ORIGINAL ARTICLE

The Condition of Learning styles, Student Engagement and its Relationship with Academic Progress in Birjand University of Medical Sciences

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Introduction: Students' academic progress in the universities of medical sciences and its related factors is one of the priorities of researches in education. Learning styles and student engagement are the influential factors of this variable. Therefore, the purpose of the present study was to investigate the condition of learning styles and student engagement and its relationship with academic progress.

Method: This is a descriptive and analytical study. Based on Cochran's sample size formula, the study population included 292 students of the university that were selected via stratified random sampling method. The Student Engagement in Schools Questionnaire (SESQ) by Fredricks et al. (2004) and The Grasha-Riechmann Student Learning Styles Scale (GRSLSS) (Grasha, 1996) were used to gather the data. SPSS 18 was used to analyze the data; moreover, independent t-test and Spearman's multiple regression analyzed at a significant level (0.05).

Findings: 186 students out of 292 were female and 106963.7%) of them were male (36.3%). The findings indicated that the students preferred the following learning styles: avoiding, competitive, participatory, independence, cooperation and dependent styles, respectively. Furthermore, there is a significant relationship (p<0.05) between learning styles and student engagement with academic achievement.

Conclusion: In accordance with the findings of the study, it is suggested that the students become aware of the different learning styles so that they can find their own appropriate learning style. Furthermore, it is recommended that teachers pay attention to learning styles and the enhancement of students' engagement while teaching.

Key words: learning styles, students engagement, academic progress

دراسة اساليب التعلم و الإقبال الدراسي لدى الطلاب و ارتباط هذا الامر مع التطور الأكاديمي في جامعة بيرجند للعلوم الطبيه

المقدمه و الهدف : إن التطور الأكاديمي لدى الطلاب في جامعات العلوم الطبيه و العوامل المرتبطه بها هي من اولويات البحث في التعليم . من العوامل الموثرة على هذا المتغير الاساليب التعليميه و الإقبال الدراسي عند الطلاب . بناء على هذا الهدف إن الهدف من هذه الدراسه هو البحث في أساليب التعلم و الإقبال الدراسي لدى الطلاب و ارتباط هذا الامر مع التطور الأكاديمي في جامعة بيرجند للعلوم الطبيه.

الأسلوب : إن هذه الدراسه هي دراسه توصيفيه تحليليه . تم اختيار الاشخاص عبر معادلة كوكران ٢٩٢ شخص من طلاب الجامعه . تم تجميع المعلومات بواسطة استمارات الإقبال الدراسي فريدريكز و مساعده ٢٠٠٤ و أساليب التعلم گراشا-ريشمن ١٩٩٦ . تم إستخدام برنامج SPSS18 و إختبار T المستقل . و تحليل ركرسيون ذو عده متغيرات اسبرمن على مستوى ذو معنى ٠.٠٥.

النتائج : من بين ٢٩٢ طالب كان هناك ١٩٦ طالب اى ٧.٦٣% من الإناث و ١٠٦ من الطلبه اى ٣.٣٦% من الذكور . اشارت النتائج إلى أن الطلاب يفضلون اساليب التعلم حسب الترتيب التالي : الفردي. التنافسي . الإشتراكي . المستقل . التعاوني. و ايضا كان هناك ارتباط ذو قيمه بين الأساليب التعليميه و الإقبال الدراسي و التطور الأكاديمي عند الطلاب P>0.05 .

الاستنتاج: نظرا الى النتائج نوصي بتثقيف الطلاب في مجال أساليب التعلم حتى يتسنى لهم اختيار اسلوب التعلم المناسب . و ايضا يوصي الاساتذه اثناء التدريس إلى إيلاء النظر إتجاه اساليب التعلم و رفع مستوى الاقبال الدراسي.

الكلمات المفتاح : أساليب التعلم – الاقبال الدراسي – النجاح الأكاديمي .

وضعیت سبک های یادگیری و اشتیاق تحصیلی دانشجویان و ارتباط آن با پیشرفت آکادمیک در دانشگاه علوم پزشکی، بیرجند

مقدمه و هدف: پیشرفت آکادمیک دانشجویان دانشگاه‌های علوم پزشکی و عوامل مرتبط با آن، از اولویت‌های پژوهش در آموزش محسوب می شود. از عوامل تاثیر گذار بر این متغیر، سبک های یادگیری و اشتیاق تحصیلی دانشجویان می باشد. لذا هدف مطالعه حاضر بررسی وضعیت سبک های یادگیری و اشتیاق تحصیلی دانشجویان و ارتباط اینها با پیشرفت آکادمیک بود.

