next generation interaction

service design

About Us

JIAYUAN LI

HSUAN-TZU SHEN

JIAJIA HUANG

TIANSHU CHEN

SEONHYO KIM

Youniverse is a brand new way to explore preschool children's potential under the pandemic through playing. The service contains a gaming platform with a series of games(visual, aural, physical, and linguistic) designed for children development and a background app for parents to observe and understand their kids better while playing.

ADVENTURES

BRIEF & BACKGROUND
DESK RESEARCH
DIRECTION DEFINITION
PRIMARY RESEARCH
EXPLORATION & DISCOVERY
SOLUTION
PROTOTYPE & TESTING
BUSINESS PLAN
REFLECTIONS & IMPROVEMENT
APPENDIX

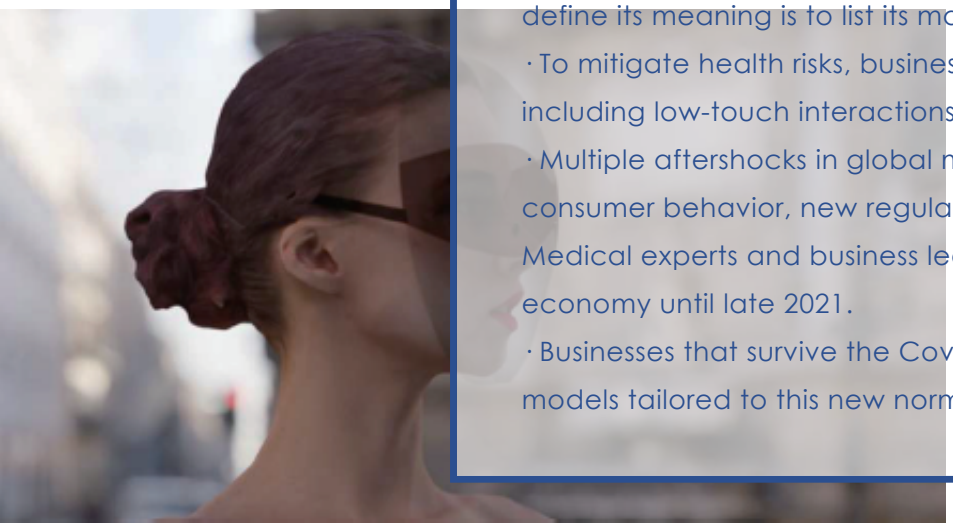
Brief & Background

Royal College of Art

MODAL

During the research, we got to know people are not used to voice interaction, and the scenarios to apply voice interaction is limited. After further exploration, we targeted our focus group to children from 4 to 6 years old as children are more willing to embrace new tech and easier to nurture new habits. The more important reason is that children at this age are still learning how to read and write. Voice is a vital and essential intermedia between them and the world. During this part, two rounds of questionnaires had been conducted, with 238 and 905 feedbacks respectively. Besides, 10 deep interviews had been completed successfully. The research covers mainly within children's education, concerns within the emotions and relationship between parents and kids.

Low touch economy



The term Low Touch Economy refers to the way businesses across the globe have been forced to operate in order to succeed as a result of Covid-19. The best way to define its meaning is to list its main characteristics so far:

· To mitigate health risks, businesses have been forced to adapt to strict policies, including low-touch interactions, limited gatherings, travel restrictions, and so on.

· Multiple aftershocks in global markets can already be seen. These include shifts in consumer behavior, new regulations, and supply chain disruptions.

Medical experts and business leaders assume Covid-19 will directly influence the economy until late 2021.

· Businesses that survive the Covid-19 pandemic will be those that rely on business models tailored to this new normal while keeping everyone as safe as possible.

Forced isolation and social distancing restrictions, put into place during the Covid-19 health crisis, are expected to have a lasting effect on the world as we know it. Or should I say, once knew it.In just a few weeks time, society has already undergone a major overhaul in the way companies and citizens live and work. It's truly impressive how adaptable human-kind can be when it needs to.But with every passing day and with every bit of extra time added to our confinement, it is becoming harder and harder for us to return to the way things were before. That's not to say this new world will be better or worse. Just different. With many isolation-induced behaviors becoming ingrained habits that usher in a whole new set of societal norms. During this period of influx, some businesses will thrive in this change and reach accelerated success, while others will struggle to find their footing in all of the chaos.

No matter what. We are all in store for a period of rapid learning, marked by plenty of ups and downs and economic uncertainty.

Desk Research

Market Research

The COVID-19 pandemic has severely impacted the growth of global industries. Voice control will evolve to become ubiquitous in our working lives, just as making a call using voice in your car has become. Voice is poised to become the enabler that helps users better interact with people, places, and technology. Here are several examples of existing industries applications and industries that are affected and forced to be shifted due to the pandemic.

Smart home

Global sales are expected to decline by 5-10% in this fiscal year, depending upon the progression of the virus spread. The impact of COVID-19 on major markets such as the US and China has been adverse, as supply chain disruption in China has resulted in a decline in demand for smart home systems in China. The decrease in the number of new construction projects and the temporary shutdown of manufacturing facilities are some of the factors hampering the market growth in China. The market in the US is expected to witness higher growth in comparison to other countries in the Americas. However, limited adoption of smart home systems for the short term and the ongoing trade war with China are expected to affect the growth of the smart home market in the region.

New data from Juniper Research found that the number of voice assistants used to access smart home devices will reach 555 million by 2024; up from 105 million in 2019. By 2024, Juniper Research expects more than 90% of voice assistants to be used to control smart home devices; driven by increased participation from Chinese manufacturers.

IoT

IoT voice control at home is popular right now. The voice-controlled smart home battle is led by Google Home Mini and Amazon Echo Dot. The Alexa skills that integrate with home features make voice-controlling a smart home easy and straightforward. Currently, Amazon and Google together account for 69% of smart speaker shipments, but there are plenty of companies improving their technology to compete. These platforms have the ability to integrate with almost every aspect of a smart home — refrigerators, lights, televisions, washing machines and so forth. As more devices become connected, voice commands will control more in the house.

IoT voice control in the hospital whereas voice control in the car and at home help keep up with consumer demands and wants, voice control in the hospital improves patient safety. Using a smart speaker or digital assistant in an exam room could update medical records in real time. Boston Children's Hospital already tested out an Alexa app called KidsMD. Parents can ask Echo questions about illnesses in their children and get real-time information about drugs, procedures and how to treat their child.

Healthcare

The coronavirus pandemic has been a wake-up call for patients-as-consumers, seeking lower-touch health care services at home or closer-to-home in community health hubs.
A survey was conducted among over 2,000 consumers living in France, Germany, the United Kingdom, and the U.S. in mid-June 2020. The report found three big shifts in global health citizens' views on their personal health and health care delivery in the wake of the pandemic:

1. Across all age groups, COVID-19 exacerbated peoples' concerns about their physical and mental health in a very short time.
2. Peoples' interest in digital health technologies has accelerated due to the pandemic, from interest in virtually-conducted clinical trials and remote health monitoring for chronic conditions to fitness and wellness apps.
3. "Empowered Consumers," more likely to be older people living with a mate, with higher incomes dealing with a chronic condition, are more likely to embrace technology to support their self-care.
4. The segment of empowered consumers would more likely use digital technologies as shown in the first bar chart. This graph compares consumers' demands by digital health channels for accessing various points of care across personal health care life-flows.

Technical Research

Voice Interaction Tech

Voice interaction generally includes three modules:

1. Speech recognition ASR (Automatic Speech Recognition), the main job is to convert sound information into text.
2. Natural language processing NLP (Natural Language Processing), the main job is to understand what people want to express and give reasonable feedback.
3. Speech synthesis TTS (Text To Speech), the main task is to convert text into sound.

Features of voice interaction

Here are some features and examples of voice interaction:

· ***Voice assistants use single commands.*** For now, these consist mostly of fixed phrases. Effectively, they push one button or set one dial.

· ***As more flexible natural language understanding technology is becoming available, interpretations of speech commands may come ambiguous.*** With commands resulting in actions, misunderstandings can be risky. Did I really want to set the oven to 600 degrees? Do we need "guard rails"?

· ***Voice assistants support only one-way "conversations".*** The appliances cannot talk back, asking for clarification of intent. Building checks into the skills executed in the cloud does not completely solve this problem.

· ***The commands are independent of the state of the device.*** The user has to know whether an oven is on, when the heat should be turned lower, etc.

· ***The stateless aspect of the voice commands also limits the ability to support action sequences*** if those actions depend on the state of the device. Have I turned on the exhaust before I turn on a burner on the stove?

· ***Appliances generally cannot initiate conversations, or give alerts by saying***, for instance, that the clothes washer is finished, or that the pot on the stove top is boiling over.

· In many cases, ***only a subset of the appliance functionality is accessible via voice assistant.*** This can be due to safety reasons. A stove top burner should be turned on only when somebody is in the kitchen. Or it can be because a function is complex and depends on the state of the appliance, e.g. bring the water to a boil, and cook the pasta until tender.

· ***Voice assistants cannot integrate context data,*** such as who is in the kitchen? is there milk in the refrigerator?

· ***They typically do not remember history*** — how did we do this the last time?

· They ***depend on an Internet connection***, and the obstacles it has in each home that can make it less than reliable.

Disadvantages of voice interaction

Disadvantage 1: ***Low information reception efficiency***

The voice output is linear. When others are speaking, you may have to wait until you have finished speaking to understand. You can't skip reading like text; voice interaction will also increase the user's memory burden, especially when faced with multiple choices and options. Longer time.

Therefore, it cannot output a lot of content at the same time. When receiving information and interacting with multiple choices, vision has a greater advantage and the sound efficiency is not high. In summary, voice interaction is more effective for one-way commands, while two-way interaction is not very effective.

Disadvantage 2: ***The accuracy of speech recognition in a noisy environment is reduced***

Speech recognition needs to clearly recognize human voices, including separating human voices from environmental sounds, and separating human voices from human voices. The noisy environment makes the extraction of human voice very difficult, especially for far-field voice interaction, the problem of noise is more prominent. At present, microphone array hardware and related algorithms are commonly used in the industry to optimize this problem, but it cannot be completely solved. For example, the accuracy of speech recognition can reach 95% in a quiet far-field environment, but it can only reach 80% in a noisy environment. However, as the technology progresses, the accuracy of far-field speech recognition in a noisy environment will definitely be gradually improved.

Disadvantage 3: ***Voice interaction in an open environment has a psychological burden***

The psychological barrier of voice interaction is that users cannot present and judge in advance. In the same situation, different people may have completely different behaviors and expectations. This has brought a lot of trouble to the designer, and it also brings uncertainty to the user. From the perspective of psychological experience, not many people are willing to speak to the machine, because they may get emotional or even wrong reactions.

Potential Scenarios

Natural language operations have low learning costs, but the accuracy of information transmission decreases; non-natural languages increase the learning curve. When applied to precise real-time operation, voice operation is difficult because it is easy to make mistakes and occur recognizing errors. Here are some potential scenarios for example:

· **Repetitive operations.** We can use natural language with low accuracy to operate to obtain the spatial width as well as do easy and repetitive tasks, such as turning the light on and off while lying in bed.

· **Proper environment.** In practical applications, people will not talk to Siri in public, but they will do that at home.

· **Multi-task situations.** People can't use their hands while driving, so voice recognition is very efficient in this situation.

· **Touch-free circumstances.** Use voice to help patients or people with impairment control their aspects of comfort in self-care.

· **Emotional feeling needs.** As voice could express the emotion and mood of a person, this could be applied in accompaniment with people to deal with loneliness.

