Management and Technology in Knowledge, Service, Tourism & Hospitality

Chapter 22. Heat concept learning and teachers’ intervention in science among year five students

Kavitha Sathiah, Madhya Zangen Ganesan and Fonny Hutagalung

Management and Technology in Knowledge, Service, Tourism & Hospitality
Edited by Ford Lumban Gaol, Wayne Mars, and Hoga Saraghi
CRC Press 2014
Pages 117-121
Print ISBN: 978-1-4398-0113-6
ebook ISBN: 978-1-315-77552-4
DOI: 10.1201/b16700-25

Heat concept learning and teachers’ intervention in science among year five students

Kavitha Sathiah, Madhya Zangen Ganesan and Fonny Hutagalung

ABSTRACT: The main aim of the study was to identify the relationship between the specific teacher intervention and students’ achievement in science concept among primary students, to assess whether the gender differences affect the level of understanding of selected science concept among primary students and to identify the differences in scores between direct and application type questions in science achievement of selected science concept.

The sample consists of 110 students (50 males and 60 females) from a national primary school in Selangor district, Sekolah Kebangsaan Dato’ Bunting Rural. This research consists of two groups of respondents, one is experimental group and another is control group. The experimental group was teachers intervention during science lessons and the control group learn through traditional method. The difference in achievement of science concept and the ability to apply the concepts to construct application type question is measured through a post test only method using a self-constructed achievement test called Achievement in Science Test (AST). The results still are analyzed using SPSS to obtain the percentage, mean and t-test comparison. The results showed if there is any significant increase obtained by the experimental group.

1. INTRODUCTION - PRIMARY SCIENCE EDUCATION IN MALAYSIA

In recent education, great emphasis has been given to learning and mastery of science subject as scientific knowledge is vital for the growth of a nation. As a developing nation, Malaysia needs citizens who can contribute to the scientific and technological developments in order to compete and be at par with other developed nations and able to achieve this goal by the year 2020 (Barclay & Ellis, 2000). This research emphasizes on learning of concept of heat among primary students in Malaysia and how teachers can intervene to help meaningful learning of the concept.

In Malaysia, heat concept is included in Year 1st primary science syllabus. As described in cognitive psychology, formal science education in school should be based on informal learning that students experience in their daily lives or in other words their prior knowledge. However, it is essential for students to develop a prior knowledge base to use as a reference. Therefore, the Integrated Curriculum for Primary School (IPPS) was formulated and implemented which is being used until now. At the end of the primary education in Year 6, pupils are set for the Primary School Assessment Test or better known as UPSI. (from Kadro Pelajar Sekolah Rendah). Pupils will receive a certificate as a proof for primary education completion. In January 2013, a new curriculum, Standard Curriculum for Primary School or KSSR was introduced and implemented nationwide for Year One. The science subject was taught in Malay language in National schools, Mandarin and Tamil in vernacular schools. In UPSI examination, science is one of the five subjects assessed. This is the highest level of assessment for primary level and the current education system in Malaysia.

In June 2002, decision to change the medium of instruction of science subject in English was made. This decision was made to overcome the low proficiency of English among Malaysians in order to keep abreast with the development in Science and Technology, with the rationale that materials for teaching and learning this subject are vastly found in English. The program reading and Learning Science in English is being better known as Program Pengajian dan Pelajaratan Sains dan Teknologi (PPPS) which began in Malay language or PPSM in Bahasa Malaysia. Thus, the implementation of PPPS began in January 2003 nationwide starting from Year One to Year Six. Pupils in primary level from Form One to Lower Six in secondary level. The implementation was done gradually and progressively to encompass all the other levels.


1/9/2015