روش: این مطالعه، یک مطالعه توصیفی- تحلیلی است. جامعه مورد بررسی تمام دانشجویان دانشگاه که بر اساس فرمول کوکران ۲۹۲ نفر برآورد و با استفاده از روش نمونه‌گیری تصادفی- طبقه ای انتخاب شدند، بودند. برای جمع آوری داده ها از پرسشنامه اشتیاق تحصیلی فردریکز و همکاران(۲۰۰۴) و سبک‌های یادگیری گراشا – ریچمن (گراشا، ۱۹۹۶) استفاده شد. برای تحلیل نتایج از نرم افزار spss18 و از آزمون های آزمونt مستقل و تحلیل رگرسیون چندمتغیره – اسپیرمن در سطح معنی‌داری ۰/۰۵ تجزیه و تحلیل شدند.

نتایج: از بین ۲۹۲ دانشجوی مورد مطالعه، ۱۸۶ نفر (۶۳/۷٪) دختر و ۱۰۶ نفر (۳۶/۳٪)پسر بودند. یافته‌ها نشان داد که دانشجویان به ترتیب از سبک‌های یادگیری، اجتنابی، رقابتی، مشارکتی، مستقل، همکاری کننده، وابسته را ترجیح می‌دهند. همچنین بین سبک های یادگیری و اشتیاق تحصیلی با پیشرفت آکادمیک دانشجویان رابطه معناداری وجود داشت (p<۰/۰۵).

نتیجه گیری: با توجه به نتایج پیشنهاد می گردد دانشجویان در مورد انواع سبک‌های یادگیری آگاهی داشته تا بتوانند سبک یادگیری متناسب با خود را کشف کنند .همچنین اساتید در هنگام تدریس، به سبک‌های یادگیری و افزایش اشتیاق تحصیلی دانشجویان توجه داشته باشند.

واژگان کلیدی: سبک‌های یادگیری، اشتیاق تحصیلی، موفقیت آکادمیک

بیرجند یونیورسٹی میں تعلیمی طریقے اور پڑھائی میں طلباء کی اشتیاق اور اکیڈمیک ترقی سے اس کا تعلق

بیک گراونڈ: میڈیکل یونیورسٹیوں کے طلباء کی اکیڈمیک پیشرفت اور اس سے متعلق تعلیمی سرگرمیوں پر تحقیقات میں اولیت رکھتی ہیں۔ طلباء کی تعلیم میں پیشرفت پر اثرا انداز ہونے والے عوامل میں تعلیم کے طریقے اور طلباء کا اشتیاق اور ذوق بنیادی حیثیت رکھتا ہے۔ اس تحقیق کا ہدف اکیڈمیک پیشرفت میں تعلیم کے طریقوں اور طلباء کے ذوق اور شوق کا جائزہ لیا گیا ہے۔

روش: یہ ایک تجزیاتی تحقیق ہے۔اس تحقیق مین دو سو بانوے طلباء نے شرکت کی تھی۔ ان کا انتخاب رینڈم طریقے سے کیا گیا تھا۔ ان کو سوالنامہ دیا گیا تھا جن کے جوابات کا تجزیہ فریڈریک اینڈ فرینڈز اور لیرننگ ویز گراشا سے سوالنامہ تیار کیا گیا تھا۔ نتائج کا تجزیہ ایس پی ایس ایس اٹھارہ اور ٹی ٹسٹ اور ملٹی ڈائمنشنل ریگریشن اسپیرمن سے کیا گیا۔

نتیجے: دو سو بانوے طلباء میں سے ایک سو چھیاسی لڑکیاں تھیں اور ایک سو چھے لڑکے تھے۔ اس تحقیق سے پتہ چلتا ہے کہ طلباء نے تعلیم کی متعدد روشوں سے استفادہ کیا ہے اور تعلیمی طریقوں اور طلباء کے اشتیاق میں معنی دار فرق تھا۔

سفارش: ان نتائج کے پیش نظر یہ سفارش کی جاتی ہے کہ طلباء کو تعلیم کے طریقوں سے آگاہی دی جائے تا کہ وہ اپنے ذوق کے مطابق تعلیمی روش اختیار کریں، اس کےعلاوہ اساتذہ تدریس کے موقع پر مفید تعلیمی روشوں اور طلباء کو اشتیاق دلانے پر توجہ رکھیں۔