Direction Definition

Questionnaire 1

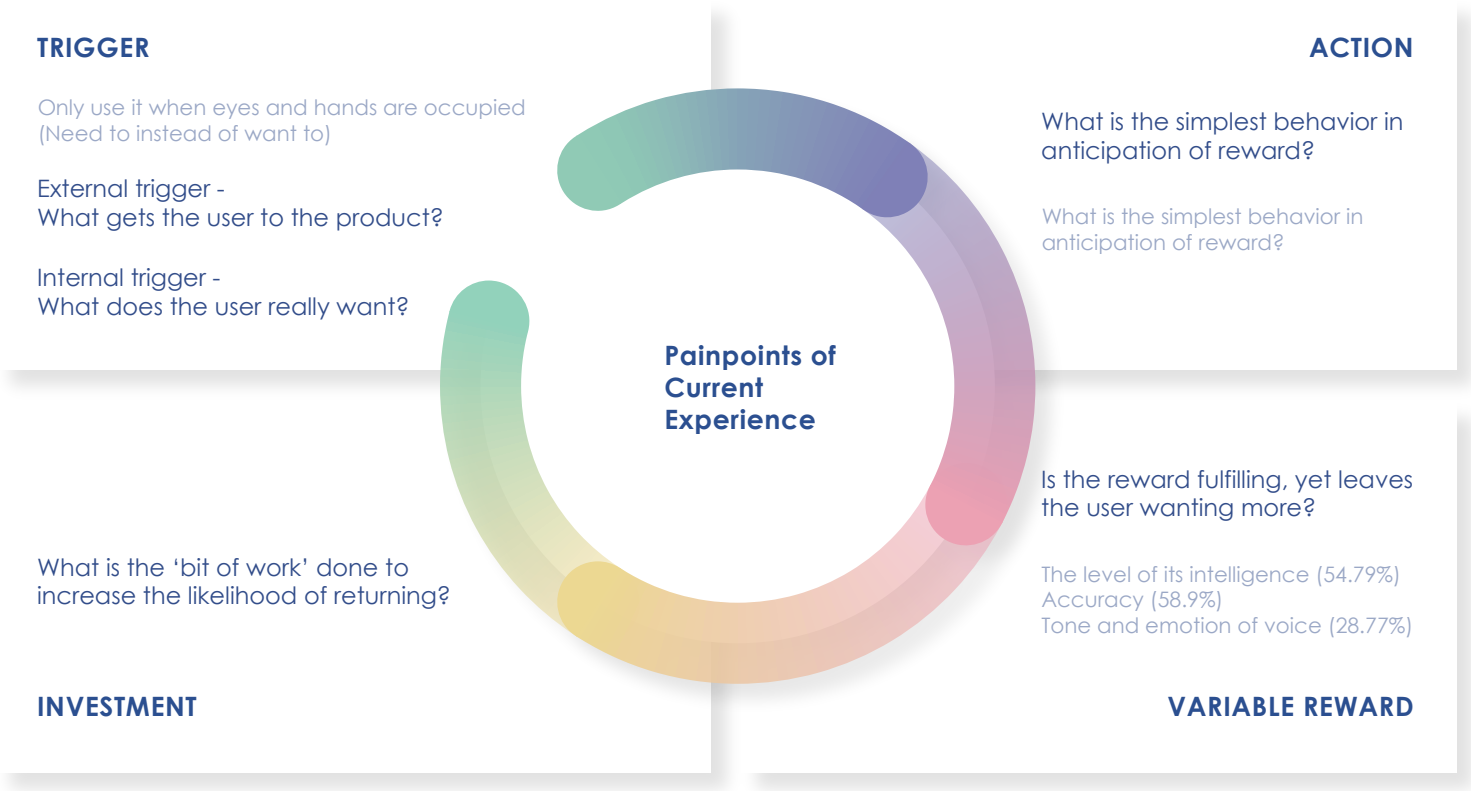
In the first questionnaire, we got 208 feedback.
Over 36% percent of people are more than 45 years old.
Approximately 55 percent of the questionnaire respondents were women.
Most of the interviewees have jobs.
The frequency of their use of voice assistants is mainly occasional and rarely
This makes us discover that there is still a large user market for voice assistants that needs to be expanded.
When talking about what functions will be commonly used if you use a voice assistant.
Most people choose to navigate, play music, make phone calls, check the weather, communicate and interact and chat.
This allows us to discover many different possibilities for voice functions

In the questionnaire, most people chose the scene of driving to use the voice interaction function.
At the same time, many people will also use it for communication, company, entertainment, etc.
Many people think that the existing voice interaction functions need to be improved in terms of intelligence and accuracy.
Most people don't use the voice interaction function because they are not used to voice interaction, and they think that voice interaction is silly and troublesome.

So we hope to find more possibilities for voice interaction to broaden the voice interaction market.
Many people have raised the drawbacks of voice interaction, but most people still have expectations for the future of voice interaction

The Potential of Behavior Change

According to the result of the questionnaire, we then deeper examined the current experience provided by voice assistants through the hook canvas to explore insights about why most of the users were gone or seldom use this technology.



Motivation and Trigger

One of the biggest reasons people turn to voice assistants is that their hands and eyes are occupied or they are concentrating on other tasks, for example, driving and meditating. It is more an external trigger instead of internal. The “need-to rather than want-to” trigger might limit people’s imagination and motivation to discover other possible scenarios where voice interaction can be used.

Rewarding Experience

Limited to the level of intelligence and accuracy of audio recognization, the current experience is more frustrating rather than rewarding for some users. People often expect voice assistants to have the same level of intelligence and way of having conversations as human beings. This expectation may lead to a more disappointing experience when the voice assistant can not understand or misunderstand what users are saying.

Taking Action

Although speaking is a natural way for humans to communicate, there are still multiple reasons that higher the behavioral and psychological threshold of interacting with CUI.

Some users feel awkward speaking to the voice interface, especially in public spaces. Besides, due to the design of the algorithm, users still have to try through multiple errors to learn how to make a command that AI can understand. Compare to GUI, the current interaction design of CUI is still less intuitive and cost more for users to complete their tasks.

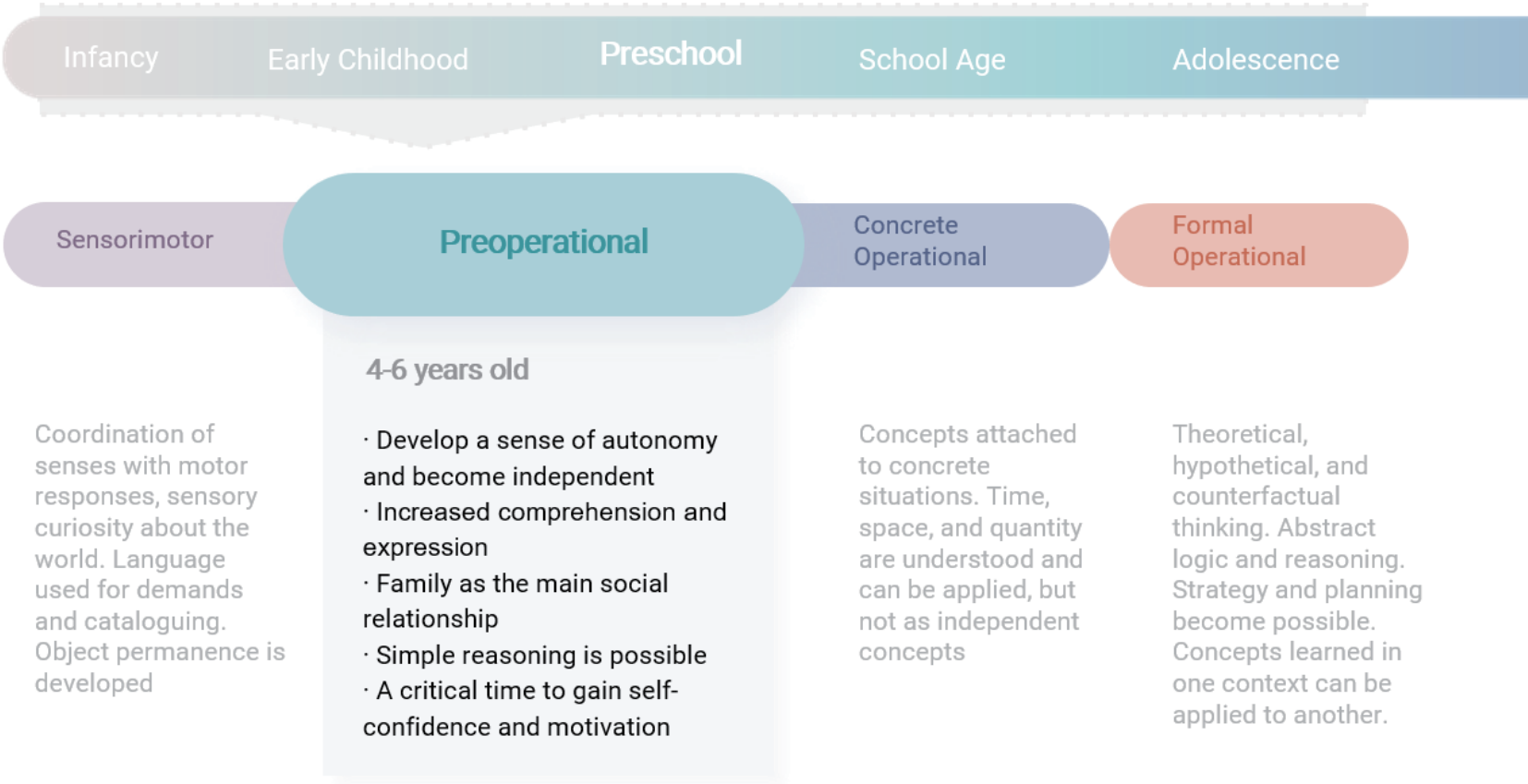
Conclusion

However, even though users are not used to the technology and there is still much to be improved, most of the interviewees are willing to try and already trying and purchasing it. Besides, when people are asked about what they think of voice interaction, except for its disadvantages, they still have positive expectations toward the technology. There are positive answers, for example, some think it is trendy, some expecting the technology to give guidance and advice, and some feel a sense of accompanying when using it. There might be a massive amount of potential users waiting to be unboarded if the user experience keeps being improved. Thus, we concluded the research around voice interaction with the potential directions below:

1. Explore the possibilities beyond the screen and the reasonable and potential scenarios in users' life.
2. Onboard potential users and turn them into regular users of voice technology.

Identifying Target Users: Preschool Education

The emergence of broadband in 2000 has created a generation of digital natives. The youngest is now learning how to use smartphones and tablets before they can speak. Children's high acceptance and adaptation of technology creates a higher possibility and potential for new technology like CUI to take place in their daily lives. According to Piaget's theory of children's development, children from 4 to 6 are already equipped with the ability of symbolic thinking. Their conversation skills are developed and can use proper syntax and grammar to express concepts. Also, kids around this age are still learning how to read. Voice and sound are important means for them to communicate and understand the world, which implies there is enormous potential for voice technology to make an influence. Therefore, conducting previous research around voice interaction, the team decided to target our user group around preschool education: children from 4 to 6 years old.



Primary Research

Why do we choose education for children aged 4-6 ?

- Children want to try everything and are less afraid of embarrassment
- It is easy to develop new habits and accept new technologies
  (for example, a 4-year-old child uses an iPad more quickly than an adult)

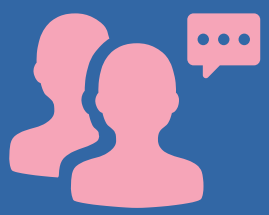
Why do we think this market has potential ?

- Preschool children are still developing reading and writing skills. Sound is a very important interactive medium for them in addition to images and text

---

905 answers

- Want to know children's real interest and talent to cultivate .
- Busy with work, and their time to observate and play with kids is not enough.
- Want to try a lot of activities but children are hard to continue, which also related to economic pressure.



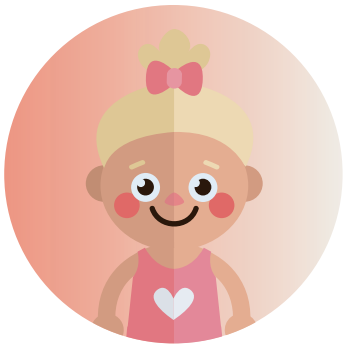
10 interviews

- **The guidance is very important, like to be encourage,like to be creative, learn from play.**
- **Parents sign up a lot of classes but it is easy for them to lose interest.**

Interviews

6 years old

· I don't like my dad much. It's scary when he loses his temper.
· My dad seldom spend time with me. I don't like to be with him either actually.
· My mom is a housewife. Dad and mom have argues and fights sometimes.
· They don't care about my thoughts and have no idea with what I like either.



5 years old

· I hope I can get more compliments from my parents.
· My parents spend about 3 to 4 hours with me everyday.
· They often lose patience when playing with me.
· They care a lot about my learning skills and signed up a lot of classes for me.
· I use an APP to learn English but I think it's quite boring.

5 years old

· I love to play with dinosaurs and Ultraman! I even invented my own Ultraman game!
· My parents play with me sometimes but they often got distracted by their phones.
· I like voice assistants a lot. I often use them to tell stories to my sister.
· I like to talk with my parents.

