Eba Playful Experiences

Lara Cardoso Goulart
lxc9693@rit.edu

Follow this and additional works at: https://scholarworks.rit.edu/theses

Recommended Citation
Accessed from

This Thesis is brought to you for free and open access by RIT Scholar Works. It has been accepted for inclusion in Theses by an authorized administrator of RIT Scholar Works. For more information, please contact ritscholarworks@rit.edu.
Eba Playful Experiences

by Lara Cardoso Goulart

A Thesis submitted to the Faculty of the College of Imaging Arts and Sciences for the degree of Master of Fine Arts in Industrial Design

Master of Fine Arts Degree
Industrial Design
School of Design
College of Imaging Arts and Science
Rochester Institute of Technology

May 12, 2016
THESIS COMMITTEE APPROVALS

STAN RICKEL
Chief Advisor
Graduate Director Industrial Design and Associate Professor
School of Design

DANA WOLCOTT
Associate Advisor | Lead Innovation Coach
Simone Center for Student Innovation and Entrepreneurship

MELANIE MARTINIK
Associate Advisor | Visual Arts–All Grades MST Teacher
Art Education

PETER BYRNE
Administrative Chair
School of Design

LARA CARDOSO GOU LART
MFA Industrial Design Candidate
School of Design
Kid, you’ll move mountains.

Dr. Seuss
Abstract

This thesis is a study of the impact of busy lifestyles on children’s education, considering playtime. Eba Playful Experiences is the result of applied design methodology to solve the lack of play between children and parents, taking into account their routine and needs.

The research includes the study of the importance of play and the problems caused by its absence. The process contains user understanding considering children’s stages of physical, social and cognitive development. The project involves learning from different areas of study: product and interaction design, child psychology and business.

Eba Playful Experiences is an online company based on a subscription business model. Every month, a kit of craft materials and suggested activities is delivered to the family’s home, so parents do not have to plan ahead for a fun and creative project. Each monthly edition comes with three kinds of activities designed for children from 3 to 7 years old; that adapts to the family’s routine.

Keywords: play, child development, design, family, experience, interaction
Acknowledgments

My deepest gratitude to Stan Rickel, who expands the boundaries of education and inspire us to be more than our best self.

I appreciate all the great advice and wonderful support of my committee members Melanie Martinik and Dana Wolcott, and also to my teacher Dan Harel. This project wouldn’t be the same without you.

Thanks to my mom, dad, sisters, Scooby, cousins, aunts, uncles, and grandparents, who were always present, no matter the distance. The way that I grew up, all the memories of my childhood, the idea for this project, these all come from you.

My special thanks to Vinicius for his lovely support and for being my daily motivation and inspiration to keep doing my best. Having you with me makes all the difference.

Thanks to my classmates who made a two years program last forever in my heart. I would like to say particular thanks to Kurtis and Julia for taking our professional pictures (despite it being little compared to all they do for us).

I would like to show my gratitude to my Brazilian friends, in special to Gabriela, André, and Mariana, who were my step family.

I appreciate the valuable voluntary feedback of 116 people who responded to my online survey: 42 mothers, 11 fathers, 20 aunts, two uncles, seven grandmothers, two grandfathers, one godmother, one godfather, three cousins, six professionals, three sisters, one friend, 17 unknown.

I acknowledge the financial support from the CAPES Foundation, Ministry of Education of Brazil, Brasilia – DF, Zip Code 70.040-020, under grant 88888.075884/2013-00.

All my achievements to God for making the unbelievable happen.
INTRODUCTION

1. PLAY
   1.1 Definition of Play 4
   1.2 The Elements of Play 6
   1.3 Patterns of Play 6
   1.4 The importance of Play 9
   1.5 Parenthood in child’s play 13
   1.6 Play and Technology 14

2. USER UNDERSTANDING 16
   2.1 Children 16
      2.1.1 Child-centered Design Requirements 20
   2.2 Parents 21
      2.2.1 Survey with parents 22

3. FIELD RESEARCH 29
   3.1 The Strong Museum for Play 29

4. COMPETITOR ANALYSIS 32
   4.1 Kiwi crate (USA) 32
   4.2 Arte surpresa and Box Joanninha (Brazil) 33

5. DESIGN DEVELOPMENT 35
   5.1 Ideation 35
   5.2 Solution 38
   5.2.1 What is in each eba kit? 39
   5.2.2 Themes and narratives 40
6. Marketing
   6.1 Branding  42
   6.2 Website  51

7. Business Plan  53

8. Future Advancements  58

9. Conclusion  59

10. Bibliography  60

11. Appendices  65
   11.1 Online Survey Questions  65
List of Figures

Figure 1. Timetable  
Figure 2. Children Development by Play  
Figure 3. Age of Respondents  
Figure 4. Hours of interaction respondent-child  
Figure 5. Time that children spend playing at home  
Figure 6. Children play less than an hour or do not play outside  
Figure 7. Time spend in each type of play for a typical 4 years old child  
Figure 8. What parents/caregivers think about the time they play with children  
Figure 9. Parents/caregivers opinion on getting a monthly craft kit  
Figure 10. How much parents/caregivers would pay for a monthly craft kit  
Figure 11. Kiwi Crate, “Fun with Flight”  
Figure 12. Arte Surpresa Box  
Figure 13. Ideation mind map  
Figure 14. Ideation mind map (continuation)  
Figure 15. Eba kit themed “dinnertime”  
Figure 16. Inside each kit: “Quick Start”, “Long Playtime”, and “Explore the City”  
Figure 17. Brand Deck  
Figure 18. Chosen concepts: Playful, Experimental, Emotional  
Figure 19. Ideation of names  
Figure 20. Initial logo ideation  
Figure 22. Logo and tagline  
Figure 23. Typefaces  
Figure 24. Official Colors  
Figure 25. Illustrations from human figure to animals characters  
Figure 27. Illustrations demonstrating familiar affection  
Figure 28. Website home page layout
Introduction

It is known that many educational problems are born in a home environment because of the lack of communication between parents and kids. Parents are very busy, but they would like to spend more time with their children. They recognize this is important for children rearing and human development. Considering that parents’ free time is very short, it has to be harnessed efficiently. On the other hand, kids need attention and care. They love to play with their parents, but the family does not have a variety of activities in mind to perform.

Play stimulates children’s social, motor and mental development. It is a powerful way to teach values and behavior to children, which will have impacts in the future. Toys can be used to promote symbolic communication. According to Lightfoot (2013), symbols are efficient tools to educate children, because they control the natural impulses and stimulate cognitive functions.

There are multiple toy options available in the market. Most of them are much desired when they are in the stores. However, this emotional attachment to children lasts less than the toys’ lifespan or the child’s developmental stage does not match with the expectations of this particular toy anymore. Because of that, toys are discarded or rendered obsolete even if their physical conditions endure longer. It causes further issues, related to consumerism mindset and sustainability.

Do-it-yourself philosophy comes to rescue hands-on activities in order to valorize the process of making and the whole system that made it possible. This method involves motor and mental development, and the final product gives the feeling of pride.

Objectives

The primary purpose of this thesis is to enhance education by improving the relationship between kids and parents through play. By strengthening families’ affinity, it is possible to create individuals able to improve the world we live. There will be an online company that delivers boxes (monthly subscription) filled with DIY activities. Children can build their toys to play with their relatives and other kids.
The project will be guided by concepts regarding fun, education, and psycho-social development. This project aims to be non-gender specific, which means that although having different interests, all kids will have the same materials to play. In the long-term, this may impact the reduction of sexist thinking in favor of egalitarian opportunities for genders. The research will be conducted considering the Brazilian context, more specifically, the city Brasilia. As being a planned city, geo-localization might be applied to induce interaction between kids from the same neighborhood.

All goals are listed below:

* To stimulate children skills to crafts;
* To boost creativity;
* To provide more time for play, spending parents time efficiently;
* To consider child development and age stages;
* To stimulate thinking about how things are made;
* To create a deeper connection to the things that are made by themselves;
* To stimulate interaction between children, relatives and environment;
* To create a business to monthly provide those tools (boxes) as subscriptions.

Methods of investigation and implementation

In order to design centered on the user, design thinking methods was applied. During the process, different methods were implemented, to extract the most accurate information from the target market.

The d.school of Stanford suggests the Bootcamp Bootleg kit, which incorporates the steps: Empathize, Ideate, Define, Prototype, Text, Repeat!. Those phases happened simultaneously and many times throught the design process.

The methodology is also based on the book “Universal Methods of Design”. The “Exploratory Research” was one of the first steps, to gather information about child development and the existing tools that help this process. “Mind maps” was used as a method to organize the thoughts and learning.
In order to gather all the information and report the deliverables to the professors and community, I used a blog (laragoulart.com/mythesisproject). Because of that, the feedback is open to all who are interested in the project, which is a valuable tool when designing focused on the user.

