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Note: There are actually only two researchers, one of these is likely an advisor.



Primer



- A paper on the field of IDC (Interaction and Children)
 - A subset of HCI (Human Computer Interaction)
- Focused on the "design of games for children that support embodied interaction, especially those that can be played outdoors by many children together."
- Hypothesis: For the innovative interactions within games, technology should be introduced as soon as possible in prototyping, to the point where paper prototyping at all can be a digression.

Arguments for lo-fi



- Any more than low fidelity (most notably, paper prototyping) will take considerable time to develop.
 - Thus, developers will be more hesitant to make changes, even if testing shows that change is needed.
- Working prototype tests often get feedback on areas the testing is not meant for.
 - Rather than comments on design, they'll focus on details like fonts and colors.





- The research is fundamentally split into two contributions:
 - A case study of the iterative design process of hi-fi prototypes with children
 - Hi-fi: a working, interactive prototype
 - The exploration of the design space of the technologies appropriate in designing outdoor games for children
 - Done through the use of the RaPIDO prototyping
 platform
- The general argument is that HCI/Game Design research + processes favor low fidelity prototypes when it may not be advantageous.

RaPIDO



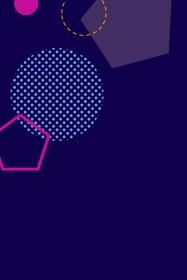
RaPID0

Individual devices with a
variety of features:

- RFID readers for RFID
 tags
- Sound processor + speaker
- RGB LEDs
- M XBee chip for radio
 communication
- (Later) accelerometer







I. First Iteration





The games played



F.A.R.M.

"Finding Animals while Running and Mooing"

Made in a creative workshop that hadn't been implemented yet

Players have a set of animals they need to get

Players take turns as "farmer", who possess an animal

In a turn, players have 10 seconds to catch the farmer to get the animal.

Follow The Light

Inspired by games one author played as a child

Players start at start line

Every turn, a color + animal + number are announced

If they have the color on their clothes, they can take the number steps, steps being proportional to the animal's size.

Save the Safe

Existing game from related literature

Robbers vs cops

Games are 3 minutes long

One cop has key

Cops have to guard robbers from key

Robber have to steal key and open safe



First Iteration - Setup



- This will be the case for all iterations, but the testing group are the children of Scouting Steensel in the Netherlands
- Participants are 7 10 years old.
- Fourteen children (3 girls, 11 boys)
- Eight RaPIDO devices
- Split into 2 groups and played F.A.R.M. and Save the Safe before swapping.
- All played Follow the Light, sharing devices

First Iteration - Results



- Children asked to talk about games and suggested changes through "collages". But they pretty much just wanted to play around than discuss the games.
- Rankings:
 - 1) Save the Safe
 - 2) F.A.R.M.
 - 3) Follow the Light
- There was a high measure of agreement here.



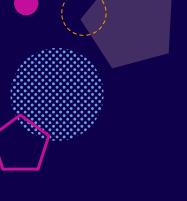
"Follow the Light" didn't work



- Some children even outright claimed it was boring.
- Mo agreement on the size of steps
- The color rule didn't really matter with teams of 2-3.
- The game was slow and uninteresting



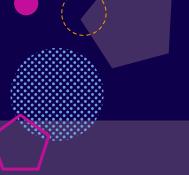




Second Iteration







Replacing "Follow the Light"



Invade the Castle

A mix of scout leader ideas and the existing game Camelot

2-3 player teams

Three "weapons" spread and hidden around the area

Team have to track them down using a "hot cold" light on the RaPIDO and return them to base

First to get all three wins







- Ten children (2 girls, 8 boys)
- Snowed and freezing temperatures
- This is the case for all, but these were done in November/December, so it is always dark.
- Likewise, the location is the same, the scout's
 woods, for 2 hour sessions.
- Same as before, F.A.R.M. and Save the Safe first, then Invade the Castle.

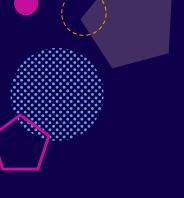






- Now asked for games to be ranked, followed up by interviews.
- Ranking:
 - 1) Invade the Castle
 - 2) Save the Safe
 - 3) F.A.R.M.
- There was high disagreement this time.
- Also, feedback wasn't that verbose.















- Fourteen children (2 girls, 12 boys)
- Three subgroups this time, but still F.A.R.M. and Save the Safe before Invade the Castle all together.
- Metal However, the subgroups were grouped by age instead of random this time.









- Only 10 of 14 stayed for interviews.
- Ranking:
 - 1) Invade the Castle
 - 2) Save the Safe
 - 3) F.A.R.M.
- There was medium agreement this time.



Conclusions

- Testing with the same group has its merits
 - Children became comfortable, it was possibly to read individual behaviors
- Radio technology was the most active from the RaPIDO
 - Allowed for game event communication and distance estimation, providing novelty
- "Games that need to be really experienced cannot be tested with lower fidelity prototypes"
- Such games need to be tested "in the wild"



Rant

I don't like this paper







- The basis of this paper is that technology-rich prototyping is valuable.
- But this isn't prototyping with technology this is making prototypes for games based on technology.
 - RaPIDO is present in all of them.
- Furthermore, while paper prototype is very common in general game design, there weren't any examples of them being practiced in the field of IDC.







- All these games seemed rather boring and had holes
 - F.A.R.M.'s athleticism favor
 - Follow the Light's cheating potential
 - Save the Safe's intrusive used of RaPIDO
 - Invade the Castle is actually pretty cool
- The issues are only really noticed AFTER testing, when they seem pretty obvious in hindsight.







- The change of the games is interesting, but there were so many confounding variables.
 - Games changed between iterations
 - The groups playing involved both new and old members
 - The number of players varied per iteration
 - Playing conditions varied
 - Even the review method changed (though this was probably for the better)



4. RaPIDO



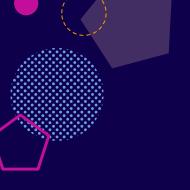
- The study utilizes the RaPIDO without much reason literally all children's games except the ones made here were developed and played without RaPIDO.
- RaPIDO is made by Iris Soute (with other colleagues
 of course) and so it's use is seemingly biased.
- It only really caused issues with the games (the exception being Invade the Castle).







- Not much of this work can be extrapolated out to more general game design practices.
 - Outdoors children games have most of the prep in rules development and polish.
 - So there isn't much discernable difference between lo-fi and hi-fi prototypes.
 - Much less board games and video games, not even sports can't be prototyped in fashion - there are just far more considerations.





Takeaways









- When to use paper prototyping vs higher fidelity prototyping
- The potential of children in prototype testing
- Accessing the community for game design
 - Scouts, schools, etc.
- Practicing game design beyond our comfort zone of "video games"
- Use of the same testing on multiple occasions









