

The impact of academic motivation education on cognitive-adaptive / non-adaptive, behavior-adaptive / non-adaptive dimensions of motivation and academic performance of female second year high school students in Mahneshan

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Abstract

This study aimed to evaluate the impact of academic motivation education on cognitive-adaptive / non-adaptive, behavior-adaptive / non-adaptive dimensions of motivation and academic performance of female second year high school students in Mahneshan. The academic motivation education (in 16 sessions) was the independent variable; the self-efficacy, mastery-orientation, valuation, stability, planning, task management, anxiety, avoiding failure, uncertain control, self-handicapping, lack of education obligation, and academic performance were the dependent variables.

This was a field experimental study with pretest and posttest and follow-up with control group. The Martin's high school student's academic motivation and commitment questionnaire, Zimmerman and Martynz-Ponez's self-regulated learning strategies questionnaire, and Ekli's learning motivational strategies questionnaire were used as research tools. Using multistage random sampling method, 60 female second year high school students were selected as sample in Mahneshan in academic year 2011-2012. They were divided into experiment and control groups. Before the education, both experiment and control groups took academic motivation and commitment pre-test. Then, the academic motivation was taught to experiment group; the control group was not taught. After completion of course, the post-test was immediately given from both groups. Finally, 6 weeks after the end of course, both groups took follow-up test. The results of multivariate analysis of covariance (MANCOVA) showed that the academic motivation education increased significantly the self-efficacy, mastery-orientation, valuation, stability, task management, and academic performance; it also decreased significantly the anxiety, failure avoidance, and uncertain control. However, there was no significant difference in planning, self-handicapping, and lack of education obligation variables.

Keywords: Academic Motivation, Self-Efficacy, Mastery-Orientation, Valuation, Stability, Task Management, Planning, Anxiety, Failure Avoidance, Uncertain Control, Self-Handicapping, Lack of Education Obligation, Academic Performance.

Introduction:

The academic motivation plays an important role in enjoyment in school, academic achievement, insisting on doing difficult homework, hardworking, trying to learn much, and selecting challenging assignments.

Bloom stated that the emotional factors or motivation account for 25% of school success. The intelligence cannot be changed, but the interest or motivation to school may be changed.

There are many methods which can be used to enhance students' motivation to learning, teachers, and school.

Different experimental research have investigated the motivational factors individually.

Some educational psychologists (Bong, 1996; Murphy and Alexander, 2000; Pintrich, 2003) have recommended the conduction of comprehensive research on academic motivation.

This study can be examined from two perspectives.

Problem statement:

Most of the students' problems are due to intellectual disabilities and motivational problems. The beliefs of people determine their success or failure. The disable students usually less communicate with education and working life, have low self-confidence and efficiency, and try less to solve their problems. Therefore, today, the reduced motivation of students is one of the problems in schools.

There are many research on academic motivation. Although these studies are very useful and effective, they face with two problems. First, the analysis of individual motivation factors in several studies limits their practical implications and applications. Second, there is a gap between various motivational aspects of educational theories and the need of teachers, counselors, and psychologists to communicate with students. Considering these issues, Martin (2008) entered the concepts of education motivation, which were examined separately in several investigations, in a cycle or a comprehensive framework of new academic motivation. This cycle includes four essential dimensions.

- Whether it is possible to develop the academic motivation in a comprehensive framework? Whether it is possible to provide an effective intervention for this academic motivation cycle? Whether the students' motivation may be increased, especially boys? Is it possible to reduce the students' educational motivation negative behaviors by using an intervention?
- The intervention which may increase the positive aspects of academic motivation and reduce its negative aspects will provide a valuable service to education, active human resource of future, and scientific community.

Research hypotheses:

Hypothesis 1: Controlling pretest scores, the academic motivation education increases cognitive-adaptive, non-adaptive-cognitive, behavioral-adaptive, and non-adaptive-behavior dimensions of motivation and academic performance in experiment group compared to control group.

Hypothesis 1-1: Controlling pretest scores, the academic motivation education increases self-efficacy in experiment group compared to control group.

Hypothesis 2-1: Controlling pretest scores, the academic motivation education increases mastery-orientation in experiment group compared to control group.

Hypothesis 3-1: Controlling pretest scores, the academic motivation education increases valuation in experiment group compared to control group.

Methodology:

This was a field experimental study with pretest and posttest and follow-up with control group.

Population:

The population consisted of all female second year high school students in Mahneshan in academic year 2011-2012 (N=783).

