

METACOGNITIVE INFLUENCE OF STATE METACOGNITION LEVELS IN ACADEMIC PERFORMANCES

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Introduction:

PERSPECTIVES ON METACOGNITION

- The academics, the students and the higher education managers are increasly concerned about the development of appropriate strategies for teaching, learning and evaluation of student competencies. Metacognition is a key concept for a lot of current issues on learning improvement and can help to ameliorate the quality of teaching and learning practices.
- Into the classic models, metacognition consists in metacognitive knowledge (declarative component) and regulation (procedural component). Metacognitive knowledge refers to the knowledge about cognitive strategies used in tasks and knowledge about themselves and people (Flavell, [5]). Regulation (procedural components) concerns the monitoring and control of one's cognitive processes during learning (Nelson & Narens, [10]).

Introduction:

PERSPECTIVES ON METACOGNITION

- Another major component of metacognitive knowledge is the result of *evaluation and reflection on* the one's learning. These components suppose a metacognitive activity and it is a global judgment of the result of a learning experience.
- Some newer models of metacognition include cognitive, but also motivational processes; two dimensions were especially examined: the *self-efficacy* and the *value of learning*.
- Also, *metacognition* consists in planning, monitoring, cognitive strategies and awareness; *metacognition* is the conscious and periodic self-checking achievement of one's goal and, if necessary, applying different strategies for accomplishing the plan and touching the goal.

Introduction:

PERSPECTIVES ON METACOGNITION

- A particular theory on metacognition concerns the *state-trait categorization* of their dimensions.
- According to this theory, *State metacognition* is a transitory state of intellectual activity of people, with variable intensity, characterized by planning tasks, monitoring/self checking, cognitive/affective strategies and self-awareness.
- *Trait metacognition* suppose a relatively stable response of individuals at cognitive tasks.
- We start our study from this theory on metacognition, for evaluating her relevance in academic achievement.

Methodology

- INSTRUMENTS: We used an instrument elaborated explicitly for *metacognition as a state* – SMI (State Metacognition Inventory, O’Neil, Abedi, 1996)
- We used also MSLQ, Motivated strategies for Learning Questionnaire, elaborated by Pintrich and de Groot in 1990; this instrument aims to evaluate the *metacognitive competence*, relying with *trait theory* on metacognition.
- Both questionnaires were translated in the Romanian language for our students.
- The third instrument was a curricular test on Pedagogy, with multiple responses items and two open items. This instrument was used to measure academic performance in a particular field of knowledge.

Methodology

- SAMPLE: Both questionnaires were applied to a sample of 327 undergraduates in Economics FEAA (222) and Philosophy (105) at “Alexandru Ioan Cuza”, University, Iasi, and were correlated with their results at the curricular test in Pedagogy, applied before testing metacognition.
- VARIABLES :
- The *independent variables* are:
 - 1. State metacognition levels: low and high
 - 2. Trait metacognition levels: low and high
 - 3. College type: FEAA and Philosophy
- The *dependent variable* is the final score obtained at the curricular test (academic performance).

Methodology

- Research hypothesis was that the type and levels of metacognition influences the academic performance in pedagogy differently depending on the type of faculty.
- RESULTS AND DISCUSSION:
- **A.** we test the research hypothesis by variance analysis method Anova factorial, first on state metacognition levels.
- First, we try to find if there is some influence (simple or combined) on the type of college and levels of *state metacognition* on academic performance.

Methodology

- The results show that students who have a high level of state metacognition obtained higher academic performance compared with students who have low levels of metacognition. It is a logically finding and is consistent with other studies on state metacognition. The metacognitive processing help student to better plan, monitoring and correct theirs responses at the curricular test.
- b. the state metacognition levels influences especially the students in economics, while the philosophy students seems to not be very affected in academic performance by the transitory (state) metacognitive processes; more than that, philosophy students obtain better academic performance in low state metacognition.

Methodology

- These results may be relatively surprising, but we think we can explain this by the nature of specialization and the curriculum: philosophy and related disciplines invite her students to a systematic, consistent, introspective and “intensive” cognitive effort, and students in economics are oriented on real-life (economic) problem-solving, case-oriented strategies, various but rather “extensive” cognitive effort.
- **B.** We test the research hypothesis by variance analysis method ANOVA factorial (A. Labăr, [9]), on Trait Metacognition levels.

Methodology

- We try to find if it exist some influence (simple or combined) of the type of college and levels of *trait metacognition* on academic performance.
- The results, show that the students who have a high level of trait metacognition obtain higher academic performance compared with students who have low trait metacognition.
- Is also an natural conclusions, consistent with our expectations and with others research.
- We don't find any effect of the variable type of college on academic performance.

Conclusion

- The main hypothesis of the study was that *the type and levels of metacognition influences the academic performance in pedagogy differently depending on the type of faculty*. We can observe this hypothesis is partially confirmed:
- The type of metacognition – state metacognition and trait metacognition – influences, both, the academic performance: high state or trait metacognition correlate with high academic performance. We can't observe clearly which is more predictive for academic performance.
- Regarding the variable *state metacognition* and “college” (or “faculty”), we observe students of Philosophy with low state metacognition obtain higher academic performance compared with students with low state metacognition from FEAA.

Conclusion

- The conclusions and the implications of this empirical study on metacognition concern mainly the quality of higher education. Two categories of experts may draw the benefits: the higher education teachers and the quality assessors.
- The university staff must pay attention to the structure of didactic activities. Teachers should take into account that metacognitive processing will influence decisively the learning activities of the students. Many studies show that metacognitive training skills may help these students. The systematic stimulation by specific learning tasks will increase students' interest and academic performance.