

Himmapan Creatures: The Tactile Texture Designed for the Blind

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Abstract—The main purpose of this research aimed to create tactile texture designed media for the blind used for extra learning outside classrooms in order to enhance imagination of the blind about Himmapan creatures, furthermore, the main objective of the research focused on improving the visual disabled perception to be equal to normal people. The target group of the research is blinded students studying in The Bangkok school for the blind between grade 4-6 in the second semester of 2011 who are able to read the braille language. The research methodology consisted of the field study and the documentary study related to the blind, tactile texture designed media and Himmapan creatures. 10 pictures of tactile texture designed media were created in the designing process which began after the analysis had conducted based the primary and secondary data. The works had presented to experts in the visual disabled field who evaluated the works. After approval, the works used as prototype to teach the blind.

Keywords—Blind, Himmapan Creatures, Tactile Texture.

I. INTRODUCTION

At present, Thailand realizes the important of the development of disabled people, especially, the right to have equal education as normal people. According to the constitution of Thailand, the government must develop the quality and the standard of education in every level, cohering to the change of economics and the society. The government founded the national education plan to develop citizens in many areas such as health, wisdom and morality to be able to live in harmony and peaceful. According to the law, every citizen, including for the disabled citizens, has the equal right to receive the 12-year fundamental education which provide by the government for free [1].

However, currently learning institutes providing special education are lacking of media and technology which suitable to teach disabled people. Those media are important factors to leaning process both outside and inside classrooms which should be access everywhere [2].

The blind is one of the disabilities which associate with visual impairment. It can be classified from partial blindness to fully blindness. The disabled people use other senses such as hearing and touching objects to measure shape, texture and size of the objects [3].

For this reason, media, which are usually used for the blind, are bas-relief such as tactile texture. This media can enhance learning experience of the visual disabled people to understand the form and the structure of objects equally with normal people. It creates imagination during touching the media, making the learning process easier to understand.

Nowadays, tactile texture media are not sufficient for the blind to learn in various subjects beside from classroom lessons and assignment.

This research aims to create the tactile texture media under the subject of the Himmapan creatures, imaginary animals who live in Himmapan forest.

The Himmapan creatures have appeared in Thai literature, Fine Art and architecture.

In general, the Himmapan were painted on temple walls or illustrated in ancient Thai books [4]. For the blind that have special interest in Thai art, this tactile texture media will be a great source of knowledge to expand their experience. This project opens the opportunity for the visual disabled people to learning by touching the pictures with the Braille language which explain the contexts.

In conclusion, searching and analyzing the patterns of Himmapan creatures to use as the prototypes of the tactile texture media will be advantage in developing new media and technology for the blind.

II. OBJECTIVES

- 1) To study the process and methods of designing tactile texture pictures for the blind.
- 2) To search and analyze the patterns of Himmapan in different kinds and use in the design process.
- 3) To create the innovation of tactile texture pictures under the topic of Himmapan creatures which can create imagination for the blind.
- 4) To develop the media for the blind and provide to related organizations.

III. METHODOLOGY

A. Population of Study

Visual disabled students who are able to read the Braille language from grade 4 -6.

B. Research Tools

10 pictures of Himmapan creatures copied on Braille paper [5].

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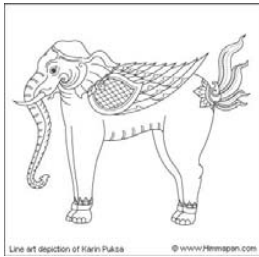