Sampling:

Using multistage random sampling method, the sampling was conducted in two stages:

A) Sampling for validation of questionnaires

B) Sampling for intervention

Research tool:

A) Martin's high school student's academic motivation and commitment questionnaire

B) Zimmerman and Martynz-Ponez's self-regulated learning strategies questionnaire

C) Eklis's learning motivational strategies questionnaire

Martin's educational motivation questionnaire reliability by Cronbach's alpha and test-retest

Dimensions	Factor	Cronbach's Alpha	Re-test
Cognitive-adaptive	Self-efficacy	0.77	0.69
	Mastery-orientation	0.80	0.78
	Valuation	0.75	0.65
Behavioral- adaptive	Stability	0.81	0.61
	Planning	0.79	0.62
	Task management	0.82	0.75
Cognitive-non-adaptive	Anxiety	0.74	0.78
	Failure avoidance	0.76	0.81
	Uncertain control	0.80	0.76
Behavioral- non-adaptive	Self-Handicapping	0.81	0.73
	Lack of education obligation	0.81	0.80

Martin's educational motivation questionnaire confirmatory factor analysis load factor

Load factors	Adaptive cognitions	Adaptive behaviors	Non-adaptive cognitions	Non-adaptive behaviors
Self- efficacy	0.86	-	-	-
Mastery orientation	0.84	-	-	-
Valuation	0.91	-	-	-
Stability	-	0.85	-	-
Planning	-	0.86	-	-

Task management	-	0.83	-	-
Anxiety	-	-	0.56	-
Failure avoidance	-	-	0.69	-
Uncertain control	-	-	0.83	-
Self-Handicapping	-	-	-	0.70
Lack of education obligation	-	-	-	0.85

Findings:

First, the data analysis methods are provided; then, the data are analyzed. The findings are provided as descriptive findings (frequency, percentage, mean, standard deviation, minimum and maximum scores) and findings of research hypotheses (-test, analysis of variance, correlation, regression analysis, etc.).

The mean and standard deviation of variables scores in experiment and control groups

Dimensions	Variables	Statistical indices	Experiment group			Control group		
			Pre-test	Post-test	Follow-up	Pre-test	Post-test	Follow-up
Cognitive-adaptive	Self-efficacy	Mean	78.33	85.16	84.83	78.53	79.29	78.8
		Standard deviation	17.50	11.59	11.72	10.34	10.67	10.7
	Mastery orientation	Mean	83.20	92.23	91.88	85.88	87.07	87.0
		Standard deviation	11.39	11.39	10.95	7.50	7.15	7.09
	Valuation	Mean	82.01	85.82	85.18	83.93	84.66	84.48
		Standard deviation	10.61	11.17	10.95	10.83	9.97	10.17
Behavioral-adaptive	Stability	Mean	69.59	78.40	77.93	71.26	72.01	71.54
		Standard deviation	14.07	11.85	11.68	11.79	11.86	12.11
	Planning	Mean	67.32	72.56	72.62	67.21	68.06	68.09
		Standard deviation	18.25	16.18	15.99	15.50	15.43	15.34

	Task management	Mean	70.60	81.62	80.96	72.10	73.39	73.11
		Standard deviation	16.78	16.65	16.60	13.86	13.09	12.62
Cognitive-non-adaptive	Anxiety	Mean	62.68	52.26	51.74	63.06	62.14	62.15
		Standard deviation	19.82	20.52	20.54	15.67	15.66	15.77
	Failure avoidance	Mean	44.56	34.78	35.17	45.79	44.60	44.70
		Standard deviation	17.50	18.31	18.20	17.30	16.84	16.85
	Uncertain control	Mean	58.55	45.18	45.25	58.63	54.50	57.61
		Standard deviation	26.99	24.89	24.95	15.44	14.62	14.85
Behavioral-non-adaptive	Self-Handicapping	Mean	43.25	39.56	39.66	42.39	41.75	41.43
		Standard deviation	19.63	20.52	20.31	13.34	13.28	13.27
	Lack of education obligation	Mean	42.78	39.03	39.21	42.10	40.82	40.97
		Standard deviation	21.04	22.93	22.89	11.45	10.82	10.84
Academic performance		Mean	13.77	15.63	-	13.73	14	-
		Standard deviation	0.85	1.03	-	1.04	1.20	-

A) Findings related to hypotheses

Hypothesis 1: Controlling pretest scores, the academic motivation education increases cognitive-adaptive, non-adaptive-cognitive, behavioral-adaptive, and non-adaptive-behavior dimensions of motivation and academic performance in experiment group compared to control group.

Results of multivariate analysis of covariance of post-test scores with controlling pre-test scores of dependent variables

Effect	Test	Value	F	df hypotheses	error df	Sig. level	Effect size
Group	Pillai's Trace	0.92	34.86	12	35	0.0001	0.92

	lambda Wilkes	0.07	34.86	12	35	0001.0	0.92
	Hotelling's Trace	11.95	34.86	12	35	0001.0	0.92
	Roy's Largest Root	11.95	34.86	12	35	0001.0	0.92

Discussion and conclusion:

The one-way and multivariate analysis of covariance showed that there is significant difference between self-efficacy post-test scores in experiment and control groups. Also, the results of repeated one-way and repeated multivariate analysis of covariance showed that there is no significant difference between post-test and follow-up scores of students' self-efficacy in both groups (time effect). Therefore, the hypotheses 1-1 and 1-2 are confirmed; the intervention impacts on students' self-efficacy.

This finding is consistent with research findings of Martin (2008), Bandura (1982), and Marsh (1990).

To explain this finding, it can be said that there is relationship between self-efficacy, self-confidence, optimism, effort, and enjoyment of school. The scientific self-efficacy helps students' development; it is a strong predictor of academic achievement and enjoyment.

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