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Material Encounters with digital Cultural Heritage

Shaping minds-on and hearts-on digital learning experiences: First lessons learned from the meSch project

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Merel Van der Vaart, University of Amsterdam & Allard Pierson Museum, Amsterdam, the Netherlands

University of Strathclyde Glasgow

Universiteit van Amsterdam
Allard Pierson Museum

Museums, Cultural Heritage and Digital technologies

Nintendo DS, Louvre (http://bit.ly/1BOIpAU)

Musée des Arts et Métiers, Paris

Deutsches Technikmuseum, Berlin

Museo Nacional de Artes Decorativas, Madrid

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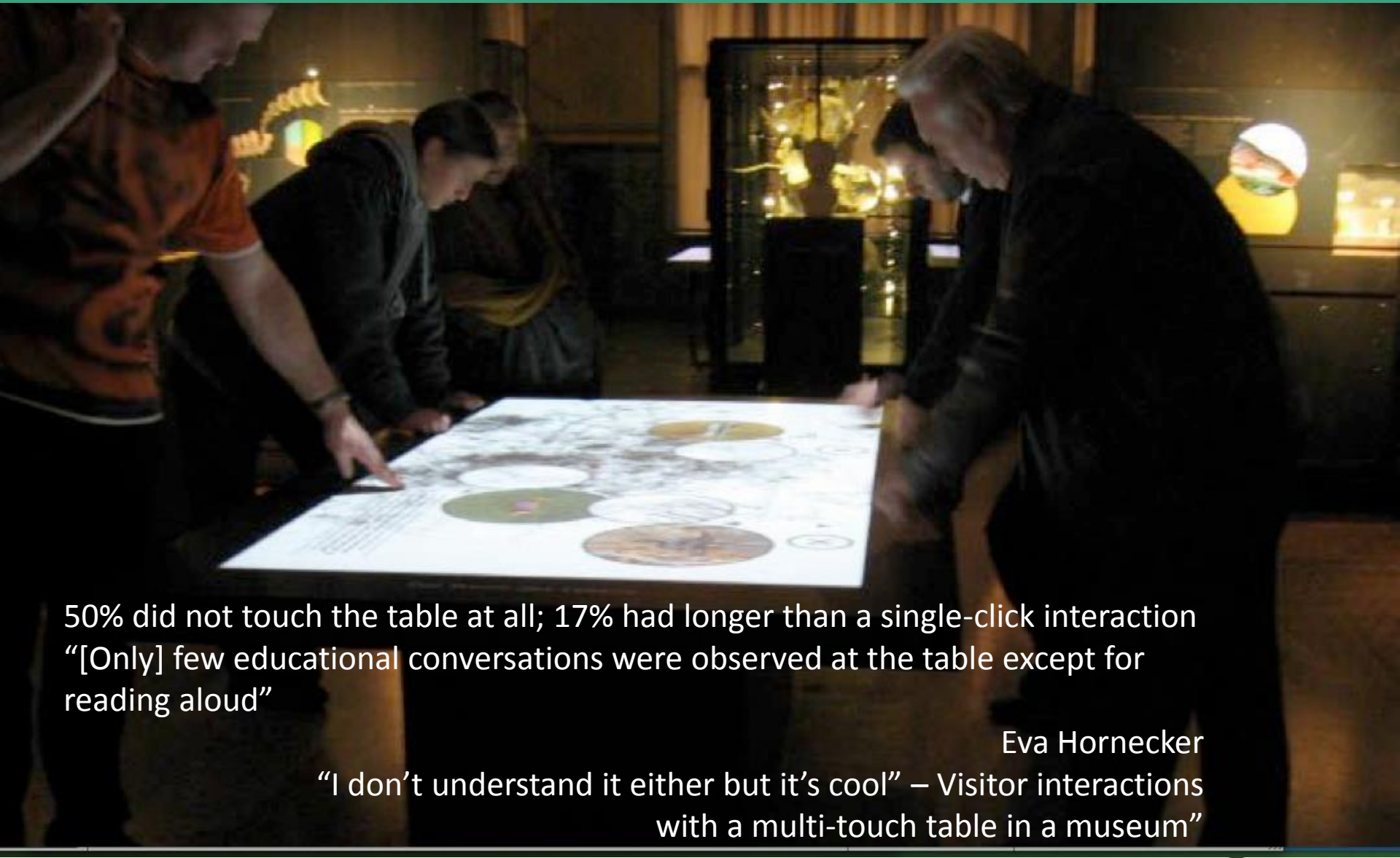
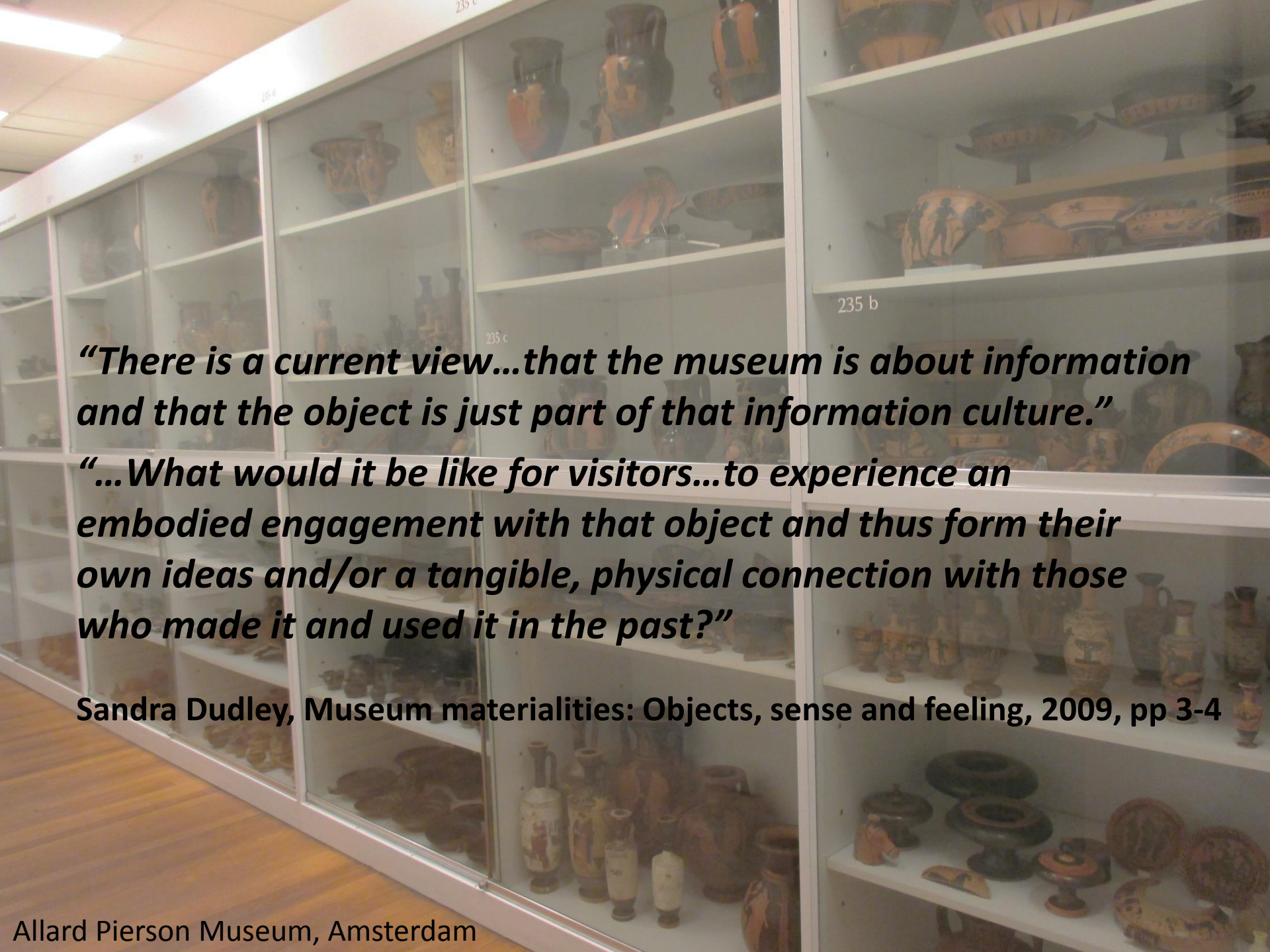
Risks of de-coupling technology from heritage



50% did not touch the table at all; 17% had longer than a single-click interaction
"[Only] few educational conversations were observed at the table except for reading aloud"

Eva Hornecker
"I don't understand it either but it's cool" – Visitor interactions with a multi-touch table in a museum"



"There is a current view…that the museum is about information and that the object is just part of that information culture."