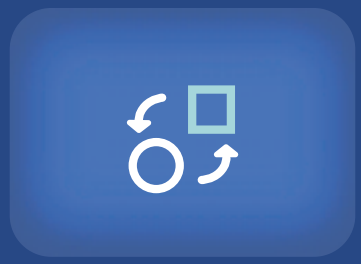
Findings

Emotion control

Most parents lose control of their emotions during the education process

Low companionship

Except for housewives, other parents spend about 3 hours a day with their children.



Lack of empathy

The children want to be understood and praised

Poor quality of communication

Parents want to be part of their child's world, but are easily distracted

Failing eyesight

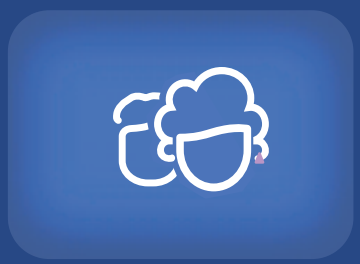
Screens can cause children to lose their eyesight.

Inadequate vocabulary

Children at this age have a lower vocabulary and limited knowledge of interfaces

Development of comprehensive skills

Parents want to develop their children's general skills and generally believe that CUI devices are helpful in learning



Roles in education

Imbalance in the participation of parents in education, with greater involvement of mothers

Exploration & Discovery

We ran nine testing workshops with kids from 4 to 7 and received feedback from both parents and children. Tools including illustrator and Google Music Lab were used to create simple interfaces and games to play with through video calls and screen sharing. We acted as the VUI to receive voice commands from users and gave aural/visual feedback.

Persona

Cassie, 32

Accountant

· Work from monday to friday
· Occasionally work overtime
· Have 5 years old son, jimmy
· Busy husband work as shopping mall manager
· Have more open minded towards education

Needs

· Want to know how to cultivate children interest
· Discover their gifts but find it difficult
· Want to involve dad more in children's education
· Want to improve the communication method with kids
· Want to have her own time

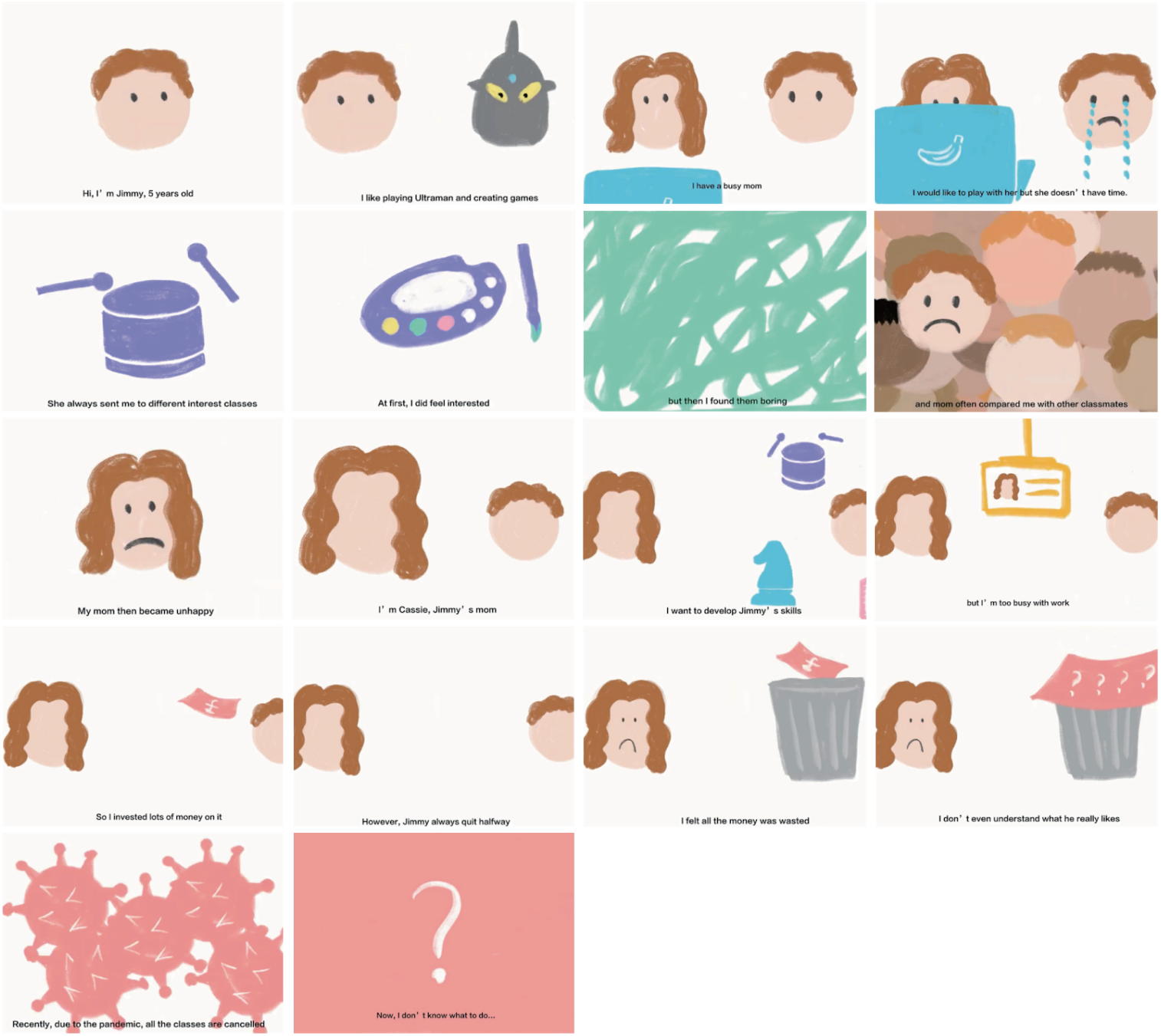
Desires

· Make her child to be successful
· Always keep relax and fun in nuclear-family
· Stable and harmonious life
· To be the best parents in the world
· Want her kids growing up healthy, happy, safely

Barriers

· Have no idea of how to apply education theories into real situation
· Feel bored when playing with kid
· Doing other things when accompany with kid
· Her child has less enthusiasm in interest class gradually
· Invest too much money on interest classes
· Economic pressure
· Peer pressure

Storyboard


Hi, I' m Jimmy, 5 years old
I like playing Ultraman and creating games
I have a busy mom
I would like to play with her but she doesn' t have time.
She always sent me to different interest classes
At first, I did feel interested
but then I found them boring
and mom often compared me with other classmates
My mom then became unhappy
I' m Cassie, Jimmy' s mom
I want to develop Jimmy' s skills
but I' m too busy with work
So I invested lots of money on it
However, Jimmy always quit halfway
I felt all the money was wasted
I don' t even understand what he really likes
Recently, due to the pandemic, all the classes are cancelled
Now, I don' t know what to do...

Insights:

Insight from parents

· Want to know children's real interest and talent to cultivate .
· Busy with work, and their time to observate and play with kids is not enough.
· Want to try a lot of activities but children are hard to continue, which is also related to economic pressure.

Insight from children

· The guidance is very important, like to be encouraged,like to be creative, learn from play.
· Parents sign up for a lot of classes but it is easy for them to lose interest.

Problem statement

“

HMW ENABLES VUI GAMES TO HELP CHILDREN EXPLORE MORE INTERESTS AND TALENTS ?

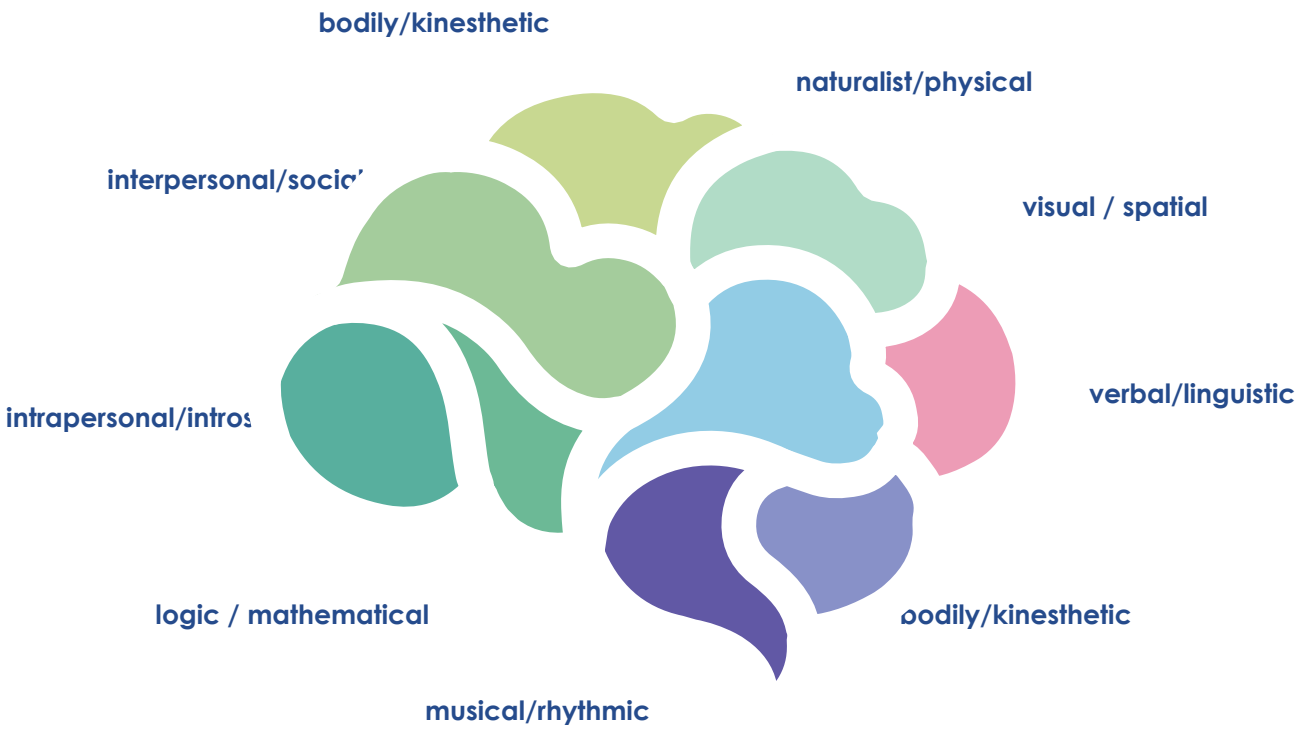
Solution

We have four different planets, they are visual planet, aural planet. language planet, and physical planet and a magic lab. they will collect elements in planet and create a virtual buddy in lab. we hope use these game to help children find their interests.

Children can pick up some basic shapes on the visual planet to create the appearance of their buddy

lab is our core.
children can use the elements which collect from different of planets to create their own buddy, and also share their buddy in youniverse community with other kids. In this way, children can be given more inspiration， and also know what other kids prefer to do, and they might find the same interest.

Inspiration



Service Proposition

Customer Segments

For parents

who would like to develop kid's potential
who feels going to interest classes is too expensive
who want to let their children explore their own interests
who want more common topics

For kids

like to explore and create
like to spend time playing on their own
exercise physical coordination

Lower the cost for parents to discover children's interest in early stage.

A new way for busy parents to observe and understand their kids better.

Learn and explore through playing. Explore and learn at home during pandemic.

