the personalized output for the visitors, the design should

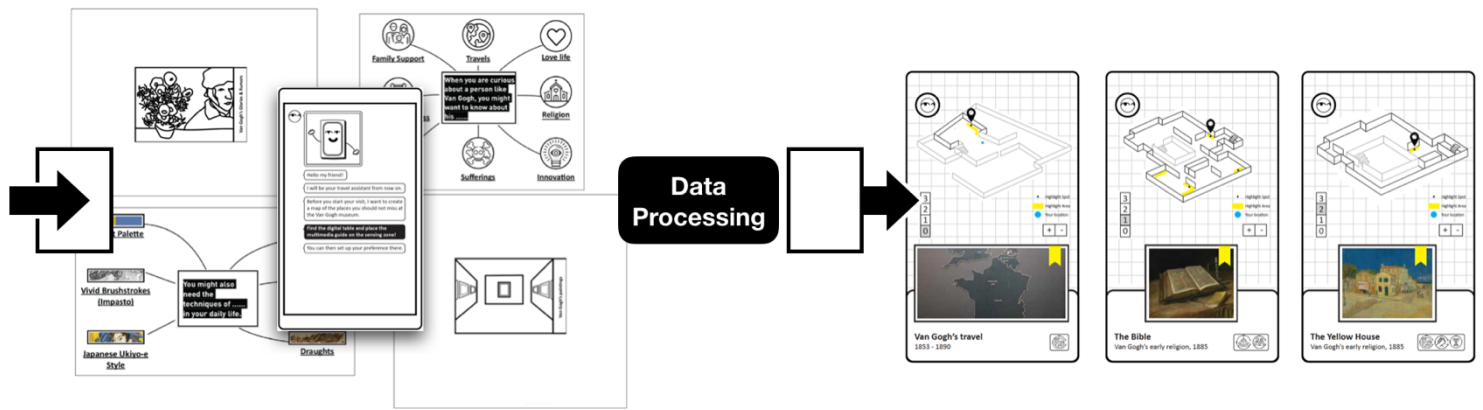
**Principle 4: ..... show the connection between visitors' input and the output they receive.**

The idea of personalized areas might be a core function for the visitors. Unlike the previous design set, all the participants are willing to pay the effort in providing input. Moreover, they might be looking for more specific spots and routing at the museum. The new idea will be added to the next design set.

Unlike using the abstract terms in the 2nd design set, the specific options seem too much for the visitors. Though participants didn't say they don't like the selection, but the input phase should be simplified at least from a view.

The positive feedback from the visitors about the avatar inspire the researcher to design the following set by making use more of this element. If a conversational channel is used on the MMT, how will it affect the visitors' attitude towards the product?

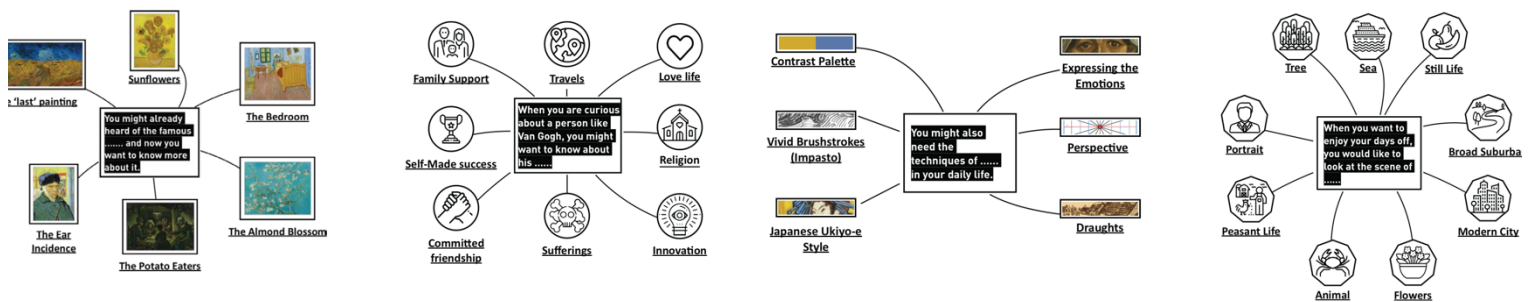
## **8.5 The 4<sup>th</sup> Round**



Select their interested (abstract) terms;  
Then select their interested (specific) terms  
under the selected abstract aspect(s)

One-to-One Personalized Information

pic 8e-1 the fourth design set (zoom-in pictures in appendix 8d)



pic 8e-2 a close look at the fourth design set

## Brief Introduction

Bases on almost positive comments from the last design set, the researcher iterated it to a new design (pic 8e-1). At the beginning of the whole process, an avatar of the MMT starts to introduce what they are going to design for the visitors and what the visitors need to do for initiating the personalization. Later on, visitors will be led to a digital table and face the four abstract option: they have to decide whether they are interested in Van Gogh and his life, his paintings or etc. The specific terms will show up on the screen afterward (pic 8e-2) and visitors have to choose as much as they want. The avatar helps keep track of the time visitors might spend in the museum.

As a result, the backend system will collect the terms and calculate the most matching spots for them inside the museum. The results will be presented on an interactive map (like Google map), with basic functions like navigation and spot introduction. Visitors' selected options will be presented on the highlight spots so that visitors can know what the highlights are about. They could also play the audio of the spot if the spots have the function. Five pairs of real visitors were invited to play with the prototype and have a follow-up interview inside the museum before their visit to the museum.



The feedback from the visitors is positive in general! But they still give the design a lot of recommendations. A Spanish visitor even asked me to create his personal highlights on the paper map. He also told the researcher after his visit that the personalized paper map was very useful for him! (pic 8f)



pic 8f a personalized highlight map for a Spanish visitor



## Comments on the input

### 1. Nice onboarding conversational interface, they feel very personal

"It is a very gentle way of approaching us. I can feel the friendly and hospitality of the MMT, and the museum." ---- Participant(s) D1

"It is good to know ahead what we can do in the museum. Normally we will take some time to figure out what we can see and what we like to see at the beginning since it is our first time here." ---- Participant(s) D4

### 2. Their selection is still constricted by the time

"I am afraid of selecting too much at the beginning. I am concerned about the time." ---- Participant(s) D2

"I will spend 1-2 hours. I have to think what will be the best combination for my schedule." ---- Participant(s) D1

### 3. Nice visual elements, but there are still a lot of things to take in

"The icons are cute. It helps me understand the choice. I can decide in quick." ---- Participant(s) D2

"A lot of options can be combined. Like the flowers, trees and sea can simplify to a big nature group." ---- Participant(s) D4

"The must-sees at the museum...um...I guess everyone wants to see them then." ---- Participant(s) D1

#### ☐➔ **Comments on the output**

##### **1. An excellent solution: easy to use and help them find their personal connection with the exhibited objects**

"Very creative. We don't like audio guides in general because they gives us too much information. But with your design, I want to try the MMT." ---- Participant(s) D1

"I like it very much. Even though both my friend and I want to know more about the person, we don't want to know the same aspects of him. I like making the choice and save my energy for what I really care about." ---- Participant(s) D5

"I like making the choice, even though they are a lot. But we like knowing what is told in the museum and what fits us the best. It is like a nice menu for us." ---- Participant(s) D3

##### **2. More flexibility, not only at the beginning phase but also at the end**

"If I find extra time left, maybe I will come back and see more things." ---- Participant(s) D2

##### **3. If the number of highlights is too much/too little**

"Because we have a lot of free time. So we are afraid that everything will be our highlights." ---- Participant(s) D3

#### **Discussion**

Users' comments show their expectation to the personalized service clearly. Not a lot of failure this time. Therefore, here are only a few precautions for designing the future tool.

When designing for collecting input from visitors, the setup should

**Principle 6: ..... onboarding visitors to the museum space step by step because visitors are easy to get lost at the beginning of their visit.**

When designing the personalized output for the visitors, the design should

**Principle 5: ..... easy to use, for example, like a normal application from their daily life.**  
**Principle 6: ..... have more flexibility in adding new requests/deleting options making changes/searching during the whole visit process.**

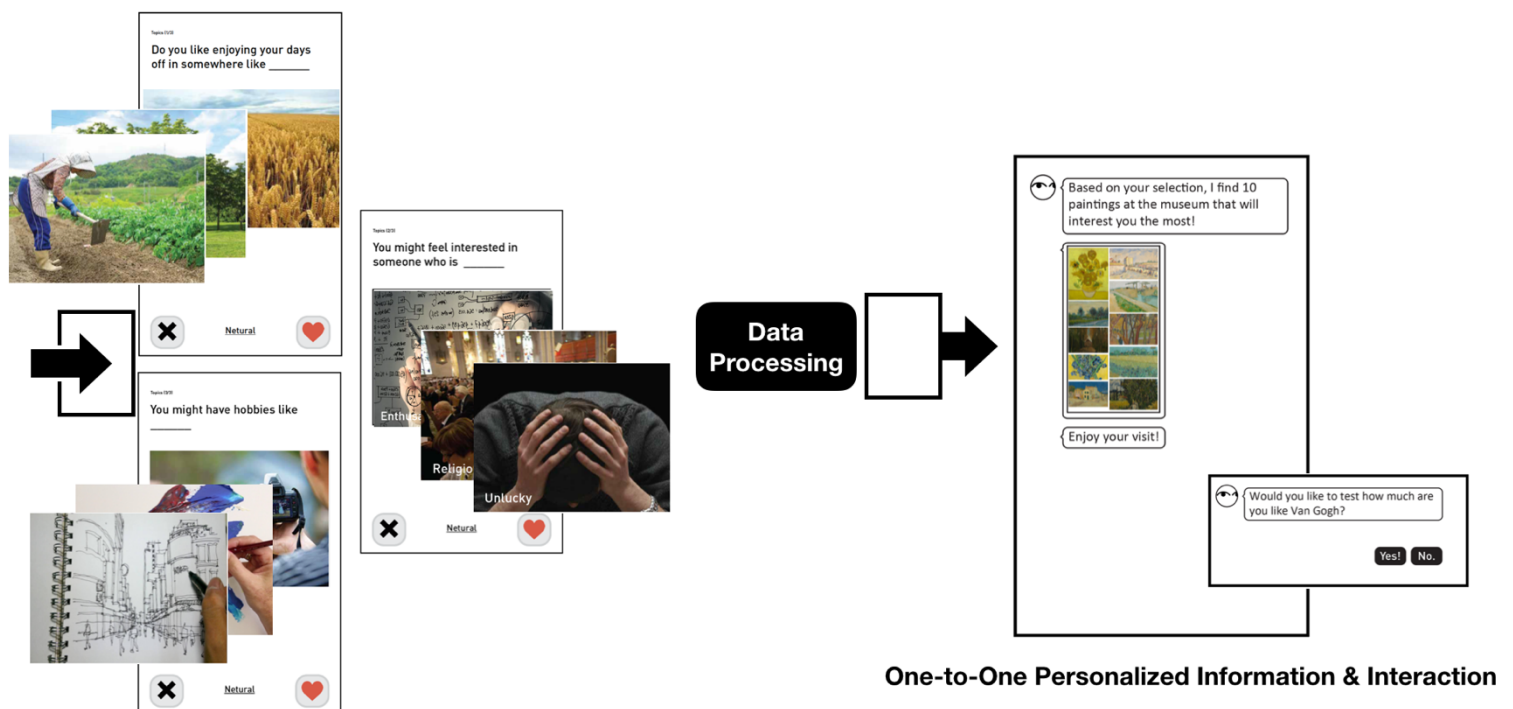
From this design, it is found out that visitors like choosing from the specific terms/aspects and get the connection between their preference and the exhibited objects. **In this sense, it is assumed that visitors' dominant concern or concern intensities are less impactful than the specific personal connection from different concern aspect.**

A lot of test participants sensed that they are initiating their own final design. And that's why visitors are afraid of timing and dare to make a choice. Until now, all the input designs are putting the responsibility on visitors' shoulder. So how to design the input phase to change the whole personalization process from visitor-initiate to museum initiated, but still let visitors know they are related to their personalized solution?

As for the personalized output, the combined form of both the digital map and both the idea of personalized spots raised a lot of praise. But is a map really necessary? Can visitors accept the highlight spots without the map? Besides the highlight spots, is there any other personalization opportunity for the visitors?

**The MMT "assistant" avatar and the conversational interface of the MMT raised a lot of praise.** It is considered as a perfect assistant that help visitors onboard to the MMT and the museum. His funny attitude is also liked by many visitors and let them feel warm and welcomed. Will he disappear after the onboarding phase? If not, what can he do more during the journey?

## 8.6 The 5<sup>th</sup> Round



**Select their interested (specific) terms/scenes**

pic 8g the fifth design set (zoom-in pictures in appendix 8e)

### Brief Introduction

Based on the insights from the 4<sup>th</sup> design, a fifth design set (pic 8g) is made and will work as last one for the research through design phase. The 5<sup>th</sup> design aims at erasing the burden of visitors in personalizing the MMT service. Therefore, instead of asking what visitors want at

the museum, the design will ask visitors about what they normally like and then guess what visitors want at the museum. Three questions are prepared for collecting visitors' contextual info, they are "do you like enjoying your days of in somewhere like (for example, a picture of wheat field)?", "do you feel interested in someone who is (for example, a picture of a enthusiastic scientist)?", "do you have a daily hobby like (for example, taking photography)?" Visitors are supposed to encounter all the three questions on the MMT and 6 options for each question. All the 6 options are related to the main theme of Van Gogh's paintings, Van Gogh's personalities and traits, and Van Gogh's skill. The must-sees are not included inside because there is no need to test what visitors normally like for the landmarks paintings and stories. Visitors can swipe the options to "not interested", "neutral", and "very interested".

Based on their visitors', the backend system will understand which specific aspects will visitors feel interested in at the VGM and how much do they have one of the basic concern. For example, if visitors find themselves interested into 5 types of people from the options, they are assumed to be strongly interested into Van Gogh. By combining all the choices from the visitors, the system can select the top-10 paintings at the museum that contains the most interesting information for them and deliver the information through a MMT assistant. If the multimedia guide sense that visitors are taking a rest, the MMT assistant will suggest a suitable leisure activity for the visitor, for example, "Would you like to test how much are you like Van Gogh?", or "would you like to draw your ears for me?" for visitors who strongly like Van Gogh's skills, or "Would you like to follow me to the balcony and take a look at Amsterdam?"

Four potential visitors (students) from TUDelft were invited to test with the paper prototype at the school. Their attitudes are moderately positive and new insights are gained!

#### ➡ **Comments on the input**

##### **1. Interesting to swipe, easy to make a choice**

"It is fun, easy to make choice. They are quite self-explanatory." ---- Participant E1

"It doesn't take long for me to make the choice. It is simple." ---- Participant E3

##### **2. This time, no worry about time**

"I feel confident in making the selection. Because I know the numbers of my choice won't affect the final result." ---- Participant E2

"I am not worried about the time. I am actually looking forward to the result." ---  
- Participant E4

##### **3. Don't know what can be achieved by swiping the options**

"I don't mind doing the game. But what is the game supposed to achieve?" ----  
Participant E3

#### ☐➡ **Comments on the output**

##### **1. Interesting highlights, but clear navigation and explanation are required**



"I can sense the nuance connection between the highlight paintings and me. But I can't tell immediately. Because they are just unfamiliar paintings for me right now." ---- Participant E4

"I don't know why they are special for me but I believe it is related to my previous options. So where are they?" ---- Participant E2

"Nice numbers. 10 highlights paintings are not a lot for one visit." ---- Participant E1

## **2. Very new, and interesting personal activities**

"I've never received requests like this from a museum guide. It is fun. It is a good break from just seeing the old paintings." ---- Participant E2

"I can understand why he provide me the activity. He actually understands me. He knows what I want for my visit." ---- Participant E3

## **3. Missing the content that he is especially interested in Van Gogh**

"I am not interested in unlucky people. But I am interested in Van Gogh's experience. Because his sufferings made him strong." ---- Participant E1

"There are many other exhibited objects, but where can I find them in the system? I have time for them as well." ---- Participant E1

When designing for collecting input from visitors, the setup should

Principle 7: ..... keep the process easy and simple so that visitors are willing to play with it.

When designing the personalized output for the visitors, the design should

Principle 7: ..... (doesn't need to) be 100% personalized.

Principle 8: ..... show the basic content even though they might not be personally interesting to the visitors.

Principle 9: ..... provide clear guidance about how to use/get to the personalized service/spots.

Principle 10: ..... (can) interact with visitors during the break.

The design let the system initiate the personalization and decrease the burden from the visitors. The result shows that visitors accept the result created by the visitors even though the highlights might not 100% correctly personalized for them. Visitors find it happy to have the connection between a painting and themselves before their visit.

Participants don't comment a lot on the number of the highlights spots (but they want an explanation and basic navigation, which means it is good to have a map from the 4<sup>th</sup> design set). In fact, no matter how much options do they choose, they will only get 10 highlights. They are more confident in making their choice. However, they are also more cautious about the rest of the exhibition and don't want to miss them.

All in all, the biggest gain of the 5<sup>th</sup> design is to finally find out a way to collect visitors' info without bothering them too much but can lead to direct and personal output.

## Conclusion

The personalization goal of the future MMT is to facilitate visitors to engage with the museum and maximize their meaning of the visit, in a caring, personal and professional way. Five design sets (which include five different ways of collecting input and personalizing output) are created and tested with around 30 people from both the TU Delft and VGM (real scenes in appendix 8f). There are a lot of fails and success: the failure designs lead to some basic design principle, and the successful designs are iterated for many times and leave many useful design elements and materials for embodiment designs.

The principles for designing for both the input phase and output phase are listed below:

When designing for collecting input from visitors, the setup...

Principle 1: ... should let visitors think less because most of them are on vacation.

Principle 2: ... should decrease the feeling of deleting because they are afraid of missing things they should know.

Principle 3: ... should communicate about the personalized outcome because visitors don't want to feel regret about their choice afterward.

Principle 4: ..... communicate about the personalized outcome so that visitors are more willing to put effort to the data collection.

Principle 5: ... should never let visitor worry about the time.

Principle 6: ... should onboarding visitors to the museum space step by step because visitors are easy to get lost at the beginning of their visit.

Principle 7: ... should keep the process easy and simple so that visitors are willing to play with it.

When designing the personalized output for the visitors, the design...

Principle 1: ... should strengthen the sense of personal difference because visitors like to compare their personalized product with each other.

Principle 2: ... should strengthen the sense of advance because visitors like to know how it is special from the original non-personalized product.

Principle 3: ... should first personalize the core functions, then the bonus functions.

Principle 4: ... should show the connection between visitors' input and the output they receive.

Principle 5: ... should easy to use, for example, like a normal application from their daily life.

Principle 6: ... should have more flexibility in adding new requests/deleting options making changes/searching during the whole visit process.

Principle 7: ... doesn't need to be 100% personalized.

Principle 8: ... should show the basic content even though they might not be personally interesting to the visitors.

Principle 9: ... should provide clear guidance about how to use/get to the personalized service/spots.

Principle 10: ... can interact with visitors during the break.

The system-initiate personalization can decrease the burden from the visitors. Comparing to choosing what they want at the museum, visitors also accept being guessed about what they want at the museum. Even though the final personalized results might not 100% correctly personalized for them, they can still enjoy an easier way of providing data.

Some design elements are tested and proved workable for personalizing the MMT. They are (pic 8h):

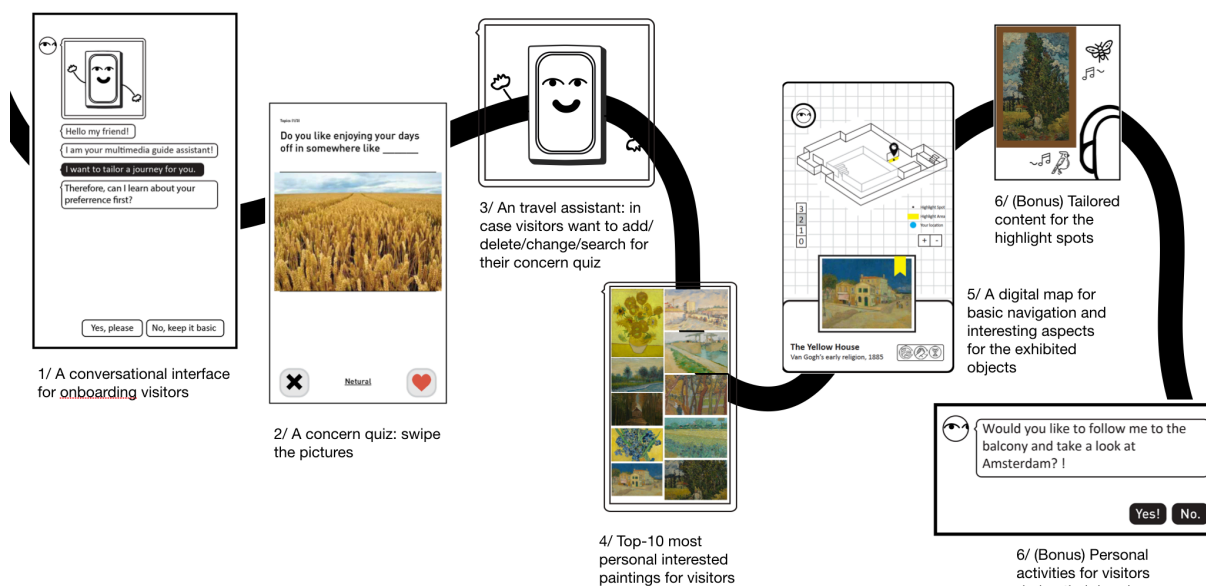
**1/ A conversational interface for onboarding visitors** (from the 4<sup>th</sup> design input), which can accompany visitors to start their visit and the personalized service step by step.

**2/ A concern quiz about swiping the options** (from the 5<sup>th</sup> design input), which can ask for visitors' preference in a light way.

**3/ An travel assistant for the journey** (from the 5<sup>th</sup> design output), who can provide instant support for visitors during their visit, for example to add/delete/change/search for their concern quiz answers.

**4/ A top-10 personal highlight paintings list** (from the 5<sup>th</sup> design output), which can provide all the visitors the fair amount of personalized outcomes and decrease visitors' worries about time; the highlights are the spots that contain the most common elements with the visitors.

**5/ A digital map** (from the 4<sup>th</sup> design output), which can provide basic navigation to the highlight spots, and also show the relevant aspects of the other basic spots that visitors might also feel interested into. Visitors can also open the multimedia for each spot content here.



pic 8h current design elements

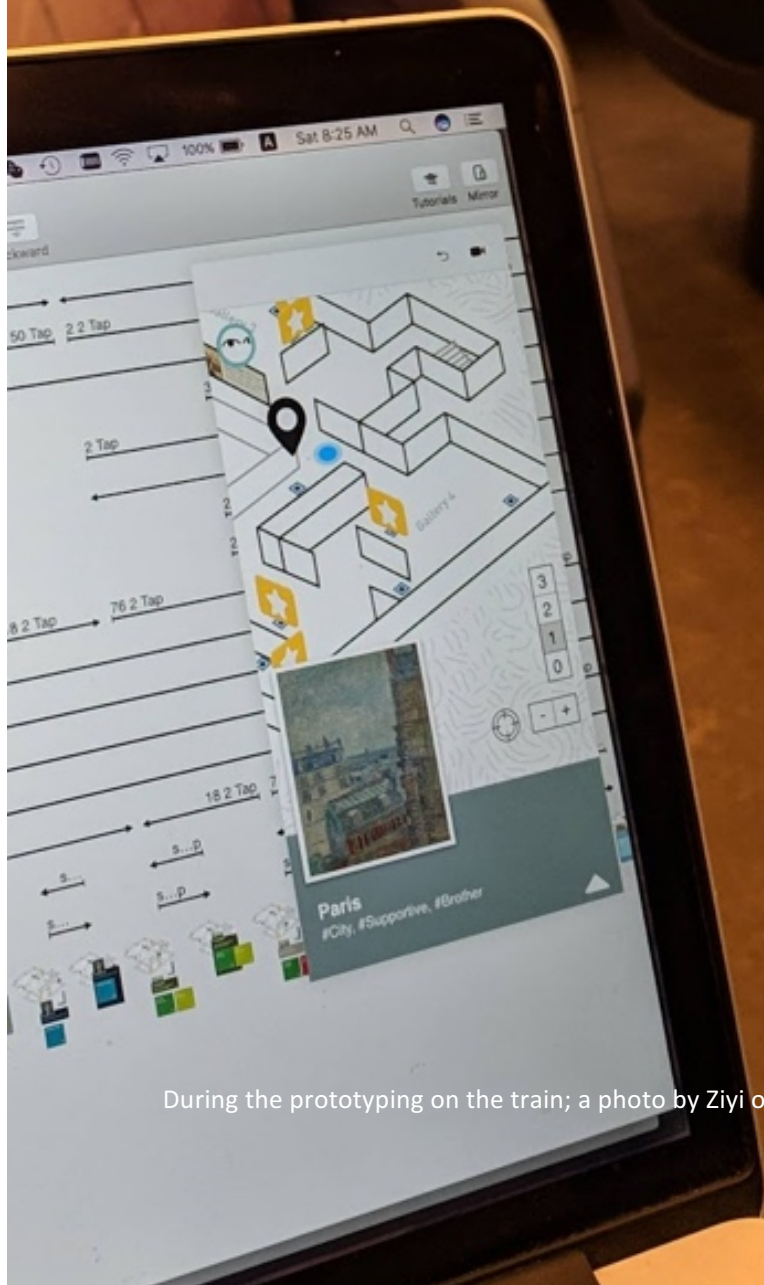
**6/ (Bonus) Tailored interactive functions for the highlight spots** (from the 2<sup>nd</sup> design output), which can enhance a different aspect of the exhibited objects based on visitors' dominant concerns.

**7/ (Bonus) Personal activities suggested by the travel assistant during the break** (from the 5<sup>th</sup> design output), which can provide extra care and surprise for visitors.

The research will create an embodiment design based on the current design principle and design elements. A minimal viable prototype will be made to test the user experience and basic usability of the embodiment design. It is hoped that the design can achieve the personalization goal in expected ways.

# Part IX

## The Embodiment Design

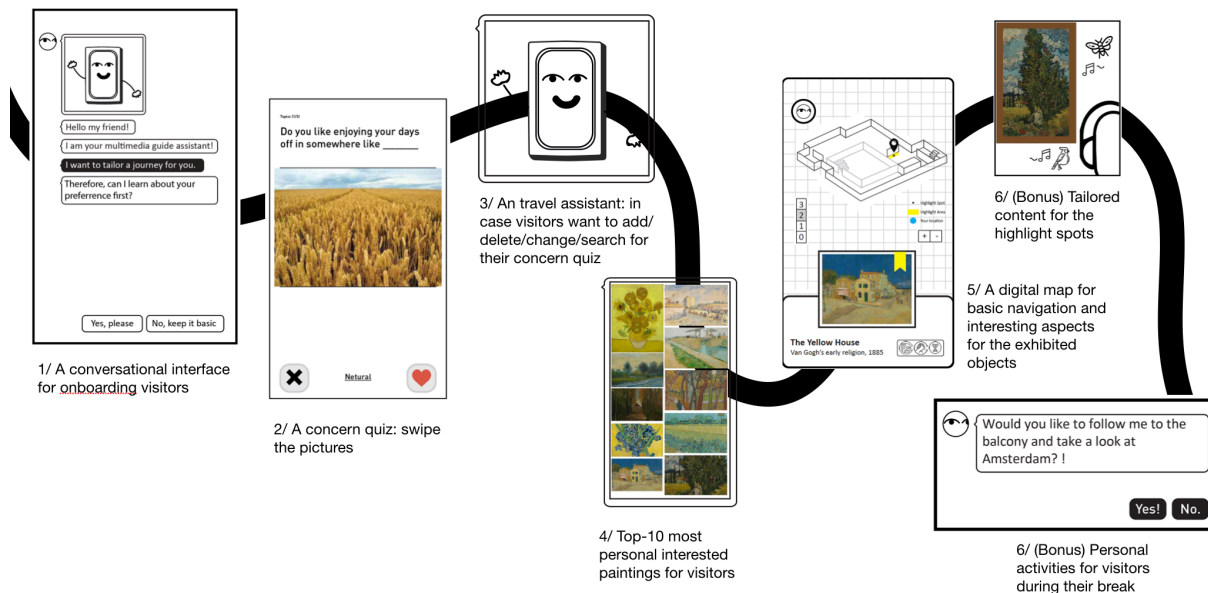


During the prototyping on the train; a photo by Ziyi on Mar, 2019



# Introduction

An embodiment design will be created based on the design principles and design elements (pic 9a) from the previous chapter. A minimal viable prototype will be made to test the user experience and basic usability of the embodiment design. It is hoped that the design can achieve the personalization goal in the expected way.

