Title	Smoothie : interactive Gacha figures that leads to a joyful creative story ideation process
Sub Title	
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Publisher	慶應義塾大学大学院メディアデザイン研究科
Publication year	2018
Jtitle	
JaLC DOI	
Abstract	
Notes	修士学位論文. 2018年度メディアデザイン学 第667号
Genre	Thesis or Dissertation
URL	https://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=KO40001001-00002018-0667

Master's Thesis
Academic Year 2018

Smoothie: Interactive Gacha Figures That Leads to a Joyful Creative Story Ideation Process

Keio University
Graduate School of Media Design

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A Master's Thesis
submitted to Keio University Graduate School of Media Design
in partial fulfillment of the requirements for the degree of
Master of Media Design

Yu Hsuan Tsai

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Abstract of Master's Thesis of Academic Year 2018

Smoothie: Interactive Gacha Figures That Leads to a Joyful Creative Story Ideation Process

Category: Design

Summary

Speaking of story ideation process, some think it is fun, while others think it is such a stress. For those who feel stressful, they admitted their lack of imagination. In human brain, left-brain functions first than right-brain. Left-brain controls logic while right deals with imagination. As growing up, we are educated with more knowledge and left-brain starts to dominant our way of thinking. This is the reason why some people feel they are lack of imagination. Smoothie aims to take advantage of Gacha (Japanese capsule toy) to enrich a person's imagination and furthermore, bring joys to a story ideation process.

Smoothie is a story ideation tool that contains interactive Gacha, a smartphone app and a holographic capsule. By animating Gacha figures, Smoothie enables a person to create a story by interacting with Gacha. Also, story will be shared among Smoothie users to sparkle inspirations. This research explores a new way, which offering a playful activity and an unexpected experience for ideation process. The goal is to enrich the possibility of human imagination with a playful method.

Keywords:

Creativity, Storytelling, Enjoyment, Interaction, Gacha, Holographic Video

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Acknowledgements

For the completion of this thesis, I have to thank professor Masa Inakage the most. Without him I wouldn't develop this idea of storytelling. During my exchanged year in GID, I was researching on a topic of how to guide a person who doesn ' t think shopping as a fun experience to enter a brick-and-mortar store by storytelling. Then when I came back to Japan, Masa sensei suggested me simplify the topic to storytelling in order to test the idea. After several times of discussion and research, finally I came out with the theme for this thesis.

To finish prototype coding skill is required. However, before making the prototype I was only a beginner of Python. Thanks a lot to Ueki sensei, who kept helping me debugging the code even when it was already very late at night. Without him I wouldn't finish the user test smoothly. I also want to thank Matthew sensei, who gave me a lot of valuable feedback on my project.

Special thanks to my beloved brother, Evan, who is the strictest teacher for my programming. He trained me looking for the solution and going through the logic myself. Without him, I don ' t know how I can finish the prototype myself. Great thanks to my parents and boyfriend. They supported me to change my career path from business to design. It was them who gave me a chance to discover myself and enjoy my life abroad. And my lovely old friend, Lucy, who always stands by me and makes me feel I am not alone in a foreign country.

Finally, there ' s still so many people I want to thank. All the friends that I met in Japan, London, and New York. For example, Tatsu, Yuki and Hazuki. Without them my master life wouldn't be so unforgettable.

Chapter 1
Introduction

Is a child more creative than an adult? This is a question that many people might answer yes. In fact, it is because how human brain functions and lack of practice making adult less creative (see section 1.2.1).

The goal of this research is to find out how a simple collection, Gacha, may affect a person's imagination and encourage he/she practicing creative thinking. Smoothie, proposed in this research, is a story ideation tool that consists of physical Gacha figures, a smartphone app and a holographic capsule. Gacha figures are animated to be interacted with smartphone app. A holographic capsule supports the animation being displayed in a playful way. Smoothie users can view story created by each other in order to get inspired.

1.1. What Is Creativity?

> Simply put, creativity involves transforming your ideas, imagination, and dreams into reality. When you're being creative, you can see the hidden patterns, make connections between things that are not normally related, and come up with new ideas.
>
> *KYLIE ORA LOBELL*

Creativity is a way of thinking by connecting things that are not normally related together. A creative person is the one who will practice this type of thinking subconsciously. For example, Salvador Dalí placed a lobster on a telephone and created a well-known work, called Lobster Telephone[1] (see figure 1.1).

1 `https://www.tate.org.uk/art/artworks/dali-lobster-telephone-t03257`

(Source: Lobster Telephone, Gala-Salvador Dali, 1936 © Tate, London [2018])

Figure 1.1 Lobster Telephone *Salvador Dali*

An English phrase “Think outside the box” is also another definition for a creative person. Giving one example of thinking outside the box it will be the well-known movie Toy Story made by Pixar (1995). Remember a scene that all the toys get together guessing what new toys will Andy receive on his birthday? Who has ever thought about that toys can speak? According to The Mission Podcasts, were it not for Joseph Hill Whedon, the screen writer, insisting on shooting movie from toy's perspective, the movie would be buried into the sea instead of a masterpiece [1].

1.2. Current Situation And Motivation

1.2.1 Creativity and Adult

According to the article, The Creativity Crisis from Newsweek[2], when tying to solve a problem, human tend to search for facts and seek for familiar solutions first. This is due to the operating order of human brain, the left-brain works first. If the left-brain couldn't find the answer, then right-brain starts operating. The right-brain searches for memories and seek for unseen patterns, alternative

2 The Creativity Crisis `https://www.newsweek.com/creativity-crisis-74665`

meanings and high-level abstractions.

Children in early childhood, without having knowledge, they are so curious about everything and keep asking why to their parents. In this stage, preschool kids who spend more time in role-play, in other word, mimicking someone else have higher creative skill. When growing older at age 9 or 10, they start create imaginary fantasies. From age 11, as kids getting more information from school, their head overloaded, and creativity suffers. They stop asking why not because of they lost interest. It is because of not asking question, they lost interest.

The older a child grow, the more knowledge and experience he/she has. The left-brain dominates their way of thinking. Meanwhile, Dr. Stephanie Carlson, a Professor, Director of Research, Institute of Child Development at the University of Minnesota, said the reason why our natural creativity wane as we mature is due to the lack of practice[3].

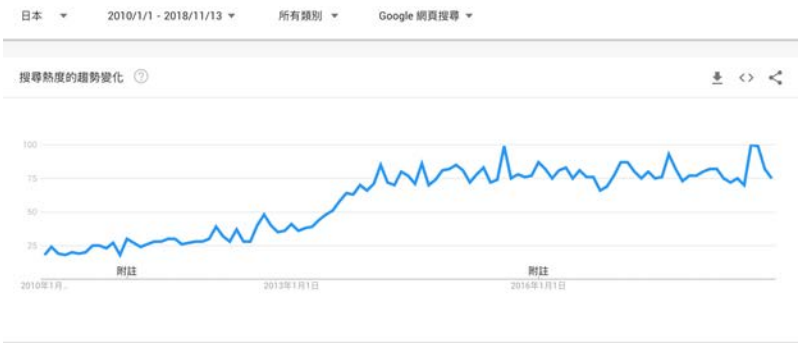
How to become a creative person? There are articles discussing about it, such as Steal Like An Artist by Austin Kleon [2], and a New York Time[4]. There are also many tools that help for generating ideas, which will be discussed in chapter 2.

3 Why You Should Have a Child-Like Imagination `https://www.ideastogo.com/articles-on-innovation/why-you-should-have-a-child-like-imagination-and-the-research-that-proves-it`

4 How to Be Creative `https://www.nytimes.com/guides/year-of-living-better/how-to-be-creative`

1.2.2 Japanese capsule toy: Gacha

Gacha is a machine that contains numbers of capsule. It can be dated back to 1970s. By turning the handle of the machine, the capsule drops. However, consumer couldn't know the figure inside the capsule beforehand. It has been more than 40 years that Gacha first be released. Even until now, the popularity of it still not fades away according to the result from figure 1.2 – keyword searching trend in Google. According to the research from The Japan Toy Association, the market of Gacha is growing as well as figure 1.3 shown[5].



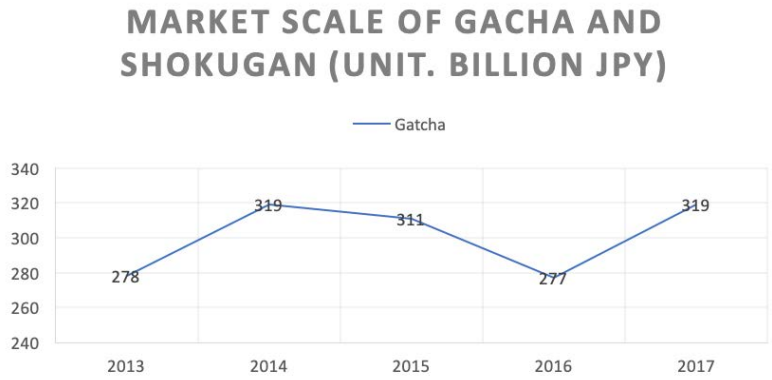
(Source: Google Inc.)

Figure 1.2 Google keyword trend of Gacha

However, most of the consumer consider figures as a decoration. In the results from a pre-survey researching, among 94 people, age 20 to 55-year-old, 81% had experience of purchasing Gacha as figure 1.4. Furthermore, 70% of those having Gacha purchasing experience consider figure as a decoration as figure 1.5. 24 % of them store Gacha in a place they don't see.

Is there other contribution can Gacha provide? The merit of Gacha is that not only its wide variety, for instance, characters, architect, automobile, food, and so forth, but also provides surprise, which means playful. Joy Paul Guilford, an American psychologists, who proposed creative theory and divergent thinking, once said, creativity is divergent thinking and ability to generate multiple ideas,

5 2017 Japan market report `http://www.toys.or.jp/pdf/2018/2017_sijyoukibo_zenpan.pdf`



(Source: The Japan Toy Association)

Figure 1.3 Market Scale of Gacha in Japan *The Japan Toy Association*

creation of new patterns, a transformation of knowledge and meaning or use the functions of objects in a new way[6]. This research aims to apply the advantage of Gacha as a stepping- stone helping a person think divergently.

1.2.3 Motivation

I am a fan of Gacha and Toy Story. Frankly speaking, I am not good at creating and expressing story. It happened to me many times that when I try to tell a story to others, I couldn ' t deliver the heart of the story very well. Thus, I looked at my collection and thought what if Gacha can help me express the story. Nowadays, IoT is penetrating through many objects. Gacha hasn ' t yet been conquered. I believe when it becomes digital is only a matter of time. One research "StoryToy the Interactive Storytelling Toy (2005)" being done by Willem Fontijn and Philip Mendels describes an interactive storytelling toy, which allows traditional stuffed plush to interact with each other. Other related researches that will discuss further in chapter 2, are focusing on children education and used as a platform displaying story. While Smoothie is a tool for adult overcoming the shortage of the imagination and enjoy ideation process by the use of Gacha.

6 Joy Paul Guilford `https://geniusrevive.com/en/joy-paul-guilford-one-of-the-founders-of-the-psychology-of-creativity/`

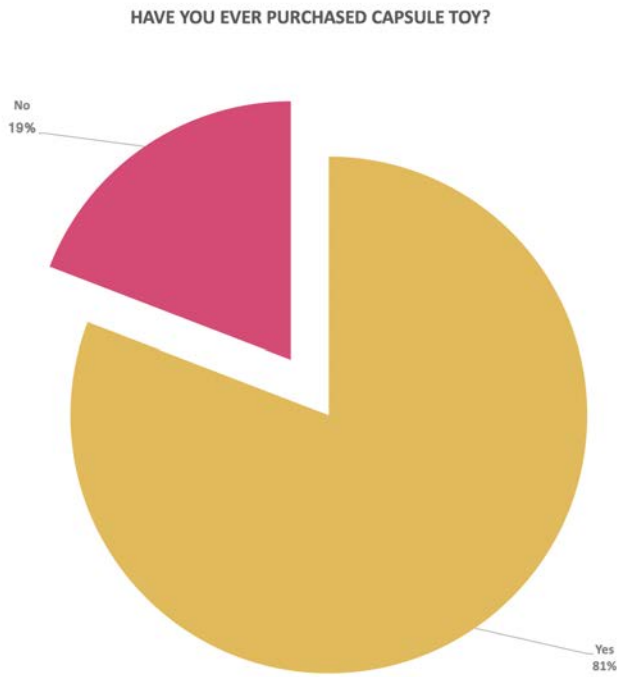


Figure 1.4 The survey that was distributed among age 20 – 55 years old, 81% admitted that they have ever purchased Gacha.

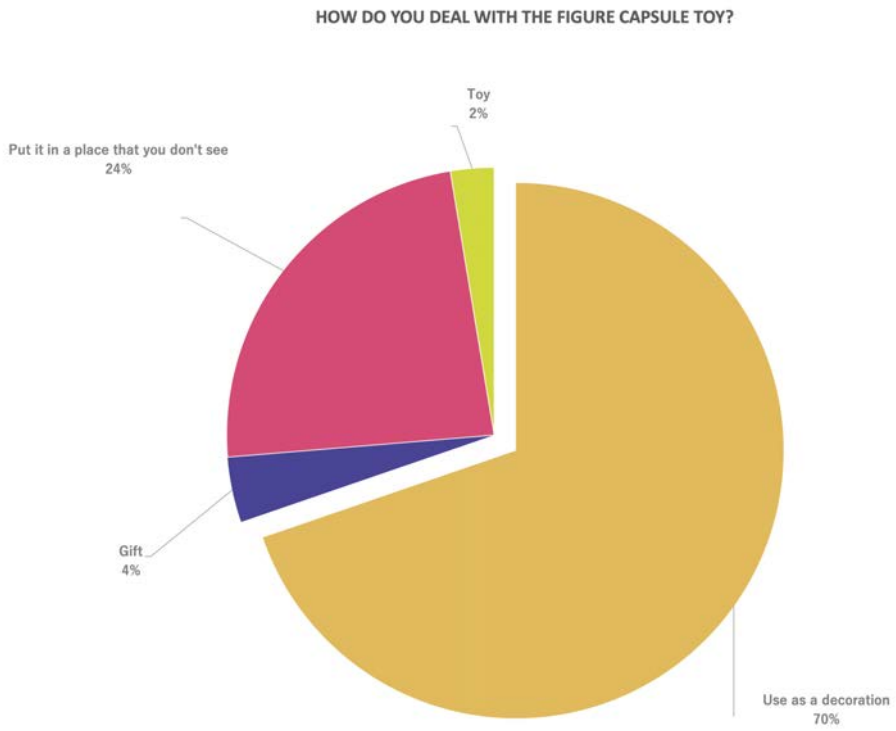


Figure 1.5 Among people who had experience of buying Gacha, 70% of them put figure as a decoration object.

