LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

MEDIA INFORMATICS
DEPARTMENT FOR COMPUTER SCIENCE

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Sketching with Objects – A Toolkit to Extend the User Centered Design Process

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Overview

- Motivation
- Evaluation
- Project overview
- User studies
- Conclusion and Outlook

Motivation

- User Centered Design: different tools can help in all stages

Fig. 1 Appropriate tools for each phase of the User-Centered Design Process with the right fidelity [1]

How can intra-team communication be made easier?

How can development of prototypes be made quicker and simpler?

Evaluation

Use of toolkit can only be measured in „soft“ data

Svanaes bases evaluation model on theories in social studies, Trochim lists alternative criteria for qualitative research ([3],[4])

→ Validity criteria:

- Confirmability: How objective are results?
- Dependability: Be aware of changing context
- Credibility: How believable are results?
- Transferability: Can results be transferred?

Evaluation

Data triangulation: data viewed from three perspectives:

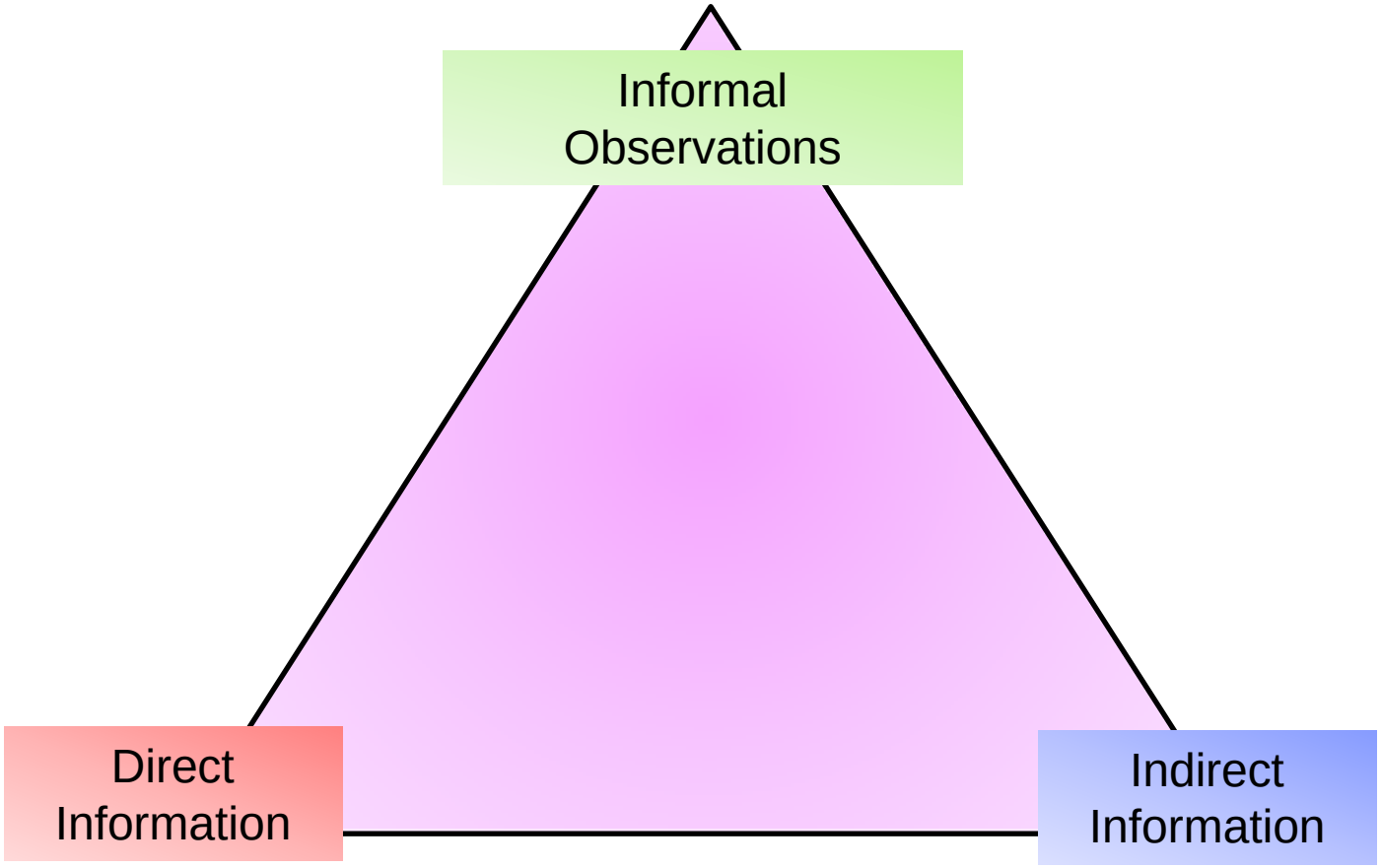
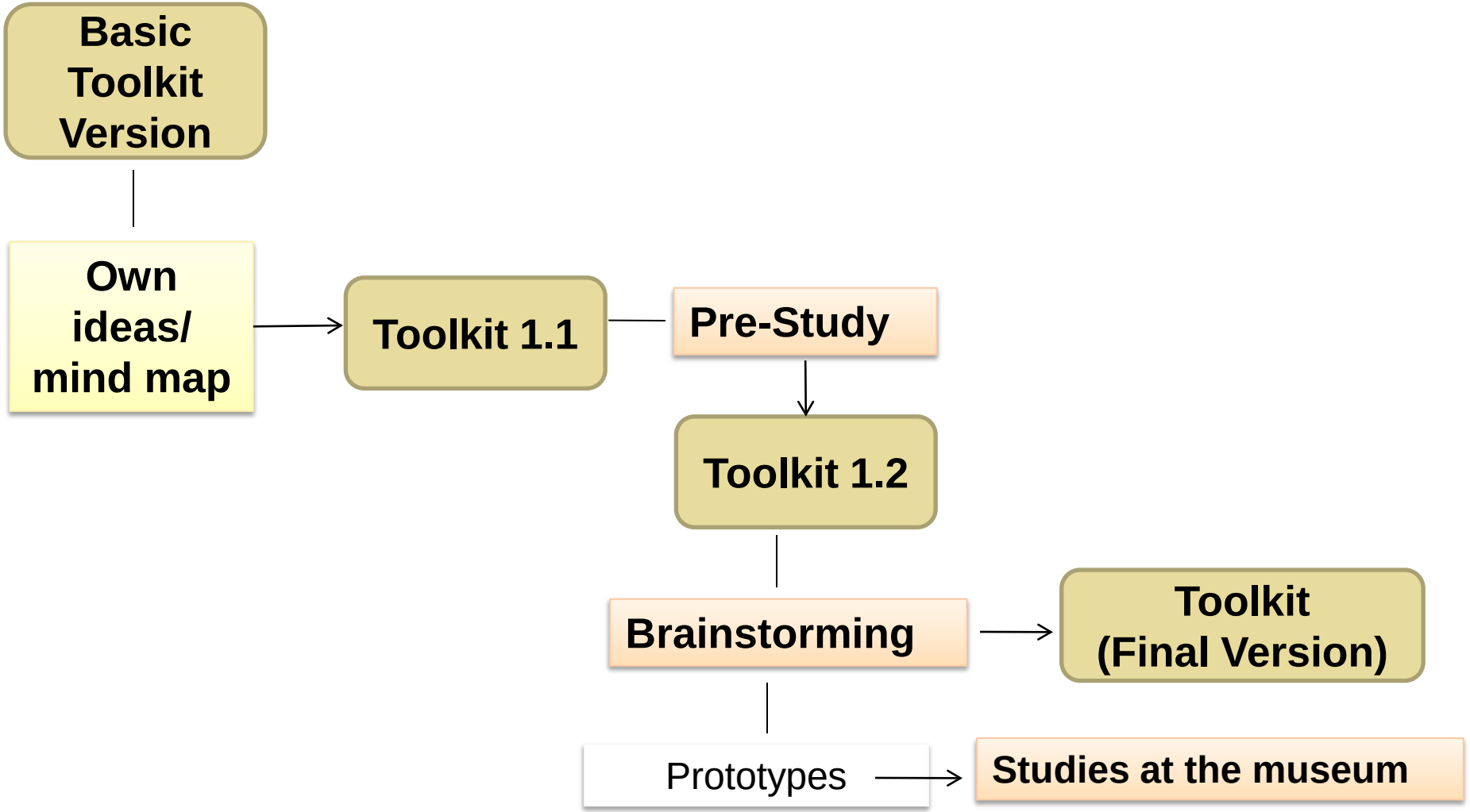
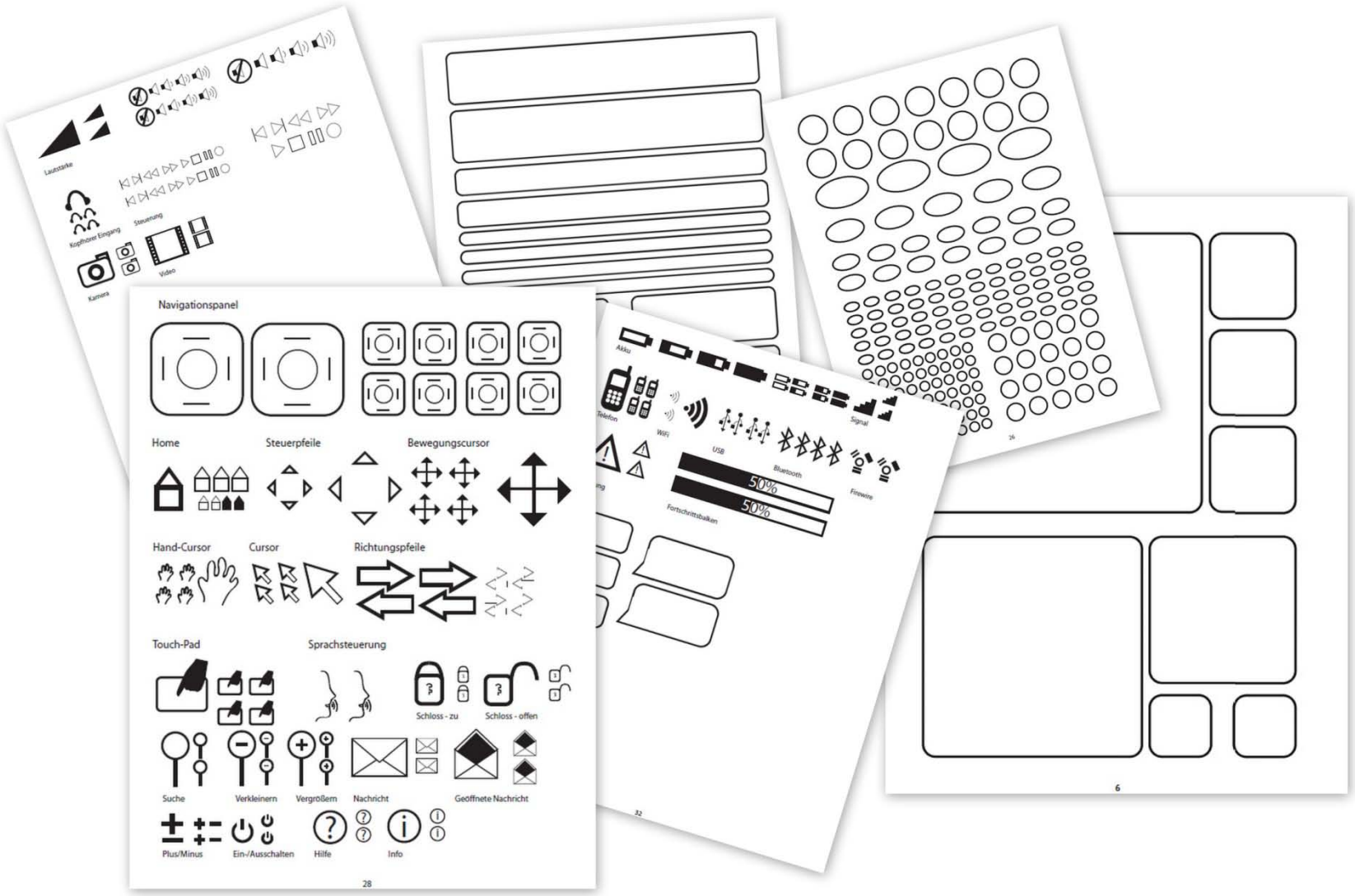