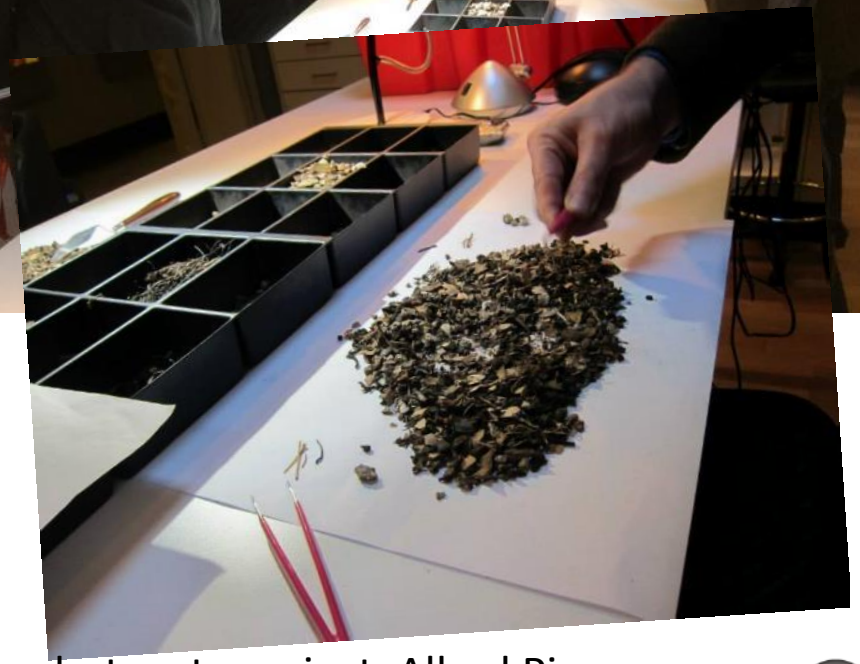
"…What would it be like for visitors…to experience an embodied engagement with that object and thus form their own ideas and/or a tangible, physical connection with those who made it and used it in the past?"

Sandra Dudley, Museum materialities: Objects, sense and feeling, 2009, pp 3-4

Allard Pierson Museum, Amsterdam

Back to Tangible and Embodied Interaction

Victoria and Albert Museum, London



Archaeohotspots project, Allard Pierson Museum, Amsterdam
(photos by Eva Hornecker, Luigina Ciolfi)

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Back to Tangible and Embodied Interaction

Gallery One, Cleveland Museum of Art, Cleveland, Ohio

Jane Alexander, Gallery One at the Cleveland Museum of Art, Curator, Volume 57 (3), pp 347-362

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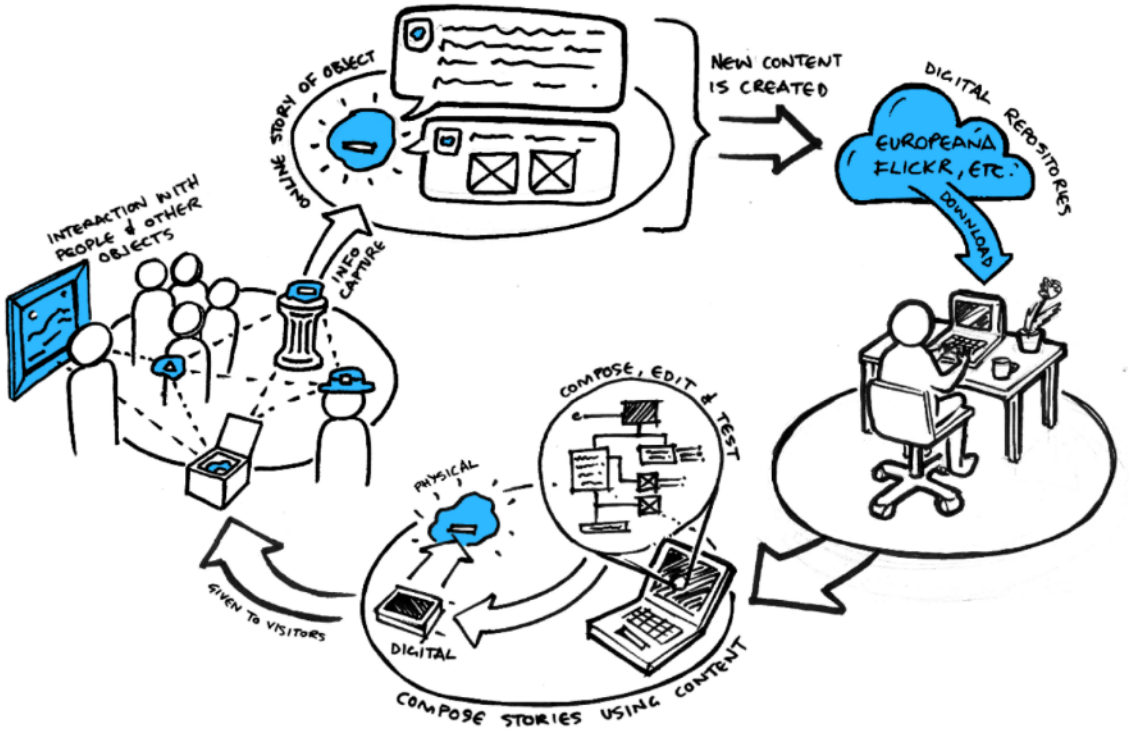
meSch: material encounterS with cultural heritage

Co-creation and DIY: Curators, artists and designers are working together to develop do-it-yourself technology for the creation of adaptive smart exhibits.

Tangible Interaction: The core problem underlying all digital artefacts is the loss of materiality. meSch wants to put the physical back in the centre of cultural heritage experience.

Digital artefacts and digital resources: A wealth of digital repositories is available. meSch wants to make innovative use of them by integrating them in a tool to create adaptive smart exhibits.



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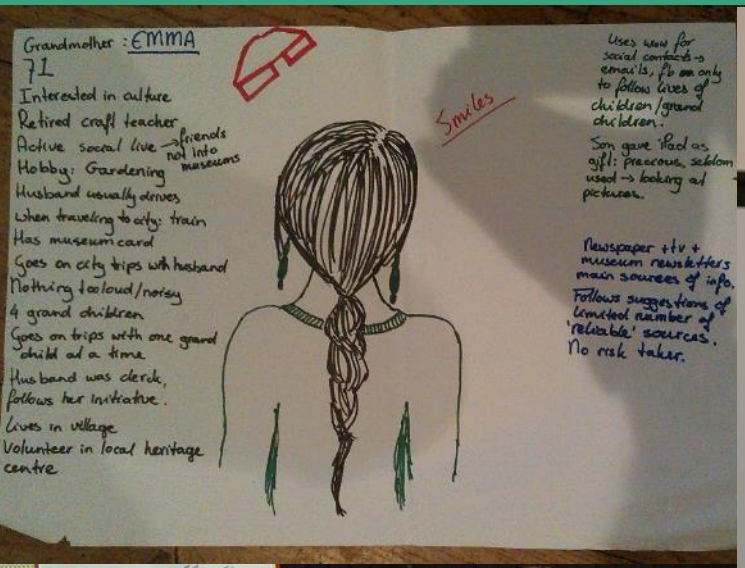
Co-design and co-evaluation Approach



