

Plate version 1.6 date 11.10.2012 2 exploring primary science teachers' creativity and 3 attitudes through responses to creative questions in 4 university physics lessons

Abstract

Aims: 1. To investigate the levels of primary science teachers' creativity through their responses in creative questions carried out in university physics lessons; 2. To find out the primary science teachers' creative attitudes towards the use of creative questions in learning physics. Study design: Case study research design. Place and Duration of Study: The study took place at the University of Malaysia Sabah for a period of two hours. Methodology: The sample consisted of 74 in-service primary science teachers (age range 25-40 years) who took Mechanic, Matter and Heat as a core course towards Bachelor of Science Education. Simple creative questions were infused into normal Physics lessons. The tasks were content-oriented, and the goal was to yield a deeper understanding of what was being taught. The appropriate responses given to each creative question were evaluated as to their divergent thinking: fluency, flexibility and originality (Torrance, 1974 [32]). Questionnaires with closed and open-ended questions were administered to explore in what ways learners found their learning with creative questions was different from ordinary physics lessons. Results: The results showed that a majority of primary scienceteachers attained different levels of creativity when assessed through creative questions - moderate level (65.8%), low level (31.5%) and only 2.7% were deemed to be at an acceptable level. Results also revealed that creative questions enable primary school teachers to develop an increased level of fluent and flexible thinking. Nevertheless the originality dimension of creative abilities of science teachers was at a low level. Conclusion: The primary science teachers who participated in the study were mostly moderate creative and only a few of them were deemed to be creative. This study reveals that physics knowledge is a necessary condition for creativity development. The findings of this study could imply that either primary science teachers are not so much impressed by the use of creative questioning as part of their classroom teaching practice, or teachers have not implemented the creativity elements of primary science curriculum effectively, or both. On the whole, primary school teachers have positive creative attitudes towards the use of creative questions in learning and teaching physics.