

Early mathematics learning in reading and writing numerals: learning through “what are the numbers?” a picture book made up of flora and fauna in Borneo

ABSTRACT

Learning through picture books is a method which is widely used in preschools to teach mathematics. However, the research findings on the benefits of using picture books in learning mathematics remain inconclusive. This study aimed to i) investigate the effects of a picture book entitled “What are the numbers?” (a picture book made up flora and fauna in Borneo) on early mathematics achievement (reading and writing numerals up to 20) and ii) to get feedback on how appropriate the use of “what are the numbers” from teachers and parents. The book consists elements of critical thinking, communication, collaboration and creative thinking. The effects were measured by comparing the change in early mathematical ability of children in reading and writing numerals up to 20 by using the Rasch measurement model. The mean of the pre-test achievement was -1.99 logits and the mean of the post-test achievement was 1.75 logits which shows a difference of 3.74 logits. The effect size of the difference between the post-test and pre-test achievement was 1.4, which is considered large. Teachers and parents gave positive feedback on the use of the picture book. They commented that the picture book is able to attract children’s attention, enhance their thinking skills and nurture creativity among children. In conclusion, the picture book based on the 4C approach enhanced early mathematics achievement of children.