



# Effectiveness of Mind Mapping Teaching Strategy in Unlocking the Cognitive Potential of Students in Basic Science and Technology in Secondary Schools in Ondo State, Nigeria

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## Abstract

The study identified the concept of Chemical Bonding in Junior Secondary School Basic Science and Technology Curriculum and examined the effectiveness of Mind Mapping Teaching Strategy (MMTS) to unlock the cognitive development of students in the concept of chemical bonding. Chemical bonding is a topic that requires critical and analytical thinking in which students' cognition needs to be developed for effective performance. In this study therefore, mind mapping was used as a teaching strategy to unlock students' cognition in chemical bonding. A pre-test post-test control group design was adopted with mind mapping teaching strategy being the treatment while the control group was exposed to lecture method. A total of 98 Junior Secondary School III (JSS III) students from two schools were randomly selected from Akoko North East Local Government Area of Ondo State, Nigeria to constitute the study sample. The choice of JSS III students was due to the fact that it is easier to mould and unlock students potentials especially the cognitive aspect when they are young vis-à-vis their formative years. The two intact classes were classified into experimental (MMTS= 48) and control group (LM = 50). A 20 item instrument tagged Chemical Bonding Achievement Test (CBAT) with reliability coefficient of  $r = 0.78$ ,  $p < 0.05$  was used to collect data. The question items consists of question on metacognition. The results showed that MMTS is more effective ( $X = 15.64$ ) than lecture method ( $X = 9.76$ ),  $t = 9.90$ ,  $p < 0.05$ . The study concluded that Mind Mapping Teaching Strategy is a better approach to teach Basic Science and Technology (BST) as its potency is very clear at improving learners' critical, cognitive and creative skills that will make them effective problem solvers.

**Keywords:** Unlocking, cognitive development, potential, effectiveness, creative, problem solving