To Compare the Effect of Competitive and Non-Competitive Environment On Academic Performance in Medical Students

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Abstract

Objectives: To compare the effect of competitive and non-competitive environment on academic progress of students, to assess the effect of competitive environment on motivation levels, anxiety levels and learning strategies of students.

Methods: This is a cross-sectional study. In this, we assigned target to all the students in one exam (Module 2 Pathology) to create competitive environment. For a non-competitive environment, no target was assigned and students gave their exam (Module 1 Pathology) without any target. The results were taken by informed consent of students. The whole procedure was explained efficiently to the students. To keep the results accurate students were unaware about the non-competitive environment.

Results: We found that students performed academically better in competitive environment rather than in non-competitive environment. Positive correlation was found between competitive environment and exam results. We also found positive correlation between motivation and learning strategy and compared them between boys and girls. We also found correlation between sleep hours, study hours and academic progress in competitive environment.

Conclusion: Competitive environment in institutes is good for better and improved academic performance. However, it effects the motivation level, anxiety level and learning strategy of students.

Keywords: competitive environment, non-competitive environment, academic progress, motivation levels, anxiety levels, learning strategy.

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Introduction

Including competition in any environment causes the change of behavior and people tend to become more focused. Competitive learning is when students prepare for exam keeping a target in mind. Competitive environment may enhance student's motivation or may increase their attention towards their goal, to win from others, to improve their learning strategies. It may have a negative aspect that probably it causes participants to focus more on competition than the quality of learning and students may get anxiety attacks or become stressed.

Previously, in a study the effect of cross-lagged study on student's motivation, academic achievement and relation with teachers was observed (Majolein et al, 2020).[1] Student's task motivation and relation with teacher was observed via models of student-teacher interaction. It was found that student's motivation and its relation with teacher has better impact on academic grades. In another research, the relation between student's satisfaction and academic progress was analyzed (Mahad and nor Abdulle, 2016)[2]. Some other factors effecting the academics were also explored. It was found that

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student's satisfaction has positive impact on academics. Another research was conducted to find out the factors effecting the student's performance (Irfan and Shabana 2012).[3] The main aim was to correlate the communication approach, facilities, guidance and family stress. It was concluded that all these factors have impact on performance of students. In another research, the effect of team based learning on academic results were analyzed (Koles et al, 2010).[4] The effect of participation in TBL on academics was analyzed. Also it was determined that TBL whether increases or decreases the performance. In another research, the effect of teaching methodology on academics was observed. (Hinojo Lucena, 2020).[5] In that study, students mark sheets were analyzed. It was observed that student-teacher interaction method was most effective. In another research, it was investigated whether the competition is useful to promote performance or not. (Frank C Worrel et al, 2016).[6] The relation between competition and performance was analyzed. The effect of competition on psychology, performance and creativity was observed. In another research, the relation between academic performance and motivation was observed on medical students (Blašková M et al, 2019)7 It was observed that competition and tasks used as motivational source shows better results.

Materials and Method

This was a cross sectional comparative study. The research was conducted in CMH LMC & IOD. Duration of research was: December 2020 – March 2021. Participants were undergraduate medical students of CMH LMC & IOD. All the undergraduate medical students were selected currently studying in CMH LMC & IOD. Only those were included who gave written consent to use their results for this research purpose. Convenient sampling technique was used. The formula used for calculating sample size was N= [(Zα/2+Zβ)22 (Sd)2]/ (μ1- μ2)2. The sample size calculated was 137. Sleep hours were calculated by question form filled by participants along with consent form. Informed consent was taken. Data was collected by mark sheets of students who gave their consent. In this, we assigned target to all the students in one exam (Module 2 Pathology) to create competitive environment. For non-competitive environment, no target was assigned and students gave their exam (Module 1 Pathology) without any target and then we compared the results of both modules. The data was analyzed by using SPSS25. Test of normality was performed. Mann Whitney test was applied. Results were expressed as mean±SD. Correlations were also found.

Results

We found the mean of both results of the pathology module1 and module 2 examinations, which were 49.9 and 54.9 respectively. A positive correlation was found between the competitive environment and the results.

Table 1: *Statistics 1*

Biostats	Module 1	Module 2
Mean	49.99	54.93
Std. Deviation	16.605	14.624

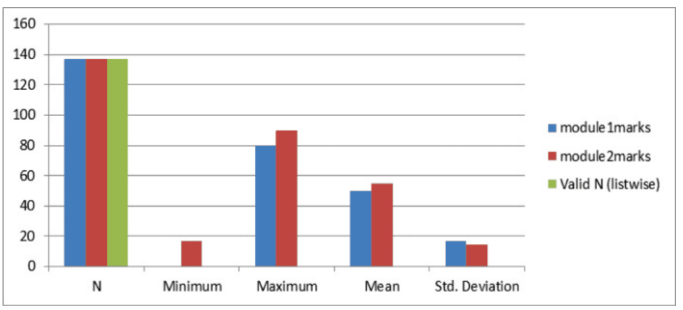

Table 2: *Correlations 1*

Correlation variable	gender		Yes/no	Yes/no	Yes/no
Motivation level	Male, female	correlation	1.00	0.423	0.070
		significance	.	0.00	0.421
Learning strategy	Male, female	correlation	0.423	1.000	0.018
		significance	.000	.	0.836
Anxiety attacks	Male, female	correlation	0.070	0.018	1.000
		significance	0.421	0.836	.