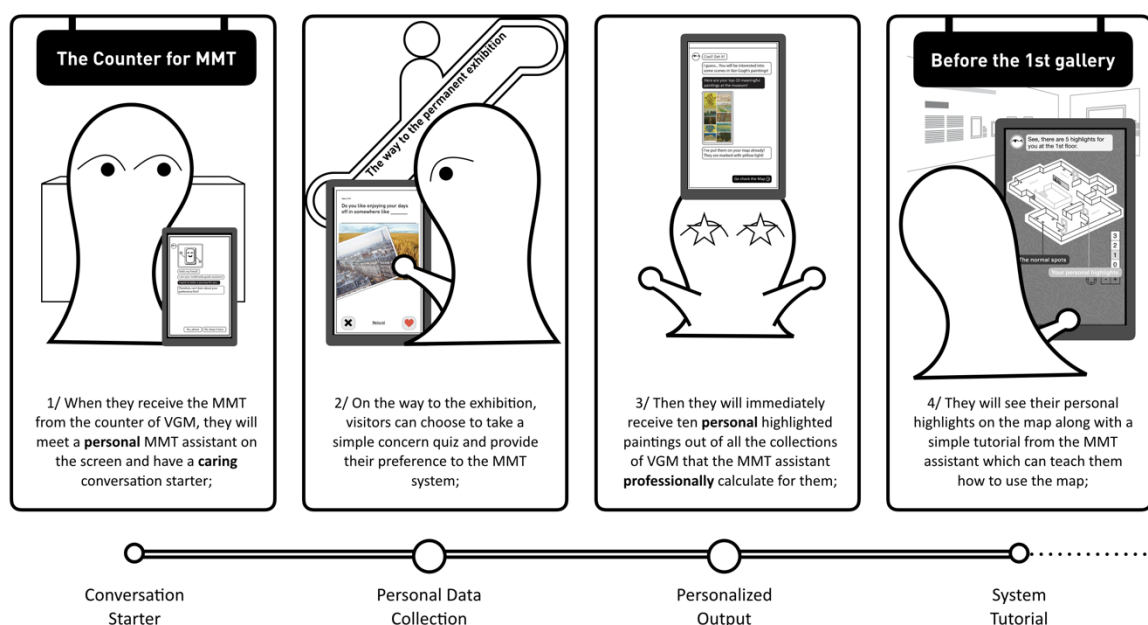


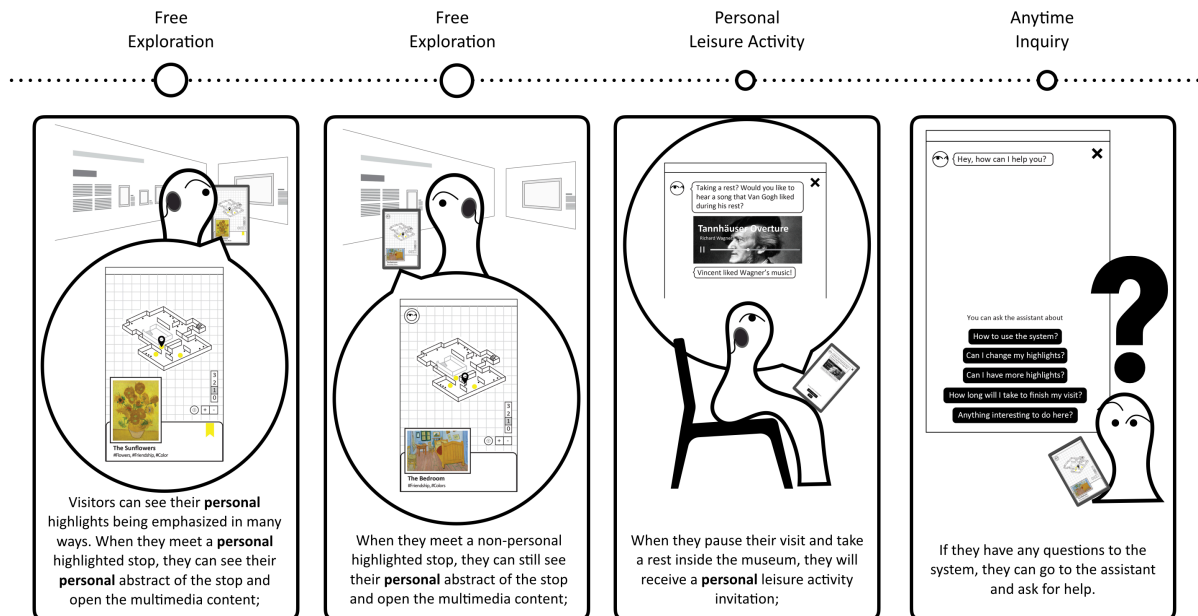
pic 9a current design elements

All the interaction can be done within the MMT; no extra display needed.

## 9.1 A General Visitor Scenario of the Embodiment Design

The design elements are extracted from different prototypes, so how to integrate them into one embodiment design? The researcher put them in a joint hand and draw an ideal scenario (pic 9b) of using the embodiment design. The scenario starts from the moment when visitors receive the MMT they rent in the VGM:





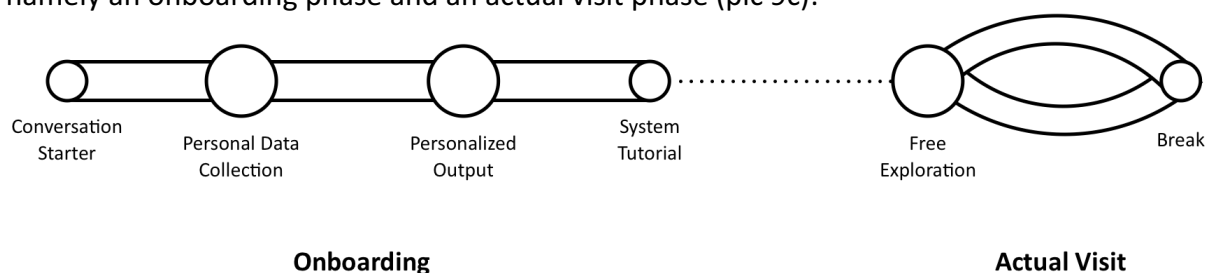
pic 9b the scenario of using the embodiment design

The full story is:

Phase I: 1/ When visitors receive the MMT from the counter of VGM, they will meet a personal MMT assistant on the screen and have a caring conversation starter; 2/ on the way to the exhibition, visitors can choose to take a simple concern quiz and provide their preference to the MMT system; 3/ then they will immediately receive ten personal highlighted paintings out of all the collections of VGM that the MMT assistant professionally calculate for them; 4/ they will see their personal highlights on the map along with a simple tutorial from the MMT assistant which can teach them how to use the map before they enter the gallery.

Phase II: After finish the onboarding phase, visitors can see their actual visit inside the galleries. They can see their personal highlights being emphasized in the MMT map: when they meet a personal highlighted stop, they can see a highlight icon on the screen, their personal abstract of the stop, and the relevant multimedia content. They can also see the non-personalized stops in the MMT map: when they meet a non-personal highlighted stop, they can also see their personal abstract of the stop and open the multimedia content; once they pause their visit and take a rest inside the museum, they will receive a personal leisure activity invitation; if they have any questions about the system, they can go to the assistant and ask for help. The personal highlights on the digital map are the basic personalized outcome for each visitor; while the content abstract of each stop and the leisure activities during the break are the bonus personalized outcome for each visitor.

According to the scenario, the usage of personalized MMT can be divide into two phases, namely an onboarding phase and an actual visit phase (pic 9c):



pic 9c the main phases of the design usage

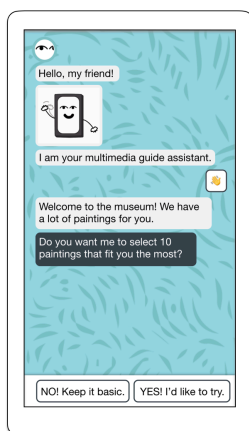
In the first phase, the MMT will onboard visitors to their personalized service before their actual visit; and then in the second phase, the MMT will facilitate visitors' actual visit in different ways. Visitors need to spend at most 5 minutes in the first phase and interact with the MMT step-by-step; but afterward, in the second phase, they will have their total freedom to operate the device and explore the museum in their preferred way as long as they want.

These two phases are equally important for using the personalized multimedia guide: in the first phase, the MMT can guide visitors through the complex system and collect valuable data from them; while in the second phase, the MMT can provide the promised service to the visitors and accompany them in their whole journey.

## 9.2 Key Screens for the Embodiment Design

The ideal user scenario introduces the embodiment design from a user point of view; in this part, the key screens for the embodiment design will be introduced from a product design point of view. (All screens and all interaction flow can be found in the principle files in the folder "prototype" of the VGM CitrixFolders.)

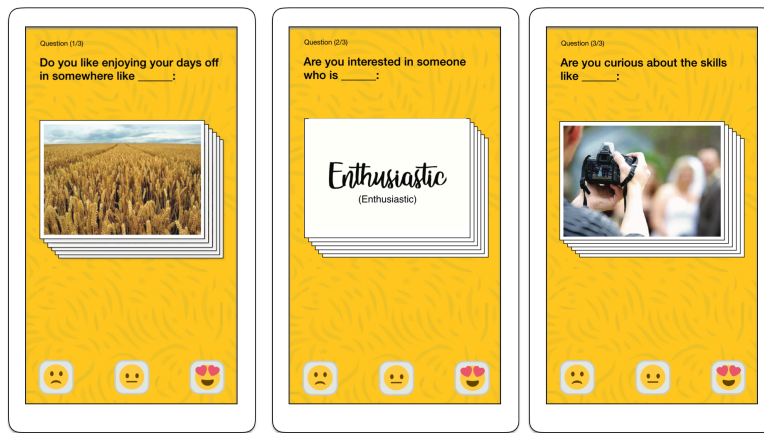
### Phase I: Onboarding



pic 9d-1

#### 1/ A Conversation Starter (pic 9d-1)

"Hello, my friend!" A conversation starter is needed at the very beginning because visitors want to know what they could get from a personalized before they start to use it (referring to the blue principle 4). The actor of the conversation starter is a virtual MMT assistant. Through a conversational interface, the assistant can give the visitors a warm greeting and show the hospitality of the VGM; then two service options for visitors to choose: to either go for a tour with only general highlights or with 10 personal highlights. It is important to explain the difference between options clearly (referring to the blue principle 3).



pic 9d-2

## 2/ Personalization Data Collection (pic 9d-2)

A personalization data collection setup here is the key for the whole personalized service. If visitors agree to have the personal highlights, they will be led to a concern quiz. The concern quiz consists of three questions and each question is followed by six different options. Visitors can make a selection by tapping “dislike”, “neutral” or “like” to each option. Their attitudes reflect the values and types of their labels. Here is an overview of the questions and the options:

### Question (1/3) Do you like enjoying your days off in somewhere like \_\_\_\_?

Options (6 views of: label #wheatfield, #flower, #park, #cityscape, #farm, #ocean)



The question is designed according to the concern model: visitors will enjoy an aesthetic experience when they encounter their daily scenes from Van Gogh's paintings. Van Gogh drew what he saw in his real life on his canvas; When visitors are asked about their enjoyable scenes in their daily life, the personalized MMT can later select the paintings with the similar themes/views to them. The current 6 options are designed according to the concern model and referred to six popular filter options of the VGM's online gallery.

### Question (2/3) Are you interested in someone who is \_\_\_\_?

Options (6 calligraphy words of: label #enthusiastic, #supportive, #religious, #innovative, #vulnerable, #self-made)



The question is designed according to the concern model: visitors will understand Van Gogh when they see that some qualities which they always appreciate are shown in Van Gogh's experience. The stories about Van Gogh's personal qualities are shown in Van Gogh's paintings; When visitors are asked about their interested traits of any person, the personalized MMT can later select the stories with the similar themes to them. The



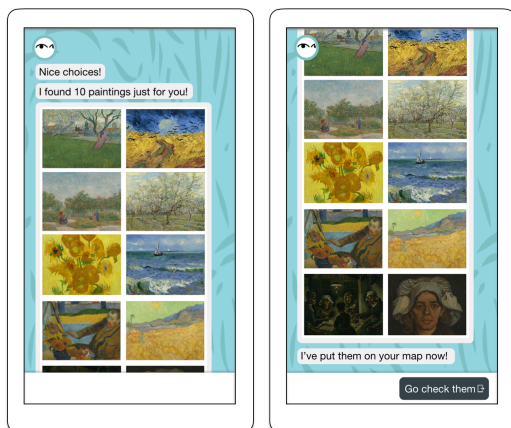
current 6 options are designed according to the concern model and referred to the six descriptive words from the sensitizing materials of the 2<sup>nd</sup> research about the “many faces of Van Gogh”.

**Question (3/3) Are you curious about the skills of \_\_\_\_\_?**

Options (6 hobbies of: label #photography, #drawing, #color-mix, #sketch, #perspective, #print)



The question is designed according to the concern model: visitors will learn art techniques when they can apply Van Gogh’s art techniques into their daily hobbies. The teaching about Van Gogh’s techniques are integrated in the stories inside the MMT; When visitors are asked about their curious skills, the personalized MMT can later select the stories with the related instruction to them. The current 6 options are designed according to the concern model and referred to the six types of art skills themes from the current multimedia guide scripts.

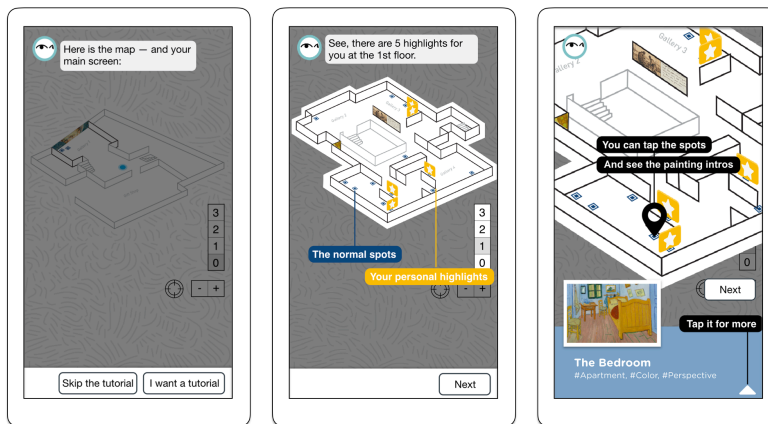


pic 9d-3

### 3/ Personalized Output Presentation (pic 9d-3)

If visitors agree to have the personal highlights and finish the concern quiz, ten paintings will be selected based on their combined choices of all the options. The selection mechanism will be explained in the following part named “Complex Algorithm for the Personalization System”. This screen is a collage showcase of all the personal highlight; visitors can only open the highlights in the digital map, which will be introduced in the screens for phase II.

If visitors disagree with have the personal highlights and choose to keep the service basic, they will skip the personal data collection session and be labeled as the visitors who only want to see the landmarks. Therefore, ten general must-see paintings will become their highlights and be shown on the screen as well.

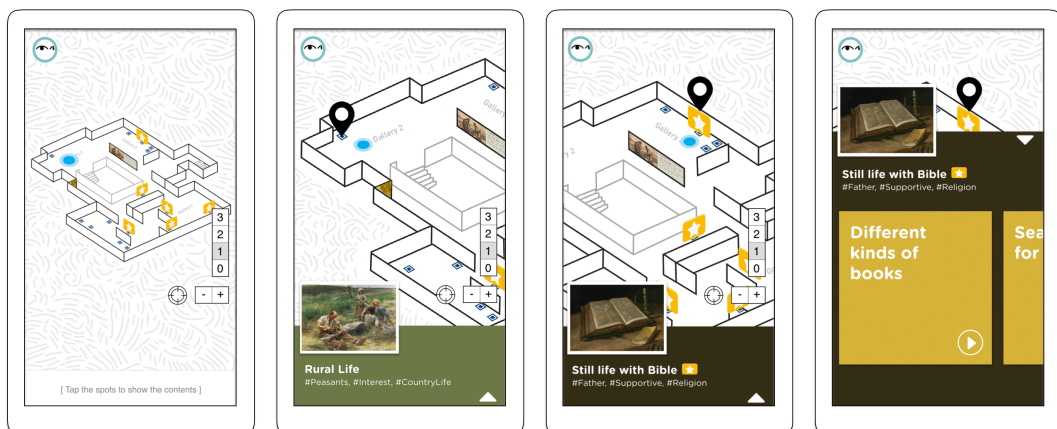


pic 9d-4

#### 4/ A System Tutorial (Optional) (pic 9d-4)

A system tutorial is needed after the personalized output presentation because visitors are easy to get lost when they start their visit to the museum (referring to the blue principle 6). Through a step-by-step system tutorial, visitors can know where they are, how to go to the 1st gallery, where are the personal/non-personal stops for them and where are the multimedia content for each stop. It is an optional step for visitors; if they want, they can also retake the tutorial by inquiring the MMT assistant.

### Phase II: Actual Visit



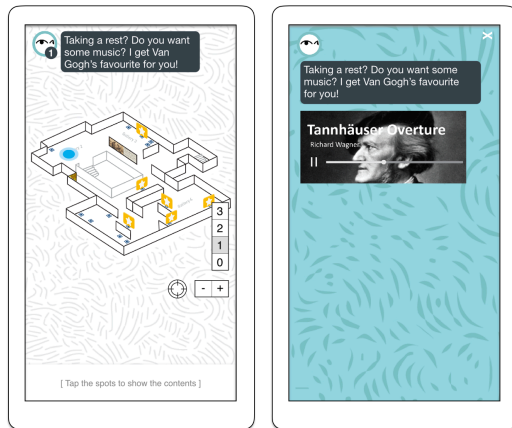
pic 9d-5

#### (Basic) Free Exploration with a personalized digital map (pic 9d-5)

This is a digital map of the 0<sup>th</sup> to 3<sup>rd</sup> floors of the Rietveld building, which is also the main screen of the personalized MMT. The spatial schematic is in a two-dimensional view just like the paper map of the VGM. Similar to the Google map, the digital map is displayed per floor; it can be zoomed in and out; it can locate the current position of the user. However, as an indoor digital map, the function of locating users might not work as accurate as the outdoor map due to the technical limitation of the beacon device; the normal wayfinding function might also be missing. Therefore, there are gallery description and illustration wall sign of the digital map, which can help visitors find their way to each multimedia stop.

All the available stops are marked on the map, and all the personal highlights are emphasized with gold medals. When visitors open the stop, they will see the thumbnail pictures of the exhibited paintings, the name, and the personal abstract of the upcoming multimedia content. Visitors can drag up and see the multimedia segments, which are now all the segments (e.g., audio, interactive games, video, etc.) from the current MMT.

The MMT assistant is now minimized to the upper-left corner; visitors can always turn to him by opening tapping the profile picture and enter the conversation page. The digital map is supposed to be the main screen of the personalized MMT during visitors' actual visit, which means visitors might spend a relatively long time on using it.

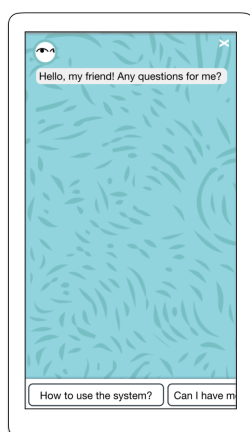


pic 9d-6

#### **(Bonus) Personal Leisure activities invitation** during the break (pic 9d-6)

This is a bonus function which can be triggered by the actual situation. Once the MMT senses that the visitors pause their movement in a resting zone (e.g., bench area, balcony area, etc.), the MMT assistant can push an invitation about a personal leisure activity on the screen. The example here is a piece of music from Van Gogh's list; this musical activity is designed according to the concern model: to strengthen the artist vibe for visitors who mainly want to enjoy the aesthetic experience. The mechanism behind the activity selection will be explained in the following part named "Complex Algorithm for the Personalization System." Different types of visitors are supposed to receive different types of activity invitation.

At first the activity invitation will show up in a dialog bubble above the digital map; only when visitors tap the bubble, can they start the personal activity. The personal activity is a bonus function for visitors: which means visitors can ignore it without worries.



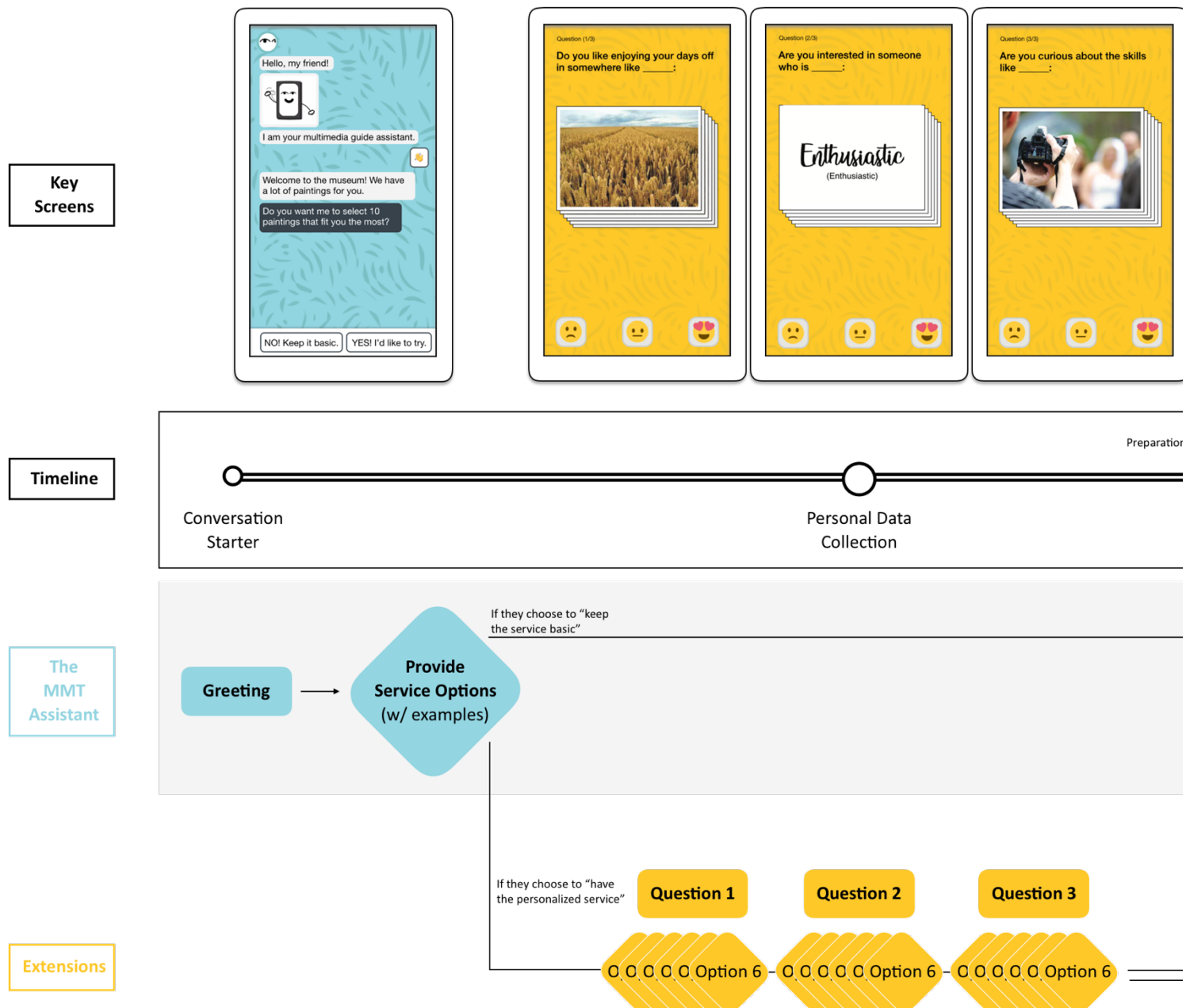
pic 9d-7

#### **(Optional) Anytime Inquiry** to the MMT assistant (pic 9d-7)

A default Q&A sector is embedded in the MMT assistant in case visitors have simple questions about the system. For example, how to use the system? Can they change their personal highlights? And so on. The inquiry is an optional function for visitors.

## 9.3 Task Flows for the Service System

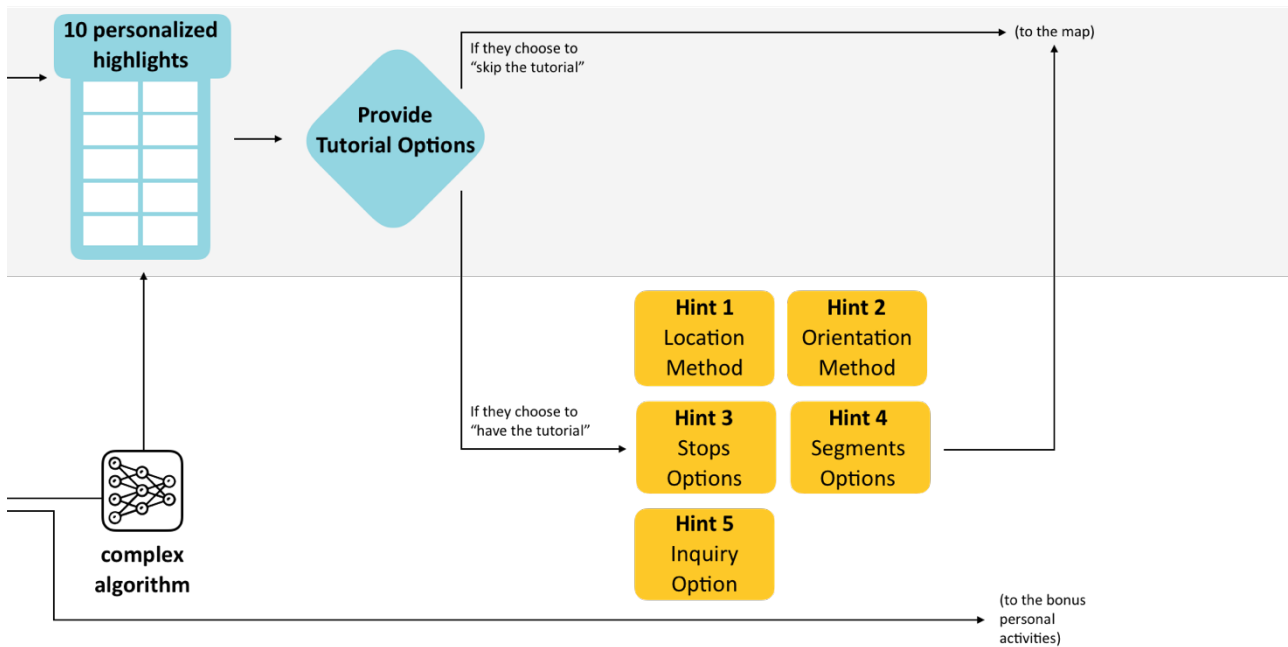
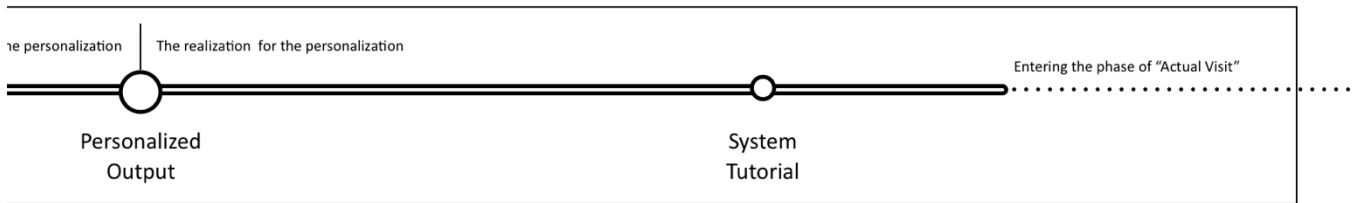
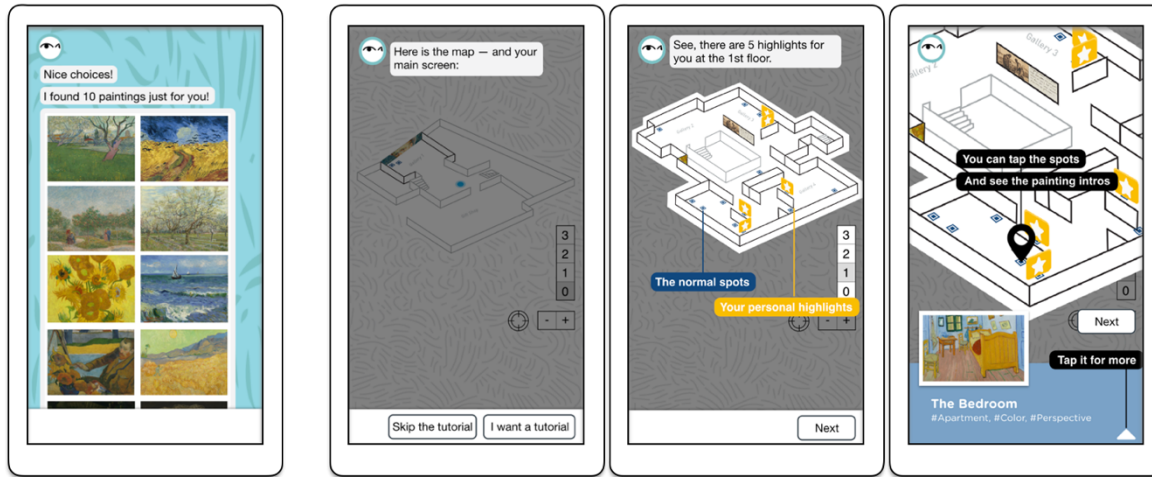
The key screens mentioned above are not working independently; in fact, they work in a joint hand for visitors' whole journey. Here are the task flows behind the key screens.



pic 9e the task flow for phase I

As can be seen in the system task flow for phase I, the MMT assistant takes the main responsibility here. Each screen of phase I are connected and highly disciplined.