Timetable and milestones (Sep/2015 – May/2016)

![Timetable Diagram]

Figure 1. Timetable
1. Play

1.1 Definition of Play

I sometimes compare play to oxygen – it’s all around us, yet goes mostly unnoticed or unappreciated until it is missing. (Brown, 2010, p6)

The research started with bibliography research on theories of play. There was a previous tacit knowledge about play, considering life experience and natural curiosity about the topic from the researcher. The initial concept that people usually have is that play is something not serious, and it is mostly done by children. However, theorists show that play is essential for our survival and development as individuals. Through play, we experiment with interactions that are useful throughout our entire life; we develop our physical, social and cognitive skills.

Play is biologically natural; it rises before our consciousness or capacity to speak. As a primal activity, it is a genetic birthright (Steve Keil, 2011) evolved by our curiosity to explore the world, connecting our hands to our brain.

Stuart Brown (2010) considers cultural entertainment, like art, drama, sports and music as a product of play. Through those activities, adults play. It means that play is associated with the experience and the satisfaction that it creates, not restricted to a particular place or action.

Play has many different applications and connotations. The definition of play in the context of this project follows the same line of reasoning as presented by the National Institute of Play. Stuart Brown (2010), the founder of this Institute, in his book “Play”, defends that play is so diverse and preconscious that it is difficult to define. He lists some properties of play:

* Apparently purposeless;
* Voluntary;
* Inherent attraction;
* Freedom from time;
* Diminished consciousness of self;
* Improvisational potential;
* Continuation desire.
All topics considered, we can conclude that play is done for its own sake, it is self-motivated and not mandatory. It is fun and make us feel excited, it makes us lose the sense of time, it is free from our own judgment. It does not follow a rigid script as it is developed while it is occurring, and there is always the feeling of “keep playing”, even if it requires changing the rules or taking a break.

By contrast, some theorists point to a negative side of play. Brian Sutton-Smith believes that play is not always innocent so that it may lead to aggressive or violent actions, like bullying or physical assault. Stuart Brown, on the other hand, argues that, because there is a continuous desire to keep playing, people tend to adjust their level to the opponents so the game does not stop, what he calls “automatically self-handicapping”. So for him, what is known as the “dark side” of play is actually an artifact used to deal with difficult emotions, but in fact, this is not play.

This said, for the purpose of this project, it is considered that players may experience negative situations while playing, but its overall benefits and learning might help them overcome difficulties in a more active and creative way, tending to lead to more harmonious social interactions. This also shows the significance of play in teaching us how to deal with real-life situations.

**Play as a state of mind**

As seen beforehand, it is hard to define play because of so many different applications. Among the scholars, play is related to an action, an interaction, an activity, a disposition, and a context (Thomas S. Henricks – American Journal of Play, volume 8, number 1). Henricks also defines play as an experience.

Following that reasoning, Brown presents play as a state of mind, the emotional state in which we are immersed when playing. It is intrinsically motivated and provides a feeling of satisfaction and pleasure. He points that the attunement between infants and parents are the base of this state of mind.

When we let play be present in our lives, this state of mind may be applicable to any context.
Stepping out of a normal routine, finding novelty, being open to serendipity, enjoying the unexpected, embracing a little risk, and finding pleasure in the heightened vividness of life. These are all qualities of a state of play. (Brown, 2010, p173)

Players are seen as individuals who are able to overcome difficulties with grace. Playing with each other, might cause discordance and someone may be hurt, for example when joking about something too personal. However, when those interactions occur while in a playing state of mind, these hurts are surpassed and prevented in future situations.

1.2 The Elements of Play

Scott Eberle (2014) from The Strong National Museum of Play presents six elements that are involved in every play, not necessary in this order:

* Anticipation: anxiety that expects play, followed by curiosity;
* Surprise: the happy feeling of discovering the unexpected;
* Pleasure: enjoying the moment and feeling good;
* Understanding: incorporating new ideas and acquiring knowledge from the game;
* Strength: the power of knowing something else;
* Poise: being grateful for having a balanced experience.

All those elements will be used as guidelines and requirements for the outcomes of this project. The final solution must provide anticipation, surprise, pleasure, understanding, strength, and poise to the users – parents, caregivers, and children.

1.3 Patterns of Play

In order to provide variety and stimulate different aspects of development, the research included a study and classification of various types of play. According to the National Institute for Play, this subject can be categorized in seven patterns, detailed below.
Attunement Play

This type of play is probably the first type of play in life. It is regarding the emotional contact between the players. It starts with the eye contact between baby and parents when this connection generates a response from the right cerebral cortex, responsible for emotional control, which translates to a smile and joy.

Body Play & Movement

Body play is the pattern seen in animals as a result of their evolution. They emit play signals by moving their tail, jumping, or just having fun finding their balance.

By moving our bodies, we learn about the world and ourselves. Body play lights up the brain and nourish learning promotes discovery and teach us how to be flexible and overcome barriers. This type of play is also used as a first stage to get into the state of play, for example, in the context of a group dynamic, in order to get people more creative.

Rough-and-tumble play involves body contact and may be related to violent behaviors. Brown shows the importance of that for the maintenance of social awareness, cooperation, fairness, and altruism. In childhood, rough-and-tumble play teaches about social practices, like give-and-take and it is associated with impulses control in later years. In adulthood, this type of play manifests in tensions caused by games and sports. This physical contact may also be replaced by verbal jousting, like teasing, kidding or joking.

Object Play

This type of play is stimulated by toys and objects, that immerses people in a playful state, lighting up curiosity and providing a hand-brain connection that progresses cognitive skills.

The neurologist Frank Wilson (1999) confirms the importance of learning through experiencing the world with our hands, especially in our early stages of development. By our contact with objects, we develop circuits in the brain that are critical to evolving our capacity
of understanding and solving complex problems, which is essential to achieving success in adulthood.

**Social Play**

When people play and interact with each other, they learn principles for living in society, which is essential to create a sense of belonging. Mutual play teaches about empathy, which is crucial during the preoperational stage of development (3 to 6 years old), so children learn how to care and share feelings of another. Through social play, we experience some basic principles for community living, like giving-and-taking, taking turns and expressing feelings.

**Imaginative and Pretend Play**

Imaginative Play is a mix of reality and fantasy, which allows us to be a different self. It starts around the age of two by changing narratives according to toddler’s imagination and creating their own sense of their mind. The psychologist Cyntia Lightfoot (2013) highlights the importance of make-believe play to develop the ability of children to regulate their actions. The benefits of this pattern of play are the development of emotional resilience and creativity, empathy, understanding of others and personal coping skills. Imaginative play is also imperative to a work context because it allows people to see a problem from a different perspective.

Brian Sutton-Smith shows the importance of make-believe play to the modern society, where symbolic language is so present in computers, software, and technologies. In imaginative play, the things are representations of real artifacts, which helps with understanding associations and intangible concepts.

**Storytelling-Narrative Play**

Storytelling-Narrative Play embraces all kinds of stories: parents’ tell about their childhood, books and movie narratives. This type of play is a great learning tool for children, as it involves a different context and storyline, which brings a new perspective, helping the child to create his/her own understanding of the world. It is fun and timeless.
Creative Play

It regards the use of play characteristics to innovate and create for business and technology. It emphasized the importance of play at any age because it shapes our brain and help to deal creatively with established patterns, especially at work. Creative Play is being applied to many methodologies at innovative companies, like IDEO, a Design and Innovation Consulting Firm.

Free Play

In addition to those patterns proposed by the National Institute for Play, Sutton-Smith (1974) also considers free play as an important category. Free Play happens naturally for children who are used to play. However, if they are not stimulated to play during their young ages, they will not know how to engage in that state of mind.

Children play freely when there are no given rules and when they have to create and manage that by themselves. Psychologists consider it very valuable for children because they have to create social life in their play, learning useful principles for their lives. Sutton-Smith says that until about the age of ten, children tend to spend as much time as arguing the rules as they do in playing. The conflicts and group management are important learning experience.

_The most important principle in all this is that you teach this kind of play by playing. You do not talk about it. You do not say "What do you want to play?" or "What shall we do now?" That is fatal._ (Sutton-Smith, How to Play with your Children, p112)

1.4 The importance of Play

There are many psychologists interested in understanding the importance of play. The Strong Museum of Play compiles the benefits of play in four categories: Physical, Cognitive, Social and Emotional Development.
Physical Development

Play is associated with physical development because it develops the muscles, bones, motor skills and coordination. Through play, children experience some movements that would be useful in the future. Stuart Brown also relates the physical challenges that play brings with important decisions at work, for example. He affirms that the principles that are learned while playing might come to mind during negotiations or important life decisions. He also points some evidence that play might increase the immune systems making our bodies stronger against diseases.

