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THE MOTIVATIONAL ASPECTS OF SELF-REGULATED LEARNING: WHAT ARE THE KEY FACTORS?

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Introduction

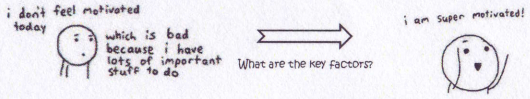
Knowing what specifically leads to the formation and development of self-regulated learning, and how this information can be used to support this process in school education, is not only interesting but also beneficial to both theory and practice.

Self-regulation is represented by a student who directs his/her learning without being directed from outside. What characterizes self-regulating students is their ***active participation in learning from the cognitive, metacognitive, and motivational point of view*** (Zimmerman, 1990, 2002).

Aims of the study

The aim of this study is to provide theoretical and methodological insights into the process of self-regulated learning, and to describe the adaptation of The Motivated Strategies for Learning Questionnaire (MSLQ), developed by Pintrich et al. (1991, 1993).

The research objectives were formulated as follows: (1) *verify if the selected scales had satisfactory construct validity using factor analysis, Catell's scree test, Monte Carlo analysis and content validity on a consensus of the judges,* (2) *examine internal consistency of the questionnaire and the partial factors, and* (3) *determine the key factors underlying students' motivation in process of self-regulated learning.*



Methods

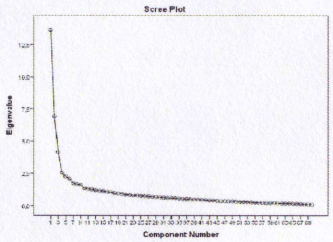
This study explores the factors underlying students' motivation in process of self-regulated learning. Within the context of the presented adaptation study, first of all, translation was made, the preliminary application of the scale has been tested and validity and reliability analyses has been applied to the gained data in SPSS Statictic Base 19.

238 university students participated in the survey (226 women and 12 men). Out of that number, 179 students were full time students and 59 students were part-time students (average age was 24, running from 19 to 48, standard deviation 6.2 years).

Principal Component (PCA) for the different factors solution was performed, yielding an interpretable structure with items clustered into three underlying factors.

Data analysis

The original number (31 items) was increased up to a total of 70 items. A test version of the questionnaire was subsequently presented in pilot testing to the first respondents and evaluated.



Assessing construct validity factor analysis was performed. To be able to determine how many components (factors) to extract we were interested only in factors that have an eigenvalue of 1 or more (Kaiser's criterion).

According to inspection of the Scree plot and Monte Carlo analysis the three-factor solution was employed and one more tactical move was accepted, i.e. exclude all items with low factor loadings (less than 0.55). Three extracted factors explain 35% variance (see table 1) and the number of items was reduced from 70 to 32 (38 items were excluded due to low factor loadings).

Table 1 Total variance explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Factor	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.647	19.496	19.496	13.647	19.496	19.496	9.536	13.623	13.623
2	6.942	9.917	29.413	6.942	9.917	29.413	8.786	12.551	26.174
3	4.151	5.930	35.343	4.151	5.930	35.343	6.418	9.169	35.343
4	2.554	3.648	38.991						
5	2.258	3.226	42.217						

Extraction Method: Principal Component Analysis. *Rotation:* Varimax normaliz. *Fixed No. of factors:* 3. *Cases included:* 238.
KMO measure of sampling adequacy: 0.844; Bartlett's Test of Sphericity 8515.369; df = 2415; p < .000) and Determinant is not 0, therefore factor analysis was appropriate.

The selected items of individual factors were further analysed for their content validity on a consensus of the judges who evaluated the degree to which items by their content expressed truly a given factor. Based on this analysis, 3 items were excluded with an average core lower than 2.5 points.

Construct validity and content validity results, however, failed occurrence of identical formulations of the items in the questionnaire, where the reduction of one or the other items is suitable. In this evaluation two items (one item from the first factor and one item from the second factor) were excluded. The coefficient Cronbach's alpha for all 27 items reached 0.83, demonstrating good internal consistency.

