

The Relationship Between Self-Regulated Learning Components and Achievement Motivation in Students of Islamic Azad University, Tehran Medical Branch

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Abstract

Background: It is nearly a century that psychologists strive to identify the predictors of academic achievement.

Objectives: The present study aimed at investigating the relationship between self-regulated learning, achievement motivation, and academic achievement, and obtaining results to create appropriate strategies to increase motivation and improve learning in students to help them with academic achievement and empowerment.

Method: The present cross sectional study was conducted in the academic year of 2016-2017. A total of 190 students of Islamic Azad University, Tehran Medical Branch, were selected by the convenience sampling method and completed the motivated strategies for learning (MSLQ) and achievement motivation questionnaires. Data were analyzed using the Pearson correlation coefficient in SPSS.

Results: There was a significant relationship between achievement motivation and the components of self-efficacy, in trinsic goal orientation, help-seeking, and time management ($P < 0.001$). Students getting higher scores on MSLQ also got higher scores on self-efficacy, time management, and intrinsic goal orientation ($P < 0.001$).

Conclusion: According to the study results, to empower medical students in academic achievement, their self-efficacy, time management skills, and goal orientation should be improved.

Keywords: Self-Regulated Learning, Achievement Motivation, Medical Students

Background

Improvement of the educational status of students is one of the goals of higher education systems. Achievement motivation is one of the major issues, which should be considered in medical education. It is one of the critical social motivations and personality traits, varying across individuals, and certain behaviors can be predicted accordingly (1). Paying attention to the education and empowerment of medical students is of great importance for training proficient physicians. Psychological characteristics, motivations, and emotions are among the internal factors in learning, and the external ones include environmental stimuli, teaching methods, study methods, educational equipment, etc. (2). According to reports, the use of self-regulatory strategies for better learning is a type of learning by which an individual, instead of relying on teachers and mentors, drives himself to learn (3). Self-reg-

ulated learning strategies show how one can control, transform, and regulate performance (4).

Self-regulation is a set of active and categorized steps by which learners can accurately set learning goals and monitor their cognition and behavioral motivations (5). Researchers classified motivation into various forms, including primary versus secondary, intrinsic versus extrinsic, social, and achievement (6). Among factors investigated by learning professionals, self-regulated learning is considered a variable related to achievement motivation and motivational beliefs. Self-regulation includes inclusive activity in terms of motivation, cognition, metacognition, and behavior for better and more learning (3). Therefore, self-regulation can be examined in behavioral, cognitive, and metacognitive domains (5). Utilization of these strategies varies across individuals (6); it maintains motivation in performing academic tasks (even for difficult ones) and,

as a result, academic achievement (7).

The achievement motivation is the driving force to achieve goals, which determines the amount of effort and probability of achieving them (8), as well as part of social needs, including the desire to achieve high standards, competition, and overcome obstacles (9). The achievement motivation is the passion and desire for success (10), which determines why and how learning motivates (11). The results show that achievement motivation and learning are related to educational environments, indicating the effect of external factors on achievement motivation (12). Likewise, Jafarian et al., found in a study that teacher action in the classroom, student achievement motivation, and self-regulation are among the factors affecting student academic performance (13). Their findings highlighted a relationship between effective teaching, self-regulation, achievement motivation, and academic performance in which the highest correlation was observed between achievement motivation and effective teaching and the lowest between academic performance and self-regulation (13). Teachers can increase students' academic achievement by better managing the classroom, applying effective teaching methods, empowering achievement motivation, and training in self-regulated learning strategies.

Objectives: To the best of authors' knowledge, limited research is carried out in this regard on medical students. Given that medical students pass more difficult courses and study for a longer course than other disciplines, maintaining motivation and applying appropriate learning strategies during the study can be very beneficial. Therefore, the present study aimed at investigating the relationship between self-regulated learning components and achievement motivation in the medical students of Islamic Azad University, Tehran Medical Branch, Iran.

Methods

The present analytical, cross sectional study was performed in the academic year of 2016-2017. A total of 190 students of Islamic Azad University, Tehran Medical Branch, were selected by the convenience sampling method. The inclusion criteria were: studying medicine at the study site and age below 35 years. Data were collected by questionnaires.

Motivated Strategies for Learning Questionnaire

This 81-item instrument was developed by Pintrich et al. (1991). MSLQ items are scores based on a seven-point Likert scale (from "It is not true for me" (1) to "It is true for me" (7). The overall score ranges from 81 to 567. MSLQ consists of two parts of motivational strategies and learning strategies (14).

Motivational strategies include three components of value, expectancy, and emotion. The value has three scales of intrinsic goal orientation (four items), extrinsic goal orientation (four items), and task value (six items). The expectancy includes two scales of controlling learning beliefs (four items) and self-efficacy (eight items), and the emo-

tion includes a test anxiety scale (five items).

