UNIVERSITI TEKNOLOGI MARA

REQUIREMENT ANALYSIS ON AUDITORY ICONS FOR AUDIO TACTILE MAPS: CASE FOR BLIND USER IN WAYFINDING

NOOR HAZIRAH BINTI KAMALUDIN

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ABSTRACT

A person with reduced visual capacity is defined as visually impaired person. Most visually impaired people have limited capabilities in performing a task. People who are visually impaired will used their sense of hearing as there is evidence that they have a better auditory ability than sighted people. Thus the visually impaired people are using their hearing senses in their wayfinding. The main problem with the current Braille learning technique of wayfinding is that its labeling cannot be read by all visually impaired people. Furthermore the amount of information can be displayed is limited. Nowadays there are many technologies used for wayfinding. One of them is Audio Tactile Maps (ATM) which helps the visually impaired people in wayfinding. The ATM used auditory icons to represent the object, function, and action in the maps. The auditory icons that are used for this study was from the Freesound Project. The objectives of this study are to identify the auditory icons that are important for visually impaired people and to evaluate the identifiability of the auditory icons. The study was conducted at Malaysian Association for the Blind (MAB) with ten visually impaired participants. The data was collected using interviews and questionnaires methods. The data is then analyzed using Kruskal-Wallis analysis, Descriptive analysis, and Spearman Correlation analysis. The outcomes of the study identify key auditory icons that are important to the visually impaired as well as the identifiability of auditory icons for each category of the icons. The result has shown that the number of participants that are correctly identified the sound of an object was higher than the sound representing the action of an object. This research helps to determine a suitable auditory icon that can be used on audio tactile maps to facilitate an interactive learning for the visually impaired people and gain new knowledge.

Keywords: Visually Impaired people, Wayfinding, Auditory Icons.

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