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**Abstract**

Gross motor development in children influences the development of self-confidence and the concept of self-formation as they mature. Most people assume that gross motor development is often ruled out compared to other aspects of child development because the perception of gross motor development will automatically increase with age, when in fact the gross motor development must continue to be stimulated so that it develops perfectly. The activity used in this research is the game of putting balls into a hole by moving the game box (Drop Box). This research aims to build a device that has been designed and assess the ability/performance of the system based on the parameters of functionality, the accuracy of values, and reading speed. In this research, the Drop Box game implements Internet of Things (IoT) to support recording activities and processing data obtained from recording children's activities. We carry out functional system testing and system performance testing based on accuracy parameters and speed-reading parameters. The test results show that the functionality of the system runs with an average of 100%. For system performance, the result is 86.59% for 20 ms as the optimal delay in testing accuracy and 79 ms for reading speed.

**Keywords:** gross motor development, drop box game, internet of things (IoT), early childhood

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