Evocative Experiences in the Design of Objects to Encourage Free-Play

Andrea Rosales, Ernesto Arroyo, and Josep Blat

Carrer Tanger 122-140
08018 Barcelona, Spain
andrucha@gmail.com, {ernesto.arroyo,josep.blat}@upf.edu

Abstract. In the near future technologies will be even more present in every day objects, which should add a playful value for children, to make use of their natural interest to play while being socially and physically active. We have moved towards this direction by building on free-play experiences identified through a face-to-face ethnographical study conducted over 4 months. The study shows that, beyond the increase of screen based entertainment, children have scarce opportunities for free-play (leading to them being more sedentary). Moreover during free play, they combine the interest of an individual activity, with a personal challenge, while collaborating and competing. Based on these findings we propose augmenting accessories with sensor systems giving feedback while doing specific body challenges. We have developed and tested two prototypes based on this concept: shoes that blink while jumping and a fanny pack that blinks while moving.

Keywords: free-play, social skills, motor skills, multi-experiences, ubiquitous, augmented technologies.

1 Introduction

It is expected that technologies will be even more present in everyday objects in near future. Technologies for children could be introduced in clothes, accessories, simple toys and playgrounds, and some of them can be used to sparkle children's creativity, stimulate face-to-face interaction and free-play to promote social and personal skills, for instance. Researchers have been working around these issues, mostly creating brand new ideas, but alternative approaches could lead to innovative products for final users. We have taken the route of understanding successful free-play experiences through ethnographic lenses to build on successful free-play experiences. This way, technology would add a new level to the existing free-play experiences.

Free-play encourages children to practice social skills, as they have to come up with new ideas together, they have to express, negotiate and collaborate with each other. Free-play occurs when kids spontaneously get together to play, when they are physically active, specially when they choose what to do, and do not have a concrete objective or a rigid set of rules [1], [3], [6], [4]. In spite of this, many factors increase or decrease the opportunities for free-play [8], such as the high interest of kids for

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screen based entertainment, the increasing number of extracurricular activities or a hectic life style [3].

In this paper we describe the evocative design process of free-play oriented interactive objects. The first phase of the process includes the use of ethnographic methods for understanding children's relation with free-play in specific living contexts. Through this phase we identified objects and activities related with free-play as well as routines and spaces that might influence their free-play. We chose to elicit new ideas with ethnography methods as it provides "a way of getting a first hand view of the ground realities of everyday life" beyond what people say or do and can be captured through surveys or focus groups [1].

The second phase of the process includes applying the evidences emerged from the ethnographic phase in the conceptual design of new objects to build on successful free-play experiences.

According to this process we have created Playful Accessories; clothes that act as playful objects, that children wear all the time and that encourage free-play in unexpected moments.

2 Evocative Design Process

2.1 Ethnographic Studio

The ethnographic study was carried out throughout 4 months observing around 240 kids playing in parks, schoolyards and homes in three districts of Barcelona (Spain). The observations were conducted to understand objects, activities and routines related with free-play.

We collected contextual evidences in real life situations using participation-observation, note taking, and informal interviews [1]. We analyzed the data through Grounded Theory [9]: we read our field notes, generated an initial list of open codes, and grouped them into initial categories. The four main categories that emerged include:

"*Let's jump!*": Kids in this age get involved in physical challenges, playing with strength, speed, gravity, coordination, etc. Beyond playing with a airplane, a ribbon or with a pebble they are facing physical challenges.

"*I've got no time to play*": The daily routine is full of curricular and extracurricular activities and gives no room for free-play.

"*I'm bored*": There are a lot of boring moments, such as going to the supermarket, or visit grandparents. However, being bored can be opportunity to sparkle children's imagination and boredom is more easily overcome with a suitable object within reach.

"*Can I play with you?*": While playing with body challenges such as scooter races or climbing a wall, kids mix this individual activity, with collaborative and competitive social patterns.

2.2 Design Concept

Based on ethnographic findings we have defined the design concept of playful accessories to encourage free-play.

We aim at designing playful accessories that give feedback to children's actions to encourage free-play. These sensor-augmented accessories can react to specific body's actions and movements, and, according to the ethnographic study, kids are highly interested in body challenges.

Moreover, this playful added value on everyday clothes or accessories can be put into practice by children in unexpected situations or in the different and multiple *I'm bored* moments happening every day (identified in the ethnographical study). The free-play is encouraged – even if *there is no time to play*.

We also seek that the augmented accessories offer a combination of individual activities and personal challenges with the possibility to collaborate or compete with others, which is a key social pattern identified during our observations of free-play in real-life settings.

Our proposal takes advantage of current sensing technologies to create smart clothes adding a relevant value Steffen [5] by add a playful one for smart clothes for children.

2.3 Prototypes

We have designed, developed and tested two Playful Accessories: Statue and FeetUp.

Statue: is a fanny pack that blinks and makes sound whenever the user moves. Statue stimulates children to play games related with being a statue or moving without being noticed, which are commonly played by children, according to our ethnographical observations. It is inspired in many folk games, which include being statue. According to our evaluations, the accessory added a new condition in their everyday settings that encouraged transforming their frequent games. Social interaction emerged by slightly modifying the rules in a social dynamics that challenged power, leadership and creativity, they also practiced body language, imitations and small talks.

FeetUp: is a pair of shoes that blinks and makes sound whenever the user jumps, or is off the ground. FeetUp stimulates children to play against gravity, one of their most frequent activities during free-play. According to our evaluations, with FeetUp each found his/her personal style to play with the accessory; doing ballet, capoeira, handstands and so on. This led children to associate with someone with whom they had a common interest, shared their knowledge and tried to improve their performance together, generating challenging social experiences.

3 Conclusion and Future Work

We suggest using ethnographic methods to study children's relation with free-play in specific contexts, where children's life happens. Ethnographic explorations may be used to build on existing evidence of factors that facilitate or restrict the opportunities for free play to design evocative objects that encourage free-play.

According to our ethnographic explorations we propose add a playful value to clothes or accessories children wear all the time, to make use of their playful attitude and their infinite interest to improve body challenges.

We have designed 2 playful accessories: FeetUp and Statue. Both are wearable objects that encourage free-play in unexpected situations everywhere and all the time.

Future work includes compare the evaluation of both accessories to understand how the different features of each design influenced the experience, and define a set of design opportunities, that can be taken into account in the design of future objects to encourage free-play.

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