Research Paper

Relationship Between Academic Emotions, Academic Motivation, and Academic Performance Among Operating Room Students During the COVID-19 Pandemic

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ABSTRACT

Background and Objective: Emotions have important role in academic activities and motivation to deal with challenges. This study aims to assess the relationship between academic emotions, academic motivation, and academic performance among undergraduate students in operating room technology during the COVID-19 pandemic.

Materials & Methods: This descriptive-correlational study was conducted on 93 undergraduate students in operating room technology from Iran University of Medical Sciences during 2021-2022. Data were collected using Pekrun's Academic Emotions Questionnaire, Vallerand's Academic Motivation Scale, and students' grade point averages. Descriptive statistics and statistical tests, including Spearman correlation test, Mann-Whitney U test, and Kruskal-Wallis test, were used to examine the relationships between variables. The significance level was set at 0.05.

Results: The positive emotions (class-related enjoyment, hope, pride) and negative emotions (anger, anxiety, hopelessness, shame, boredom) had a significant relationship with students' academic motivation ($R=0.096$, $P<0.05$). However, there was no significant correlation between these emotions and students' academic performance ($R=-0.174$, $P>0.05$).

Conclusion: Due to the change in the educational system during the pandemic, students' academic emotions, motivation and academic performance were affected and it is suggested that educational programs to increase motivation and positive academic emotions be included in their academic curriculum, which will greatly increase their academic performance.

Keywords: Emotions, Motivation, Academic performance, COVID-19, Students

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Introduction

Improving students' academic performance is a primary goal of educational institutions. In this context, researchers have indicated emotions as a key factor in creating motivation and academic success [1]. In recent decades, academic motivation has been considered as an important factor in medical education. It can help students achieve educational goals including proper professional performance [2]. The term "achievement emotion" was first introduced by

n in 2006 in the academic field [3]. Academic achievement emotion refers to the emotions that are directly related to academic activities or academic progress [4]. These emotions can be positive (e.g. pride, joy, hope) or negative (e.g. boredom, anger, anxiety), or active (e.g. pleasure, pride, anger) or passive (e.g. shame), experienced in various educational contexts (before, during, and after class, study, or test) [5]. Positive and negative academic achievement emotions can significantly affect education, learning, and performance of students [6]. Positive emotions expand thoughts, foster curiosity, increase communication with others, help better solve issues, and increase the adaptability [7].

In recent years, there has been an increase in analyzing educational situations with an emotional approach in academic settings [5]. According to Pekrun's (2010) model, the effect of emotions in increasing academic skills and empowerment is created by a number of motivational mechanisms including motivation for learning [8]. Academic motivation plays an important role in learning and trigger a person's movement towards behaviors that lead to better learning [9]. Individual and environmental factors have a role in creating academic motivation, and their consideration is especially important [10]. Academic motivation encourages learners to comprehensively evaluate their performance according to the highest standards, to strive for success in performance, to continue learning, and enjoy the pleasure that is associated with success in performance [11, 12]. Academic motivation is related to the level of learning; individuals with high academic motivation have more effort and, thus, achieve more success [13].

According to Faridah et al. higher motivation in learners leads to better academic performance [14]. Academic performance is considered as the basis of success and progress in any educational level [15]. It also reflects the success of educational system in achieving its goals. Academic performance of students is one of the important indicators for assessing the efficiency of educational systems [16]. Therefore, any failure in training of student, especially in medical and paramedical fields such as operating room students (who need clinical training in addition to theoretical education) can have severe consequences for society and public health [17, 18].