1.3. Contribution

The final goal for this research is creating an enjoyable ideation process that encourage a person doing exercise of creative thinking.

Children are dreamers. We always get astonished by their creative imagination. I had several experiences with young kids. I noticed that kids like creating a fantasy with their toys. Young kids, such as 6 to 9-year-old, without many knowledge, they tend to mix up toys whatever they have and create story among it. When getting older, at age 11, they tend to sort toys logically based on what they learn at school. The older they grow, the low interest they have of playing toy. Some adults still like to play toys. However, some are shy of the word play and rather talk about hobbying [3].

Would toy enrich an adult's imagination? Could Gacha become a medium that make ideation process more enjoyable? This work aims to analyze these questions.

1.4. Structure Of Study

There are five chapters in this thesis. Chapter one introduces the overall view, the motivation and the purpose of developing this project. The second chapter describes the existing researches in order to distinguish the unique contribution of the concept. In chapter three, the detail of the design will be introduced in three part. First, observation. By learning from the surrounding, thinking how might be the solution to the problem in this thesis. Chapter four is the summary of the proof of concept. The significant interview results are written in this chapter. Last but not least, chapter five is the conclusion of the entire research and also encloses with some suggestions for the future development.

Chapter 2
Related Works

In proposing a solution for creating an enjoyable story ideation process, this research examines on tools that help a person creating story easily, which can include accumulating experience as well. From this perspective, ideation tool and sharing platform play an important role through out the entire project.

The topic of how to do ideation has been discussed for years. Many workshops are held around the world or on-line. The platform for storytelling is continuously evolving, especially the maturing of augmented reality (AR) technology. In 2018, AR tattoo[1] has been developed. The transforming of a storytelling approach is undergoing.

Could AR storytelling platform being used as a story ideation tool and furthermore creating a playful process? How to combine these two together and making it unique by implementing with Gacha collection? Past researches and existing products that could help to achieve the goal of the research are introduced in this chapter.

2.1. Story Ideation Tool

How to come up with ideas? Literally there are tons of methods, such as Brainstorming and Mind Mapping. Some methods start with writing a word on a paper, like Braindump. Some, for instance, Sketchstorm, require drawing a graph. Still some require participants acting the skit, such as Bodystorm. There are also some approaches done through gamification. No matter how each method processing

1 THIS AUGMENTED REALITY TATTOO GENERATES A SONIC THE HEDGEHOG GAME https://nerdist.com/augmented-reality-tattoo-sonic-the-hedgehog-game/

differently, they all lead toward to two words “think wide” [4]. This section an ideation board game and app are introduced.

2.1.1 Rory ’ s Story Cubes

(Source: Asmodee Group)

Figure 2.1 Rory’s Story Cubes® *Asmodee Group*

Rory ’ s Story Cubes[2] is a board game that proposed by Rory O’Connor for solving the shortage of creative ideas. The basic set consists with 9 dice, which is engraved with icon on each side of a die (see figure 2.1). By rolling 9 dice the game starts. First player finds the most eye-catching image and base on that begins saying “Once upon a time···”. The Goal of this game is that players take turns to compose a story with all 9 images.

Besides entertainment, Rory’s Story Cube also been used in many occasions for idea generation. A music teacher implemented story cube in a music composing class. She gave her student three dice and asked her how would she interpret the image through melody[3]. A story cube study group in Japan indicated that Rory ’

2 Rory ’ s Story Cubes ® `https://www.storycubes.com`

3 Color in My Piano `http://colorinmypiano.com/2011/04/22/improvisation-activity-`

s Story Cubes can also be applied in the areas of Human Development, Teaching, Facilitation and Nursery activities[4].

Most importantly, each icon on a die doesn ' t have specific meaning. User can interpret differently base on the situation and there are expansion sets of cubes with different genres, such as clues, fright, enchanted and so on This is why Rory ' s Story Cubes can be used in various applications.

2.1.2 Smartphone Applications

Typing keyword " idea generation " in the App Store, it will reveal many results. Some apps generate words. Some provide famous quotes. Depending on the purpose, there ' s some apps give story plots or narration of mysterious locations. One group of apps will generate words randomly without asking user assigning a specific genre. Other group of apps will find related result for users ' requests.

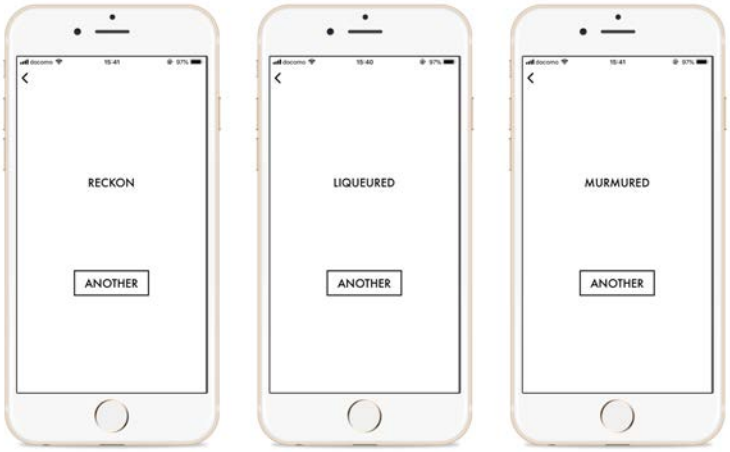
An app named RNDM – Word and Number Generator is an example that doesn't require users assigning category for generating words. It is so simple that only has two buttons " word " and " number " on the home screen as figure 2.2 shown to generate random outcome. RNDM doesn ' t need user narrow down the library initially. Therefore, the result can be totally unexpected (see figure 2.3).

rorys-story-cubes/

4 Japanese Rory's Story Cubes Study Group https://www.storycubes.com/blog/04-jul-japanese-players-form-a-rory-s-story-cubes-study-group

(Source: Niks Evalds)

Figure 2.2 RNDM Home page *Niks Evalds*



(Source: Niks Evalds)

Figure 2.3 Random word *Niks Evalds*

2.1.3 Summary: Story Ideation Tool

To conclude ideation approaches, it can be categorized based on numbers of participant and idea delivering medium. Ideation can be done by oneself or a group of people. It is not necessary saying whether individual or group is better. However, ideation within a group could be fun and people could get inspired.

Speaking about idea delivering medium, apart from words and picture, human body is another one. Bodystorm asks participants physically act out situations they are working on. It provides a better understanding of the problem and might let participants discover another issue that hasn't been noticed previously[5]. Institute for Color Research implied that a person makes first impression within 90 seconds of the initial viewing. Secretariat of the Seoul International Color Expo in 2004 suggested that 92.6% of the population puts most importance on visual factors[6]. From the success of Rory's Story Cube and the widespread of Mindmap, it is not hard to draw conclusion that human brain has better understanding in visual factors. One common factor for Rory's story cubes and RNDM is the variety of contents. As described previously, Rory's story cubes has many collections and RNDM generates words randomly without genre limitation. However, their visual presentation is limited.

The idea of Smoothie using the strength of Gacha's variety of physical figures seems similar to those two ideation tools. However, in Smoothie, each choice (or figure) is animated, which supports users to create a vivid imagination of their story. Moreover, Smoothie encourages users viewing story created by each other to get inspired. Although creators are not doing ideation together at the same time and same space, they can still be influenced by others and enjoy a semi group-like ideation process.

5 Bodystorm `https://dschool-old.stanford.edu/groups/k12/wiki/48c54/Bodystorming.html`

6 Why color matters `http://www.colorcom.com/research/why-color-matters`

2.2. Interactive Toys

Nowadays, technology is penetrating in our daily surroundings. People tend to make it less obvious or less recognizable, which is called pervasive computing or ubiquitous computing. Take Google Assistant[7] for example, it simulates a lifelike phone call for booking an appointment for a haircut. A person on the other end of the phone didn ' t even notice that she was talking to a robot. Toy is been penetrated by technology as well. Could pervasive computing be used in story ideation tool as well? What role can interactive Gacha play in ideation process? Here are two examples of RFID implemented toy in storytelling process.

2.2.1 Make a Riddle and TeleStory

Siftable [5] is a digital tile that can interact with one another as figure 2.4 shown. It was designed by David Merrill, Jeevan Kalanithi, Pattie Maes from MIT Media Laboratory in 2007. One tile is a 36mm x 36mm x 10mm color LCD display consisting in a microcontroller, 3-axis accelerometer, four IrDA Transceivers, a rechargeable battery and a RF radio. With assigned physical gestures, users of Siftable can tell tiles how to interact.

One of the Siftable's application is Make a Riddle [6], which is an expanded study done by Seth Hunter, Jeevan Kalanithi and David Merrill. This is an educational application for children. Tiles will display vocabularies and animations. When children forming vocabularies into a descriptive sentence, one tile will reveal a represented animation. It encourages children playing with words and learning the meaning of the sentence they made.

7 Google Lifelike Chatbot `https://www.theguardian.com/technology/2018/may/08/google-duplex-assistant-phone-calls-robot-human`

(Source: David Merrill, Jeevan Kalanithi, Pattie Maes)

Figure 2.4 Siftable: interactive tile *David Merrill, Jeevan Kalanithi, Pattie Maes*

(Source: David Merrill, Jeevan Kalanithi, Pattie Maes)

Figure 2.5 Creating story with Siftable *David Merrill, Jeevan Kalanithi, Pattie Maes*

Another application is Telestory, which is a story generator. With the introduced scene displaying on a large HD screen, children are asked to pick up props and characters that being shown on Siftable tiles and send to the story while it is processing. Telestory allows children to become a co-creator of their story and enjoy the process of creating (see figure 2.5).

Observing how young kids manipulating Siftable in Telestory, researchers found out the ambiguous action between looking at the tile and external large screen. The large screen would draw attention from kids so that they didn ' t notice the change of the image on tiles.

2.2.2 StoryToy: the Interactive Storytelling Toy

(Source: Willem Fontijn, Philip Mendels)

Figure 2.6 StoryToy: Interactive plush *Willem Fontijn, Philip Mendels*

StoryToy [7] is another research on RFID Toy. This research is done by Willem Fontijn, from Philips Research and Philip Mendels, from Eindhoven University of Technology. Unlike Siftable interacting with LCD tiles, StoryToy tried to implement the idea of Pervasive Computing and embedded sensors into traditional stuffed animals as figure 2.6 shown. StoryToy uses sensors, RFID tag and audio to allow stuffed animals interact with children. There are three modes in this game, free play, reactive play and story play. By detecting where the stuffed duck being positioned, the game mode will be changed. Free play literally is a mode without implementing technology. Kids play toy in the traditional way. Reactive play is a

mode that animals start interacting. When animals being placed near each other, they will start conversation and the representative sound of that animal will be reproduced. Last but not least, story mode allows children following the story line interactively. There are two branches for story mode. One is linear story. The other one is branched story. The former asked kids to follow the instruction according to the story line. When animal is placed at the wrong place, animal will notice the user. It is popular with younger child, like age 3. However, for older kid, such as age 6, the interaction seems too limited. On the other hand, branched story has more interacting possibility. The placing of the animals determines which story line to be processed. For the future development, researchers envisioned that StoryToy can let kids create their own story by using the story content provided by the system and also exploring how environment can support kids in telling story.

2.2.3 Summary: Interactive Toys

Playing toy intuitively is the common factor for researches described above, which allows users, even children easily understand how to manipulate devices without receiving further explanation. Speaking of narration, Telestory only speaks vocabulary and makes the sound of represented character. For example, when user lift up an orange tractor, the system says “an orange tractor”. On the other hand, StoryToy puts more effort in narration. Unlike Telestory that narration can be supplemented by animations, without digital interface, voice narration seems to be more important to deliver the story.

From those studies, it looks like physical toy can be used as a medium for storytelling. Gacha has been a popular toy among adults. However, it has not yet applied with technology. In this research, Smoothie proposed an interactive Gacha, which uses RFID tag to connect figure to animations, that can act as as users' wishes and making story ideation process more playful. According to the finding from Telestory and StoryToy, it indicates that narration is not that important when animation being played. In Smoothie, background music and narration can be set up as an optional function for users further interpreting their story.

2.3. Storytelling Platform

So far, based on the research it is clear that how Gacha can bridge ideation tool and storytelling together. In this section, how a story can be formed, displayed and shared among users are examined as Smoothie trying to create an easy and joyful ideation process by letting users get influence with each other.

While technology keep developing, the form of storytelling is evolving. It's been years that people tried to merge digital and the real world. The Magic Book [8] brings story into real life with hand-held augmented reality display (HHD). Later on, 3D story cube [9] introduced a tangible and intuitive platform. It is a foldable cube. It requires a user wearing head-mounted display (HMD) and unfolding the cube to see 3D animation and listen to audio narration. There are many augmented reality (AR) storytelling platform compatible with smartphone, such as AR picture book. Moreover, some AR apps allow user to create their own storyline. In this section, two apps that can create story are introduced.

2.3.1 StoryFab

StoryFab[8] is an iOS app that developed by a Swiss team, Spooklight. StoryFab has several installed scenes, such as Christmas, Zoombie, Seven Dwarf, Pirate and so on. Player, of course, can create his/her own scene by adding props. The appearance and outfit of the AR characters can be adjusted by player as well. By launching the game, AR characters will appear as if they were in the real environment. The movement and interaction between each character can be assigned. Player can record a movie with narration (see figure 2.7) and publish it to the social network service, such as Facebook.