Value Proposition

youniverse- comprehensive vui interaction game

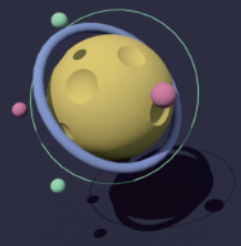
For kids

Explore different interests
Develop skills and interests
Less competitive and comparison
Having a fun and relaxing time

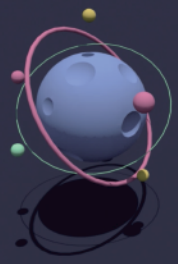
For parents

Get to know their kid's interests better
Have a fun and relaxing time with kids
Save money
Involved in children's education

Game Content



1. Visual planet

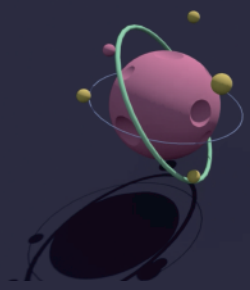


2. Aural planet

3. Language planet

4. Physical planet

5. Lab



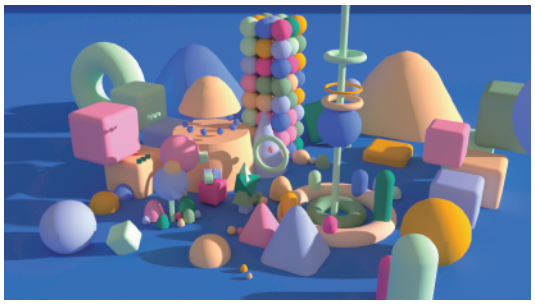
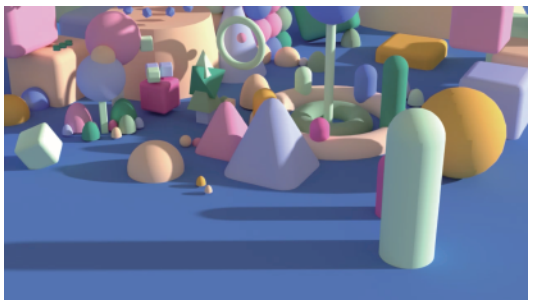

youniverse

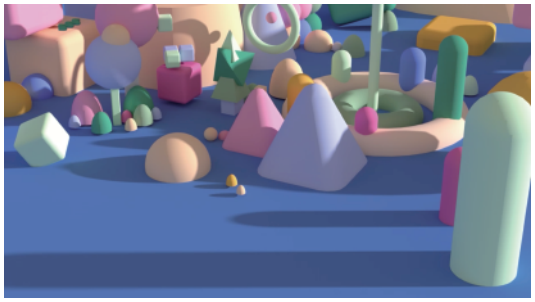
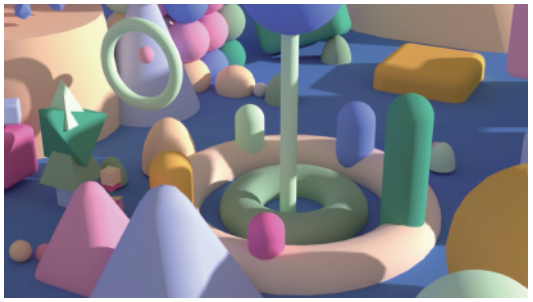
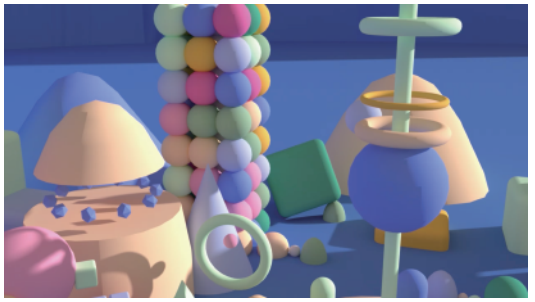
Visual Planet

· On a visual planet, children can pick up some basic shapes on the visual planet to create the appearance of their buddy.

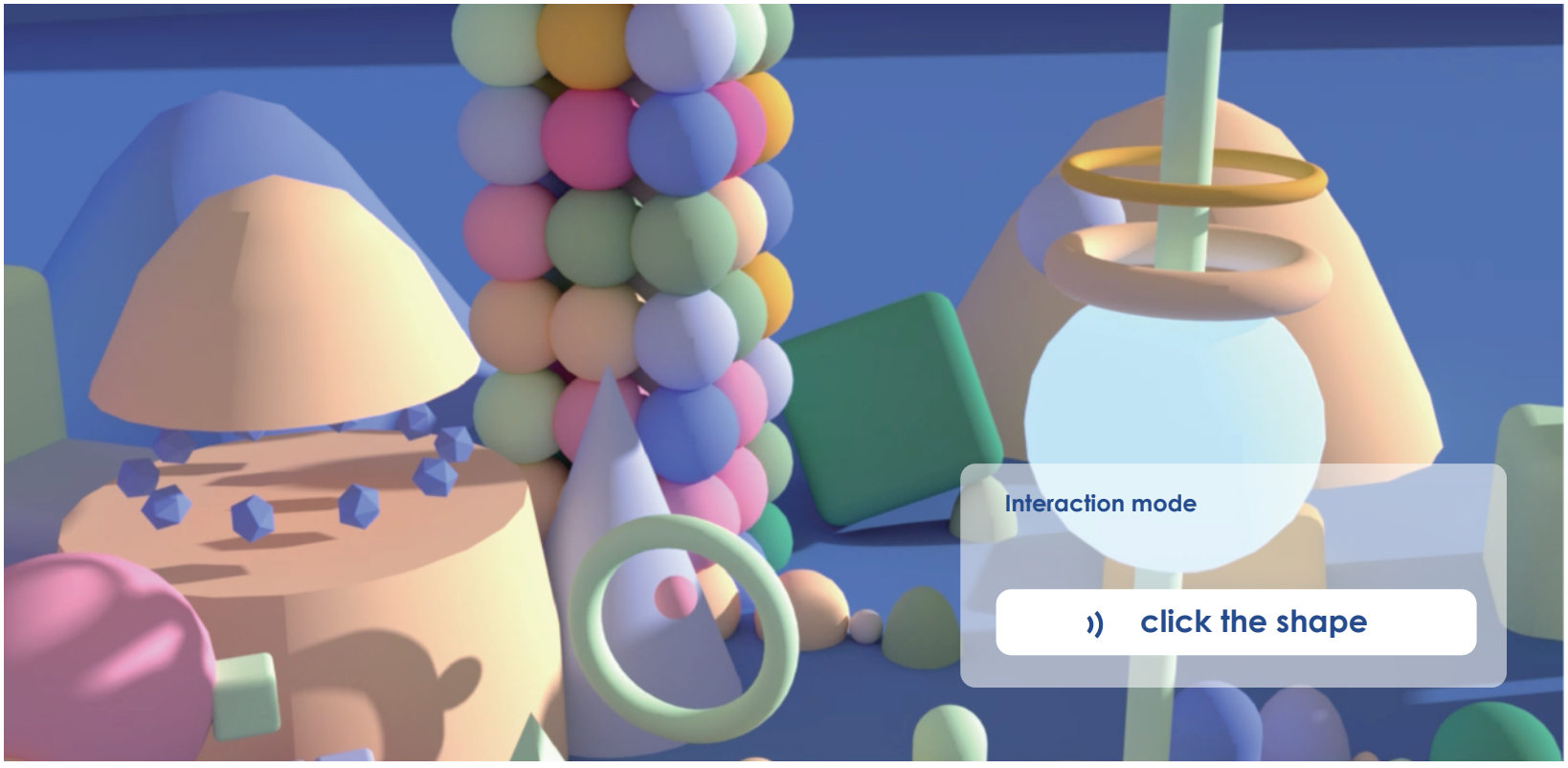
· Children can pick any shape they like, and create their buddie in any form.

· For example, any shape can be a head, and it is not necessarily a prototype. In this part, we encourage children to use their imagination and create their favorite shapes. We do not have any restrictions on the functions of shapes. All physical functions are given by children.

Children can touch the screen to choose the shape they like and when they choosed, the shape will be lighted and collected in their lab.



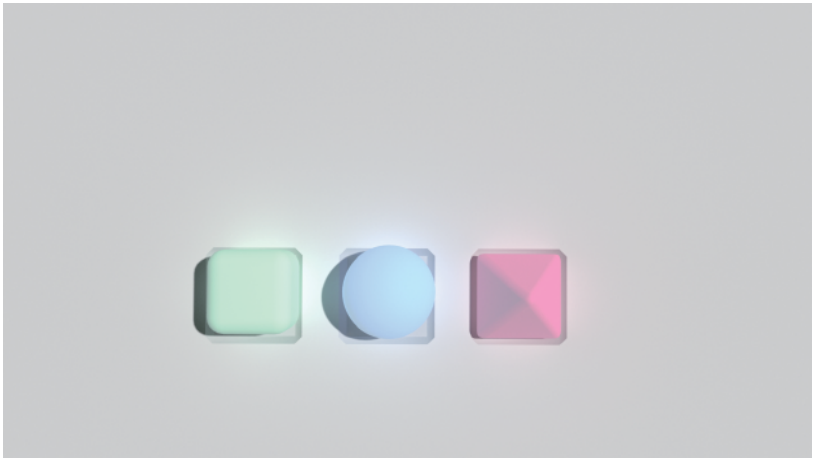
Aural Planet

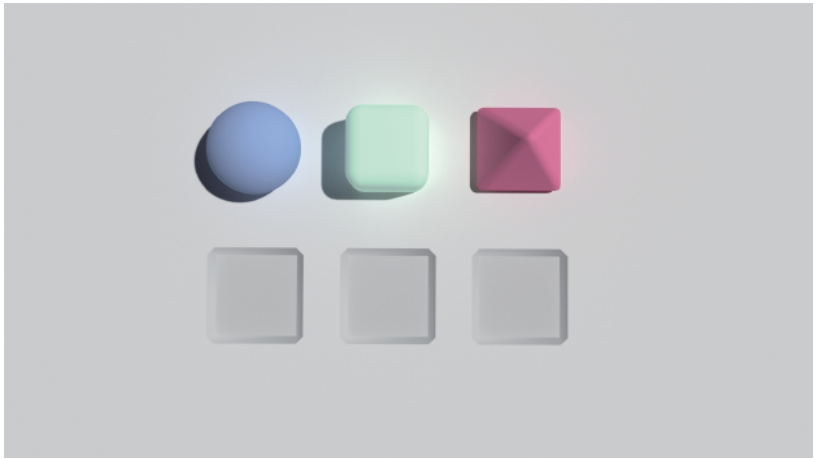
· In Aural Planet, children can play some simple music games and teach them to their buddy.

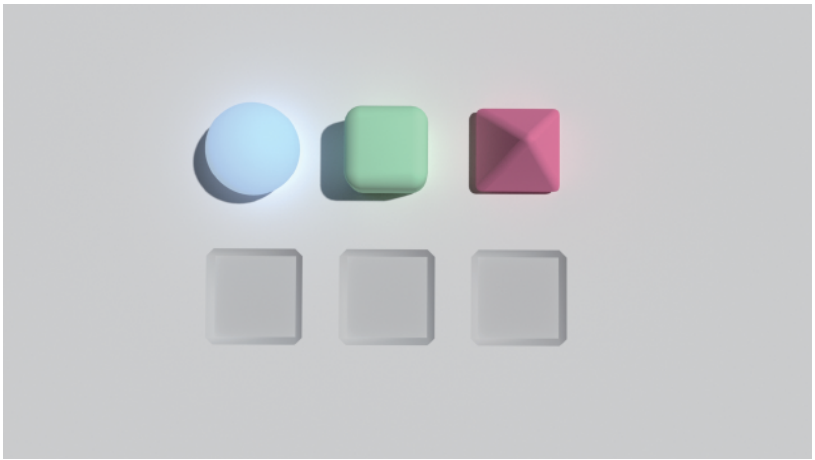
· At first, children will listen a period of music, and this piece will be cut to three parts. Children can play the music when children touch each piece.

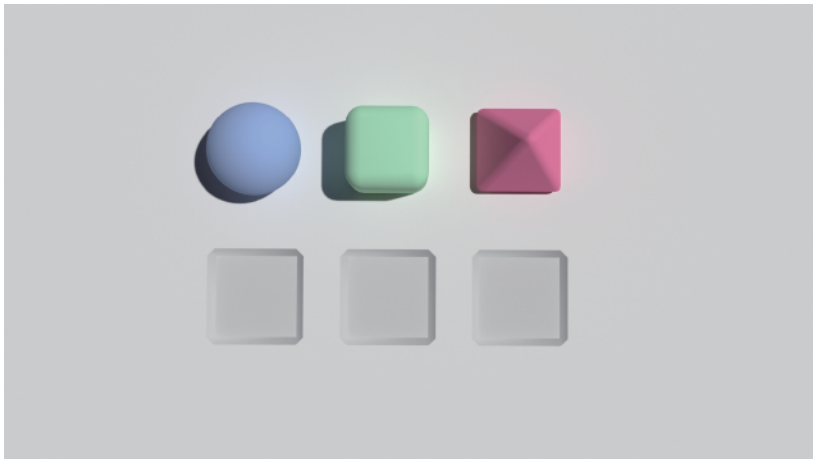
· Children could arrange the sequence of these pieces to match the orginal melody.

This part is aim to cultivate the abilities of music and logic .