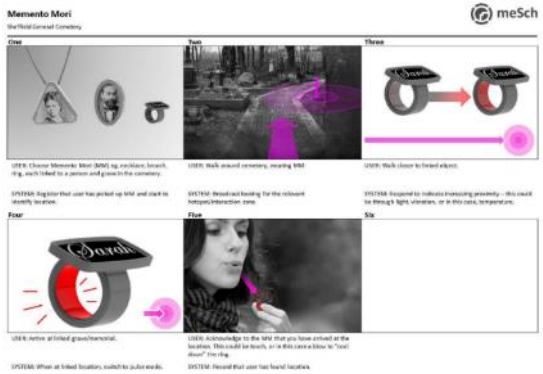
Our meSch museums

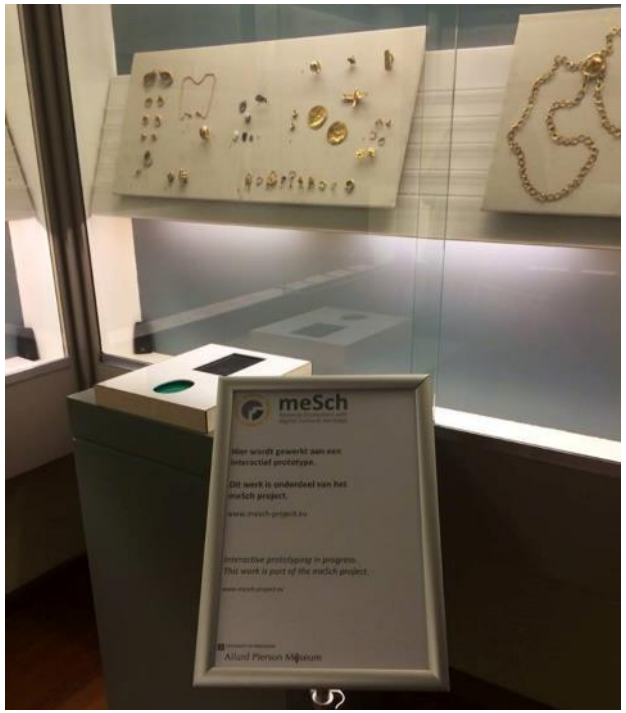
MUSEON

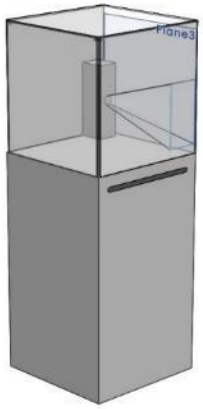
ALLARD PIERSON MUSEUM
Archeologisch Museum van de Universiteit van Amsterdam

Museo Storico Italiano della Guerra Rovereto (o.n.l.u.s.)

The first meSch prototypes

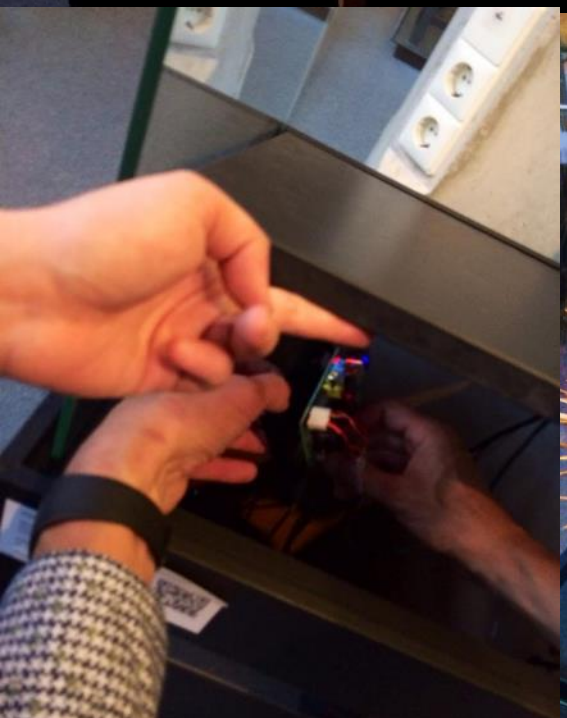


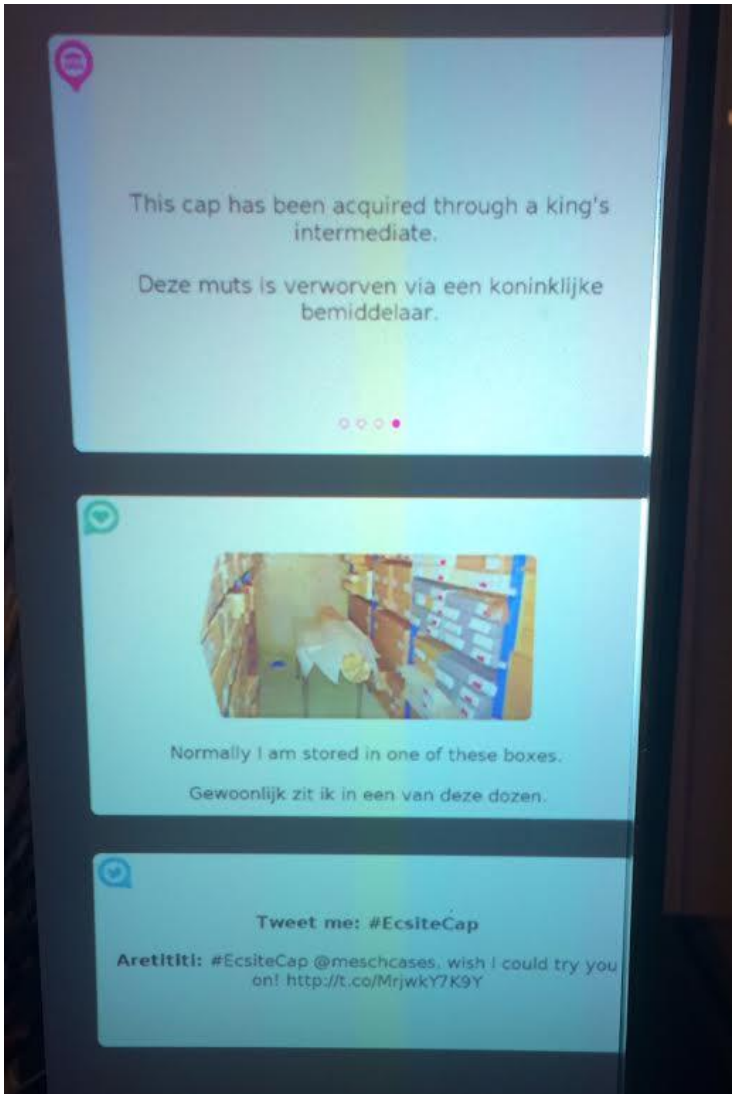




Museo della Guerra: The Companion Novel

Museon: The Interactive Showcases





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The Loupe

- Easy and enjoyable to use
- Focus on the loupe, not the objects
- A lot of playing but what about learning?

