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Self regulated learning strategies – predictors of academic adjustment

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Abstract

Our study aims to highlight the relationship between students' previous academic performances, psychological characteristics of the learning motivation, learning strategies, and the first year academic adjustment. We suppose that previous academic achievement, self regulated learning strategies and motivational orientations predict academic adjustment. The hierarchical regression technique highlighted that self regulated learning strategies, academic self efficacy and test anxiety are predictors of academic adjustment, the strongest predictors being the metacognitive regulation strategies.

1. Introduction

The transition to university can be a stressful experience for many new undergraduate students. One important challenge for them is the need to develop learning habits and to adjust their learning strategies for the new academic environment (Bruinsma, 2004; Vermunt, 2005). Past researches showed that inefficient learning strategies can determine adjustment difficulties among first year students. Researchers have shown that self regulation is associated with academic performance and with academic adjustment (Kornell & Metcalfe, 2006; Zimmerman & Schunk, 2008).

Academic self-regulation refers to students who are independent, self-initiated learners with the ability to use a variety of learning strategies to accomplish specific learning goals (Kitsantas, Winsler, & Huie, 2008). Although self regulation strategies contribute to a successful academic adjustment, these processes

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are also linked with motivational beliefs. Wigfield and Eccles (2000) suggested that learning motivation is a combination of the students' expectation for success and of the value they place on performing well. Besides motivational beliefs, there are also affective beliefs which can influence academic adjustment. One of these beliefs is test anxiety. Students who experience high levels of test anxiety tend to be less efficacious, and to use fewer self regulated learning strategies than students who experience lower levels of anxiety (Bembenutty, 2008; Pintrich, 2004).

The personal capabilities that enable students to be independent learners and to develop a core of resiliency are highly related to academic achievement and to academic adjustment. Successful adjustment is reflected in student's learning behavior and in their academic performance. Although cognitive abilities are linked to academic indicators of success in school, recent research indicates that the ability to self-regulate has greater influence on student's academic performance than his or her IQ (Duckworth & Seligman, 2005). Although many researches highlighted the influence of self regulated learning strategies on academic performance, the relationship between self regulation and academic adjustment remains insufficiently explored.

2. Method

Our study aims to highlight the relationship between students' previous academic performances, psychological characteristics of the learning motivation, learning strategies, and the first year academic adjustment.

2.1. Hypotheses

We expect that individuals with high academic performances use efficient self regulated learning strategies. We also expect that previous academic achievement, self regulated learning strategies and motivational orientations predict academic adjustment.

2.2. Participants and procedure

The participants in this study were 280 first year university students at the Transylvania University of Brasov, Faculty of Psychology and Education Sciences. The measures were administered to a first year educational psychology class. Participants were informed that they would receive feedback on their performance as a whole class and individual feedback as a learning style profile.

2.3. Measures

We used two instruments, The Academic Adjustment Questionnaire (Clinciu, 2003), and MSLQ (The Motivated Strategies for Learning Questionnaire – Pintrich et al, 1991).

MSLQ comprises several scales and measures learners' motivational beliefs and use of learning strategies (cognitive, metacognitive, motivational and behavioral self regulation strategies) from a socio-cognitive perspective. MSLQ has two sections: a motivation section and a learning strategy section. The Motivational Section consists of three sections: value, expectancy, and test anxiety. The Learning Strategy Section contains three types of scales: cognitive, metacognitive and behavioral strategies. For this research, we also added a motivational strategies scale created by Wolters, Pintrich, &Karabenick (2003). The values of Cronbach's alpha for each subscale are acceptable, ranging between 0.61 and 0.89 for the motivational scales and between 0.70 and 0.93 for the learning scales.

The Academic Adjustment Questionnaire measures students' success in coping with various educational demands characteristic of university experiences. The questionnaire gives an overall indicator of academic adjustment. A high score on the scales indicates poorly organized and less integrated students, emotional instability, and indiscipline. The Alfa Cronbach for the whole questionnaire is .85.

Prior ability and academic performance were measured by the following indicators: high school GPA, college GPA at the end of the first semester, and educational psychology GPA.

3. Results

The results showed that overall self regulation is strongly associated with academic adjustment. Cognitive and metacognitive strategies are also significantly related to academic performances. The hierarchical regression technique highlighted that self regulated learning strategies, academic self efficacy, and test anxiety are predictors of academic adjustment, the strongest predictors being metacognitive self regulation strategies.

Unexpectedly, the results showed weak correlations between academic performances and cognitive and metacognitive strategies (r (278) = .18, p = .035) but a moderate correlation between academic performances and motivational self regulation strategies (r (278) = .38, p <.001). A possible explanation is the fact that students have clearly defined interests in certain areas; academic performances are less relevant for them than their perceived competence. We also obtained two statistically significant correlations: between the performances on educational psychology and the metacognitive strategies (r (256) = .18, p = .009) and between the performances on educational psychology and the behavioral strategies (r(256) = .13, p = .05). Previous academic achievement correlates weakly only with behavioral self regulation strategies (r(278) = .18, p = .05).