In December 2019, the outbreak of a viral disease was reported in Wuhan, China, which was later named COVID-19 [19]. Due to its rapid spread and transmission, the World Health Organization (WHO) declared a global health emergency on February 4. To minimize contact in crowded places, complete lockdown and preventive measures were implemented at local, regional, and national levels [19]. As a result, many students worldwide were prevented from attending schools. Considering the high population of students, the density of classrooms, the use of public and common facilities and spaces in schools, the high probability of virus transmission from this group to the society, the care and control of educational spaces was one of the first measures of the countries [20-22]. Virtual education was thus used to continue education during the COVID-19 pandemic, which caused an unprecedented global disruption in education, particularly for medical education, due to the need for both clinical and theoretical training [22, 23]. The unexpected move to online learning increased stress and anxiety, decreased motivation, and caused dissatisfaction with performance in student [24]. All studies that examined psychological disorders during quarantine reported signs of motivational and emotional disorders such as decreased mood, anger, sadness, loneliness, and reduced attention [23], which can lead to adverse effects on students' academic performance and quality [22, 24]. Cardinas-Flamiano found that the level of academic excitement among students changed during the COVID-19 pandemic and increased after returning to face-to-face learning [25].

In the risky situations such as the COVID-19 pandemic, it is necessary to investigate and identify effective psychological solutions and techniques that can maintain students' achievement emotions and motivations, especially for medical students who also need clinical training, and any failure can have dangerous health consequences. Since most of studies on academic achievement emotions have been conducted in Western countries, and there is no study on Iranian students during the COVID-19 outbreak, this study aims to explore the relationship of academic achievement emotions with academic performance and academic motivation in Iranian operating room students during the pandemic.

Materials and Methods

This is a descriptive-correlational study with a cross-sectional design. Participants were 93 undergraduate students in operating room technology from Iran University of Medical Sciences (31 in the third semester, 32 in the fifth semester, and 30 in the seventh semester). They were selected by a census method. Inclusion criteria were being an undergraduate student in operating room technology at Iran University of Medical Sciences and willingness to participate in the study. Exclusion criteria were unwillingness to continue participation, return of incomplete questionnaires, and semester leave.

The data collection tools were:

The academic motivation scale (AMS)

This tool was designed by Vallerand in 1992, and has 28 items and three dimensions: Intrinsic motivation, extrinsic motivation, and amotivation in education [26]. Data were rated on a five-point Likert scale from 1 (completely disagree) to 5 (completely agree). The face validity was confirmed by the professors from the Faculty of Educational Sciences. The test-retest reliability with a two-week interval was obtained 0.73, and Cronbach's alpha value was obtained 0.88 [27].

Achievement emotions questionnaire (AEQ)

This tool was designed by Pekrun in 2002 [3], and has 51 items measuring eight emotions: Class-related enjoyment, hope, pride, anger, anxiety, shame, hopelessness, and boredom. The items are rated on a 5-point Likert scale from 1 (completely disagree) to 5 (completely agree). In this scale, 36 items are related to negative emotions and 15 are related to positive ones. The total score ranges from 51 to 255, with higher scores indicating higher usage of that emotion. Nikdel et al. [28] validated this questionnaire for Iranian students, reporting Cronbach's α values of 0.75, 0.76, 0.78, 0.74, and 0.84 for class-related enjoyment, hope, anxiety, anger, and boredom, respectively. For the operating room students, its content validity was confirmed by 10 professors (from Tehran University of Medical Sciences, Iran University of Medical Sciences, Kashan University of Medical Sciences, Alborz University of Medical Sciences, Tabriz University of Medical Sciences, and AJA University of Medical Sciences) who reviewed and provided feedback on the questionnaire. The Cronbach's α values for the overall scale was obtained 0.863. For its subscales, Cronbach's α scores were as follows: Anger= 0.712, pride= 0.909, hope= 0.874, class-related enjoyment= 0.744, hopelessness= 0.755, shame= 0.898, anxiety= 0.772, and boredom= 0.906.

Academic performance scale

The grade point average (GTA) of the second semester in the academic year 2021 was used as a measure of academic performance.

The collected data were analyzed in SPSS software, version 22. Descriptive statistics such as frequency, percentage, mean, standard deviation, were used to describe the contextual variables. The relationships between variables were examined using non-parametric tests, including Spearman's correlation test. The significance level was set at 5%.

