Self-regulation as a Mediator in the Relationship between Anxiety and Academic Examination Performance

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Abstract

The research addresses the problem of psychological predictors of academic success. It had the task to scrutinize the relationships of self-regulation, anxiety, and the final examination results on the sample of Russian schoolchildren (N=231). To diagnose regulatory features we used the Morosanova's Self-Regulation Profile Questionnaire (SRPLQM) measuring the students' level of learning activity self-regulation and different regulatory aspects related to achieving academic objectives. To estimate anxiety level the Russian adaptation of Spilberger's Test Anxiety Inventory (TAI) was used. Unified State Exam scores in mathematics and the native language (Russian) had been also collected. Correlation, regression and mediator analysis of individual data made it possible to construct the model revealing a partial mediator effect of the conscious self-regulation in the relationships between the test anxiety and examination success. The study results provide for the main conclusion that the conscious self-regulation acts as a mediator of students' anxiety influence on exam results. The higher the level of conscious self-regulation, the lower the anxiety level and the better exam results.

Keywords: Self-regulation, Test anxiety, Exam performance, Mediator analysis

1. Introduction

For a long time it was believed that cognitive and intellectual abilities development is a prerequisite for academic success. Yet many recent studies have shown an important role of non-cognitive factors for high academic

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achievements, the psychic self-regulation being one of them (Pintrich, DeGroot, 1990; Zimmerman, Schunk, 2001; Zimmerman, Bandura, & Martinez-Pons, 1992; Winne, 1995 and etc.). Scrutinizing the conscious self-regulation of learning activities in the system of academic success predictors is a live issue giving substantial grounds for the sphere of education.

We propose an approach suggesting the conscious self-regulation to be an integrative cognitive-personal construct. On the one hand, it is supposed to be the system of cognitive processes handling information that comprises the Goal planning, Modelling of significant conditions, Programming of actions, Results evaluation. On the other hand, it is presented by singularity of instrumental personal-regulatory features: Flexibility, Independence, Reliability, Responsibility, etc.

This structure of the conscious self-regulation emphasizes its meta-nature as a psychological means of mobilizing and integrating both cognitive and personal resources to solve various problems of vital activity (Morosanova, 2013). We have repeatedly justified the assumption that conscious self-regulation development not only contributes directly, but also mediates the influence of cognitive and personality factors on productive aspects of human activity.

In several studies carried out in Russian schools, we have demonstrated the positive impact of the conscious self-regulation on academic success and performance reliability in the exam situation (Morosanova, Filippova & Fomina, 2014, Morosanova et al., 2016; Morosanova, Fomina & Bondarenko, 2015). It is shown, that self-regulation indicators are linked to various personality characteristics of students, and that the level and the character of this interconnection significantly affect an exam result.

The purpose of the present study was to find an empirical answer to the question: can the conscious self-regulation development not only directly affect the academic success level, but also serve as a mediator of the other psychological characteristics' influence on achievements. Test anxiety was of particular interest to us.

Studying test anxiety and its impact on learning outcomes has a long history. Meta-analysis results show that generally anxiety indicators are negatively related to academic achievements (effect size of $r = −.21$) (Seipp, 1991). Test anxiety is considered as a complex of two elements - cognitive (Worry) and emotional (Emotionality) (Liebert and Morris, 1967; Cassady and Johnson, 2002; Morris, L. W., Davis, M. A., & Hutchings, 1981; Schwarzer, 1984; Zeidner, 1998). Worry is defined as a cognitive component, as understanding disturbing or difficult to explain circumstances, and emotionality - as non-specific reactions caused by arousal of the autonomic nervous system. Their ratio may be different: either priority of the cognitive processes over the heat of passion, or vice versa. The analysis of these components relationship with academic success suggests that worry influences performance to a greater extent (Deffenbacher, 1977; Liebert, R.M. & Morris, 1967).

As the conscious self-regulation involves perceivable processes, we have assumed that primarily it will be related to the cognitive component of anxiety - worry. Therefore, the hypothesis of the study suggests that conscious self-regulation of learning activities through the links to the cognitive component of the test anxiety (worry) acts as a mediator of its impact on exam results.

2. Methods

2.1. Participants

The sample included 231 person (53% males) aged 16-18, educated in the State Secondary Schools in Russia. All participants were in the 11th (out of 11) grade of the Russian formal educational system.

2.2. Measures

To evaluate the regulatory features we used Morosanova’s Self-Regulation Profile of Learning Activity Questionnaire (SRPLAQ) measuring the general level of students’ learning activity self-regulation and different aspects of self-regulation related to achieving academic objectives. SRPLAQ includes 67 statements describing typical situations of achieving the learning goals. These statements are grouped into the following 9 scales: Planning, Modelling, Programming, Results Evaluation, Flexibility, Independence, Reliability, Responsibility, Social Desirability. Each statement is rated on a scale of 4 (Yes - Probably Yes - Probably No - No). The responses are then reduced to only 'Yes' and 'No', by counting 'probably yes/probably no' as 'yes/no' respectively. The 'yes' responses
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