The effect of abacus mental arithmetic on children mathematic ability

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ABSTRACT: The main objective of this study focus on the accuracy and speed in answering the mathematic questions by the children who had learned and do not learned abacus mental arithmetic. A sample of total 80 children had been selected in this study. 40 children who had learned abacus mental arithmetic for 1 year and 40 children who do not learned abacus mental arithmetic but had gone through standard one mathematic for one year had been selected in this study. Quantitative analysis, examination method had been used and the result had been count manually. The results indicated that there are differences in the accuracy and speed between the children who had learned abacus mental arithmetic and children who do not learned abacus mental arithmetic. Majority of the children who had learned abacus mental arithmetic can answer the mathematic questions accurately within the time limit (3 minutes). Whereas majority of the children who do not learned abacus mental arithmetic cannot answer the mathematic questions accurately within the time given (3 minutes).

Keywords: The Effect, Abacus, Mental Arithmetic

1 INTRODUCTION

In the West Country, abacus mental arithmetic as urbanized and being called as mental computation or calculation. It emphasize on problem solving which using mental strategies to differentiate it from the conservative mental arithmetic that generally using the method of pure arithmetic calculations (Morgan, 1999 & Cutler, 2001). In the East Country, they stress on the practice of imaginary which using mental abacus to do mathematical calculation mentally (Hishitani, 1989). Noor Azlan (1995) reviewed that the Malaysian mathematics curriculum has undergone several significant changes within the last five decades. The relatively short history of the mathematics education can be said to have begun with the traditional mathematics emphasizing mainly on basic skills (predominantly computational) in the primary grades.

Noor Azlan (1995) also reviewed that improving the quality of teaching and learning of mathematics has always been a major concern of mathematic educators. Many efforts and hard work had been carried out to improve the standard in teaching and learning mathematics. Different types of ways had been carried out to help in improving the standard of the teachers, for example, training programs for pre-teachers. One of the suggestions is to introduce the use of abacus or mental arithmetic in the teaching and learning for preschool and primary schools. The Malaysian government, particularly under the previous Prime Minister, Tun Dr Mahathir Mohamad, has been a strong advocate in implementing mental arithmetic into the Mathematics curriculum (Lu, 2001) with the aim of raising the standard of the students.

1.1 Problem statement

In 1983, the primary school curriculum (KBSR) has been implemented. The main aim of this KBSR is to help in develop the children and their individual development in the aspects of social, physical, spiritual, emotion, intellect, character, talent, and moral values. The mastery of three basic skills 3R which are reading, writing and arithmetic were being emphasized in this curriculum. The focuses for Mathematics are mastering numbers and basic operation such as addition, subtraction, multiplication and division.

This focus is mainly for year one, year two and year three children. Children were expected to master the basic operation so they can progress to more advanced topic like algebra when they go to secondary school. The planned change is constant with hope in the high-performing education jurisdictions of Singapore and Hong Kong. By age 9, children should memorize their times tables up to 12 x 12. Currently children only need to know up to 10 x 10 by the end of primary school. By age