Results

The new version of MSLQ questionnaire is represented by 27 items. Factor 1 (F_1) ***academic self-efficacy*** included 10 items, factor 2 (F_2) ***task value*** included 9 items, factor 3 (F_3) ***test anxiety*** included 8 items. In our context, the MSLQ questionnaire has been translated and adapted by Jakešová, Švec and Hrbáčková, distributed under the name of MoSU (*Dotazník motivačních strategií učení – Czech lang. version).*

Pintrich, P. R. (Ed.). (1991). *A manual for the use of the Motivational strategies for learning questionnaire (MSLQ).* Ann Arbor: University of Michigan, School of Education.

Pintrich, P. R. (Ed.). (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement, 53*(3), 801–814.

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist, 25*(1), 3–17.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–70.

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PROMOTING MOTIVATION AND SELF-REGULATED LEARNING: FROM THEORY TO PRACTICE

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INTRODUCTION

Understanding how independent learning is regulated, and how to educate others in this process may lead to an improvement in students´ study habits, and greater professional competence in teachers; specifically, the acquisition of skills that go beyond the normal boundaries of the profession.

Many studies suggest that self-regulation is represented by student ***who directs his/her learning without being directed from outside.*** Rather than taking a passive role, ***self-regulated learners are active participants in the learning process, who seek new information and take steps to master new skills.***

Self-regulating skills cannot be considered inborn mental skills or acquired learning skills; rather they are the self-directive processes by which learners transform their mental abilities into academic skills (Zimmerman, 2001). We think that at a certain stage in life (age between 6 and 12) the brain is optimally suited for self-regulation, and self-regulation is a part of one's healthy lifelong development. This process continues and can be strengthened in any stage of life.

AIMS OF THE STUDY

The aim of this study is to propose design modifications of the classroom program in order to stimulate and develop students´ motivation toward the process of self-regulated learning.

The current study aims to address the following question: (1) *What can a school do to develop positive motivational beliefs in students, and ensure that they engage in self-regulated learning?* (2) *What is the role of teachers in promoting a student´s motivation in self-regulated learning?* (3) *Which are the educational practices most effective in fostering the regulation of motivation in students?*

The empirical section of the study describes an intervention program integrated in educational practice. Based on data collected from the pretest-posttest, and observation and interviews with students and teachers, we provide guidelines for designing appropriate strategies to promote student´s motivation in self-regulated learning.

THEORETICAL BACKGROUND

Resent research has stressed the importance of considering the motivational components of classroom learning. Ability to self-regulate one´s learning is increasingly being seen as a ***good predictor of a student's academic success*** (Pintrich, DeGroot, 1990), ***higher educational goals*** (Vallerand, Bissonnette, 1992) ***and level of satisfaction, enhanced achievement.***

Overall, results from the empirical studies appear to provide some promising evidence that self-regulation learning interventions ***can improve students´ performance in different fields of study when compared to no in intervention control conditions*** (Cleary, Zimmerman, 2004; Cleary, Platten, Nelson, 2008). However, understanding this motivational process is still incomplete. The present study seeks to address this gap by evaluating the pilot intervention program in the Czech educational environment.

METHOD

The research sample is comprised of 40 university students, in their final year of the full-time master´s program in the helping professions. Based on data collected in the previous studies and teachers´ interviews concerning the best educational practices to promote students´ motivation in self-regulated learning, a semester stretch intervention program was integrated into educational practice.

This intervention consisted of three phases: *assessment (teachers and students); stimulation and development students´ motivation in process of self-regulated learning, and outcomes evaluation (effectiveness of intervention and level of satisfaction).*

To measure the progress we used an 18 item self-report questionnaire at the beginning (pre) and end (post) of the Winter Semester 2012. The scales of the questionnaire were comprised of five-point Likert type statements, ranging from (1) least mastered task to (5) most mastered task of the intervention program materials. Individual 15-question student interviews (n = 40) were performed after the intervention, focusing on five factors underlying students' motivation.

