

# Effects of Teaching Toulmin's Argument Patterns on Critical Thinking and Argumentation among Elementary Gifted Students

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## **ABSTRACT**

The purpose of this study was to investigate the influence of Toulmin's Argument Pattern (TAP) teaching toward critical thinking and argumentation ability. Four "breaking internet science tales" units integrated with elements of critical thinking and argumentation, to scaffold students' abilities gradually. The study adopted the one-group pretest-posttest design, totally had 14 sixth grade gifted students from Taipei County. Data collection included "Critical Thinking for inventory in Science", "Critical Thinking Disposition Inventory", worksheets of argumentation teaching, and interview after teaching. The results revealed: (1) the scores of critical thinking ability and disposition made positive progress but no significance; (2) students owned abilities to "warrant" and "claim" earlier teaching, other argument abilities progress with the order of "data", "qualifier", "rebuttal", and "backing"; (3) students' ability of argumentation showed the significance between each units, quality of argumentation was a significant difference between first three units and improved in forth unit continuously. This study proposes TAP argumentation worksheet included instruction, linking words, and teaching order. In addition, recommendations of curriculum designed according to the aspects of teaching material, strategy and procedure, which can provide examples of argumentation learning and teaching for further research.