Results

The mean age of the participants was 21.27±1.85 years, where 56% were female and 44% male. Among participants, 33.3% were in the third semester, 34.4% in the fifth semester, and 32.3% in the seventh semester. Housing conditions showed that 31.2% of the students were living in dormitories and 5.4% at a house without parents, and the majority (n=59, 63.4%) resided at home living with their parents.

The mean total score for AEQ was 157.62±21.39. The highest mean was related to the domain of pride (Mean=28.60), and the lowest was related to hopelessness (Mean=9.55). The mean score for academic performance was reported as 16.74±2.43, and the mean AMS score was 89.38±19.65, with the highest score related to external motivation (Mean=42.42) (Table 1). The normality of data distribution for the variables was examined to determine the use of parametric or non-parametric tests for the research hypotheses. As shown in Table 2, since $P<0.05$ and was significant, the distribution was not normal. Thus, non-parametric tests were used.

We examined the relationship of positive academic emotions (class-related enjoyment, hope, pride) and negative academic emotions (anger, anxiety, hopelessness, shame, boredom) with the subscales of AMS (intrinsic motivation, extrinsic motivation, and amotivation). The findings indicated that positive academic emotions had a direct and significant relationship with positive academic emotions and both intrinsic and extrinsic motivations, and a negative significant relationship with amotivation. On the other hand, negative academic emotions showed an inverse and significant relationship with intrinsic and extrinsic motivations, and a direct significant relationship with amotivation (Table 3).

Table 1. Scores of AEQ, AMS, and GTA in operating room students

Variables	Mean±SD	Min	Max
Class-related enjoyment	25.96±5.21	12.0	40.0
Hopelessness	9.55±3.66	4.0	20.0
Anxiety	22.78±7.51	9.0	45.0
Hope	26.40±5.76	11.0	35.0
Anger	12.31±3.30	4.0	20.0
Boredom	19.33±5.69	6.0	30.0
Shame	12.69±5.04	5.0	25.0
Pride	28.60±6.02	8.0	40.0
Positive emotions	80.95±15.12	31.0	115.0
Negative emotions	76.66±21.03	28.0	140.0
Total AEQ	157.62±21.39	67.0	255.0
GTA	16.74±2.43	10.18	19.87
Intrinsic motivation	39.28±11.10	12.0	59.0
Extrinsic motivation	42.42±11.00	12.0	59.0
Amotivation	7.69±4.31	4.0	20.0
Total AMS	89.38±19.65	28.0	121.0

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Abbreviations: AEQ: Achievement emotions questionnaire; GTA: The grade point average; AMS: The academic motivation scale.

The relationship between academic emotions and academic performance was also examined, whose results showed no significant association of positive or negative academic emotions with students' academic performance (Table 3).

Also, we examined the relationship of demographic variables with academic emotions, academic performance, and academic motivation. The results showed no significant association of age with academic emotions, academic motivation, or academic performance (Table 4). However, gender and academic semester had a significant relationship with academic performance, where higher academic performance was observed in females and in those from higher semesters (Table 5). Furthermore, the results showed that the gender factor was significantly correlated with academic motivation, where women showed higher motivation (Table 5). No significant relationships were found between academic emotions and demographic variables (Table 5).

Discussion

Table 2. Testing the normality of data distribution

Variables	Mean±SD	Kolmogorov-Smirnov Statistic	P
Academic achievement emotions	157.62±21.39	0.093	0.045
Academic performance	16.74±2.43	0.141	<0.001
Academic motivation	89.38±19.65	0.132	<0.001

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Table 3. Testing the relationship between academic achievement emotions, academic performance and academic motivation in operating room students

