Metacognition: What Roles Does It Play in Students' Academic Performance?

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Abstract: This paper discusses metacognition, defined as thinking about one's own thinking, and its relationship to student's academic performance. A number of previous studies have shown that metacognition and intelligence were associated, and therefore suggested that students who have metacognition tend to be successful learners. This paper also reports on a study investigating the relationship between students' academic achievement and metacognitive awareness, which has been done at a private secondary school in Kuching. An established instrument by Schraw and Dennison's Metacognitive Awareness Inventory is used for the purpose of this study. Specifically, this study examined the relationship between student's academic performance and each of the five components of metacognition regulation namely planning, information management strategies, comprehension monitoring, debugging strategies and evaluation. It also examined metacognition awareness in students across gender and different academic years. Overall, the findings revealed a significant positive relationship between student's academic performance and metacognitive awareness, a significant difference in metacognition awareness between Form 2 and Form 5 students, and no significant difference in metacognition awareness between male and female across all academic years. Some suggestions to develop metacognition in students are discussed, and possible directions for research on metacognition in learning process are proposed.

Keywords: Metacognition, Metacognitive Awareness, Metacognitive Knowledge, Metacognitive Regulation

Introduction

METACOGNITION IS SIMPLY and commonly defined as "thinking about thinking". Metacognition refers to the knowledge that people have about their own thought processes The term "metacognition" has been used in psychology and education research literature since mid 1970s. It is most often associated with John Flavell, who first used the term formally in the title of his paper in 1976. He defined metacognition as follows: "In any kind of cognitive transaction with the human or non-human environment, a variety of information processing activities may go on. Metacognition refers, among other things, to the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually in service of some concrete goal or objective."(Flavel, 1981). In essence, metacognition is the knowledge and the active monitoring of one's own cognitive processes. Indeed, we engage in metacognitive activities everyday.

Another early contributor to the metacognition literature was Ann Brown (1987), who suggested knowledge of cognition (what we know about our cognition) and regulation of cognition (how we regulate or control our cognition to perform something) as the two primary principles of metacognition which are important for learning. Knowledge of cognition includes three components of knowledge namely declarative (knowing "about" things), procedural (knowing "how" to do things), and conditional (the "why" and "when" aspects of cognition). Regulation of cognition, on the other hand includes planning, regulation and evaluation. Knowledge of cognition helps people to selectively allocate their resources and use strategies more effectively, while regulation of cognition is linked to more systematic skills such as planning, monitoring, and evaluation (Schraw, 1998) According to Schraw and Dennison (1994)

metacognition refers to the ability to think about, understand and manage one's learning. Metacognition includes knowledge about learning and about oneself as a learner, and the skills of monitoring and regulating one's own cognitive processes. Schraw and Dennison defined regulation of cognition as comprising of the following five aspects namely planning, information management strategies, comprehension monitoring, debugging strategies and evaluation. Planning refers to goal setting and allocating resources prior to learning; information management strategies refers to the skills and strategy sequences used to process information more efficiently such as organizing, elaborating, summarizing and selective focusing; monitoring refers to the assessment of one's learning, comprehension and