Original Article

Investigating the relationship between motivational beliefs and self-regulation learning with students' academic performance

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ABSTRACT

This study aimed to investigate the relationship between motivational beliefs (self-efficacy, internal evaluation and test anxiety) and self-regulation learning (cognitive and self-regulation strategies) with students' academic performance in Kerman University of Medical Sciences. For this purpose, 460 male and female students studying during the academic year 2015-2016 were randomly selected using the Cochran's sample size formula. The research employed a descriptive-correlational method. The data collection instrument was the Motivated Strategies for Learning Questionnaire (MSLQ) developed by Pintrich and De Groot (1990), which was used to study self-regulation learning and motivational beliefs. Also, the student's total GPA was considered as a measure of their academic performance. The results of Pearson's correlation test showed that there is a direct and significant relationship between self-regulation learning and academic performance of students at the University of Medical Sciences (P 0.05; r=0.434) as the students' academic performance improves with increasing self-regulation learning. There was a significant relationship between motivational beliefs and students' academic performance (P 0.05; r=0.498). On the other hand, there was no significant difference between the two groups (females and males) in terms of motivational beliefs, self-regulation learning and academic performance (p <0.05). Independent sample t-test was used to compare the academic performance of male and female students. The results indicated no significant difference between the two groups in terms of academic performance.

Keywords: Motivational Beliefs, Self-Regulation Learning, Academic Performance.

Introduction

Today, educational development and continuous improvement of educational quality require a comprehensive investigation of students' academic performance as well as the identification of relevant affecting factors in order to resolve the educational system's bottlenecks and failures and to provide timely scientific solutions to them [1]. Undoubtedly, one of the educational objectives is to promote students' learning and academic performance. Various factors affect the students' learning and academic performance, among which motivation plays a critical role [2].

There was a turning point in motivation-oriented issues for the first time at the end of the 19th century with the scientific studies of the theorist Freud. Brunner's theory (1996) emphasizes on motivational aspects of learning. According to Brunner, the main output of cognitive development is thinking; therefore, the students should be grown as self-regulated and self-autonomous thinkers. Piaget (1952) also believes that motivation is driven by individuals' goals, provoking and

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guiding them in planning, organizing, reviewing, making decisions, problem solving, evaluating and achieving the goals.

The most important prerequisite of learning is motivation. Motivation acts as a trigger for human behavior. Motivation can be defined as a motivating, preserving, and guiding factor affecting the goal-oriented behavior. Motivational behaviors are associated with the students' beliefs about themselves and their assignments. These beliefs include metrics of individuals' reasoning for choosing some methods to perform the assignments. Formed in any case, the personal metrics are the basis for personal motivation. Motivational beliefs reflect the effect of emotional factors on learning, which can influence the learner's motivation for the subjects, assignments, and tests. Motivational beliefs refer to those beliefs directing and guiding academic activities [3].

Self-regulation learning has actually been of concern since the 1980s as a new strategy to help students to master the learning process and generally to improve the quality of learning. Bandura's social cognitive theory (1986) focuses on social learning and introduces the term self-directed learning. In this method, the learners have a personalized self-regulation learning process. In Pintrich and DeGroot's (1990) self-regulation learning, self-efficacy, internal evaluation, assignment and test anxiety are introduced as motivational beliefs and cognitive and meta-cognitive strategies in self-regulation learning [3].

Researchers and educational psychologists have always dealt with the academic performance and its effective factors as one of the fundamental and basic variables in education. In fact, it can be mentioned that the learners' academic performance greatly contributes to the existing research on education. Various definitions are proposed for academic performance. Atkinson (1964) recognized academic performance as a person's acquired or learned ability. It can be claimed that academic performance reflects the success of passing a course by a student and his proper functioning in his society and life based on what he has learned [4].

Students are one of the capitals in each country. Accordingly, one of the goals of the universities is to improve the quality of education and students' academic performance since the students' academic failure imposes many financial and spiritual costs on the universities and students. Thus, examining the factors affecting the students' academic performance is the main focus of research on higher education. On the other hand, the investigation of the students' academic performance is one of the ways to achieve academic development and, in other words, continuous improvement of educational quality, which are of use in identifying the shortcomings and strengths of an educational system and providing scientific and proper solutions to effectively solve the existing problems [5, 6].

Through revealing the contribution of each variable affecting the academic performance and presenting useful information, the universities' education system professionals can provide a more appropriate opportunity for students to succeed. Hence, the present study sought to examine the relationship between self-regulation learning and motivational beliefs with students' academic performance.

Methods

This study was applied in terms of its objective and descriptive-correlational regarding the data collection method. The statistical population of this study consisted of all undergraduate students studying at Kerman University of Medical Sciences during the academic year 2015-2016. A total of 460 students were selected using the random sampling method based on the Cochran's sample size formula and included in the study after obtaining permission from Kerman University of Medical Sciences and obtaining their consent. After the removal of incomplete questionnaires containing missed items, 448 questionnaires were studied and analyzed.

