

Influence of Tactile Symbol Size on Its Perceptibility in Consideration of Effect of Aging

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Abstract : We conducted perception experiments on tactile symbols to elucidate the impact of the size of these letters on the level of perceptibility. This study was based on the accessible design perspective and aimed at expanding the availability of tactile symbols for the visually impaired who are unable to read Braille characters. In particular, this study targeted people with acquired visual impairments as users of the tactile symbols. The subjects (young and elderly individuals) in this study had normal vision. They were asked to participate in the experiments to identify tactile symbols while unable to see their hand during the experiments. This study investigated the relation between the size and perceptibility of tactile symbols based on an examination using test pieces of these letters in different sizes. The results revealed that the error rates for both young and elderly subjects converged to almost 0% when 12 mm size tactile symbols were used. The findings also showed that the error rate was low and subjects could identify the symbols in 5 s when 16 mm size tactile symbols were introduced.

Keywords : accessible design, tactile sense, tactile symbols, bioinformatic

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