Cognitive Development

Play is also related to knowledge acquisition and understanding. The Strong Museum points to the development of abilities like learning, talking, reading and think.
Neuroscientific studies show the correlation between three-dimensional play and the development of the cerebellum and frontal lobe, which is responsible for cognition. The Neuroscientists Sergio Pellis and Andrew Iwaniuk and the biologist John Nelson reported the relationship between playtime and brain size for mammals, confirming that the animals with larger brains (compared to their body sizes) were the most playful ones.

Studies with animals proved that play makes them smarter and more adaptable. Stuart Brown translates that to the human context as creativity and innovation and affirms that people who were growing up playing are more willing to “see solutions” for significant challenges.

Besides, through our imagination and storytelling, we create new connections between neurons and brain centers and we strengthen existing weak ones, developing a complex mind and enhancing learning itself.

Stuart Brown also points to the importance of play to become a master in any subject. For him, the pleasure and fun provided by play are essential for connecting for so long a person to a discipline to bring her to mastery. Without joy, people will lose interest before achieving this level.

**Social Development**

Play teaches children how to live in a social environment. Fundamental learnings, like empathy, collaboration and conflict resolution can be learned with play practice. By playing, we inquire knowledge about the environment and the rules of interacting with friends and others.

Studies with animals evidence that the natural behavior between predator and prey can be overridden when those animals emit play signals. Stuart Brown, in his study of polar bears and husky dogs, showed that those play signals bring the animals to a comfortable zone, making them feeling safe even if this is just for a moment. When they feel safe, they are free to interact and socialize.
**Emotional Development**

The emotional benefits of play regards to the state of mind that it provides. Play seems to be a tryout for other things in life, in a safe scenario without threatening, so it modulates deep fears and insecurities.

Fantasy play also develops our capacity to re-create ourselves throughout life, engaging us in the process of finding different ways of being and seeing different solutions for our personal problems.

Resilience and persistence are also important takeaways from play, where we learn how to deal with life's wins and losses with grace, making us optimistic for new challenges.

**Can play change the world?**

As seen in the previous topics, play has always been associated with biological adaptation and evolution of many species. Once we understand the importance of play for children and adults, it is possible to assume that play also has impact on our society and culture.

Steve Keil, in his TEDx Talk “A manifesto for play, for Bulgaria and beyond” (2011), shows the solution for a stagnated society like Bulgaria. He affirms that play is the catalyst to revolution-ize the way people work and live in there and in other countries.

Keil (2011) points out the economic reasons for considering play as a key transformative force. In Bulgaria, it is predominant the mechanized work started in Industrial Revolution in the XIX Century. However, the new world requires creativity and adaptability, which comes from innovative and playful minds.

The effects on culture and long lasting benefits of creative people is also confirmed by Stuart Brown (2009). He says that creativity brings together ideas from different fields, and it is the source of all growth. The fact that play promotes a mix of fantasy and reality is crucial for the various connections and associations that happen in creative brains. Besides, the state of play opens our minds to the unexpected, helping to find the unusual among the common.
Another important reason why play may bring significant changes to the world is regarding social improvement. It stimulates cooperative socialization and foster empathy and caring for others, making each other more willing to communicate and solve problems without violent actions.

Play also can promote a better world by raising motivated and positive individuals, with new levels of mastery and imagination. It may also help to cope with global adversities, preparing humans to deal with ambiguity and fatalism.

1.5 Parenthood in child’s play

The study considers the busy lifestyles that families have and the importance of parents and children playing together.

The benefits of parents that are convinced that play is essential for life is not only restricted to themselves. If this is nurtured in their home, the environment will be favorable to encourage natural play from children, which may be contagious to adults if they are open to that.

Parents tend to keep their children busy with school and extra activities to provide more education and give anything that they couldn’t have in their childhood. However, this excess may overwhelm young minds, who needs free time to organize their thoughts, discover by themselves and develop their own understanding and critical thinking. A child who is always following the busy schedule does do not face the necessary leisure that brings creativity.

Certainly, parents and mentors are pivotal, but the self that emerges through play is the core, authentic self. (Brown, 2010, p107)

Stuart Brown defends play as the main path for self discovery. Time for play has to be included in children’s routine, and parents have the role of monitoring and keeping a safe environment. Playing all together as a family is also relevant to mold children’s behavior and keep track in practice what they are learning and reproducing.

Regarding long-term skills development (music, language, sports), it is essential to stimulate children to do that with joy, like they were playing. In order to achieve mastery, the long-term
motivation will come from internal feelings of competence and satisfaction, which does not happen if parents and teachers force performance as an obligation.

Stuart Brown points that play is very natural for children, but adults need celebratory and ritual play, like wedding and birthday parties so they can have an “excuse” to immerse in the state of play while other work activities are pending.

Work tends to be a refuge for parents and an excuse for play deprivation. What is missing from that is the connection between play and labour. A responsible adult should enjoy life and have work that excites him/her.

*If we are not completely full of ourselves or too serious, we can see that we can do a better job of helping our children be more joyful if we help ourselves remember how to play. If we are open to some self-evaluation, and do so with a lightness about our life opportunities, we will actually find a way to play.*(Brown, 2010, p122)

Likewise, Sutton-Smith (1973, p113) argues that the long-term effect on children’s learning is greater if we teach parents how to play with their kids. The advantages of that are many: it increases empathy, makes children and relatives enjoy each other more, and brings families closer. All those benefits are transferred to other relationships, inducing the little ones to be friendlier and happier with other children and increase positive socialization.

However, living in a society requires learning how to deal with the struggle and the unpleasant. The sociologist Émile Durkheim supports that through play parents and children can face life’s threatening events. An adult-oriented teasing play would be favorable to introduce children to more complicated situations.

### 1.6 Play and Technology

The advent of digital technology facilitated the easy access to information and changed the way people interact with each other. Adults can be reached out anytime, which breaks the limits of working in an office and relaxing at home. Children spend time with their families with their attention divided by tv, email, and social media notifications.
According to a survey conducted by the Highlights Magazine (2014), 62% of children complain that parents are distracted when they try to talk to them. When asked about its cause, 51% of the answers pointed to technology (phones, TV, laptops). The editor in chief Christine Cully, affirms that it is necessary to find those little moments between children and parents focused only on their interaction, without any distraction.

The Brazilian Magazine Crescer shows that the situation in Brazil about technology and parenthood may be more alarming. A study conducted by AVG (online security company) pointed that 71% of the Brazilian parents assume to check too much their smartphones, compared to the 54% global average. 87% of their children agreed with that information, which may show a negative impact of technology on family’s interaction.

This project intends not to replace technology but to provide playtime for children and parents where they are all in a state of play, fully engaged in their moment, not distracted by smartphone notification or TV shows. The use of physical interface compared to the screen aims to bring the real experience to people, stimulating sensorial interactions in a context of dimensions, textures, materials and its properties.
2. User Understanding

As seen previously, activities dedicated to children and parents/caregivers have to promote mutual growth. This project targets parents who have children from 3 to 7 years old. Taking from a broader perspective, the target market also embraces grandparents with grandchildren in the same age group.

2.1 Children

Preoperational Stage of Development

This project is designed for children in their Preoperational Stage, nomination created by Jean Piaget (1951-72) in his theory of developmental stages. He refers to individuals between two and seven years old, who actions and reasoning are very concrete. They are very sensorial and require manual activities (touching and visual) to develop physically, socially and cognitively. Before 6 – 7 years old, children don't understand principles like conservation of number, mass, liquid, and weight. They hadn't developed notion of classification (categorization), planning (when playing games or maze activities) and metacognition (think about and regulate one's thoughts).

The target market for this project is children from 3 to 7 years old, because it involves a lot of materials and small components, so young toddlers could have the hazard of swallowing them.

After defining the addressed age group, I looked for more accurate information about the capacities and limitation of those children. Following Sutton-Smith, Lightfoot and the toy company Fisher-Price, I summarized some guidelines that would be critical for designing the activities.
Children from 3 to 4 years old

At this age, they have developed gross motor skills and are able to skip, jump and run smoothly. They are also capable of using pencils, paints, crayons for drawing, which shows that smaller movements are refined. They can also build blocks and play with threads.

This is the peak period for pretend play and curiosity about all things around. They like to pretend to be adults, playing as mom and dad, doing routine activities. They also accept parents pretending to be a child. In terms of social living, they are more efficient in dressing, eating, toileting, and talking. They enjoy some indoor activities with toys like hammer and nail set, trucks and dolls, sorting boxes, paper cutting, design matching, but they are more interested in exploring new places and discovering new things (about plant, trees, animals or growing things).

When telling fairy tales they are also able to start telling their own story highlighting the remarkable facts to them. A good exercise is trying to make up your own story or acting out together. It is very important to cultivate the magic fact of the stories. The happy end helps them believe in a good world where they feel safe and protected. Also toys, miniatures, and pretend appliances are very helpful to stimulate the dialogue of this imaginative play.