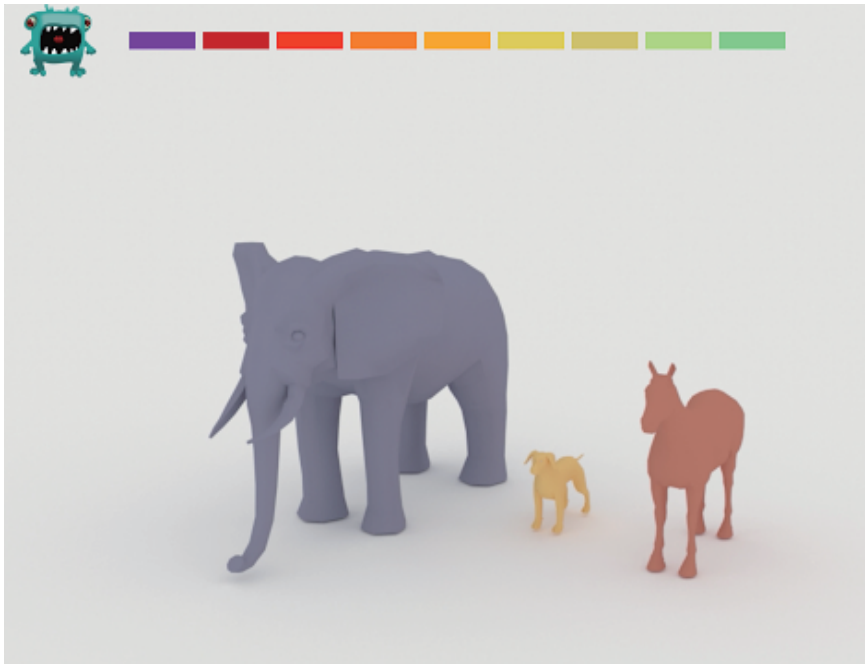


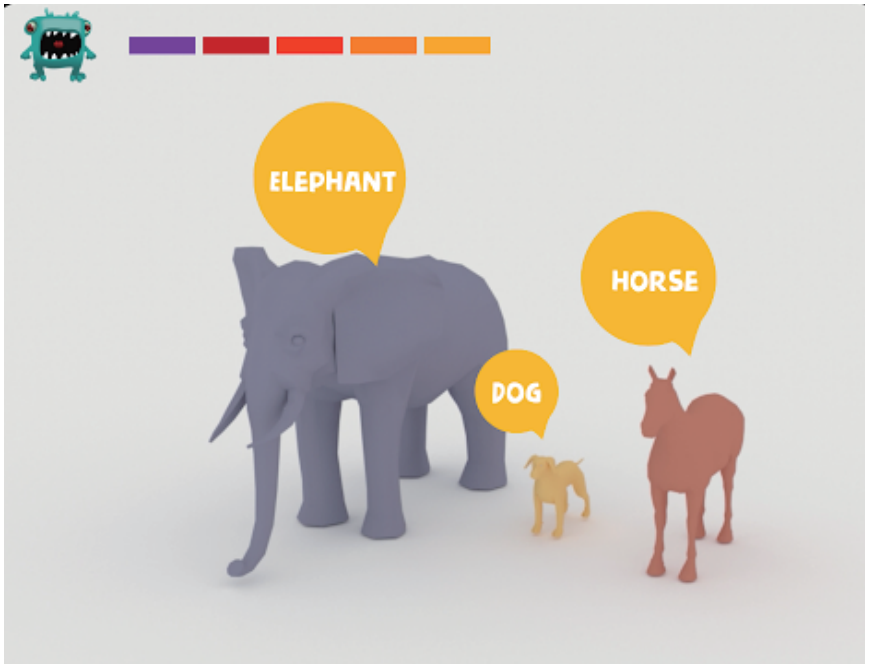




Language Planet

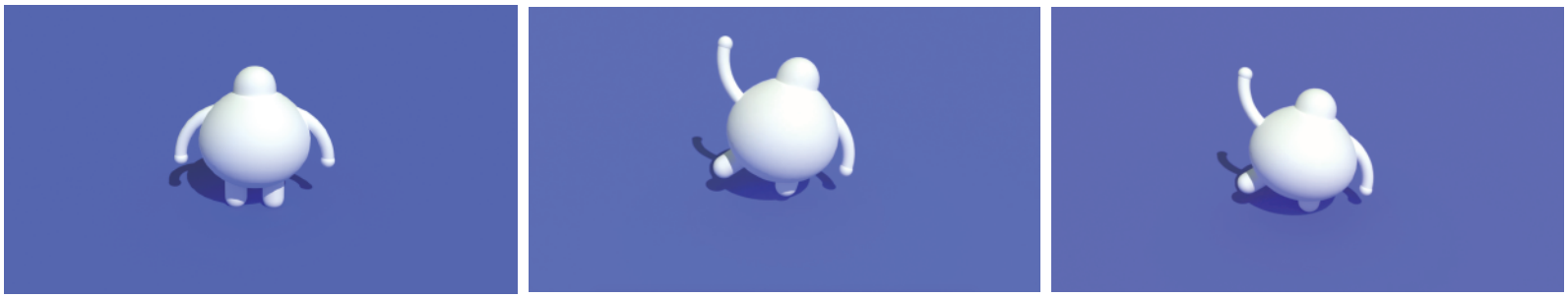
In Language Planet, we have prepared some monsters, when kids attack them through words or sentences. The words and sentences they used can be collected by the system and shared with their virtual buddy.

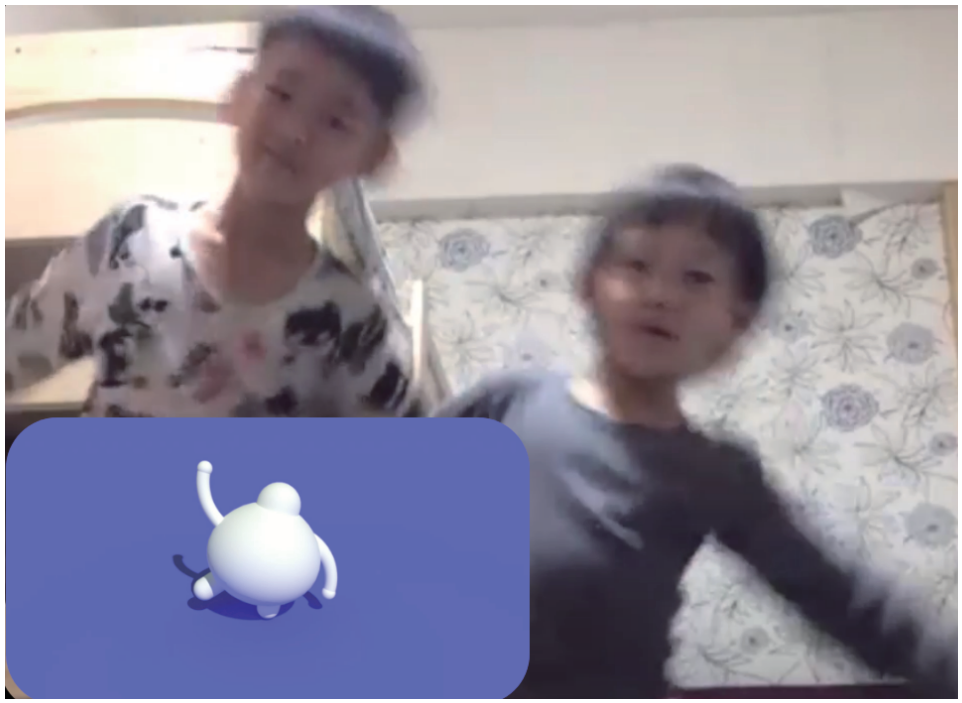




Physical Planet

On the physical Planet, children can follow our game to do some actions, and the right actions can also be collected as the actions of their buddy.





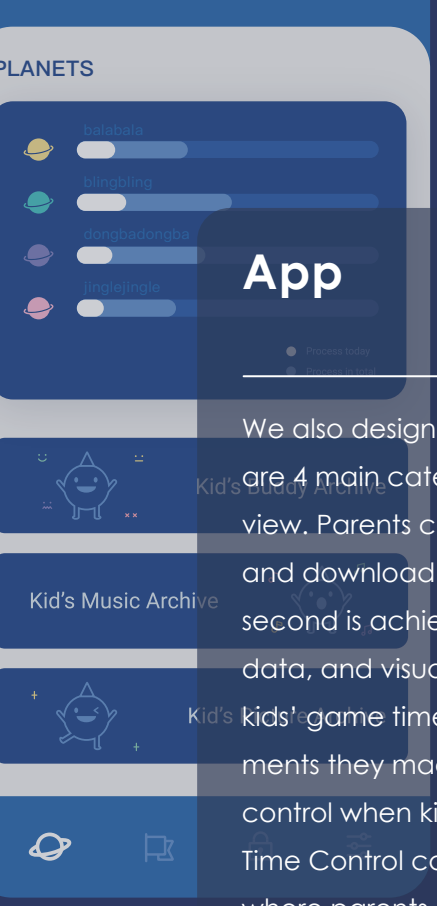
Lab

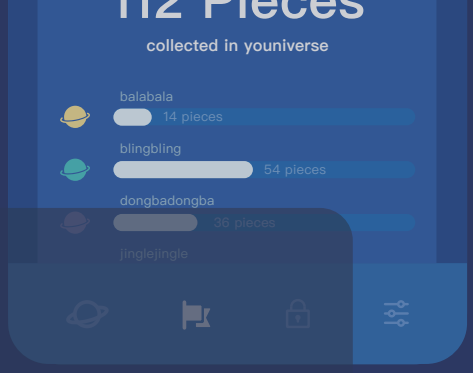
children can use the elements which collect from different planets to create their own buddy.

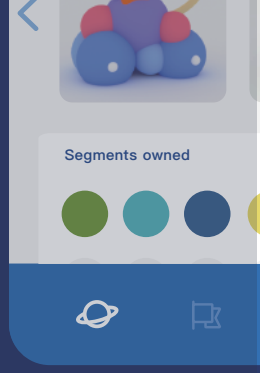
.

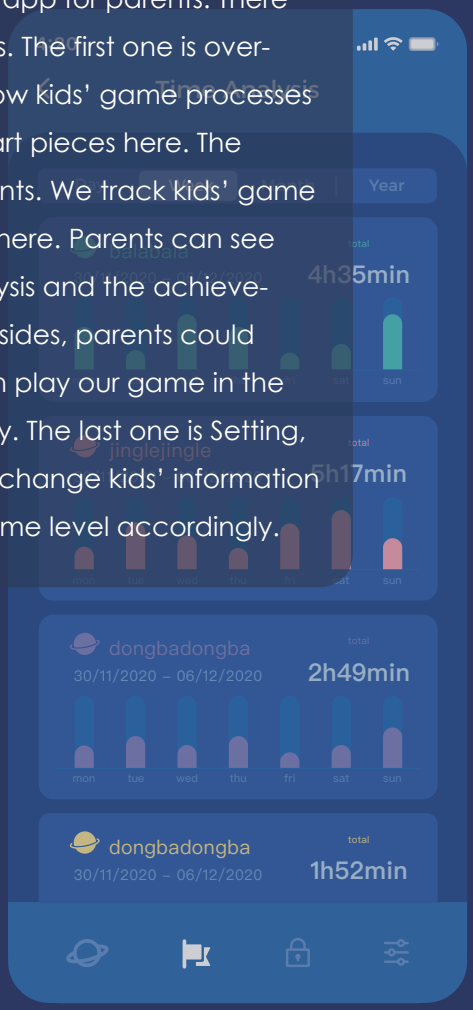
App

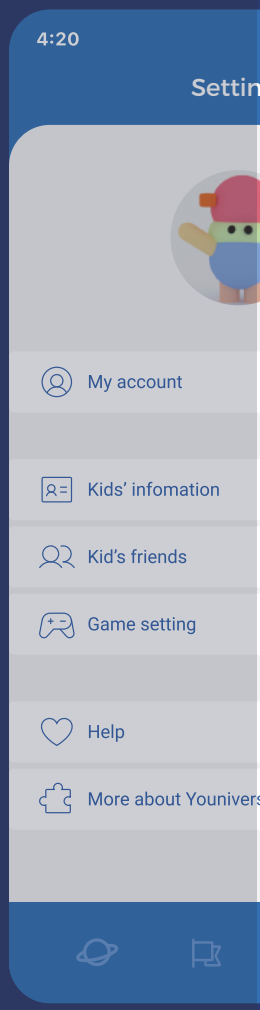
We also designed an app for parents. There are 4 main categories. The first one is over-view. Parents can know kids' game processes and download their art pieces here. The second is achievements. We track kids' game data, and visualize it here. Parents can see kids' game time analysis and the achieve-ments they made. Besides, parents could control when kids can play our game in the Time Control category. The last one is Setting, where parents could change kids' information and regulate their game level accordingly.