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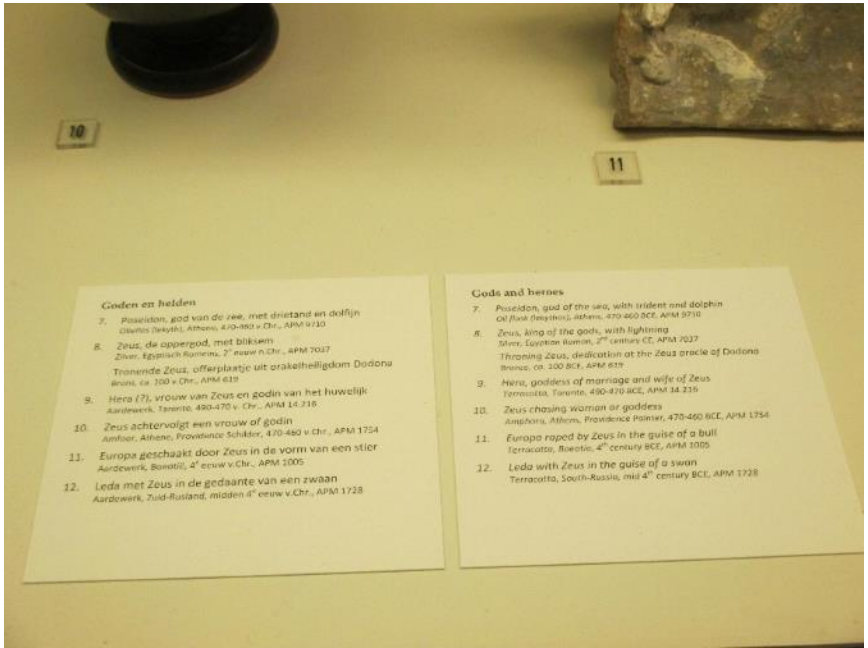
The Loupe study: Research questions

- Where is the focus?
- How easy is it to use?
- Can it be shared?
- How much content should be included?
- Text vs other media
- Cognitive & affective impact

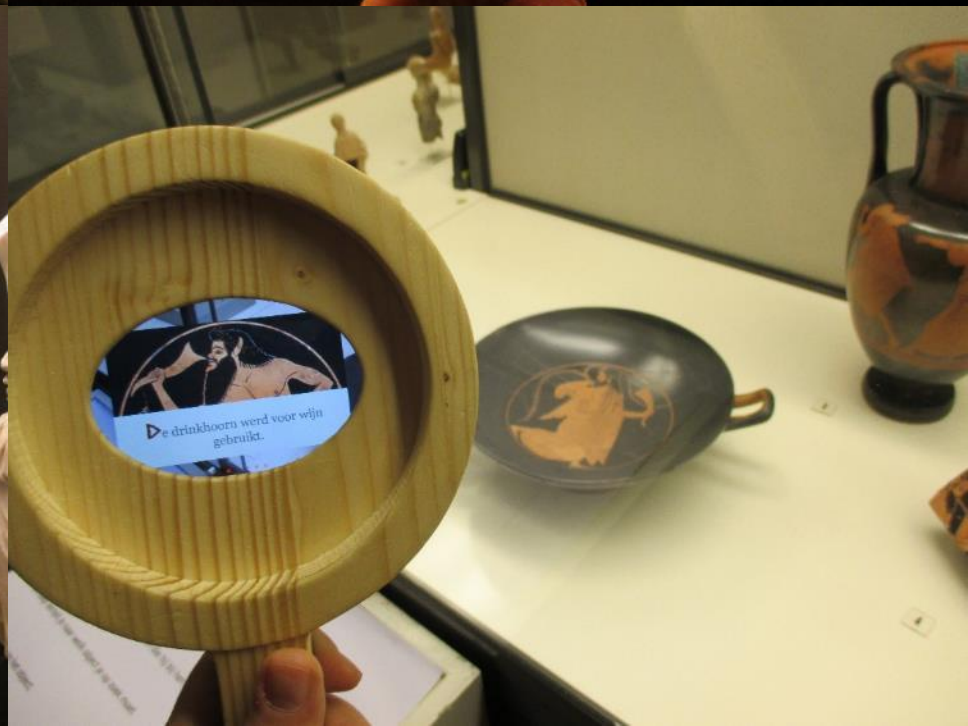


The Loupe study

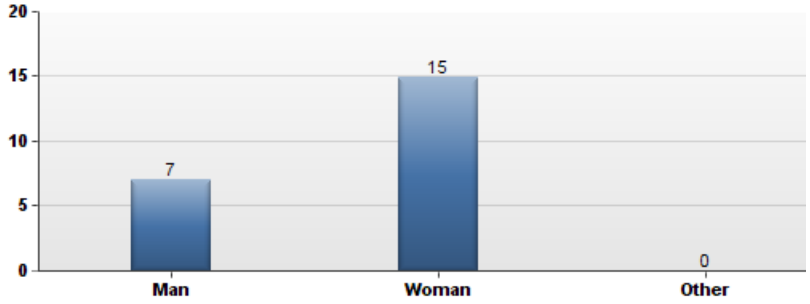
Protocol

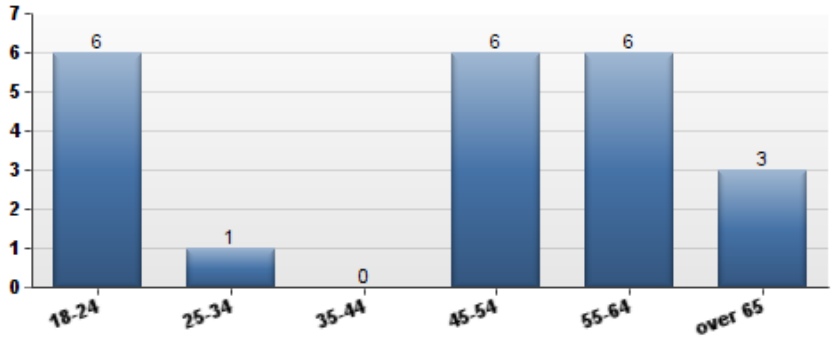
- Pre-visit questionnaire
- Observations
- Post-visit questionnaire (25 questions)
- Semi-structured interviews
- 22 participants
- Channels:
  - Allard Pierson Museum, Friends of the Museum
  - University of Amsterdam students' network

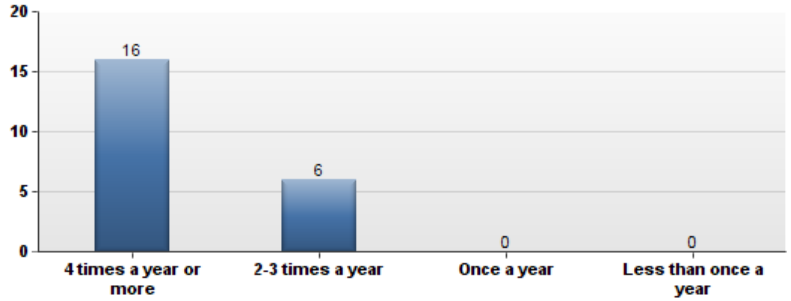
Op deze drinkschaal zie je Apollo, de god van de muziek. Wat voor instrument bespeelt hij?

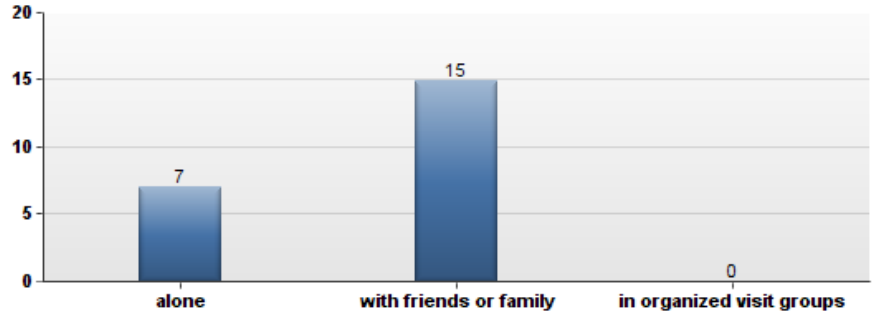

De drinkhoorn werd voor wijn gebruikt.

