

# Buddha Images in Mudras Representing Days of a Week: Tactile Texture Design for the Blind

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**Abstract**—The research “Buddha Images in Mudras Representing Days of a Week: Tactile Texture Design for the Blind” aims to provide original tactile format to institutions for the blind, as supplementary textbooks, to accumulate Buddhist knowledge, so that it could be extracurricular learning. The research studied on 33 students with both total and partial blindness, the latter with the ability to read Braille’s signs, of elementary 4 – 6, who are pursuing their studies on the second semester of the academic year 2013 at Bangkok School for the Blind. The researcher opted samples specifically, studied data acquired from both documents and fieldworks. Those methods must be related to the blind, tactile format production, and Buddha images in mudras representing days of a week. Afterwards, the formats will be analyzed and designed so that there would be 8 format pictures of Buddha images in mudras representing days of the week. Experts will next evaluate the media and try out.

**Keywords**—Blind, tactile texture, Thai Buddha images in Mudras representing days of the week.

## I. INTRODUCTION

THE blind are used to define those who have the inability, partial or total, to see, and perceive surrounding information via oratory method and touches on forms, shapes, surfaces, and sizes of the objects; to form mental image. So media and technology aiming to encourage the appropriate learning are usually produced in tactile texture.

Nowadays, Thailand has put an accent on the development of the disable, especially, to equalize the rights and the opportunities with the normal people. According to the Act of National Education (1999), people with the disability, either physical or mental, must be taught under the special learning condition with educational media and technology, to support their learning in various forms, to substitute what each of them lacked appropriately and responsively to their needs. Currently, however, there have been the lacks of media and technology for the disable in institutes and related organizations, to aid them in learning appropriately and equally to the normal. Or if existed, they are not up-to-date. Educational media and technology are main factors to encourage the learning of the blind: formal, non-formal, and informal education. Education can happen everywhere and anytime. Hence, educational media and technology will aid them to reach the equal and effective learning [1].

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Tactile texture is the tool to communicate what we need to express to people with blindness so as to let them perceive the form, structure and boundary of matters in the nature and inventions. Such act helps the blind form mental images by touching objects objectively. And with the tactile media, the blind understand any matters better and are able to learn equally to the normal [2].

Nowadays, there is scarcity in producing tactile texture for the blind. Most of the media are applied in lessons, to better the understanding. Supplementary tactile texture production is hence to provide the blind exposure to the interesting matters.

The design of Thai Buddha images in mudras representing days of the week is the presentation to provide the ‘learning touches’ regarding the Buddha images in various mudras. Mudras of Buddha images are the Buddha’s gestures, built according to the belief associated with Buddhist history [3].

95% of Thai citizens are Theravada Buddhists: so the Buddhism is the national religion. Apart from the principle Buddha image established in each temple, there are also 8 mudras of Buddha images representing days of the week, created to be respected by Buddhists. The 8 mudras of the Buddha images are: 1) Pensive thought posture representing Sunday; 2) Reconciliatory posture representing Monday; 3) Reclining posture representing Tuesday; 4) Holding Monk’s Bowl posture representing diurnal Wednesday; 5) Sitting posture representing nocturnal Wednesday; 6) Enlightened posture representing Thursday; 7) Crossed-arm posture representing Friday and 8) Naga-covered posture representing Saturday [4].

Hence, the study and analysis on mudras of such Buddha images lead to the appropriate format of tactile texture for the blind, accumulating the development of media and technology. This aims to assist the blind effectively.

## II. OBJECTIVES

1. To invent original tactile textures entitled “Buddha Images in Mudras Representing Days of the Week”
2. To do a research regarding Buddha images for original format of such tactile textures
3. To study the process and production in creating tactile media for the blind.

## III. METHODOLOGY

### A. Population of Study

The population is students with blindness, Samples are 33 blind students able to read Braille’s signs, Bangkok School for the Blind, of elementary 4-6, currently studying in their 2<sup>nd</sup>

semester of the academic year 2013. These samples are selected through purposive sampling.

