

The use of i-smart mapping in improving students' critical thinking in secondary science: A case study

ABSTRACT

Malaysia Education Development Plan (PPPM) 2013-2025 has driven the transformation of education curriculum to emphasize further on the Higher Order Thinking (HOT) concept, aiming to produce students with better critical thinking skills in order to compete internationally. Thinking maps and thinking maps are visual representations of knowledge which can be employed as a learning strategy by the learners to find the relationship between current knowledge and new information. i-SMART Mapping is an instructional intervention combining the benefit functions of both thinking mapping and thinking maps with hand-on tasks designed to promote critical thinking. 25 lower secondary respondents were chosen from district of Tuaran, Sabah. This qualitative research analysed focus group interviews, videotaping, and document analysis. Critical thinking skill was assessed via "Assessment and Rubric for Critical Thinking (ARC)". The respondents were to construct i-SMART Mapping and formulated the required hands-on activities on the basis of the constructed maps. This research focused on the effects of i-SMART Mapping on student's critical thinking and achievement in Science classroom. Research also included student's perception toward the used of i-SMART Mapping. Findings indicated i-SMART Mapping stimulates meaningful learning, motivates students to learn autonomously, developed critical thinking skill, and enhances personal skills. The implications of this study suggest that using i-SMART Mapping facilitates students' thinking ability, interest and achievement in learning of science thinking in the classrooms.