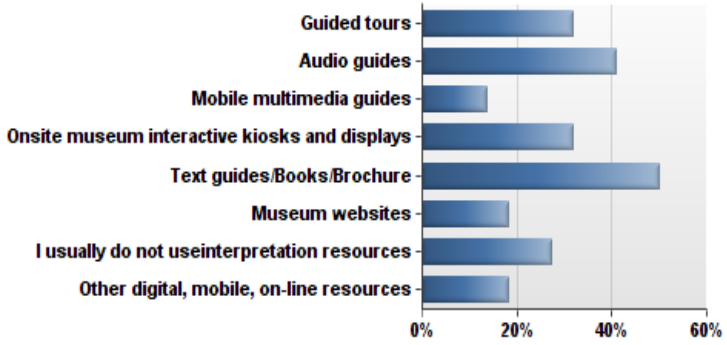
Demographics and visitor profiles

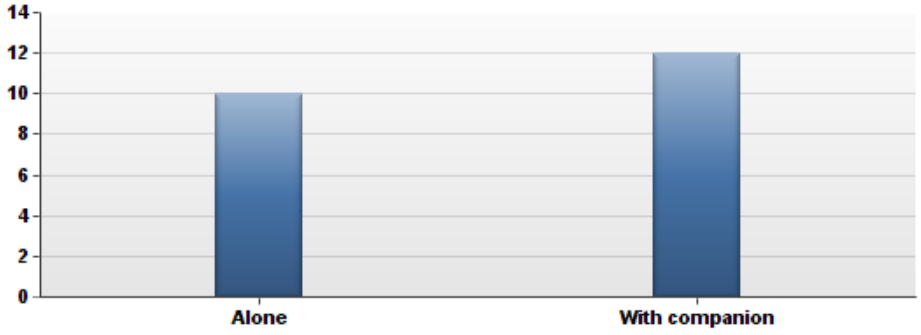




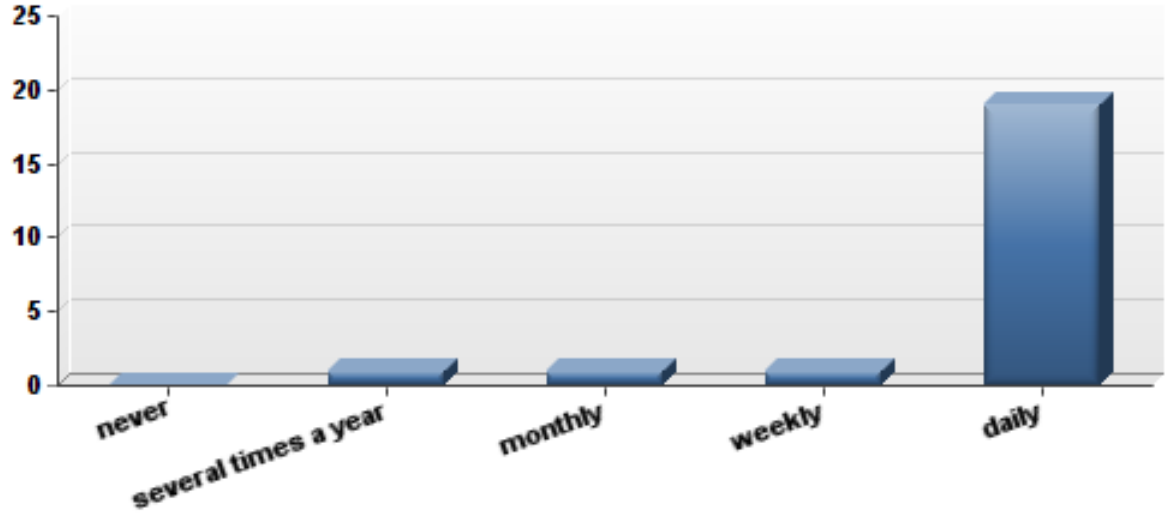




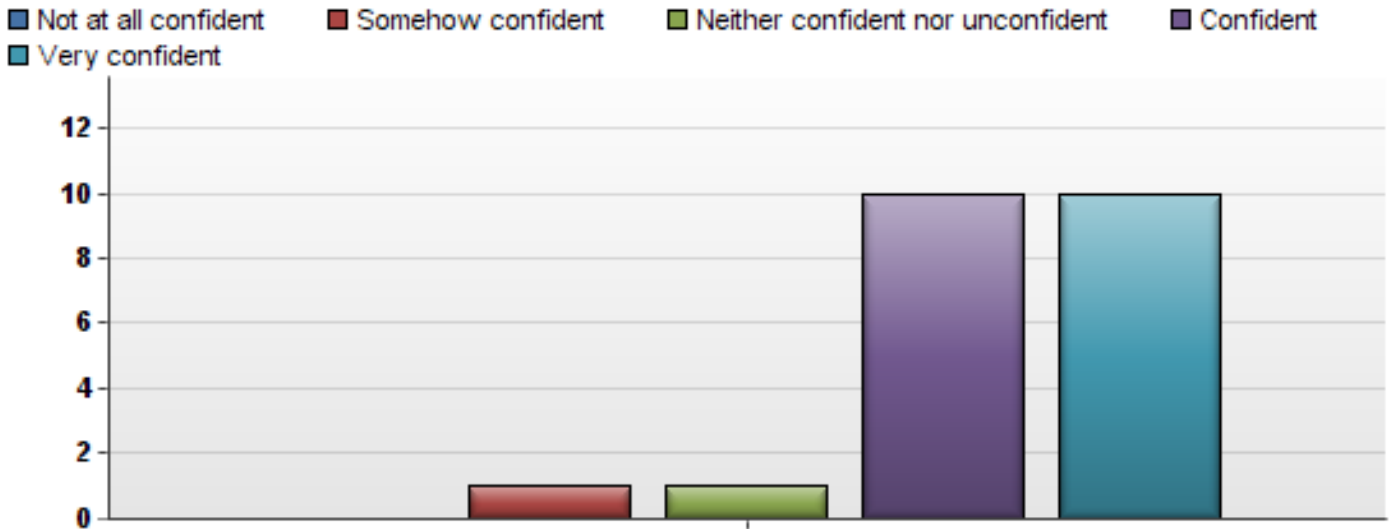




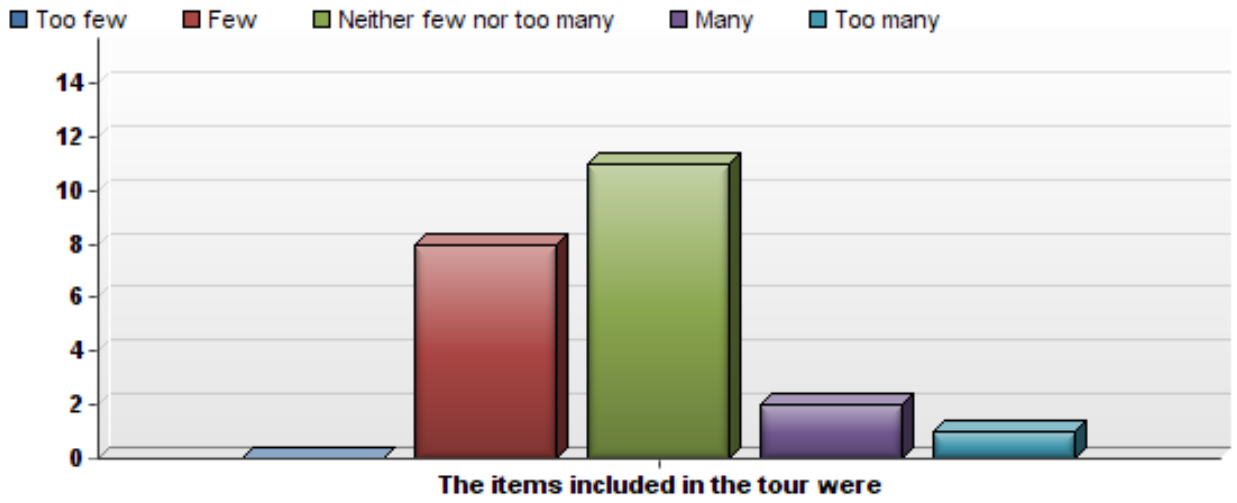
How often do you use the internet to search, learn or communicate?



