
Em'power' me – an alternate take on pervasiveness

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Abstract

This work in progress paper describes the user centered design of a "toy" ecosystem. Encompassing both - a tangible, physical toy and a digital equivalent, the goal of the ecosystem is to transcend socioeconomic boundaries and facilitate an understanding of cultures beyond one's own. Through the workshop we invite others to work with us and help us unravel unseen challenges in our attempt to make play truly pervasive.

Author Keywords

HCI4D; Development; Toy Design;

ACM Classification Keywords

HCI

Research Summary

Research has examined the positive role played by toys in a variety of contexts including their ability to enhance cognitive behavior[4], stimulate creativity[6] and promote physical activity[7]. We seek to build on this body of work by examining their potential role as change agents, capable of transcending physical, cultural and socioeconomic borders thus creating sustained long term impact.

This paper is the result of an exploratory study of school going children between the ages of 4-6 in India,



Figure 1: The physical version (prototype) of the toy made with cardboard (and other cheap materials)

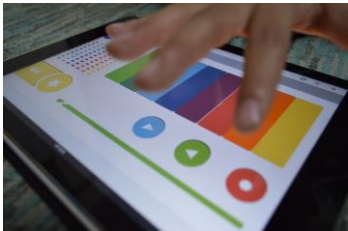


Figure 2: The digital equivalent made for the iPad (prototype version).

Saudi Arabia, Somalia and the United States. These children came from high, middle and low SES households[5]. The objective of the study was to understand their behaviors by gaining insights into activities they engaged in and found interesting. As part of the qualitative inquiry we conducted over 20 interviews with parents and teachers of the target audience. This was an approach we resorted to after several failed attempts to interview children in a structured fashion. In addition, we conducted several participant observations in multiple sites including 3 schools, 3 public playgrounds and 1 hands on museum. Transcripts and field notes were compiled and organized into an affinity wall, which served to inform our designs.

Findings

Children of low SES rarely mixed with or played with children of upper and middle SES. The extent of fluency with the language specific to the culture – (for example Hindi in Indian children) was a major barrier that prevented children in different SES strata interacting with / mixing with each other. In addition, another major difference was that children belonging to middle / upper SES spent their play time playing games on digital devices like iPads and mobile phones while the lack of access to such technology meant that children of low SES primarily stuck to physical toys. The other findings which influenced our design decisions were as follows –

- Both teachers and parents encouraged activities which stoked creativity
- Teachers specifically ensured that students appreciated their peers work – especially in the context of tasks involving group work

High level Design Decisions

- ‘Music as language of exchange’ – The primary function of the design allows the user to create and exchange music. While facilitating a common language of interaction, this also falls in line with existing research about music making encouraging pro social behavior while stimulating creativity.[1]
- ‘Listen and appreciate’ – Upon exchange the children can listen to tunes created by others and appreciate them by sending an ‘applause’, which children can keep a count of.
- ‘Eco-system’ – The eco system which facilitates this musical exchange includes both a physical toy and its digital counterpart. Both versions seek to serve the same function in every way. In order to eliminate the problem of access, the physical version of the toy will be made available for free (for children in low SES) via partnering NGO’s with funds generated for the same via the digital application. This is in line with the Toms one for one framework.[8]

Future work

We are currently prototyping both – the digital and physical versions of the toy. As appropriate next steps we intend to evaluate the preliminary designs from both a theoretical and practical perspective. While evaluation from a theoretical angle will involve measurements against existing frameworks like the play pyramid[2] and Piagets measures of cognitive development [3], practical work will involve putting both versions through user testing.

‘Pervasive’ – an alternate perspective


We take an alternate take on the term ‘pervasive’, which in other technology contexts places emphasis on

the computing side of HCI. By shifting focus to the human component, our interpretation of pervasive extends play to all including those with limited technology access thus, eliminating boundaries of access while fulfilling larger research goals. It is in this light that we believe that this project fits within the realms of this workshop.

References

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<http://www.toms.com/improving-lives>.

Superhero Profiles (well really ?)




Name: *Ro han (the warrior) Malpani*
Affiliation: *with ?*

Strengths: *"I am good - real good" - a popular movie quote*

Weakness: *Boom - none whatsoever*

Confidence |
Technology lover |
Ideator (whatever that is) |
Selfie taker |



Name: *Vai(carious) ssshh (not so quiet) nav*
Affiliation: *God alone knows*

Strengths: *Have to think. Still thinking. Will continue thinking.*

Weakness: *Space insufficient*

Generally Dull |
Foresight |
Cleanliness |
Deep thinker |

Article Inspirations

1 - <http://thegamehaschanged.net/what-are-pervasive-games/>

I am kind of not very smart and before the submission to this workshop had little idea about what pervasive play even meant. This article provides a decent breakdown of the same. Well, I also did know about a domain called game development not game studies for sure. So lots of learning bits in this article – read on

2 - Johan Huizinga, *Homo Ludens: a Study of the Play-Element in Culture*. Published originally in 1944.

A classic piece in game literature ! Never too old.