2.3.2 LEGO AR-Studio

LEGO AR-Studio™ is an iOS app[9], which allows players mixing digital LEGO model with the physical world. Effects that couldn't be done in reality, LEGO AR

8 Spooklight Studio `http://spooklight.ch/#storyfab`

9 LEGO AR-Studio `https://itunes.apple.com/dk/app/lego-ar-studio/id1296734986?mt=8`

Figure 2.7 Recording story with AR characters *Story Fab*

Studio will realize them through the smartphone. For instance, a physical building is burning when watching through the smartphone display. A physical character is telling player that he is hungry in the game. Browsing through this app, two side of LEGO worlds, digital and physical is overlapped. Players can create their adventure journey in this fantasy world and direct a movie (see figure 2.8). The game also supports up to four players. They collaborate to solve the tasks and operating the imagination world together. Finally, this fantasy adventure can be saved as video and share with other players.

(Source: ©The LEGO Group)

Figure 2.8 LEGO AR-Studio *The LEGO Group*

2.3.3 Summary: Storytelling Platform

Although many AR story apps are available on the market already, the AR storytelling platform is still under development. In the first half of a year 2018, Google

Inc. and Apple Inc. both announced their new AR development tools, AR Core [10] and ARKit 2[11]. One common concept for both companies is shared AR. This concept allows user cross-platform sharing the same experience in the virtual world. Shared AR is still a fairly new technology that not many storytelling related app shown on the market yet. However, LEGO AR-Studio™ is one of a game that implement this latest technology. It is undeniable that the storytelling platform will keep under developing.

From the successful examples above, it is clear that showing a story with AR technology can be fun and joyful. How can a story being created through smartphone app and shared? To summarize, both StoryFab and LEGO AR-Studio allows users select actions for digital characters and record both animation and narration of adventure then share through the social network. This research considered this story creating pattern a reference and applied into Smoothie.

2.4. Autostereoscopic Display

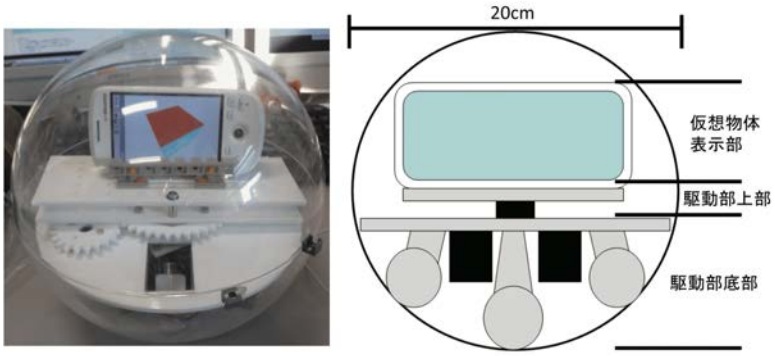
Since AR technology being so popular and fun for storytelling, Smoothie also tried to apply it. As mentioned earlier, most of the storytelling platform are using smartphone AR system. In another word, the user experience is constrained to a flat screen. Is there any method that allows AR experience without the use of screen device? What Smoothie tries to achieve is a harmonious AR user experience.

Seamlessly emerging digital object into the real world has been challenged for years. Various devices that allow human seeing virtual contents without having a single wearable device, such as glasses are introduced to the market rapidly. Looking Glass, designed by Looking Glass Factory is a holographic display that allows user seeing the floating 3D model with naked eyes and operating it by hand [10]. Possible AR technologies that allows viewer having an immersive storytelling experience are introduced below.

10 Google AR Core `https://developers.google.com/ar/`

11 Apple ARKit 2 `https://developer.apple.com/arkit/`

2.4.1 Object VR



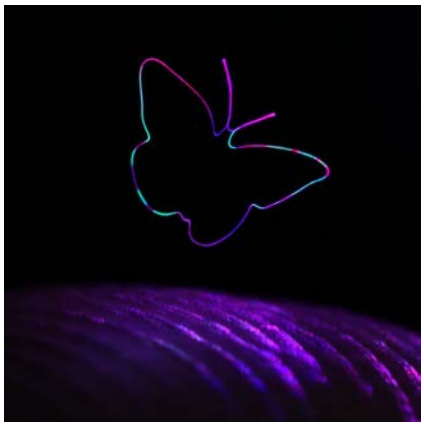
(Source: Kiwamu SATO, Takuya HATAKEYAMA, Naohito OGASAWARA and Hiroshi NUNOKAWA)

Figure 2.9 Spherical object VR display *Kiwamu SATO, Takuya HATAKEYAMA, Naohito OGASAWARA and Hiroshi NUNOKAWA*

Making user controls the virtual object as natural as operating the physical one is the target of Object VR. There is one article about the improvement of object VR platform in Kansei Engineering International Journal. The projection platform developed in that research is a spherical environment that can be hold in hand. This device enables operator glancing projection 360 degrees naturally by turning a plastic ball (see figure 2.9). The prototype is made with a Gacha capsule. Inside the capsule a motor platform and a display are installed. Along with the operator ' s movement, the display platform turns accordingly. So that the digital content can be viewed from every angle [11].

2.4.2 Volumetric 3D Display

Volumetric 3D display is a technique that uses laser beams to steer particles in the air and project color onto them. This method allows human eyes seeing 3D graphic suspending in the space (see figure 2.10). Unlike holographic projection only certain angle can see the effect, volumetric 3D display allows the projection being seen from any perspective. However, this kind of project can only apply to simple image such as outline in the current phase [12] [13].



(Source: Smalley Holography Group)

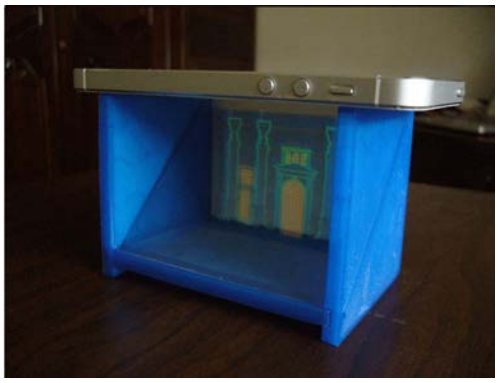
Figure 2.10 Volumetric 3D Display *Smalley Holography Group*

2.4.3 Portable Holographic Device on Smartphone

Daniele Rossi had done a research about hand-held 3D printed souvenir for mixed reality experience. He aimed to redefine souvenir as a tool that evoke memory with experience. In his research [14], he reproduced the architecture façade and created a hologram platform with 3D printer. Then using smartphone projecting image on the façade to relive the experience as figure 2.11 shown. What Daniele achieved in the research is a quickly reproducible, low-cost and experience deliverable holographic souvenir as illustrated in Figure 2.11. Similarly, a Japanese toy company, BANDAI Co., Ltd., released a product, named Hako Vision [12], in 2013. Hako Vision is a Shokugan that equipped with holographic application (see figure 2.12). Shokugan is a type of Japanese toy package that packed both toy and candy in a box. A Japanese Digital Art company, Naked Inc.[13] had done several famous artworks of projection mapping at Tokyo Station and Tokyo National Museum. Hako Vision collaborated with them condensing the experience of projection mapping into a Shokugan box. Hako Vision was also the performance stage of Hatsune Miku, a Japanese idol, and Gundam (see figure 2.13), an

12 Hako Vision `http://www.bandai.co.jp/candy/hakovision/index.html`

13 Naked Inc. `https://naked.co.jp/`



(Source: Daniele Rossi)

Figure 2.11 Holographic Souvenir *Daniele Rossi*

animation character.

(Source: Bandai Co., Ltd.)

Figure 2.12 Hako Vision *Bandai Co., Ltd.*

(Source: Bandai Co., Ltd.)

Figure 2.13 Gandum series *Bandai Co., Ltd.*

2.4.4 Summary: Autostereoscopic Display

> To look at your phone and perceive a 3D image either floating towards you, or to look through your phone to see a 3D image the other side ⋯ both of those things are possible, but not with the technology we have today [15].
>
> *Dr Jamieson Christmas*
> *Chief Technology Officer at Daqri Holographics*

Currently, floating image that people seen most of the time is being displayed under all kind of tricks. Light field display, for instance, using spinning mirror to build up 3D floating image in human ' s brain [16] [17]. Fog screen hologram is an approach by projecting image on the fog screen [18].

Approaches for displaying floating image under current technology are not yet matured for small devices, such as smartphone. FrameStore ' s[14] creative technologist Karl Woolley indicated that technically the concept of a hologram is physically impossible. The display of holographic image requires a light beam being stopped at a certain space [15]. Volumetric 3D Display seems to be the closest

14 FrameStore `https://www.framestore.com/`

one so far. However, it couldn't display complex image. Object VR allows user see and manipulate virtual images as if they were real with capsule size device. However, the device is complex.

To achieve harmonious environment for AR storytelling platform, under the current condition of technology, smartphone hologram projection might be the most suitable, accessible and low-cost method. In this research, Smoothie proposed a transparent holographic Gacha capsule, which is a combination of a hologram pyramid and a Gacha capsule. It is easy to produce and affordable. By projecting virtual contents on a transparent Gacha capsule, without holding any device users can view the AR content. Furthermore, due to the transparency of the holographic capsule, the awareness of device becomes subtle. Smoothie provides a storytelling platform with harmonious AR user experience.

Chapter 3
Design

As mentioned in chapter one, the purpose of this study is trying to make a story ideation process enjoyable and enrich adult's imagination. According to the result of related researches, three key objects, which are interactve Gacha figures, smartphone application and holographic Gacha capsule can be used as fundamental materials to achieve the goal of this research. Smoothie is a story ideation tool that made up with three critical elements, such as interactve Gacha figures, smartphone application and holographic Gacha capsule. In this chapter, design concept and detail will be introduced first. In the end of this chapter will discuss how Smoothie is different from current ideation tools.

3.1. Concept

Through the advantage of Gacha, such as variety, having a person think divergently, get inspired for story ideation and enjoy the ideation process. Unlike the normal Gacha, in this research, figures are embedded with RFID tag, which makes them capable to interact with. By assigning actions to figures, selecting background music and recording narration for the story, Smoothie users forms their fantasy world. The fantasy world will be displayed in form of holographic animation through a holographic Gacha capsule and smartphone.

Based on the research and literature review, the following 3 key requirements were needed to establish the design.

- Variety: the design aims to enrich a person's imagination by providing various objects and animation as a reference.
- Physical: the design aims to create an enjoyable story ideation process by

enabling a person playing with physical toys and viewing character's action as if it existing in same space as human.

- Interaction: the design aims to create a playful story ideation process by animating Gacha and letting a person interact with it. Also, the animation will interact with user surprisingly creating an unpredictable user experience.

3.2. Design Process

3.2.1 Observations

Before forming a solid idea of Smoothie, observations was done.

- When children around age 3 to 7 years old being given toys, they tend to mix up toys from different category and form a story in their wonderland. Once they grow older having more knowledge, they start categorize toys and making less fantasy.

- Compound store is a type of store that combine two different type of store into one space. The most famous example in Japan is Tsutaya, the bookstore and café combination. There are many other example combination as well. For instance, laundry and juice bar.

- Yakisoba bread is a famous Japanese gourmet that stuffed fried noodle into a bread. By mixing two different unexpected ingredients, sometimes the result becomes such a big hit in the market. Like Yakisoba bread does. Tuna mayonnaise onigiri is another successful idea. Before the birth of tuna mayonnaise onigiri, nobody had ever think about mayonnaise as a dressing for rice. It was this onigiri that helped establishing the onigiri production line in convenient store [1].

- Smoothie is an drink that mixed with fruits and vegetables. The different combination of the indigents, the taste changes entirely. When making green

1 The invention of Tuna Mayonnaise Onigiri `https://www.onigi-re.com/onigiri-topics/onigiri-material/`

smoothie, by putting more banana, the smoothie becomes sweeter. On the other hand, if putting Spanish more, it becomes bitter. As long as one ingredient dominates the overall proportion, it directs the taste.

3.2.2 Ideation: Smoothie, Gacha and Ideation Tool?

According to the result of the observation, it seems that a correct combination leads toward to a successful market. Unlike other examples being given in the previous paragraph, smoothie is more flexible to be adjusted base on individual's preference. Similarly, Gacha works in the same logic as well. Per Gacha as per ingredient. A person collects Gacha based on his/her preference then forming their fantasy. A drink, smoothie is a good example in terms of invention. As long as the ingredients being changed, the taste will change, so does Gacha. Different Gacha combination creates a different type of story. The content of Gacha keeps developing years and years. Lately, figures become very delicate that the target customer expanded from children to adult.

3.3. Design Detail

While playing with Gacha figures, user can see how figures interact through holographic video and furthermore using it as a reference for further story ideation. This section focuses on the design detail of Smoothie. How does it look like? How does it work? Later, a customer's journey will demonstrate the example situation of how Smoothie can be used in a daily life.

Before elaborating specific detail of design, let's look at what kind of implementation could fulfill the requirements of this project first?

- Variety: Smoothie's Gacha has wide variety of figures. Smoothie users can see various animation created by other users as well through the smartphone app. The variety of Gacha and animation provides user more ideas for story creation.
- Physical: Smoothie implements with physical Gacha figures and using hologram technology to create an illusion as if characters lived physically in the same space as human do, which provides an enchanted user experience.

- Interactions: Smoothie users can set up action for each figure and let them interact through the smartphone app. Meanwhile, the animation made by other users will pop out automatically to interact with Smoothie users, called Surprising Interactions in the smartphone app.

Interactive Gacha Figures

Current Gacha has many different kinds, such as food, animal, mail box, stationary and so on. The variety of current existing Gacha is the strength that Smoothie wants to take advantage with. However, in order to make the ideation process enchanted, some little change can be done, which is making Gacha interact. Smoothie is trying to implement shorter-range wireless communication to the existing Gacha figures.

Holographic Video

In order to create an illusion that make animated figures becoming more real, hologram is needed. Hologram has been discussed for more than years. Holographic video allows human experience the virtual world without wearing any devices. Methods of displaying holographic video are vary, such as projecting image on the fog, using mirror for reflection and so forth. Either one requires large size equipment and certain distance [17]. The most common application easily reproduce and low cost probably would be the smartphone holographic pyramid. A smartphone holographic pyramid is simple. It can be made by plastic sheet. Simply cutting the sheet, folding it and placing on the smartphone screen with compatible video, it can provide enchanted experience. Under the current applicable technology, making Gacha figure existing in the same space as human do, holographic video seems to be the suitable and approachable solution.