In general at this age children’s imaginative play is helped by having such miniature toy worlds to play with. If children are not particularly imaginative, such toys help. For children who are already very imaginative, toys are not quite so necessary; they can make their own toys out of anything. (Sutton-Smith, p123)

Despite the fact that they are not ready to understand board and card games, they enjoy playing with the pieces and rolling marbles. In addition, they don’t deal very well with losses yet, so they don’t appreciate competitive games unless they win or at least draw. At this age is more important to cultivate games where they can have fun and trust the playmates, which help building courage at later age.

At around three and four years old, it is the beginning of group socializations. It starts from solitary play, when they all play by themselves watching the others. Because of the fact they have the habit to imitate others, they start copying what they see until they begin playing together.
A few moments of shared play may be sufficient for the announcement that they have a “friend”. (Sutton-Smith, 1974, p113)

Group play brings the milestone of this age: managing play construction, where they have to define all playmates’ role and decide what they do together. According to Sutton-Smith, it is easier for them to do central-person play, when someone dictates the rules. But they always desire to be the main person, because are very egocentric at this age, so taking turns and playing with other children develops social interactions. Managing play is a big problem for children in their preoperational stage, so they might spend more time arguing than playing; this interaction is crucial for creating social rules and learning how to deal with others.

Children from 4 to 5 years old

Around 4 to 5 years old, it is the initiation for being an independent person, as most of the children go to kindergarten or nursery school, so they spend a considerable time without their parents or relatives. They worry about getting along with others and also care about their friends opinions about them.

It brings challenges regarding being a responsible self out of home. They also feel uncomfortable on being the central person and acting a role for others to see, so fantasy and dramatic play can be stimulated through the use of puppets, dolls, or characters.

Children are now used to their families routines and requirements and they have established their limitations and needs. They understand that they should behave well in public.

They now enjoy activities that loses their control of their bodies, like whirling until feeling dizzy, rolling down slopes, swinging, sliding. Cooperative play, like dancing and singing together is relevant to give the sense of social unity.

Fantasy and pretend play are still very appreciated and now kids add some emotions to their characters. From 4 to 5 years old, they manage better each child’s role. The way they play also reflect the education they get from parents and teachers, being more authoritarian and rigid or more relaxed.
“The very great step forward in this year is the invention of the imaginary character.” (Sutton-Smith, 1974, p143)

Now children are able to use their imagination to be a different self. They can pretend to be anything, from existing creatures to unreal monsters. It expands play, because now they can be in any context, where only imagination can bring them.

**Children from 5 to 7 years old**

The milestone for children from 5 to 7 years old is make-believe play with the use of imaginary object and situations.

> Certainly between five and seven children can do imaginary actions, react to imaginary objects, be imaginary people doing routine things, provide and imaginary setting, show emotion, and in some cases be completely fantasy people. (Sutton-Smith, 1974, p 153)

At this age, they are able to elaborate dramatic play. However, they still feel embarrassed of showing their talents to others. A good solution for that is having a safe place where this imaginative play begins. When the child practices and repeats some activities they feel more comfortable to expose that.

Like children in younger ages, from 5 to 7 years old they are still dependent on a center-person orientated, which means that an adult or older child can start playing, telling the rules and bringing the materials.

They organize their social play into the fitting roles of our society, so each player has a “profession”: doctor and patient, cop and robber, mom and dad, seller and buyer, etc.

Sometimes, they can expand it and have two different roles per person. In terms of social development, they maintain stronger friendships.

At this age, children can perform more complex actions, as they have better physical coordination. Their brain is capable of solving harder problems. From 5 to 7 children is literate, can
write and read their names and some text. Their reasoning is more developed, as they can explain narratives or happened situations.

2.1.1 Child-centered Design Requirements

Considering the differences and milestones for each year, it is noticeable that a 7-year-old kid knows a lot more than the 3-year-old. These four-year gap are crucial for their development. Lightfoot (2013) shows that the size of our brain is up to 90% of the total size when we are five years old. So how to design for all those children?

The answer relies on the do-it-yourself method, which emphasizes the process and is driven by the maker. Some structure will be provided, with materials and suggested games, but the solution will be open to adapt to individual needs. Of course that it will attend some basic requirements, like safety and age appropriate activities, but the experience for each player will be single.

The younger kids might need more parental attention to play while the older ones might prefer to make everything on their own or with other friends. It does not exclusively happen during playtime, so this closer relation with parents may lead to other attention needy situations. Also, it gives flexibility to families to decide rather their children needs more help or more independence.

It is important to mention that the most expected result is to include playtime into families’ routine aiming to provide more communication and strengthen their relationships. So it is predicted that the three-year-old child will make something different from the seven-years-old, even if they are given the same tools and materials. That is the beauty and adaptability of play.

User-centered requirement specifications

Considering the user and various ways to stimulate their gradual progress and development, it is possible to define some design specifications. They are a set of requirement to be satisfied by the final solution, with its materials and proposed experiences:
* Incorporate routine activities, like cooking, traveling, taking care of the house.
* Promote discovery and exploration.
* Induce social interaction, not competition.
* Provide the initial structure to start, because managing play is tough for preoperational stage kids.
* Stimulate make-believe, which encourages determination and success in later ages.
* Encourage fantasy and drama play around everyday themes, like house, professions, and life.
* Provide materials to make a creative mess.
* Create a space where imaginary things can happen, so children feel safe and free to be inventive.
* Introduce new materials and tools gradually.
* Allow repetition and practice. When it leads to mastery, the activity is combined with other skills to make something more complex.
* Avoid providing duplicates kit for children who play together so that they can complement each other.

It is important to mention that the most expected result is to include playtime into families’ routine aiming to provide more communication and strengthen their relationships. So it is predicted that the three-year-old child will make something different from the seven-years-old, even if they are given the same tools and materials. That is the beauty and adaptability of play.

### 2.2 Parents

To understand parents’ habits and common attitudes, the study considers the three primary goals shared by all parents, proposed by the anthropologist Robert LeVine (1988) and cited by Lightfoot (2013): (1) the survival goal, related to health and safety; (2) the economic goal, to ensure that their children will be educated to get economic independence as adults; (3) the cultural goal, to transmit the cultural values to the next generations.
The path to achieving these aims may be countless. Diana Baumrind (1971,1980), cited by Lightfoot (2013), summarized the parenting styles in three: authoritative, authoritarian and permissive parenting patterns.

For this project, we encourage activities and interactions to stimulate the Authoritative Parenting Pattern, where parents set up high expectations for their children, but they understand that kids also have needs and rights. Conflicts are solved with verbal explanations and reasoning, love and care. In this environment, children tend to be more responsible, self-controlled and with a good knowledge of social rules.

It is important to mention that, by considering “parents”, it includes all main caregiver, who is responsible for raising the child. In some cases, it is the uncle, aunt, grandmother, grandfather, godmother, godfather, a relative, etc.

Size of the market

The size of the market was validated by data from IBGE (Brazilian Institute of Geographic and Statistics) and DataPopular research. My customer segment is parents, grandparents or caregivers who have children from 3 to 7 years old. The minimum income for my segment is R$4,591 Brazilian Reais/month (= US$2,000), so it incorporates classes A and B. There are 14 million children in Brazil from 3 to 7 years old. 10% represents the total of children at this age range from economical classes A and B. We can consider that the average number of children per family (classes AB) is close to 1. So the total amount of children from 3 to 7 years old from classes AB in Brazil is 1.4 million. The approach of this company starts with the beta city Brasilia. In this area, there are 210,453 children from my segmented age range; 34% are from classes AB, so the total number of children ages 3 to 7 in Brasilia is 71,554. It is important to mention that, by measuring the size of the market based on a number of children, we consider that parents, grandparents, and caregivers would be the buyers. Indirectly, this company also provides creative playtime to children in need, by sending a free box to foster care institutions for every box that we sell.

2.2.1 Survey with parents
In order to get customer understanding, I conducted a survey with 97 people who interact with children from 3 to 7 years old. The biggest challenge about that was how to get responses from people in Brazil, so I decided to do an online questionnaire.

According to the book Universal Methods of Design, by Bella Martin and Bruce Hanington (2012), questionnaires are simple tools to get people’s information about their characteristics, behaviors, attitudes, perceptions, feelings and thoughts. This method is self-reporting, quantitative or qualitative, exploratory and evaluative.

The online questionnaire has the advantage of permitting to include different media (videos, sounds, pictures). The survey was elaborated using Google Docs. The questions were seeking information about people’s routine, activities, and feedback about DIY toys. The market and need also needed to be validated.

I sent a survey with some objective and subjective questions and included a video of me showing a box/toy from a similar company in the US (Kiwi Crate). I consulted the statistics André Ramos and Gabriela Olinto to make sure that the survey was adequate in order to meet my needs for validation.