Learning strategies consist of two components of cognitive and metacognitive learning and resource management strategies. The cognitive and metacognitive strategies have five scales of rehearsal (four items), expansion (six items), organizing (four items), critical thinking (five items), and metacognitive self-regulation (12 items), and resource management strategies, four scales of time and study environment management (eight items), effort regulation (four items), peer learning (three items), and help-seeking (four items). Pintrich et al., reported Cronbach's alpha coefficients of 0.93, 0.80, 0.69, 0.46, 0.64, 0.80, 0.79, respectively, for self-efficacy, test anxiety, rehearsal, expansion, organizing, critical thinking, and metacognitive self-regulation subscales, and 0.78 for the whole scale (14). The MSLQ validity assessment in Iran by Cronbach's alpha coefficient was 0.88, 0.85, 0.54, 0.79, 0.70, 0.74 and 0.79, respectively for its components (15). The instrument validity was also confirmed in the present study by experts. Cronbach's alpha coefficient was 0.94, 0.91, 0.89, 0.97, 0.92, 0.94, and 0.95, respectively for the components and 0.96 for the whole scale.

Achievement motivation questionnaire: This 50-item instrument was developed by Bahargava (1994). The items are incomplete sentences with three options; any correct response is given 1 point, and finally, the sum of the scores (from zero to 50) is compared with the norm table containing five motivational categories of high (≥ 23), above average (19-22), medium (17-18), below average (14-16) and low (≤ 13). The validity of the Hindi and English versions of the instrument is reported 0.78 and 0.91, respectively. In Iran, the reliability and validity of its Persian version were 0.87 and 0.80, respectively (16). In the present study, Cronbach's alpha coefficient of the instrument was 0.60.

Data were analyzed using the Pearson correlation coefficient in SPSS version 17 (SPSS Inc., Chicago, IL). The ethical principles in the research, issued by the Islamic Azad University, Tehran Medical Branch, were observed in the present study (ethical code: 95484). The questionnaires were anonymous, and the information remained confidential. Informed consent was obtained from all participants, and the minimum risk was also observed.

Results

In total, 190 students participated in the present study. The mean age of the subjects was 21.70 ± 5.99 years (ranged from 18 to 32); 104 were females (54.74%) and 86 males (45.26%). Table 1 shows the mean scores of MSLQ components and achievement motivation.

Among the MSLQ components, the highest and lowest mean scores belonged to organizing and test anxiety, respectively. The mean score of achievement motivation was 102.10. The correlation between achievement motivation and self-regulated learning strategies and its components is shown in Table 2.

There was a significant correlation between achievement motivation and intrinsic goal orientation, self-efficacy, time management, and help-seeking ($P < 0.001$).

Table 1. Mean Scores of the Self-regulated Learning Strategies Components and Achievement Motivation

Variable	Component	Mean±SD
Self-regulated learning strategies	Test anxiety	13.10±3.82
	Self-efficacy strategy	42.63±12.68
	Learning beliefs control strategy	20.79±6.07
	Task value strategy	26.83±7.30
	Extrinsic orientation strategy	20.72±5.95
	Intrinsic orientation strategy	21.84±14.67
	Help-seeking strategy	18.19±4.97
	Peer learning strategy	13.64±3.04
	Effort regulation strategy	18.24±50.09
	Time management strategy	40.19±11.32
	Self-regulation strategy	51.54±11.65
	Critical thinking strategy	23.63±5.86
	Organizing strategy	78.63±8.63
	Expansion strategy	28.96±7.14
Rehearsal strategy	16.95±4.87	
Total score	-	391.54±77.38
Achievement motivation	-	102.10±8.21

Table2. Correlation of Achievement Motivation With Self-regulated Learning Strategies and its Components

Main Variable	Self-regulated Learning Strategies and Components	Correlation	P-value
Achievement motivation	Intrinsic goal orientation	0.21*	0.030
	Extrinsic goal orientation	0.06	0.950
	Task value	0.19	0.050
	learning beliefs control	0.12	0.210
	Self-efficacy	0.22*	0.020
	Test anxiety	-0.07	0.440
	Rehearsal	0.01	0.900
	Expansion	0.05	0.550
	Organizing	0.01	0.960
	Critical thinking	0.05	0.600
	Metacognitive self-regulation	0.05	0.590
	Management of time and study environment	0.49*	0.001
	Effort regulation	0.12	0.210
	Peer learning	0.16	0.110
	Help-seeking	-0.26	0.007
Total score	0.37	0.001	

*P-value <0.001

Also, a significant correlation was observed between achievement motivation and self-regulated learning strategies ($P < 0.001$); that is, those with higher scores on the achievement motivation scale had a higher intrinsic goal orientation. There was a significant correlation between achievement motivation and time management. Accordingly, those with higher scores on achievement motivation were more successful in time management. Also, those

with higher scores on self-efficacy were more motivated to achieve and less likely to seek help.