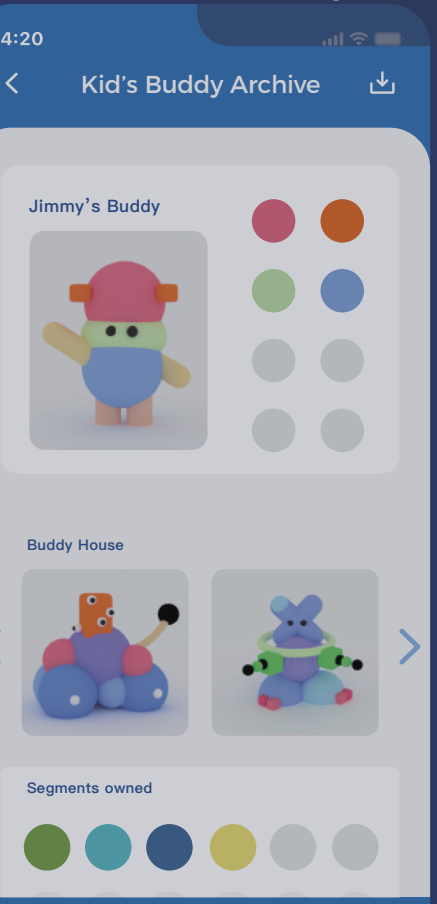


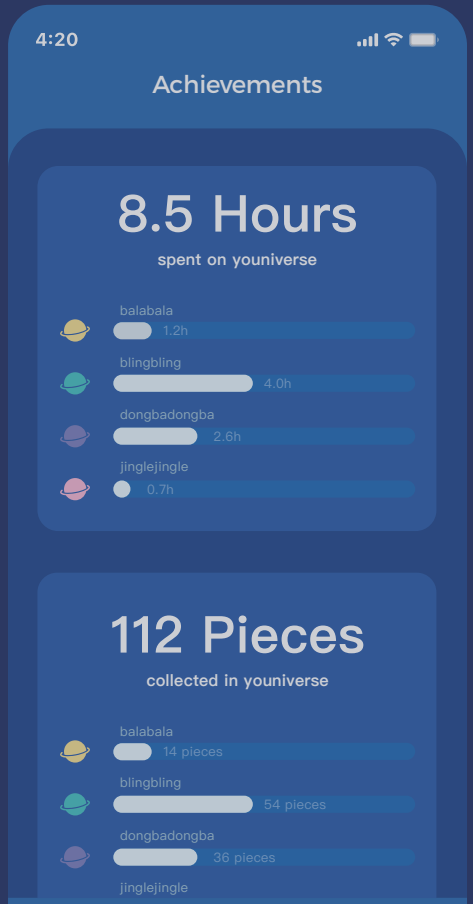


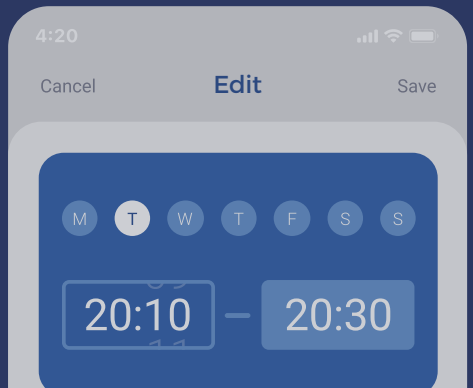


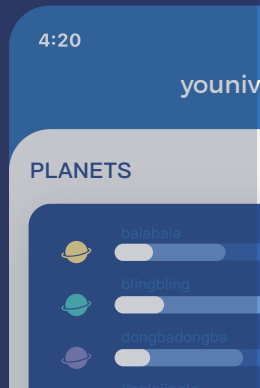












Prototype & Testing

Tools & purposes

We ran nine testing workshops with kids from 4 to 7 and received feedback from both parents and children. Tools including illustrator and Google Music Lab were used to create simple interfaces and games to play with through video calls and screen sharing. We acted as the VUI to receive voice commands from users and gave aural/visual feedback.

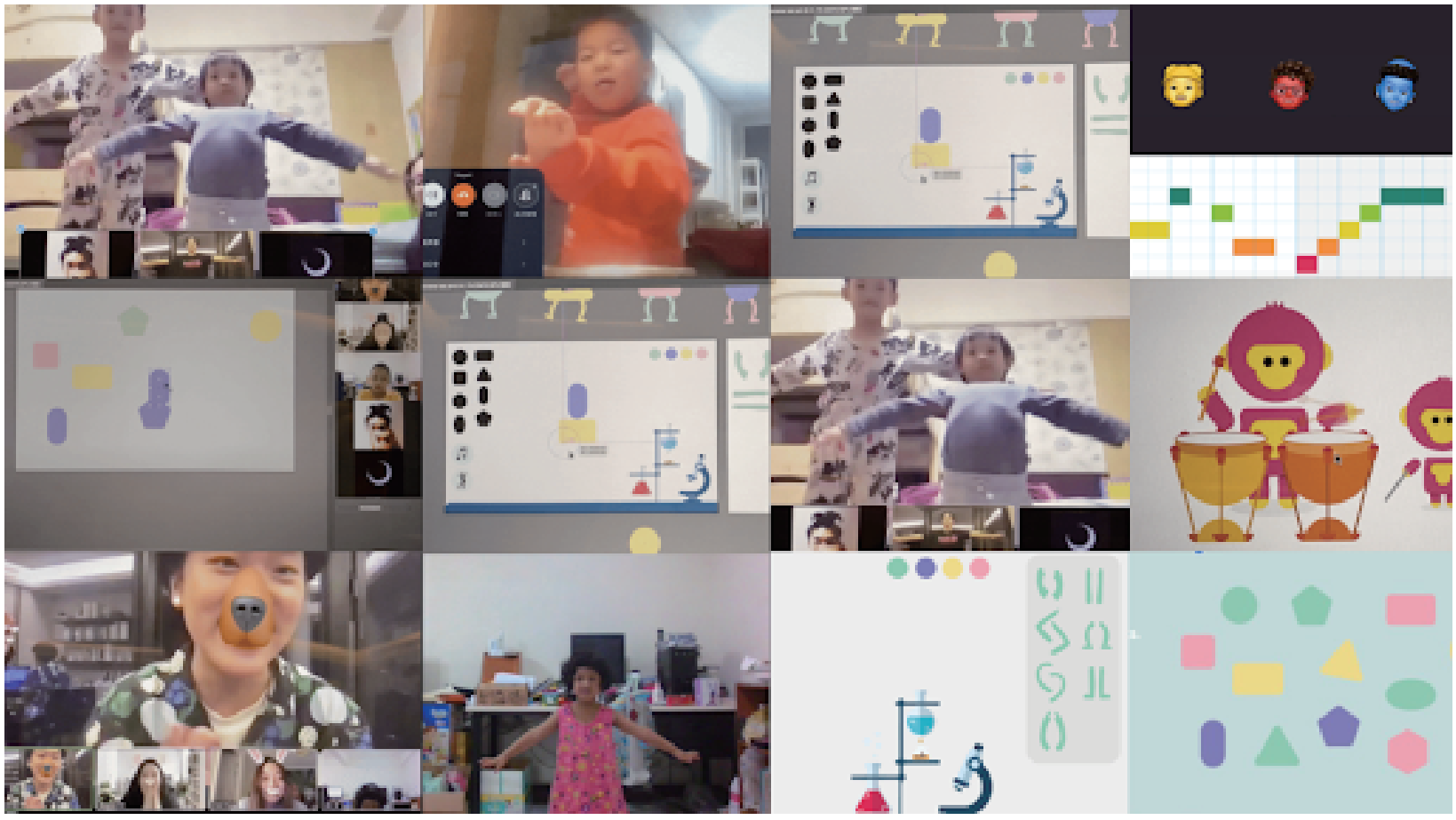
9 prototyping

we have had 9 times proto-types with different kids and their parents.

The testing process includes selecting shapes and color to create their partner, distinguish between different tones and sounds of instruments, imitate and create their own physical poses, and some riddle and vocabulary games to test out their language skills.

Kids were attracted by the visual elements, especially the part of creating creatures. Some of them even wanted to touch the screen to move objects. Encouraging and rewarding children's behavior during the testing process worked well to promote their confidence to keep playing and trying.

For parents, they think the game requires certain language and cognitive skills for kids to make commands to the VUI. Besides, there's a need to design more different levels of difficulties for kids of different ages and situations, this might help to observe their kid's interests better.



I like the language planet because it's exciting and challenging!

Arthur, 6 years old

I Like the lab the most since I can create my own partner!

Lucy, 4 years old

I think the APP function for parents will be very helpful for busy parents to understand their kids' interest more. And kids really like the colorful visual design.

Danniel, 34 years old

Iteration

We iterated after each test including improvement of the VUI script and the content of game design. Also, functions are added to the onboarding interface for parents to select and customize the difficulty and content of the game for their children.

Business Plan

Value Proposition

We came up with the value proposition based on the pains and needs of our users that we have dug out from research and testing. We want our service to act as a toy to develop a child's potential and interest in different aspects of life. Unlike offline extra-curricular classes, our games are played in an exploratory way, are relatively less competitive, and reduce the comparisons by parents. The children can have fun in the game. For parents, the electronic toy makes it easier to get involved in education, have more in common when chatting by giving them a better understanding of their child's interests, and it also helps to reduce some of the 'trial and error' costs for parents. Parents will also have their own time while their children explore the game.

We hope to find investors and by establishing links with some extra-curricular interest classes or educational institutions, this will help us to promote each other and develop more levels of the game. In the early stages, we will be promoting the game on social media such as Tiktok, WeChat, Instagram etc. This may involve contacting some online celebrities to help us promote the game.

Routes to market

Key partners

extra-curricular activities & class
Pre-school program
Investors
Advertisement
Lobbyists
Educator

Key Activities

Game & APP development
Data analysis
Partnership with organization
Social media(instagram+tiktok+ wechat)
Advertising-cooperate with famous youtuber
Building game communities and awarding system
Membership priority

Key Resources

Education expert
CUI/VUI tech support (somatic tech)
Investors
Kid& parents group/data
Copyrights

Value propositions

An online game help children develop their potential

-For kids:
Explore different interests
Develop skills and interests
Less competitive and comparison
Having a fun and relaxing time

-For parents:
Get to know their kid's interests better
Have a fun and relaxing time with kids
Save money
Involved in children's education

Customer Relationships

Buyer
Through the game upgrade- to maintain user
More game layout
Link with friends
Tutorials for newcomers
Rewarding

Channels

Paids Ads
Game platforms(IOS/Steam/ xbox/Playstation)
Monitor
Wii& Switch
APP
Social media
Word of mouth

Customer Segments

· Kids & parents group
· 4-6 years old kids
· Would like to develop kid's potential
· Exercise physical coordination
· Who feels going to interest classes is too expensive
· Like to explore and create
· Parents who want to let their children explore their own interests
· Like to spend time playing on their own
· Parents want more common topic with kids

Cost structure

Platform maintenance
Customer support
Customer Acquisition Costs(CAC)
Legal and settlement costs
Insurance costs
Research and development
Salaries and permanent employees
Longing and compliance
Technology infrastructure
Copyrights

Revenue Streams

Revenue Streams:
Monthly membership
Purchase propsition
Revenue from advertising
Peripheral products

we also roughly list the necessary costs such as product development and maintenance costs, costs of attracting users and copyrights to the songs in our library. ..... While we use investor financing upfront to develop the product for launch, the way we generate profit is mainly from the monthly membership fees, advertising space, as well as the sale of peripheral products.

Member privileges include but are not limited to:

1. unlocking different language packs such as dinosaur sound effects, sound effects of some anime characters, etc.

2. regular users can only pick up a limited number of skill elements while members can pick up an unlimited number of elements that are continuously updated.

3. the parents can control their child's play time, download photos of their child doing actions, watch their child's progress, etc.

4. children can choose to print their own buddies' 3D models, and members will receive a discount.