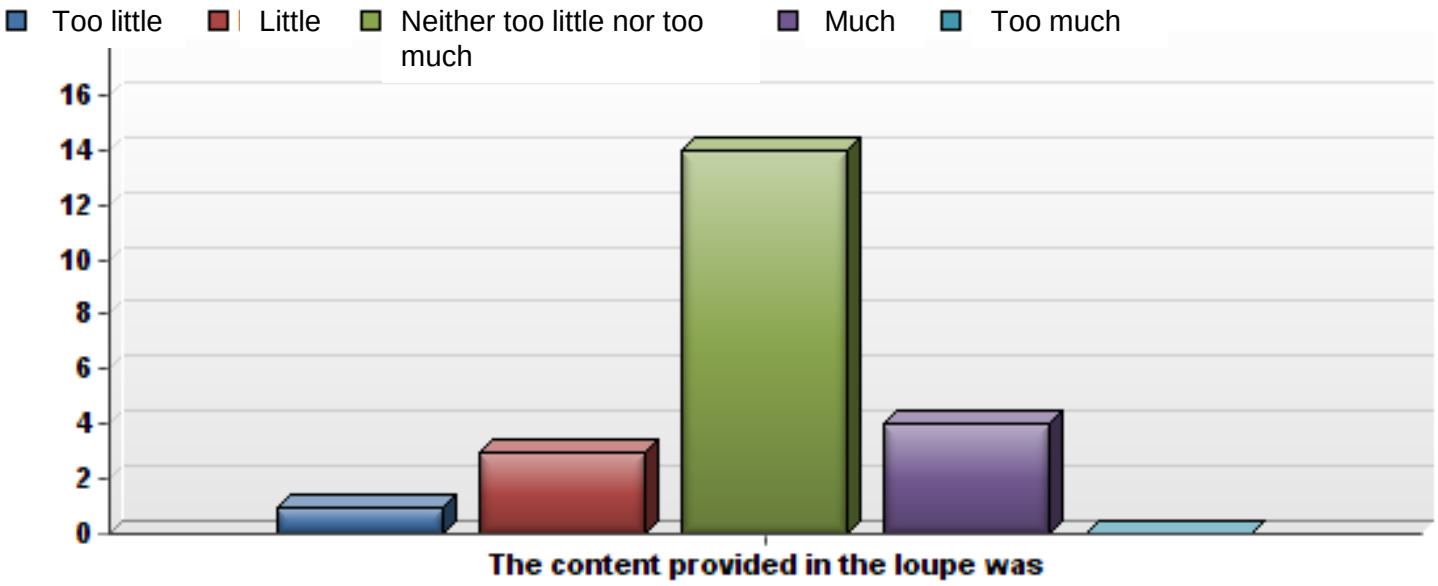
How confident do you feel on using digital applications and devices?