I posted the survey on Facebook, in groups with similar interests (educational toys, mothers in Brasilia). The number of responses exceeded my expectations, and I got many positive feedbacks about the idea, which gave me more excitement to move forward with that and make it real for people in Brazil.

Results

The online survey was applied in Brazil from October to December 2015. The applied version was in Portuguese (official language in Brazil), but the translated version is attached to this document for records (Appendices section). It obtained a total of 116 answers. From that, 96 were considered for quantitative and qualitative analysis. They are mothers, fathers, aunts, uncles, grandmothers, grandfathers, godmothers, and godfathers who interact with children from 3 to 7 years old. The other 20 people would not be our target market, as they do not have a direct relationship with children from this age group or do not have purchasing power of decision.
The survey validated the target market. The majority are people from 22.5 to 45 years old. There is also a significant representation of older adults, from 52.5 to 67.5 years old, who are grandparents.

When asked how long people usually interact with the child, we got two different scenarios: a major part which spends five or more hours with the kids and another portion which interacts less than one hour per day. From that, it is possible to conclude that we have two adult user profiles: (1) people who live with children from 3 to 7 years old, and (2) people who usually spend some time with them. Both are considered consumers because their relationships are close enough to be likely that they would purchase a monthly surprise to the child.

The questionnaire also collected data from the children’s routine, in order to evaluate how much time they spend playing or doing other activities.
One remarkable point regards to the environment. The majority of children spend their days doing indoor activities. Outdoor activities are barely part of their routine. It was an alarming point considering all the benefits that play in different environments can bring regarding exploration and discovery of the world.

![Figure 5. Time that children spend playing at home](image)

![Figure 6. Children play less than an hour or do not play outside](image)

The survey with parents and caregivers provided a better understanding about children's routine. Based on the results, it is possible to summary the types of play that a typical four-years-old child does (that age was the mode in this survey which considers only children from 3 to 7 years old):
Talking about playtime, the survey also investigated how parents/caregivers feel about the time they spend together. The most recurrent answers were “I would like to play more if I had time” and “Kids always want to play more than I play”. It confirms the hypothesis that families need more playtime included to their routine, being time a key point to be addressed. It also shows that children wants more playtime than adults, so providing interactions with other children is important too.
In the survey, I included an one minute video of myself showing a Kiwi Crate box, its materials and activities (see Competitor Analysis in section 4). Then I asked how getting one of that kit every month would be. The results showed a lot of potential for this project, as most of the parents/caregivers say that they would like to help their child to play with the box. Only 6% disagree and think that kids could play with that by themselves.
Through the survey, we could get notion of price. Most of the respondents said that they would pay between R$30 and R$40 Brazilian Reais (between $10 and $15 American Dolars) for a monthly craft kit.

Besides quantitative questions, the questionnaire included the qualitative query. It was very useful to get people's opinion and broader comments and suggestions. The first impressions, when I showed the video with the Kiwi Crate box, was very positive. 98% of the respondents approved the concept and confirmed the need for hands-on toys. The highlights were related to the fact that this kit provides variety, creative and challenging monthly activities. Parents/caregivers also pointed the fact that children can make their own toy with simple recyclable materials as an advantage, compared to digital toys (tv shows, tablets). They recognize that this kind of games can bring mental development and more interaction.

Furthermore, some comments warned of giving the option to try the product before subscribing. The lack of time for busy parents was also a big concern for them.
3. Field Research

3.1 The Strong Museum for Play

On November 7th, 2015 we went to a Field Trip to the National Strong Museum of Play to observe children’s interactions with the environment and relate their behavior to what we are studying in the Child Development in Art class. This experience provided me observations of families’ interaction and learning on different kinds of play.

As soon as we enter the museum, there is the Abraham Maslow quotes: “Almost all creativity involves purposeful play”. That is basically what the museum provides: exploration and discovery to children in order to develop their creativity and self-learning by having fun. Furthermore, the fun interactions do not restrict to young people; adults also enjoy their experiences either interacting with their children or remembering meaningful toys and plays from their childhood that are in the gallery. In general, the museum reminds me Montessori’s philosophy, because she supports the idea of brain development provided by play when it links sensory-motor, cognitive, and social-emotional experiences.

Close to the entrance, there is a six-feet aquarium with sea fishes. The colors and movements from the corals and fishes call attention. For me it was expected to see children so interested on that, because they naturally love animals. But what surprised me was that some children were trying to connect the pictures from the information panel to the live fishes. I also witnessed a child calling the fish “Nemo”, affirming Piaget’s theory that children think symbolically in their preoperational stage and they start building their memory with associations.

Walking through the Adventureland, I observed a lot of imaginative play and interaction between children and adults. The environment is composed of a huge ship where children can find the treasure using the map and send letters to report the discoveries, or enjoy the sandbox under the ship. This place confirmed Erickson’s theory about children in their “purpose” stage (3-5 years old), when they explore a lot, create stories with their peers and do a lot of imaginative play, including fantasy. On the other hand, they also continue to depend unduly on adults, that is why there where many adults watching their kids and playing with them. In the King and Queen area, where kids can make their own crown and set on a throne, I saw a four-years-old-girl building her crown following her mother’s instructions “First, you have
to draw on the paper stripe”, and getting her positive feedback “That looks nice!”, but also the mother imposing limits to her daughter worried about her safety “Watch out the scissors, you will cut your fingers”.

In the Adventureland, there is also a huge giant, which can have their arms and mouth movements controlled by the child. The ability to manipulate the giant and also make him talk with children’s own voice makes this toy a very personal object, which is a characteristic very appreciated to children. Piaget’s theory for the preoperational stage (2-6 years old) emphasize how egocentric they are, so this could be a reason for why they like toys which imitates their voices and actions.

Going upstairs towards to the National Toy Hall of Fame, there were chain-reaction machines. There was a treadmill powered by a tricycle controlled by the child, which would lead marbles to a maze. I observed a young child “pedaling” the tricycle with his hands while his father was trying to teach him how to manipulate that associating this toy to real-word experience “If you ever going to ride a bike, you have to learn how to do that with your feet”.

On the second floor, there is a big exposition of tradition and new dolls, teddy bears and action figures. In this area, there is a house and a pet care center. One aspect that caught my attention in the previous areas of the museum is that the activities were very dynamic and children were switching from one to another in a short frame of time. However, in this house and pet center area, I observed that children were spending more time, what I assumed they were imitating real life. It reminded me Montessori schools, where teachers stimulate concrete sensorial learning letting young children experience activities respecting how much time they need for that.

The mini Wegmans at the museum also simulates adults’ life, where children can go to buy groceries and work at the market. Imaginative play was very present in this area, as I saw kids creating their narratives behind the scenario, involving other people and their parents.

In the pet care center, there were four children taking turns to use the “scanner machine” which gives the diagnostic of the pet. I observed that the girls were more into caring activities, taking notes on their clipboard and examining the pet. I saw one boy playing that with many pets at the same time, emphasizing the egocentric characteristic and worry about quantity.
In conclusion, the Museum is a flexible space that allows all kinds of play for children with many different interests. Taking families to places like that helps to build learning through experimentation and discovery. It is also a very useful resource for researchers and educators who creates children-centered activities.

The great experience at the Museum also suggests that expanding learning out of the school and doing play outside their house provides more stimulus to children and families. This is a requirement for this project: to provide play inside their familiar environment, but also expand the boundaries to different places in the city.
4. Competitor analysis

4.1 Kiwi crate (USA)

When I first started this project, I looked for similar ideas in the US, and I found Kiwi Crate, an online company who sends monthly creative boxes with supplies, kid's educational craft and DIY projects, and a magazine with activities. It is designed for children from 5 to 8 years old, but they also have other brands: Koala Crate (3 to 4 years old), Doodle Crate (9 to 16 years old), and Tinker Crate (9 to 16+ years old).

![Figure 11. Kiwi Crate, “Fun with Flight”](image)

Each box has a unique theme and comes with two different craft activities, where children can build something with the materials and play. The magazine Explore brings some comics, activities and recipes.

I subscribed to Kiwi Crate for ten months and got in my house these themes: Frozen Fun, Busy with Bugs, Backyard Adventure, Interesting Insects, Science of Color, Lemonade Stand, Day at the Lake, Woodland Creatures, Treasure Hunt, Shadow and Light.

Analyzing those kits, some positive points stood out. First, getting a surprise box in the mail is awesome and make us very excited to open and play with it. The fact that the package has Kiwi Crate's visual identity applied enhances that, because it makes us identify the brand and
be curious to open the box to find out what is the theme of the month. Talking about the themes, it was great to see that they correlates to the current season, so I got the “Frozen Fun” in February, when was very snowy. The first edition came with a “Welcome” card, with a pair of scissors to be used with the next projects and also with a “year path”, full of blank spots to be completed by stickers through the year (one sticker per month comes in the box).