Reflections & Improvement

Reflections

Optimisation of game details, for example the mechanics of upgrading the game and how the difficulty of the game increases as the child gets more skilled. We also wondered if we could work with other games such as “just dance” to add more levels. We found that children of this age group (4-6) are not very literate and cannot read, so voice can replace text as the main interaction method of the game

As for the app, parents actually felt through the prototype that the length of time spent playing the game was not a good indicator of their child's true interest, and that they might have spent a long time on the level because it was difficult or for other reasons. So, we wanted to give parents feedback through a combination of data, but this feedback was more objective, and we left the rest up to them to judge.

Future plan

For future plans, we will set up accounts on social media to popularise children's educational content, and also build up a potential user base. Then we will continue to enrich and develop the youniverse on the App store and other game platforms, and ask people working in the education of children to do more testing in the hope that our games can be adapted to children of different ages.

Appendix

1. Questionnaires related to child development and education

孩子成长与教育相关调研

第 1 题　您的年龄是？　[单选题]

选项	小计	比例
95 后	16	1.77%
90 后	48	5.3%
85 后	124	13.69%
80 后	395	43.6%
70 后	264	29.14%
60 后	59	6.51%
本题有效填写人次	906	

第 2 题　您的性别是？　[单选题]

选项	小计	比例
男	233	25.72%
女	673	74.28%
本题有效填写人次	906	

第 3 题　您的工作性质是？　[单选题]

选项	小计	比例
受雇于他人或单位	307	33.89%
经营个体或私营企业，自主创业	138	15.23%
自由职业	214	23.62%
家庭主夫（妇）	247	27.26%
本题有效填写人次	906	

第 4 题　您在孩子学龄前（7 岁左右）每日陪伴孩子的时间是多久？　[单选题]

选项	小计	比例
1 小时以下	87	9.6%
1-3 小时	213	23.51%
3-6 小时	162	17.88%
6-9 小时	106	11.7%
9-12 小时	109	12.03%
12 小时以上	229	25.28%
本题有效填写人次	906	

第 5 题　您在教育过程中遇到过哪方面的问题？　[多选题]

选项	小计	比例
孩子情绪	549	60.6%
身体健康	201	22.19%
亲子沟通	267	29.47%
孩子社交	186	20.53%
学习能力	453	50%
习惯培养	470	51.88%
创新思维	158	17.44%
三观塑造	77	8.5%
其他	58	6.4%
本题有效填写人次	906	

第 6 题　在教育过程中比较重视孩子的哪些能力/成长因素？　[多选题]

选项	小计	比例
价值观	372	41.06%
社交能力	431	47.57%
生活自理能力	571	63.02%
同理心	54	5.96%
想象力与创造力	385	42.49%
学习能力	625	68.98%
其他	28	3.09%
本题有效填写人次	906	

第 7 题　您认为科技的应用对教育的积极影响有哪些方面？　[多选题]

选项	小计	比例
信息更新速度快	696	76.82%
内容更丰富	656	72.41%
资源更广泛	643	70.97%
不受时间位置限制	345	38.08%
其他	73	8.06%
本题有效填写人次	906	

第 8 题　您认为科技的应用对教育的消极影响有哪些方面？　[多选题]

选项	小计	比例
知识吸收率变低	279	30.79%
孩子注意力容易被分散	667	73.62%
屏幕对孩子视力的影响	707	78.04%
质量参差不齐	270	29.8%
杂乱信息增多	559	61.7%
其他	60	6.62%
本题有效填写人次	906	

第 9 题　您平时会使用哪些设备或者道具和孩子进行互动吗？　[多选题]

选项	小计	比例
手机	598	66%
平板	176	19.43%
教具	218	24.06%
玩具	249	27.48%
语音助手	178	19.65%
其他	229	25.28%
本题有效填写人次	906	

第 10 题　您在孩子的生活中有使用到以下语音设备及其功能吗？　[多选题]

选项	小计	比例
音频播放	497	54.86%
语音互动	562	62.03%
声音收录	188	20.75%
其他	200	22.08%
本题有效填写人次	906	

第 11 题　您在孩子的教育和生活中，哪些场景会有机会使用到声音或者语音功能？　[多选题]

选项	小计	比例
沟通	482	53.2%
陪伴（讲故事等）	370	40.84%
娱乐	297	32.78%
学习辅助	604	66.67%
生活引导	396	43.71%
其他	91	10.04%
本题有效填写人次	906	

第 12 题　您目前在教育过程中遇到的最大一次挑战是什么？　[填空题]
填空题数据请通过下载详细数据获取

第 13 题　您认为自己是一个合格的父母吗？请为自己打分　[量表题]
本题平均分：3.24

选项	小计	比例
很不合格	49	5.41%
不合格	78	8.61%
一般	469	51.77%
合格	229	25.28%
很合格	81	8.94%
本题有效填写人次	906	

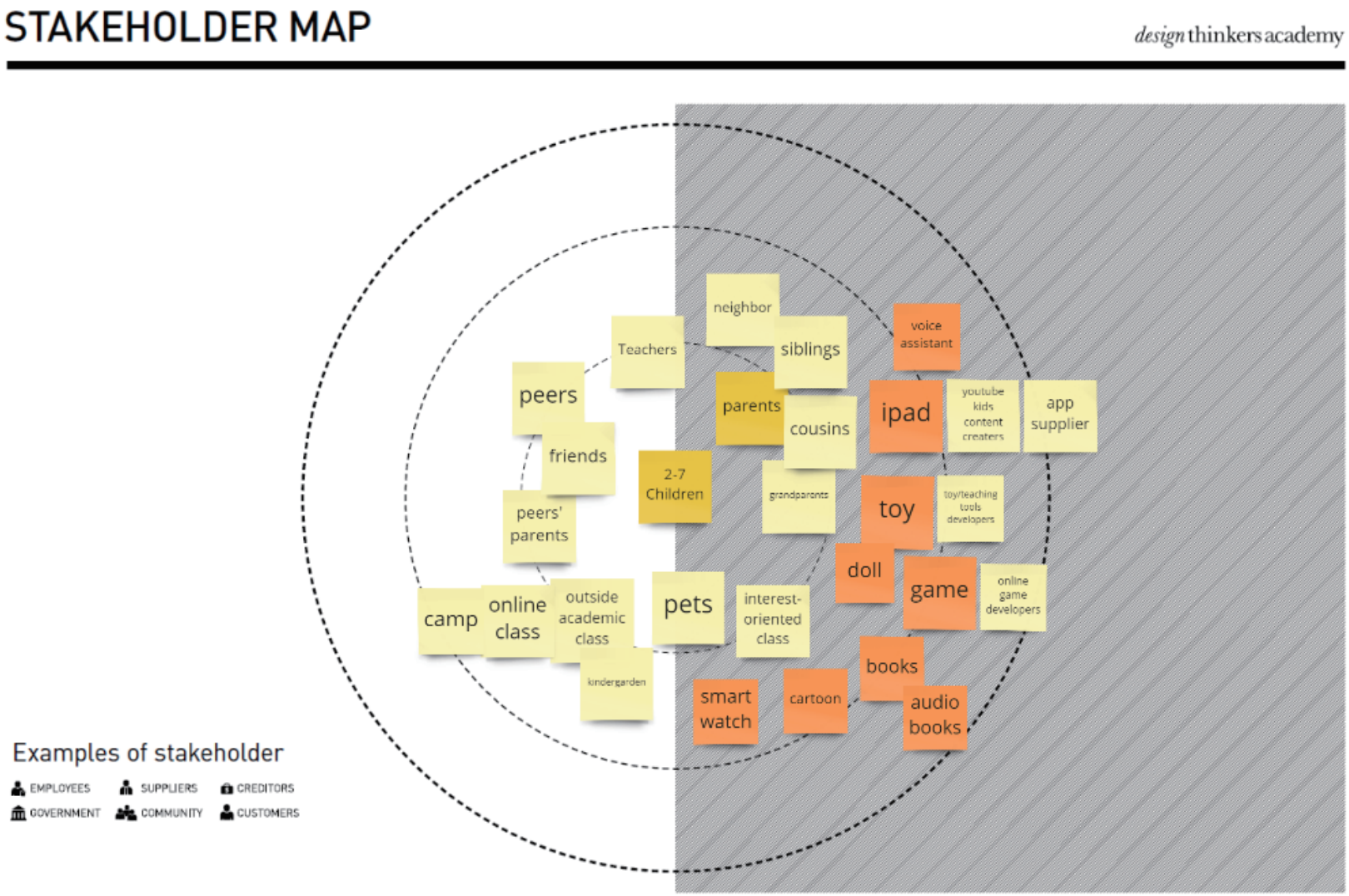
第 14 题　如果不合格，觉得自己哪方面有所欠缺？　[多选题]

选项	小计	比例
孩子文化教育的支持	276	30.46%
孩子素质教育的增强	235	25.94%
孩子三观性格的养成	257	28.37%
孩子生活能力的培养	284	31.35%
自我情绪的控制	548	60.49%
陪伴孩子的时间	343	37.86%
与孩子沟通的方式	490	54.08%
对孩子的理解和包容	391	43.16%
其他	47	5.19%
(空)	90	9.93%
本题有效填写人次	906	

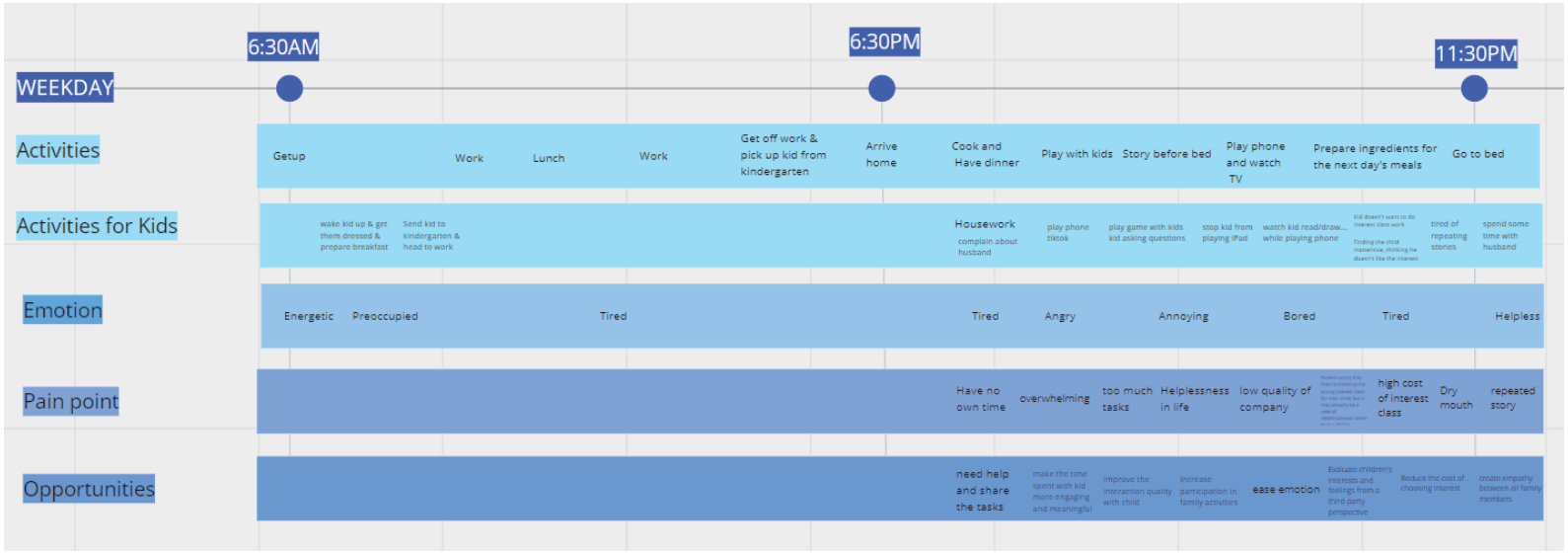
第 15 题　如果合格，觉得自己哪方面做的比较好？　[多选题]