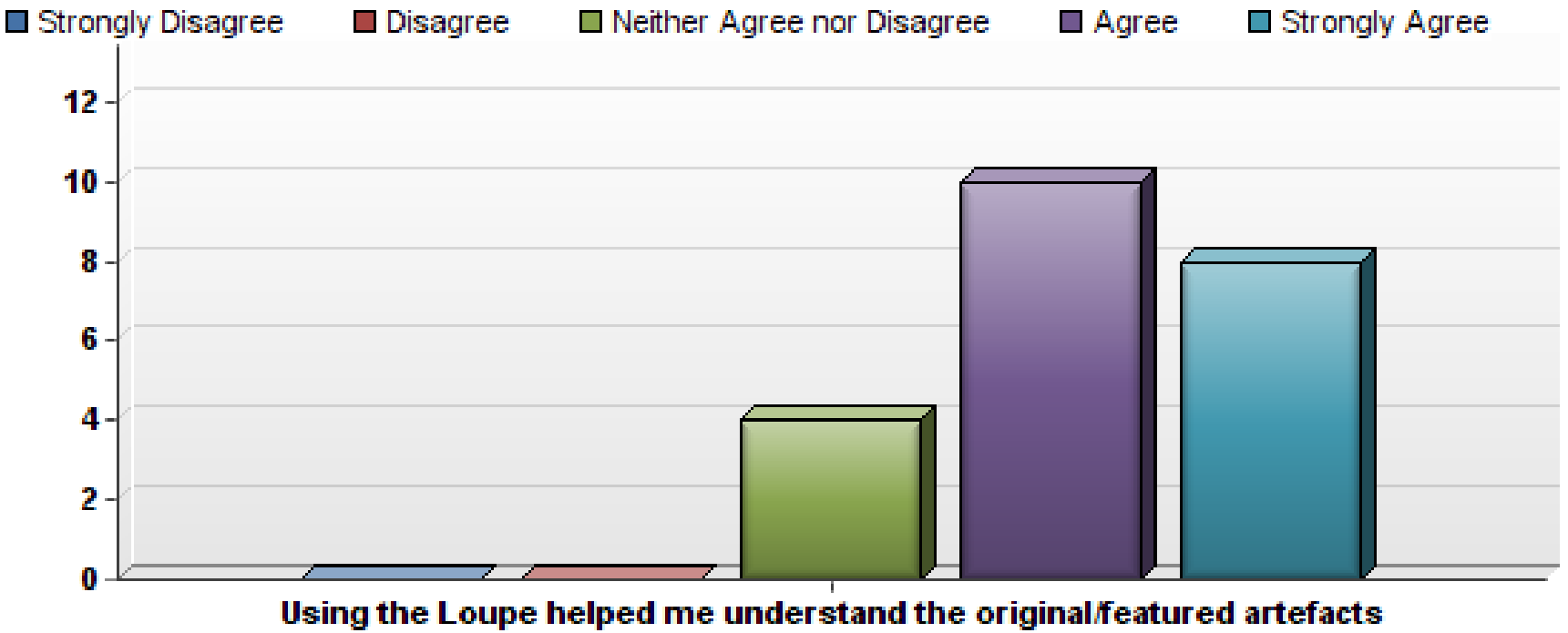
The objects included in the tour were



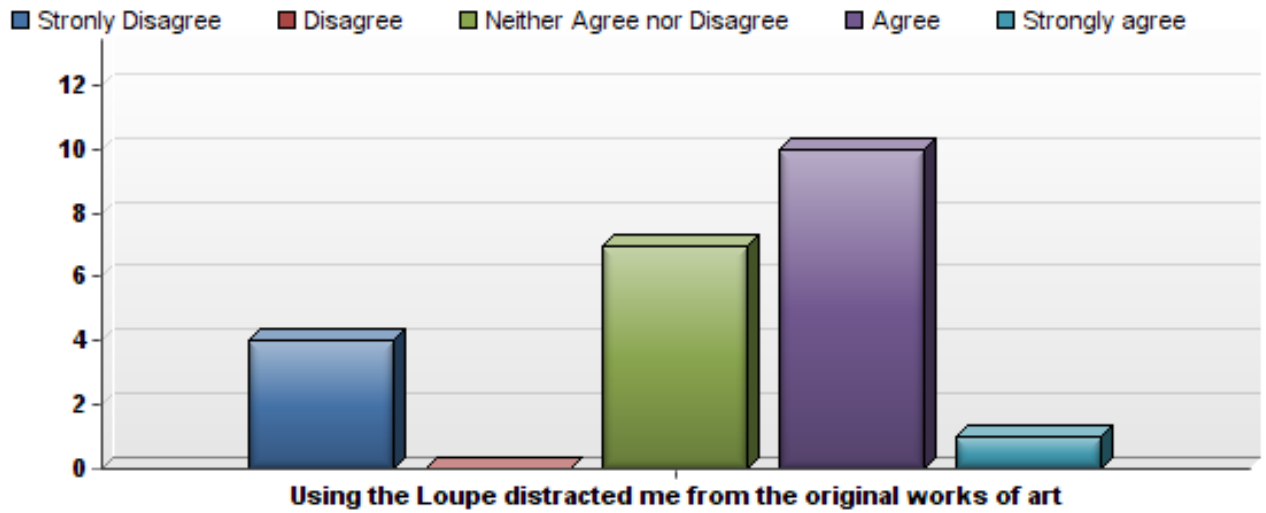
The content provided by the Loupe was



Using the Loupe helped me understand the featured artefacts

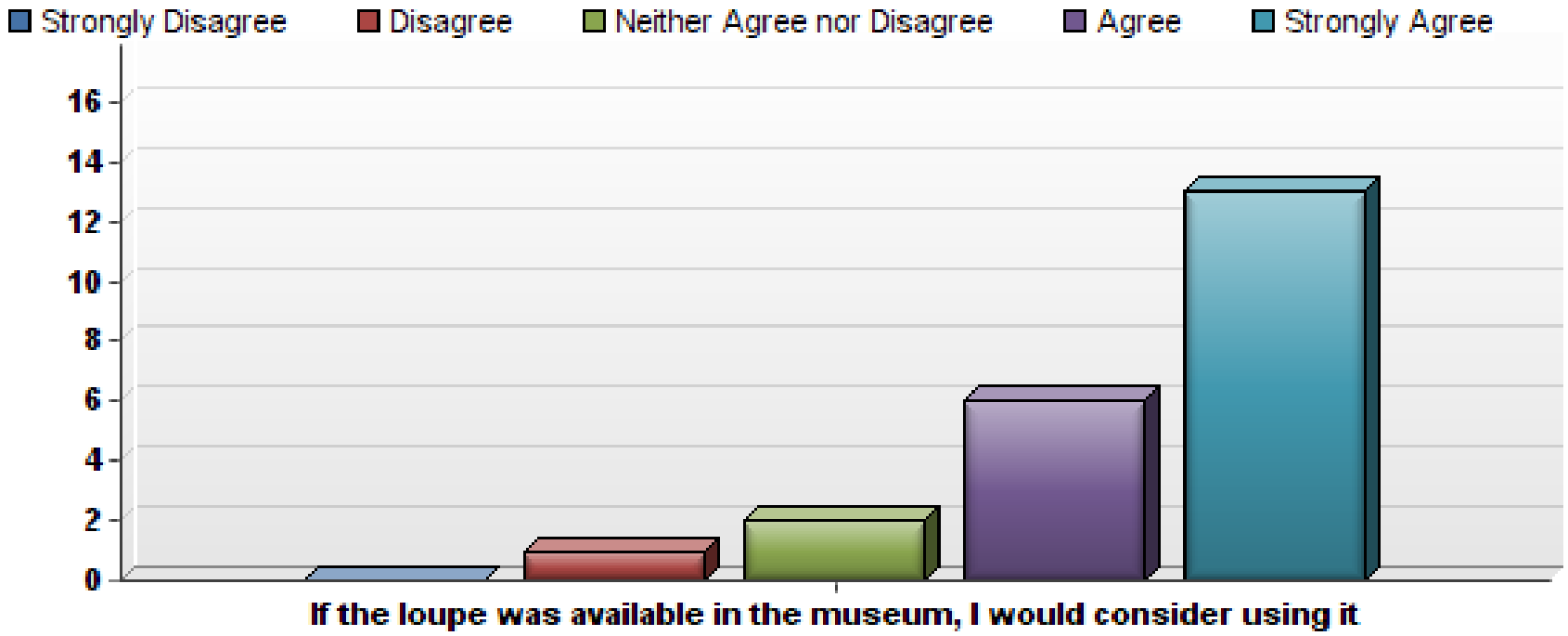


Using the Loupe distracted me from the original works of art



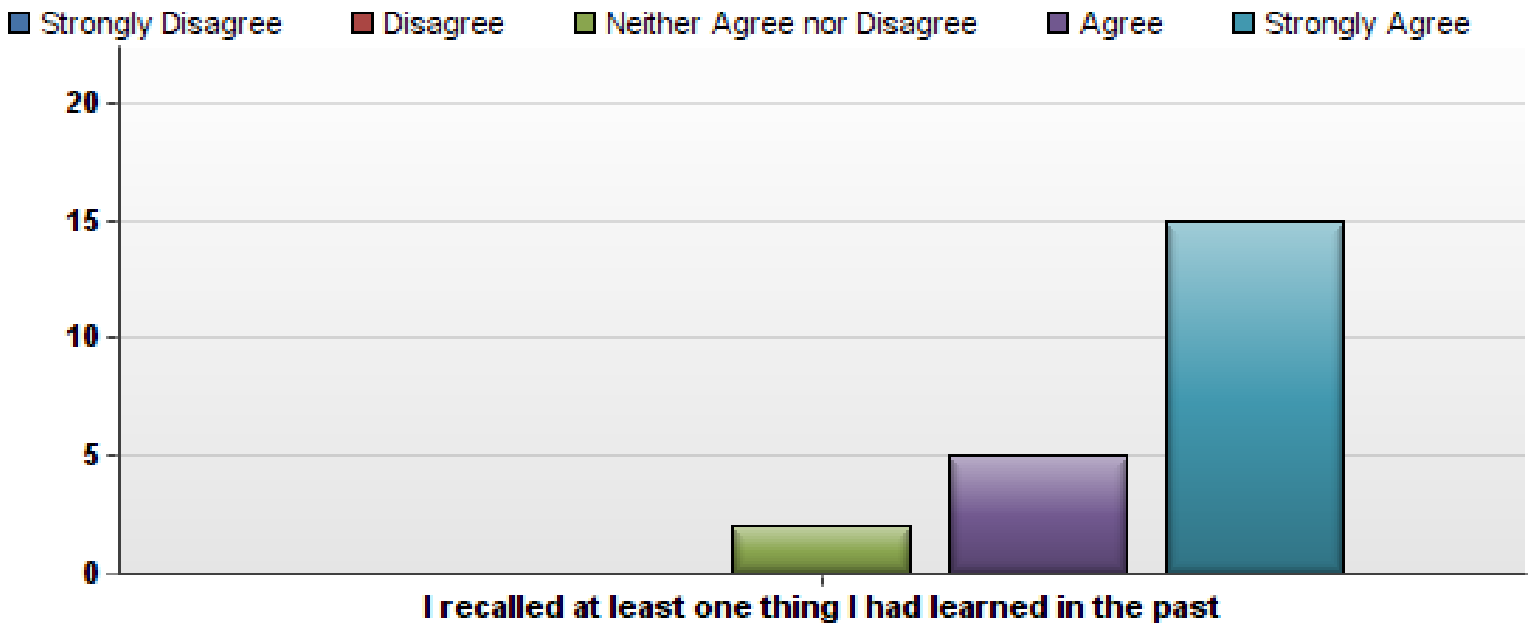
#	Question	Stronly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly agree	Total Responses	Mean
1	Using the Loupe distracted me from the original works of art	4	0	7	10	1	22	3.18

If the loupe was available in the museum, I would consider using it



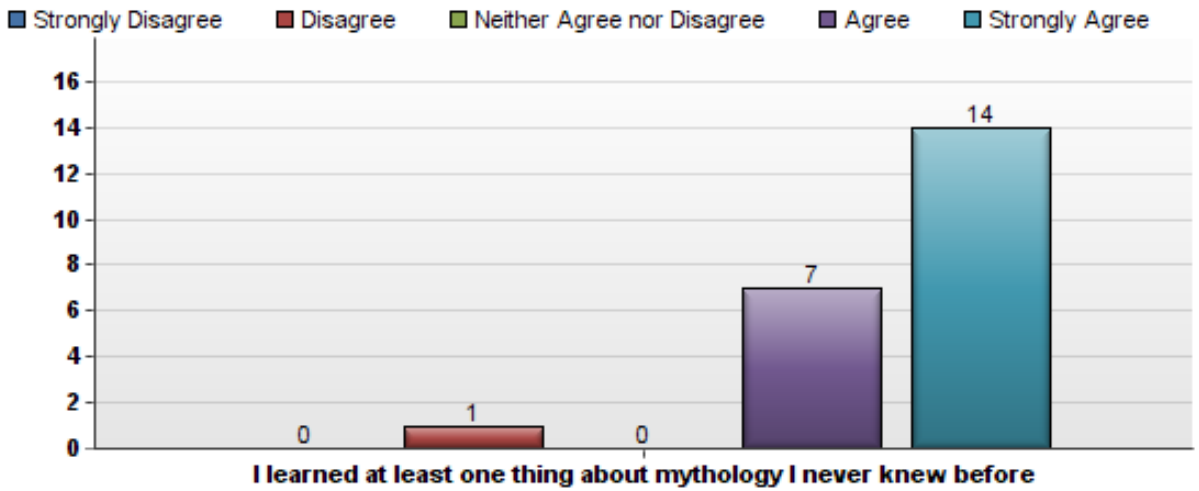
Cognitive and affective impact

I recalled at least one thing I had learned in the past



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	I recalled at least one thing I had learned in the past	0	0	2	5	15	22	4.59