Discussion

The results of the present study showed a significant correlation between self-regulated learning strategies and achievement motivation in medical students. If a student studies only to pass a course due to fear of rejection, he

is motivated in self-regulated learning (17). Motivation had a correlation with self-regulated learning, indicating that the application of self-regulated strategies has a motivational origin; that is, the degree of self-regulation depends on motivation. The results of a study showed that with increasing students' motivation, their studying and academic performance improved (18). Given this finding and the fact that academic achievement in medicine is crucial, determining student motivation and presenting strategies to improve it can guarantee academic performance improvement.

There was a significant correlation between the components of self-regulated learning strategies and achievement motivation. These results were consistent with those of previous research (19-22). According to the theory raised by Pintrich et al. (14), and the results of the study by Zimmerman and Martinez-Pons (23), self-regulated students are far superior to their peers in education. Also, evaluation of self-regulation and goal setting training for students indicated that self-regulation leads to improved achievement motivation, and self-regulation can be considered an academic skill that improves academic achievement. Training learning strategies, studying, and metacognition strategies improved the motivation of female students (24). There was a significant relationship between the application of learning strategies and academic achievement (25), as well as cognitive reading strategies, studying habits, metacognition, and students' motivation (26).

According to the results of the present study, four components of self-regulated learning strategies, including self-efficacy, intrinsic goal orientation, peer help-seeking, and time management, had a significant correlation with achievement motivation. Self-efficacy is one of the important components of maintaining and promoting students' motivation that plays a pivotal role in studying a course. Learners, with a greater sense of self-efficacy, make better use of time and energy in education, which in turn motivates them to achieve their goals (27). Rabbani and Yousefi also concluded in a study that learners with higher self-efficacy examine and regulate their motivations with more sensitivity (28). Also, Pintrich highlighted a significant relationship between self-regulated learning strategies and motivational components (29). The study by Khurshid et al., on the relationship between study skills and academic achievement (30), also confirmed the present study findings.

The present study results showed that intrinsic goal orientation is one of the important and effective factors in achievement motivation. Students who are self-regulated in setting their educational goals are academically more successful because they set goals based on intrinsic criteria and naturally spend more time and energy on achievement. According to the results of the study by Hassanzadeh and Mahdinejad Gorji, students with intrinsic goal orientation had more self-confidence. They were more focused on activities to achieve the goal, and external factors did not much affect their performance (31). The findings of Wolthers et al. (32), were consistent with those of the

present study.

According to the present study results, peer help-seeking had an inverse and significant relationship with achievement motivation, similar to previous studies' findings (34, 33). The study by Ghadmapour and Sarmad showed that with increasing achievement motivation, peer help-seeking increases (35).

Time management was another component that had a positive and significant relationship with achievement motivation. The results showed that individuals vary in time management and optimal use of their time. Learners with more control over their time, applying time management and time planning techniques, expected more achievements, in turn, prevents them from doing unnecessary tasks, which brings positive emotional knowledge to them and maintains their achievement motivation at a high level. Omidvar et al., found that the time management subscale increases achievement motivation (36). Time management has a positive and significant relationship with academic achievement by increasing achievement motivation (37). To explain this finding, those who have more achievement motivation have better time management and higher academic motivation. Hence, the individual does his best to make the most of his time, accompanied by a high achievement motivation. A review of the literature showed the relationship between these two variables, the components of self-regulated learning strategies, and achievement motivation.

Atashkar et al., concluded in a study that there was a positive and significant relationship between the mean scores of achievement motivation and academic satisfaction. There was a significant difference between the academic satisfaction of medical and dental students and between the motivation of dental and pharmacy students. Moreover, there was no significant difference between students' academic motivation and academic satisfaction in gender and discipline. The dentistry students were more motivated and satisfied than those in other disciplines, such as medicine and pharmacy (38). The study by Rostami and Aliabadi reported that the academic achievement motivation of most agricultural students was below average.

Path analysis showed that among the effective cognitive and metacognitive strategies, planning, organizing, repeating, and practice strategies had the most, and learning, control, and monitoring strategies the least effects on students' academic achievement motivation (39). Training self-regulated learning strategies had a positive effect on academic achievement motivation, and self-regulation a significant relationship with learning disabilities (40).

One of the limitations of the present study was the use of the convenience sampling method, which affected the generalizability of findings. The utilization of self-report questionnaires was another limitation of the study. It is suggested to perform longitudinal studies while applying observation or interview techniques for data collection.

Conclusion

The results of the present study showed that by empowering self-regulated learning components, such as self-efficacy, time management, and goal orientation, the self-motivated learning skill is improved in students, ultimately leading to increased achievement motivation.

Supplementary Material

Supplementary material (s) is available here [To read supplementary materials, please refer to the journal web-site and open http://sdme.kmu.ac.ir/jufile?ar_sfile=804441]

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