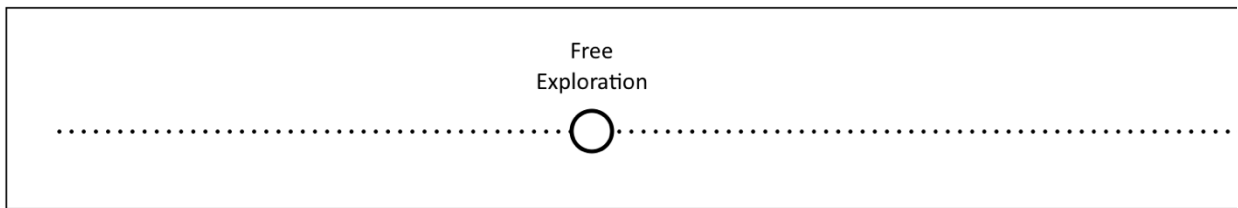




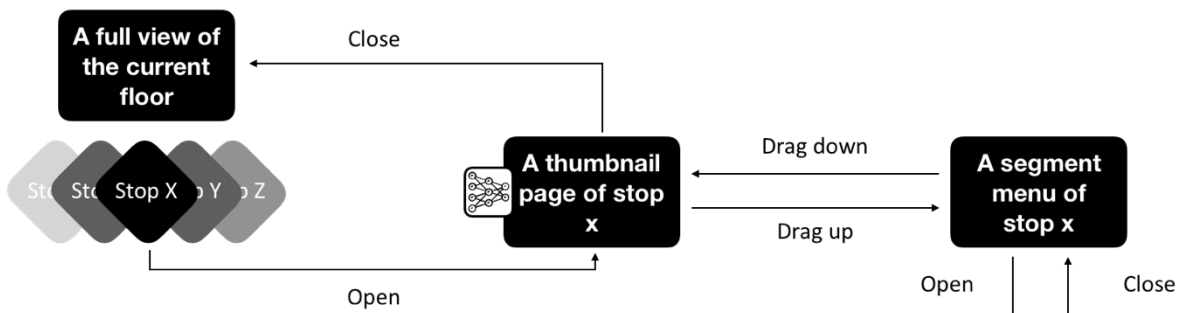
Key Screens



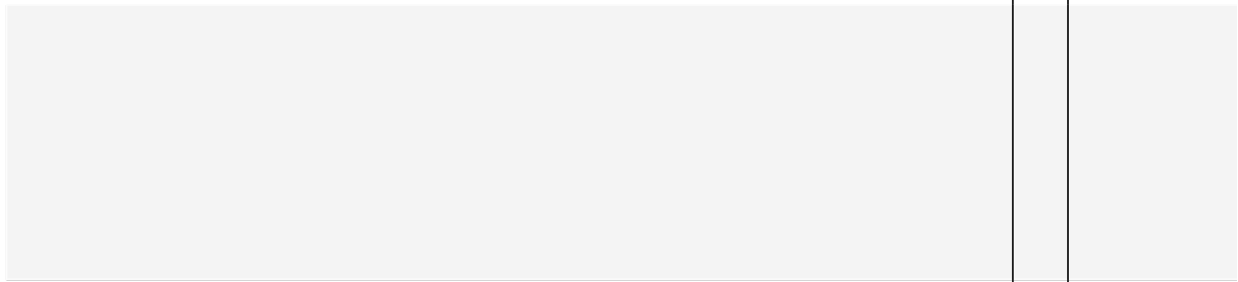
Timeline



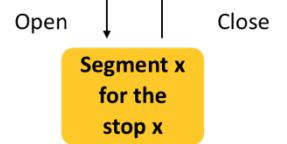
Digital Map

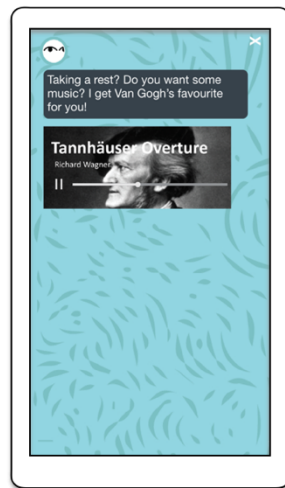
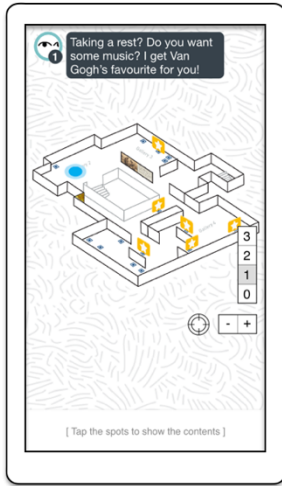


The MMT Assistant



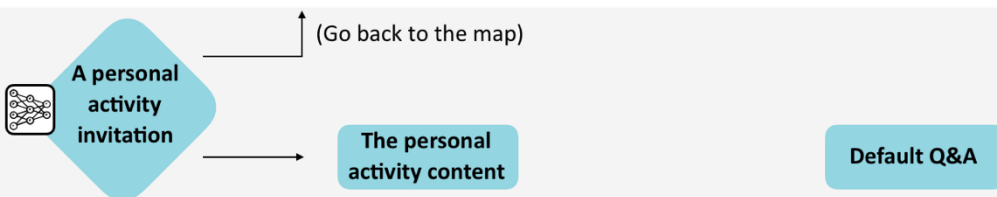
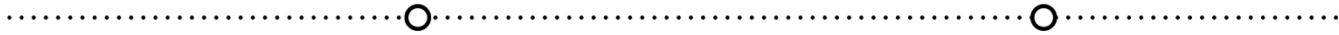
Extensions





Personal  
Leisure Activity

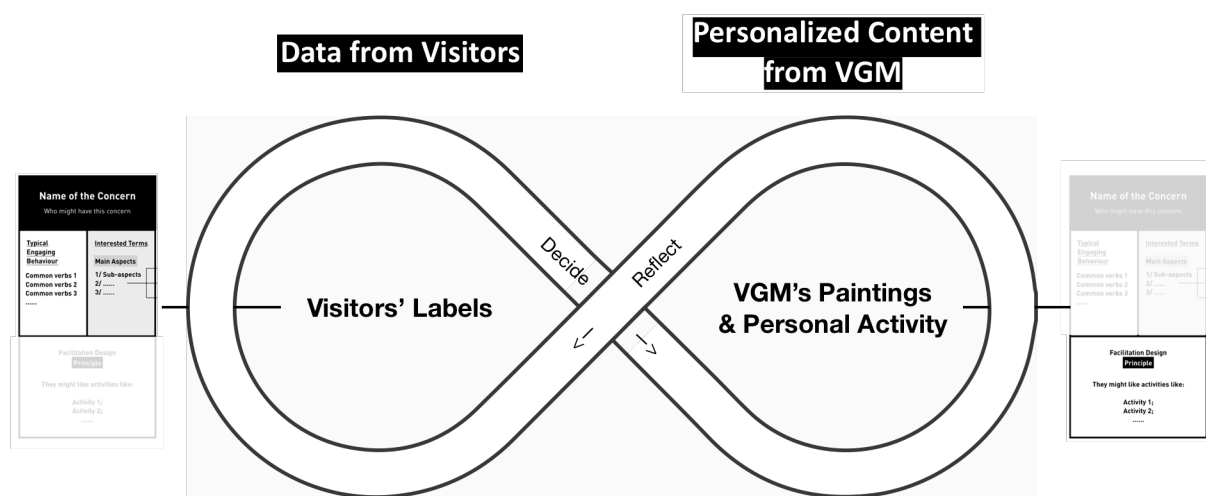
Anytime  
Inquiry



As can be seen in the system task flow for phase II, the digital map takes the main responsibility here, while MMT assistant will also show up for the bonus and optional help.

## 9.4 Reflection on the Core Bone of the Personalized Design Framework

In general, the core interaction of the whole personalization is a between the data from visitors and the personalized content from the museum (pic 9g). Visitors' attitudes to different options in phase I will be calculated into their labels; and then 10 personal highlight paintings, the unique abstract of each painting stops and their personal activities in phase II are the personalized content from VGM. These label designs and the personal screens design are designed based on the concern model. In general, the embodiment stick to the core of a personalized system.

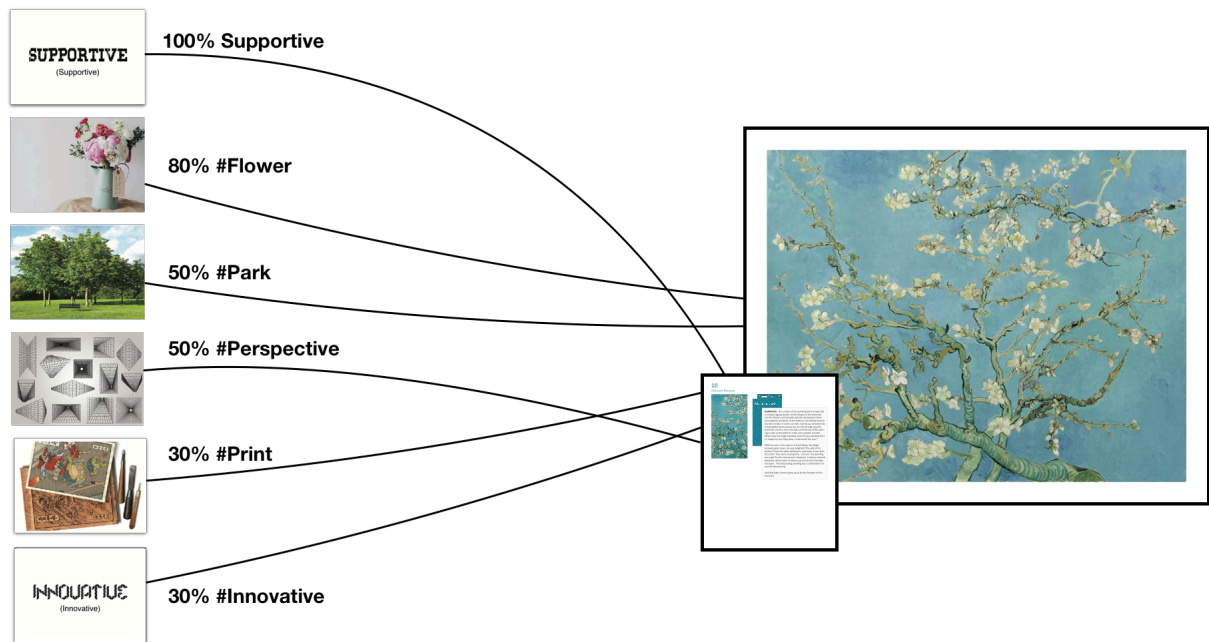


Pic 9g the core bone of the embodiment design

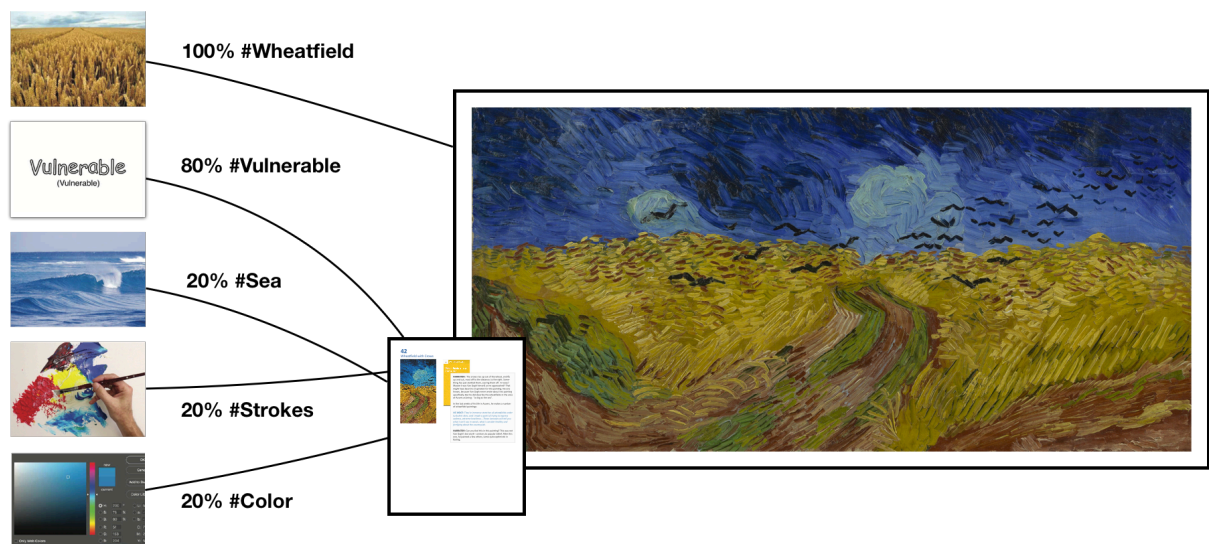
## 9.5 Complex Algorithm for the Personalization System

In preparation for the personalized system, the labels and the method to collect the labels can refer to the first part of the concern model; and the personalized design for the highlight paintings, personal abstract and the leisure activities can refer to the second part of the concern model. Once the labels for collection are settled down, the correlation between the labels and the exhibited paintings (and the correspondent multimedia content) can be calculated based on the robust Bayesian network, a popular algorithm which can automatically calculate the likelihood between items. Here are the illustrated examples of the correlation between the current labels and two exhibited paintings (pic 9h) (p.s. the correlation rate here is manually added by the researcher by now):



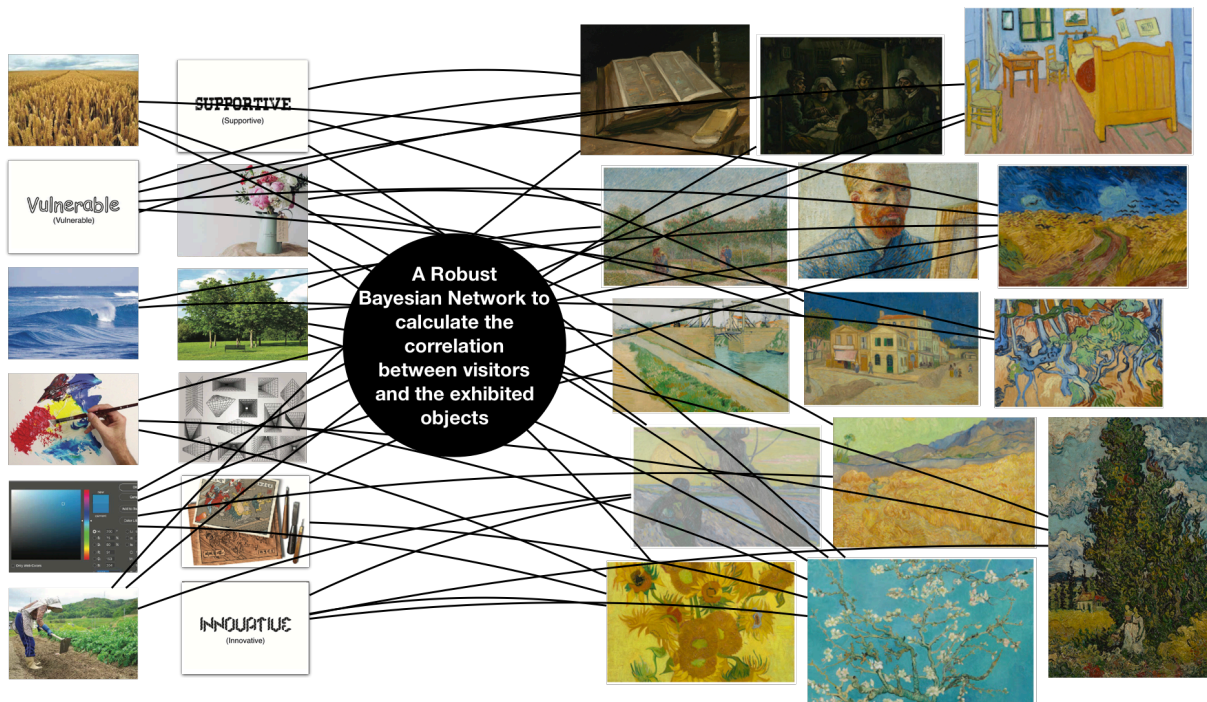


pix 9h-1 Almond Blossom



pix 9h-1 Wheatfield with Crows

By looking at more paintings together, the network will look like this (pic 9i):

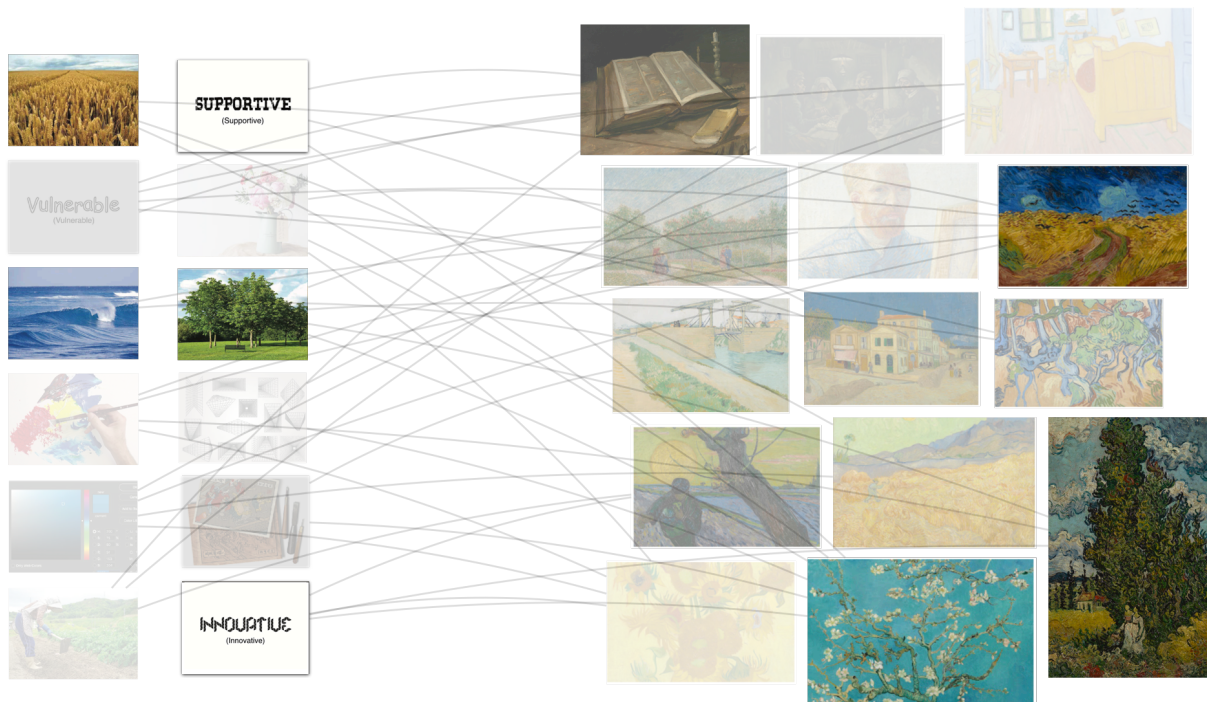


pic 9i the Bayesian Network for calculating the correlation between the labels and content

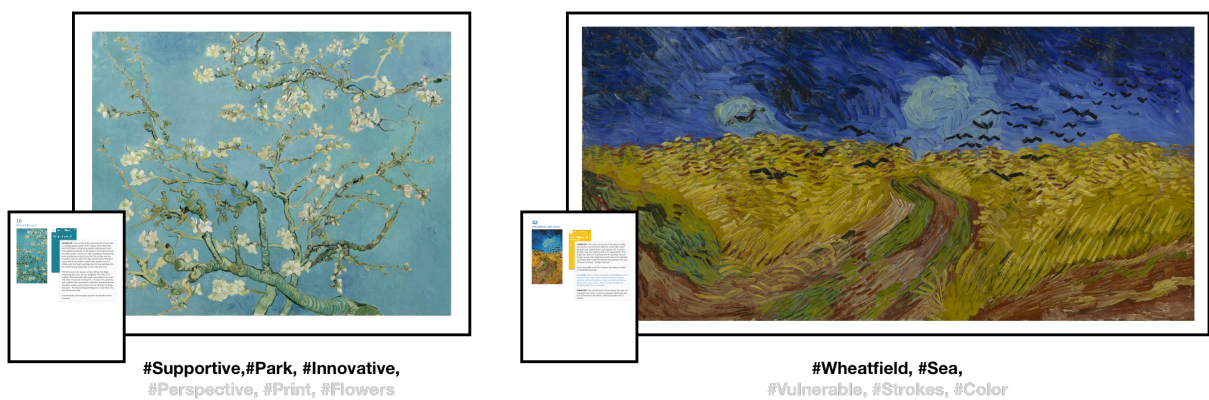
By having a completed database, the system will be ready for applying in the real use cases.

According to the system task flow, the personalized MMT needs full support from a complex algorithm to personalize three types of key screens, namely their personalized output presentation, all the personal abstracts for each stop in thumbnail pages and their bonus personal activity invitations. The algorithm is needed for measuring the correlation between visitors' data input and their personalized output.

Based on visitors' attitudes to each label option (e.g., dislike, natural, and like) in phase I, the Bayesian Network predict the most relevant paintings at the VGM. For example, when visitors show their preference to the label options named #wheatfield, #supportive, #sea, #park and #innovative, their most highlighted paintings will be the "wheatfield with Crows", the "almond blossom", and the "cypress and two women" (pic 9j):

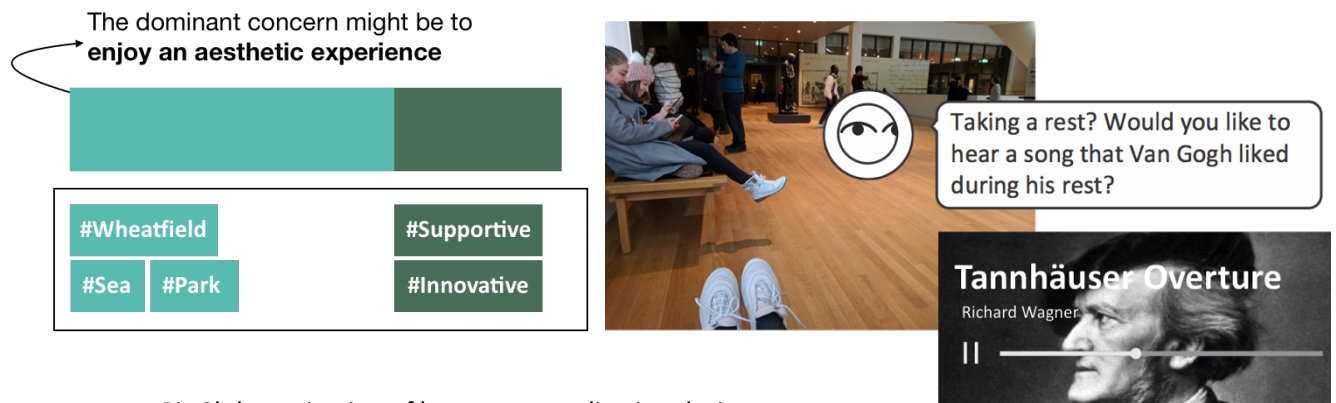


The highlight paintings can reflect the labels from the painting view and from the script view of the multimedia content. The abstract of the multimedia content is also tailored to visitors' selected label. Here are two examples of the personal labels (pic 9k):



Based on visitors' labels, the system can predict visitors dominant concern(s) (pic 9k). Therefore, when visitor pauses their visit at the VGM and take a break, they will receive a bonus facilitation activity from the MMT assistant. For example, if a real visitor selects the previous labels at the museum, he/she will be recognized as a visitor who mainly wants to enjoy an aesthetic experience. Therefore, when he/she is taking a break on the first floor, the assistant will recommend him the song "Tannhäuser: Overture" from Richard Wagner (pic 9l).





Pic 9I the activation of bonus personalization design

## Conclusion

An embodiment design is made by joining the design elements together from Chapter 8. A general user scenario is made for understanding the personalized product (pic 9x).

**According to the user scenario, the usage of the embodiment personalized design is divided into two main phases:** in phase I, visitors will meet a conversation starter named the MMT assistant; then choose to take a concern quiz or not to provide their personal data to the system; afterwards, they can receive their ten highlight paintings collage; they will be taught about how to find their highlights and other non-highlights in the main screens of a digital map; after the sequential phase, visitors enter the II phase and have their freedom to explore the museum freely with their personal digital map and multimedia content; they will also receive personal leisure activities during their break.

**In general, the MMT will onboard visitors to their personalized service before their actual visit; and then in the second phase, the MMT will facilitate visitors' actual visit in different ways.** Visitors need to spend at most 5 minutes in the first phase and interact with the MMT step-by-step; but afterward, in the second phase, they will have their total freedom to operate the device and explore the museum in their preferred way as long as they want.

Several key screens are presented to further explain the content on the personalized MMT.

**The core bone of the whole personalization is a connection loop between the data from visitors and the personalized content from the museum (pic 9x).** Visitors' chosen options in phase I will become their label and decide their personal outcomes on the MMT; these personal outcomes should also reflect their chosen labels; besides, visitors should always have the ability to change their labels and have an updated personal outcome if they want. In preparation for the personalized system, the labels and the method for collecting the labels can refer to the first part of the concern model; and the personalized design for the highlight paintings, personal abstract and the leisure activities can refer to the second part of the concern model.

A robust Bayesian network is needed for the system. The algorithm need to first build a database about all the correlation between all the input labels and the output content; only



then, the system can pick up the 10 most relevant exhibited paintings and the abstract of all the multimedia content for the visitors after the system receives their label preference; the system can also infer visitors' dominant concern(s), and push the most suitable leisure activities to the visitors during their break.

Until now, the framework and content of the personalized MMT are ready for a test. The next chapter will introduce you a role-play based in-situ test at the VGM, which aims at figuring out how will people use and think of the personalized MMT.

A person wearing glasses and a grey shirt is looking at a tablet. The tablet screen displays a grid of small images, likely a gallery or a collection of photos. The background is a blurred indoor space, possibly a museum or gallery, with other people and display cases visible. The lighting is warm and ambient.

# Chapter X

## The Personalized Embodiment Design Evaluation Test

Hollis receives his personal highlights; a photo by Zlyi on Mar, 2019

## Introduction

An embodiment design is made by joining the design elements together from Chapter 8. A general user scenario is made for understanding the personalized product (pic 9x). According to the user scenario, the usage of the embodiment personalized design is divided into two main phases: in phase I, the MMT will onboard visitors to their personalized service before their actual visit; and then in the second phase, the MMT will facilitate visitors' actual visit with the personalized contents, including a personal digital map which mark out 10 personal highlights stops for each visitor; and a MMT assistant who can push tailored personal activities during the break and anytime answers of regular questions for visitors.

Until now, the framework and content of the personalized MMT are ready for a test. This chapter will introduce you a role-play based in-situ test at the VGM, which aims at figuring out how will people use and think of the personalized MMT.

### 10.1 Design Evaluation Test Plan

The goal for the final design test is **to figure out how will different visitors use and think of the personalized MMT during their visit at the VGM.**

The test questions are related to the original personalization goal: **How much can the personalized MMT facilitate them in engaging with the museum? How much can the personalized MMT maximize their meaning of visiting the museum?**

Based on the test goal and questions, the researcher invited 8 participants from TUDelft to role-play four different charterers and visited the VGM with the Wizard-of-Oz prototype for 40 minutes. It's not a regular test setup, which means you might have the following questions:

#### **Why invite students from TUDelft instead of the real visitors?**

Because it is much easier to invite students from TUDelft to do the test than invite the real visitors at the VGM.

The real visitors at the VGM normally travel for a long distance to the museum and most of them value the chance to visit the museum on their busy schedule. The researcher concluded from her previous research experience that it is also assumed that 4 out of 5 visitors might reject to take an interview for a 15-minute-long interview at the VGM cafe, let alone a 40-minute-long test inside the galleries. Recruiting real visitors from the museum would be inefficient for this test.

Students from the TUDelft are also the potential visitors for the VGM, especially those fresh students from abroad. The selected participants come from different countries, for example, UK, USA, Canada, Australia, and China; and all of them had never visited the VGM in the previous two years; in fact, 6 out of 8 participants are

fresh students and have never been to Amsterdam before, which means they fit the design target group very well.

Besides, four of them participated in the test individually, while the other four participated in two different pairs. They could represent at least two types of travel groups.

### Why do participants need to roleplay?

Because, 1/ participants from TUDelft are all highly educated young students, even though they all come from different disciplines; 2/ it is very hard for the researcher to personalize a prototype for everyone. Therefore, the researcher created four roles for all the 8 participants. These roles are a 36-year-old software engineer (Hollis), a 48-year-old florist (Everest), an 18-year-old art student (Arden), and a 28-year-old stock manager (Larry). Each participant was assigned to the most similar role to themselves.

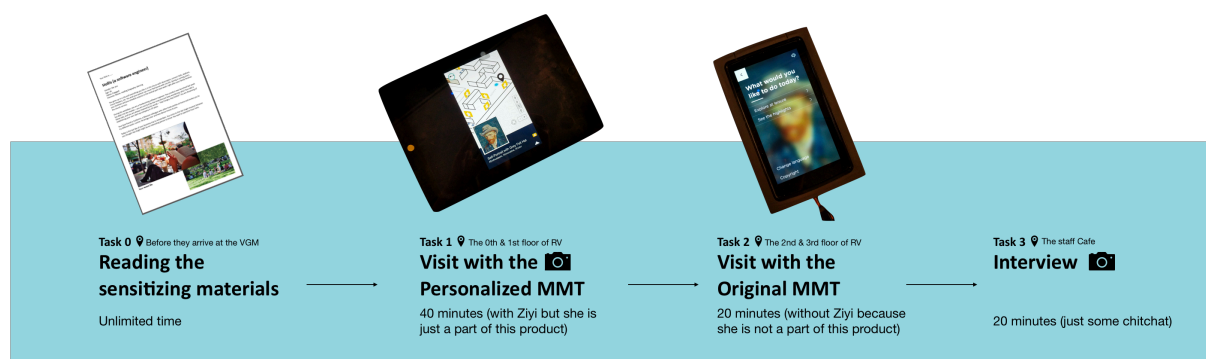
At last, there were 3 Hollis, 3 Everest, 1 Arden and 1 Larry for the test. They were presented with a sensitizing material with all the information about their living environment, hobby, schedule, etc., before the test (appendix 10a).

### Why use a Wizard-of-Oz prototype?

Because, 1/ there is no Bayesian network for calculating the correlation between visitors' label preference and generate the personalized outcome right now, so that the personal highlights are manually arranged for each role and prepared by the researcher in advance, but based on the same working principle of the Bayesian network; 2/ the multimedia content for each stop and each personal activities are not embedded in the test prototype, so that visitors will listen to the audio, and sometimes interact with some segments from the original MMT. Besides, all the other screens can work properly as the scenario illustrates (which can be found in the project archive folder named "embodiment design prototype").

Since the goal for the test is to test the usage scenario of the personalization concept instead of its usability, the Wizard-of-Oz prototype can work for the purpose.

The whole test includes a sensitizing, a visit with the personalized MMT, a comparative visit with the non-personalized guide and a follow-up interview. Participants can be filmed once they agree to the consent form (appendix 10b).





