

Abstract

Motor development is the result of changes caused by physical growth, muscle strengthening, and the ability to interact with the environment. There are two types of motor development, namely gross motor and fine motor. The best age for a child for motor development is 0 to 8 years. At the age of 4 to 6 years mostly of children's gross motor activities related to balance and coordination. Child's development of gross motor can be achieved by stimulating using games. Hopscotch is type of game that implements balance and coordination skills that support the development of gross motor skills. In Indonesia, children aged 4 years to 6 years have started to enter the Early Childhood Education and Kindergarten level. When the child is at school, parents cannot provide motor stimulation and must wait for the child's motor development reports submitted by the teachers. In this study we implemented system to stimulate the development of gross motor balance and coordination in children age 4 to 6 years using hopscotch game integrated with Internet of Things (IoT) technology. IoT provides the ability to read, record and evaluate children's activities and publish their results online for parents to access. This system is evaluated based on the system's functionality and performance parameters. From the test results found that the functionality of the system runs 100% by the specified function. The system performance test results from the sensor reading are under 1 second and the accuracy of the assessment activity of the first test variation of the foot position in the middle of 68.75% and the foot position at the edge of 81.25% with the program delay setting from the node to the IoT platform an average of 1 second.

Keywords: Gross motor, Hopscotch game, Internet of Things (IoT), System performance