To make figures interact, a huge database of interaction video is needed. Depending on how many videos a database has, the selection of interaction differs. The more choice Smoothie has, the more playful by the users. Therefore, the number and the variety of the video need to be consider thoroughly.

Allowing holographic video be displayed appropriately on the smartphone, the shape of a video has to be square with a black background. The height of the tolerance area need to be calculated carefully as well. If the dimension is wrong

then the video will go off the screen or overlay with each other. As the figure 3.1 showed, the tolerable area is very small. Not speaking of when it is played on a small display, such as 4-inch smartphone. Thus, animation should not be too complex. This restriction further influence the number of character can users interact with.

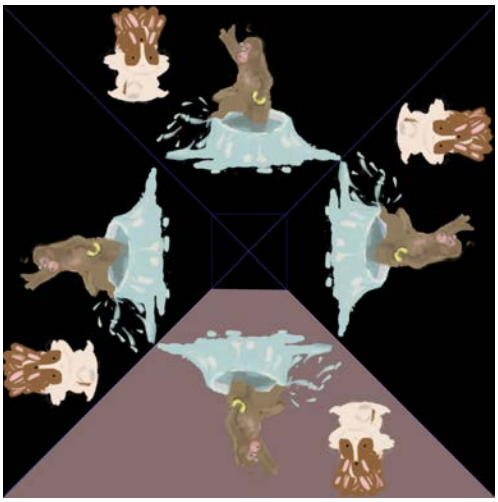


Figure 3.1 Pink area is the tolerance area for one video content

3.3.1 Redesigning Gacha Capsule

Why redesigning Gacha capsule? The reason is simple. Making the capsule support a hologram video is the easiest way to produce and cost less.

Transformation of Gacha Capsule

Sustainable issue is being a popular issue for years. Having noticed that the significant amount of waste Gacha toy produced each year, more and more manufactures redesign figures making capsule becoming a component of it. [19]

Following the social norms, this thesis tends to design a type of capsule that allows the displaying of holographic video. Smoothie capsule will be entirely transparent and one part will be hologram pyramid (see figure 3.2, 3.3, 3.4). The size of the capsule can't be too small. Each side of the length of the hologram

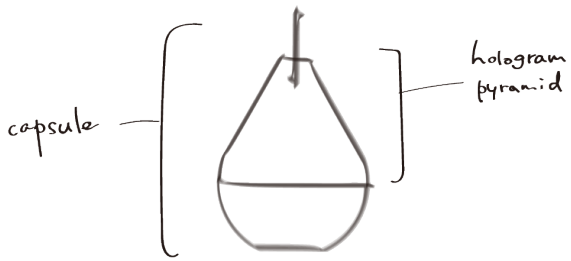


Figure 3.2 Sketch of a hologram supported capsule

pyramid needs to be exactly or bigger than the width of the smartphone screen. Otherwise, the displaying video will be too tiny. However, capsule needs to remain the adaptability of current Gacha machine in order to lower the related expenses. The try-out holographic capsule is shown as figure 3.5.

Figure 3.3 Smoothie Gacha capsule (idea sketch)

Figure 3.4 The top part of the capsule is a hologram pyramid (idea sketch)

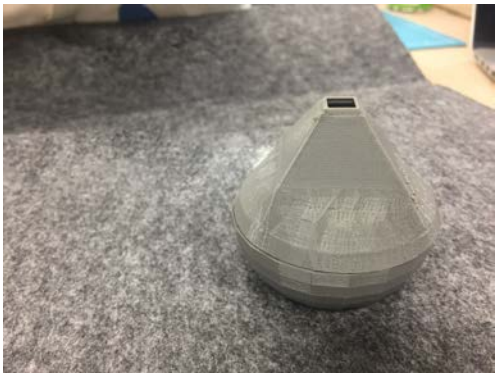


Figure 3.5 3D printed holographic capsule prototype

3.3.2 Smartphone Application

To enrich a user's imagination and make a ideation process enjoyable, a smartphone application plays an important role. In this application, by assigning action to the character, selecting background music and recording narration for the story, user creates his/her fantasy in a playful way. The final outcome (a story) will be uploaded to cloud sharing with all Smoothie users.

The application is simple. It contains two parts:create and view (Figure 3.6). Create is for making a story and view is for expanding imagination brain by getting ideas from other creators.

Figure 3.6 Home page

Create

> Toys could then be viewed as portals to imagination that serve players of different ages and that carry in them the potential to trigger rich forms of storytelling (imagined worlds and characters or paracosms) in the hands (or the minds) of the players [3].

Katriina Irja Heljakka

This part is a heart that enables Gacha coming alive and interacting as users' wishes. By connecting Smoothie Gacha figure to smartphone through RFID, users can assign name and action to it. Normally, a story is made up with five elements, character, action, time, place and object. The purpose of Smoothie is not creating a complex story video. Instead, it provides hints to assist users picturing story themselves. At this stage, the number of interacting figure (up to two) and the prop can be decided. Setting up one figure is required for processing the app. Connecting only one figure (see figure 3.8), user can see the action as figure 3.9 shown of it (see figure 3.10). When two figures being connected (see figure 3.11), interaction could be made (see figure 3.12). If users have prop Gacha figure, they can decide whether putting it into the interaction or not. To interpret a single movement or interaction, user can set up background music and record narration optionally (see figure 3.13, 3.16). Since the limitation of preset actions, users might end up choosing same interaction over again. Therefore, background music and narration become important. Even same interaction being chosen, the different background music and narration being given will change the development of a story entirely (see figure 3.15).

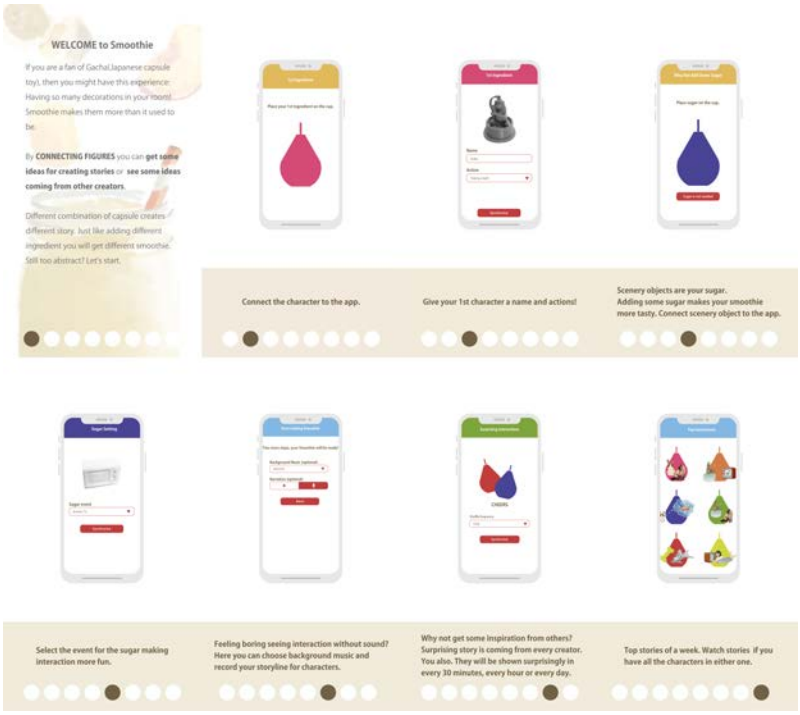


Figure 3.7 Manual of the app

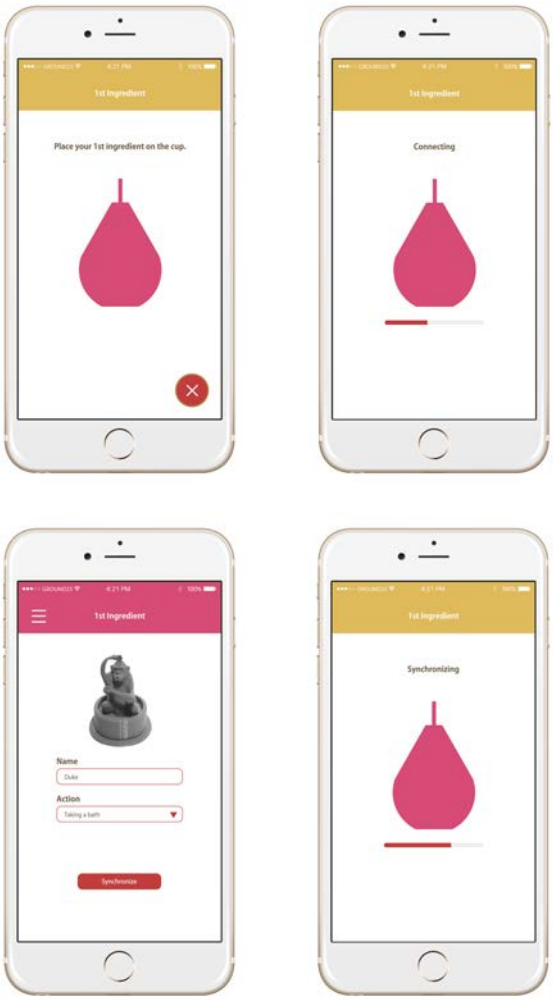


Figure 3.8 Connect the first character

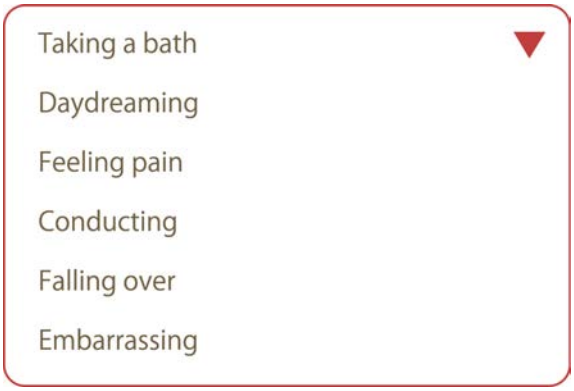


Figure 3.9 Character's action set

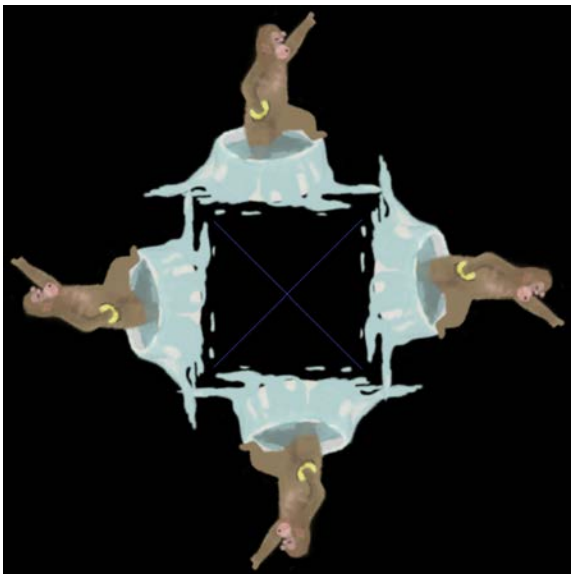


Figure 3.10 Action of one character

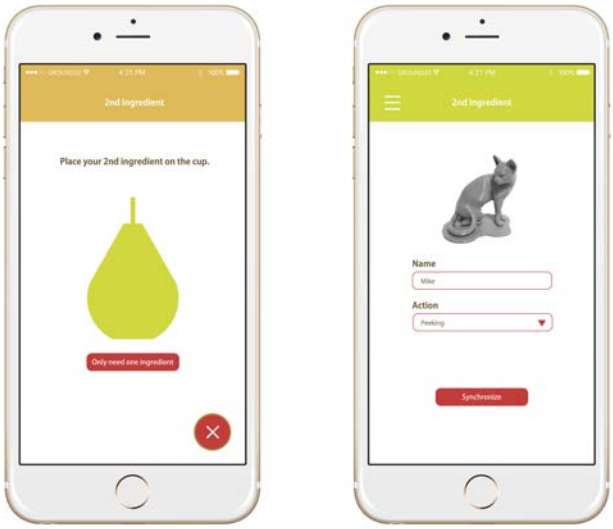


Figure 3.11 Connect the second character(optional)

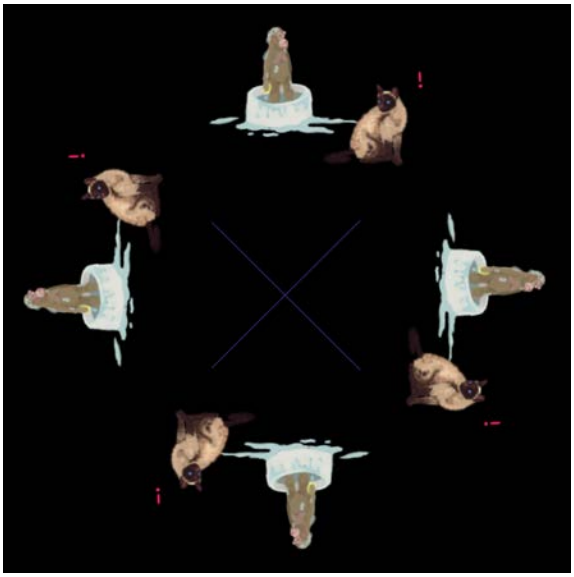


Figure 3.12 Two characters interacting

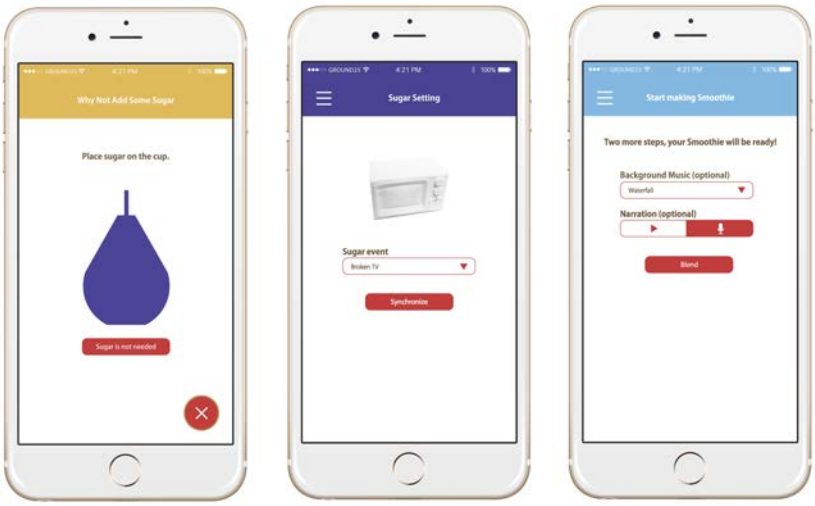


Figure 3.13 Connect prop, suggest BGM and record narration(optional)

