

## The way to improve children's right brain developed with smart phone

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### 1. INTRODUCTION

Infant Care Policy Laboratory said that as the result of survey about actual condition of Child Smart phone Use, 38 of 252 parents replied that their children used smart phone daily. Unilateral and repeatable stimuli given by smart phone or TV only develops left brain. Therefore the unbalanced development of brain is induced.[1] When Using Smartphone causes the function of right brain to be inferior, it leads to ADHD, Tic disorder, learning difficulties and so on.[2] In such a situation, Seoul city surveyed 1320 student from elementary to university student. The result was that Child and Youth use the smartphone 3.5hours a day on the average.[3] At the seminar both Youth Policy Laboratory and Infant Care Policy Laboratory held, they announce that on the average, full 0 to 5 year old infants use the smartphone at 2.27 for the first time.[4] Along with this, statistics of Health Insurance Review & Assessment Service showed that from 2009 when people started to use smartphone, the problem on neck and spine has worsened.

Thus, the objective of this paper is to present such a model. By making right brain developed and increasing activity with smartphone application, we solve the problem that in the situation that the number of smart addicted infant grows and their age lows more and more, it worsens the physical and unbalanced brain development problem.

### 2. PREVIOUS WORK

#### 2.1. child smart phone addiction

First of all, we define smartphone addiction as the condition that absorption time of using smartphone is long and it affect daily life negatively.[5] In Korea, The research of infant smart addiction is few or no. While infant smartphone addiction worsens, many researches have focused on youth or child.[6] First time infant use smartphone earlier, Using time longer and media addicted infants have a feature in common. The feature is that there is a problem in emotional sociality development. Also, the time parents use smartphone longer, the time infants are exposed to smartphone earlier, and parents use the smartphone to their children for the purpose of eliminating children's crying as a temporary work.[7]

#### 2.2. right-brain development

Keidi(Korea education intelligence development institution) said that The effective way to stimulate right brain is exercise. Especially, the gross-motor exercise is good for right brain- stimulation and doing core muscle exercise 10minutes a day is a good way to prevent ADHD.[8] For developing right brain of infants, the instruction making infants express their own selves freely and learn naturally is better than direction, control and the instruction aiming for goals.[9]

### 3. RESEARCH QUESTION

1. By smartphone application, can we induce behavior reaction of infant?
2. By smartphone application, can both parents and children interact to each other?

### 4. RESEARCH METHOD

#### 4.1. survey and interview

We survey parents raising full aged 3-4 infants. The questionnaire of survey consist of Smartphone addiction self-diagnosis of NIA( National Information Society Agency) and cognition of parents about child education application, infant smart addiction and infant's reaction about smartphone.

#### 4.2. design research methodology

It is composed of 4 processes. – Discover, Define, Develop, Deliver –. Through these, we found the problems of application for smartphone addicted infant and revision of the problems. In discover process, we interviewed the

parents having 3-5 year old infant who use the smartphone. We could collect quantitative information about them. In define process, we did contextual inquiry and affinity diagram. We could find the key cord for developing service, problems and improvement about problems. In develop process, Through persona, ideation(scamp) and customer journey map, we could concretize all things we already found in the previous process. In deliver process, we did serviceprototyping , we could get the feedback

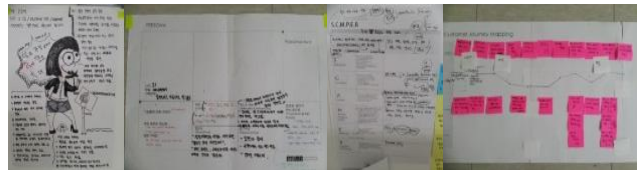


Figure1. Design methodology

## 5. RESEARCH FINDING AND CONCLUSION

We surveyed the parents raising average 3.81 year old infants and with surveyed information, we draw the results. First, most parent dissatisfied educational application. Second they preferred limitation of using smartphone to right-brain development with application. Third, infants watched the video with smartphone so much and they imitated the scene of the video. The last thing was that infants show the tendency to follow their parent’s regulation.

Through design research methodology, we draw some proposal and present a service. Application consist of two types: for infants and for parents. Application for infants is that we can see the streaming or downloaded video with this. It has a function to control the watching time by setting a time slot or the number of clip. When Set time or numbers of clip come, the video instantly stop and show the mission picture. Mission is to imitate the posture of animal picture describe. Application for parents has a function to pass the mission. And with this application, parents can share children’s picture when they imitate the picture. And they also can check the time until they success the mission among users. So they can compare among another. And there is the board for parents. They can share education or raising way about their children. However there are problems. First, parents must have 2 more smart devices. Second. The standard of success is so subjective, not objective because parents decide to pass or not on their selves.



Figure2. service prototype

## 6. REFERENCES

- [1] Yaeji Kim, PARENTS AGGRAVATING SMART PHONE ADDICTION, DaejonIlbo, 2014.01.21
- [2] Sports Kyunghyang, Adolescent 18.4% Smart phone addiction... need to exercise right brain, SPORTS KYUNGHYANG, 2013.06.13
- [4] GahyeBek ,Average time of child and youth Smartphone use 3.5hours, TBS news, 2013.08.26
- [5] Sun-ah Yang, 0-5 Aged infants, use the smartphone at average 2.27 years old, HankyureBabytree, 2013.11.21
- [6] Ha-sung Hwang, Seung-hyeSohn, & Choi, Yun -jung, Exploring Factors Affecting Smart-Phone Addiction - Characteristics of Users and Functional Attributes. The Korean Journal of Broadcasting, 25(2), 2011, pp 277-313.
- [7] Kyungsook Lee, The real condition of the exposure of Child and Youth smartphone and discussion about protection provisions, National Youth Policy Institute, 2013, pp 73-76'
- [8] Junglim Lee, The real condition of the exposure, National Youth Policy Institute, 2013, pp 1- 36' KEIDI, 'Exercise to develop right brain', 2013.10.18 , KEIDI
- [9] Byung Kwon Park, Effect of Physical Activity on Brain Development for Kindergarten Children, KDES, 2008, VOL.2 NO.2