Variables		Correlation Coefficient	P
Academic performance	Positive academic achievement emotions	0.080	0.446
	Negative academic achievement emotions	-0.111	0.292
Intrinsic academic motivation	Positive academic achievement emotions	0.462	<0.05
	Negative academic achievement emotions	-0.322	0.002
Extrinsic academic motivation	Positive academic achievement emotions	0.341	0.001
	Negative academic achievement emotions	-0.140	0.181
Amotivation in education	Positive academic achievement emotions	-0.551	<0.05
	Positive academic achievement emotions	0.383	<0.05

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Based on the findings of this study, there was a positive and significant relationship between positive emotions and both intrinsic and extrinsic motivations of students, and a negative and significant relationship between negative emotions and academic motivation. These findings are consistent with the results of Villavicencio and Bernardo, who suggested that positive emotions are linked to some motivation-related variables [29]. Our findings are also consistent with the results of Gholamrezainejad (2019)'s study, which reported the significant relationships of intrinsic and extrinsic motivations with both positive and negative academic emotions [30]. Ahmadi et al. (2021) concluded that training courses based on social-emotional skills can increase academic vitality and motivation [31] which is consistent with our findings. The reason for the relationship between academic achievement emotions and academic motivation in operating room students can be due to the fact that positive achievement emotions may act as forces to enhance motivation during the COVID-19 pandemic. Providing solutions to increase positive emotions and reduce negative emotions in college students can increase their motivation and, consequently, improve their academic performance.

Furthermore, our findings indicated no significant relationship between negative academic emotions and academic performance in students, which is consistent with Hayat [5] results, who reported no significant correlation between negative emotions (such as anger, anxiety, hopelessness, shame, and boredom) and academic performance of students at Shiraz University of Medical Sciences [5]. Some studies such as conducted by Daniels and Stupnisky [32] suggested that boredom negatively affects academic performance, while Cocoradă (2016) found no significant relationship of anxiety and shame with academic performance [33].

Our findings showed no significant relationship between positive academic emotions and academic performance in students. This finding is against the results of Pekrun (2006), who reported that positive emotions such as class-related enjoyment, hope, and pride facilitate learning, increase motivation, and improve performance

Table 4. Testing the relationship of age with academic motivation, academic performance and academic achievement emotions in operating room students

Variables	Age	
	Correlation Coefficient	P
Academic performance	0.022	0.832
Academic motivation	0.034	0.744
Academic achievement emotions	-0.13	0.905

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Table 5. The relationship between demographic variables and performance, excitement and academic motivation of undergraduate students of operating room technology

Variables	Demographic Variable	No.	Mean Rank	Test Statistics	P
Academic performance	Gender: Female	50	54.71	U=589.50*	0.001
	Gender: Male	41	35.38		
	Semester: 3	31	29.48	H=27.027**	<0.001
	Semester: 5	32	64.81		
	Semester: 7	30	46.10		
	Place of life: Living in dormitory	29	49.57	H=1.465**	0.481
	Place of life: Living with parents	59	44.81		
	Place of life: Living without parents	5	57.90		
Academic motivation	Gender: Female	50	55.58	U=546.0*	<0.001
	Gender: Male	41	34.32		
	Semester: 3	31	45.24	H=0.627**	0.731
	Semester: 5	32	45.70		
	Semester: 7	30	50.20		
	Place of life: Living in dormitory	29	49.33	H=2.688**	0.261
	Place of life: Living with parents	59	44.43		
	Place of life: Living without parents	5	63.80		
Academic achievement emotions	Gender: Female	50	46.30	U=1010*	0.905
	Gender: Male	41	45.63		
	Semester: 3	31	53.44	H=4**	0.135
	Semester: 5	32	47.64		
	Semester: 7	30	39.67		
	Place of life: Living in dormitory	29	46.50	H=2.062**	0.357
	Place of life: Living with parents	59	45.82	H=2.062**	0.357
	Place of life: Living without parents	5	63.80		

*Mann–Whitney U test; **Kruskal–Wallis test

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[34]. Cocoradă (2016) concluded that the academic positive emotions such as class-related enjoyment, hope, and pride are positively and significantly correlated with academic performance [33] which is not consistent with our results. The discrepancy may be due to differences in the study duration, study population, or the existing conditions in the university.