Fig. 2 Data triangulation

Project overview




Navigationspanel
Home
Steuerpfeile
Bewegungscursor
Hand-Cursor
Cursor
Richtungspfeile
Touch-Pad
Sprachsteuerung
Schloss - zu
Schloss - offen
Suche
Verkleinern
Vergrößern
Nachricht
Geöffnete Nachricht
Plus/Minus
Ein-/Ausschalten
Hilfe
Info
Akku
Telefon
WiFi
USB
Signal
Bluetooth
Firewire
50%
50%
Fortschrittsbalken
28
6

Brainstorming session

Pre-Study

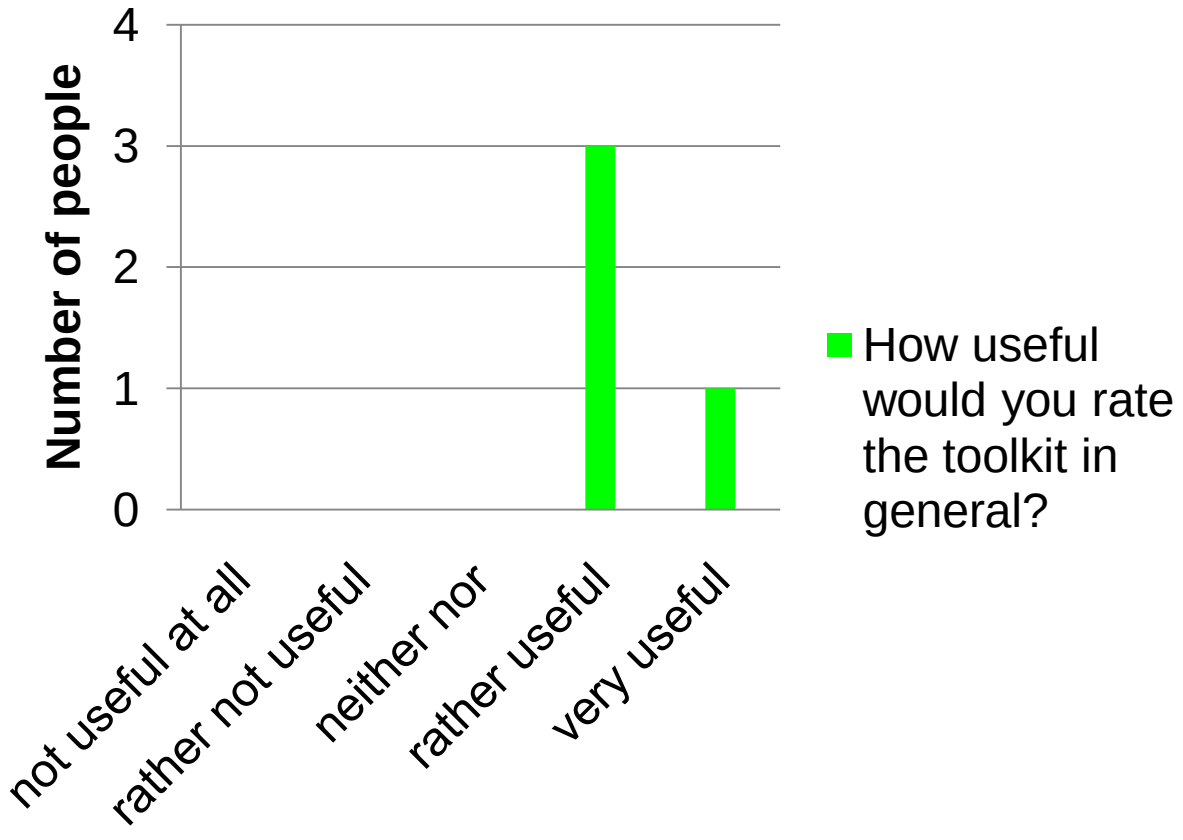
→ First alterations to the toolkit

Study

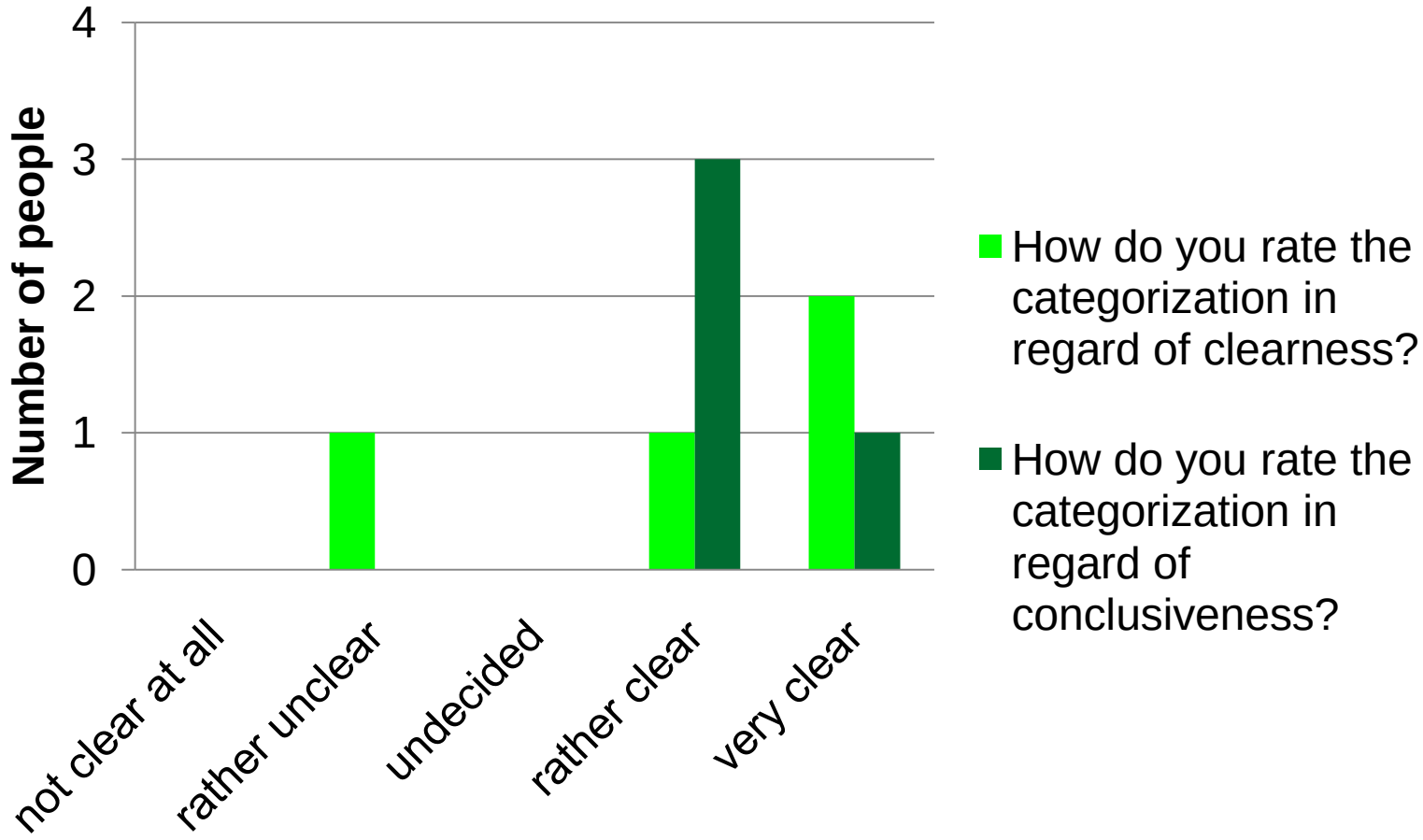
- Briefing
- Scenario
- Brainstorming
- Prototype development
- Questionnaire