کلیدی الفاظ: تعلیمی روشیں، تعلیم کا اشتیاق اور اکیڈمیک کامیابی۔

INTRODUCTION

The students are the intellectual capital of countries. The most crucial purposes of educational programmers are to investigate special issues of students, academic achievement and provide mental and physical health of students. (1) Accordingly, one of the purposes of the universities is to upgrade the quality of education and academic progress of the students. (2) Ineffective learning and academic progress results in economic losses, frustration, and loss of self-confidence, humiliation, depression while the talents and capabilities of the individuals do not flourish. (3)

Therefore, academic progress is the main concern of teachers, university authorities and students' families (4). The purpose of education is to make progress in academic domains (5). Analyzing factors that influence academic progress is a multidimensional issue that depends on social, political, cultural, cognitive and emotional development. Many researchers have insisted on the impact of mental and cognitive abilities on academic progress, however, it should be noted that mental abilities are not the only influential factor for academic progress, and other factors such as engagement could be influential (6).

Different factors influence students' academic progress. Learning styles are one of these factors that could have an impact on the process of learning. Learning style is a distinctive and behavioral habit to gain knowledge or feedbacks that could be achieved by study or experience, or it is a method that learners prefer in comparison with other styles (7).

Consequently, learning is the process of receiving and processing data that is not similar in different individuals. Actually, the pace of learning and rate of academic progress is not similar in different learners (8). Therefore, students have different learning styles due to personal traits. Their thinking process is different in accordance with their attempt for learning and they have special learning preferences. These differences influence learning process of the students. In total, the learning features determine the rate of learning among students (9).

It could be stated that all amazing advancement of human being is the result of learning. Teaching responsibility and the upgrade of learning is the main focus of all educational institutes. The validity of an educational system is dependent on the rate learning of the students (10). Another influential factor in the academic progress is student engagement. Engagement is not only a special and transient emotional state. It refers to an emotional-cognitive state that is steady and focuses on a special event, behavior or topic (11).

Consequently, engagement refers to learning and academic progress behaviors (12). This term refers to the efforts made by learners for purposeful educational activities in order to gain satisfying results (13). The concept of engagement offers three dimensions, including behavioral, affective and cognitive (14).

Cognitive engagement includes the application of cognitive and metacognitive strategies in learning. Affective engagement has three elements, including feeling, value and

emotion, it includes the like of educational environment and university activities. Behavioral engagement is the active participation in educational environment with eagerness (15).

Mohammadi and his colleagues (16) stated that the impact of teaching method on students' educational development is adjusted by learning styles. Several studies have been conducted on learning styles, including the study of Kassim (17), in which, the positive impact of learning styles on students' educational development is investigated. Furthermore, the findings of Martin et al. (18) presented that the students who have cognitive and affective engagement in learning are keener on learning and spend enough time to complete their assignments in comparison with the students who have lower levels of cognitive and affective engagement.

In addition, the research of Hejazi and his colleagues (19) indicated that there is a significant relationship between engagement and performance. Furthermore, Abedi (20) showed that academic self-efficacy, academic self-concept, attitude towards learning, and perception of eligibility, self-esteem, self-regulated learning and goal orientation are the most important personal elements associated with student engagement and motivation. Regarding the importance of learning styles and engagement in order to achieve academic success, the current study aimed to investigate the condition of learning styles and student engagement and its relationship with academic progress in Birjand University of Medical Sciences.

METHODS

This is a descriptive and analytical study. The study population is the students of Birjand University of Medical Sciences. Based on Cochran's sample size formula, the study population included 292 students of the university that were selected via stratified random sampling method. All of the students that had GPA and were studying in the second semester entered the study. The students who did not have the total average were excluded from the study. The Student Engagement in Schools Questionnaire (SESQ) by Fredricks et al. (2004) and The Grasha-Riechmann Student Learning Styles Scale (GRSLSS) (Grasha, 1996) were used to gather the data.

A) The Grasha-Riechmann Student Learning Styles Scale (GRSLSS): The questionnaire had 60 items and six sub-scale, each scale had ten items. The questions should be answered with self-reporting style and were scored based on a Likert scale (1= totally disagree and 5= totally agree). The score of the participants was counted for each of them for six different learning styles, including: avoiding, competitive, participatory, independence, cooperation and dependent. The validity of the questionnaire was assessed and confirmed by teachers of medical education and curriculum programmers in ED. The reliability was evaluated by Cronbach's alpha. Alpha coefficients of the scales of learning styles, including independent, dependent, and participatory, competition, cooperation, and avoiding were 0.69, 0.64, 0.80, 0.66, 0.69, and 0.72, respectively, which represents the appropriate reliability of the questionnaire. Furthermore, the reliability was _____

evaluated by Cronbach's alpha 78%.