*B. Research Tools*

Tactile media entitled ‘Buddha Images in Mudras Representing Days of the Week’ which has been formatted with explanation printed in Braille’s signs on Braille’s paper; 8 images whose production process is as follows: Drawing 8 mudras of the Buddha image set

1. Pensive thought posture representing Sunday
2. Reconciliatory posture representing Monday
3. Reclining posture representing Tuesday
4. Holding Monk’s Bowl posture representing diurnal Wednesday
5. Sitting posture representing nocturnal Wednesday
6. Enlightened posture representing Thursday
7. Crossed-arm posture representing Friday
8. Naga – Covered posture representing Saturday

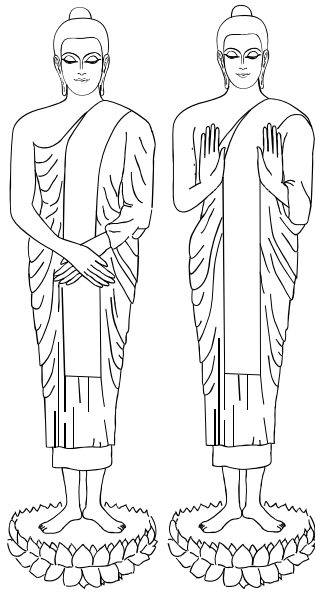


Fig.1 Buddha Images of Sunday and Monday



Fig. 2 Buddha Images of Tuesday and Diurnal Wednesday

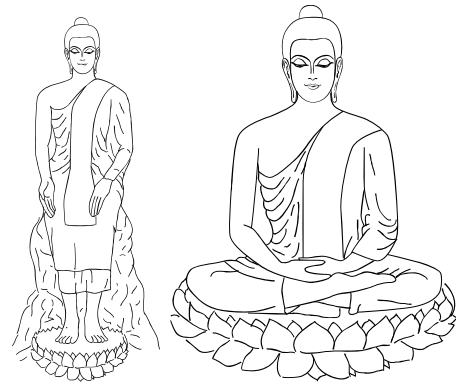


Fig. 3 Buddha Images of Nocturnal Wednesday and Thursday



Fig. 4 Buddha Images of Friday and Saturday

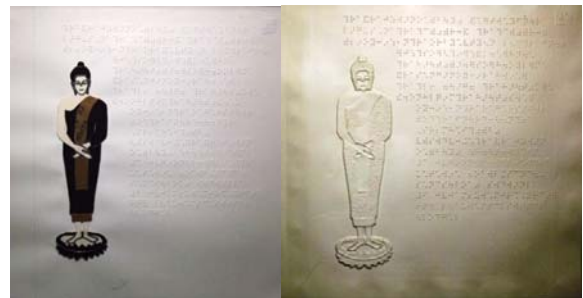


Fig. 5 Original and Finished Buddha Images of Sunday

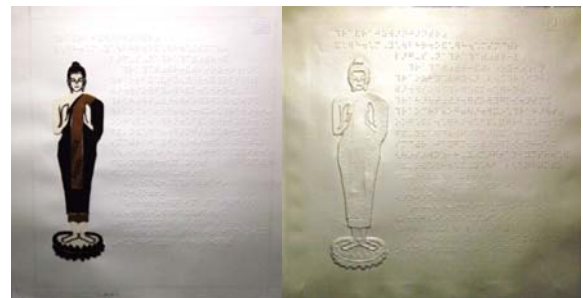


Fig. 6 Original and Finished Buddha Images of Monday



Fig. 7 Original and Finished Buddha Images of Tuesday

