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Need for cognition and approaches to learning among university students

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Abstract

This study explores the relationships among need for cognition and approaches to learning. We used the Need for Cognition Scale (Cacioppo & Petty, 1982), the short form and the Inventory of Learning Styles (Vermunt & Vermetten, 2004). The results revealed that the Need for Cognition Scale is a reliable measure, with a high Alfa Cronbach coefficient. The results showed that students with a high need for cognition engage frequently in deep learning activities, using strategies such as critical processing, relating and structuring while students with a low level of the need for cognition use strategies such as memorizing and rehearsing.

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1. Introduction

Need for cognition' refers to the tendency of an individual to engage in effortful cognitive activities and to enjoy thinking (Cacioppo & Petty, 1982). A high need for cognition is defined as the presence of the motivation for effortful cognitive activities while low need for cognition is the opposite (Cacioppo, Petty, Feinstein & Jarvis 1996).

The learning approach depends on perceptions of the learning task. Need for cognition and learning approaches are associated. Individuals with a high need for cognition are likely to seek, acquire and reflect on information

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proactively, to engage in deep learning activities. Individuals with a high need for cognition are process-oriented as opposed to outcome - oriented. Individuals with a high need for cognition tend to be intrinsically motivated to explore strategies despite the cognitive challenges found in complex tasks (Day, Espejo, Kowollik, Boatman & McEntire, 2007). Individuals with a low need for cognition use an external regulation of learning, they are less interested in effortful cognitive activities, they usually use surface learning strategies. Need for cognition is positively associated with effort and performance on challenging tasks (Dornic, Ekehammar & Laaksonen, 1991). Thus, need for cognition is positively associated with self-regulated learning strategies.

Previous researches showed that individuals with a high need for cognition invest more cognitive resources in information processing (Enge, Fleischhauer, Brocke & Strobel, 2008), tend to reflect on relevant information when solving cognitive tasks (Cacioppo & Petty, 1982; Cacioppo et al., 1996; Coutinho, Wiemer-Hastings, Skowronski & Britt, 2005), generate more task related cognitive responses and select more task relevant information, (Dickhäuser, Reinhard, Diener & Bertrams, 2009; Verplanken, 1993), actively search for information (Curşeu, 2011) to a higher extent than individuals with a low need for cognition.

2. Purpose of study

This study explores the relationships among need for cognition and approaches to learning, deep and surface learning strategies, assuming that need for cognition and deep processing strategies are positively associated. We also expect that, self-regulated learning strategies and need for cognition predict academic achievement.

3. Methods

The following questionnaires were used: the Need for Cognition Scale (Cacioppo & Petty, 1982), the 18 items short form and the Inventory of Learning Styles (Vermunt & Vermetten, 2004). The participants were 177 first year psychology students, at the Transylvania University of Brasov, Faculty of Psychology and Education Sciences.

Need for cognition scale measures individuals' responses to various situations that require cognitive efforts, such as *Thinking is not my idea of fun*, and *I would prefer complex to simple problems*. Responses are rated on a five-point Likert scale from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me). Previous research shows that Need for Cognition Scale has a unitary factor structure and good psychometric qualities (Bors, Vigneau & Lalande, 2006). Alfa Cronbach for the Romanian version of the scale is .79.

Inventory of Learning Styles (Vermunt & Vermetten, 2004) measures aspects of students' learning: such as processing strategies, regulation strategies, mental models of knowledge (which can be labeled as conceptions of knowledge), and learning orientations (personal goals, intentions, motives, expectations, concerns, and doubts with respect to learning). For this research we used items regarding learning activities. The selected scales are the following: concrete processing, stepwise processing, deep processing, self-regulation of learning and lack of regulation. The scales were translated in Romanian and the alfa Cronbach coefficients for the translated version are between .65 and .80 (Cazan, 2011).

Academic performances were also measured by the results of the final exams, at the end of the first academic year. Previous academic performances, school grades at the end of high school, were taken into account.

4. Findings and results

The results revealed that the Need for Cognition Scale is a reliable measure, with a high Alfa Cronbach coefficient. The results also showed that students with a high need for cognition engage more frequently in deep learning activities, using strategies such as critical processing, relating, structuring and analyzing while students with a low level of the need for cognition use strategies such as memorizing and rehearsing (Table 1).

The strongest correlation is obtained for the association between need for cognition and deep processing strategies, showing that students who have a strong desire to understand and comprehend may utilize strong metacognitive skills to achieve this goal (Cutinho, 2006). Lack of regulation correlates negatively with need for cognition, self-regulation of learning correlates stronger than external regulation with need for cognition. The results confirm the hypothesis that individuals with a high need for cognition are more self-regulated learners.

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