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Motivation, metacognition and performance

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ABSTRACT

Pintrich (2000) notes three core areas of self-regulation namely: cognitive and metacognitive skills and knowledge, motivational/affective dimensions, and behavioural components. Self-regulated learning hinges on the ability of an individual to take active control over their learning such that they can plan, monitor, evaluate and regulate their cognitions, behaviours, beliefs, thoughts, and affects (Zimmerman, 2009). Learners, in particular at the tertiary education level, need to be able to adapt to changing contexts and conditions, and thus must develop the capacity to be self-reflective and autonomous in their learning (Valle, Nunez, Cabanach, Gonzalez-Pienda, Rodriguez, Rosario, Cerezo, & Munoz-Cadavid, 2008). The role of metacognition and motivation in academic performance has been well documented (Al-Harthy & Was, 2010; Boekaerts, Pintrich & Zeidner, 2000; Carvalho, 2010; Coutinho 2007; 2008; Linnenbrink & Pintrich, 2002; Schunk & Zimmerman, 2008; Sungur 2007a; 2007b; Wolters, 2003). Research has also shown that a learner's capacity to self-regulate can be altered and taught through instruction (Watson, McSorley, Foxcroft, & Watson, 2004). It is therefore imperative to investigate the role, and interplay, of metacognition and motivation in academic performance, particularly at the tertiary level as this area seems to be less well researched (Coutinho, 2008).

The aim of this research was to examine the nature and extent of the relationships between metacognition, motivation, and academic performance. These variables have not been studied widely in the South African context and thus investigation into their interplay at the tertiary level was warranted. Specifically, the role of metacognition and motivation, as well as the demographic variables of home language, socio-economic status, and type of schooling, were examined in terms of their capacity to predict academic performance. Performance in this study was not just taken from an overall weighted average, but also included a range of formative, summative, and combined formative-summative assessments tasks, in the form of two essays, two tests, and an examination.

The sample was comprised of two hundred and sixty eight first-year university students, enrolled in the Psychology One course offered at the University of the Witwatersrand. Each participant completed a self-developed demographic questionnaire, the Metacognitive Awareness Inventory (MAI), and the Motivated Strategies for Learning Questionnaire (MSLQ).

Findings of the correlational analyses in this research revealed that the subscales and majority of the subsections of the MAI and MSLQ were highly inter-related, raising questions as to whether the

variables of metacognitive awareness, motivation, and cognitive and metacognitive learning strategies could be examined and operationalized as separate constructs. In terms of the relationships between the key variables of metacognitive awareness, motivation, and academic performance there were some unexpected findings. The MAI overall scale and Regulation of Cognition subscale showed no significant correlations with performance across the different assessment tasks, while the Knowledge of Cognition subscale only showed a significant relationship with performance on both tests and the overall weighted average. For both the Regulation of Cognition and Knowledge of Cognition subscales, however, key relationships were identified between some of the subsections and performance on certain assessment tasks. Correlations between the MSLQ Cognitive and Metacognitive Learning Strategies subscale and the academic performance variables were also minimal. However, there were a few key relationships that emerged between the Resource Management Strategies and the performance variables. The MSLQ Motivation subscale showed no significant relationships with academic performance.

The results overall suggested that the key variables of metacognition, and motivation, were on the whole not significant predictors of performance across the different assessment tasks. The only exceptions to this were that the Metacognitive Awareness aspect of Knowledge of Cognition played a small predictive role in performance on the first test and in overall weighted average; and Resource Management Strategies served to explain a small proportion of the variance in performance on both tests, as well as in overall weighted average. These findings allude to possible issues with regard to the measurement of the constructs of metacognition, and motivation; and also raise questions as to the psychometric applicability of the instruments within the South African context. In terms of the demographic variables as predictors of performance across the different assessment tasks the following results were obtained: home language was a significant predictor across all the performance variables; and in each case was the strongest predictor. Type of school predicted performance across all the performance variables, and in particular it was the only significant predictor of essay performance. Socio-economic status was generally not a predictor of performance across the different assessment tasks; except for the second test which was more factually-laden and biologically-based. These findings highlight the need for further investigation into the variables of metacognition and motivation as they link to academic performance across different tasks. They also allude to the need for the instruments assessing these variables to be scrutinised psychometrically in general, but also for use in the South African context. The findings in this research, while preliminary, provide useful content for future research efforts and offer key information that can be used to guide development initiatives and instruction practices.