## Test Preparation

The personalization design evaluation test requires more preparation than the general design evaluation test. Because different design contents needed to be prepared for different participants. Before we look at the personalized designs, let's get familiar with the target users who will have personalized designs.

### <Hollis, Everest, Arden, and Larry>

These roles are created for design evaluation. They are not the personas for the design test but normal people like you and me.

As mentioned in chapter 10, the core bone of the whole personalization is the connection loop between the data from visitors and the personalized content from the museum (pic 9x). The personalized outcomes are prepared in advance for different roles. **If participants ever failed to provide their data or experience the personalized outcome in the mindset of their role, they will lose the key features of the embodiment design.**

Therefore, it is vital to sensitize the visitors in advance and keep reminding them to think like their roles during the test. You can also choose one actor to role-play and look at your personalized content on the next page. The detailed sensitizing materials for each role can be seen in appendix 10x.

#### Hollis

A software engineer – 36 years old, engaged



"You grew up in a *city* and everything you like is in the city as well; your you schedule a picnic with your *family* in the central park next week; right after you finish the *church* service; Your idol is Steve Jobs, – "stay hungry, stay foolish". You are *dreaming* of establishing your own *start-up* company in 10 years.



#### Everest

A florist – 48 years old, divorced



"You grew up in your parents' *farm* and you spent most of the years doing *gardening* there. You plant the most beautiful *flowers* in your state. You are an *optimistic* person and pay a lot of attention to your tiny world. It was a shock that your auntie actually went to your farm for treatment; as she was suffering from a moderate *depression* right now."



## Arden

An art student – 18 years old, single



"You grew up in a medium town where is famous as an ideal *natural* environment for both human and animals. The most precious belonging in your bag is your *sketchbook*. You draw *people*; you draw *food*; you draw every moment that worth remembering in your life. You are very *curious* about the East-Asian *culture* and want to absorb *new* ideas for your own *style*."



## Larry

A stock manager – 28 years old, in relationship



"You are a very, very *busy* man. You are "forced" to come to come to the Van Gogh museum because your artist girlfriend is a super fan of Van Gogh. But apparently, you are not. You want to take a look at each floor and then spend some time looking for a perfect souvenir for your girlfriend."



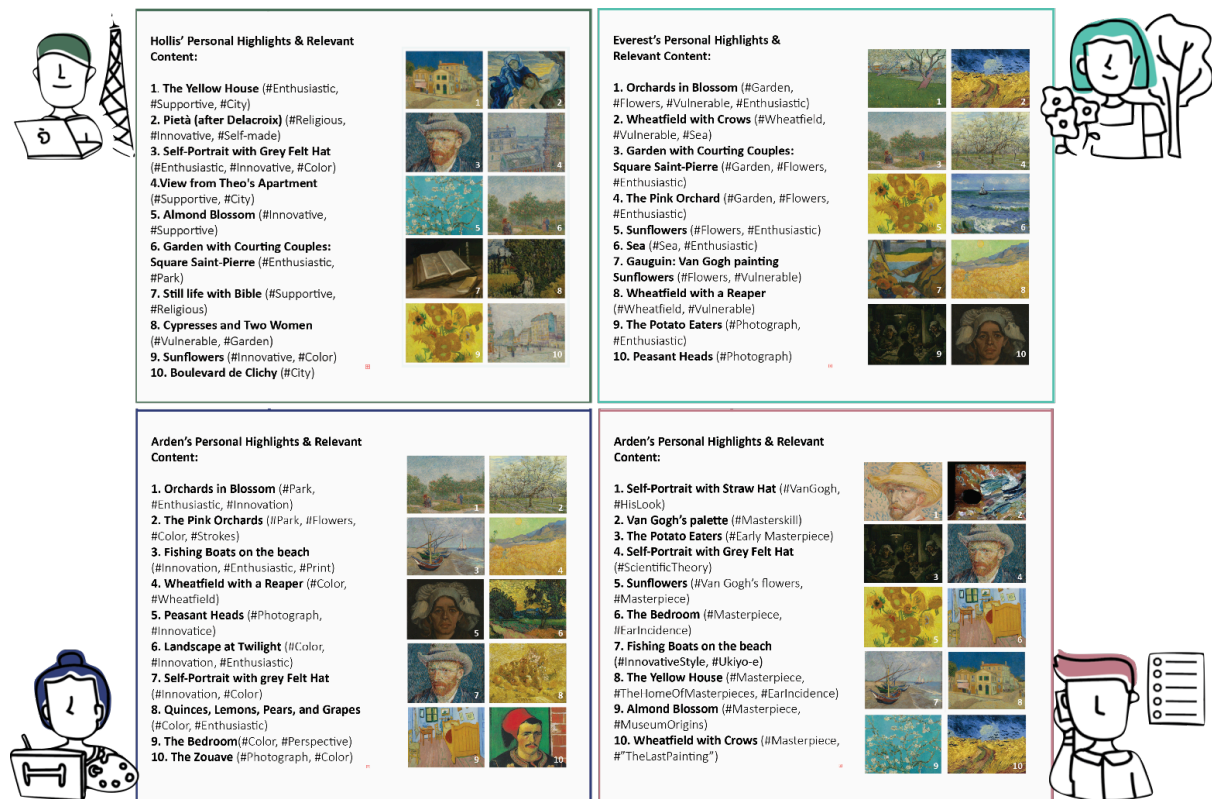
## <Test Prototypes for Each Role>

Based on the task of the (pic 10b), the researcher personalized four different prototypes for the roles. Referring to the background stories of each role, it is clear that they will provide different data to the system; based on the system, the researcher designed four different screens of personal highlight collage; the digital map; and the personal activity invitation. Here is the example of the personalization process for the role "Everest".



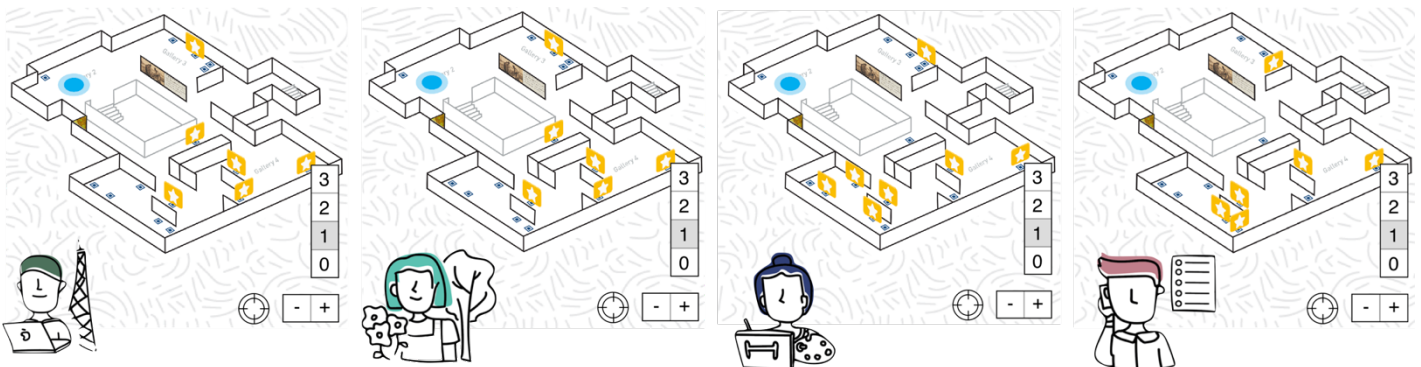
pic 10b Everest's personal selection and screens

Let's put the highlight collages of every role together, you can see the difference between their personal highlights and the relevant labels related to the selection (pic 10c).



pic 10c Four collages and abstracts for different roles

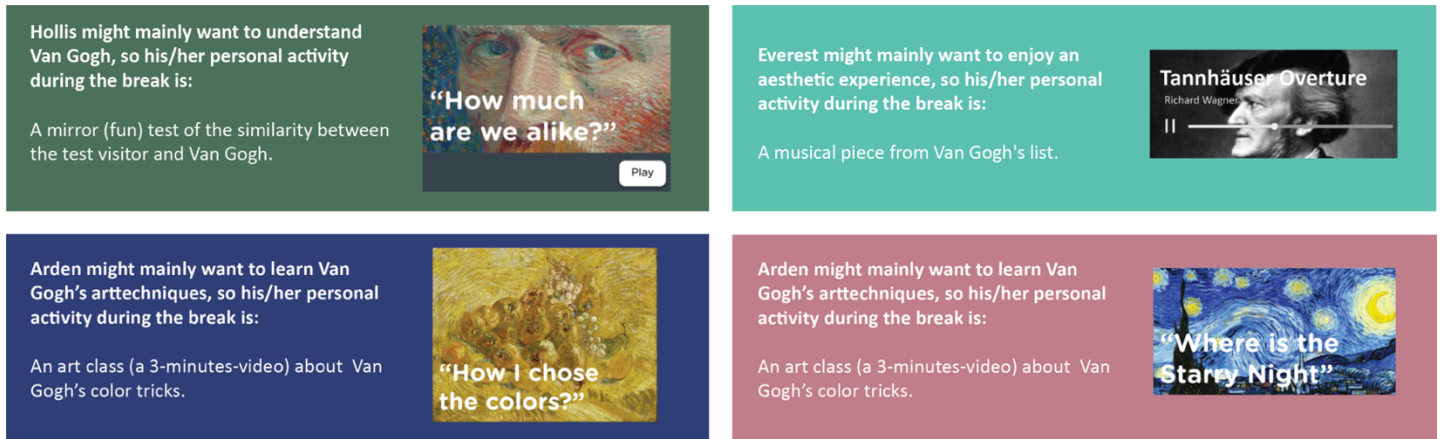
The highlights are distributed in different places of the museum; the difference can be shown on their personal digital map (pic 10d):



pic 10d tailored digital maps

Their personal activities are different; they are designed based on the concern model (pic 10c):





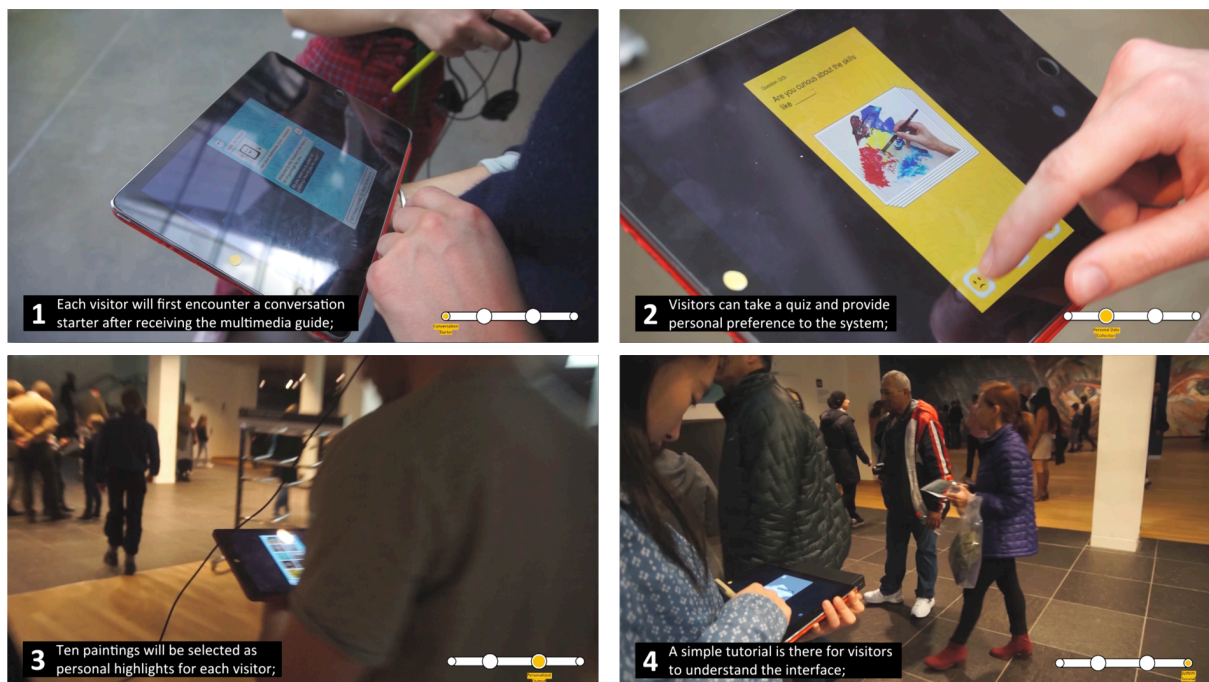
pic 10e tailored personal activities

The mirror test for Hollis is aimed to enhance his personal connection with Van Gogh; the musical piece is designed to strengthen the artistic vibe for Everest; the art class of Van Gogh's color tricks is designed for Arden to improve her art knowledge; and the documentary of Starry Night is designed to expand the unmissable glory for Larry.

So, these are the difference between each prototype for each role. An overview for the personalized designs for each role can be seen in appendix 10c.

## 10.2 In Real Scenes

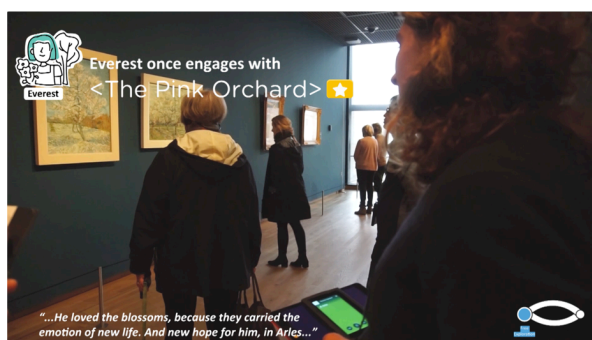
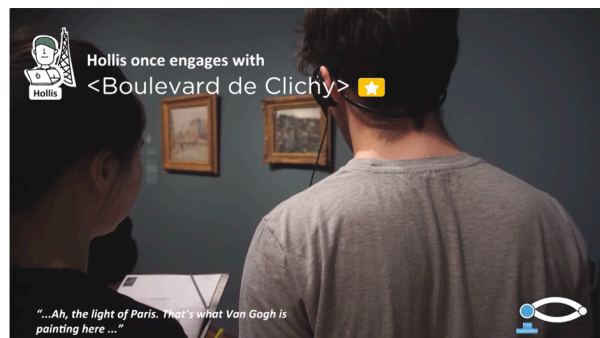
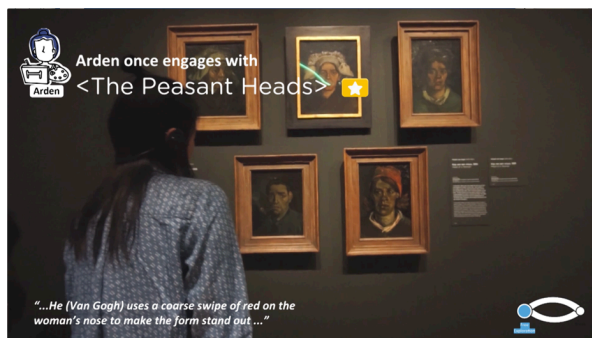
The evaluation tests went smoothly just like the usage scenario in chapter 9. Here are the real scenes of the test in-situ:



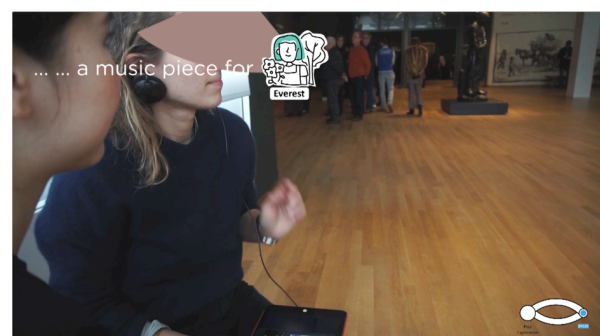
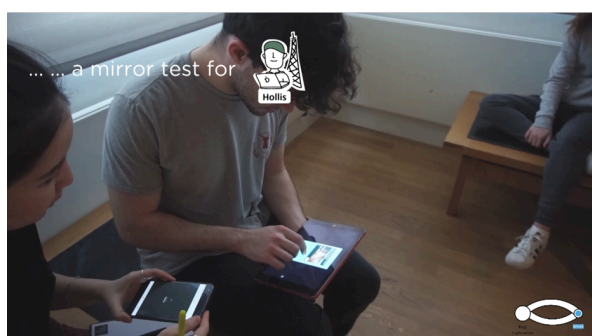
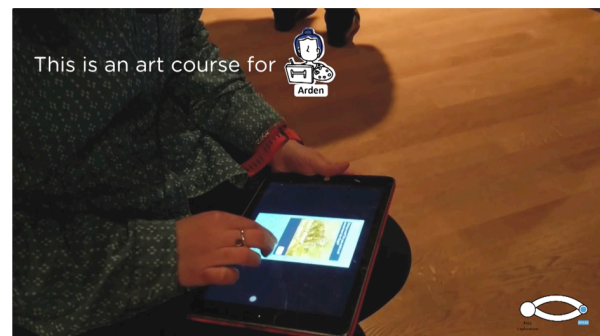
During the phase I, each participant followed the task flow and succeeded in getting their personalized content; Therefore, in the phase II, they can actually visit the 0<sup>th</sup> and 1<sup>st</sup> with



their personalized prototypes. The researcher noticed that participants engaged with their personal highlights as expected (the sentence are quoted from the MMT), here are very few of the examples, there are more behaviors like that in the real test:



Two participants took a break during the visit, and they received the personal activity invitation and accepted them; while the rest were “invited” to have a break and took the personal activity:



Afterward, they will explore the museum by themselves without the multimedia guide for 20 minutes. The purpose for that is to let them experience a visit at the VGM without a

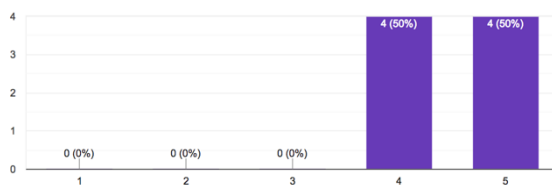
personalized multimedia guide. They can still keep the current multimedia guide so that they could have the multimedia content with them. There is no video recording for their self-exploration until they come back to the researcher for a follow-up interview.

### 10.3 Test Result: Positive!

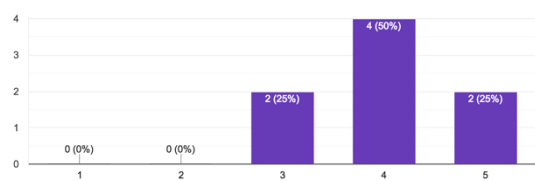
All the participants were given a follow-up interview with several questions (appendix 10e) and a questionnaire. The general feedback from them is positive! They like the concept of personal highlights and their personal activities, but they also think there is space for improvement.

Firstly, here is the quantitative result of the final questionnaire (pic 10x) (appendix 10d). When they were asked about **“How much can the personalized MMT facilitate them in engaging with the museum?”** and **“How much can the personalized MMT maximize their meaning of visiting the museum?”**, they can rate the personalized MMT (abbreviated as the PMMT in the graph) from 1 (not at all) to 5 (very much):

How much do you think the PMMT can facilitate you in your visit?  
8 responses



How much do you think the meaning of visit is maximized by using the PMMT?  
8 responses



As can be seen in the graph, all of my participants think the personalized MMT can facilitate them in exploring the museum a lot (which scored 4.5/5) and maximize the meaning of their visit (which scored 4/5). The data shows that the current embodiment design reaches the initial personalization goal.

Their reflections to the current interaction qualities are also positive, the score for “feeling personal” is 4.25/5, for “feeling being cared” is 3.9/5, and “feeling professional” is 4.1/5. The data also shows that the current embodiment design can achieve the personalization goal in a desired way.

The researcher briefly asked the participants about the reason behind the scores. Most of their opinions can reflect their opinions about the testing scenario, but some of them are mainly reflecting their opinions about the prototype itself, which is highly limited by the Wizard-of-Oz method.

#### Limitation

1. The accuracy of personal highlights recommendation is sometimes poor because of the unstable manual calculation;

“Some personal highlights are not very relevant to me; for example, the ‘potato eaters’ is too sad for me.” ---- Everest #1

2. The personal activities are not fully ready yet;

"I am quite interested in the mirror test. But it is a shame that I can't get the test result yet." ---- Hollis #2

3. The actual location function of the map is missing;

"I noticed that my location is not real (here in the prototype) and I cannot rotate the map." ---- Hollis #1

These are the points that could be improved by a fully functional product. Therefore, they are included in the current limitation of a Wizard-of-Oz prototype.

## 10.5 Appraisals from the participants

Visitors were asked about their experience of using both the personalized MMT and the non-personalized MMT, and talk about their general experience and experience with each feature of the personalized MMT:

### General impression

The personalized multimedia guide is engaging and new for them.

*"I feel like I am a part of the museum." ---- Everest #1*

*"It is interesting to see personalization in a museum. Make it real." ---- Hollis #3*

*"I save a lot of energy. I don't want the crowds and I want to have something I could personally connect to. The personalized media help me a lot." ---- Arden #1*

### Personal Highlights

They like the non-famous paintings that are recommended for them, but they miss the landmark paintings that are not recommended for them.

*"As Everest, I was very pleasant and surprised when the personalized media chose the paintings that refer the most to the nature (...) Because that's what Everest can resonate with." ---- Everest #1*

*"It's kind of like a friend recommending it. It is like someone says to you: you should really go see this painting. (...) I will go with that (advice) and pay extra attention to it." ---- Everest #2*

*"Without the personalized media guide, I felt a bit headless; that can be tiresome, in the end. And I can miss a lot of highlights. (...) This one (referring to the MMT with 10 personal highlights) is like the highlights of highlights, and it is personalized for me. I quite like it." ---- Arden #1*

-----

*"I felt quite sad when the Bedroom is not in my personal highlights. I like it so much." ---- Everest #3*

*"I feel like I am missing the spots. (...) Are these all the spots that are available on the screen? (...) OK. If I were in a hurry, I will just see the paintings you recommend to me, and then miss 'the Bedroom'. I guess I won't be happy." ---- Hollis #2*

*"We are in a hurry during the visit, and then we separate a lot because of our different highlights. I might miss some famous paintings." ---- Larry #1*

### **Personal Activity**

Most of them think the personal activity is suitable for them, but they are also curious about other people's activity.

*"I like the music. It is nice. There are no lyrics and it is perfect for a museum visit." ---- Everest #1*

*"(The video of 'where is the starry night') is suited to what I wanted to see." ---- Larry #1*

*"I am quite interested in the mirror test. But it is a shame that I can't get the test result yet." ---- Hollis #2*

*"I like the personal activities. And I see hers is different than mine. (...) I'd also like to try hers. It will be fun." ---- Hollis #3*

*"As Hollis, I think I am not that into Van Gogh. So I want to see if there are any other options for me. (...) I am actually going to say music. Music is nice." ---- Hollis #1*

### **Map**

Most of them really like seeing all their options that are presented on the map; only one of them need extra help for understanding it.

*"The map is good. This is nice. I like it." ---- Everest #2*

*"I feel like wasting my time that I don't know where the spots (with multimedia content) are in the museum, when I was using this one (the original MMT). (...) I miss the map when I used this one." ---- Everest #1*

*"I like the map, but I spend some time trying to find the sign of 'gallery 1' inside the gallery. It will be great if you can name the gallery with the actual gallery name on the wall." ---- Arden #1*

*"I don't care whether it is a map or a list. As long as I can find the place I want to go, it is good for me." --- Hollis #3*

*"By any chance, I am going to see every painting. So I am using the map to check what will the next gallery be about. It works." ---- Hollis #1*

----

*"I am not good at using the map at all, even when they give me a direction or routing. I prefer to have an alternative option like a list." ---- Everest #3*



### Assistant

They think the assistant guides them well at the beginning; but later on, they don't use it frequently.

*"It is always hard to start a new device. But this is good. It (the MMT assistant) guided me quite well. It is very clear." ---- Hollis #1*

*"I don't really care whether it (the MMT assistant) is caring me or not. Because I will be busy talking with my friends instead of him." ---- Hollis #2*

### Others

They are very curious about the mechanism behind all the personalized outcome; the presentation of the link now is useful but not obvious.

*"When I selected a hobby about 'photography', I'd like what are you going to recommend me. Is the paintings about composition, or color or etc.?" ---- Arden #1*

*"As a software engineer, I really want to know the mechanism behind my personal highlights. (...) The personal abstract is nice, but I don't see them during my trip." ---- Hollis #3*

*"I realize the abstracts are also tailored for me. This is nice. I like it. I can know what the audio is about before I listen to them." ---- Hollis #1*

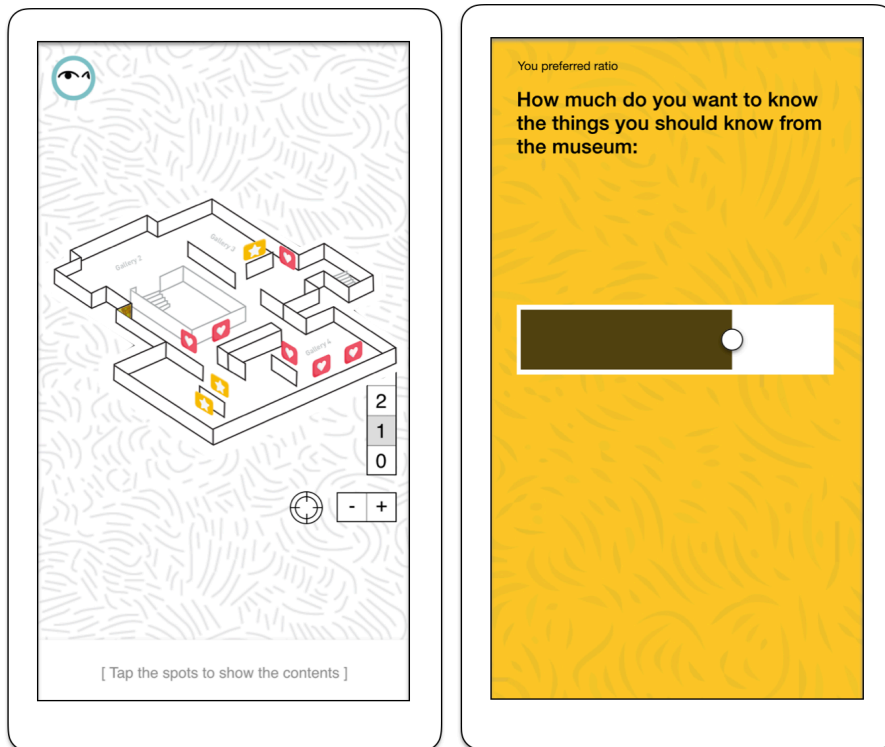
## 10.6 Recommendation from the participants

Half of the participants show their needs between a totally personal service or a totally generic service. It is a surprise to see how strong they are looking forward to the landmark paintings they should see/know, even though they might be less than 10% relevant to their normal preference. Besides, they are satisfied with their personal activities, but they also want to enjoy all the other activities that they could have.

So, based on their feedback, the researcher generates the following recommendations.

### 1. To balance the personal highlights and the must-see highlights on the map;

Visitors are afraid of missing out the landmarks, which means the must-see landmarks need to be emphasized under any circumstance. This balance can be achieved by showing two different visual marks on the map (pic 10x-1); or by letting visitors choose the ratio of their personalized service: how much they want to know the things they should know from the museum (pic 10x-2).



Pic 10x-1; Pic 10x-2

## 2. To balance the personal activities for them and for others;

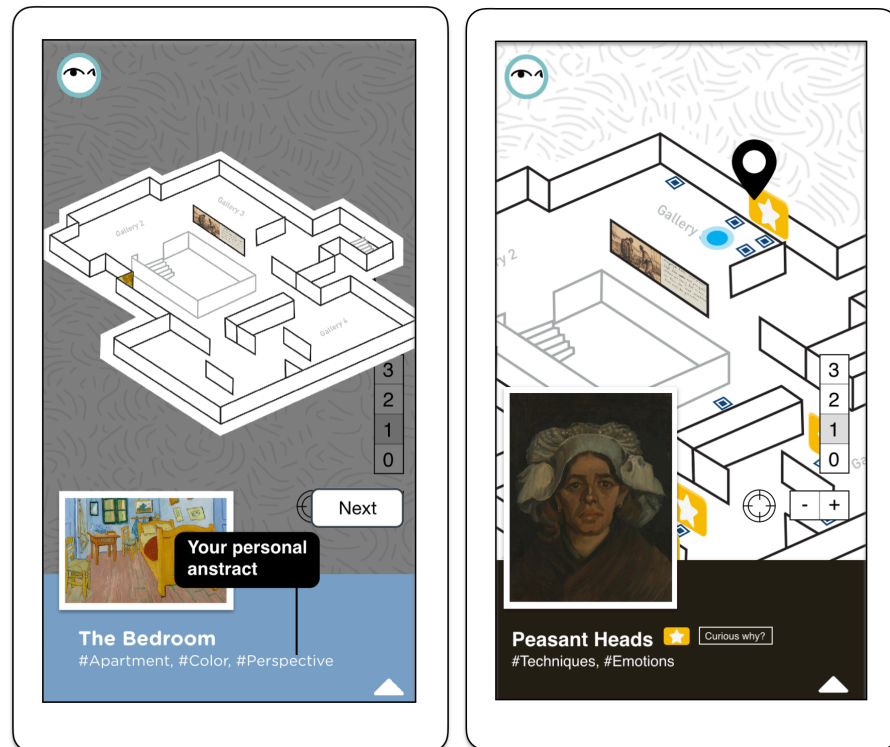
Visitors enjoy having more options of the personal activities no matter they are tailored for them or not; but at the same time, the personalized MMT should keep the “personal” sense of the activities recommendation. This balance can be achieved by giving them a button to open the full list of personal activities (pic 10x-1); or by showing them a personal top chart of all the activities (pic 10x-2).



Pic 10x-1; Pic 10x-2

### 3. To improve the communication of the personalization mechanism;

Visitors want a showcase about the mechanism behind each the personal highlight and personal activities. The improvement can be achieved by introducing the personal abstract during the tutorial session (pic 10x-1); or by adding a button to show the recommended reasons next to each stop (pic 10x-2).