Figure 3.14 Prop's event

Figure 3.15 Background music selection

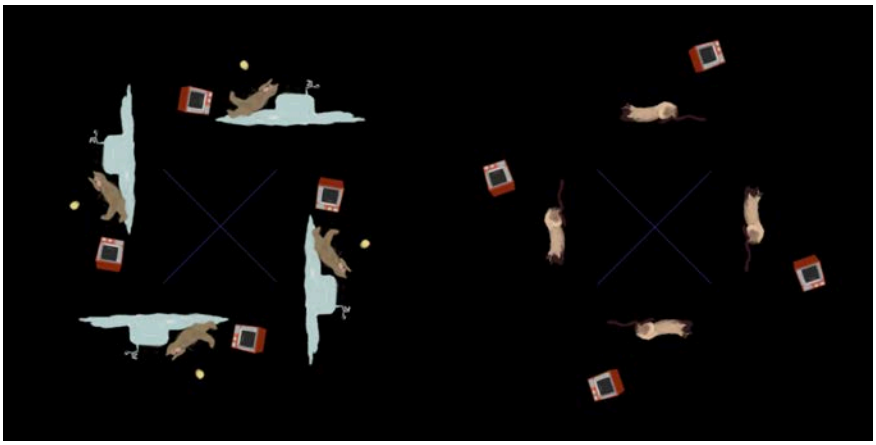


Figure 3.16 Interact with two characters and prop

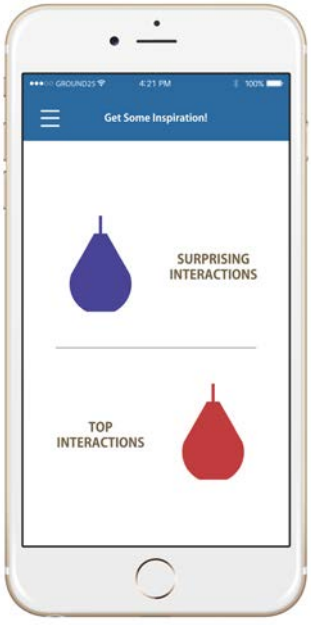


Figure 3.17 View menu

View

> Your job is to collect good ideas. The more good ideas you collect, the more you can choose from to be influenced by. Every new idea is just a mashup or a remix of one or more previous ideas [2].
>
> *Austin Kleon*

In the book, Steal Like An Artist, Austin Kleon said a good idea is coming from observations, collections and digestion. Just like how human is formed by DNA. A person's experience influences his/her way of thinking. DNA can't be decided, however, experience can. A person can decide what information to receive and what not to. The more collection of experience a person has, the more compelling ideas will come out. The view part of Smoothie encourages users absorbing ideas from other users. It also elaborates the core value of Gacha - surprise and unexpected (see figure 3.17).

Surprising Interactions

The main intention of this function is influencing a person to expand his/her imagination brain. By revealing interactions, which will uploaded to cloud automatically once finished, done by other users, a person can see different interpretations for same figures. The function "Surprising interactions" is working similarly as push notification as any other apps. When connecting figures to Smoothie app, user can see how others interpreting same characters automatically and surprisingly. The frequency of shuffling the holographic video can be adjusted (see figure 3.19). After watching interaction, user can press thumb up button for reviewing. The more likes an interaction get, the higher chance it will be shown up again (see figure 3.18). As the name suggested, user would not know what the upcoming interaction is. Their work might showing up unexpectedly when it receives enough compliments. The idea of showing interaction automatically not only creates a fun and surprise moment but subconsciously influencing a way of thinking.

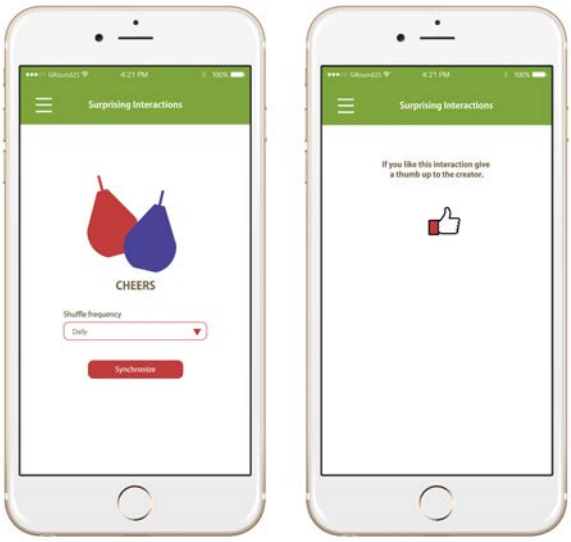


Figure 3.18 Surprising Interactions

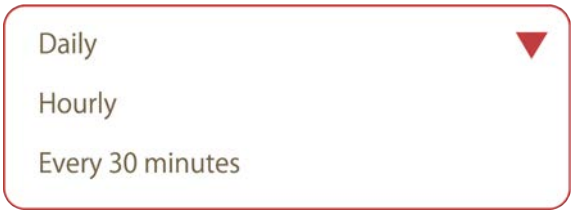


Figure 3.19 Video shuffling frequency

Top Interactions

As mentioned previously, interaction made with Smoothie app is recorded and being reviewed by users. The function "Top Interactions" lists the top six most popular interactions. In this section, the app will let user know the name and on stage characters of each interaction. However, only by having all the required characters in specific interaction can user view the holographic video (see figure 3.20). This function provides users a chance of controlling "Smoothie channel".

Figure 3.20 Top actions: watch the video when having all the required figures

3.4. Customer's Journey (scenario)

It was a nice day for going outside. Woowee decided to go out for a lunch with friends. They went to Ikebukuro for a piece of delicious cake after lunch. It has been a while that Woowee didn't go to a shopping mall. Thus, they stopped by one later on. There were many Gacha machines inside the mall. Woowee and his friends felt so excited! While they carefully looking at each machine, they heard people laughing out loud and discussing something interesting. Woowee saw people placing a capsule on the top of their smartphone and on the top of the capsule was a figure. "What is that? I never seen that kind of capsule before." Woowee thought. He asked a person nearby. "That is an interactive Gacha. You can make figures interact with each other. See, it's that machine." a lady pointed to the Gacha machine. Woowee was so curious that he got one capsule for himself. "First, open the capsule and take the figure out (see figure 3.21). Then reassembles it and places on the screen (see figure 3.22)." Woowee followed the instruction (see figure 3.23, 3.24, 3.25).

Figure 3.21 Step 1. Open the capsule

Figure 3.22 Step 2. Install Smoothie app

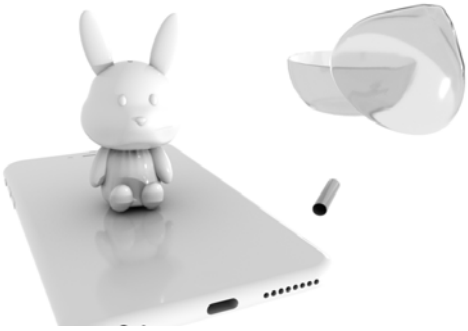


Figure 3.23 Step 3-1. Place the first figure on the top of the smartphone for setting up the action

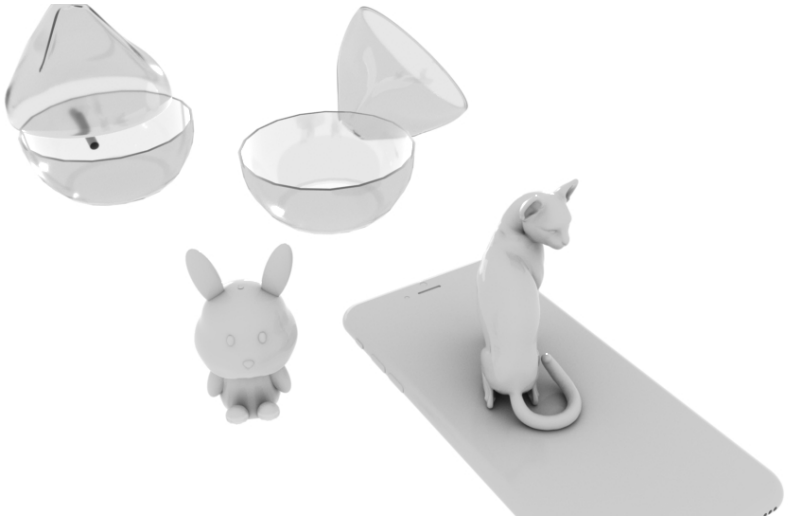


Figure 3.24 Step 3-2. Place the second figure

Figure 3.25 Step 4. Reassemble the capsule and put on the phone to see the interaction

On the next day, Woowee was studying hard. Suddenly, he saw some image appeared on the Smoothie capsule (see figure 3.26). He was so surprised that he called his friend. "Oh that's the surprising action. You didn't read the instruction well, did you? The action done by other users will show up automatically." replied Woowee's friend.

"Wow. That's cool! I saw a rabbit working out so hard. Her dance reminds me gymnastics that we did when we were in elementary school. There's a cat watching her nearby. The rabbit tries to invite cat dance with her. However, that cat is too lazy to move. This interaction is funny." laughed Woowee[2]. "That is my work! Woowee! You saw my work. That's awesome. You know what, if you can see my work that means it got a lot of thumbs up. Woowee, this app is so fun! I want to create more interactions." Hearing his friend shouting out on the other side of the phone, Woowee thought "Smoothie this little thing looks very interesting. I am going to try it out as well!"

Figure 3.26 Surprising Interaction appeared unexpectedly

2 Sample video `https://drive.google.com/open?id=1hGiUnpRzrjq1XEYUQGppDIa8Y832-cKO`

3.5. After all, Why Smoothie Is Unique?

Three factors described below make Smoothie unique and fun.
First, "WHAT YOU SEE IS NOT WHAT OTHER'S THINK" A Japanese comedy website, Bokete[3], encourages user write different caption for interpreting the same picture, like figure 3.27. Interestingly, same picture with different captions makes the entire story different. By looking at this picture only, person A thought two dogs are rescuing their owner (top right picture); while person B thought dogs are refusing going to the island (bottom right picture). Smoothie implements this idea by allowing users to record narrations for interpreting their ideas.

Second, "NEVER THOUGHT AN OTTER WOULD PLAY TROMBONE" Smoothie is implemented with Gacha, which has wide variety. From architect to landscape. From human-made to nature-formed. From reality to imagination. Smoothie encourages the user to look at Gacha as a whole, instead of individual. By considering Gacha as a one thing, no matter what genre, it can result users coming out some ideas that they have never thought before, in other word, thinking outside the box (see figure 3.28).

Third, "SURPRISE!" It is the unexpected surprise makes Gacha so popular. The consumer will never know what figure he/she is getting beforehand. Smoothie extends this playful factor. Same as normal Gacha, consumer can collect a set of figures from the same series. With Smoothie, upon the finishing of collecting one series, the represented interaction will be shown. Besides, there are surprising interactions updating unexpectedly. Surprising interaction is a pop-up interaction, which will appear surprisingly. Displayed interactions are made by each Smoothie user. The purpose of surprising interaction is making users get inspiration from each other.

3 `https://bokete.jp/boke/68093627`

(Source: Bokete user: kero_kerorin)

Figure 3.27 Sample picture, different captions, different stories *Bokete user: kero_kerorin*

Figure 3.28 Otter playing trombone?

How is Smoothie different from other story ideation tool, such as Rory's Story Cube? Comparing Rory's Story Cube to Smoothie, there are one main difference, the number of used human senses. Smoothie uses three senses, while Rory's Story Cube uses two (see figure 3.29). Unlike Rory's Story Cube, simple shape, in Smoothie, user can feel the texture and the complex shape of Gacha figures. They can also see the animated interaction and hear the narration.

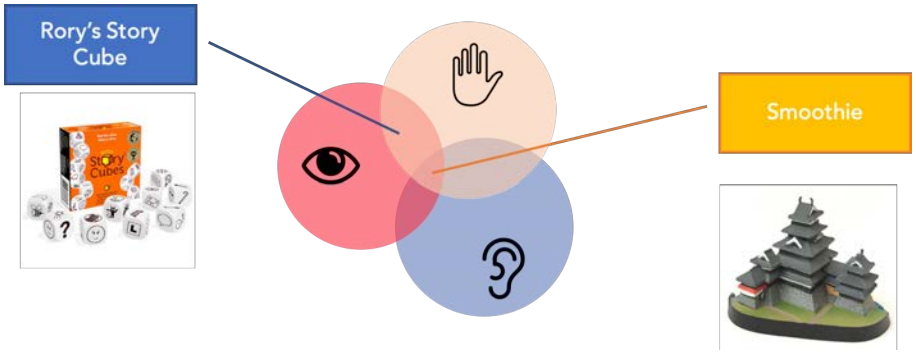


Figure 3.29 Contribution of Smoothie

How could sensations affect to ideation? Here's an example. When I showed Smoothie to target users, I discovered interesting result. One user came up with a story of an adventure of colorless monkey and rabbit. To create a story, I provided her a group of Gacha. She noticed that upon a group of Gacha, only monkey and rabbit were colorless. Thus, she made a story that illustrating how monkey and rabbit get colored after they met each other. To read the entire story, see appendix B.3.