Moreover, the results of the current study showed a significant relationship between gender and academic performance of students, where females showed better academic performance. This finding is consistent with the results of Keyvanara [35], Peltzer et al. [36], and Ebadi et al. [37]. Therefore, female students seem to be more able to cope with crises and have higher resilience during the pandemics. In this study, we found a significant relationship between academic semester and aca-

demic performance. This may be because first-semester students take more courses compared to those in higher semesters, who receive courses theoretically and virtually (Table 5).

The results indicated a significant relationship between gender and academic motivation, where female students showed higher motivation compared to males, which is consistent with the results of Rouhi et al. [38], Izadi et al. [39], and Tamnnaifar [40]. Women in Iran are often housekeeper with no financial independence. Maybe the reason for the higher academic motivation among female students is their tendency for higher social participation, employment, and financial independence. Considering the availability of job opportunities in the field of operating room technology, this could be a motive for them to pursuit education. One limitation of this study was the unwillingness of some students to complete the questionnaires, which was mitigated by ensuring them of the confidentiality of their information.

Conclusion

Academic emotions have a significant correlation with academic motivation in operating room students indicating the importance of increasing positive academic emotions of students to enhance their motivation and their academic performance should be strengthened during pandemics using other methods along with virtual education. The educational programs for copying skills, academic motivation, emotion control, self-management skills are also recommended to increase the academic emotions of operating room students. Moreover, providing training on finding effective strategies and counseling to professors, along with talent search programs, can help them to use better methods in designing, planning, and implementing educational courses during pandemics. Future studies are recommended to investigate the effect of teaching methods for increasing positive academic emotions on the academic motivation of operating room students. Furthermore, it is recommended to develope a structural equation model to examine the role of academic stressors in resilience, motivation, and academic burnout in operating room students.

Ethical Considerations

Compliance with ethical guidelines

This study has ethical approval from the ethics committee of Iran University of Medical Sciences (Code: IR.IUMS.REC.1401.145).

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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References

[1] Kohoulat N, Hayat AA, Dehghani MR, Kojuri J, Amini M. Medical students' academic emotions: The role of perceived learning environment. J Adv Med Educ Prof. 2017; 5(2):78-83. [PMID]

[2] Bachari SS, Afra A, Ban M, Darari F, Shahrokhi Sh. [Relationship between self-efficacy and academic motivation in the operating room students (Persian)]. Educ Strategy Med Sci. 2022; 14(6):405-12. [Link]

[3] Pekrun R, Goetz T, Titz W, Perry RP. Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. Educ Psychol. 2002; 37(2):91-105. [DOI:10.1207/S15326985EP3702_4]

[4] Pekrun R, Elliot AJ, Maier MA. Achievement goals and achievement emotions: Testing a model of their joint relations with academic performance. J Educ Psychol. 2009; 101(1):115-35. [DOI:10.1037/a0013383]

[5] Hayat A, Esmi K, Rezaei R, Nabiee P. [The relationship between academic emotions and academic performance of medical students of Shiraz University of Medical Sciences (Persian)]. Res Med Educ. 2017; 9(4):20-9. [DOI:10.29252/rme.9.4.29]

[6] Schutz PA, Pekrun R. Emotion in education. Massachusetts: Elsevier Academic Press; 2007. [Link]

[7] Hasanzade Sh, Zahid Bablan A, Ghasempoor A. [The role of forgiveness and psychological toughness in predicting hope (Persian)]. Knowl Res Appl Psychol. 2017; 12(3):12-9. [Link]

[8] Pekrun R, Goetz T, Frenzel AC, Barchfeld P, Perry RP. Measuring emotions in students' learning and performance: The Achievement Emotions Questionnaire (AEQ). Contemp Educ Psychol. 2011; 36(1):36-48. [DOI:10.1016/j.cedpsych.2010.10.002]