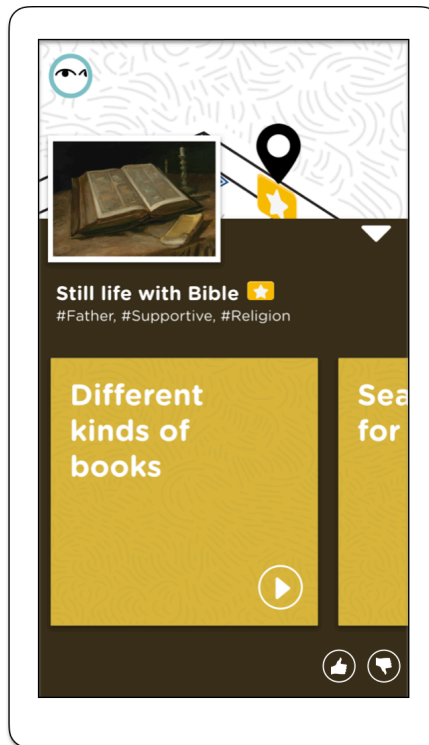


Pic 10x-1; Pic 10x-2

### 4. To improve the accuracy of the personalized outcome;

Visitors might feel disappointed and untrusted when they find out that the personal highlights or activities don't fit them so well. The improvement can be achieved by providing a quick feedback portal underneath each personal stop (pic 10x-1). This can also be improved by a working algorithm.

Visitors are also looking for a more functional map: at least the function of locating where they are. This can be improved by carefully place the Beacon in the museum and cover more location space for the visitors. There can also be an alternative screen like the current multimedia guide in the future, in case visitors lost their way or cannot use the map in somewhere.



Pic 10x-1

## Conclusion

In this chapter, a role-play based in-situ test at the VGM was held at the VGM. The evaluation test aims at figuring out how will people use and think of the personalized MMT. Eight participants from TUDelft participated in four roles and visited the VGM with their personalized Wizard-of-Oz prototype for 40 minutes.

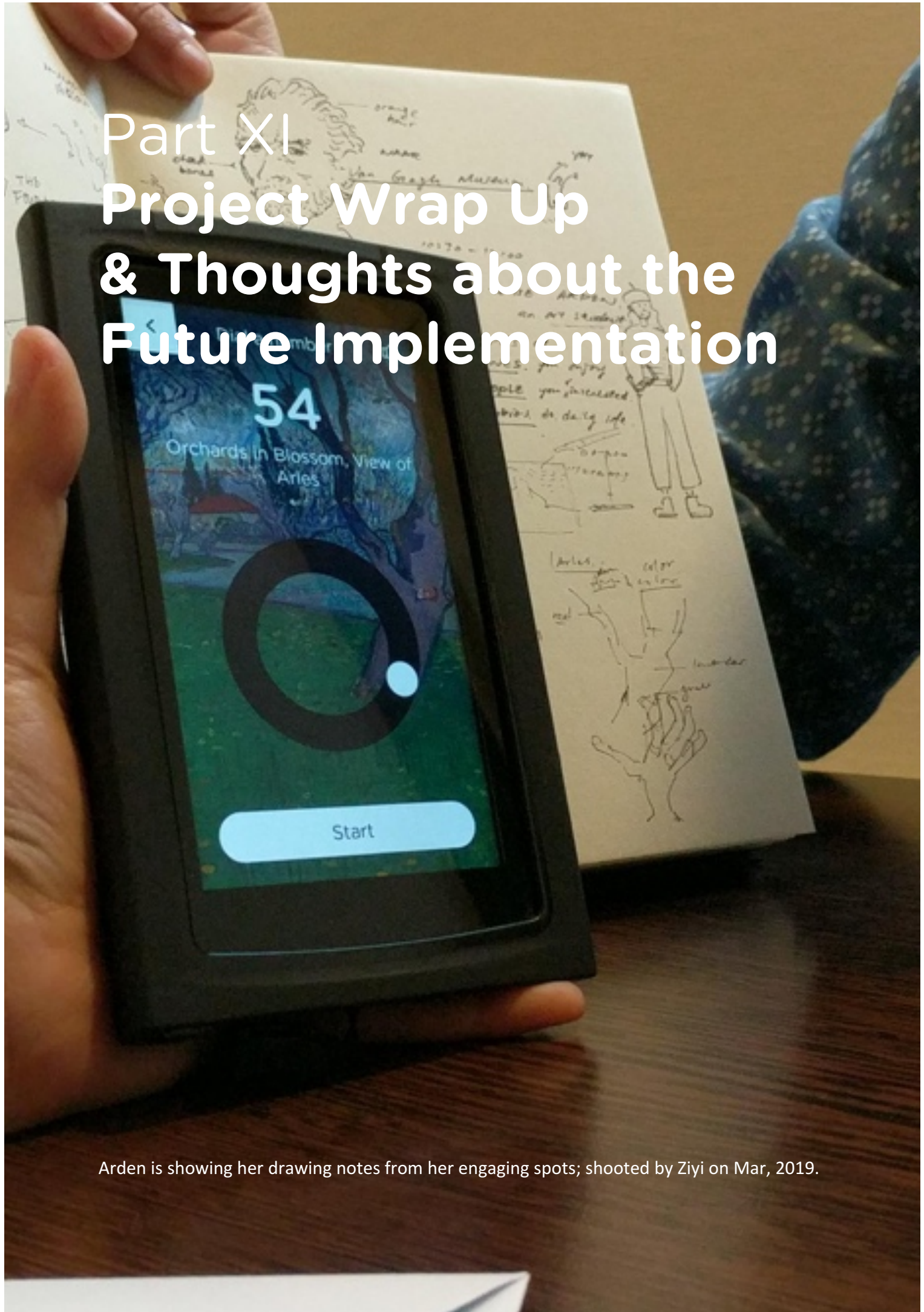
The general feedback from them is positive! They like the concept of personal highlights and their personal activities. All of them think the personalized MMT can facilitate them in exploring the museum a lot (which scored 4.5/5) and maximize the meaning of their visit (which scored 4/5). The data shows that the current embodiment design reaches the initial personalization goal.

They gave a lot of praise to their personalized outcomes like the personal highlights and their personal activities, and the communication medium like the digital map and the assistant; At the same time, they gave a lot of recommendation for a better personalized MMT. These recommendations are: 1/ **To balance the personal highlights and the must-see highlights on the map;** 2/ **To balance the personal activities for them and for others;** 3/ **To improve the communication of the personalization mechanism;** 4/ **To improve the accuracy of the personalized outcome.**

The researcher provides several simple solutions for the design recommendation, which can be integrated into the next iteration and tested. In the next chapter, the researcher will wrap up the whole project with a project recap and the and a final development recommendation.



# Part XI Project Wrap Up & Thoughts about the Future Implementation



Arden is showing her drawing notes from her engaging spots; shot by Ziyi on Mar, 2019.

The design task for the graduation project is broad and difficult. Therefore, this chapter will collect all the important pieces from different chapters and explained them together.

## 11.1 Why to personalize the MMT?

VGM: “To personalize the multimedia guide!”

VGM & The Researcher: “Why? & How to?”

If you remember, the original assignment is “personalizing the multimedia guide of the Van Gogh museum” and initiated by the museum. The challenges for the graduation project is to figure out why and how to achieve the design goal. After getting know to the current MMT, the researcher found out some personalization opportunities about the current multimedia contents. But still, the ultimate goal for personalizing the multimedia content is missing.

Therefore, the researcher conducted a brief observation in the museum and looked into visitors’ diversity. It is found out that each visitor is paying different levels of attention to each exhibited painting and making use of different “mediators” in visiting, including the multimedia guide, their phone, etc. The researcher applied literature research to investigate the theoretical explanation behind visitors’ various behaviors. It is found out that visitors pay more attention to the objects that they could perceive the higher value of; and once when they find out and engage with these exhibited objects, they could start their “minds-on” activities. Their meaning-making process generates their own interpretive stories in mind which are related to their concerns and their experience with the exhibited objects. However, the multiple elements and objects are competing for visitors’ attention in most exhibitions; therefore, visitors often need some guidance to decide what is considered important. Different personal facilitation might be required based on their interest.

By now, a rough goal for personalizing the current MMT is finally clear, which is to **facilitate visitors to engage with the collection, maximize visitors’ meaning of visiting the Van Gogh Museum, in a personal, caring and professional way.**

## 11.2 How to personalize the MMT?

**1/ Firstly, a concern model is needed for understanding visitors’ diversity at VGM.**

The 1<sup>st</sup> field research was conducted at the VGM and 26 real visitors were interviewed at the VGM. According to the interviewees, they had diverse travel experience at the VGM. They engaged with and focused on diverse types of combined spots in each gallery. Even though when they engage with the same spots, they focus on various factors in various ways. All in all, their discrepancy of activities at the museum are led by personal concerns.

Therefore, a 2<sup>nd</sup> field research was conducted at the museum again and, this time, the initial concern model from the 1<sup>st</sup> research was validated and improved. Now, the first part of the concern model is ready:

## Understand Van Gogh

Visitors who have this concern are curious about **Van Gogh and his life**. They might be big fans of Van Gogh; or someone interested in people in their daily life.

### Typical Meaning - Making Process

**Understand** Van Gogh's experience;

**Empathize** with Van Gogh;

**Appreciate** Van Gogh's, e.g., talent and strong will;

**Admire** Van Gogh's, e.g., achievement in his career;

.....

### Interested Terms

**Van Gogh's –**

**1/ Personalities** (e.g., being bold, vulnerable, etc.)

**2/ Personal qualities** (e.g., his strong will, being self-taught, progressive and innovative, etc.)

**3/ Experience** (e.g., travels, troubles, success, influence, etc.)

**4/ Surroundings** (e.g., , family, friends, etc.)

## Learn Art Techniques

Visitors who have this concern are interested in **Van Gogh's art techniques**. They might work in the art-relevant industries; or they want to improve their artistic appreciation.

### Typical Meaning - Making Process

**Learn** how Van Gogh, e.g., used color and light (to express characters' emotions);

**Remember** Van Gogh's e.g., color and his color combination;

**Collect** their beloved paintings;

**Practice** in the future;

.....

### Interested Terms

**Van Gogh's skills of –**

**1/ Artistic Styles** (e.g., Dutch styles, Parisian modern art, Japanese ukiyo-e style, impressionism, etc.)

**2/ Personal Styles** (e.g., impasto, vivid brushstrokes, color mixture, etc.)

**3/ Details** (e.g., color, light, emotion, lines, perspectives, etc.)

**4/ Form** (e.g., draughts, landscape, figures, etc.)

## Enjoy an Aesthetic Experience

Visitors who have this concern are interested in **Van Gogh's paintings**. They might want to look at the paintings in real; or love artistic objects and places in their daily life.

### Typical Meaning - Making Process

**Feel** the atmosphere expressed in the painting

**Imagine** the situation when the painting was made

**Enjoy** the vibe in the museum

**Relax** without thinking too much of the outside world;

.....

### Interested Terms

**Van Gogh's paintings' –**

**1/ Themes** (e.g., nature, animal, social life, peasants, wheat fields, etc.)

**2/ Atmospheres** (e.g., suppressive, quiet, peaceful, cool, sad, rebellious, religious, etc.)

## Find Out the Landmarks

Visitors who have this concern are interested in **the must-sees** of Van Gogh Museum. They might be not interested in Van Gogh's or art in general; or they are just interested in something they should know.

### Typical Meaning - Making Process

**Find out** the location of the most famous paintings (incl. the paintings like Starry Night that are not here etc.);

**Figure out** the truth of his famous myths (being crazy and cut off his ear);

**Compare** Van Gogh with other people;

**Complete** a task in the bucket list in mind;

.....

### Interested Terms

**The must-sees of VGM -**

**1/ The Landmarks** (e.g., the Sunflowers, the Bedroom, the Starry Night, the Almond Blossom, etc.)

**2/ Rumors** (e.g., the ear incidence, the last paintings, the secret behind Van Gogh's suicide, etc.)

**3/ Fame and Specialty** (e.g., why is Van Gogh so famous, what is he special for, etc.)

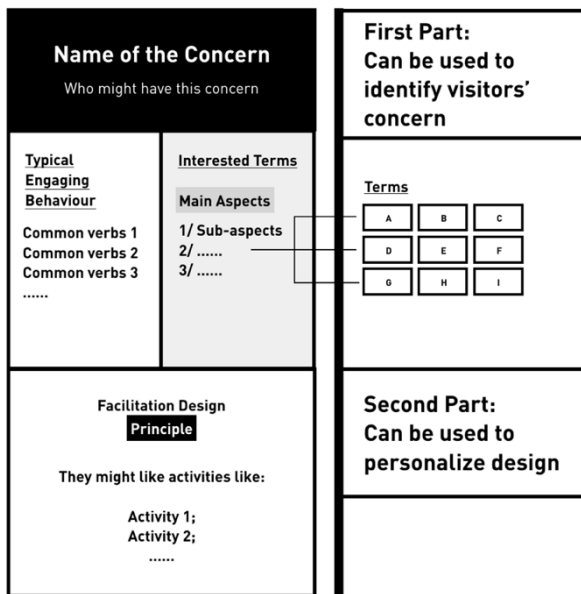
This part of the concern model can be used to identify visitors' concern(s). When a visitor has typical meaning-making behaviors or interested terms about one main aspect, he/she have a concern like similar visitors.

But how to design for different concerns based on this information? A how-to session was conducted inside the MuseumFuture Lab and came up with design solutions and principles for different concerns. This is when the second part of the concern model is ready:



When a visitor is identified having a dominant concern X, he/she would like to engage with exhibited objects/activities that contribute to a specific facilitation; for example, here are some activities.



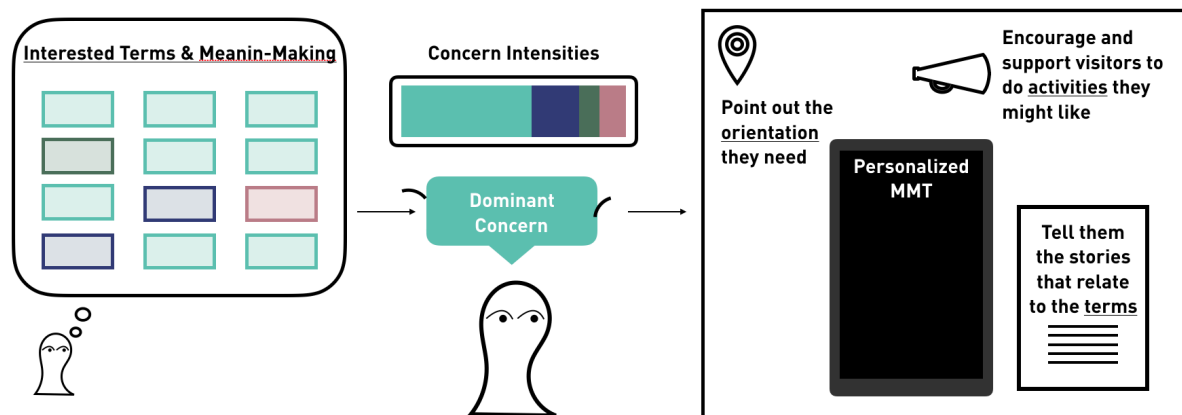


Here is the structure of the completed concern model (pic 11a). The first part of the concern contains the typical engaging behaviors and interesting aspects and terms from the visitors who have the concern; the part can be observed or tested for identifying the concern (and the intensity). The second part contains the concern-based facilitation design principles and some examples from designers in the museum field; the part can inspire the personalized design.

Pic 11a the structure of concern model

## 2/ Secondly, a design framework is needed for personalizing the MMT based on visitors' diverse concern.

The researcher rethought the minimal task flow of using the personalized MMT (pic 11b), and discover the basic tasks for the personalized MMT system: the system need to collect visitors' input first about their interested terms and typical meaning-making activities; the system can then calculate visitors' concerns and select the personalized content in the backend database; and push the multimedia content to visitors' MMT screens.



Pic 11b the structure of concern model

In abstract, the personalized design need to deal with the connection loop between two important elements: visitors' data input and the personalized content output (pic 11c).

Q1: How to decide which data to collect?

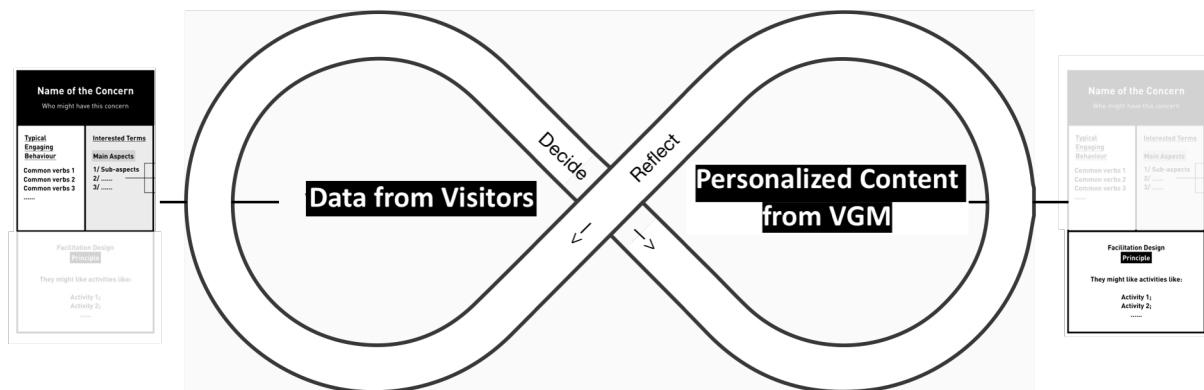
A1: They could any data type from the first part of the concern model.

Q2: How to designed the personalized content?

A2: They could be any content type that match the facilitation principle from the second part of the concern model.

Q3: How the two parts be connected together?

A3: They could be connected by a robust Bayesian network which can calculate the correlation between the data input and the personalized content output.



pic 11c the core bone of the general personalized design framework

This core bone is the basis of all the personalized MMT. When designing the data for collection, it is necessary to assure that the data are able to decide the personalized content out of general content; when designing the personalized contents from VGM, it is also necessary to assure that different contents for personalization can reflect on the different data input.

A MMT can be called as a personalized MMT as long as it can collect data from visitors, and select one content out of many according to their data input; with a premise that the content is relevant to the data input.

### 3/ Thirdly, some design principles are needed for designing the input and output of the personalized MMT.

Later on, five design sets were created and tested with around 30 people from both the TU Delft and VGM. There are a lot of fails and successes: the failure designs lead to some basic design principle, and the successful designs are iterated for many times and leave many useful design elements and materials for embodiment designs.

The principles for designing for both the input phase and output phase are listed below:

When designing for collecting input from visitors, the setup...

Principle 1: ... should let visitors think less because most of them are on vacation.

Principle 2: ... should decrease the feeling of deleting because they are afraid of missing things they should know.

Principle 3: ... should communicate about the personalized outcome because visitors don't want to feel regret about their choice afterward.

Principle 4: ..... communicate about the personalized outcome so that visitors are more willing to put effort to the data collection.

Principle 5: ... should never let visitor worry about the time.

Principle 6: ... should onboarding visitors to the museum space step by step because visitors are easy to get lost at the beginning of their visit.

Principle 7: ... should keep the process easy and simple so that visitors are willing to play with it.

When designing the personalized output for the visitors, the design...

Principle 1: ... should strengthen the sense of personal difference because visitors like to compare their personalized product with each other.

Principle 2: ... should strengthen the sense of advance because visitors like to know how it is special from the original non-personalized product.

Principle 3: ... should first personalize the core functions, then the bonus functions.

Principle 4: ... should show the connection between visitors' input and the output they receive.

Principle 5: ... should be easy to use, for example, like a normal application from their daily life.

Principle 6: ... should have more flexibility in adding new requests/deleting options making changes/searching during the whole visit process.

Principle 7: ... doesn't need to be 100% personalized.

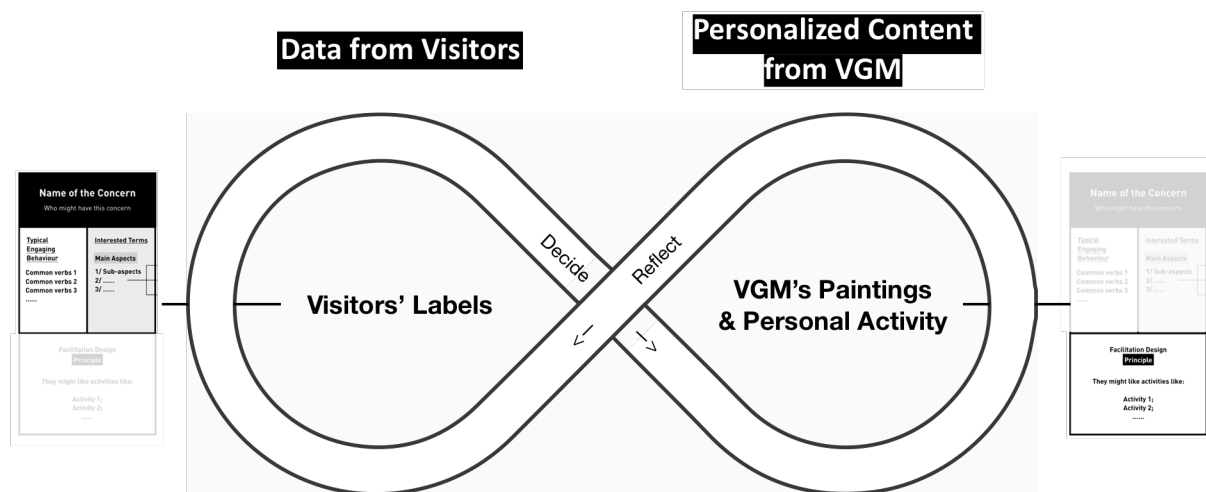
Principle 8: ... should show the basic content even though they might not be personally interesting to the visitors.

Principle 9: ... should provide clear guidance about how to use/get to the personalized service/spots.

Principle 10: ... can interact with visitors during the break.

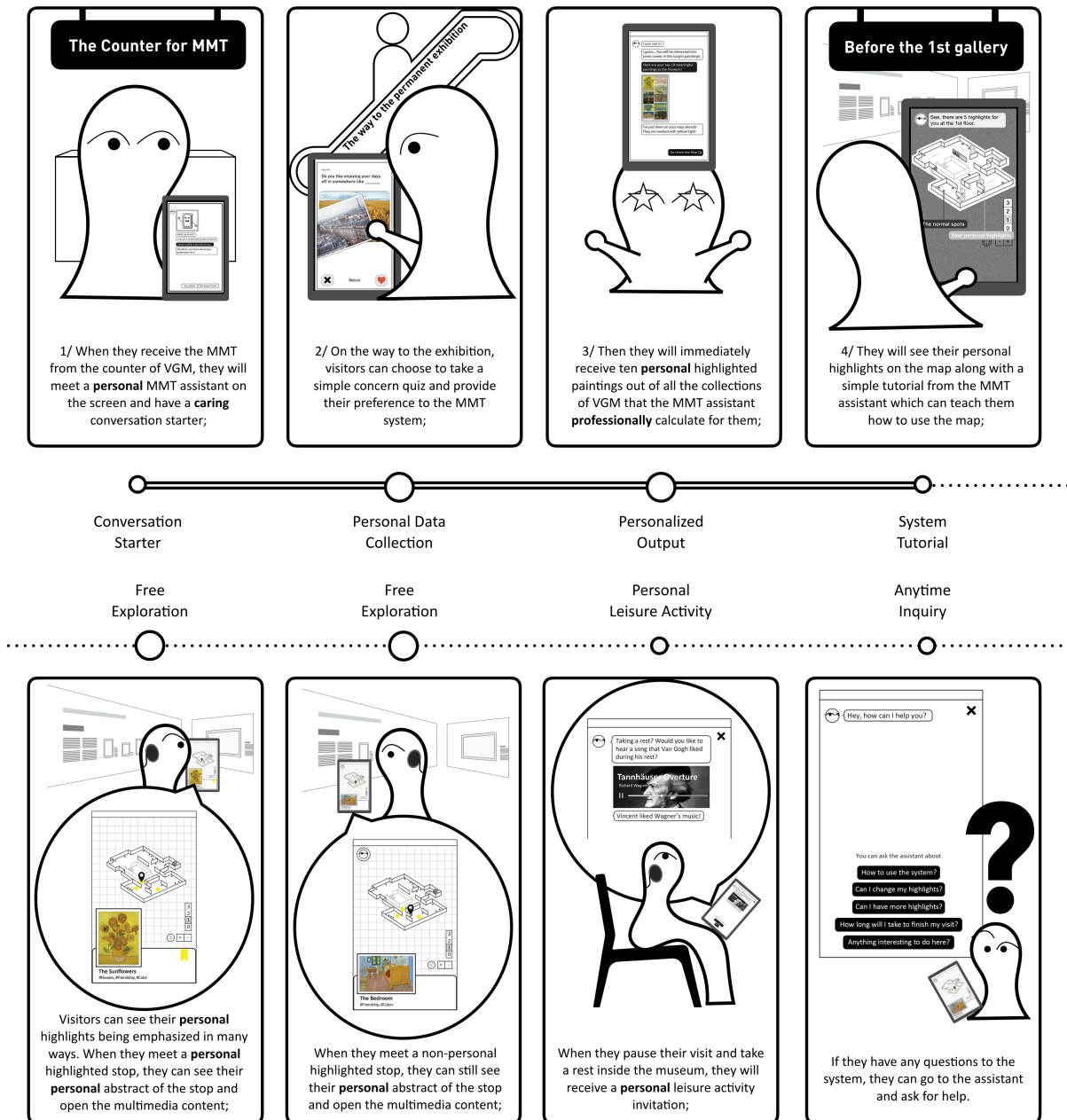
#### 4/ Fourthly, an embodiment design is created as a design example of the personalized MMT.

The embodiment design is built upon the current design elements which are proven to work in the graduation project. Visitors' interested terms are needed as the data input to the MMT system, and the "10-personal highlights" from the museum collection and their personal activity invitation are the personalized content output for the visitors (pic 11d).



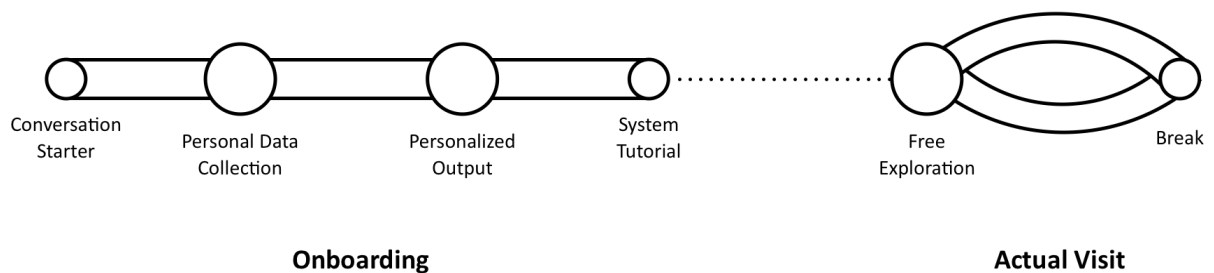
pic 11d the core bone of the embodiment design

The channels for collecting the input and presenting the output are a MMT-based assistant and a digital map. This is the scenario of using the embodiment design (pic 11e):



pic 11e the scenario of using the embodiment design

The usage of the personalized MMT can be divide into two phases, namely an onboarding phase and an actual visit phase (pic 11f):



pic 11f two phases of using the personalized embodiment design



Several key screens are made for presenting channels and the content examples on the embodiment design.

### 5/ Last but not least, an evaluation test to test the scenario of using personalized MMT.

How will different visitors use and think of the personalized MMT during their visit at the VGM? Based on the test goal, the researcher invited 8 participants from TUDelft to role-play four different charterers and visited the VGM with the Wizard-of-Oz prototype for 40 minutes.

The preparation for a personalized design is more difficult than a regular test: because several personalized screens are needed for each role. For example, these are the personal key screens for Everest, a florist:



The test must prepare different sets of key screens like these to each participant role because only when the participants sense the connection between the data they provide to the system and the personalized content they get back from the system; can they provide their true feeling of using a personalized MMT.

The general feedback from them is positive! They like the concept of personal highlights and their personal activities, but they also think there is space for improvement, which are:

- 1/ To balance the personal highlights and the must-see highlights on the map;
- 2/ To balance the personal activities for them and for others;
- 3/ To improve the communication of the personalization mechanism;
- 4/ To improve the accuracy of the personalized outcome.