Table 3: *Correlations 2*

		Module 2 marks	Study hours	Module 2 marks	Sleep hours
Module 2 marks	Correlation	1	0.154	1	-0.082
	Significance		0.072		0.338
Study/sleep hours	correlation	0.154	1	-0.082	1
	Significance	0.072		0.338	

Also, positive correlation was found between motivation and learning strategy, as shown in correlation 1. It was found that a competitive environment enhances the motivation level, learning strategy and anxiety levels of students. Girls had higher motivation levels than boys. It was also seen that girls had improved learning strategies. However, they got more anxiety attacks shown by correlation 1. In correlation 2, we found a relation between the results of the competitive environment with sleep hours and study hours. Students with fewer sleep hours and more study hours had a better academic performance.

Discussion

By setting a target and by creating the competitive environment, the academic performance of students got better as the mean of module 2 was more than module 1 which showed that competitive environment had positive impact on academics (as shown by Statstics1)

A research of[8] Alfredo Corell et al, 2018, is consistent with ours. It was found that results of competitive group were higher than control group students. Competitive learning improved their results. It was found that competitive environment also enhances the motivation level, learning strategy and anxiety level of students. It was seen that girls had higher motivation levels than boys. It was also seen that girls had enhanced learning strategies and also got more anxiety attacks than boys (As shown by Correlation 1). A research of[9] Mimi Bong, 2005 is consistent with ours. In that research it was found that Korean school girls have more motivation level in learning environment. In another research of[10] Andrew J Martin,2003, it was found that girls score more than boys and have more learning focus and study management. It was found that study hours and sleep hours were also affected by competitive environment and had effect on academics. Students with fewer sleep hours and more study hours had better academic results. (As shown by Correlations 2) A research of[11] Andrew J Howell et al, 2004, showed that sleep quality and sleep propensity have effect on student's GPA. Students with poor sleep quality performed less well. Another research of[12] Megan L Zeek et al, 2015, showed that sleep hours were positively associated with grades. By the correlations 1, we found that relation between motivation, learning strategy and anxiety was significant whereas the relation between anxiety and learning strategy was not significant which meant although anxiety levels were high but it had no effect on learning outcomes.

Conclusion

The competitive environment in institutes is good for better and improved academic performance. However, it enhances student's motivation, anxiety and learning strategy. Having fewer sleep hours and more study hours results in better academic performance.

Conflict of Interest *None*

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References

1. Zee M, Rudasill KM, Bosman RJ. A cross-lagged study of students' motivation, academic achievement, and relationships with teachers from kindergarten to 6th grade. Journal of Educational Psychology. 2021 Aug; 113(6):1208.
2. Dhaqane MK, Afrah NA. Satisfaction of Students and Academic Performance in Benadir University. Journal of Education and Practice. 2016;7(24):59-63.
3. Beltrán-Velasco AI, Ruisoto-Palomera P, Bellido-Esteban A, García-Mateos M, Clemente-Suárez VJ. Analysis of psychophysiological stress response in higher education students undergoing clinical practice evaluation. Journal of medical systems. 2019 Mar;43(3):1-7.
4. Burgess A, van Diggele C, Roberts C, Mellis C. Team-based learning: design, facilitation and participation. BMC Medical education. 2020 Dec;20(2):1-7.
5. Hinojo Lucena FJ, López Belmonte J, Fuentes Cabrera A, Trujillo Torres JM, Pozo Sánchez S. Academic effects of the use of flipped learning in physical education. International journal of environmental research and public health. 2020 Jan;17(1):276.
6. Worrell FC, Knotek SE, Plucker JA, Portenga S, Simonton DK, Olszewski-Kubilius P, Schultz SR, Subotnik RF. Competition's role in developing psychological strength and outstanding performance. Review of General Psychology. 2016 Sep;20(3):259-71.
7. Blašková M, Majchrzak-Lepczyk J, Hriníková D, Blaško R. Sustainable academic motivation. Sustainability. 2019 Oct 25;11(21):5934.
8. Corell A, Regueras LM, Verdú E, Verdú MJ, de Castro JP. Effects of competitive learning tools on medical students: A case study. PLoS One. 2018 Mar 8;13(3): e0194096.

9. Urdan T, Kaplan A. The origins, evolution, and future directions of achievement goal theory. Contemporary Educational Psychology. 2020 Apr 1; 61:101862.
10. Scarparolo G, MacKinnon S. Student voice as part of differentiated instruction: students' perspectives. Educational Review. 2022 Mar 24:1-8.
11. Chen WL, Chen JH. Consequences of inadequate sleep during the college years: Sleep deprivation, grade point average, and college graduation. Preventive medicine. 2019 Jul 1; 124:23-8.
12. Ball L, Costa D, Jinah R, Ogorek C, Pritchard J. Exploring a Correlation between Quality of Sleep and Smoking Behaviour amongst Canadian Adolescent Youth in Grades 9-12 through a Cross-sectional Design. STATistical applications for undergraduate research exploration. 2021 Apr:44-62.

Authors Contribution

ANK: Conceptualization of Project
NN: Data Collection
NN: Literature Search
BN: Statistical Analysis
HAC: Drafting, Revision
HAC: Writing of Manuscript