Chapter 4
Proof of Concept

As mentioned before, the goal of this research is to create an enjoyable story ideation process by enriching a person's imagination. To have better understanding of whether design concept achieves the goal or not and get feedback from target users, two experiments were processed. In total, 18 people from age 25 – 45 were participating in the experiments. Among them, 4 people were reluctant to create story at the beginning. In order to observe differences of before and after using the prototype, the first experiment was separated in two parts and several conditions were followed to limit out the dependent variable. The second experiment was almost the same as the first one but conducting with prototype only. The purpose of it was to eliminate the possible learning effect in experiment one.

The experiment was evaluated according to three requirements of the project.

- Variety: would participant come out with story idea easily upon seeing various Gacha figures and animations made by other users?
- Physical: what reaction would participant have upon seeing Gacha and holographic animation?
- Interaction: would participant enjoy creating interaction between Gacha figures and seeing animation pop out surprisingly?

4.1. Experiment Settings

Participants were asked to create stories around 100 words each with given characters by their first language. The reason for using first language is that I tried to eliminate any possible factor that might effect a person's thinking.

- time duration: 10 minutes
- number of given characters: 2

4.2. Evaluation Procedure

Before starting the first experiment, definition of creativity was given to the participant – A creative person is who will connect things that normally not related together. For example, a monkey normally doesn't watch TV. Before experiment started, participants were asked to think if they are a creative person according to the given definition. Later, a discussion about how does ideation process mean to them was undergoing. This conversation was trying to figure out how people feel about ideation process. Later, two characters were given to participants verbally and writing section began. The completion of the story in the first round of the first experiment was entirely based on his/her imagination. User can add as many things into the story as long as the main characters remaining as assigned.

Before heading to the second round experiment, a short discussion was conducted again. This time participants were asked to flash back to the process just went and think about whether it was difficult or not. This discussion also allowed participants having a little break for their brain.

For the second round of the first experiment, participants were asked to create story with the assistance of Smoothie. Unlike the first round, assigned characters in the second round were provided physically and along with other reference figures as figure 4.1 shown. Participants could touch and look at the figures. This time participants were asked to go through the same procedure as round one. Most importantly, they could decide whether applying the reference figures into their story or not.

Finishing the creation, participants were asked to compare two procedures. These outcomes were used to determine whether Smoothie could make a person enjoy ideation process or not. Then, discussing about if they are willing to do this kind of creating process once again in the future.

Figure 4.1 Figure reference

4.3. Rapid Prototype

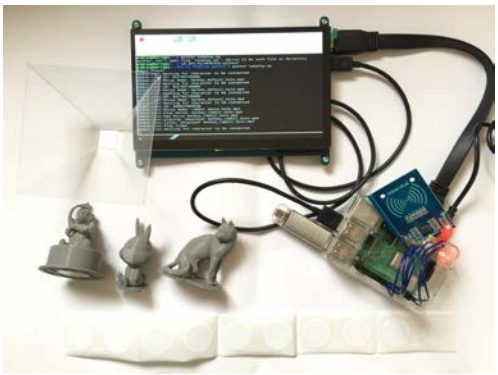


Figure 4.2 Rapid prototype

In order to demonstrate the idea to participants, a rapid prototype was built. The prototype of Smoothie, an interactive storytelling assistant, is consisted of Raspberry Pi 3 B+, MFRC522 RFID reader, RFID tag sticker, touchable LCD screen, hologram pyramid and 3D printed figures. A program (see appendix A) that being used for playing interaction video was modified based on the original code written by Billy Manashi[1]. Due to the limitation of programming skill, the interactive prototype is separated apart from smartphone app.

1 RFID Video Player `https://github.com/bma-diy/rpi-rfid-video`

The redesigned Gacha capsule couldn't be finished at the phase yet. However, the size of it shouldn't be much larger than the existing one in order to implement it to the existing Gacha machine. To demonstrate the holographic animation, the hologram pyramid was used. The interactive figures were done with 3D printer and with maximum 6mm height. By attaching figures with RFID tag, they enabled the video player sensing which animation to play (see figure 4.3, 4.4, 4.5, 4.6).

Figure 4.3 3D printed figure

Figure 4.4 Character with RFID tag

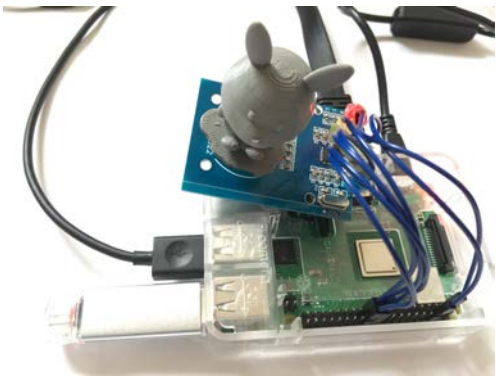


Figure 4.5 Connect the character to see video

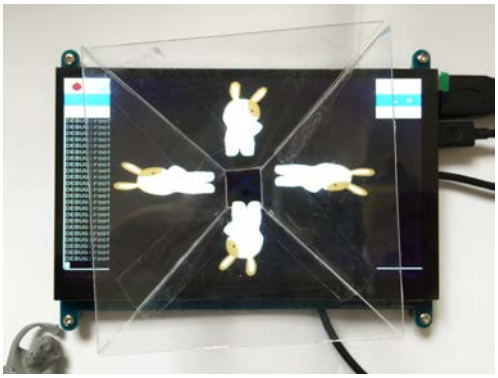


Figure 4.6 Holographic video

4.4. Results

The experiments were done with 18 participants. Interestingly, during the experiments, four participants were so reluctant to write a story at the beginning. They thought it as a huge challenge. After the experiments, however, they all felt creating process with Smoothie was not as difficult as they thought. Every user thought playing with Smoothie making story ideation process more enjoyable, easy coming out with a story and willing to do more creations such as this kind. Several participants even didn't want to stop writing story when times up. About the smartphone app, most of the participants felt the surprising interaction was unique and related to Gacha's core value. Furthermore, the hologram display was very enchanted. However, the video was too small to see and the explaining pages about the app were too long to read patiently (see figure 3.7). The further detail of some significant results are described below.

4.4.1 User L

Figure 4.7 User L creating story with the help of Smoothie in the second round of experiment

User L is a 29-year-old employee who loves Gacha very much and has many collections. She received a landscape design bachelor degree. However, she thinks herself lack of imagination.

- Variety: During the experiment, user L kept playing with figures to see

interactions made by other users to get inspiration (see figure 4.7). As a designer, she thought getting inspiration from others is very important.

> "By seeing how other users interacting with Gacha and their narrations, my imagination grew. Instead of constraining myself in my little world of imagination, I learned things from others. When I was in elementary school, our teacher conducted a similar exercise asking us to write a story every day. She tried to train our imagination. However, I was struggled a lot. It was not fun at all, just stress. With Smoothie, I get inspiration from figures and from other users. it makes the ideation process easier and more fun."

While watching the animation and listening to the narration, a new story will start forming inside user L's head. She thought in terms of story creation, the background music also helping a lot to express the idea.

- Physical:

> "Unlike most of AR app using smartphone viewing the effect, Smoothie enables user watching without the awareness of the device, which made me feel those characters are real and alive."

User L was so excited when seeing holographic animation. She mentioned that the idea of using hologram pyramid displaying AR is more appealing then viewing image through a flat screen. In this way, user L felt the characters and human sharing the same space, the same dimension.

- Interaction:

> "One thing I like very much about Smoothie is that I could see my creation surprisingly when my work is very popular. This is like the physical Gacha that always give me surprise."

User L recalled that one time when she playing with Gacha, the coin was stocked into the machine. The staff couldn't solve the problem. Thus, he opened the machine and let user L pick one herself. Instead of searching for

the one she likes in the machine, user L closed her eyes and grabbed one. Later on, the same situation happened again from the same machine. In second time, user L still insisted grabbing one capsule in blind. It is the uncertainty makes Gacha so playful, user L thought.

After all, user L said that Smoothie had increased her interest in creating story with Gacha, which also results in the intention of collecting more Gacha from different genre.

4.4.2 User Z

Figure 4.8 User Z placing figure on the RFID reader to see the figure in action.

User Z is a 27-year-old lady graduating from the bachelor of Business Administration. She referred to herself as a non-creative person. For user Z, she thought creation as a tool for stress releasing more than a recreation. She likes to write articles, such as diary, to express her feeling. During the experiment, she found creating story with Smoothie was easier than without. With all the hints in hand allowed her to think outside of the box.

- Variety:

  "By watching how people describe the same interaction differently making me get more inspiration."

- Physical: While User Z doing the ideation process, she played with Gacha many times, especially the Gacha machine figure.

  > "The sound from Gacha machine figure was so fun that I just couldn't stop turning it."

  She also mentioned the hologram display is very unique. It made character becoming more real.

- Interaction:

  > "I like the idea of letting users make their own narration for the interaction."

  Smoothie allows user Z expressing her idea in the form of animation. Her output from it will be showed up surprisingly according to the popular ranking, which makes her being encouraged for doing more story ideation exercise.

Interestingly, user Z was so dedicated to making up story during the second round of the experiment. She kept writing even though assigned time was finished. User Z said she is not a big fan of Gacha figure. Nevertheless, Smoothie was fun and it makes her want to collect Gacha. Furthermore, the playfulness, surprising, and the interaction of Smoothie makes her feel creating can also be a leisure activity and she would like to make more works with Smoothie in the future.

4.4.3 User Y

User Y, a 27-year-old graduate student in media design, who thinks himself not very good at ideation.

- Variety: Within the same time duration, user Y came out more stories in the second round experiment. However, the length of each story was slightly shorter compared with the outcomes in the first round (see figure 4.9). He considered the first round experiment was 100% credited to the effort of imagination. The story was created from scratch. He could describe story freely. Thus, he tended to write more detail. In the end, the length of the

Figure 4.9 Creating story with Smoothie's assistance

context becoming longer. On the other hand, lacking of imagination made the task getting boring after a while. In the second round, Gacha played a role as a hint provider. By looking at various of Gacha user Y came out stories much quicker than the first test. He also tried to come out various stories by putting different Gacha into his stories.

User Y thought the top action is very appealing. He would be willing to collect figures to view interaction created by other users and get inspired.

- Physical: When seeing many Gacha as a tool for ideation, user Y was so excited. He kept playing with different combination as figure 4.10 and forming stories.

- Interaction: While setting up action for Gacha, user Y was worrying about what if getting same figure again and again from Gacha machine. Then he realized that he can select background music and record narration to interpret his unique story.

  > "If I can input background music and make narration differently, even though characters are the same, the interaction will look totally different!"

Figure 4.10 User Y playing with physical Gacha

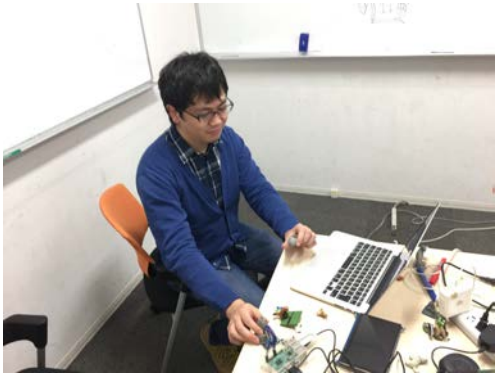


Figure 4.11 User T was composing story with the help of Smoothie

4.4.4 User T

User T is a 25-year-old graduate student in media design who doesn't think himself as a creative person. He gave himself 30 out of 100 points for the ability of creativity. He likes creative activity, especially brain storming. However, when it comes to proof of concept, he starts getting struggle and creating becomes a stress activity for him in the end.

- Variety:Similar to user Y, user T also came up more stories for the second round (see figure 4.11, figure 4.12).

  > "The second round was easier because there were more hints."

  Smoothie trying to help a person generating idea by providing various "references" or "hints", such as video and background music. Speaking of the most important "hint" of Smoothie, user T thought it would be the video. During the experiment, user T kept going back and forth for all the video clips from top interactions. After the test, he mentioned that videos really helped him a lot.

  > "By seeing how other people playing with Gacha characters with specific actions gave me more directions in my creation."

  However, he thought watching the video reference might constrain the direction of story developing.

- Physical:

  > "I can see figures coming alive through hologram display which is amazing. This kind of creation was very fun."

- Interaction:

  > "There's a game call Doubutsunomori [2]. The animals will interact randomly. The surprising interaction concept in Smoothie is similar to that, which is very fun."

2 Doubutsunomori `https://www.nintendo.co.jp/character/mori/index.html`

User T was laughing out loud while seeing other user's story popped out surprisingly.

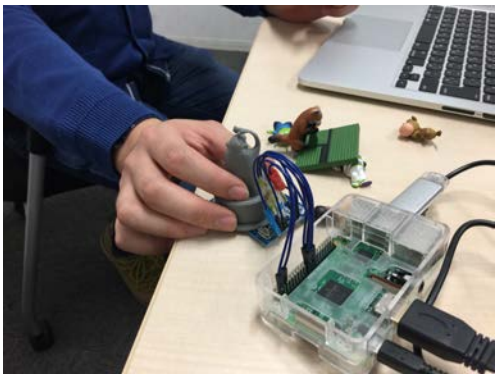


Figure 4.12 User T connecting figure to the RFID reader

About the app, user T thought the number of explanation pages were too many that user might lost the patient to read and background music is not necessary because interaction itself is interesting enough. Besides, if there could have more description about each top story, the intention to view interaction and further collect Gacha might rise.

"Although I am not very good at ideation, playing with Smoothie making me feel coming up with story is such a playful process. To conclude, I am willing to do more creation with it."

4.4.5 User O

User O, 27-year-old, is a coordinator at a travel agency and a teacher, a photographer working with children in Africa. He also holds speeches in public in Japan. He is highly confident in making story. However, he still thought creating story with Smoothie was easier than without.

"In the first round of experiment, by given two characters verbally, it was out of expectation for me. I felt it was a very childish activity to do. Thus, for the beginning of few minutes, I didn't know what

Figure 4.13 User O watched the holography video through the application

to write. Later, I started structuring story with opening and ending sentences in order to come out general story line. While the story being built, this activity became very interesting. The name of characters and other objects just automatically flew in to my mind. I was so eager to finish it in the end."