The following instruments were used to measure the study variables:

1) Pintrich and De Groot's (1990) Motivated Strategies for Learning Questionnaire (MSLQ) which is also called the Motivational Strategies for Learning Questionnaire. This 47-item scale measures the two components motivational beliefs and self-regulation strategies along with their sub-components. Sub-categories of the questionnaire are as follows:

- **Motivational Beliefs:**
  - Self-efficacy (9 items)
  - Internal evaluation (12 items)
  - Test Anxiety (6 items)

- **Self-regulation strategies:**
  - Cognitive Strategies (16 items)
  - Self-regulation (4 items)

A lot of studies have been conducted to assess the validity and reliability of this questionnaire. In their study, Pintrich and De Groot (1990) reported the Cronbach Alpha values for the sub-components of motivational beliefs as follows: Self-efficacy (0.89), internal evaluation (0.87), test anxiety (0.75), cognitive strategies (0.83) and self-regulation (0.74). In another study by Bijrano (2007), the observed Cronbach's alpha ranged from 0.62 to 0.84.

Similar results have been obtained in studies carried out in Iran. Using test-retest method for a group consisting of 30 subjects, Razavieh et al. (2006) reported the reliability coefficient of this questionnaire to be 0.90. The values also ranged from 0.86 to 0.87 for each subscale. In addition, Goldoust et al. also assessed the reliability of this questionnaire using Cronbach's alpha to be 0.91. The reliability of the scale was estimated in this study using the Cronbach's alpha to be ($\alpha = 0.79$). A five-point Likert scale was employed to score the questionnaire:

- Strongly agree: 1
- Agree: 2
- I have no idea: 3
- Disagree: 4
- Strongly Disagree: 5

2) GPA

In order to assess the students' academic performance, their GPA was concerned. To evaluate the relationship between motivational beliefs and self-regulation learning with the academic performance of the students at the Kerman University of Medical Sciences, Pearson correlation coefficient, in addition to descriptive statistics, was used. Independent sample t-test was also run to compare the results obtained for the female and male participants. All data were analyzed using the SPSS software version 17.

Findings

Descriptive statistics

Descriptive information of 448 respondents who had completed the questionnaires is listed in

Table 1: Frequency distribution of gender, age and marital status.

Sex	Abundance	Percent
Man	178.75	39.9
Female	269.2	60.1
Single	338.2	75.5
Married	109.7	24.5
Less than 20 years old	198.4	44.3
Between 20 and 22 years old	151.4	33.8
Between 22 and 24 years old	91.8	20.5
More than 24 years	6.27	1.4

Inferential statistics

Before testing the research hypotheses, the normality of the study variables was studied using Kolmogorov-Smirnov test. Given that the significance level corresponding to the z value was greater than 0.05 for all the variables, the normality assumption was accepted. Hence, parametric methods were used to investigate the research hypotheses.

Pearson Correlation Coefficient was run to study the relationship between self-regulation learning, motivational beliefs and academic performance of the students. The results of this test are presented in Table 2.

Table 2: Correlation coefficients between motivational beliefs and academic performance of dental students

Type of communication	connection	Academic Performance			Variable
		Number	p	Pearson correlation	
direct	Yes	448	*<0.001	0.498	Motivational Beliefs
direct	Yes	448	*<0.001	0.434	Self-regulation Learning

The results obtained from the Pearson correlation test indicated that there is a significant and direct relationship between motivational beliefs and academic performance of students at the Kerman University of Medical Sciences (P <0.05 and r=498). In other words, students' academic performance improves as their motivational beliefs enhances. This can be verified according to the distribution and regression line shown in Figure 1. According to the value of R^2 (R-squared for Pearson correlation), the motivational beliefs explain 24.80% of the academic performance variance.

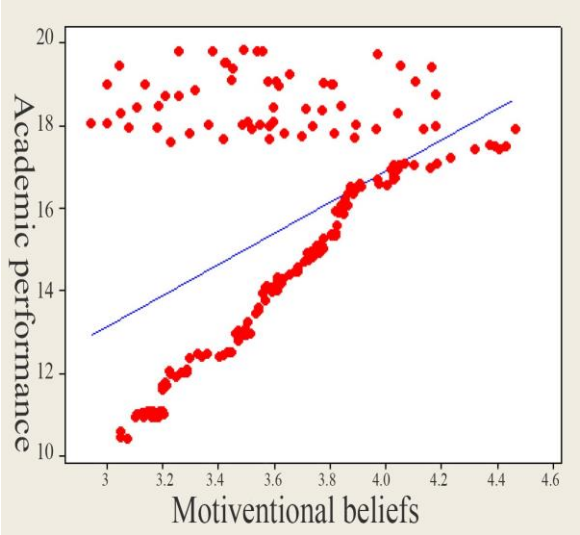

Figure 1: Distribution Scenarios of Motivational Beliefs * Academic Achievement

On the other hand, the results of Pearson correlation test suggested a significant direct relationship between self-regulation learning and academic performance of students (P <0.05 and r=0.434). In other words, the students' academic performance improves as their self-regulation strategies increase. This can be verified according to the distribution and regression line shown in Figure 1. According to the value of R^2 (R-squared for Pearson correlation), self-regulation strategies explain 18.84 percent of academic performance variance.