[9] Alaei KR, Narimani M, Alaei KS. [A comparison of self-efficacy beliefs and achievement motivation in students with and without learning disability (Persian)]. J Learn Disabil. 2012; 1(3):85-104. [Link]

[10] Ghorbaninia R, Izadi F. [The relationship of academic achievement motivation with emotional intelligence and quality of life of university students (Persian)]. J Health Based Res. 2017; 3(3):297-307. [Link]

[11] Kordloo A, Behrangi MR. [The effect of intellectual scaffolding on educational management in the application of new educational technologies on academic motivation and academic achievement in science courses for female students in the fifth grade of elementary school (Persian)]. Manag Educ Perspect. 2020; 2(1):19-33. [Link]

[12] Duchesne S, McMaugh A. Educational psychology for learning and teaching. Melbourne: Cengage Learning Australia; 2018. [Link]

[13] Saif AA. [Educational psychology (Psychology of Learning and Teaching) (Persian)]. Tehran: Publishing Institute of Agah; 2002. [Link]

[14] Faridah I, Sari FR, Wahyuningsih T, Oganda FP, Rahardja U. Effect digital learning on student motivation during covid-19. Paper presented at: 8th International Conference on Cyber and IT Service Management (CITSM). 23-24 October 2020; Pangkal, Indonesia. [DOI:10.1109/CITSM50537.2020.9268843]

[15] Byrne ZS, Mueller-Hanson RA, Cardador JM, Thornton III GC, Schuler H, Frintrup A, et al. Measuring achievement motivation: Tests of equivalency for English, German, and Israeli versions of the achievement motivation inventory. Pers Individ Dif. 2004; 37(1):203-17. [DOI:10.1016/j.paid.2003.08.012]

[16] Khadivi A, Madadinia R, Hazratian T. [Investigating the relationship between emotional intelligence and academic performance of graduate students of Tabriz University of Medical Sciences (Persian)]. J Psychol Sci. 2021; 20(99):405-12. [Link]

[17] Singh K, Srivastav S, Bhardwaj A, Dixit A, Misra S. Medical education during the COVID-19 pandemic: A single institution experience. Indian Pediatr. 2020; 57(7):678-9. [DOI:10.1007/s13312-020-1899-2] [PMID]

[18] Heshmati H, Darvishpour K. [Effective factors in clinical education quality from the viewpoints of operation room and anesthesiology students in Torbat Heydarieh University of Medical Sciences (Persian)]. Iran J Med Educ. 2015; 15:601-12. [Link]

[19] Rasmitadila R, Aliyyah RR, Rachmadtullah R, Samsudin A, Syaodih E, Nurtanto M, et al. The perceptions of primary school teachers of online learning during the COVID-19 pandemic period: A case study in Indonesia. J Ethnic Cult Stud. 2020; 7(2):90-109. [DOI:10.29333/ejecs/388]

[20] Sahu P. Closure of universities due to coronavirus disease 2019 (COVID-19): Impact on education and mental health of students and academic staff. Cureus. 2020; 12(4):e7541. [DOI:10.7759/cureus.7541]

[21] Salimi S, Fardin MA. [The role of corona virus in virtual education, with an emphasis on opportunities and challenges (Persian)]. Res sch virtual learn. 2020; 8(2):49-60. [Link]

[22] Ahmadi SM, Sadoughi M, Gilakjani A. [Online education during covid-19: Applying emotional intelligence strategies to deal with academic stress in students. J N Res Approaches Manag Account. 2022; 5(19):1683-700. [Link]

[23] Angdhiri RP. Challenges of home learning during a pandemic through the eyes of a student. Jakarta. 2020. [Link]

[24] Grunschel C, Patrzek J, Fries S. Exploring different types of academic delayers: A latent profile analysis. Learn Individ Differ. 2013; 23:225-33. [DOI:10.1016/j.lindif.2012.09.014]

