Methodological Reflections on Working with Young Children

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Context

Inter-cultural computer clubs for children and parents in German elementary schools (Stevens et al. 2005)

- Children at the age of 6 to 12 years old
- Computer-mediated project work on a shared topic
- Construction of personally meaningful artifacts (games, animations, videos, stories, photo stories, ...)

Setting

Designing an interactive system for use by children in the clubs

- Investigating two clubs: Bonn (2004) and Siegen (2006)
- Participants meet voluntarily for 2 hours each week in the school's computer lab
- Children from families of diverse backgrounds: migrational, educational and economical

Setting (cont.)

- 18 evaluation sessions during 9 club sessions in May/June 2009
- 13 children at the age 7 to 10 yrs (9 male, 4 female)
- 7 out of 13 w/ migration background, new and old participants
- Evaluation during regular club hours in the clubs' localities
- Documented as screencast and audio/video of the participants

Approach

Evolutionary & Participatory Software Development Process

- Further development of an initial non-functional prototype with user feedback from the field
- Evolutionary
    - Iterative completion of individual modules/functionality
    - Re-evaluation of these modules after each iteration
- Participatory
    - Involvement of children in each development cycle
    - Use of the prototype in scenarios
    - Gathering feedback from observations of *trying out the prototype together*

Findings

- Evaluation in groups of two or three children, not individually
- Make clear (demonstrate) that their opinion is taken seriously

- Iterative prototyping fruitful, but sequential order of introduction of modules is crucial
- Scenarios help to draw comparisons between existing practices and new prototype

Findings (cont.)

- In-situ modifications of the software prototype together w/ the children hardly possible
- Offering many obvious opportunities to tinker with the system (free exploration)
- Use of artifacts previously created by the children themselves

- Easy to gather insights pertaining usability problems, but difficult to capture understanding of underlying concepts and ideas by children

Conclusion

Children are much more sensitive to good evaluation design

- Pairing children yields better results than evaluating with each child individually
- Consider low-tech prototyping in early phases
- Include many obvious opportunities for exploration
- Make extra clear that their opinion is valued and taken seriously
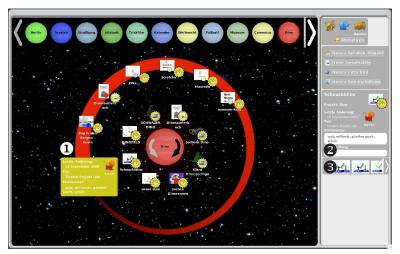
Thank you! Questions?

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Approach

Pre-study developed an initial non-functional prototype

Evolutionary & Participatory Software Development Process

- Spiral model (Boehm 1988), STEPS model (Floyd et al. 1989), Cooperative Prototyping (Bødker & Grønbæk 1991)
- Insights on working w/ children by Druin (1998)
- Pair evaluation informed by Constructive Interaction (Kahler 2000)

Splatch 2 – Main Window

❶ Visitenkarte und Umlaufbahn   ❸ VersionsBrowserWidget
❷ MetadatenWidget