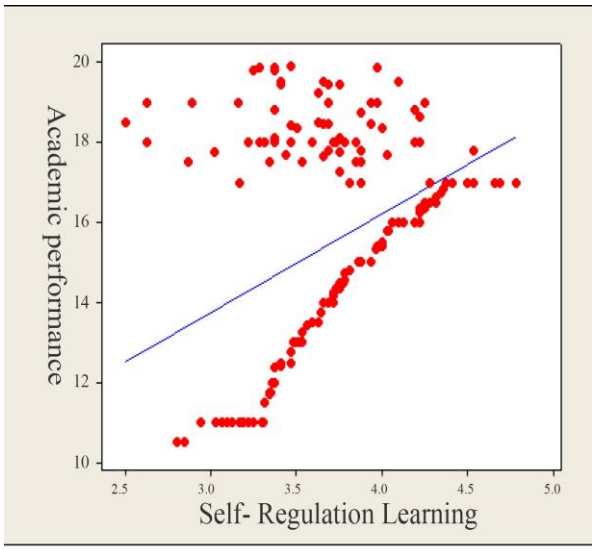

Figure 2: Distribution Schedule Self-Regulatory Learning * Academic Performance

Both male and female students participated in this study. Independent sample (paired samples) t-test was used to compare the variables in the two groups. The results shown in

Table 3 indicates that there was no significant difference between the two groups in terms of self-regulation learning ($p < 0.05$).

Table 3: A Comparison of Motivational Beliefs and Self-Regulation in Girls and Boys

P	statistic t	Boys		Girls		Variable
		Standard deviation	Average	Standard deviation	Average	
0.832	-0.212	0.4	3.6	0.3	3.6	Motivational Beliefs
0.337	-0.963	0.4	3.6	0.4	3.7	Self-regulation Learning

Independent sample (paired samples) t-test was used to compare motivational beliefs and self-regulation learning for male and female students. The results presented in the table below show that there was no significant difference between the two groups in this regard ($p < 0.05$).

Independent sample (paired samples) t-test was also used to compare the academic performance of male and female students. The results are presented in Table 4.

Table 4: Comparison of academic performance of girls and boys

p	statistic t	Boys		Girls		Variable
		Standard deviation	Average	Standard deviation	Average	
0.387	-0.867	2.9	15.2	2.7	15.5	Academic Performance

As it can be observed, there was no significant difference between the two groups in terms of academic performance ($p < 0.05$).

Discussion and Conclusion

This study was to predict the students' academic performance as a criterion variable according to two predictors (namely self-regulation learning and motivational beliefs for learning). The results of this study showed that academic performance has a significant correlation with a majority of subcategories of self-regulation learning and motivational beliefs for learning. The findings of this study are consistent with other studies conducted by Biaban Gard (1999), Khosravi (2001), Kajbaf (2003), Amini (2006) and Goldoust (2008). In fact, students with high academic achievements have better learning skills than those with low academic achievements [7]. Furthermore, the results of this study showed a significant correlation between motivational beliefs and academic performance of students. This finding is in line with the findings of Caliver Sing (2014), Mousavi (2010), and Oshro Pajares (2009).

On the relationship between self-regulation learning and academic performance, the results of the present study supposed a significant relationship between these two variables. The finding is in a similar vein with the findings of Chen (2002) [8], Camahalan (2003) Rizemberg and Zimmerman (2008), Bombotti (2008) and Charlotte et al. (2008). The results of this study also indicated that there was no significant difference in terms of motivational beliefs between the male and female students at Kerman University of Medical Sciences ($p<0.05$). Similar to Kajbaf's et al. study (2003), the present study showed different results regarding the difference between male and female students using different motivational beliefs [2, 8].

Independent sample (paired samples) t-test was used to compare the self-regulation learning between the male and female students. The results of this study implied that there was no significant difference between male and female university students in this regard ($P< 0.05$) This finding is consistent with the results obtained by Kajbaf et al. (2003) indicating the relationship of self-regulation learning strategies between high school female and male students as well as the results of the study conducted by Sajedi et al. (2014) suggesting that there was no significant difference between female and female students in terms of adopting a variety of learning strategies [2, 9].