[25] Cardinas-Flamiano BGA. Return to complete face to face learning: Level of students' academic excitement and challenges. Asian J Res Educ Soc Sci. 2022; 4(1):317-27. [Link]

[26] Vallerand RJ, Pelletier LG, Blais MR, Briere NM, Senecal C, Vallieres EF. The Academic Motivation Scale: A measure of intrinsic, extrinsic, and amotivation in education. Educ Psychol Meas. 1992; 52(4):1003-17. [DOI:10.1177/0013164492052004025]

[27] Bahrani M. [A study of secondary students' academic motivation and the predictive factors (Persian)]. Journal of Social Sciences and Humanities, Shiraz University. 2005; 22(4):104-15. [Link]

[28] Nikdel F, Kadivar P, Farzad V, Arabzade M, Kavousian J. [The relationship between academic self-concept, positive and negative academic emotions and self-directed learning (Persian)]. Applied Psychology. 2012; 6(2): 103-19. [Link]

[29] Villavicencio FT, Bernardo AB. Positive academic emotions moderate the relationship between self-regulation and academic achievement. Br J Educ Psychol. 2013; 83(Pt 2):329-40. [DOI:10.1111/j.2044-8279.2012.02064.x] [PMID]

[30] Gholamrezainejad M. [Investigating the relationship between academic excitement, learning strategies and motivation to progress in the second year high school students of Anar city (Persian)] [MA thesis]. Kerman: slamic Azad University, Anar Branch; 2018. [Link]

[31] Ahmadi R, Azmodeh M. [Compare the effectiveness of motivational self-regulatory skills training and emotional-social skills training on academic buoyancy, resilience and academic engagement in junior high school students with low academic performance in the Fifth District of Tabriz (Persian)]. Journal of Instruction and Evaluation. 2021; 14(53):61-92. [Link]

[32] Daniels LM, Stupnisky RH. Not that different in theory: Discussing the control-value theory of emotions in online learning environments. The Internet and Higher Education. 2012; 15(3):222-6. [DOI:10.1016/j.iheduc.2012.04.002]

[33] Cocoradă E. Achievement emotions and performance among university students. Bull Transilvania Univ Braşov Series VII Soc Sci Law. 2016; 9(2-Suppl):119-28. [Link]

[34] Pekrun R. The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. Educ Psychol Rev. 2006; 18(4):315-41. [DOI:10.1007/s10648-006-9029-9]

[35] Keyvanara M, Hosseini M, Naderi B. [Investigation of the relationship between academic performance of students at Isfahan University of Medical Sciences with demographic, academic and statistics education factors (Persian)]. Dev Strategies Med Educ. 2018; 5 (2):13-21. [Link]

[36] Peltzer K, Malaka DW, Phaswana N. Sociodemographic factors, religiosity, academic performance, and substance use among first-year university students in South Africa. Psychol Rep. 2002; 91(1):105-13. [DOI:10.2466/pr0.2002.91.1.105] [PMID]

[37] Ebadi Fard F, Ahmdi A, Roudbari M. [Associated factors with academic excellence among Medical Students of Iran University of Medical Sciences: Educational year 2009-2010 (Persian)]. Teb va Tazkie. 2010; 19(3):37-48. [Link]

[38] Rouhi G, Hoseini SA, Badeleh MT, Rahmani H. [Educational motivation and its relationship with some factors among the students of Golestan University of Medical Sciences (Persian)]. Strides Dev Med Educ. 2008; 4(2):77-83. [Link]

[39] Izadi S, Jouybari L, Behnampoor N, Taghavi A, Baiky F. [Academic motivation and associated factors of the Golestan University of Medical Sciences (Persian)]. Dev Strategies Med Educ. 2014; 1(2):44-50. [Link]

[40] Tamannaifar MR, Gandomi Z. [Correlation between achievement motivation and academic achievement in university students (Persian)]. Educ Strategy Med Sci. 2011; 4(1):15-9. [Link]

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