I also looked for online reviews about the Kiwi Crate. Parents and children are very interested on the content of this kit; they report a lot of focus and determination from the kids to make the projects. There is also happiness and attachment to the thing that they made. One parent reported that his child gave a name to his glowworm and also asked if he could take that to his bed at night. The biggest issues reported by parents against Kiwi Crate relates to the subscription. Some people find the kits pricey ($19.95 per month) so they suggest asking grandparents to gift the kids for Christmas or Birthday. Other people reported having problems to cancel the contract, being that a critical point for them.

4.2 Arte surpresa and Box Joanninha (Brazil)

Arte Surpresa and Box Joanninha are two companies that produces craft kits to families in Brazil, very similar to what Kiwi Crate offers in the US.

Arte Surpresa comes with two activities and the supplies, except for the magazine. Some of the themes are also very similar. It costs R$39.90 Brazilian Reais plus shipping fee. which would be equivalent to $18 dolars total. This is also a monthly subscription plan, and offers discount in long-term contracts (for six months).

Box Joanninha brings on craft project and the materials to make it. As Arte Surpresa and Kiwi Crate, it comes with instructions and indicator of parental involvement. Box Joanninha offers monthly and long-terms subscription plans (three months, six months, and twelve months). It costs R$45 Brazilian Reais per month plus shipping cost (around US$20 American Dollars).
Analysing the competitors was very useful to see the reaction of people to that. Experiencing myself the Kiwi Crate gave me the sensation that my users will have and I deliver Eba to their houses. The online reviews and homemade videos about Arte Surpresa and Box Joanninha put me closer to the opinions of the Brazilian market.

Also, it is possible to conclude that those companies deliver craft projects very well, which stimulates children creativity. However, there is an opportunity to improve that considering the lack of interaction with other children (neighbors, friends) and also allowing more parental participation in the play, not only as mentors and guides. Furthermore, all those kits are designed for indoor familiar use; we can break these boundaries by offering outdoors experiences including other interaction with “strangers” from the community, like supermarket cashiers, attendents, restaurant servers, etc.
5. Design Development

5.1 Ideation

Ideation consists on generating multiple concepts in order to select and refine some ones for the final solution. For this project, the ideation aimed to generate themed activities to be played by children from 3 to 7 years old and their parents/caregivers.

This project was such inserted in my life that the ideation phase did not restrict to a certain timeframe or method. Ideas came from analyzing existing toys, reading lists of awarded educational toys, reading online reviews and families’ complains, studying developmental stages, reading kids books as the ones from Dr. Seuss. The literature and field research at the Museum of Play gave me good insights for this project. Also, this deep immersion on the topic brought me back to my childhood memories. I applied some of my favorite games and activities created by myself, my sisters and cousins.

As seen in the previous literature research, play happens so naturally that it can be found anywhere. The ideation also embraces that, looking for inspiration in any everyday event. Brainstorming suddenly happened when I was looking for different uses for existing materials and objects. In addition, a lot of ideas came from taking some places in the city, like cinema, restaurants, parks, landmarks and thinking about the activities we could do there.

I used a mind map from Mind Meister to compile the ideas. This method is very flexible, allows edition any time, and gives a broad view of the notes, which facilitates editions and correlations. The fact that this mind map was online and stored in a cloud folder helped me to keep it updated with my ideas through the process, not restricted to the place I was working.

I compiled the ideation in three categories:

* Themes: appealing themes to children
* Activities: what actions they could be doing
* Developmental skills: what kind of development it promotes
Figure 13. Ideation mind map
Figure 14. Ideation mind map (continuation)
The next step was combining the three columns (theme, activities and developmental skill) to come up with the content in each Eba kit. The process based primarily on the themes; following that, I skimmed the other columns trying to create a connection between them. Having a list of action verbs helped to imagine the narrative of playing instead of designing only the toy, which contributed to creative solutions that emphasizes the experience and interaction.

5.2 Solution

The solution is a combination of product and service. Eba is an online company based on subscription business model. Each month, an unique kit of craft materials and suggested games is delivered to families’ home, so parents do not have to plan ahead a fun and creative project. Eba brings playtime to children and parents’ daily life.

The shape of the package is defined according to the kit supplies, so it could come as a box or a tube. Play starts by getting it at the mail and finding the surprise theme. The package is white on its exterior to allow customization and to facilitate its reuse in the play. All the materials, including the cardboard is designed to be creatively consumed while playing.
5.2.1 What is in each Eba kit?

Each monthly kit comes with some craft materials and suggested activities to bring playtime to the family, when they can freely interact together and have fun. There is a unique theme every month, designed for children from 3 to 7 years old and their parents. When you open the box, there is a booklet with the theme, guidelines to start using the materials and information for the parents on what to expect in terms of family interaction and child development.

The monthly suggested activities are designed to adapt to the families’ routine, so they can play according to the time available each day. Eba will provide the “Quick Start”, the “Long Playtime” and the “Explore the City” activities.

The materials vary from paper, cardboard, plastic, natural, stickers, wood, foam, fabric, metal sheets, rubber, etc, to promote hands-on learning on different touches, textures and properties (elasticity, stiffness, consistency, etc).

![Figure 16. Inside each kit: “Quick Start”, “Long Playtime”, and “Explore the City”](image)

The **Quick Start** is very simple to set up, it does not require planning or much time available. It intents to transform a daily occurrence (like having lunch, going to school, waking up, brushing teeth) in a fun moment. It promotes communication and interaction between children and parents. Stepping outside from the routine is also beneficial to stimulate a self-reflexion on how people deal with those daily tasks that may end up being repetitive and boring.

The **Long Playtime** involves making and acting and develops craft abilities. It is designed for children-children interaction during weekdays and children-parents during the weekends or
when they are more available. The activity promotes creative and role play. It also gives freedom to be re-created by the child with their imagination by adding other existing toys.

**Explore the City** promotes discovery and exploration of new places in the city. Families can go out together and feel part of their community. Eba will have partners in the city to make this easily happen, by including coupons, tickets or samples to stimulate children and parents to discover a new place, that could be a restaurant, a zoo, a museum, a library, a cinema, a park, a foster house, a playground, a mall, a community, etc.

### 5.2.2 Themes and narratives

Considering the previous ideation on themes, developmental aspects and actions, I defined monthly kits that incorporate routine activities and play around everyday events. The period of the year is also relevant to define when each kit is delivered, so it takes in consideration Brazilian holidays and celebrations, school vacation and climate.

For the first year, the themes will be broader and more general, which means that it will include places and activities that could be done in any city, like going to the park, to a restaurant or to a cinema. Gradually, when we create more solid partnerships in the city, the kits can be more site specific, suggesting to visit a landmark for example.

<table>
<thead>
<tr>
<th>Quick Start</th>
<th>Long Playtime</th>
<th>Explore the City</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dinnertime</strong></td>
<td>dinner as picnic</td>
<td>restaurant owner</td>
</tr>
<tr>
<td><strong>Family Stories</strong></td>
<td>talk about relatives</td>
<td>families’ book</td>
</tr>
</tbody>
</table>
5. Design Development

**Eba Playful Experiences**

**Sleeping Time**
- gentle massage fingertips textures
- pijama party!
- sleeping outside – with accessories to make a tent

**Super Heroes**
- be a hero (masks)
- paper parachute with toys and messages
- top of a skyscraper or tower (handmade binoculars)

**Sounds**
- balloon, wristle, rubber band, suction cup, mouth, cardboard
- build instruments and play
- watch a musical or concert

**Detective Hunting**
- find at home! color + shape
- find the “tic tac” with secret messages
- find in a park

**Travelling**
- train with friends strings + cloth-peg + box for toys
- make your suitcase
- car window with characters

**Movie Time**
- pop corn launcher
- spin movie
- cine drive-in, cinema, movie outside
6. Marketing

6.1 Branding

The Business Dictionary defines “Branding” as:

*The process involved in creating a unique name and image for a product in the consumers’ mind, mainly through advertising campaigns with a consistent theme. Branding aims to establish a significant and differentiated presence in the market that attracts and retains loyal customers.* (Business Dictionary)

In order to get a consistent set of visual elements that represents an idea, this process involved the creation of a name, logo, tagline, official colors, illustrations and packaging.

The initial step used the Brand Deck, which is a simple tool to help defining what you are and what you are not. It was created by Scott Thomas and funded by a Kickstart campaign in 2015.

“The Brand Deck consists of 100 adjectives, 50 on the front, and 50 contrasting terms on the back. For example, one side might read ‘simple’ and the other ‘complex’. Each card is placed into one of three piles, You are, You are not, and Not Applicable.” says the campaign.

Figure 17. Brand Deck
By the end of this method, I got nine cards that represented the main concepts of my solution: fun, playful, surprising, crafted, experimental, emotional, imaginative, energetic, curious.

As written in the instructions, the fewer number of cards you can get at the end, the better. So I decided to narrow it down.