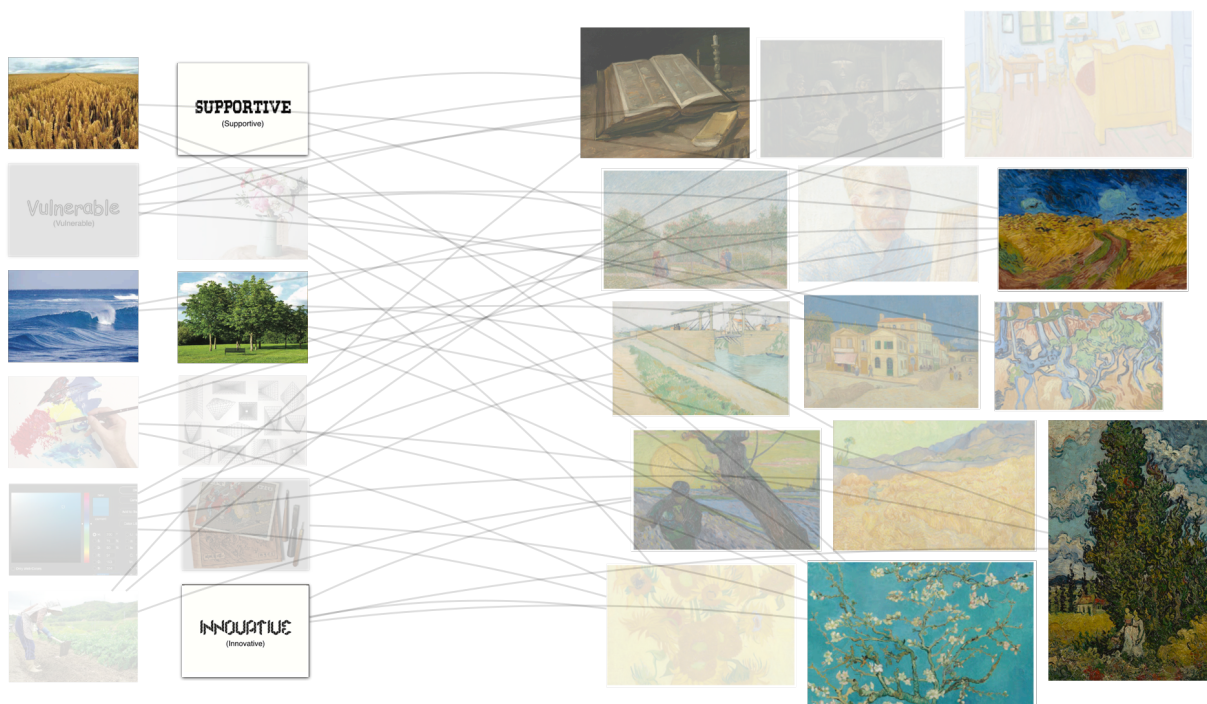
In general, it is a surprise to see how strong they are looking forward to the landmark paintings they should see/know, even though these landmarks might be less than 10% relevant to their normal preference. Besides, they are satisfied with their personal activities, but they also want to enjoy all the other activities that they could have. These two points require extra attention when designing the personalized MMT.

## 11.3 Thoughts about the future implementation

The final embodiment design from the graduation project was originally planned as a design example for the future MMT. But after the positive results from the evaluation test, it is

proved to be an actual workable concept for the VGM. If the museum wants to implement the design in the future, here are some thoughts for the actual implementation and development.

1. **Start from the database setup and the backend algorithm** – the concept of personalization is highly technology based. In the future, visitors from all over the world might provide numerous types of label input to VGM, the personalization system need to prepare all the correlation between different labels combination and different exhibited objects in advance (for example, pic 11x). Besides, the database and algorithm can not only realize the final functions but also guide the design of data collection and the personalized content design. For example, if a new label is found out in the exhibited objects, the design team can immediately design relevant content for the new label.



2. **Enrich the data input label type and the personalized multimedia content** – as mentioned above, the labels for data input might be enriched when the database is ready. Based on the new labels, the personalized multimedia content can also be enriched at the same time. For example, the museum can prepare more stops with multimedia content; and more personal activities for different visitors.
3. **Conduct more internal testing and Beta testing than ever** – visitors care for the accuracy of their personalized service. Plus, the personalized content for each visitor will be different based on their unique input. Therefore, more tests are required before launching the final product. It is also important to test with visitors from diverse backgrounds as well: which is to make sure that all the personalized output can be tested. The algorithm can be trained to be smarter with more testing as well.

**4. Apply personalized advertisement on the ticket page** – the current marketing slogan is saying “making the most out of your visit” now. After the MMT become personalized, the vision of using the MMT will be clearer per visitor as well. For example, an art student can actually “learn the most about Van Gogh’s technique out of your visit”, a florist can actually “enjoy the most vivid nature from Van Gogh’s paintings out of your visit”, and etc. The personalized advertisement can not only improve the sales of the MMT but also communicate well with the potential MMT users about the personalized features in advance.

If the museum wants to personalize the MMT without the constraint of the embodiment design example, it is necessary to refer to concern model, stick to the core bone of the personalized design framework, and obey the design principles when designing the personalized product system.

(Hurray!!! The main repost is finally finished!!!)

# Reference

Van Gogh Museum (2017). *Van Gogh Reviews Annual Report 2017*. Retrieved from <https://www.vangoghmuseum.nl/en/organisation/annual-report>. Accessed March 12, 2018.

En.wikipedia.org. (2018). Vincent van Gogh. Retrieved from [https://en.wikipedia.org/wiki/Vincent\\_van\\_Gogh](https://en.wikipedia.org/wiki/Vincent_van_Gogh). Accessed December 9, 2018.

Vangoghmuseum.nl (2018). Opening Hours - Van Gogh Museum. Retrieved from <https://www.vangoghmuseum.nl/en/plan-your-visit/opening-hours>. Accessed December 9, 2018.

Hans van Heeswijk architecten (2015). Retrieved from <http://aasarchitecture.com/2015/09/new-entrance-hall-van-Gogh-museum-by-hans-van-heeswijk-architecten.html/new-entrance-hall-van-Gogh-museum-by-hans-van-heeswijk-architecten-20>.

Van Gogh Museum (2018). Van Gogh aspires: Strategic Plan 2018-2020. Retrieved from <https://www.vangoghmuseum.nl/en/organisation/mission-and-strategy>. Accessed December 9, 2018.

Mw2015.com (2015). BoW Title: Van Gogh Museum multimedia guide. Re-designing the visitor experience. Retrieved from <https://mw2015.museumsandtheweb.com/bow/van-gogh-museum-multimedia-guide-re-designing-the-visitor-experience/> Accessed December 9, 2018.

A. S. Rao, G Verweij. (2017). Getting personalization to work for your company and your customer. In [mckinsey.com/future-of-cx](https://www.mckinsey.com/future-of-cx). Retrieved from <https://www.mckinsey.com/businessfunctions/marketing-and-sales/our-insights/getting-personalization-to-work>. Accessed December 12, 2018.

Blom, J. (2000, April). Personalization: a taxonomy. In CHI'00 extended abstracts on Human factors in computing systems (pp. 313-314). ACM.

Sunikka, A., & Bragge, J. (2012). Applying text-mining to personalization and customization research literature—Who, what and where?. *Expert Systems with Applications*,



39(11), 10049-10058.

Barbieri, G., & Celentano, A. (2011). Multimedia technology: a companion to art visitors. In *Handbook of Research on Technologies and Cultural Heritage: Applications and Environments*(pp. 393-410). IGI Global.

Vangoghmuseum.nl (2018).The Multimedia Guide - Van Gogh Museum. Retrieved from <https://www.vangoghmuseum.nl/en/plan-your-visit/multimedia-guide>. Accessed December 9, 2018.

MW2015: Museums and the Web (2015). Van Gogh Museum multimedia guide. Re-designing the visitor experience | Mw2015.museumsandtheweb.com. Retrieved from <https://mw2015.museumsandtheweb.com/bow/van-gogh-museum-multimedia-guide-re-designing-the-visitor-experience/>. Published 2019. Accessed Nov 10, 2018.

En.wikipedia.org (2018). Subjective theory of value. [https://en.wikipedia.org/wiki/Subjective\\_theory\\_of\\_value](https://en.wikipedia.org/wiki/Subjective_theory_of_value). Accessed December 10, 2018. Accessed Nov 10, 2018.

Yalowitz, S., Garibay, C., Renner, N., & Plaza, C. (2013). Bilingual Exhibit Research Initiative: Institutional and intergenerational experiences with bilingual exhibitions. Washington, DC: Center for Advancement of Informal Science Education.

McGaugh, J. L. (2013). Making lasting memories: Remembering the significant. *Proceedings of the National Academy of Sciences*, 110(Supplement 2), 10402-10407.

Bitgood, S. (2010). An attention-value model of museum visitors. Center for Advancement of Informal Science Education: Washington, DC, USA.

Crotty, M. (2003). *The foundation of Social Research: Meaning and Perspective in the Research Perspective*.

Silverman, L. H. (1995). Visitor meaning-making in museums for a new age. *Curator: The Museum Journal*, 38(3), 161-170.

Lazarus, R. S. (1991). *Emotion and Adaptation*. Oxford: Oxford University Press

Paris, S. G., & Mercer, M. J. (2002). Finding self in objects: Identity exploration in museums. *Learning conversations in museums*, 401-423.

Evans, G., & Durant, J. (1995). The relationship between knowledge and attitudes in the public understanding of science in Britain. *Public Understanding of Science*, 4(1), 57-74.

ADELMAN, L. M., Falk, J. H., & James, S. (2000). Impact of National Aquarium in Baltimore on visitors' conservation attitudes, behavior, and knowledge. *Curator: The Museum Journal*, 43(1), 33-61.

Vygotsky, L. (1978). Interaction between learning and development. *Readings on the development of children*, 23(3), 34-41.

Sandell, R. (2009). Using Form+ Theme+ Context (FTC) for rebalancing 21st-century art education. *Studies in Art Education*, 50(3), 287-299.

Sandell, R. (2006, January). Form+Theme+Context: Balancing considerations for meaningful art learning. *Art Education*, 59(1) 33-37.

Desmet, P. M., & Hekkert, P. (2007). Framework of product experience. *International journal of design*, 1(1), 57-66.

# Appendix

## Appendix 1a

### The detailed explanation of the buildings

#### The Rietveld Building

The presentation of each floor focuses on the development of Vincent van Gogh as an artist. Different floors contain different themes of paintings and stories.



#### 0th Floor, gallery “Face to Face with Van Gogh”

Literally speaking, in this gallery visitors can meet a series of Van Gogh’s self-portraits and some of his ‘double-sided’ paintings. There is also a biography timeline of him since this gallery is always considered as the starting point of the whole permanent exhibition.



#### 1st Floor, gallery “Van Gogh, 1883-1889”

This floor is the main stage for showcasing Van Gogh’s artistic development from 1883 to 1889. The first half of this floor exhibits the peasant paintings from Van Gogh made in Nuenen, the Netherlands, where Van Gogh drew for farmers and weavers with dark colors, like “the Potato Eaters”. Van Gogh’s motif and color changed dramatically after he moved to Antwerp and Paris, for example, “the Head of a Skeleton with a Burning Cigarette”, “the Sunflowers” and “the bedroom”. These paintings with bold and strong color contrasts are shown in the second half of this floor. Many myths are mentioned in the paintings here as well, like Van Gogh’s love story with “the Agostina Segatori in Le Tambourin”, Van Gogh’s friendship related to “Gauguin’s chair”, and his ear incidence presented in “the Self-Portrait with Bandaged Ear”. Besides, this floor also shows Van Gogh’s various subject matters from nature, his inspiration from the Paul Signac, Claude Monet, other contemporaries, and the Japanese woodcuts.



#### 2nd Floor, gallery “Van Gogh Close Up”

This Floor highlights the relationship between Van Gogh and his family friends (Gauguin). A cabinet where Theo kept all the letters he received from his brother Vincent is placed here, along with a family map and some audio of the letters. In addition, at the middle of the floor, there is the famous painting “the Yellow House”, where Van Gogh lived in Arles with his good friend Gauguin. Visitors can find their quarrels about the way of painting and the detailed ear incidence here. There are also many interactive installments on this floor, including a microscope for a close look at “the Sea”, the perspective grid and the drawing tablet.



### **3rd Floor, gallery “Van Gogh, 1889-1890”**

This is a floor dedicated to Van Gogh’s last years, displaying the paintings from “the Almond Blossom” in Saint-Rémy hospital to “the Tree Roots” and the “Wheatfield with Crows” in Auvers-sur-Oise. This gallery shows the mature peak of Van Gogh’s styles and the end of his life.

## **The Kurokawa Wing**



### **-1st Floor: Van Gogh Dreams (27 July 2018 - 13 January 2019)**

Unlike most of the exhibitions of paintings in the VGM, this is a narrative installation for visitors to immerse themselves in Van Gogh’s emotional journey. Visitors can experience and feel how Van Gogh’s dreams flourished and then broke down when he moved to Arles, in the South of France.



### **0th Floor: Gauguin and Laval in Martinique (5 October 2018 - 13 January 2019)**

This is a colorful and exotic collection created by Van Gogh’s friends Gauguin and Laval together in Martinique, an insular region of France located in the eastern Caribbean Sea.

## **Appendix 1b Publications**



The VGM also conducts research on the life and work of Van Gogh and publish books annually. Here is a list of on-sale and upcoming books for the upcoming 2019:

**His myths and skills:** “On the verge of Sanity. Van Gogh and his illness”, “Van Gogh’s Sunflowers illuminated: Art Meets Science” and so on.

**His themes and inspiration:** “Vincent van Gogh and nature”, “... and the Sunflowers”, “... and Japan”, “... and Paris”, “... and Rembrandt” and so on.

**His different identities:** “Van Gogh Painter”, “Van Gogh Draughtsman”, “Van Gogh and his letters” and so on.

**His contemporaries:** “The Dutch in Paris, 1789-1914”, “Prints in Paris 1900”, “Gauguin and Laval in Martinique” and so on.

The rich resources of Van Gogh stories might be used in the MMT in one day.

## Appendix 2a

### the MMT tone of voice

According to an internal document named “*Tone of Voice volwassenen MMT*”, there are 11 conditions for the MMT design position:

The guide should...

1. ... help visitors look at the real art carefully;
2. ... help visitors have pleasurable (active) engagement with art;
3. ... develop the visitors’ skills in looking and build their confidence in art;
4. ... reveal a Van Gogh that you never knew;
5. ... tell the truth and address the public’s misconceptions about Van Gogh and his work;
6. ... start with Van Gogh’s life;
7. ... use emotion to create lasting memories and impact;
8. ... be open, accessible, sociable, and expert;
9. ... inspire visitors and evangelize about the lasting importance of Van Gogh and the role of the Museum;
10. ... share the special insights and views of the VGM;
11. ... be the sociable leisure experience and not the classroom – it will be pleasurable and not overly academic.

**Why so much? In conclusion, the MMT should not only assist visitors in looking at art but also emotionally engaging with art in a pleasurable way.** Van Gogh's stories are the main design materials for the MMT, which are used to introduce visitors a real Van Gogh behind the legendary myths.

The 7th condition is the most interesting one for the researcher. The strength of memories varies with the emotional significance of the events. (McGaugh, 2013) It also means that by using the MMT, visitors are wished to have an enhanced emotional experience at the VGM. **The emotional experience will be the focus of visitor research.**

## Appendix 2b

### 4

#### The Yellow House



< The Yellow Ho... ≡

A house with a plan

**NARRATOR:** The green shutters mark the building where Van Gogh lived—and worked—in Arles. He called it ‘my little yellow house’ Do you see the house to the far left, the one that’s shaded by a tree? That’s the restaurant where Van Gogh took his meals. If you look into the distance, there’s a bridge with a train going by.

What to see in the painting.

That blue of the sky: it’s incredibly intense. Van Gogh paints the tallest roof a bright orange—a colour it could not have actually been. But it makes the complimentary colour of the sky even more brilliant.

Van Gogh’s color skills

The Yellow House meant a lot to Van Gogh. He wanted to invite other modern artists there to work, and live, alongside him. His goal was to set up what he called the “Studio of the South.” It was going to be a community of modern artists, sticking together in their struggle for a new kind of art.

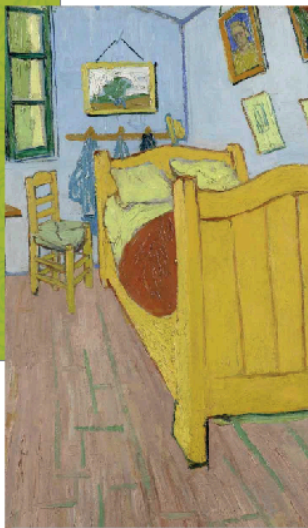
Van Gogh’s ambition

< The Yellow Ho... ≡

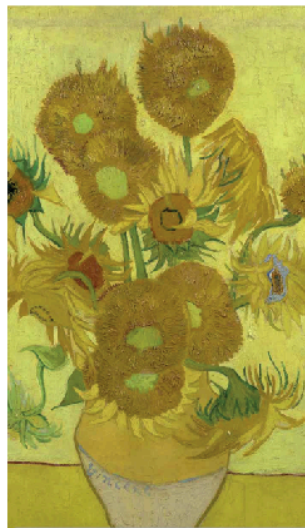
Big things in a little house



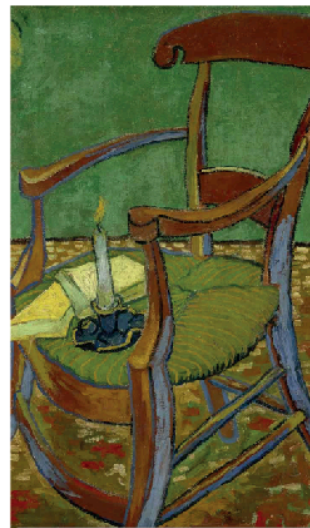
**NARRATOR:** Van Gogh painted so many of his famous masterpieces inside this little house in Arles.



**NARRATOR:** His bedroom, for example.



**NARRATOR:** His beautiful sunflowers, to decorate its walls.



**NARRATOR:** And the chair for his friend who stayed with him there, the artist Paul Gauguin.

The context story of the yellow house

## 2+ Scripts Examples

< The Yellow Ho... ☰

A guest



**NARRATOR:** Van Gogh was excited to welcome a special guest to the Yellow House. Tap the button to see who it was.

**NARRATOR:** It was the artist Paul Gauguin. Van Gogh greatly admired Gauguin, thinking him more sophisticated than himself, and certainly more successful. The two men had very different approaches to art: Gauguin focused on the power of the imagination, and dreams...and Van Gogh insisted on observation of the natural world. There were many arguments in the Yellow House. They culminated in fury one day. It was the famous 'ear incident.'

**Van Gogh and his friend Gauguin: their differences and argues**

- There are rarely jargons in scripts. The words are informative and friendly at the same time.
- The scripts always raise questions to visitors to get their attention and sometimes guide visitors in which details to look at the paintings and which actions to do on the screen. There are several different characters in the audio, including a narrator and a "Van Gogh". Van Gogh always appears and reads his own quotes.
- The audio also makes use of different environmental sound to recreate the situation in the paintings.

## Appendix 4a

### The 1<sup>st</sup> Research Plan

it is time to study what visitors want for their visit at the VGM, and how are they different than each others'. Before

#### Research Goal

1/ To understand the concerns of visitors and their personal meaning at the Van Gogh Museum (what and why).

2/ To understand how are visitors evoked by the art and story at the Van Gogh Museum as mediated by different types of supports or not.

## Research Methods

Type of interview: visitor lead, open end questions

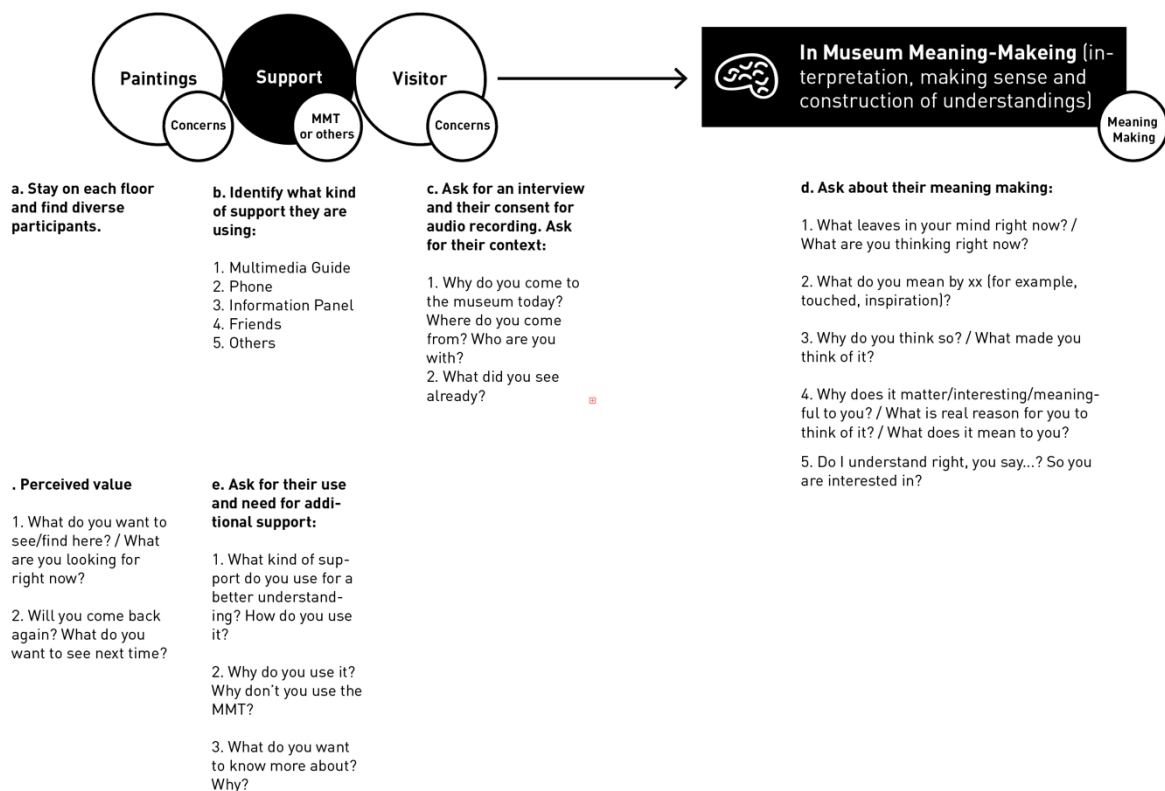
Number of participants: 20-30

Time: Oct 22, 23, (24)

Place: Each floor of the museum (permanent + temporary exhibitions)

Duration: 10-15 minutes

## The research procedure and interview questions



## Appendix 4b

### The 1<sup>st</sup> Research limitation

1. Most visitors at the VGM are very friendly, but some visitors refused the interview due to a language problem. Three Spanish-speaking (female) tourists, for example, turned down the researcher because they could not express themselves in English. It results in a lack of representatives from these countries like Spain, Portugal, Italy and so on. **Being turned down by visitors with a language problem is inevitable, but involving them in future research is still necessary.**
2. Interviewees cherish the time, especially during their visit inside the galleries. At the beginning of the research, none of the visitors accepted the research request when the researcher mention the interview would last for 12-15 minutes; they accept the research until the interviewer shortened the time for 8-12 minutes. They also react impatient, haste, and eager to stop the interview explicitly



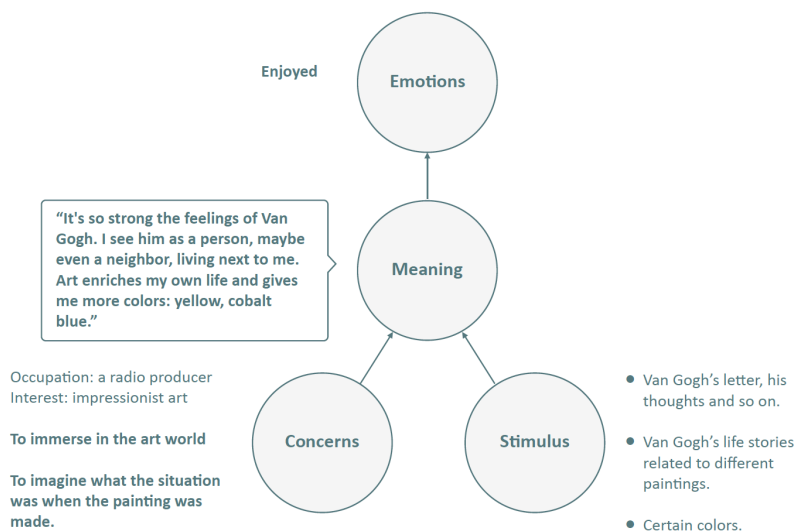
when it is over 5 minutes. Obviously, they are eager to spend more time in their visit rather than talking with the researcher. **If the future research needs for more than 10 minutes, it's better to do it outside the galleries.**

## Appendix 4c

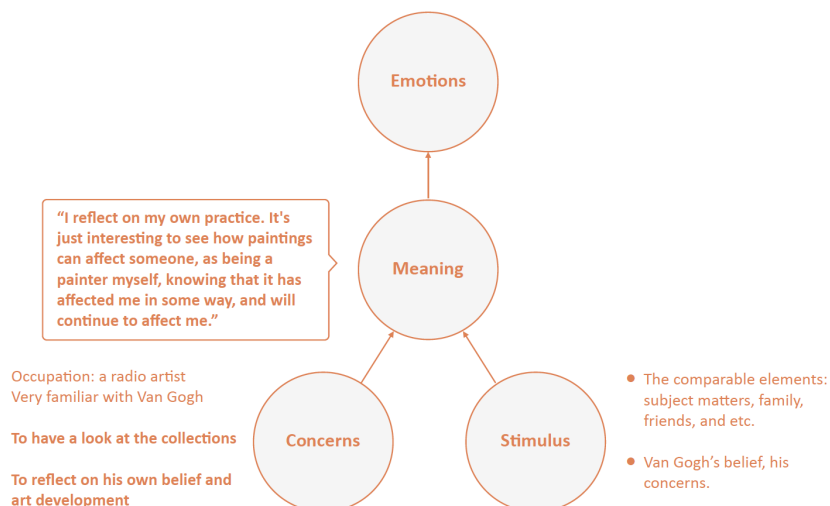
### The concern inference

Here are just four examples. The concerns for more visitors can be found in the folder named project archive.

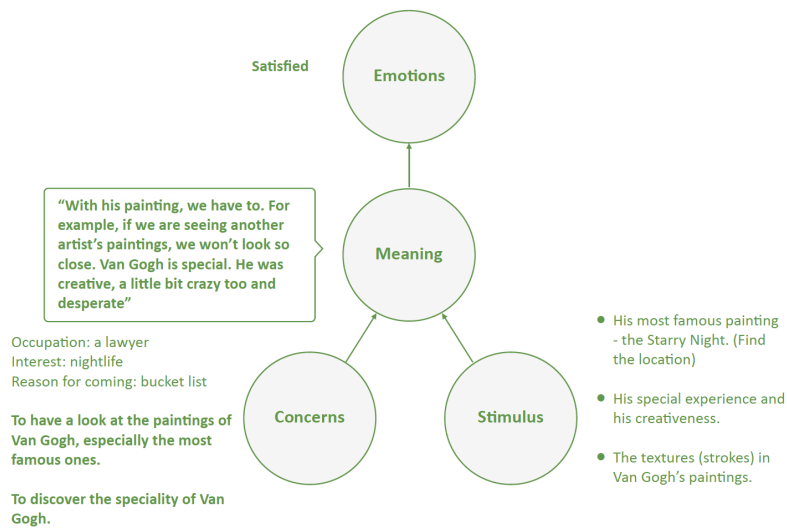
#### #20 A Korean radio producer



#### #3 A California artist



## #9 A Canadian sports guy



## Appendix 5a

### Visitors' own interpretation of their concern

The full data are in the folder named project archive.

#### The 2nd Research

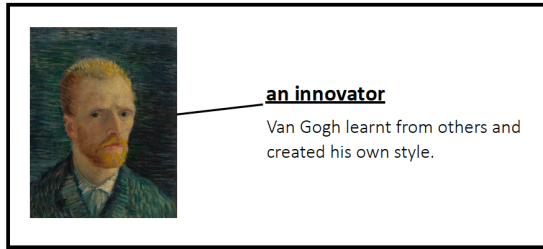
#### /Data 1: An English young lady (w/ friends, w/out MMT)



"Because I feel a bit sad for him (as he only became famous after he died). Maybe he tried to express his sadness in his paintings."

<b>Feel the art</b> To enjoy an artistic moment in the museum.	5	"I guess all of them."
<b>Understand others</b> To understand how Van Gogh developed into who he was.	3	"Most importantly is to feel the art. To know a bit more history behind the painting, and to actually look at <u>real</u> art in person. You know, unlike looking at the pictures from the internet. We can see so many <u>details</u> of the paintings here."
<b>Find the significance</b> To see the most famous painting and the truth of the myths.	2	"I don't know art. I would say just to see the paintings in <u>real</u> , and to feel the <u>atmosphere</u> of the paintings."
<b>Seek for novelties</b> To discover something unexpected and trendy.	1	
<b>Learn new techniques</b> To learn from Van Gogh's paintings about the color, composition, and etc.	1	
<b>Understand yourself</b> To compare with Van Gogh and understand yourself.	0	"Not sure (whether to understand myself or not at the museum). Maybe. But I don't know yet."

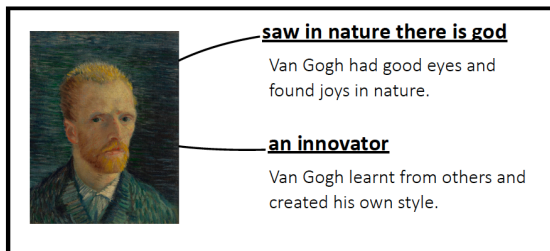
## The 2nd Research /Data 2: A Chinese CSI PhD (Individual, w/ MMT)



"I think we are both in a creation industry (haha). I majored in computer science, but I think we are the same in creating something new everyday."

"No, I am not entirely an innovator like Van Gogh. But I want to know why he is so different than the other painters."

## The 2nd Research /Data 3: A Spanish young lady (w/ friends, w/out MMT)



"I love nature. I can also find enthusiasm from nature. Will I understand Van Gogh spiritually? (haha) I hope to."

"I don't know art. So I think it's a good chance to understand why Van Gogh is so famous."

\* It's a bit hard to choose.....