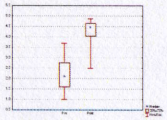
RESULTS

Within this study, the findings ($p < 0.01$) indicated that students made significant progress in mastering tasks (Table 1), and the results of the student interviews suggested that intervention can have a meaningful impact upon the development of motivation in the process of self-regulated learning.

Table 1 Program outcomes evaluation (t-test)

Pretest		Posttest	
Mean	SD	Mean	SD
2.203	0.765	4.275**	0.497

**difference is significant at 0.01 level



The specific means to increase the level of self-regulation include:

- Promoting autonomy not independence – encouraging students to be self-initiating and volitional in their actions. It means providing the supports necessary for students to feel as if their actions were emanating from themselves.
- Providing options to decide what the structure of the class will be about – students feel capable of managing activities they have chosen to do.
- Creating working groups of students according to their field of interest – students motivate each other to study relevant literary sources and discuss the findings.
- Ongoing studying throughout the whole semester, not just during the examination period of the semester.
- Reducing external control from outside.
- Requiring discussion as the main method of teaching.
- Presenting meaningful and useful activities that induce personal interest.

The presented research was supported by the Faculty of Education Scholarship Fund, PdF MU in Brno.

Cleary, T. J., & Zimmerman, B. J. (2004). Self-regulation empowerment program: A school-based program to enhance self-regulated and self-motivated cycles of student learning. Psychology in the Schools, 41, 537–550.

Cleary, T. J. (Ed.). (2008). Effectiveness of self-regulation empowerment program with urban high school students. Journal of Advanced Academics, 20, 70–107.

Pintrich, R. R., DeGroot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance, Journal of Educational Psychology, 82, 33–40.

Vallerand, R. J., Bissonnette, R. (1992). Intrinsic, extrinsic, and amotivational styles as predictors of behavior: A prospective study. Journal of Personality,60,599–620.

Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman, D. H. Shunk, (Eds.) Self-regulated learning and academic achievement: Theoretical perspectives. New Jersey: Lawrence Erlbaum Associates.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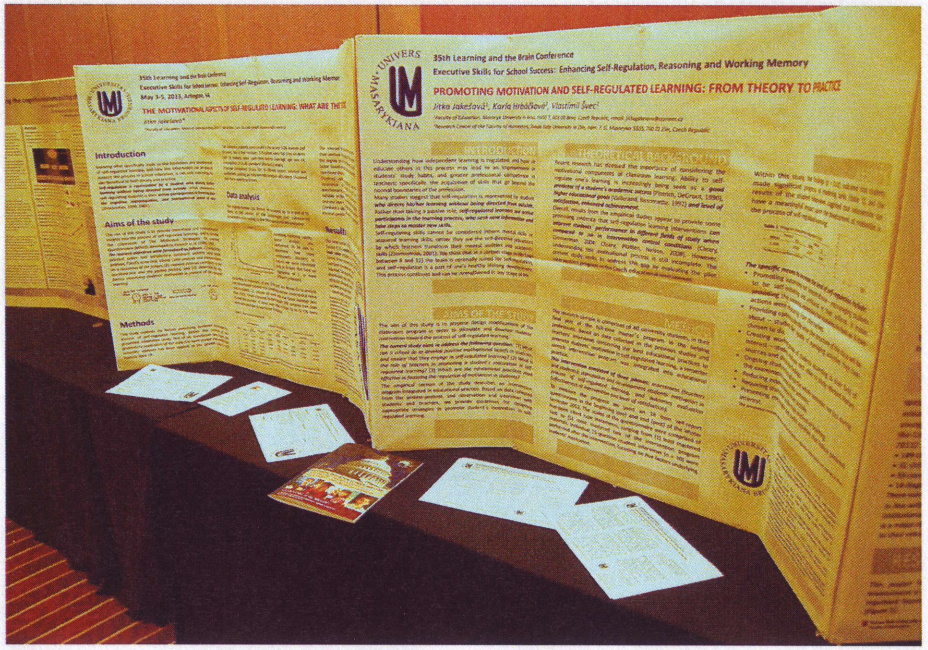
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