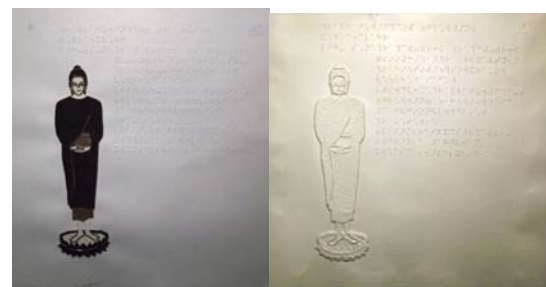


Fig. 8 Original and Finished Buddha Images of Diurnal Wednesday

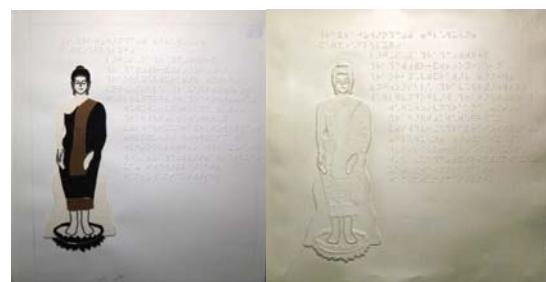


Fig. 9 Original and Finished Buddha Images of Nocturnal Wednesday

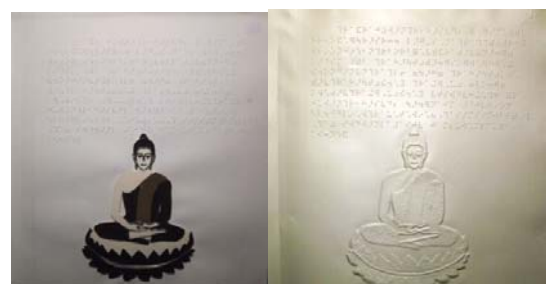


Fig. 10 Original and Finished Buddha Images of Thursday

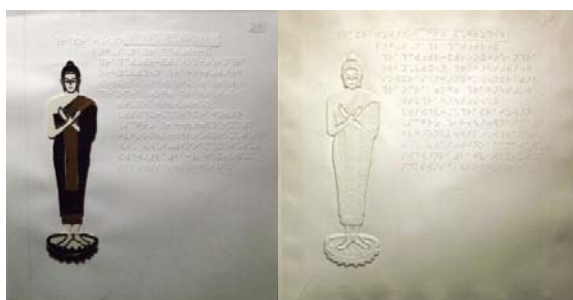


Fig. 11 Original and Finished Buddha Images of Friday

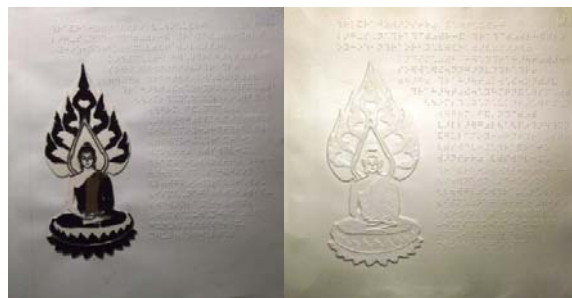


Fig. 12 Original and Finished Buddha Images of Saturday

### C. Questionnaire

Survey regarding “The tactile media application with the blind”, composing of two sections: 1) survey on the understanding towards the relation between images and Braille’s signs and 2) survey on satisfaction towards the media application. The 5- rating scale is in use: Very high, High, Moderate, Low, Very Low.

### IV. RESULTS

According to the research tool (interview), the 33 students with the ability to read Braille’s signs, of elementary 4-6, Bangkok School for the Blind, the understanding and satisfactory rate are in high rates. The media is able to assist forming mental images, and bettering the understanding.