![Figure 18. Chosen concepts: Playful, Experimental, Emotional](image)

The final selected cards represents the brand’s core attributes. They are:

**Playful**: it cover the concepts “fun”, “imaginative”, “energetic”, “surprising” and “curious”, which are elements presented in playful situations.

**Experimental**: it regards to the product, materials and suggested activities. It incorporates the “crafted” characteristic also, because the product will be open-ended, which requires manual work and experimentation, where the process is high-valued.

**Emotional**: it relates to all the connection promoted between the players (children-parents, children-children, children-environment). It is also associated with anticipation, curiosity and surprise brought by the monthly subscribed kits.

**Naming**

One step of Branding conception, was the creation of an official name for the company. The main requirement was being easy to be spoken by children and adults, no matter their age or native language.
The ideation started from references to Tupi (native Indian Brazilian language) and primitive Brazilian toys. The most outstanding names were “Peteca” and “Pipa”:

**Peteca**: this is a shuttlecock-like object used for centuries in games. It is handmade out of a leather pad with feathers stuck into it. This denomination was discarded after finding many other companies with this name (associated with sports and toys).

**Petecar**: it is an action verb, would suggest the idea of making a mess and playing. However, some informal dictionaries relates this word to sexual connotation, so it was rejected.

**Pipa**: it is a toy made of wooden sticks and lightweight paper, which flies according to the wind direction (kite). This word was also discarded because it might have sexual connotation.

Changing the course, the ideation went through some onomatopoeias to express “surprise”. It represents the emotion of getting monthly boxes with different activities. We selected some expressions like **Tcha-ram**, **OBA**, **Uau**, **Opa**, and **Eba**, that could be translated as **Woohoo** in English.
Eba is the name that best aligns to our requirements. It is an onomatopoeia used by children and adults to express happiness and joy (examples: “Eba! Today is Friday” or “Eba! You are in town, I can see you!”). The name is easy to be pronounced by children and adults, no matter their native language. The letters E, B and A are first letters of these Portuguese words: Experimentar, Brincar, Aprender (translation: experience, play, learn).

**Visual Identity**

The Eba visual identity is composed by logo, tagline, official typography, official colors and illustrations.

The logo is based on the Trebuchet typeface. With the use of a Bamboo Tablet, I did handwriting lines on the top of the font guidelines.

![Initial logo ideation](image)

Figure 20. Initial logo ideation
The final design express energy, freedom, and happiness. The terminations look like hands, which suggests manual work and people participation. There is a small and a large “hand”, which refers to children and parents involvement.

**Tagline**

To promote a better understanding of the logo when seen for the first time, there was defined a tagline, which appears right on the bottom of the logo. The tagline in English is “Playful Experiences”, refering to the core value. In Portuguese, the tagline is composed by the three keywords “experimentar”, “brincar”, “aprender” (translation: experience, play, learn).
Typography

Some typefaces were chosen to be part of the Eba Visual Identity:

Annie Use Your Telescope: an open font by Kimberly Geswein. This cute and playful handwriting typeface simulates the child writing. It should be used in short sentences, like titles or quotes. This typeface seems smaller and less legible when compared to other serif or sans serif fonts, so it should be applied in bigger sizes.

Open Sans: it is a sans serif font designed by Steve Matteson. It has great legibility and offers different weights, which varies from Light 300 to Extra Bold 800. It is applied in the tagline, website and most of the prints.

Minion Pro: it is the serif typeface designed by Robert Slimbach chosen to be used in long texts because of its high readability. It has various weights from Regular 400 to Bold 700, with Regular, Italic, Medium, Medium Italic, Semibold, Semibold Italic, Bold and Bold Italic.

Figure 23. Typefaces
Official Colors

The colors also follow the core concepts of Eba: playful, experimental, emotional. Regarding the requirements, it needed to express energy and happiness, being visual attractive for children and parents. The initial thought was using primary colors, because they remind childhood and do not associate to any gender specifically.

The process involved references research on Pinterest (keywords: visual identity, child, kids, packaging), a lot of experimentation (contrast, application with the logo, printed colors), and the use of color wheel (Adobe Color CC).

After many color combinations, we decided to go with three analogous warm colors and two cold colors to complement with. We are still working with the primary yellow, blue and red, but in different tones, which makes it more appealing to the buyers too (adults).

Color codes: #9F1D51, #258E8D, #F15B4E, #FBB040, #98D09C, #EEF6EB (almost white).

Figure 24. Official Colors
Illustrations

The development of some illustrations to go with the visual identity arose from the need of emphasizing the familiar affect.

The initial idea was to use human figures to make the drawing. However, due to the multiple derivations and family compositions today, we decided to not attach this project only to the traditional family representation (mother, father, children). The solution was to symbolize affect through the use of other creatures. So we chose animals, which are very appreciated by children and plays the role of representing emotional attachment. Also, most of the male and female species would look similar in a drawing, so we could keep this non-gender specific.

For the style, it reminds children’s drawing by the use of simple shapes as a base (oval for animals body) and unfinished pencil lines as the main technique to delimited the figures.

Figure 25. Illustrations from human figure to animals characters
Some illustrations had been developed to be used on the posters, presentations, website, prints, and packaging. The first one symbolizes the physical, social, emotional and cognitive development. The lions, bunnies, elephants, birds, dears, sheeps and pigs shows familiar affection.
6.2 Website

The website is the online platform with commercial and social main functions. It is designed for parents/caregivers to easily access information about the product and to subscribe to receive Eba kits at home. Besides that, the website will have an online community where people can share their creations and pictures of their family playtime, inspiring other families. For a future application, through this section Eba will promote neighborhood events to establish collaboration and connection.

![Figure 28. Website home page layout](image)

The layout incorporates the main concepts of our branding: playful, experimental, emotional. The use of illustrations refers to child’s drawings and families’ relationship. Large pictures enhance the interaction provided by play and give a hint of what the product is.

The “Inside a kit” page brings and explanation about the benefits of having a monthly surprise kit delivered at home. It will give an idea of themes and narratives. It will also show that Eba is designed to adapt to their routine because it comes with the Quick Start, Long Playtime, and Explore the City activities.
The “Join” page brings information about the subscription plans with prices. By selecting one option, it goes to the online store.

The “Community” page is layouted in a blog format, with news and pictures. The users can access, comment, like and share the posts. It will also be linked to the Facebook page.
7. Business Plan

Elevator Speech and Business Model Canvas

The Business started during the Fall 2015 in the Applied Venture Creation class, ministered by Rich Notargiacomo, Richard DeMartino and Dana Wolcott, who was also my coach and had closer attention to this project. Throughout the semester, the business gained a lot of improvement, especially in its definition, financial plan, and logistics. The Elevator Speech was created and after many modifications, now the business can be explained in 1 minute:

“Have you experienced a child more excited to play with cardboard boxes than actual toys? That was me in my childhood. I used to make up my play, and always wanted to include mom and dad. Well, when they were available. Parents are much busier today. Studies show that they play in average less than 1 hour with their children – while checking their smartphones. We want to recover playful time for parents by providing the tools. Using subscription business model, our company delivers to families’ home convenience and creativity by sending a kit of craft material and suggested games, considering 3 to 7 years old developmental stage. With this do-it-yourself play, we provide to the families a great time together! With our social program, we send a free box to a child in need for every box that we sell. Let us be part of YOUR children’s education because we believe they are OUR future.”

At the start of the semester, there was no financial plan. Defining the cost structure, key activities, key partners and revenue streams helped to make a financial projection. The survey with the customers showed the price that they were willing to pay and allowed to build TAM and SAM.

In terms of customer understanding, the progress was bigger than expected. The survey with a hundred people in Brazil validated the need of the business and extracted some information about the type of toys, subscription model and activities that families do.

Considering the educational topic and the big market, it was defined that a crowdfunding campaign would be very beneficial in the first year of the business, so the company will get the
first customers and they may subscribe to get monthly kits. So the campaign will be launched in September 2016 in Brazil while I manage the contracts with the partners and bureaucrats to register the company.

The business model was developed in order to validate some assumptions, discard or take the initial ideas. By the end of the semester, this was the result of the business model canvas study:

**Customer Segment**

The size of the market was validated by data from IBGE (Brazilian Institute of Geographic and Statistics) and DataPopular research. My customer segment is parents, grandparents or caregivers who have children from 3 to 7 years old. The minimum income for my segment is R$4,591 Brazilian Reais/month (= US$2,000), so it incorporates classes A and B. There are 14 million children in Brazil from 3 to 7 years old. 10% represents the total of children at this age range from economical classes A and B. We can consider that the average number of children per family (classes AB) is close to 1. So the total amount of children from 3 to 7 years old from classes AB in Brazil is 1,4 million. The approach of this company starts with the beta city Brasilia. In this area, there are 210,453 children from my segmented age range; 34% are from classes AB, so the total number of children ages 3 to 7 in Brasilia is 71,554. It is important to mention that, by measuring the size of the market based on a number of children, we consider that parents, grandparents, and caregivers would be the buyers. Indirectly, this company also provides creative playtime to children in need, by sending a free box to foster care institutions for every box that we sell.