Comparison of academic performance of male and female students revealed no significant difference ($P< 0.05$). This is consistent with the findings of Kajbaf et al. (2003) for high school female and male students and Sajedi et al. (2014) for male and female university students [2]. The findings of this study are also in a similar vein with the results of Hyde, Fennema, Lamon (1990), Fingeld (1992) and Alborzi and Samani (1999).

Limitations of the study

Quantitative approach was used in this research so that the reasons were not studied. Qualitative research as a more efficient method can delve more accurately into the explanations for the educational environments and, consequently, provide practical and effective solutions. The results of this study are limited to undergraduate students of Kerman University of Medical Sciences; therefore, we should be cautious in generalizing the findings to other higher education universities and institutions. The present study was also limited to higher education and generalizing the results to other educational levels should be done with cautions. On the other hand, a questionnaire was used in the present research, other aspects, including the families' social and cultural status, can be considered in further research.

Recommendations for further research

According to these findings and considering the role and importance of self-regulation learning and motivational beliefs in students' learning and academic performance, it is recommended that students use self-monitoring learning strategies and increase their self-motivational skills to deepen their learning and to enhance their motivation and self-esteem.

The faculty members and authorities in charge at universities and higher education systems are also recommended to establish a student-oriented and challenging learning environment to

operationalize learning and enhance motivation among the students [10, 11].

It is suggested that the professors organize the materials in such a novel way that new learning materials can be transferred through this new strategy. They should guide students on how to use them. Future studies should also operationally and experimentally address the methods and means of enhancing motivational beliefs among students.

It seems that educational planning in our country should be reorganized in line with the findings of researchers on learning to ensure the progress and success of learners. Through providing effective learning strategies and applying them for students and emphasizing the promotion of motivation among students, universities can provide the ground for increasing their academic performance.

Researchers have been devising and examining the effectiveness of a variety of studying and learning methods in order to pave the way for students' success and progress. In Iran, however, lack of learning achievements, lack of attention, lack of patience and learning motivation and lack of specified goals and planning are the common complaints of learners because most of them receive no special training on how to study and learn. The results of this study showed that the use of learning strategies and high motivation for development increase the students' academic performance. Furthermore, the use of learning strategies is a factor enhancing the motivation for progress in students. [7]

References

1. Piri, M, ghobadi, L., 2013, Relationship between active learning and motivational beliefs and academic performance, journal of new thoughts on education, vol.9.no.3, pp.28-48.
2. Kajbaf, M, Molavi, H and Tehrani, A., et al., 2003, Study of the relationship between motivational beliefs and self-regulated learning strategies, and academic performance among high school students, journal of advances in cognitive science , Vol.5.No.1, Pp. 27-33.
3. Barzegar, k, Salmani, M, Hashemi, A., 2013, Predicting academic performance of student teachers girl on emotional intelligence, learning strategies and motivational beliefs, Journal Management system, Vol.2.No.5,Pp.35-17.
4. GHolavandi, H, Amani, j, Najafi, M, et al 2013, Related components of learning strategies and components of academic performance, journal of New Educational Approaches, Vol.8.No.2,Pp.55-72.
5. Mirkamali, M, khabare, k, Mazari, E, 2015, The Role of Mental Health on Academic Performance of University Students with the Meditation of Academic Achievement Motivation, Journal of knowledge &Research in Applied psychology, Vol.16.No.2, Pp. 101-109.
6. Fayaz, I, Kazem, S, Raeisoon, M R, et al., 2016, The Relationship Between Learning Motivational Beliefs and Control Source Dimensions with Academic Vol.8.No.2, Pp.69-76.
7. Bembenutty, H. (2008): Self- Regulation of Learning and Academic Delay of Grafication: Gender and Ethnic Difference among College students, Journal of advanced academics, Vol. 18, No.4 ,Pp.586-616.
8. Chen.C.S. (2002). Self-regulated learning strategies and achievement in an introduction information systems course, information technology learning and performance Journal, Vol.20, No.1, Pp.11-25.
9. Sajedi, R, Shafizadeh, H., 2014, A Study of the Relationship between Learning Strategies, Achievement Motivation and Academic Performance among the Students of Semnan University of Medical Sciences.
10. Azimi, mohammad, moosa piri, Zavar, T, 2013, Relationship of academic burnout and self-regulated learning with academic performance of high school students, journal of curriculum planning knowledge & research in educational sciences, vol.10.no.11,pp. 116-128.
11. Yahyazadeh, F, Mohammadipour, M. 2016, The role of interest, self-efficacy and academic self-regulation in predicting academic achievement of students of Islamic Azad University, Journal of Fundamental and Applied Sciences, Vol.8.No.4.Pp. 2059-2075.