

Use of Concept Maps as a Tool for Evaluating Students' Understanding of Science

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Abstract : This study explores the genesis and development of concept mapping as a useful tool for science education and its effectiveness as technique for teaching and learning and evaluation for secondary science in schools and the role played by National College of Education science teachers. Concept maps, when carefully employed and executed serves as an integral part of teaching method and measure of effectiveness of teaching and tool for evaluation. Research has shown that science concept maps can have positive influence on student learning and motivation. The success of concept maps played in an instruction class depends on the type of theme selected, the development of learning outcomes, and the flexibility of instruction in providing library unit that is equipped with multimedia equipment where learners can interact. The study was restricted to 6 male and 9 female respondents' teachers in third-year internship pre service science teachers in Gampaha district Sri Lanka. Data were collected through 15 item questionnaire provided to learners and in depth interviews and class observations of 18 science classes. The two generated hypotheses for the study were rejected, while the results revealed that significant difference exists between factors influencing teachers' choice of concept maps, its usefulness and problems hindering the effectiveness of concept maps for teaching and learning process of secondary science in schools. It was examined that concept maps can be used as an effective measure to evaluate students understanding of concepts and misconceptions. Even the teacher trainees could not identify, key concept is on top, and subordinate concepts fall below. It is recommended that pre service science teacher trainees should be provided a thorough training using it as an evaluation instrument.

Keywords : concept maps, evaluation, learning science, misconceptions

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