Understand others To understand how Van Gogh developed into who he was.	5	"Mostly his career I think. I've heard that he started as an artist at 27 or 28? I want to know how can he achieved so much in such a short time."
Find the significance To see the most famous painting and the truth of the myths.	5	"Why is he so special? Why is he so important in the Western art world? And why are his paintings so different than our Chinese paintings?"
Understand yourself To compare with Van Gogh and understand yourself.	2.5	"I am looking forward to understand a bit more of myself. I also created things everyday. Maybe I can get some "
Seek for novelties To discover something unexpected and trendy.	1.5	
Learn new techniques To learn from Van Gogh's paintings about the color, composition, and etc.	1	
Feel the art To enjoy an artistic moment in the museum.	1	
Find the significance To see the most famous painting and the truth of the myths.	5	"Like I said, I don't know art. I wanna connect to the professions here. Just get some basic idea of how Van Gogh differentiate than others, why is he so famous nowadays."
Feel the art To enjoy an artistic moment in the museum.	4	"Seeing the paintings in their real size. Having only the beauty in my eyes."
Understand others To understand how Van Gogh developed into who he was.	3	
Seek for novelties To discover something unexpected and trendy.	1	
Learn new techniques To learn from Van Gogh's paintings about the color, composition, and etc.	1	
Understand yourself To compare with Van Gogh and understand yourself.	1	

## The 2nd Research /Data 4: A French gentleman (w/ friends, w/out MMT)



"I would like to know how Van Gogh engage with the society. I think painters, they drew what they saw in real life, and they help us understand how to live in 19th century in Paris."

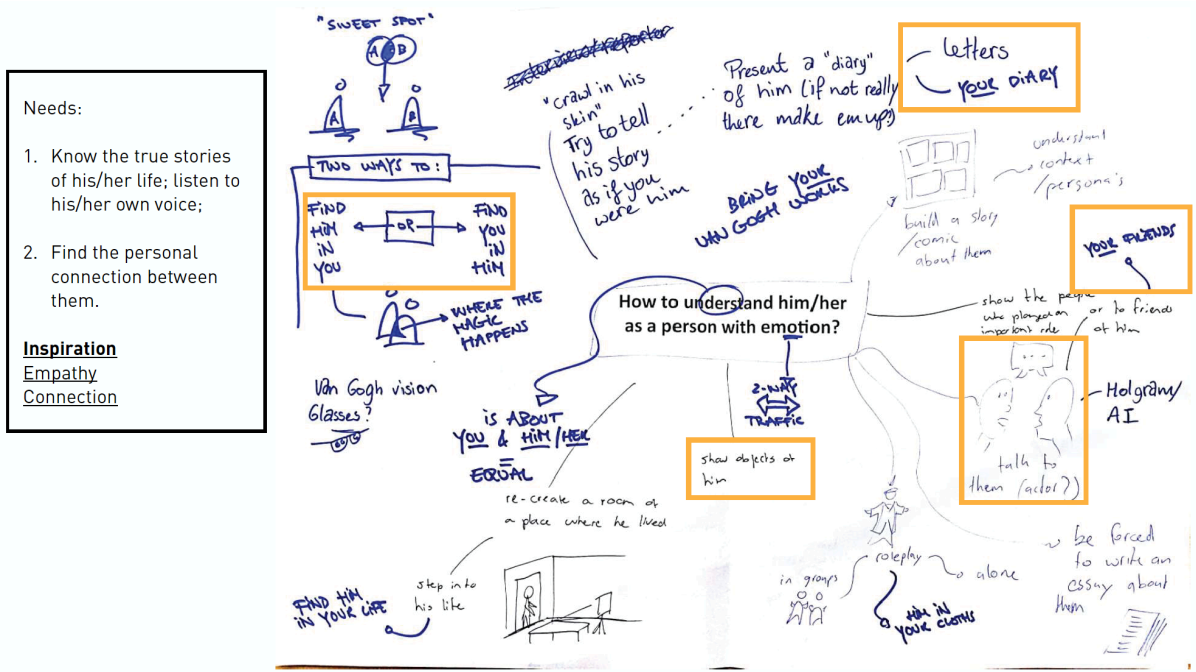
"Relate to Van Gogh? I haven't thought of that before. Maybe we are both not lucky in love? Also emotional?"

<b>Feel the art</b> To enjoy an artistic moment in the museum.	5
<b>Understand others</b> To understand how Van Gogh developed into who he was.	2
<b>Understand yourself</b> To compare with Van Gogh and understand yourself.	2
<b>Find the significance</b> To see the most famous painting and the truth of the myths.	1
<b>Learn new techniques</b> To learn from Van Gogh's paintings about the color, composition, and etc.	0
<b>Seek for novelties</b> To discover something unexpected and trendy.	0

"The paintings from the previous century might somehow show the way of living at that time. I don't really know art, but I would like to see what's in the painting and imagine the life at the past."

"Not at all. I don't majored in art. I am not very into art as well."

## Appendix 6a The How-to Maps

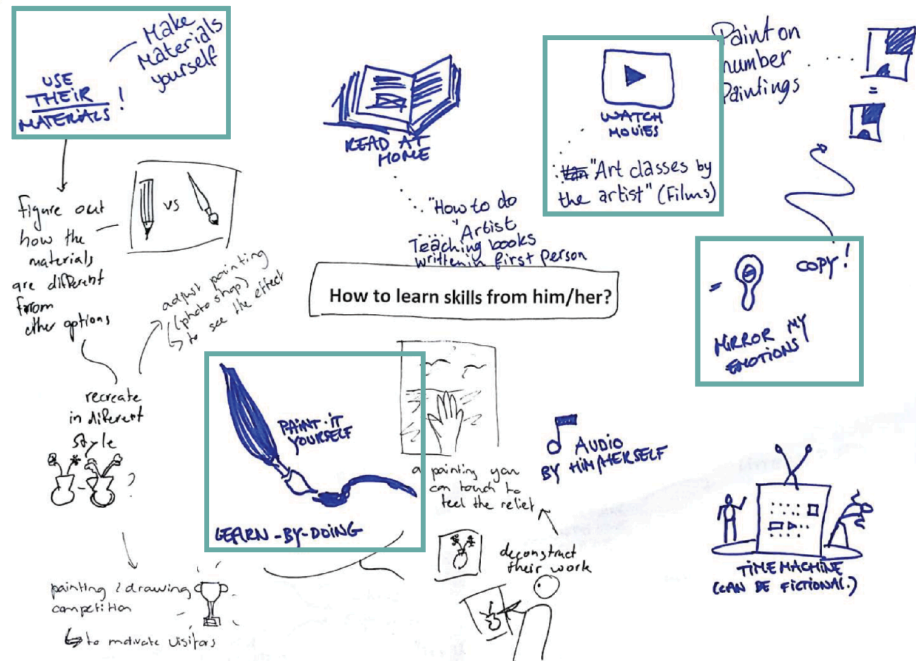




Needs:

1. Art classes - explain the color and the skills;
2. Practice - learn by doing

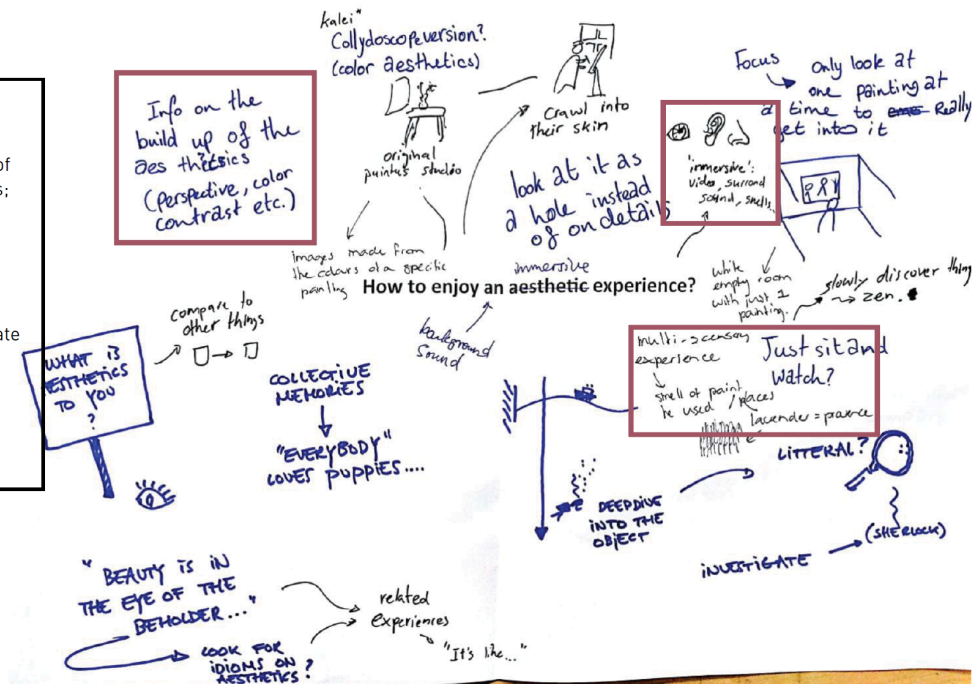
Progress  
Profession  
Inspiration



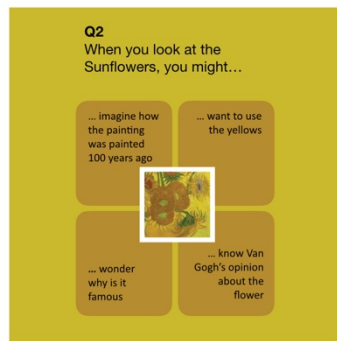
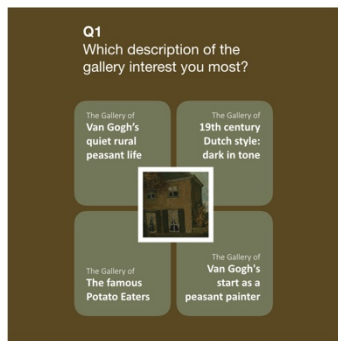
Needs:

1. Info on the build up of the aesthetic; idioms; etc.
2. An enhanced atmosphere: which could be multi-sensory; or in a private setup;

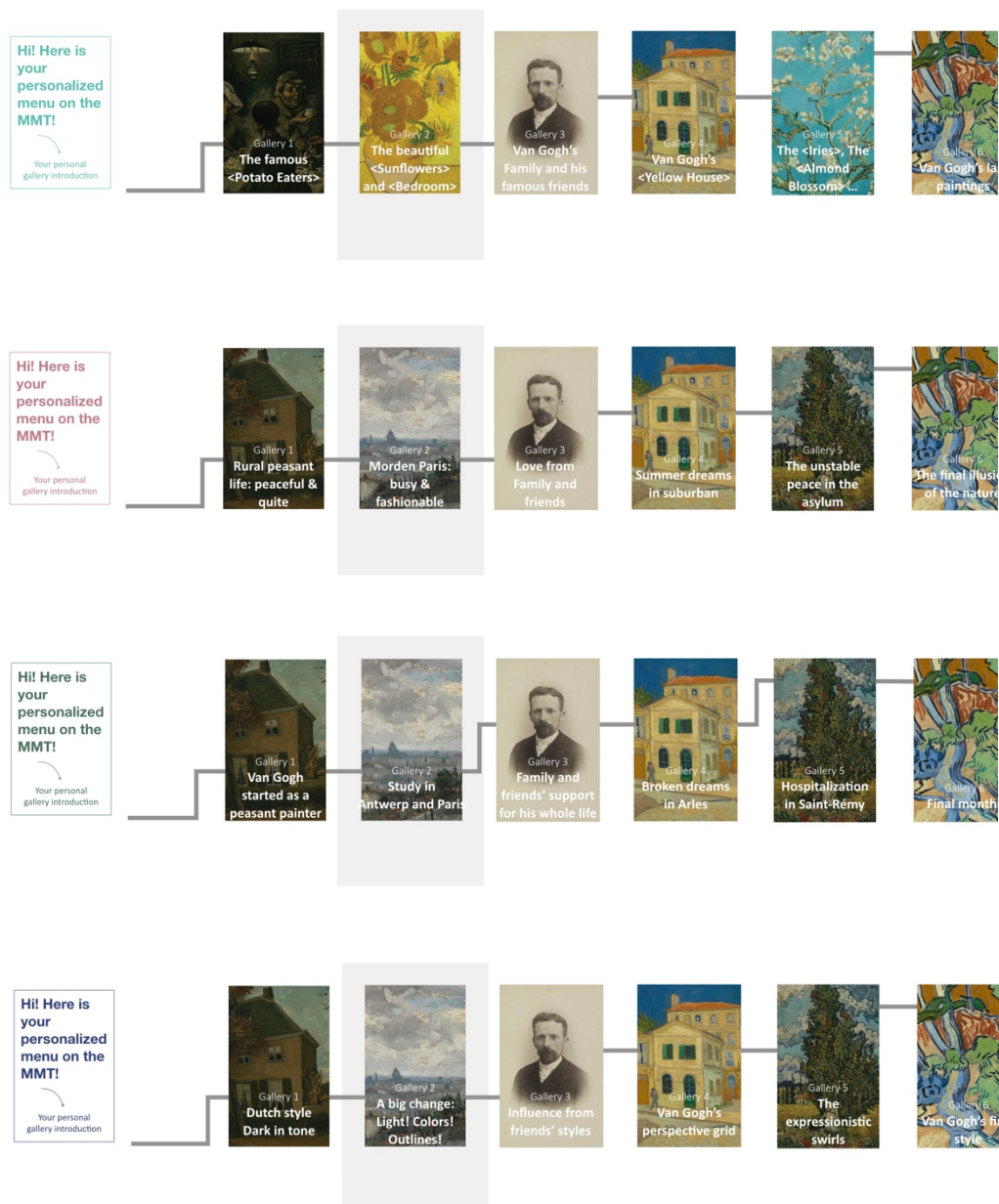
Enjoyment  
Imagination  
Relaxation







The different outputs are:



## Appendix 8b

### The 2<sup>nd</sup> design set

Collecting input by

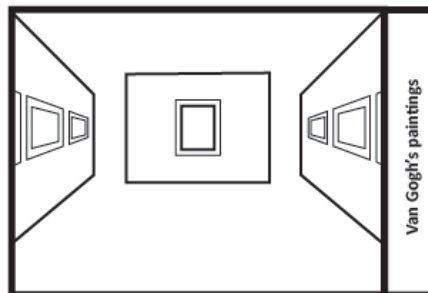
**Welcome to the Van Gogh museum!**

We want to personalized a service for you!

Therefore, we invite you to do a small quiz.

**Between the two topics, which one are you more interested into?**

OR





The different outputs are:

### Thank you so much!

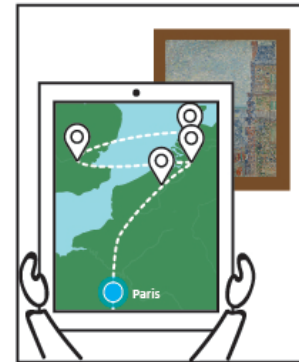
We personalize an AR kit for you on the Multimedia guide.

Here is the user case: everytime you place your tool in front of/close to a painting, you could have these extra visual information on your screen.

Enjoy!



Get to know the key players behind Van Gogh's painting



Get the track of Van Gogh's routine

### Thank you so much!

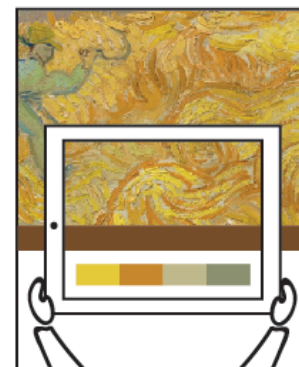
We personalize an AR kit for you on the Multimedia guide.

Here is the user case: everytime you place your tool in front of/close to a painting, you could have these extra visual information on your screen.

Enjoy!



Have a clear view of the perspective grid



Collect Van Gogh's colors

### Thank you so much!

We personalize an AR kit for you on the Multimedia guide.

Here is the user case: everytime you place your tool in front of/close to a painting, you could have these extra visual information on your screen.

Enjoy!



See the paintings in the reality



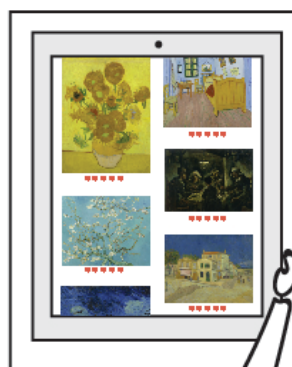
Immerse in art with the background sound

### Thank you so much!

We personalize an AR kit for you on the Multimedia guide.

Here is the user case: everytime you place your tool in front of/close to a painting, you could have these extra visual information on your screen.

Enjoy!



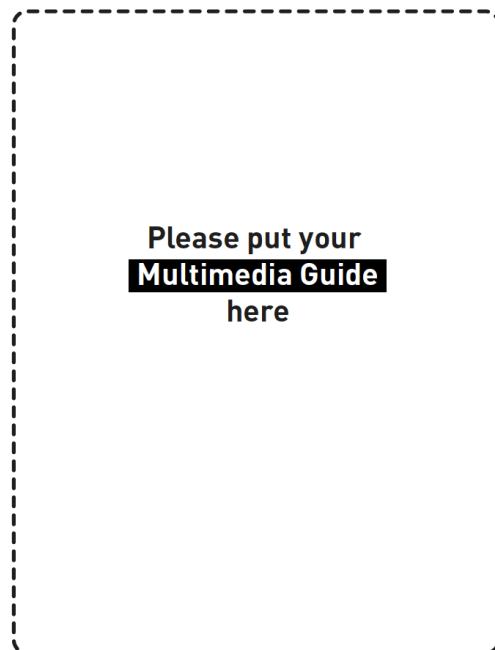
Find out the most famous collections



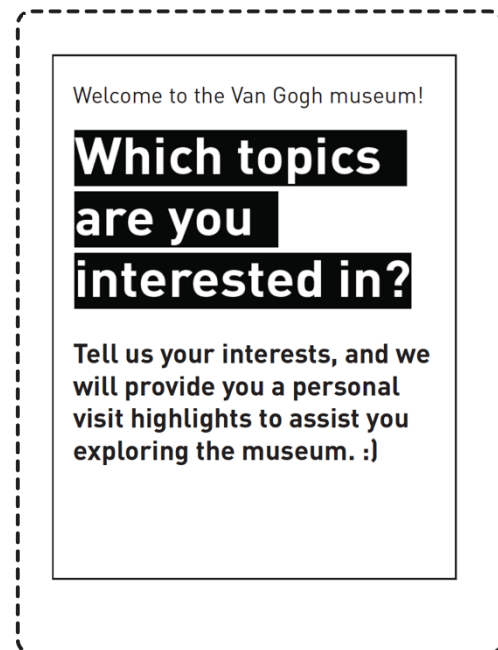
Compare the masterpieces

## The 3<sup>rd</sup> design set

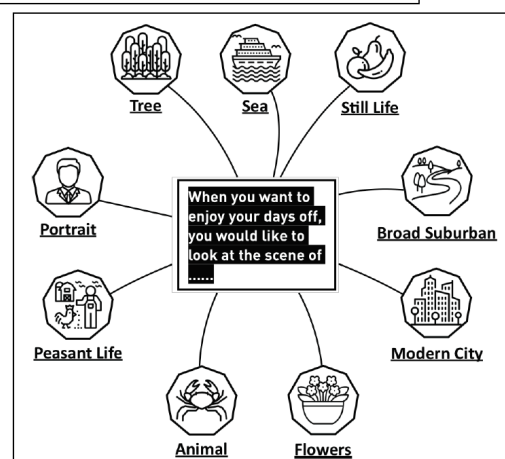
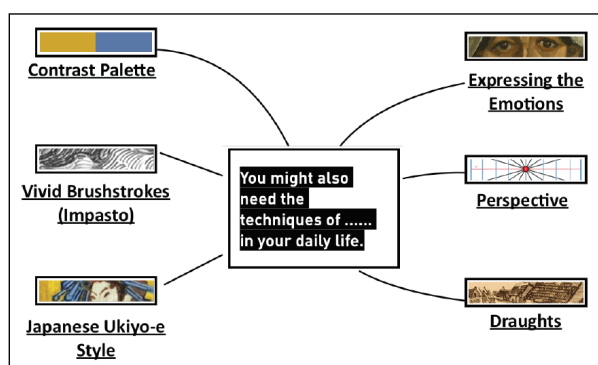
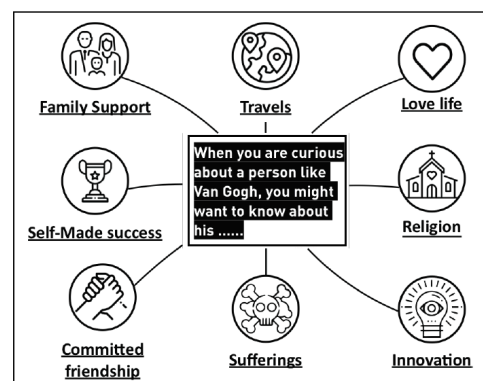
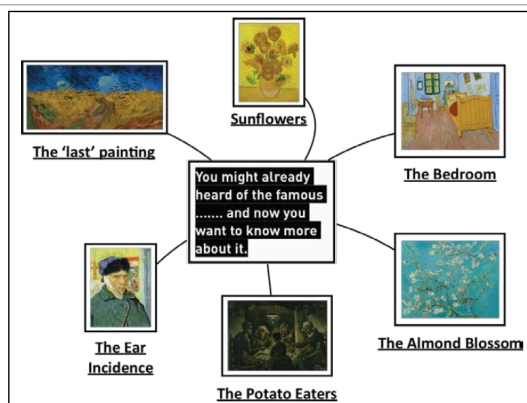
Collecting input by



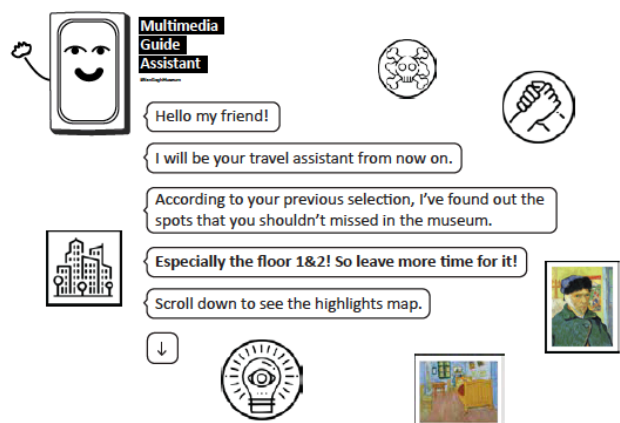
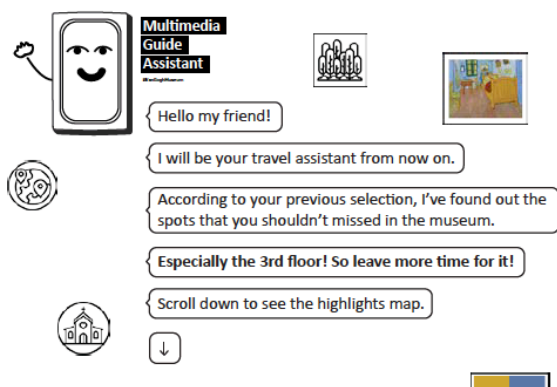
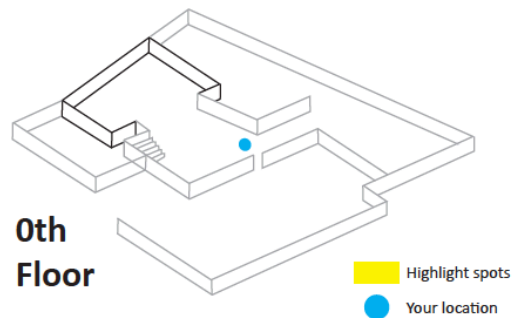
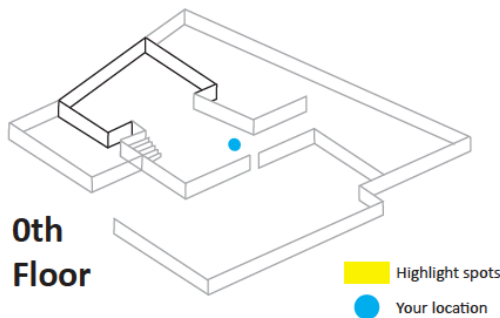
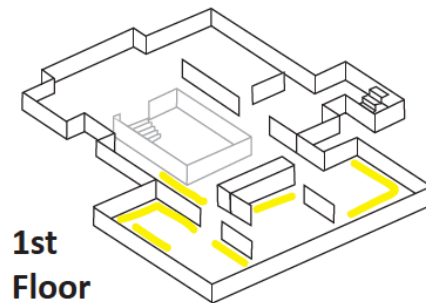
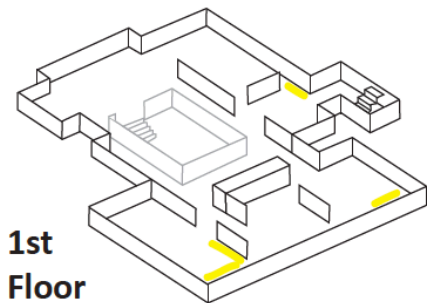
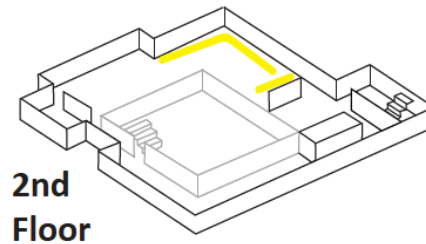
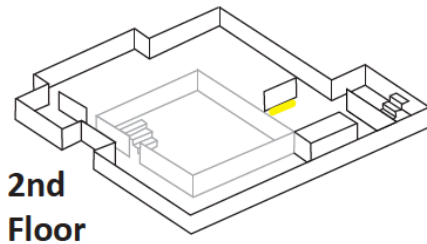
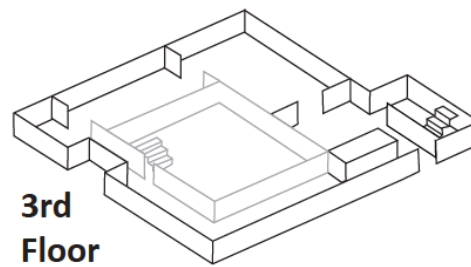
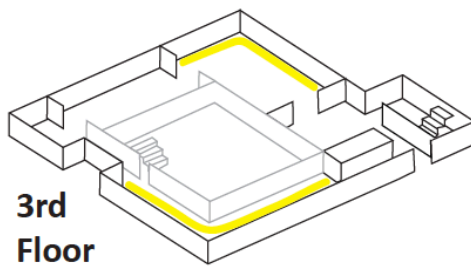
Based on your selected topics,  
your estimated highlight visit time is



Based on your selected topics,  
your estimated highlight visit time is



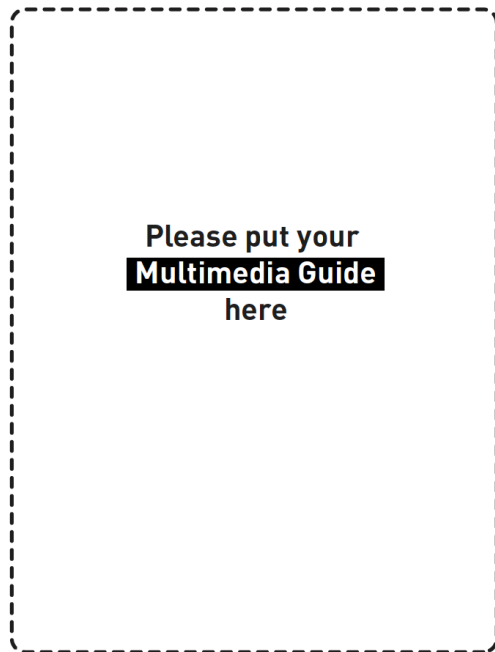
The different outputs are:



