**A comparison of brain activation in cartoon and text problem-solving**

The purpose of this study was to investigate whether there are differences in the mathematical problem-solving process among students depending on the method of problem presentation, using cognitive neurology as a basis. Elementary school students in grades 5 and 6 solved two types of problems presented as cartoons and text, and their gaze and brain activity were measured using eye trackers and fNIRS devices during the process. When the same problems were presented as cartoons and text, differences in brain activity and the area of brain activation were examined. Using an eye tracker, the distribution of gaze on speech bubbles, characters, and other pictures was analyzed when reading cartoons. By checking where the gaze was focused during the most active brain activity, it was confirmed how students obtained information to solve problems when reading cartoons and the results of problem-solving according to their reading method. The learning characteristics of the students were also analyzed by surveying them before and after the experiment. The results of this study objectively analyzed the effects of mathematical problems presented as cartoons and suggest how to use cartoons and text according to the characteristics of students.