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CERTIFICATE

This is to certify that

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P7

### **Motivational and self regulated learning components of academic performance**

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This investigation is concerned with the examination of cognitive, motivational and emotional components of learning strategies and with the ways in which combinations of those dimensions, are associated with academic achievement. Recent models of self-regulated learning stress the importance of integrating both motivational and cognitive components of learning (Garcia & Pintrich, 1994; Pintrich, 1994; Pintrich & Schrauben, 1992). The purpose of this study was twofold: first to gather psychometric information regarding the Learning and Study Strategies Inventory (LASSI) in Italian sample and second to analyze the relationship between student's academic performance and scales of Lassi. Data were provided by 412 Italian university students from 2 faculties: education and physical science. First results showed acceptable psychometric properties of Lassi and suggested a two factor model. Regression analyses revealed that Motivation, Organization and Self-Evaluation emerged as the best predictors of academic performance. These first results showed the importance of reflecting critically upon various aspects influencing the use of adequate self-regulation strategies.



Università di Roma " Foro Italico"

## MOTIVATIONAL AND SELF REGULATED LEARNING COMPONENTS OF ACADEMIC PERFORMANCE

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### ABSTRACT

This investigation is concerned with the examination of cognitive, motivational and emotional components of learning strategies and with the ways in which combinations of those dimensions, are associated with academic achievement. Recent models of self-regulated learning stress the importance of integrating both motivational and cognitive components of learning (Zimmerman, Martinez-Pons, 1988, Boekaerts, 1996, Ablard and Lipschultz, 1998). The purpose of this study was twofold: first to gather psychometric information regarding the Learning and Study Strategies Inventory (LASSI) in Italian sample and second to analyze the relationship between student's academic performance and scales of LASSI. Data were provided by 412 Italian university students from 2 faculties: education and physical science. First results showed acceptable psychometric properties of LASSI and suggested a two factor model. Regression analyses revealed that Organization and Self-Evaluation emerged as the best predictors of academic performance. These first results showed the importance of reflecting critically upon various aspects influencing the use of adequate self-regulation strategies.

### INTRODUCTION

The researches over the last two decades into psycho-pedagogical area witness a eye-catching increase of interest about the concept of self-regulation of learning (Zimmerman, Martinez-Pons, 1988, Boekaerts, 1996, Ablard and Lipschultz, 1998). Despite the diversity of definitions derived from different theoretical perspectives on self-regulation, it can be defined an articulate process that integrates motivational aspects (self efficacy, interest) with variables related to strategic processes (using strategies to foster intercultural dialogue, strategies for achieving goals) and allowing the students to adjust their study behavior autonomously, with awareness and flexible manner (Zimmerman 1999, Winne 1996). Zimmerman (1999), one of the leading theorists of the self-regulation of the learning, argues that this approach has developed in order to explain the aim of the course: study activity is, above all, underpinned by the willingness to learn, and by the direction towards a goal. Self regulated processes are of particular significance at university: studying at university, as pointed out by Albanese and Fiorilli (2001), constitute a delicate test-bed for the students in the organization of their study. In the transition from high school to university students leave an environment generally regulated from the interaction with others in relation to the time and to the spaces of learning, coming in a place where are required skills of organization and autonomous adjustment. The growing interest of researchers towards self-regulation in a academic environment is founded on numerous empirical outcomes in literature that showed a strong connection between the processes of self-regulation and academic performance (Pintrich, 2003; Zimmerman and Schunk, 2001; Bandura, 1997). Within theoretical construct self-regulation of learning, Weinstein, Schulte and Palmer in 1987, have developed a questionnaire in order to investigate not only learning strategies in academic context, but also the skills and attitudes possessed by the student in organising his own study approach. The questionnaire is the Learning and Study Strategies Inventory (LASSI). By authors' definition, the LASSI is both diagnostic and prescriptive. The focus is on both covert and overt thoughts and behaviors that relate to successful learning and that can be altered through educational interventions [...]. Furthermore, these factors can contribute significantly to success in college and can be learned or enhanced through educational interventions (Weinstein, Schulte & Palmer, 1987, p. 2). On the basis of these considerations we liked to contribute to the scientific debate through a study on Italian sample the psychometric characteristics concerning of Learning and Study Strategies Inventory (LASSI) and explore the power of prediction of the various motivational strategic aspects on academic performance.