I learned at least one thing about mythology I did not know



#	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total Responses	Mean
1	I learned at least one thing about mythology I never knew before	0	1	0	7	14	22	4.55

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Post-visit questionnaire

Can you help us understand if any of the moods/emotions below occurred while:

A. Using the Loupe (Question 9)

and

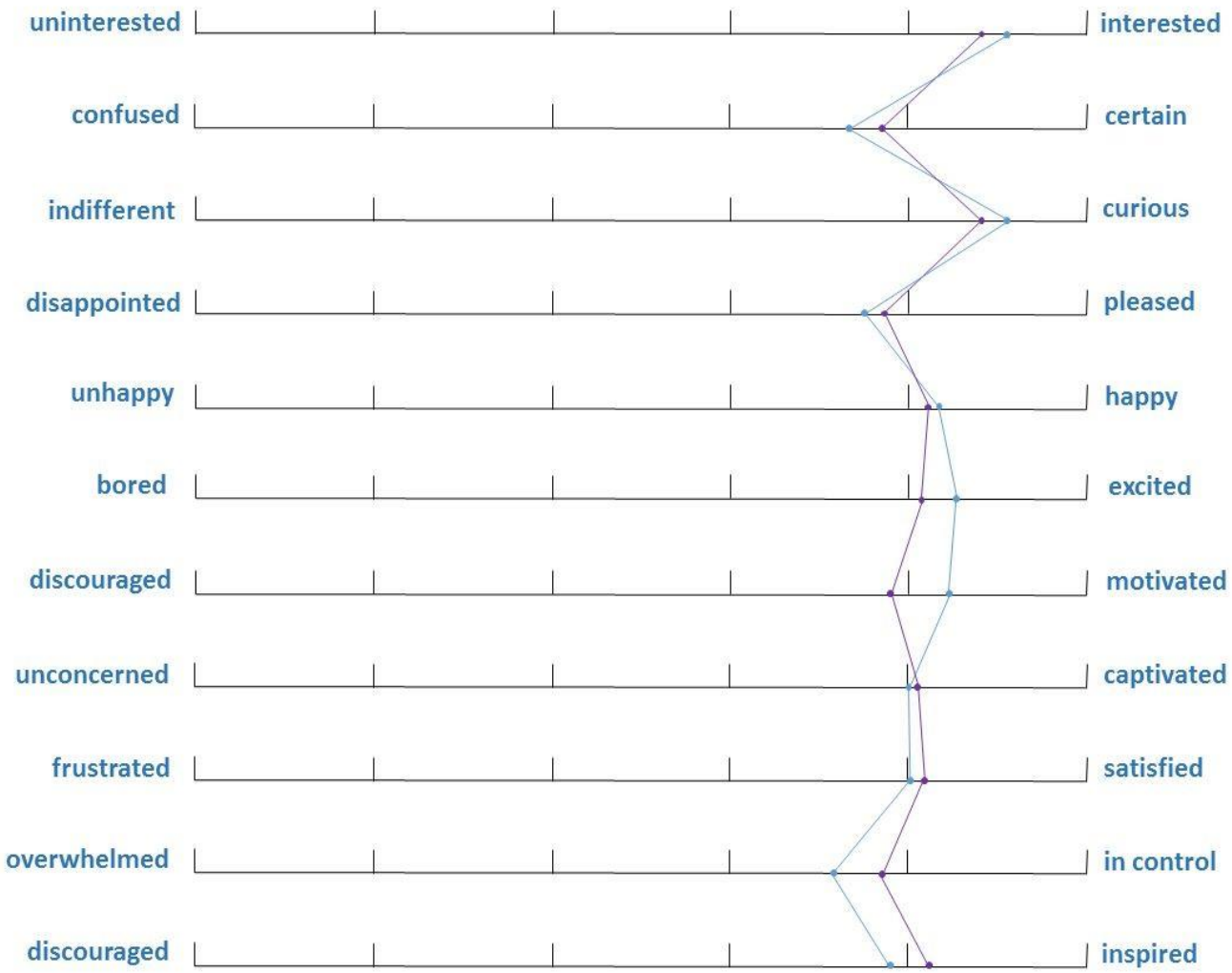
B. Following the tour and going through the content (question 10)

Q9. While using the Loupe I felt:

Uninterested	|_____|_____|_____|_____|_____|	Interested
Certain	|_____|_____|_____|_____|_____|	Confused
Indifferent	|_____|_____|_____|_____|_____|	Curious
Pleased	|_____|_____|_____|_____|_____|	Disappointed
Unhappy	|_____|_____|_____|_____|_____|	Happy
Excited	|_____|_____|_____|_____|_____|	Bored
Motivated	|_____|_____|_____|_____|_____|	Discouraged
Unconcerned	|_____|_____|_____|_____|_____|	Captivated
Satisfied	|_____|_____|_____|_____|_____|	Frustrated
Inspired	|_____|_____|_____|_____|_____|	Discouraged
Overwhelmed by my experience	|_____|_____|_____|_____|_____|	In control of my experience

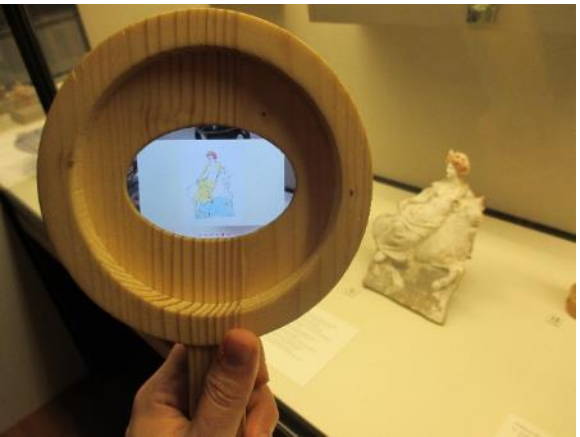
The Loupe

The content



What else did we learn? (interviews & observations)

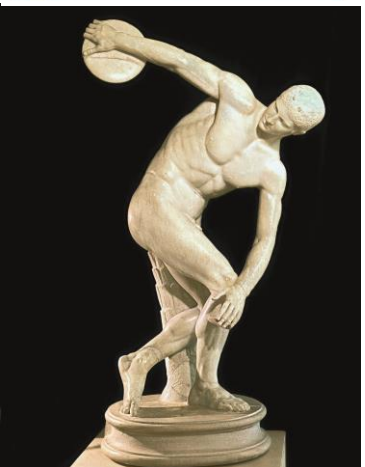
- Easy vs intuitive (and learning curve)
- The loupe or an app?
- More “experienced”= less distracted?
- Types of content prompting visitors to look back at the exhibit
- The role of text
- Can be shared by visiting companions



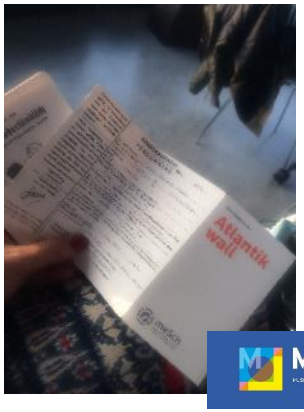
What's next?

- Comparative study with "traditional" text delivery
- Three museums, three large-scale exhibitions, three parallel evaluation studies
- Comparative evaluation studies among museums using closely related prototypes (Museon, Museo della Guerra, Allard Pierson Museum)
- Plan for the gathering, analysis, interpretation of "big" data
- Further explore interrelations among tangible & embodied interaction, emotions, cognition and learning

ALLARD PIERSON MUSEUM
Archeologisch Museum van de Universiteit van Amsterdam



Museo Storico Italiano della Guerra Rovereto (o.n.l.u.s.)



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Questions?

Stay tuned!

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SEVENTH FRAMEWORK PROGRAMME