On the other hand, academic adjustment is associated with the use of cognitive and metacognitive strategies (Table 1). These results are concordant with previous research (Cazan & Anitei, 2010). Academic adjustment is associated with efficient behavioral self regulation (r(278) = -.33, p<.001), highlighting the fact that behavioral self regulation has various benefits on learning and adjustment because it involves learning motivation and persistence in academic tasks (Table 1). These students are capable to cope with stressful situations, they allocate efficiently their study resources, and they know when to seek help (Skaalvik , & Skaalvik, 2005).

Table 1. Pearson correlation coefficients between academic adjustment and the variables included in the hierarchic regression model

VARIABLE	Metacognitive Self Regulation	Behavioral S-R	Motivational S-R	Value	Self efficacy	Text anxiety
Academic adjustment	-.404**	-.333**	-.10*	-.210**	-.391**	.357**

* p< .05, ** p< .01, N = 272

* A high score on Academic Adjustment Questionnaire indicates poorly organized and less integrated students

The hierarchic multiple regression technique was performed in order to test the second hypothesis. Four regression models were formulated in order to find the most relevant predictors of academic achievement. The correlations obtained between academic adjustment and the predictors are significant and the correlations between predictors are less than .70 which eliminates the problem of multicolliniarity. The first model included previous academic achievement (high school GPA) but results revealed that this predictor accounted only for 10% of the variance in student's academic adjustment, R^2 = .10, F (1, 255) = 7,36, p = .007. In the second model, the students' reports of academic self regulation (metacognitive, cognitive and motivational strategies) also were added. A significant change was detected

in accounted academic adjustment variance, $R^2 = .24$, $F (4, 255) = 19,61$, $p < .001$. In the third model, motivational orientation (task value, self efficacy and test anxiety) were added. A value of 34% of the variance in academic adjustment was obtained, $F(7,255) = 18,62$, $p<.001$, but task value and previous academic achievement did not continue to play a significant role, and motivational strategies and self efficacy became less influential in predicting academic adjustment. Therefore, in the final model, previous academic achievement and task value were removed. The results showed that the motivational strategies and self efficacy became more influential in predicting academic adjustment (Table 2).

Table 2. Results of the regression analyze for the prediction of academic adjustment

PREDICTORI	R	ΔR^2	β	B	SE b	t
	.58	.34				
1. Metacognitive self regulation			-. 33**	-.10**	.02	-4,08*
2. Behavioral self regulation			-.14*	.08*	.03	-2,06*
3. Motivational self regulation			-.15*	.03*	.01	1,99*
5. Self efficacy			-. 17*	-. 17*	.06	-2,57*
6. Text anxiety			.30**	.34**	.06	4,93**

* p< .05, ** p< .01, N = 232, Comstant = 32,38

The most significant model was the model which includes the following predictors: metacognitive self regulation, behavioral self regulation, motivational self regulation, academic self efficacy and test anxiety. Unexpectedly, previous academic achievement was not an efficient predictor. The model explains 34% of the variance and it is statistically significant: $F(5,231) = 23,04$, $p< 0,001$. We also found that variables related to behavioral and to motivational strategies have a weak weight in explaining the academic adjustment, the most relevant predictor being metacognitive self regulation. Thus, the hypothesis is partially confirmed, self regulated learning strategies having a significant weight in the prediction of academic adjustment.

4. Discussion and conclusions

The present study investigated the role that self-regulation and motivation, assessed during the students' first semester in college, play in predicting academic adjustment. This study used a global measure of motivation and self-regulation to predict overall academic adjustment, which is a general, multidimensional outcome. Partial support was found for the hypotheses, as previous academic achievement was not significant in predicting academic adjustment.

The predictive value of the self regulation strategies confirmed the fact that students who plan efficiently their study, monitor their learning progress, constantly adjusts their behavior to the requirements of learning situations, perform better and have higher levels of academic adjustment (Cazan & Anitei, 2010). This finding confirms previous research suggesting that self regulation is an integral part of student academic achievement (Kornell & Metcalfe, 2006; Kitsantas, Winsler, & Huie, 2008) and of academic adjustment.

Test anxiety was negatively correlated with both academic performances and academic adjustment, and it negatively influences academic adjustment, results which are in line with prior research (Bembenutty, 2008; Kitsantas, Winsler, & Huie, 2008).

Regarding the relevance of self efficacy for the prediction, we can conclude that self-efficacy is important during the first year of studies when students are adapting to a new academic environment and

to new learning habits. Efficacious individuals are more likely to participate and to involve in learning tasks, self-efficacy predicts cognitive and metacognitive engagement and performance (Pintrich, 2004).

This study has identified some significant aspects regarding the relationship between self regulation and academic adjustment. By understanding these aspects, teachers and counselors can identify high risk learners and they can maximize students' chances of academic success. Although little can be done in terms of boosting student abilities by examining standard university entrance criteria such as high school GPA, student motivation and academic self-regulation skills can be changed through intervention (Tuckman, 2003).

Further researches must also focus on the improvement and the adaptation of MSLQ for the university level. An experimental design would be also relevant in order to identify the most efficient strategies for developing self regulated learning abilities.

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