The effect of abacus mental arithmetic on children's mathematical ability

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Abstract: The main objective of this study was to ascertain the accuracy and speed of mental arithmetic questions by children who had learned and did not learn abacus mental arithmetic. A sample of 60 children had been selected for this study. Children who had learned abacus mental arithmetic took 10 minutes to complete the mental arithmetic questions, while children who did not learn abacus mental arithmetic took 15 minutes to complete the same tasks. The results indicated that there were differences in the accuracy and speed between the children who had learned abacus mental arithmetic and children who did not learn abacus mental arithmetic. Majority of the children who had learned abacus mental arithmetic could answer the mathematical questions accurately within the time limit (10 minutes) while the majority of the children who did not learn abacus mental arithmetic could answer the mathematical questions accurately within the time frame (15 minutes).

Keywords: The Effect, Abacus, Mental Arithmetic

1. Introduction

In the West Country, abacus mental arithmetic is taught and is called mental computation or calculation. It emphasizes on problem solving which uses mental strategies to differentiate it from the conventional mental arithmetic that emphasizes on rapid mental calculations (Mong, 1999; Lean, 2001). In the East Country, the focus is on the properties of memory which trains mental abilities in the mathematical calculations mentally (Kleiman, 1990). Year 10 (1990) remarked 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 introduction of mathematics teaching methods in the primary grades. Year 11 (1990) also observed that improving the quality of teaching and learning can start by increasing the number of good teachers and ensuring that they are well-trained in the subject matter. Year 12 (1990) has been a major concern of mathematics 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, inservice programs for pre-teachers. One of the suggestions is to introduce the use of abacus mental arithmetic in the teaching and learning for primary schools. The Malaysian government, particularly under the previous Prime Minister Tun Dato' Sri Haji Mohd. Mahathir, has been a strong advocate of incorporating mental arithmetic into the Mathematics curriculum (Lau, 2001) with the aim of raising the standard of the students.

1.1 Problem statement

In 1991, the primary school curriculum (KSSR) has been implemented. The main aim of the KSSR is to help in developing the children's thinking and skills. It is designed to develop the cognitive aspects in the subjects, such as mathematics, science, and social studies. The Ministry of Education encourages the use of mental arithmetic in the classroom. The emphasis on mental arithmetic is intended to improve the students' ability to solve problems and to develop their thinking skills. The use of mental arithmetic is intended to be implemented in the classroom to develop the students' thinking skills. The emphasis on mental arithmetic is intended to be implemented in the classroom to develop the students' thinking skills. The emphasis on mental arithmetic is intended to be implemented in the classroom to develop the students' thinking skills.