TABLE I  
 ILLUSTRATING PERCENTAGE OF STUDENTS UNDERSTANDING  
 THE TACTILE MEDIA (N = 33)

Figure No	Understanding Rate Frequency (percentage)				
	Very high	High	Moderate	Low	Very Low
1.Buddha Image of Sunday	8 (24.3)	18 (54.5)	7 (21.2)		
2.Buddha Image of Monday	7 (21.2)	16 (48.5)	10 (30.3)		
3.Buddha Image Of Tuesday	6 (18.2)	14 (42.4)	13 (39.4)		
4.Buddha Image of Diurnal Wednesday	6 (18.2)	10 (30.3)	17 (51.5)		
5.Buddha Image of Nocturnal Wednesday	10 (30.3)	16 (48.5)	7 (21.2)		
6.Buddha Image Of Thursday	12 (36.4)	11 (33.3)	10 (30.3)		
7.Buddha Image Of Friday	10 (30.3)	12 (36.4)	11 (33.3)		
8.Buddha Image Of Saturday	13 (39.4)	14 (42.4)	6 (18.2)		

Table I reveals that 33 targeted students of elementary 4-6 have an understanding able to be sectioned as follows:

Fig. 1 Buddha Image of Sunday Most students have high understanding (18 entries or 54.5%), second to which is 8 entries at very high understanding (24.3%), next to the latter is the moderate understanding with 7 entries or 21.2%. No student opted the low and very low understanding.

Fig. 2 Buddha Image of Monday Most students have high understanding (16 entries or 48.5%), second to which is 10 entries at moderate understanding (30.3%), next to the latter is

the very high understanding with 7 entries or 21.2%. No student opted the low and very low understanding.

Fig. 3 Buddha Image of Tuesday Most students have high understanding (14 entries or 42.4%), second to which is 13 entries at moderate understanding (39.4%), next to the latter is the very high understanding with 6 entries or 18.2%. No student opted the low and very low understanding.

Fig. 4 Buddha Image of Diurnal Wednesday Most students have moderate understanding (17 entries or 51.5%), second to which is 10 entries at high understanding (30.3%), next to the latter is the very high understanding with 6 entries or 18.2%. No student opted the low and very low understanding.

Fig. 5 Buddha Image of Nocturnal Wednesday Most students have high understanding (16 entries or 48.5%), second to which is 10 entries at very high understanding (30.3%), next to the latter is the moderate understanding with 7 entries or 21.2%. No student opted the low and very low understanding.

Fig. 6 Buddha Image of Thursday Most students have very high understanding (12 entries or 36.4%), second to which is 11 entries at high understanding (33.3%), next to the latter is the moderate understanding with 10 entries or 30.3%. No student opted the low and very low understanding.

Fig. 7 Buddha Image of Friday Most students have high understanding (12 entries or 36.4%), second to which is 11 entries at moderate understanding (33.3%), next to the latter is the very high understanding with 10 entries or 30.3%. No student opted the low and very low understanding.

Fig. 8 Buddha Image of Saturday Most students have high understanding (14 entries or 42.4%), second to which is 13 entries at very high understanding (39.4%), next to the latter is the moderate understanding with 6 entries or 18.2%. No student opted the low and very low understanding.

TABLE II  
 REVEALING THE AVERAGE UNDERSTANDING OF STUDENTS  
 USING THE TACTILE TEXTURE (N = 33)

Figure No	Average $\bar{X}$	Standard Deviation SD	Interpretation
1.Buddha Image of Sunday	4.03	0.68	High
2.Buddha Image of Monday	3.91	0.72	High
3.Buddha Image of Tuesday	3.79	0.74	High
4.Buddha Image of Diurnal Wednesday	3.67	0.78	High
5.Buddha Image of Nocturnal Wednesday	4.09	0.72	High
6.Buddha Image of Thursday	4.06	0.83	High
7.Buddha Image of Friday	3.97	0.81	High
8.Buddha Image of Saturday	4.21	0.74	High
Overall	3.97	0.70	High

Table II indicates that the average score showing the understanding of students using the tactile media in overall aspect is 3.97, holding 0.70 as its S.D., equivalent to the high level of understanding.

Fig. 1 Regarding Buddha Image of Sunday The average understanding of students using the texture is at 4.03, holding 0.68 as its standard deviation, interpreted as high level of understanding.