Fig. 1 Karin Puksa pattern



Fig. 2 Karin Puksa



Fig. 11 Nok Thet pattern



Fig.12 Nok Thet



Fig. 3 Kraisorn Karwee pattern



Fig. 4 Kraisorn Karwee

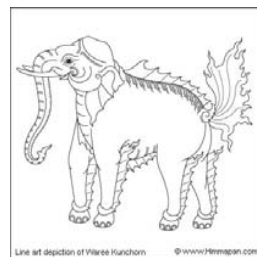


Fig. 13 Waree Kunchorn pattern



Fig.14 Waree Kunchorn



Fig. 5 Durong Puksin pattern



Fig. 6 Durong Puksin

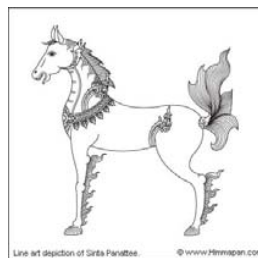


Fig. 15 Sinta Panattee pattern



Fig.16 Sinta Panattee

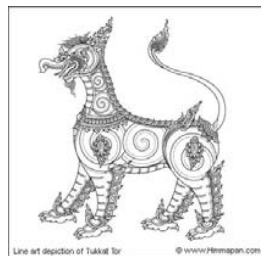


Fig. 7 Takka Tor pattern



Fig. 8 Takka Tor

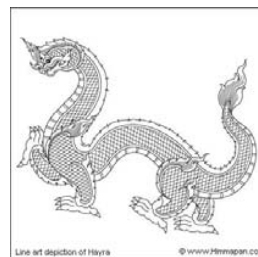


Fig. 17 Hayra pattern



Fig.18 Hayra



Fig. 9 Nok Hussadee pattern



Fig.10 Nok Hussadee



Fig. 19 Ussadorn Vihok pattern



Fig. 20 Ussadorn Vihok

C. Questionnaire

A questionnaire collects data on the use of bas-relief media of the blind. The questionnaire consists of 2 parts. The first part asks about the understanding of the relationship between the pictures and the Braille language. The second part asks about the satisfaction of the media usage which categorizes in 5 levels: The most, the above average, average, less and the least [6].

IV. RESULT

From the experiment, the target group is the blind who are capable to read the Braille language. 37 students were studying at the Bangkok school for the blind at grade 4-6. The result focused on searching for the relationship between the

design and the satisfaction in the usage of the media. The research found that the target group satisfied with the media.

TABLE I
NUMBERS AND PERCENTAGES OF THE TARGET GROUPS (N = 37)

Level of study	Numbers of students	Percentage
Grade 4	10	27.03
Grade 5	11	29.73
Grade 6	16	43.24
summary	37	100

From Table I, the number of 10 students from grade 4 is calibrated to 27.03 in percentage. the number 11 of the grade 5 students is calibrated to 29.73 in percentage and the number of 16 students from grade 6 is calibrated to 43.2 in percentage.

TABLE II
NUMBERS AND PERCENTAGES OF THE SATISFACTION OF THE MEDIA USAGE (N = 37)

Level of study	Level of satisfaction					Summary (person/percentage)
	The most (in percentage)	Above average (in percentage)	Average (in percentage)	less (in percentage)	The least (in percentage)	
Grade 4	9 (90)	1 (10)				10 (100)
Grade 5	7 (63.64)	3 (27.27)	1 (9.09)			11 (100)
Grade 6	16 (100)					16 (100)
summary	32 (86.49)	4 (10.81)	1 (2.70)			37 (100)

From Table II, the satisfaction of the 37 students from grade 4-6 toward the media at the most satisfied level is at 86.49 in percentage (32 students). The satisfaction rate at the level of the above average is at 10.81 in percentage (4 students) and the satisfaction rate at the level of the average is at 2.70 in percentage (1 student).

Classifying the data as follows:

- 1) The rate at the most satisfaction of the grade 4 students is at 90 in percentage (9 students) and 10 in percentage (1 student) at the above average level.
- 2) The rate at the most satisfaction of the grade 5 students is at 63.64 in percentage (7 students), 27.27 in percentage (3 students) at the above average level and 9.09 in percentage (1 student) at the average level.
- 3) The rate at the most satisfaction of the grade 6 students is at 100 in percentage (16 students).

V. CONCLUSION

From the experiment, using "Himmapan creatures" the tactile texture designed media to the blind twice can conclude the result as follows :

A. The First Experiment

From the observation, the blind were curious and not confident to explain when touching the pictures before reading the Braille language. The Himmapan creatures are not the real animals but they were created by mixing many kind of animals and redesigning in Thai art style, for this reason, it is hard for the blind to explain the shape and the character of the Himmapan creatures clearly. The names of Himmapan

creatures were unknown to the students because in were not in the textbook they had learned.

B. The Second Experiment

In the second experiment, the blind were allowed to read the Braille language and touched the pictures altogether. The result found that the students acted differently from the first experiment. It is observable that the blind paid great attention on the media and able to described the pictures. They are also able to ask question related to the Himmapan creatures. The majority of the blind had never heard of the names of the Himmapan creatures. It was hard to correct the pronunciation of the names.

Moreover than observing the learning process, the researcher collect data from the participants to find the satisfaction rate toward the media and the relativity between reading the Braille and touching pictures. This method can help student to understand better.

After presenting the media to the experts who evaluated the research tools, the media was considered to be good quality in choosing the pictures and materials. The prototype works are creative, suitable to use for the blind.

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