- Variety: In the second round of experiment, user O felt with providing Gacha allowing him quickly coming up story.
- Physical: User O mentioned that providing a physical character was very critical during the creating process. Without Gacha he had to imagine the outlook of a character himself. He was very satisfied with the second outcome that he created. It was very interesting that user O was the only person among all the test subjects that imagining the given characters (monkey and rabbit) as artificial objects. When he explained why he had that image, he said "It was because I saw one Gacha character having its long tongue outside its mouth. I knew the character very well in the animation. However,

I didn't want to apply its original personality into my story. I would rather play with its action."

- Interaction: User O indicated that it is an interesting idea that the displayed story will change surprisingly (see figure 4.13). However, he suggested if the story teaches the fact, for instance, history, he would be highly motivated to collect Gacha.

Chapter 5
Conclusion

5.1. Overview and Limitations of Research

5.1.1 Overviews

To summarize the research, the results are listed below.

- Variety: with various Gacha and animation provided in the experiment, all participants thought it helped them coming up ideas quickly and easily.
- Physical: during the experiment, some participants were playing with Gacha a lot, especially the Gacha machine, which has sound. In general, participants like the way how animation being displayed. They showed surprising face when they see characters coming out from the display. However, in current design, the animation is small and hard to be seen under the light.
- Interaction: The process of creation interaction was no problem with every participant. Only the surprising interaction that was barely noticed the by participants while they were focusing on story creation. For participants who noticed the animation, they said it was fun but kind of interrupting their work.

All participants felt easier coming out with idea and enjoying the story ideation process with Smoothie. The goal of this research, to enrich the possibility of human imagination with a playful method, is achieved.

Luckily, I got a chance having a conversation with a script writer, L, who wasn't one of the participant in the experiment. Upon knowing that without having preference scripts writing in specific genre, I was curious what would be the approach for L enriching his imagination. "I read a lot of books. When I was

young, I read many novels, any certain kind of it. Then, I started reading other books that besides novel. After watching the movie, Interstellar, I was searching on books which related to the topic of space time. Absorbing knowledge from different field allows me having the ability challenging script writing in all types." replied L.

The interview with L again supports the idea of this thesis.

5.1.2 Limitations

- Selection: 4 participants pointed out that although figure references did help for ideation, it also constrained the imagination possibility. To be more specific, figures provided for experiments were my collection as shown in figure 4.1, which might not be participants' favorite. The variety and amount were limited as well. Upon seeing figures, 3 participants tended to creating story based on existing figures. Even though the instruction of the experiment was asking them using figure as reference only.

  Besides, from design's aspect, there are few points have to be discussed in detail. For instance, the number of interaction video. Current prototype only has five actions for each character. The choice for users is very limited. The minimum number of video for each character that is acceptable by general user needs further research. Second, the size of hologram video is another issue that can be improved. Some users mentioned the videos were too small to watch. However, it is the physical restriction of a hologram pyramid that confine the size. To solve this problem, more experiments will need to be processed.

- Gacha collector: When asking the willingness of collecting Gacha in order to see top interactions, only six people said yes. One of the limitation of this research was the difficulty of finding Gacha collectors. To conclude Smoothie being applicable in the consumers' market, further validation needs to be conducted.

- Video size: The size of video currently is small. Not only users can't notice surprising interaction but also the video itself couldn't display complex content, which makes the video less interesting.

5.2. Future Works

5.2.1 More than an Assistant

Current platform is used as an assistant for creating a story. User can only create and watch simple interaction through the current platform, instead of the entire story. Neither could they watch full story created by other users. When interviewing users, they mentioned that if watching and sharing a complete story is possible, it would be more playful. Therefore, making Smoothie as a story generator could be considered for further development.

Currently, there are many story production apps, such as StoryFab and Lego AR-Studio, which were mentioned in chapter 2. These apps provide user characters, props and sceneries for building up story. On the other hand, user can only take what apps provide for story content. As mentioned previously that 3 users of Smoothie thought their creation were led the way by limited options. Therefore, considering how to lower the limitation and letting user making story as freely as possible are the target to achieve in the future. By achieving this goal, Smoothie can also distinguish from existing story production apps.

One possible solution is that having user creating several interactions and putting in order then making narrations. Later, animation team from Smoothie base on receiving data creating a complete animation for user. Figure 5.1) is the example animation made from user R's story (see story in appendix B.1). However, this solution requires animators and processing time.

5.2.2 Telling Story for Kids

One situation that Smoothie can be applied is when a person telling story to kids. In order to figure out the relationship between telling story to a kid and Gacha purchasing behavior, the questionnaire was conducted. It was distributed at 95 survey subjects age 23 to 55-year-old. The result shows that 76 respondents are Gacha consumer. Within 76 respondents, 49% indicated that they had experiences of telling children story no matter they are parents or not (see figure 5.2).

Moreover, 73% of those who be requested a story by children were struggling coming out a story immediately (see figure 5.3). According to the outcome, it

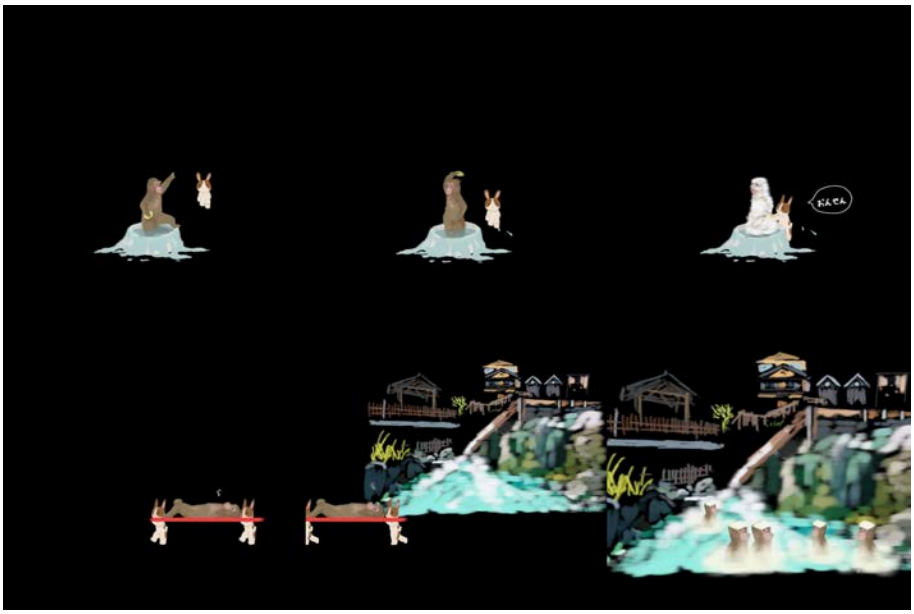


Figure 5.1 Story animation based on user's creation

seems having a positive relationship between Gacha collection and the difficulty of making up story.

The most popular solution for solving this problem among respondents is finding a picture book. Then it's searching on the Internet. Third is playing game with them. Finally, making up a story. There was one participant further answering that when not knowing any story to tell a child, she will try to make up a story while playing toy with kid. Some would like to make up a story him/herself or with child together (see figure 5.4).

As the pie chart reveals, all of the methods that participants applied can be achieved by Smoothie. To further understand the reaction of the target user and children, few interviews were conducted and being described below.

Feedback from Parents

User R

A 35-year-old freelance creator, who has two children, 7-year-old son and 3-year-old daughter. Although she is a creator, user R felt creating a story in a sudden

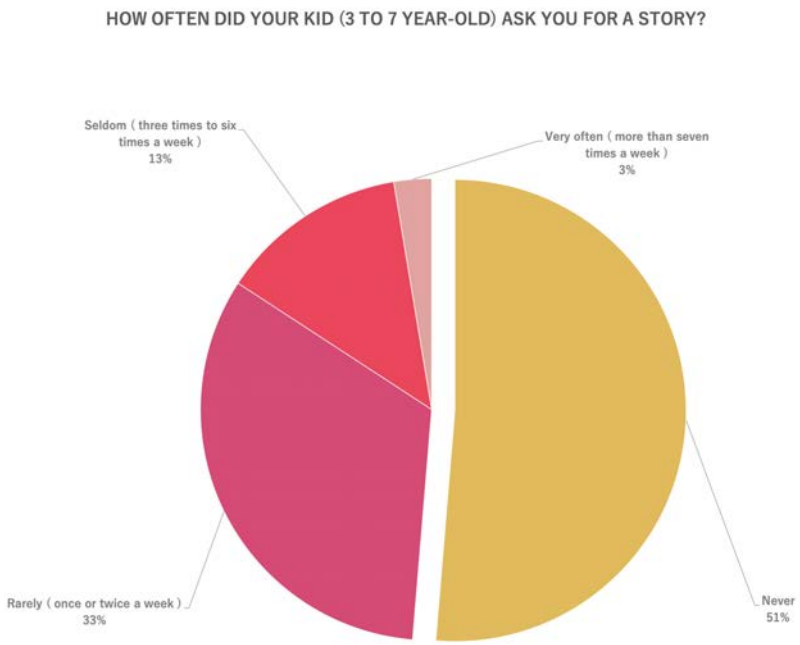


Figure 5.2 Having an experience of purchasing Gacha, 49% of respondents indicated they had encountered being asked for a story by a child in their life.

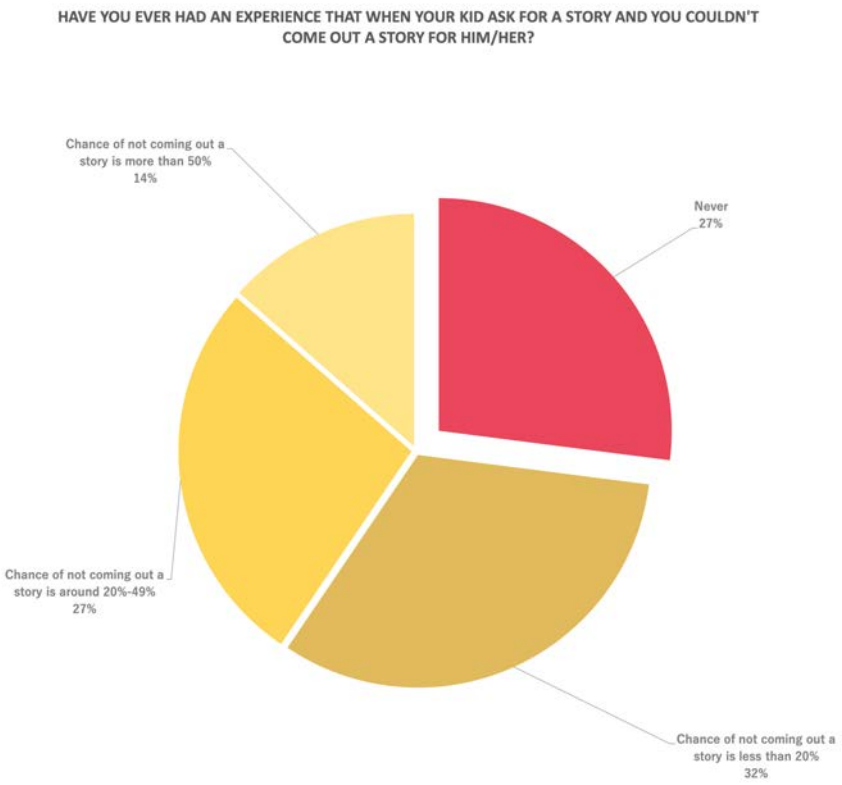


Figure 5.3 Among objects who have experience telling story to kids, 73% of them struggling making or finding story immediately.

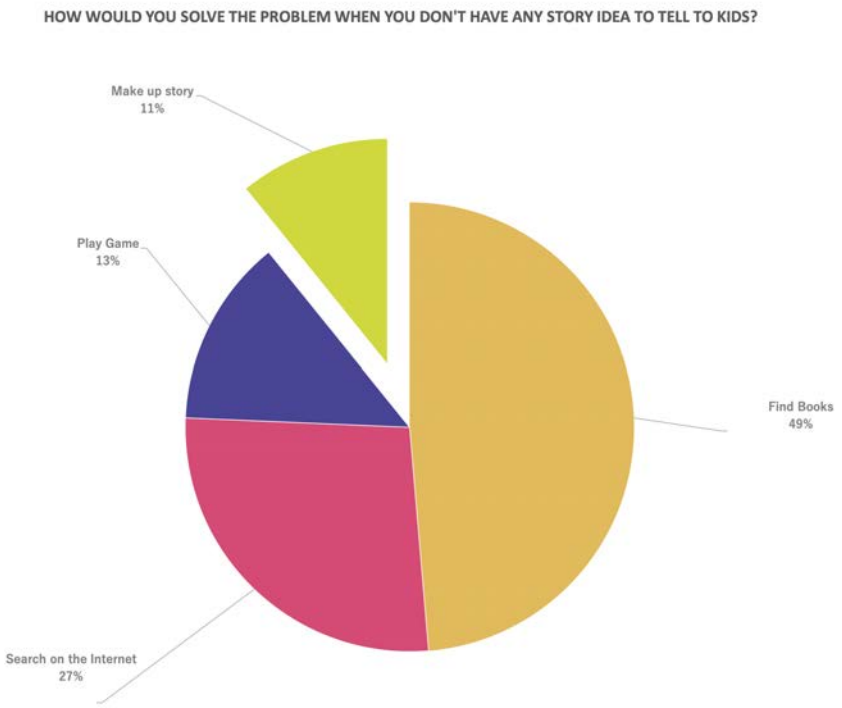


Figure 5.4 Solutions of how respondents overcome the situation of lacking story ideas

Figure 5.5 User R was looking for some inspiration

was very hard. "Usually when my kids ask for a story, I would use their name as the main character and start saying "Once upon a time, Tetsu was walking on the street⋯⋯" However, I don't think my story is very creative. Creating with Smoothie definitely help creation. And I am more satisfied with the outcome. "said user R (see figure 5.5).

Speaking of telling a story, user R said she has a lot of picture for child in different age. She recalled that there was a report saying reading picture books to children will make them grow quickly. That's the reason why she bought so many books. User R also mentioned that due to her work, she doesn't have much time making up story herself. Reading picture book has saving her a lot of time. "Children also prefer listening to the story telling by their parents." said user R (see figure 5.7).

