

Learning Support System using 3DCG and GIF animation for an intuitive understanding of Braille

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Braille is a written language for the visually impaired, that the letter is represented by patterns of raised 6 dots. Braille can be read by touching them tactilely. Visually impaired spontaneously can use Braille as one of read/write methods. Supporters of visually impaired should have each ability of read/write Braille as same as them for doing communication. In this study, they are sighted persons who belonged to a public library, a school of special needs education and so on.

Miura et al. [1] developed a self-learning program of Braille (e-learning system for Braille). As a result of evaluation of the system, it showed effectiveness of learning for the acquired visually impaired. The representation of Braille is on the only 2-dimensional. For example, it was used the symbols of black and white circles or, “+” and “-”.

However, in this representation, nobody knows whether they have expressed the Braille for read (convex), or the Braille for write (concave). The problem seems to lie in the fact that Braille is represented on 2-dimensional. Little attention has been given to how to express Braille. It is important that a representation of Braille on 3-dimensional is discussed.

The purpose of this study is to develop the learning support system using 3DCG and GIF animation for an intuitive understanding of Braille. The existing learning support system whose name is “TENJI TO ISSHO” can make questions of only Braille for read. In this study, the system is added the two functions that each student can learn with 3DCG not only Braille for read but also Braille for write, and he/she can see GIF animation that represent about “mirror image”.

From now on, the students will learn Braille for read/write on this system for evaluating.