Fig. 2 Regarding Buddha Image of Monday The average understanding of students using the texture is at 3.91, holding 0.72 as its standard deviation, interpreted as high level of understanding.

Fig. 3 Regarding Buddha Image of Tuesday The average understanding of students using the texture is at 3.79, holding 0.74 as its standard deviation, interpreted as high level of understanding.

Fig. 4 Regarding Buddha Image of Diurnal Wednesday The average understanding of students using the texture is at 3.67, holding 0.78 as its standard deviation, interpreted as high level of understanding.

Fig. 5 Regarding Buddha Image of Nocturnal Wednesday The average understanding of students using the texture is at 4.09, holding 0.72 as its standard deviation, interpreted as high level of understanding.

Fig. 6 Regarding Buddha Image of Thursday The average understanding of students using the texture is at 4.06, holding 0.83 as its standard deviation, interpreted as high level of understanding.

Fig. 7 Regarding Buddha Image of Friday The average understanding of students using the texture is at 3.97, holding 0.81 as its standard deviation, interpreted as high level of understanding.

Fig. 8 Regarding Buddha Image of Saturday The average understanding of students using the texture is at 4.21, holding 0.74 as its standard deviation, interpreted as high level of understanding.

TABLE III  
 SHOWING THE PERCENTAGE OF THE SATISFACTION OF THE MEDIA USAGE  
 (N = 33)

Entries	Satisfaction towards the media N (percentage)			
	Very High	High	Moderate	Low Very Low
33	17 (51.1)	13 (39.4)	3 (9.1)	

Table III reveals that 33 samples are satisfied with the tactile texture in different degrees. 17 students (51.5%) are very highly satisfied. As second place, 13 students (39.4%) are highly satisfied. Lastly, 3 students (9.1) are moderately satisfied.

TABLE IV  
 STATING THE AVERAGE SCORE OF STUDENTS SATISFACTION TOWARDS  
 THE TACTILE SET (N = 33)

Entries	Average $\bar{X}$	Standard Deviation SD	Interpretation
33	4.42	0.66	High

Table IV unveils that the satisfactory rate of students towards the educational media in overall aspect is equivalent to 4.42, holding 0.66 as its standard deviation, interpreted as high satisfaction.

The average score of quality assessed by experts is at 4.9, equivalent to high quality.

## V. CONCLUSION

Regarding the research outcome, the average score of students' understanding of the tactile media is at high rate. As

found during the interview with the target group, it can be stated that no students knew about the Buddha image's mudras that represents their birthday. The creation of the tactile texture regarding Buddha Images Representing Days of the Week delimits the knowledge boundary. As stated Somchao Netrprasert that the media application is significant to complete the pedagogical process because such media brings knowledge and experience into learners' perceptions. These perceptions are what teachers must select the means appropriately, otherwise the knowledge and experience cannot be established in the learners. In the media, there should be supplementary explanation; the Braille's sign description and images should be formatted on the same page so that the relation between the description and image is established, leading to easy perception and, by extension, mental images [5]. Such statement is as stated Pimjit Satitwittayanan that people with blindness require verbal explanation and tactile media so as to increase their understanding: accuracy, pace, and tangibility. The tactile media production is as to express the seen to the blind [6].

According to the average score of satisfaction towards the media application, it's in high rate. This phenomenon is because targeted students still need to learn from the touch on tactile images rather than merely on Braille's signs. The touch on tactile media stimulates the mental images, leading to the exposure to the surrounding. It's as Supoj Kruahong said that the current condition of blind students' learning is the students either learn from the Braille's signs or from the tactile texture. The tactile media is another way to ease up and stimulate mental images at pace, bettering the understanding and, later, forming the key components of the lessons [7].

Suggestion: In order to design the tactile texture for blind next time, it's better to start with the needs of the blind regarding what they are interested to be printed on tactile texture so that the creation meets their needs.

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