Reaction From Children

Children were interested in figure toys and hologram video. While the mother reading story, the daughter kept watching the video. The son was very eager playing with figures and wanted to compose a story with his mother as figure 5.6 shown. The mother said her kids have impatient personality. They get bored easily. The prototype showed them 6 different videos. At the beginning, when I was explaining Smoothie to the mother, they watched and left quickly. About an hour later, while the prototype being disassembled, they wanted to play with it again. In the end, they played with it for 10 minutes long and showed satisfied smiles.

5-year-old girl, Suri was being told a story by her mother using Smoothie. However, she didn't have patient listening to what her mother said. Instead, her took over the entire prototype, started playing with Gacha, replaying video and making up her own story.

5.2.3 Educational Used

Simply put, Smoothie is a tool that delivers world of fantasy. Besides of imaginary stories, if the video delivers knowledge, for example Aesop's Fables, then it can be used as educational purpose. User O has mentioned about this idea as well

Figure 5.6 Tatsu, 7-year-old liked to play with physical figures which can interact with each other. He tried to make a story with his mother.

Figure 5.7 User R was using Smoothie telling story to her daughter, Fu. Fu is 4-year-old. She was so concentrating on the holography animation.

Figure 5.8 Suri was eager to create her own story with Gacha

(see chapter 4.4.5). In order to understand parents' opinions toward transforming children's collection into educational tool, two interviews were conducted.

Feedback from Parents

User S

Figure 5.9 User S was looking at the top actions' page

User S is a mid-age woman who just working in an American company currently. Before that she was a full-time house wife, who spent much time with her children, who are 11-year-old and 13-year-old. She likes creative activity, such as hand craft and drawing. However, when she worked full-time in the office, she barely had time doing it. "Both joyful and stressful. Ideation for me means making a totally new stuff out of something. To create something which is not commonly found. However, if I am forced to think of something that I am not really interested in, I feel stressed." said user S when being asked the opinion on ideation process. She likes to share her works with friends. "At least this is what I've done and I enjoyed the process. Therefore, I want to share it." user S indicated.

After experiencing with Smoothie (see figure 5.9), she thought the process of creating a story from scratch was more difficult then using the prototype. She thought Smoothie helped her thinking outside the box. "While seeing different genre of Gacha, I started combining them together!" mentioned user S.

Having the whole image of Smoothie, she mentioned that her children love collecting things, which also including Gacha. However, originally user S thought

this kind of collection as a waste of money. Besides, there's not much to do with it. Thus, she refrained them from buying it. But Smoothie had changed her perspective. When hearing about the idea of Gacha characters teaching knowledge, user S reacted positively.

> "In that case, I would not stop my children purchasing Gacha anymore. Instead, I will even encourage them to buy it. Also, after manipulating Smoothie, I can see it as a tool of cultivating creativity, which is very good for kids' development."

User SY

Figure 5.10 Looking for ideas from the help of Smoothie

User SY is an office lady. She has two daughters, 11 years old and 5 years old. "I am not very creative. Ideation for me is rather a pressure than a leisure activity. Probably it's due to the environment I live in. In daily life, I don't need to do creation. The longer I don't train my brain, the higher chance I lose imagination." said user SY. After playing with Smoothie (see figure 5.10), she felt she was happy to say it out loud that she is the author of this story. "This kind of creation was fun. I didn't feel stress at all and I would like to do it again." mentioned user SY. She also indicated that Smoothie taught her how to think outside the box. "Next time when I making proposal, I will try to think outside the box just like how I created story today."

User SY's daughters like collecting figures and play with them as figure 5.11 shown. Unlike other parents, user SY respects her children's hobbit. She said that her daughters will carefully treat the collection, thus, she agrees on buying

Figure 5.11 Kids were playing with figures

figures. Her daughters play figures once in a while and seldom get bored. "While playing figures can also absorbing knowledge I would like to purchase more figures for kids." said user SY.

5.2.4 Commercial Use

In the past of the few years, Gacha became not only a toy but a promotion prop. From perfume store, restaurant to shrine, Gacha attracted numbers of visitors.

(Source: Biotope Inc.)

Figure 5.12 Gacha Champagne from Nose Shop in 2018 *Biotope Inc.*

A champagne (see figure 5.12) from the Nose Shop[1] in 2018, they created a perfume Gacha. Inside the capsule packed a bottle of perfume. This strategy

1 Nose Shop `https://noseshop.jp/`

provides consumers a chance of trying out some perfume they might never ever think to try before. Once customers discover their new favorite fragrance, the revenue will rise accordingly.

(Source: Takamasa Tsukamoto)

Figure 5.13 Gacha champagne at Nishiki service area 2017 *Takamasa Tsukamoto*

Another example is the champagne in a restaurant in Nishiki service area, Japan[2]. The restaurant putting discount coupon inside the capsule. By purchasing a capsule with 500 JPY, customer will have a chance to win a meal that value 2100 JPY (see figure 5.13).

From examples above, the relationship between Gacha and other industries is seen obviously. If applying Smoothie's interactive Gacha to the store and deliver a store's fantasy world to potential customer, would it be another method to attract more foot steps into a brick-and-mortar store? In chapter 4, some users actually mentioned that they would like to collect interactive Gacha. And some mentioned that if they can smell the environment of a story setting through the aroma Gacha, it would immerse them into a fantasy world more deeply, which is very attractive. However, without further research on testifying, no conclusion can't be made. Thus, the proof of this concept will be left for the future work.

2 `https://www.travel.co.jp/guide/article/28193/`

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Appendices

A. Prototype Code on Raspberry Pi

Original code was written by Billy Manashi. RFID Video Player, which can only detect a single RFID tag. The prototype of Smoothie has modified the code to make the video being played according to different combination of two tags.

```
#!/usr/bin/env python
#version 1.0.07


import SimpleMFRC522
import time
import subprocess
import os
import logging
import random
import glob
import RPi.GPIO as GPIO
from threading import Timer


def playMovie(movie, aspect43=False):
    """plays a video."""

    global myprocess
    global directory

    logging.debug('linux: omxplayer %s' % movie)
```

```
    if not isPlaying():
        logging.debug('Play Video.')
    else:
        logging.debug(
        'Video is already playing, so quit current video, then play')
        myprocess.communicate(b"q")

    if not aspect43:
        exec_params = ['omxplayer', directory + movie]
    else:
        exec_params = ['omxplayer', '--win',
                       '240,0,1680,1080', directory + movie]

    myprocess = subprocess.Popen(exec_params,
                                 stdin=subprocess.PIPE,
                                 stdout=subprocess.PIPE,
                                 stderr=subprocess.PIPE,
                                 close_fds=True)
    time.sleep(3)


def runMovie(movie, id):
    global current, myprocess, directory, start_time

    if current != id:
        logging.debug("New Movie %s" % movie)
        #this is a check to prevent omxplayer from restarting video
        # if ID is left over the reader.
        # better to use id than movie_name as there can be a problem
        # reading movie_name occasionally

        if movie.endswith(('.mp4', '.avi', '.m4v', '.mkv')):
            #we set this here to prevent it mess up on first read
            current = id
            logging.debug("playing: omxplayer %s" % movie)
            playMovie(movie)
```

```
        elif 'folder' in movie:
            # randomly plays video files from a certain folder
            current = id
            movie_directory = movie.replace('folder', '')
            movie = random.choice(
                glob.glob(os.path.join(directory+movie_directory, '*')))
            movie = movie.replace(directory, '')

            logging.debug("randomly playing: omxplayer %s" % movie)
            playMovie(movie)

        elif 'fourthree' in movie:
            # video randomly played from a folder in 4:3 aspect ratio
            current = id
            movie_directory = movie.replace('fourthree','')
            movie = random.choice(
                glob.glob(os.path.join(directory+movie_directory,'*')))
            movie = movie.replace(directory,'')

            logging.debug("randomly playing: omxplayer %s" % movie)
            playMovie(movie, True)

        else:
            logging.debug("Invalid movie name")

    else:
        if isPlaying():
            # i don't know what here does...
            elapsed_time = time.time() - start_time
            if elapsed_time > 0.6:
                # pause, unpause movie
                logging.debug('Pausing movie - or - Playing movie')
                myprocess.stdin.write("p")
```

```
def setMovie(scanned_set):
    # play movie
    if len(scanned_set) == 1:
        # if there is only a single card
        logging.debug("only one card detected")
        item = scanned_set.popitem()
        movie = item[1]
        id = item[0]
        logging.debug("Play movie: %s" % movie)
        runMovie(movie, id)
    elif len(scanned_set) == 2:
        movie = ''
        movies = scanned_set.values()
        # change the movie names here, add more
        # get new movie name
        if "cat_default_holo.mp4" in movies:
            if "monkey_default_holo.mp4" in movies:
                movie = "monkey_cat_holo.mp4"
            elif "rabbit_dance_holo.mp4" in movies:
                movie = "rabbit_cat_holo.mp4"
            else:
                movie = "cat_default_holo.mp4"
        elif "monkey_default_holo.mp4" in movies:
            if "rabbit_dance_holo.mp4" in movies:
                movie = "monkey_rabbit_holo.mp4"
            else:
                movie= "monkey_default_holo.mp4"
        else:
            movie= "rabbit_dance_holo.mp4"
        id = sum(scanned_set.keys())
        # play movie
        logging.debug("Play movie: %s" % movie)
        runMovie(movie, id)
    else:
        logging.debug("More than 2 cards detected")
```

```
def isPlaying():
    """check if omxplayer is running
    if the value returned is a 1 or 0, omxplayer is NOT playing a video
    if the value returned is a 2, omxplayer is playing a video"""

    process_name = 'omxplayer'
    tmp = os.popen("ps -Af").read()
    proc_count = tmp.count(process_name)

    if proc_count == 2:
        return True
    else:  # 0 or 1
        return False


def timeUp():
    global time_up
    time_up = True


# program start
"""set logging"""
logging.basicConfig(level=logging.DEBUG)

"""set globals"""
reader = SimpleMFRC522.SimpleMFRC522()
directory = '/media/pi/B0D7-193D/video/'

scanned_set = {}
timer = None
current = 0
time_up = False
start_time = 0
```

```
try:
    print("Begin Player")

    while True:
        start_time = time.time()

        if not isPlaying():
            if current != 0:
                current = 0

        logging.debug("Waiting for character to be connected")
        id, movie = reader.read()
        movie = movie.rstrip()
        if(not id in scanned_set):
            scanned_set.update({id : movie})
        logging.debug("ID: %s" % id)
        logging.debug("Movie Name: %s" % movie)

        # if one found, wait for the other cards shortly
        if timer is None:
            if len(scanned_set) > 0:
                timer = Timer(1.5, timeUp)
                timer.start()
        else:
            if len(scanned_set) >= 2:
                timer.cancel()
                time_up = True

        if time_up:
            # reset timer
            time_up = False
            timer = None
            setMovie(scanned_set)
            # clear the set
            scanned_set.clear()
```

```
except KeyboardInterrupt:
    GPIO.cleanup()
    print("\nAll Done")
```

B. Story Created by Participants with Smoothie

B.1 King Monkey (by User R)

Once upon a time, there's a king monkey loves bathing. He always asks his rabbit sergeants coming to the public bath scratching his back. Being called so unexpectedly most of the time, rabbit sergeants becomes super busy. One day, king monkey heard about Kusatsu hot spring from rabbits and eagerly wanting to visit. Therefore, leading the rabbits, king monkey spent three days arriving Kusatsu hot spring. When arriving, he saw many monkey soaking in the hot spring. It was not until then did he know there are other monkeys living on this planet. King monkey believed that Kusatsu is his birth place. Thus, he decided to migrate there. Upon hearing this news, rabbit sergeants felt so happy that finally they can escape from king monkey's control.

B.2 Boiled Rabbit (by User W)

In Japan, foreign visitors like to go to historical spots, such as castle and having gourmet. But for European visitors, some other interesting spots are worth a visit as well, for instance, monkey hot spring. No matter how cold winter is, they will make a group tour to the countryside of Japan seeing monkeys in a hot spring. Monkeys bringing revenue to the local region, residents felt grateful that they worship them. Monkeys became so pride that starting bully small animals. One bullied rabbit thought he's much cuter than monkey. People will love him. Thus, he decided to go into the hot spring challenging monkeys. Unfortunately, it was his first time going to the hot spring. Not knowing where has suitable temperature, he jumped into case that had eggs inside and lowered the case into a hot spring which having incredible steam. Not much longer, a boiled rabbit and eggs were ready to eat.

B.3 Colorless Monkey and Rabbit (by User N)

This is the story of white monkey and white rabbit. For some reason they were colorless, they were entirely white. They felt different from the rest, because of course, those around them had as many colors as there were colors in the world. White monkey and white rabbit did not know each other, that is, they did not know the existence of each other. They lived in the same jungle, but they had never crossed paths. It was a Saturday morning, cold, cloudy, gray, lack of vivid colors in the forest. White monkey and white rabbit coincidentally appeared in that place at the same time. First, a small white dot caught their attention so they began to approach it. Sooner, they were getting closer and closer to each other. They did not stop moving until they were finally face to face. They stared at each other, without saying anything, and their eyes started turning green.

B.4 Girl Waken Up in Rabbit's Body (by User ZB)

Once upon a time there was a girl named A. she lived in a country where animals were forbidden. Animals lived in a separate place that was more like a zoo far from humans. All the references of animals were destroyed even from media and books. Growing up she thought the only race that existed is the human race. Green spaces were a luxury that only rich people have access to. One day on her way to school, she found a ring in the floor that she picked up. The ring felt magical she kept admiring it all day. When she went back home she run to her room, wore the ring and started doing her homework. Some minutes later she started feeling very sleepy. Then she fainted. That's the last thing she could remember. When woke up, she wasn't herself again. She woke up in the body of a rabbit. A creature so unknown to her, she didn't know what was happening and started to feel scared because she knows the danger of being an animal in this town. She decided to leave home before anyone finds her and hurts her. She dragged a piece of clothing as a cover-up and started going down the stairs to leave. In the corner of the street, the very dark street, she hears a strange sound. It was a sound of a monkey! She approaches the sound to find out if it's another person to whom the same thing happened to him.