**Value Proposition**

Our company delivers convenience and creativity to busy parents. This is very appreciated by them, what was confirmed by a survey with 97 parents and caregivers. We also provide physical, cognitive and social development to children by sending DIY craft games and promoting play. There are many studies confirming this hypothesis, what is summarized by Stuart Brown in his book “Play”.

Eba Playful Experiences 7. Business Plan 54
Channels

Selling channel is the company’s website. Marketing will be conducted through social medi- as (Facebook and Instagram) and in some physical places, like schools and neighborhoods. During the semester, I found out that a crowdfunding campaign could be very beneficial for the beginning of this company, considering that the educational aspect of the products might get visibility and support. The survey with caregivers was conducted online, which confirms that my customer segment would be reached through the internet.

Customer Relationships

Subscription model creates a recurrent relationship with the customer, who can choose between three plans: per month, per semester or per year. The survey with caregivers also showed that the Brazilian market would not buy a long-term subscription without trying the product first, so the biannual and annual purchases will be offered with discounts and the possibility to cancel the subscription with no additional fee in the second month (after getting the first box). Events in neighborhoods could also occur in order to promote interaction between our customers and advertising for our company. It would require the election of a leader in each neighborhood, who would be a temporary partner of our company.

Cost Structure

The main costs are with material supplies and shipping, as we provide monthly boxes with DIY tools to families house. Other costs are considered: assembly of the materials in the box, designing and testing new products (R&D), making and maintaining the website (domain and hosting), trademarks and initial costs to register the company, fees from online payment services.

Revenue Streams

This company has a recurring revenue based on a subscription model. All the plans are calculated from a fixed monthly price per box, which is R$50 Brazilian Reais (= US$20), with
10% and 15% discounts for long-term (biannual and annual, respectively) contracts. Some DIY boxes will come with suggested places to visit and explore the city. Partnership with those local institutions could generate revenue from advertising them.

**Key Resources**

Our key resource is our Research & Development team, composed by designers and psychologists who do constant development of new products, based on children's interests, play activities and children development. Our logistic is also very important to certify that our products will be manufactured, shipped and delivered according to our schedule. As I'm starting my company by myself, I also listed some people needed in order to project the company successfully. In this case, those people will be found in Brazil:

* Logistics (shipping, receiving materials and packaging) – partnership with Correios
* Counter (financial management)
* Web and Interface Developer (Vinicius Romualdo)
* Psychologist (certify the playful activities and classify the sensory development)
* Business management support (SEBRAE – Brazilian support service for micro and small businesses)

**Key Activities**

R&D are responsible for developing new products and improve existing ones. The creation of a new box happens one year before it is launched. The website creation and maintenance are also key, in order to guarantee a positive interaction for the users, which reflects in sales and customer trust. Assembly, shipping and customer service are activities that occur frequently and are key to build a positive image for the company.

**Key Partners**

Material suppliers are the key partners; the relationship with them is key to guaranteeing quality of material and production according to our demand. There will be partner suppliers
for personalized packaging, craft materials and prints (pamphlets, little magazines, instructions). The Brazilian support service for micro and small businesses – SEBRAE – would help with initial legal issues for the business creation and management.
This Thesis project is the beginning of Eba Playful Experiences. I envision to apply all the learning I got during this process to open an online company in Brazil.

Going forward with this project the first need is user testing. The concept is validated with the survey that I conducted. However, it is necessary to evaluate the benefits of that for families in reality. In partnership with local manufacturers in Brazil, I will first produce fifty unities to send as a beta test. It might bring feedback from families and also from the producers. The results will be activities validated by families and defined suppliers for a large scale production.

The business also needs enhancement and application in the Brazilian context. I will apply for InovAtiva Brasil, an accelerator program created by the Brazilian Government, which aims to provide resources and connect startups with investors.

Another advancement that will be made is the online platform. I will develop the website content, create the wireframes and design all the screens. The emphasis will be the benefits of the product as an interaction facilitator and the online community.

As a company that sends monthly kits to families, the designs will be continuously created. As simplicity, people communication and play are core values for this project, I looked for organizations in Brazil that have similar proposal. “Território do Brincar” (Territory of Play) is a series of 26 videos of children playtime that shows region differences and cultural influence. It is co-produced by Alana Institute, a society organization that aims to “ensure conditions for children to fully experience their childhoods” (Alana.org.br). I will contact those institutions to keep me updated and fully immersed in the topic.
9. Conclusion

Eba Playful Experiences started as a study of how busy lifestyles and digital technology impact on children's playtime. The literature review and survey with parents and caregivers confirmed that families play for a short amount of time, and this is explained by their busy routines and the advent of technologies, such as smartphone and tablet.

Play is responsible for children's physical, cognitive, emotional and social development. Piaget shows that during the Preoperational Stage (2 to 7 years old) the brain grows until 90% of its total size, which means that this early childhood is determinant to what kind of adults they will be. Through play, children explore, discover and learn about the world they live.

This lack of playtime may be associated with anxiety disorder, attention deficit, behavior and neurological problems. In a broader perspective, play is beneficial for the society because it makes individuals see different solutions for their problems, developing creative thinking and problem solving.

Eba Playful Experiences come to this scenario to bring convenience, creativity and playtime to families by sending a kit of craft materials and open-ended activities. They require children and parents/caregivers involvement, which contributes to bringing an emotional attachment to what is created, making the family proud of their achievements and getting them closer. Also, Eba considers busy routine, so the proposed activities adapt to different schedules and have everyday life themes.

The multidisciplinarity of this project made possible a broader approach. The psychological study on child development provided a deeper understanding of the user and made me more fascinated with this topic. It is motivating to see studies proving that play develops better individuals for our society. The business approach brings the idea closer to the reality. It provided me the base to go further to a venture incubator or accelerator.
10. Bibliography


“Color Wheel | Color Schemes - Adobe Color CC.” 2016. Accessed May 10. https://color.adobe.com/create/color-wheel/?base=2&rule=Custom&selected=3&name=eba&mode=rgb&rgbvalues=0.6235294117647059,0.11372549019607843,0.3176470588235294,0.1450980392156863,0.5568627450980392,0.5529411764705883,0.9450980392156862,0.3568627450980392,0.3058823529411765,0.984313725490196,0.6901960784313725,0.25098039215686274,0.596078431372549,0.8156862745098039,0.611764705882353&swatchOrder=0,1,2,3,4.


11. Appendices

11.1 Online Survey Questions

Research on Children

Hello! Thank you for joining my thesis research, you will spend about 6 minutes to answer everything. My name is Lara Goulart, I am studying in the United States to do my Masters in Industrial Design Rochester Institute of Technology. The objective of this project is to promote interaction between children and the world around, in order to contribute to their development through play. If you want to know more about my thesis, visit http://laragoulart.com/
All responses will be anonymous.

* Required

How old are you? *

[ ]

You interact with children between 3 and 7 years? *

[ ] Yes
[ ] No

What is your relationship with that (s) children? *

[ ] mother
[ ] father
[ ] Grandma
[ ] Grandma
[ ] uncle
[ ] aunt
[ ] Other: [ ]
How many of them are boys and girls? *

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>two</th>
<th>3</th>
<th>4 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>boys</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For the next questions, please consider one of these children. How old is this child chosen for the research?

- 3
- 4
- 5
- 6
- 7

How many hours do you interact with that child normally a day? *
(Consider a normal weekday)

- Less than 1 hour
- 1
- two
- 3
- 4
- 5 or more
- Other: ___________________________
Now think of that child day routine. How many hours she spends in each of the following activities? *
(Consider a normal weekday)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Do not do that</th>
<th>less than an hour</th>
<th>1 to 2 hours</th>
<th>2 to 3 hours</th>
<th>3 to 4 hours</th>
<th>more than 4 hours per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>play at home</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>play in the street / down the block</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>play with the neighbors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>see TV / DVD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>use iPad, computer or video game</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>performing manual tasks (cut paper, paste, draw)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>play house, kindergarten, restaurant, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>read or listen to stories</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What is your favorite joke of it (a)? *

What do you think of the time when you play together? *
- I would like to play more if I had time
- The child always wants to play more than I play
- I think I played for a long time
- Other: ___________________________

What do you usually do on weekends? *

  ____________________________________________
Please watch this very short video (1 minute):

What was your first impression about this product? *

How much would you pay for this? *

If you receive this at home every month, what would you think? *

(You can check how many alternatives you like)

- My children would spend a lot of time playing with it
- My children would rather play with other toys
- I would like to help play with the activities of this box
- It would be better if children brincassem with this box without asking for adult help
- Other: 

What else would you like to speak? Please any comment on children, family and games are very welcome!