Brainstorming Findings

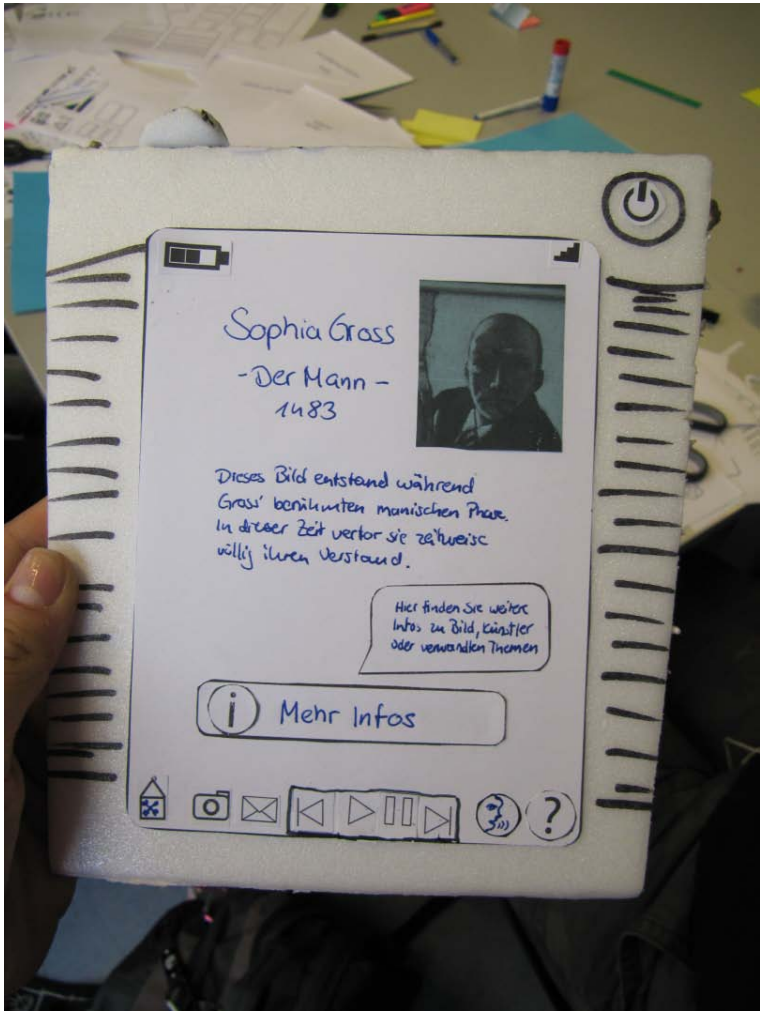
- saves time
- serves as reminder of elements/functions
- applicable for many scenarios and situations
- enhance creativity
- restriction in creativity because design is preset