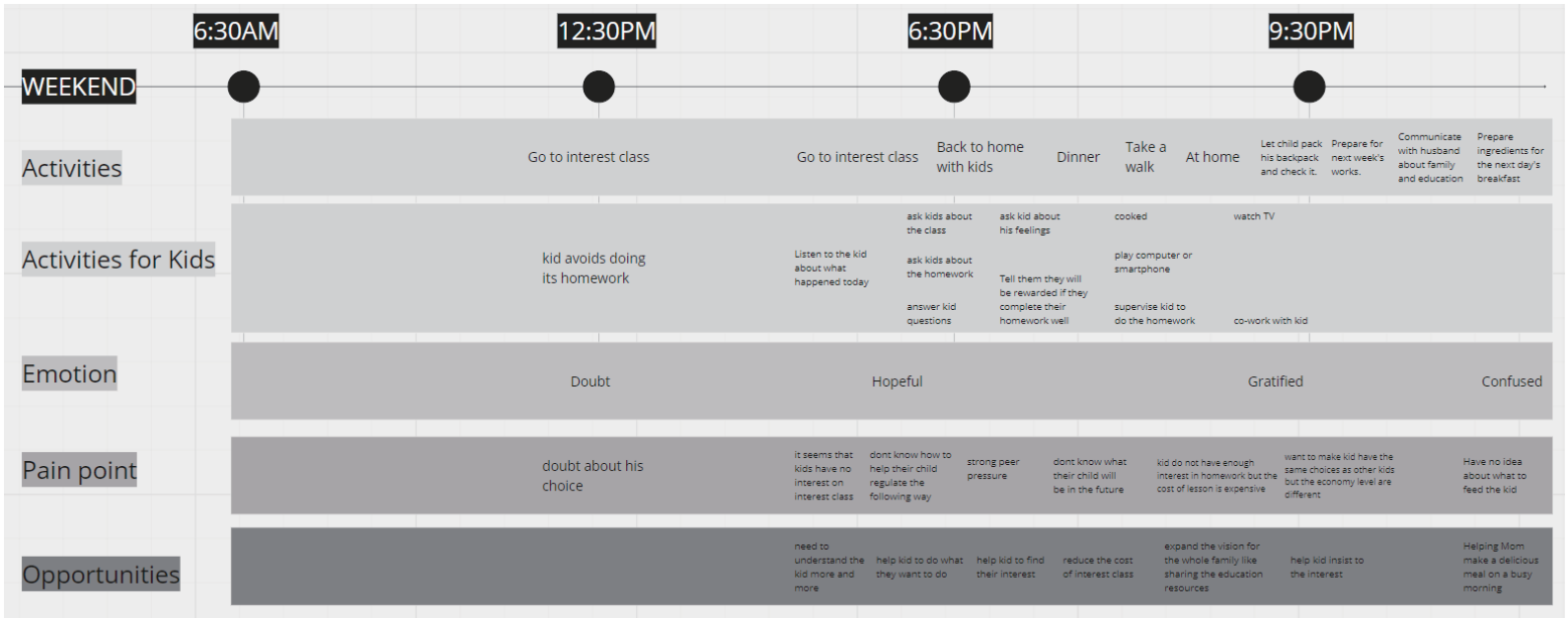
选项	小计	比例
孩子文化教育的支持	445	49.12%
孩子素质教育的增强	369	40.73%
孩子三观性格的养成	296	32.67%
孩子生活能力的培养	380	41.94%
自我情绪的控制	171	18.87%
陪伴孩子的时间	355	39.18%
与孩子沟通的方式	251	27.7%
对孩子的理解和包容	310	34.22%
其他	71	7.84%
(空)	76	8.39%
本题有效填写人次	906	

2. Stakeholders map

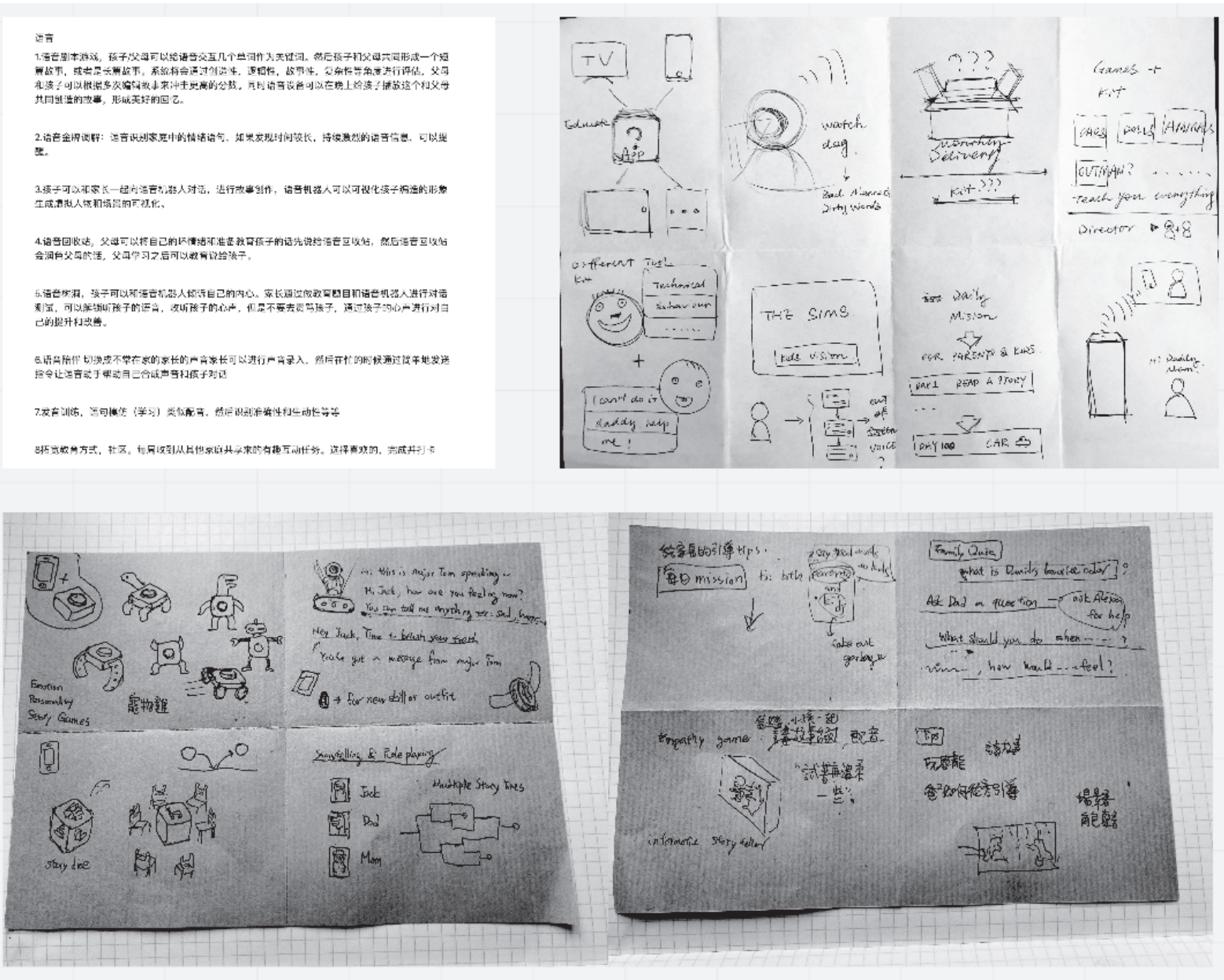


3. Journey map





4. Ideation



语音

1.语音剧本游戏，孩子/父母可以给语音交互几个单词作为关键词。然后孩子和父母共同形成一个短篇故事，或者是长篇故事，系统将会通过创造性，逻辑性，故事性，父亲性等角度进行评估，父母和孩子可以根据多次编辑故事来冲击更高的分数，同时语音设备可以在晚上给孩子播放这个和父母共同创造的故事，形成美好的回忆。

2.语音实时识别：语言识别家庭中的情绪语句，如果发现时间较长，持续激烈的语言信息，可以提醒。

3.孩子可以和家长一起与语音机器人对话，进行故事创作，语音机器人可以可视化孩子构造的形象生成虚拟人物和场景的可视化。

4.语音回收站，父母可以将自己的负面情绪和批评教育孩子的语先说给语音垃圾站，然后语音垃圾站会洞悉父母的话，父母学习之后可以教育说给孩子。

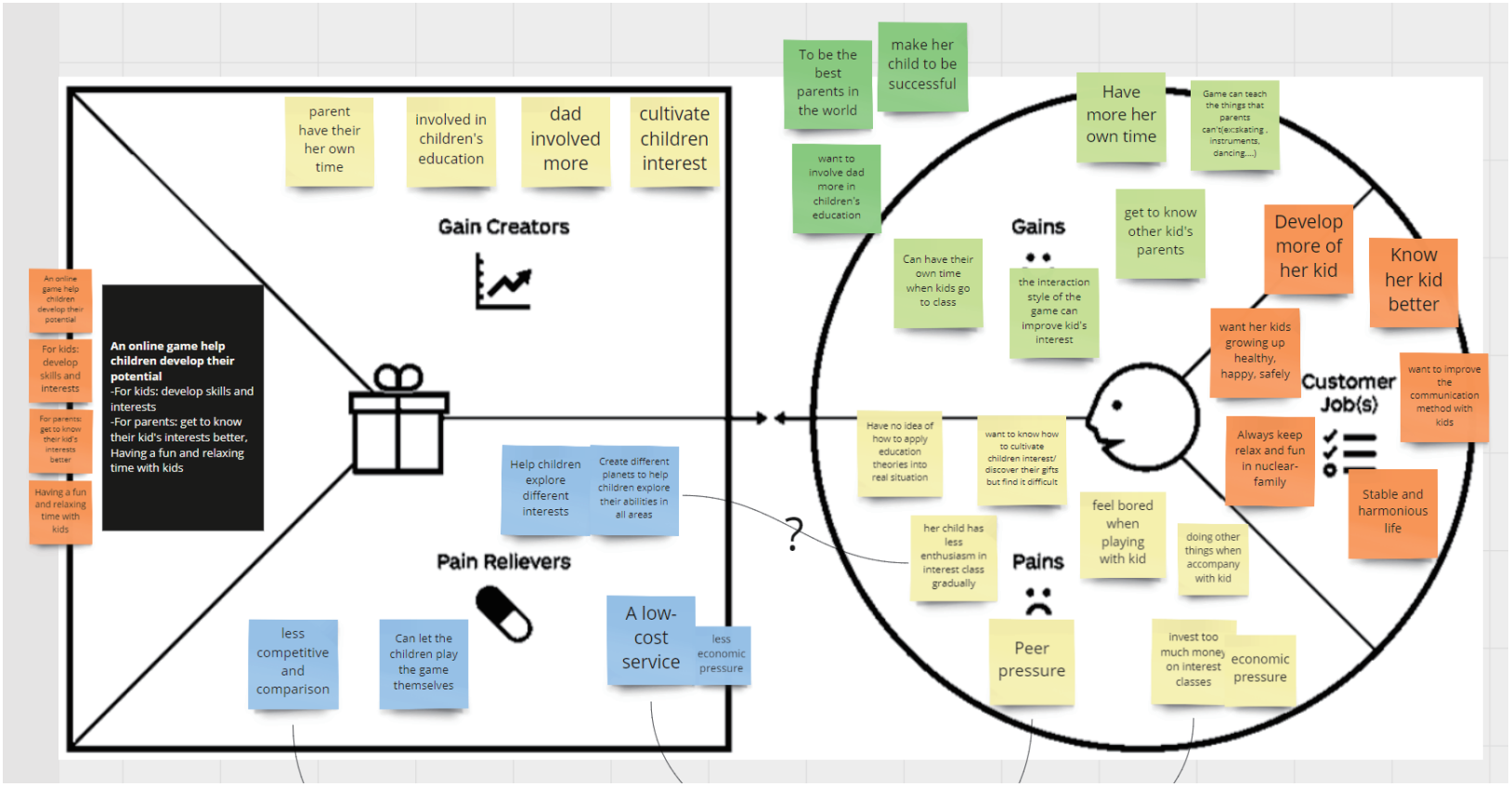
5.语音树洞，孩子可以和语音机器人倾诉自己的内心。家长通过做教育题目和语音机器人进行对话测试，可以能够听孩子的语音，读听孩子的心声，但是不要去责骂孩子，通过孩子的心声进行对自己的提升和改善。

6.语音陪伴 切换成不常在家的家长的声音家长可以进行声音录入，然后在忙的时候通过简单地发送指令让语音或于帮助自己合成声音和孩子对话

7.发音训练，语句模仿（学习）类似配音，然后识别准确性和生动性等等

8拓宽教育方式，社区，每周收到从其他家庭共享来的有趣互动任务。选择喜欢的，完成并打卡

5. Value propositions



the end.

youniverse