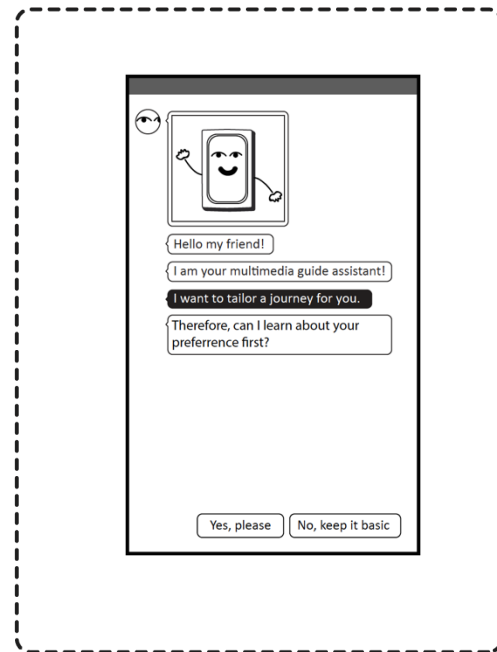
## Appendix 8d

### The 4<sup>th</sup> design set

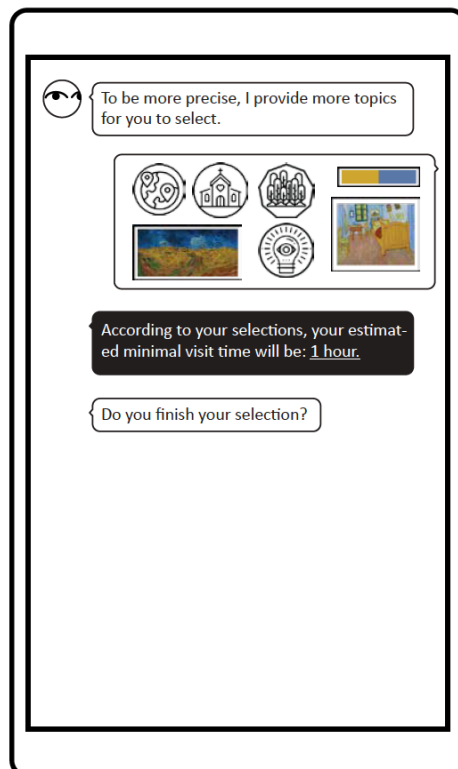
Collecting input by



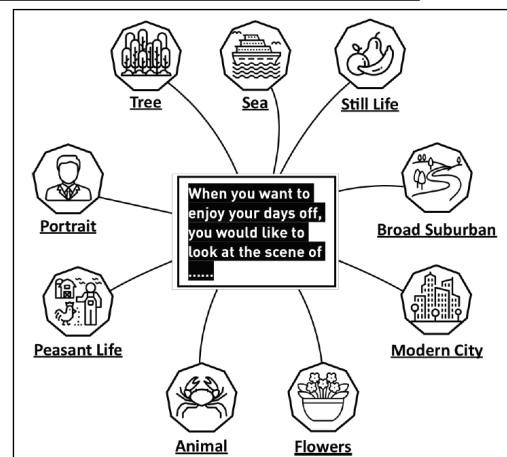
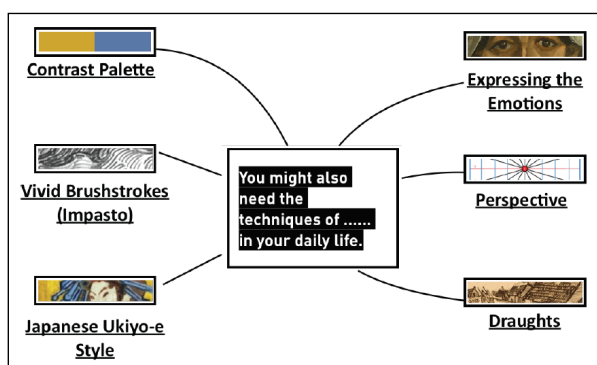
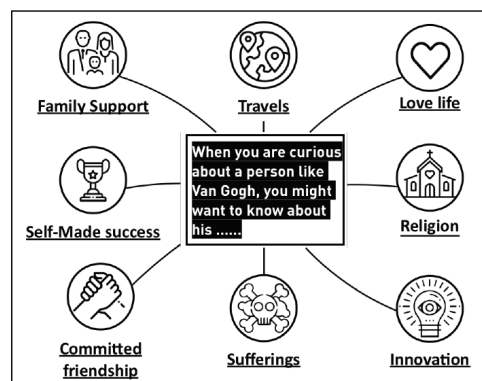
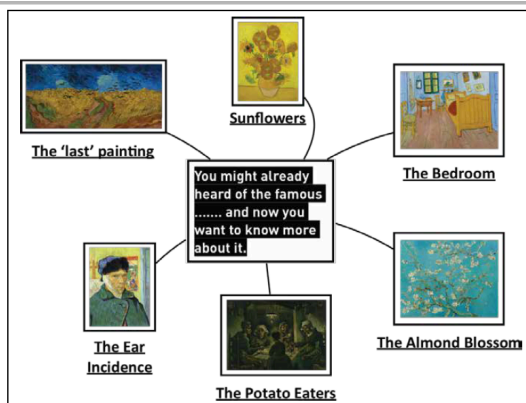
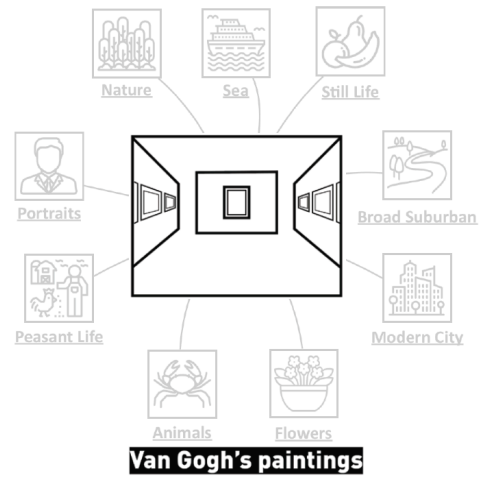
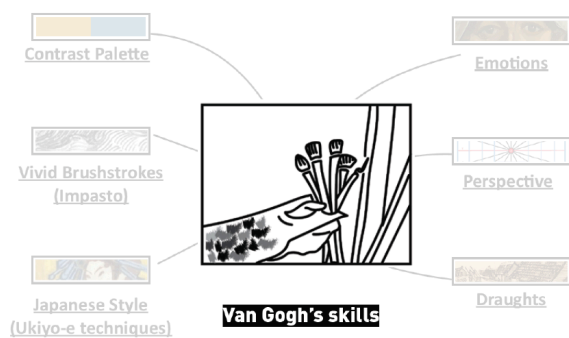
Based on your selected topics,  
your estimated highlight visit time is



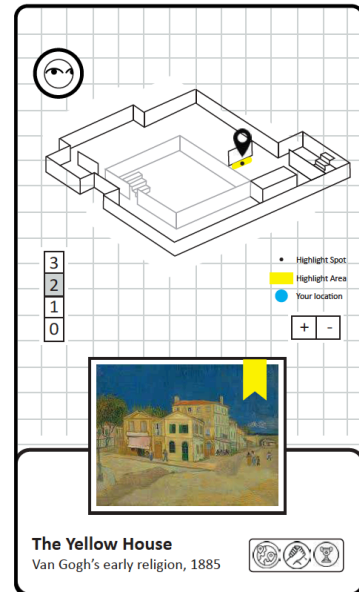
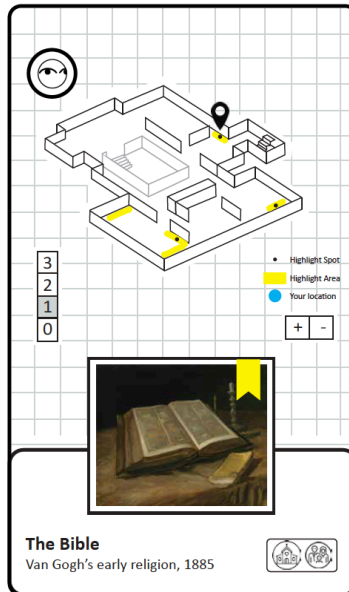
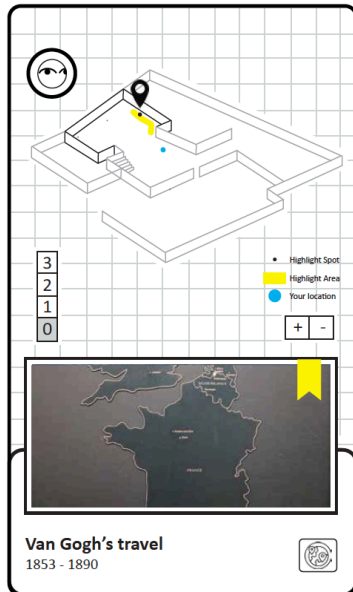
Based on your selected topics,  
your estimated highlight visit time is







The different outputs are:



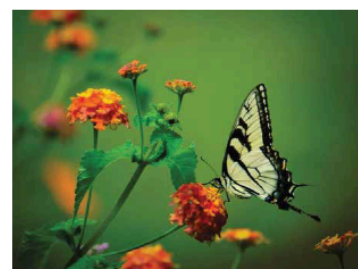
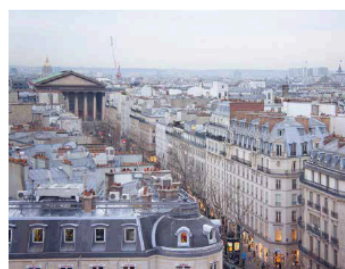
## Appendix 8e The 5<sup>th</sup> design set

Collecting input by

Topics (1/2)

Do you like enjoying your days off in somewhere like \_\_\_\_\_

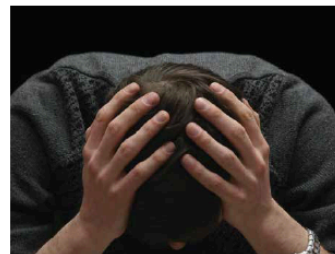
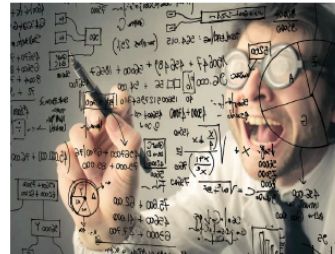
✕
Netural
♥



Topics (2/2)

You might appreciate someone in the situations like \_\_\_\_\_

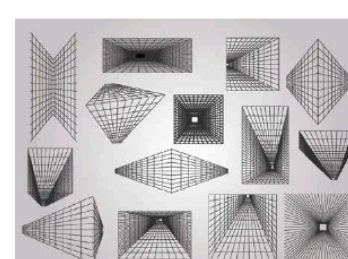
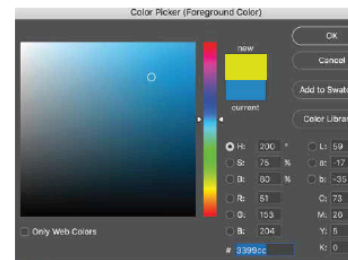
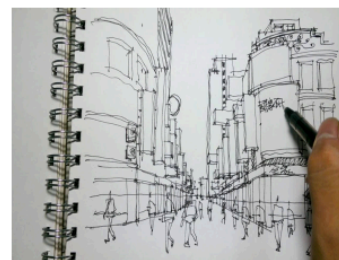
✕
Netural
♥



Topics (3/3)

You might want to improve some techniques like \_\_\_\_\_

✕
Netural
♥



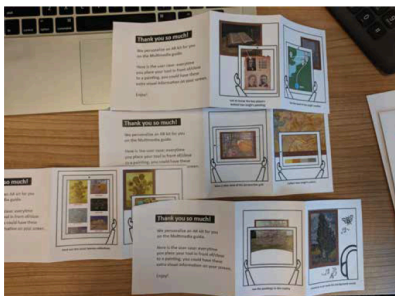
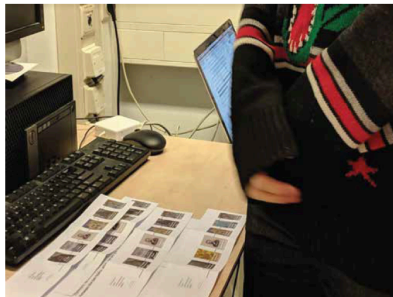
The different outputs are:





## Appendix 8f

### The real scenes of design tests





## Appendix 10a

### The sensitizing materials

Your Role is .....

#### Hollis (a software engineer)

Gender: like you

Age: 36

Status: Engaged

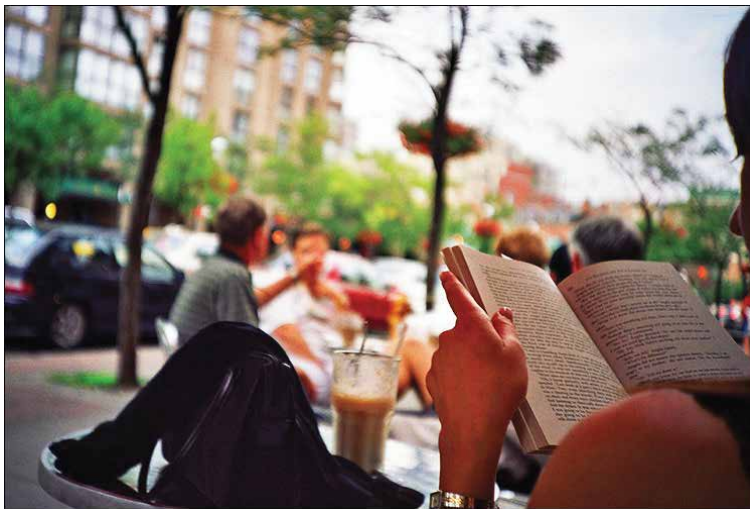
Interests: Movie, reading biography, dancing

You grew up in a city and everything you like is in the city as well: skyscrapers, concert halls, stadium, movie theaters, etc. You and your partner can never feel bored with city life. Spring is coming soon; your brothers and you schedule a picnic in the central park next week; right after your family finishes the church service.

During the weekdays, you are a hardworking software engineer. Your product was launched last week but didn't hit the market – you are not hurt by the news but just keep wondering: why? Your idol is Steve Jobs, and you are always inspired by his words – “stay hungry, stay foolish”. You are dreaming of establishing your own start-up company in 10 years.

Your best friend is Guillermo, a Mexican colleague who often hosts parties at home and invites you to try different exotic cuisine. He brings color and new dance moves to you.

Today is the last day of your business trip to Amsterdam. You come to the Van Gogh museum because you thought Van Gogh might be an interesting person to know. You want to spend an hour here.



Your recent life



Your Role is .....

## Everest (a florist)

Gender: like you

Age: 48

Status: Divorced

Interests: Gardening, horse-riding, writing

You grew up in your parents' farm and you spent most of the years doing gardening there. The white roses you grew last year were granted as the most beautiful flowers in your state. You are also investing in a large field of apple trees next year. You are fascinated by nature and animals, and basically everything that is beautiful; you enjoy your slow-pace life in the countryside.

You are an optimistic person and pay a lot of attention to your tiny world. Two months ago, your favorite auntie visited your farm. It was a shock that your auntie actually went to your farm for a treatment; as she was suffering from a moderate depression right now. You wonder, how can depression affect someone and his/her life?

You are having a new hobby recently: writing poems! You add your thoughts to the photos and post them to your Instagram.

Today is the first day of your trip to Amsterdam. You come to the Van Gogh museum because you are curious about the beautiful paintings here. You want to spend an hour here. Afterward, you will go to the flower market!



**Your recent life**

Your Role is .....

## Arden (an art student)

Gender: like you

Age: 18

Status: Single

Interests: Drawing, art, creative cooking

You grew up in a medium town where is famous as an ideal natural inhabitant for both human and animals. You can count all the names (and color names) of plants and trees alongside the country avenue, where you choose to draw during most of your weekend. You get along well with your neighbors. Next month, you are going to film a documentary for them as a gift.

The most precious belonging in your bag is your sketchbook. You draw people; you draw food; you draw every moment that worth remembering in your life. You have spent your whole life in Europe. Therefore, you want to escape to somewhere else. Your dream school is the South China University of Technology in Guangzhou, China. You are very curious about the East-Asian culture and want to absorb new ideas for your own style.

Your current best friend is a cake researcher, who can combine fantastic drawing, sculpture, and cake together on an eatable artboard. You like their shape, color, and cuisine very much!

This is the first two hours of your stay in Netherlands. You come to the Van Gogh museum because you are fascinated by Van Gogh's style for a long time. Your sketchbook is ready! You are going to spend a whole day here.



Your recent life





Your Role is .....

## Larry (a stock manager)

Gender: like you

Age: 28

Status: In a relationship

Interests: Stock market, money

You are a very, very busy man. You are “forced” to come to the Van Gogh museum because your artist girlfriend is a super fan of Van Gogh. But apparently, you are not.

This is the last six hours of your stay in Amsterdam. You come to the museum because you promised her to look at the paintings. She wants you to improve your taste and have basic art knowledge. You think she will test you after you get home.

You want to take a look at each floor and then spend some time looking for a perfect souvenir for your girlfriend.



Your recent life



## Appendix 10b Consent Form



# Consent for participation in Research

“Personalizing the multimedia guide of Van Gogh museum”

This consent form is about a test of the “personalized multimedia guide (prototype) of Van Gogh museum” from a graduate student named Ziyi Zhang from the TU Delft. First of all, please read the following conditions carefully.

- ☐ I agree to voluntarily participate in the test of the “personalizing the multimedia guide of Van Gogh museum”.
- ☐ I agree to step into the role that I was given to during the preparation and try my best to travel like him/her.
- ☐ I agree that I will take the test seriously and provide your true and honest thoughts to the prototype.
- ☐ I agree that if I quit the test halfway, I will not have my reimbursement for my travel tickets.

As mentioned in the recruitment ad and the preparation letters, you will be videotaped during the test. The videotape will be used for internal-use-only presentation materials (e.g., the graduation report, the presentation slides, and the test video). Only the staff members/students from the TUDelft and the Van Gogh museum can see the information you provide us. The information will be used completely anonymously. Hereby, please read the following conditions carefully.

- ☐ I know my face will be blurred in all the presentation materials. So I agree my face to be filmed during the test.
- ☐ I know my hand and my interaction with the prototype will be introduced anonymously. So I agree my hand and my interaction to be filmed during the test.
- ☐ I know my voice and my comments will be used anonymously. So I agree my voice and my comments to be recorded during the test.
- ☐ I know my back and my movement in the museum will be used anonymously. So I agree my back and my movement to be filmed and recorded during the test.

Last but not least, your name and all the other personal information you left in the signup form will be removed right after the test.

Please sign below to indicate that you have read and understand the information on this form and that any questions you might have about the session have been answered.

Date: \_\_\_\_\_ Signature: \_\_\_\_\_

## The personalized design for different roles



**Hollis**



#InnovativePpl, #CityView,, #EnthusiasticPpl, #ReligiousPpl, and etc

**Hollis' Personal Highlights & Relevant Content:**

- 1. The Yellow House** (#Enthusiastic, #Supportive, #City)
- 2. Pietà (after Delacroix)** (#Religious, #Innovative, #Self-made)
- 3. Self-Portrait with Grey Felt Hat** (#Enthusiastic, #Innovative, #Color)
- 4. View from Theo's Apartment** (#Supportive, #City)
- 5. Almond Blossom** (#Innovative, #Supportive)
- 6. Garden with Courting Couples: Square Saint-Pierre** (#Enthusiastic, #Park)
- 7. Still life with Bible** (#Supportive, #Religious)
- 8. Cypresses and Two Women** (#Vulnerable, #Garden)
- 9. Sunflowers** (#Innovative, #Color)
- 10. Boulevard de Clichy** (#City)



Hollis might mainly want to understand Van Gogh, so his/her personal activity during the break is:

A mirror (fun) test of the similarity between the test visitor and Van Gogh.



**"How much are we alike?"**

Play



**Everest**



#WheatfieldView, #FlowerView,, #EnthusiasticPpl, #VulnerablePpl, and etc.

### Everest's Personal Highlights & Relevant Content:

1. **Orchards in Blossom** (#Garden, #Flowers, #Vulnerable, #Enthusiastic)
2. **Wheatfield with Crows** (#Wheatfield, #Vulnerable, #Sea)
3. **Garden with Courting Couples: Square Saint-Pierre** (#Garden, #Flowers, #Enthusiastic)
4. **The Pink Orchard** (#Garden, #Flowers, #Enthusiastic)
5. **Sunflowers** (#Flowers, #Enthusiastic)
6. **Sea** (#Sea, #Enthusiastic)
7. **Gauguin: Van Gogh painting Sunflowers** (#Flowers, #Vulnerable)
8. **Wheatfield with a Reaper** (#Wheatfield, #Vulnerable)
9. **The Potato Eaters** (#Photograph, #Enthusiastic)
10. **Peasant Heads** (#Photograph)



Everest might mainly want to enjoy an aesthetic experience, so his/her personal activity during the break is:

A musical piece from Van Gogh's list.

**Tannhäuser Overture**

Richard Wagner







Arden



#StrokeSkills, #PhotoSkills,, #Enthusiastic ppl, #Vulnerable ppl, and etc.

### Arden's Personal Highlights & Relevant Content:

1. **Orchards in Blossom** (#Park, #Enthusiastic, #Innovation)
2. **The Pink Orchards** (#Park, #Flowers, #Color, #Strokes)
3. **Fishing Boats on the beach** (#Innovation, #Enthusiastic, #Print)
4. **Wheatfield with a Reaper** (#Color, #Wheatfield)
5. **Peasant Heads** (#Photograph, #Innovative)
6. **Landscape at Twilight** (#Color, #Innovation, #Enthusiastic)
7. **Self-Portrait with grey Felt Hat** (#Innovation, #Color)
8. **Quinces, Lemons, Pears, and Grapes** (#Color, #Enthusiastic)
9. **The Bedroom**(#Color, #Perspective)
10. **The Zouave** (#Photograph, #Color)



Arden might mainly want to learn Van Gogh's artechniques, so his/her personal activity during the break is:

An art class (a 3-minutes-video) about Van Gogh's color tricks.







-  
Keep it basic.

### Arden's Personal Highlights & Relevant Content:

1. **Self-Portrait with Straw Hat** (#VanGogh, #HisLook)
2. **Van Gogh's palette** (#Masterskill)
3. **The Potato Eaters** (#Early Masterpiece)
4. **Self-Portrait with Grey Felt Hat** (#ScientificTheory)
5. **Sunflowers** (#Van Gogh's flowers, #Masterpiece)
6. **The Bedroom** (#Masterpiece, #EarIncidence)
7. **Fishing Boats on the beach** (#InnovativeStyle, #Ukiyo-e)
8. **The Yellow House** (#Masterpiece, #TheHomeOfMasterpieces, #EarIncidence)
9. **Almond Blossom** (#Masterpiece, #MuseumOrigins)
10. **Wheatfield with Crows** (#Masterpiece, #TheLastPainting)



Arden might mainly want to learn Van Gogh's art techniques, so his/her personal activity during the break is:

An art class (a 3-minutes-video) about Van Gogh's color tricks.



## Appendix 10d The questionnaire and results

## How much do you like the personalized multimedia guide?

Personalized multimedia guide is too long, isn't it? Let's call it PMMT right now.

\* Required

1. What's your (role's) name? \*

---

2. How much do you like the PMMT? \*

Mark only one oval.

	1	2	3	4	5	
Not at all. I won't recommend it to anyone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very much! I want to recommend it to everyone

3. How much do you think the PMMT can facilitate you in your visit? \*

1 = Not so much; 3 = Neutral; 5 = Very much

Mark only one oval.

	1	2	3	4	5	
Not much.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very much.

4. How much do you think the meaning of visit is maximized by using the PMMT? \*

Mark only one oval.

	1	2	3	4	5	
Not much	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Very much

5. How would you describe the service of the PMMT ..... \*

Mark only one oval.

	1	2	3	4	5	
General	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Personal

6. \*

Mark only one oval.

	1	2	3	4	5	
Careless	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Careful

7. \*

Mark only one oval.

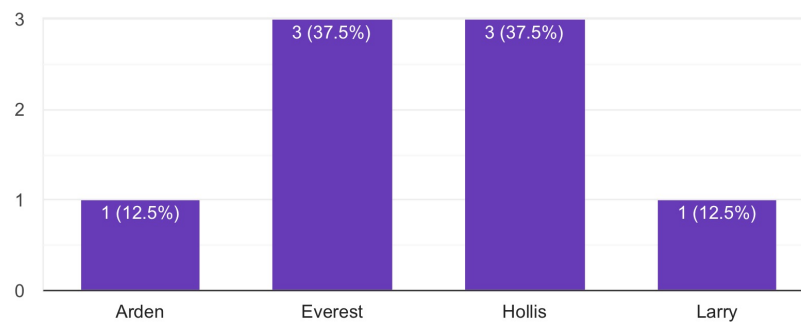
	1	2	3	4	5	
Unprofessional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Professional

## How much do you like the personalized multimedia guide?

8 responses

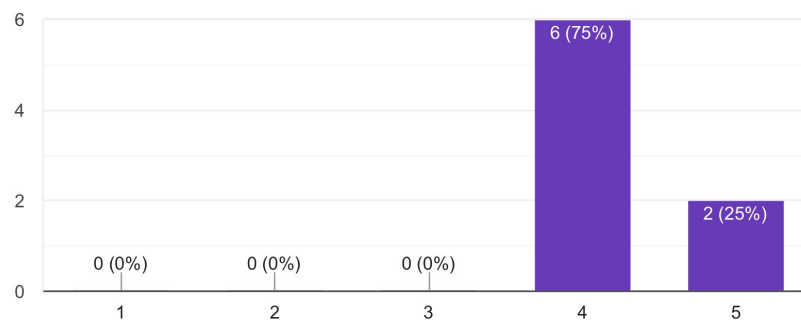
### What's your (role's) name?

8 responses



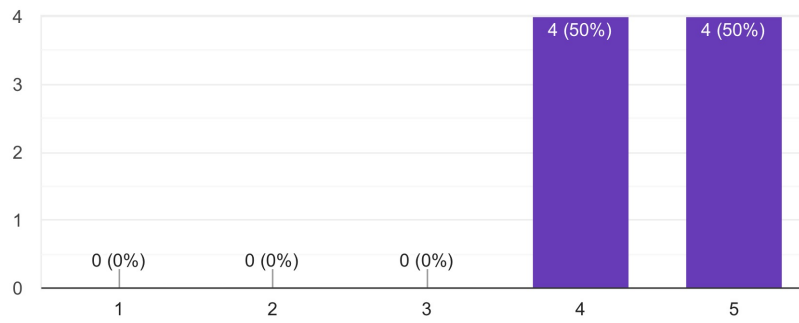
### How much do you like the PMMT?

8 responses



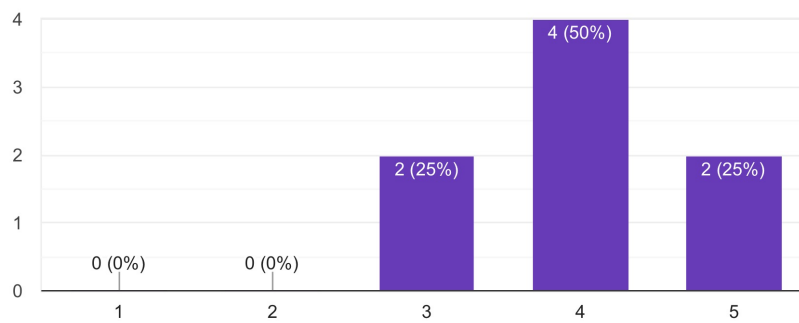
### How much do you think the PMMT can facilitate you in your visit?

8 responses



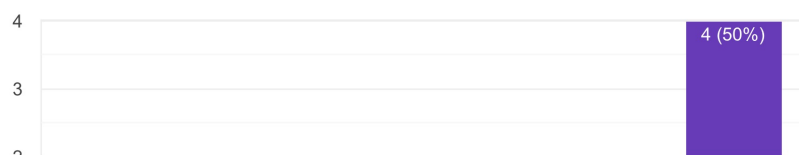
How much do you think the meaning of visit is maximized by using the PMMT?

8 responses

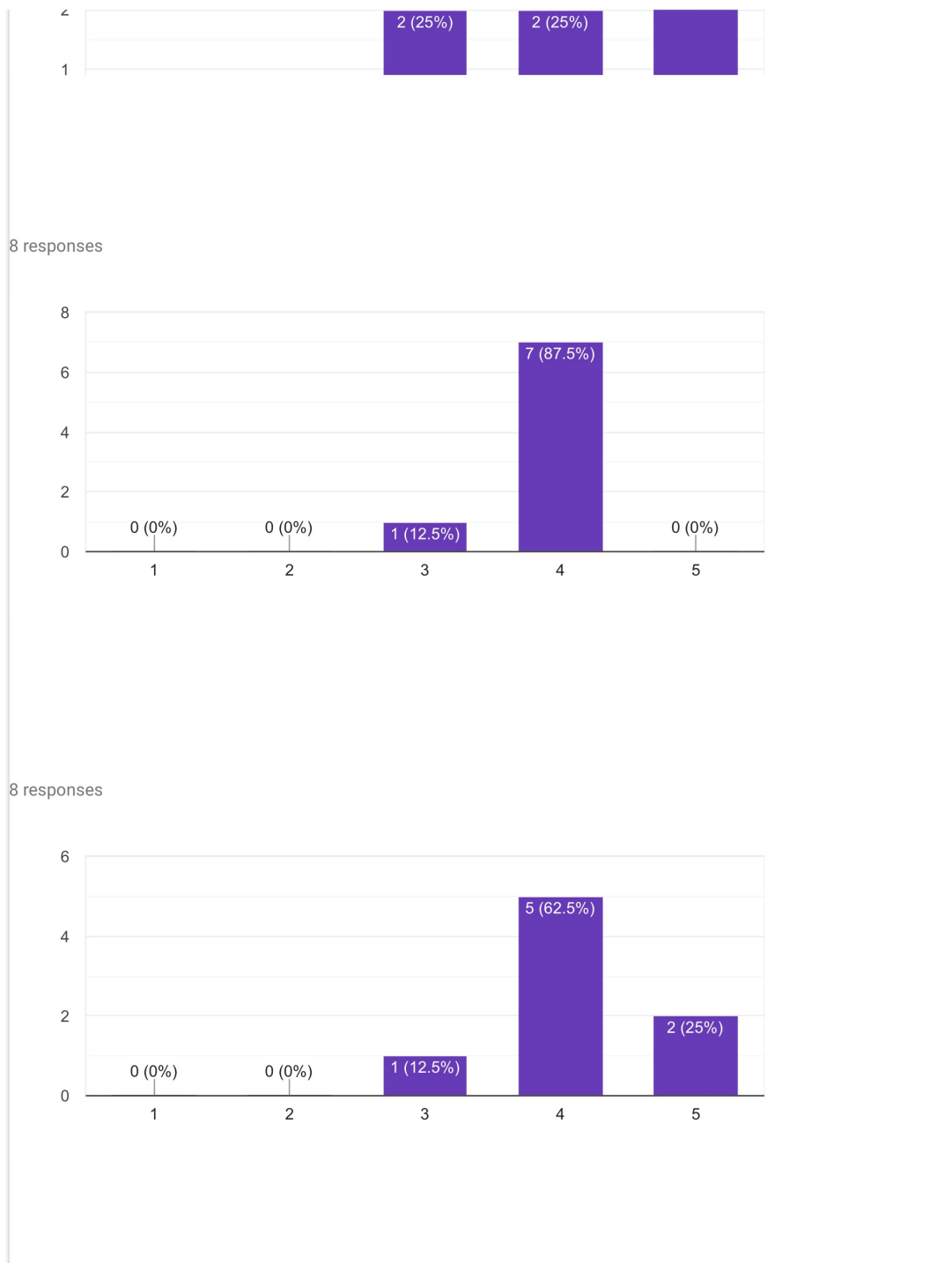


How would you describe the service of the PMMT .....

8 responses







This content is neither created nor endorsed by Google. [Report Abuse](#) - [Terms of Service](#)

Google Forms

## Appendix 10e

### The interview questions

1. **What leaves in your mind after the visit?** Which paintings/stories you remember the most?
2. **What is different between using the personalized MMT and the non-personalized MMT?**
3. **You've gone through several phases, (show him task 1-4); for each phases, what do you like/dislike? (Elaborate plz!) opener, how do you think.....**
  - How much do you find it easy/hard to finish the onboarding choices?
  - How much do you find it easy/hard to use the system (map)?
  - How much do you like your personal highlights? Why/Why not?How much do you like your personal activities? Why/Why not?

(Hurray!!! The whole repost is finally finished!!!)