### OBJECTIVES

The purpose of this study was twofold:

- first to gather psychometric information regarding the Learning and Study Strategies Inventory (LASSI) in Italian sample,
- and second to analyze the relationship between student's academic performance and scales of LASSI

### PARTICIPANTS

Data were provided by 412 Italian university students from 2 faculties of Rome : Education Science (8 males, 201 females) and Physical and Sport Science (115 males, 88 females). The students attended the first and third year of university. Student participation was voluntary.

### PROCEDURES

The participants were asked to fill out data form designed to obtain information regarding gender, faculty, grade point average of exams already passed , attended exams and high school diploma grade.

Learning and Study Strategies Inventory, LASSI (Weinstein, Schulte and Palmer, 1987) was administered to the students in a single session. LASSI was a 77-item questionnaire based on a 5-point Likert scale ranging from 1 (definitely disagree) to 5 (definitely agree), it was constituted by 10 subscales (tab.1, 2). Most students finished the inventory in about 18 minutes.

### DATA ANALYSIS

Exploratory factor analysis procedures were used to evaluate the factor structure of LASSI. Index was created from the sum of grade point average of exams already passed, the number of attended exams and high school diploma grade. Multiple regression analyses were conducted in order to verify the predictive potential of self-regulation strategies (LASSI factors) and academic performance.

### MAIN RESULTS

#### Factor Analysis

Subscales	Factor	
	1	2
Concentration	.843	.123
Test strategies	.836	.060
Selecting Main Ideas	.664	.300
Time Management	.612	.239
Attitude	.549	.240
Motivation	.529	.436
Anxiety (low level)	.523	-.154
Self testing	.189	-.794
Information Processing	-.317	.584
Study Aids	-.082	.527

#### Reliability

Scales	Alfa Cronbach
Attitude	.72
Motivation	.81
Time management	.86
Anxiety	.81
Concentration	.84
Information Processing	.83
Selecting Mean Ideas	.74
Study Aids	.68
Self testing	.75
Test Strategies	.83

#### Multiple Regressions

Variables	B	Beta	T	P
Costant	- 0,309		- 0,308	n.s.
Factor 1 <i>Affective and Cognitive Strategies</i>	0,005	0,069	1,040	n.s.
Factor 2 <i>Monitoring and Elaboration Strategies</i>	0,022	0,128	2,344	< 0,05

### CONCLUSIONS

- ❖ The primary purpose of this research study was to gather initial data on the psychometric properties of the Italian version of LASSI. Reliability analysis showed subscales with good internal consistency estimates ranging from 0.86 (Time management) to 0.68 (Study aids).
- ❖ Exploratory factor analysis procedures produced two factor solution.
  - ✓ The first factor, called as *Affective and Cognitive Strategies* included : Concentration, Test strategies, Selecting Main Ideas, Time Management, Attitude, Motivation, Anxiety. Students who scored high on this factor would typically exhibit study behaviors such as making plans for how best to study for the tests and effectively managing study time.
  - ✓ The second factor, *Monitoring and Elaboration Strategies*, was composed of strategies such as: Self testing, Information Processing, Study Aids. These two general factors are consistent with most of perspectives on the nature of self-regulated learning (Boekaerts et al., 2000; Zimmerman, Schunk 2001, Pintrich 2003).
- ❖ In order to analyze the relationship between student's academic performance and metacognition strategies, a multiple regression analysis was carried out. In particular students' achievement was regressed on the two LASSI factors. Findings revealed that only Monitoring and Elaboration Strategies factor was predictive of the students academic performance. These main results showed the importance of reflecting critically upon various aspects influencing the use of adequate self-regulation strategies.



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