

A STUDY ON THE NEW MEDIA FOR MULTI-SENSORY COMMUNICATION OF VISUAL & AUDITORY INFORMATION - FOCUSED ON HAPTIC INTERFACE USING BRAILLE TYPES : TACTUAL [SI:GAK] SERIES

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ABSTRACT:

This study was inspired by the issue of finding the meaning of true extension of the human senses in the area of New Media Art called grafting between the digital technique and art. By utilizing the interactivity of digital media, it aims at the experience of the visually disabled to spectators in a new type of communicational method by the haptic interface using Braille types.

KEYWORDS:

Interaction Design, Physical Computing, Haptic Interface

1. INTRODUCTION

Communication media through language activity based upon visual information goes on various developmental ways in the form by new digital technique. The essential role of visual communication design in this age is not limited to the area of styling, but extends to transforming human communication methods as a pioneer of culture. Therefore, this study proposed the new media for multi-sensory communication of visual & auditory Information from the viewpoint of computation graphic design in this social context.

2. CONCEPT

This study is about presenting an approach through the view-point of this generation's the visually disabled, and their perception of the world.

By touching the tactile dots of the installation through one's finger tips, spectators can read a sentence that appears on the computational handling hardware. Those who have never experienced the visually disabled conditions will communicate with this artwork in a different way. Through this interactive process, people (generally called the public) can understand them.

For the realization, the visual information was classified into three types. After that, the tactual sensory input system was developed in the form of haptic interface using the Braille types among the ways of communication for the visually disabled.

3. OUTPUT: TACTUAL [SI:GAK] SERIES



Figure 1 the simulation model for multi-sensory communication _ tactuaLight [text] #1



Figure 2 the simulation model for multi-sensory communication _ tactuaLight [image] #2

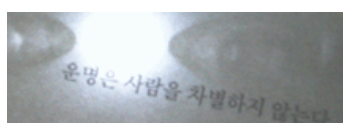


Figure 3 : the simulation model for multi-sensory communication _ tactuaListening [sound] #3

3.1. WORK COMPONENTS

The hardware consists of three parts; the input section, which is touch sensor connected to object, Wiring I/O board, which mediates signals in between, and the output section of Display and Sound output.

tactuaLight [text] #1



tactuaLight [image] #2



tactuaListening [sound] #3



Input Information form	Braille Types / Text	Braille Units / Static image	Braille Types / Text
Input Material	Touch Sensor / Paper	Touch Sensor / Ceramic Plane	Touch Sensor / Ceramic Cup
Micro-controller	Analogue Signal into Digital Signal : Wiring I/O Board		
Output Information form	Visual Types / Text	Kinetic image	Kinetic image / Sound
Output Material	LED Display Panel / Printed Paper	LED Display Panel	Projector / Speakers

Table 1: Input / Output system specification of each installation

3.2. INTERACTIVE PROCESS

The input signal from the touch sensor, which senses the static electricity of fingertips, can transform into LED power control output signal or Sound output signal in Wiring, a hardware-controlling program.

Also in the software Processing, signal from serial port gives direct affect on elements of constituent changes.

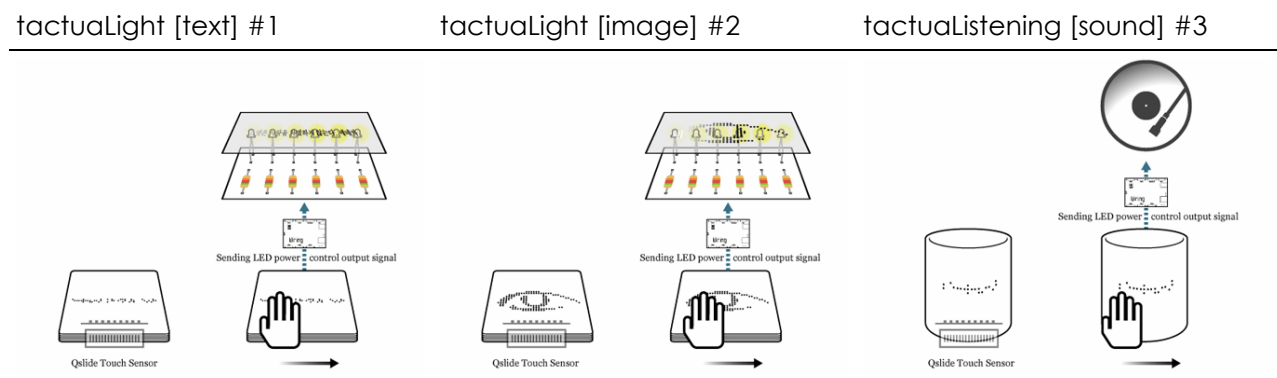


Table 2 Diagram of Interactive Process

4. CONCLUSION

This research was created at a point where the boundaries dividing art from science and designing are disappearing due to technological development. Also It carries its meaning by seeking to go beyond the traditional visually-oriented communicational method of physical computers, and to find a new type of communicational method and a new ground for future designers.

REFERENCES:

Haemin Kim, A Study on Converting Visual Communication by Tactual Sense, (2006) ADADA 2006 International forum and Conference, Seoul, South Korea, December 7-9.

Project information : <http://www.tactualseries.info>