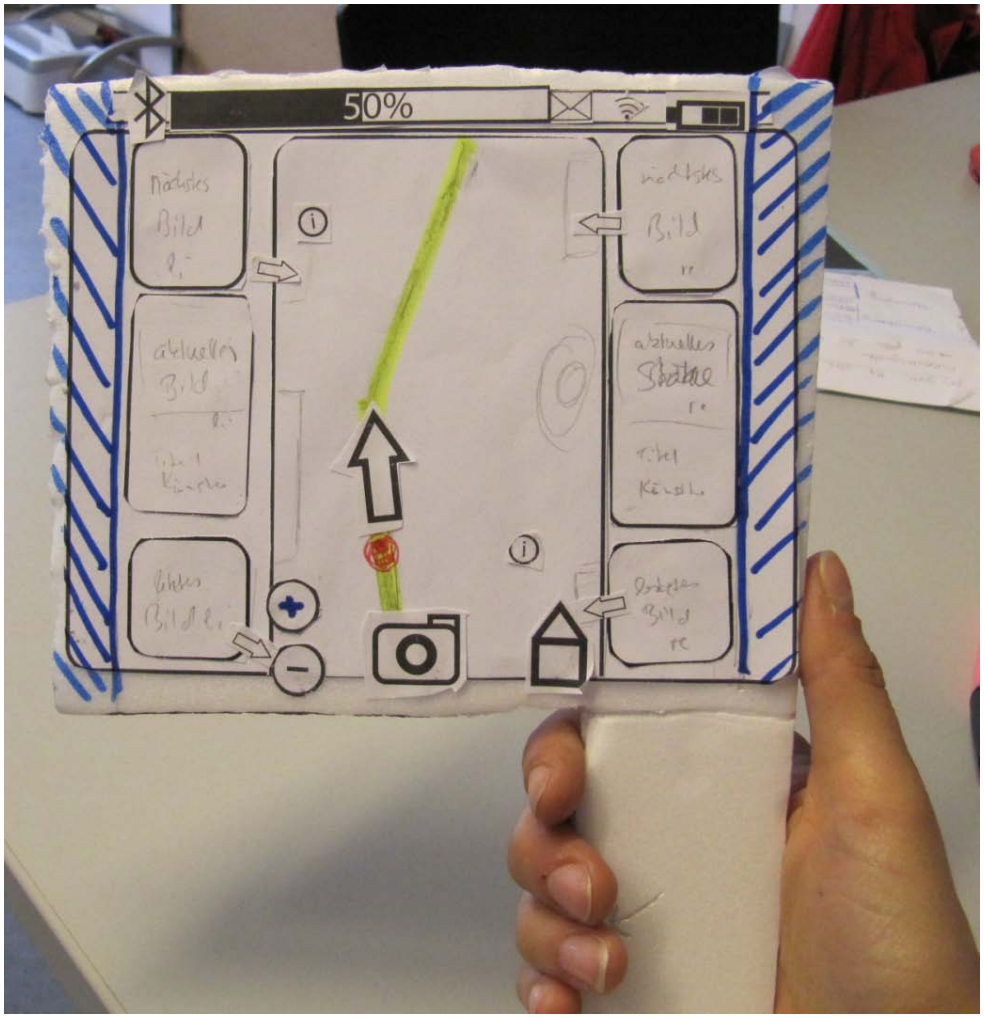


Brainstorming - Findings



Brainstorming - Results





Studies at the museum

at the “Pinakothek der Moderne”

Two studies with participants from brainstorming

First study without prototypes or props, second study with prototypes

Design

- Briefing
- Interviews
- Questionnaire

Assumption: Ideas can be communicated faster and easier with tools

→ get qualitative feedback

First study at the museum

- Two teams
- Questionnaire:

  General Questions (visiting the museum)

  Functions and Appearance of a new guide

  Demographics

Thursday afternoon, 2 p.m.-4 p.m.

10 interviews (about eight minutes on average)

Design

Kasse

First study – problems

- People thought of audio guide
- Description of certain functions was difficult
- Unintended use of help

Second study

- Same two teams
- Same questionnaire
- Using prototypes and props from the toolkit
- A week after first study
  7 interviews (9 minutes on average)

Studies at the museum – Impressions

Studies at the museum – Findings

Assumptions based on questionnaire after first study

- use of prototypes would arouse interest
- simplify communication of ideas

Questionnaire findings – second study

- Participants found that answers came quicker
- Visitors could imagine better what interviewers meant by their ideas

Conclusion

- Keep certain level of abstraction
- More constraints for brainstorming → no digression
- Distinction between elements merely regarding appearance and other functional features
- Toolkit useful → Further evaluation necessary

Outlook

- surveys with most essential parts from toolkit (size etc.)
- studies with unexperienced end users

Thank you for your attention.

Any Questions?

Literature

[1] Workshop Artifacts in Design: Representation, Ideation, and Process. Wiethoff, Alexander, Conradi, Bettina and Butz, Andreas. 2010

[2] *Prototyping for tiny fingers.* Rettig, Marc. 4, s.l. : ACM, 1994, Commun. ACM, Vol. 37, pp. 21-27

[3] Trochim, William M. The Research Methods Knowledge Base, 2nd Edition, http://www.socialresearchmethods.net/kb/ (06.07.2010)

[4] *Putting the users center stage: role playing and low-fi prototyping enable end users to design mobile systems.* Svanaes, Dag and Seland, Gry. s.l. : ACM, 2004, pp. 479-486.

[5] Christian Rohrer, When to Use Which User Experience Research Method, http://www.useit.com/alertbox/user-research-methods.html (06.07.2010)