This scale is created by Fredricks and his colleagues (21) and has fifteen items that evaluate three sub-scales, including behavioral, affective, and cognitive engagement. The answer of each item is scored from 1 to 5 that includes "never" to "at all times". The designers of the scale have reported 86% reliability coefficient for this scale. Determining the validity of the questionnaire, content validity was conducted. The questionnaire was distributed among teachers of medical education and curriculum programmers in EDC and they confirmed the validity. Furthermore, the reliability is evaluated by Cronbach's alpha 82%.

Table 1. Frequency distribution of participants' personal traits

variable	Dimensions	Frequency	Percentage
Gender	Female	186	63.7
	Male	106	36.3
Degree	Associate Degree	5	1.7
	BS	201	68.8
	MSc	7	2.4
	General practitioner	79	27.1
School	Nursing	68	23.3
	Hygiene	60	20.5
	Paramedical	83	28.4
	Medicine	81	27.7
Marital Status	single	228	78.1

Table 2. Mean and standard deviation of the variables

Variable	Standard deviation	Mean
Engagement	7.18	42.50
Academic progress	1.31	16.39
Participatory style	6.82	25.92
Competitive style	5.62	27.00
Dependent style	4.86	22.07
Cooperation style	5.36	24.25
Avoiding style	6.22	29.26
Independent style	4.72	25.54

B) Students' GPA was used to assess their academic progress. Therefore, newly admitted students that did not have GPA were excluded from the study. Before distributing the questionnaires, the participants expressed consent verbally. Then the researcher distributed the questionnaires and declared confidentiality of the results.

SPSS 18 was used to analyze the data; moreover, descriptive statistics (frequency, mean, standard deviation) and independent t-test and Spearman's multiple regression were analyzed at a significant level (0.05).

RESULTS

The total number of the participants was 292. 186 of them were female (63.7%) and 106 were male (36.3%). The age average was 23.43 ± 5.4. The youngest individual was 18 and the eldest was 32 (table 1 and 2).

The findings indicated that among the learning styles only participatory, avoiding and competitive styles had the qualification to enter regression and could explain engagement. While the other styles did not meet the requirements to enter the equation and were excluded. The correlation coefficient was as follow: 0.486 participatory, 0.563 avoiding, and 0.574 competitive. ($P > 0.05$). (Table 3)

The findings showed that there is significant relationship between participatory and avoiding styles with students' academic progress. ($p > 0.05$). (Table 4)

The Lambda value (0.001) confirms significant differences between learning styles of male and female students of the medical sciences university ($p < 0.05$). There was significant difference between male and female students in learning styles, including participatory style ($F = 3.96$, $p < 0.05$), avoiding style ($F = 8.56$, $p < 0.05$) and independent style ($F = 6.25$, $p < 0.05$). The mean of participatory style among males and avoiding and independent style among females was more. However, there was no significant difference between male and female students in other styles, including competitive, dependent, and cooperation. In addition, there was no significant difference between males and females in student engagement ($P > 0.05$, $t = -0.481$). Moreover, the statistics confirm significant difference between male and female students of the medical sciences university in academic progress ($p > 0.05$). (Table 4)

DISCUSSION

The present study aimed to investigate the condition of learning styles and student engagement and its association with the academic progress of students of Birjand University

Table 3. the findings of multiple regression test to analyze the relationship between student engagement and aspects of learning styles

Approved or rejected	Significance level	Beta	The correlation between the two variables	Simple correlation	Sample size	Variables
Approved	0.000	-0.290	0.236	0.486	292	Participatory
Approved	0.000	0.330	0.317	0.563	292	avoiding
Approved	0.028	- 0.133	0.329	0.574	292	competitive

Table 4. The findings of Spearman correlation test to analyze the relationship between learning styles and academic progress

variables		cooperation	competitive	dependent	Participatory	avoiding	independent
Academic progress	N	292	292	292	292	292	292
	p	-**0.177	0.063	0.066	0.099	-**0.230	-0.050
	sig	0.002	- 0.288	-0.259	-0.093	0.000	0.397
**0.01							

Table 5. Independent T-test to compare learning styles, engagement and academic progress among male and female students

Variable	Gender	Mean	DF	Effect size	T	Significance level
Participatory	female	25.35	287	0.014	3.96	0.047
	male	27.00				
competitive	female	27.13	287	0.001	0.16	0.682
	male	26.84				
Dependent	female	21.74	287	0.008	2.21	0.138
	male	22.63				
Cooperation	female	24.04	287	0.004	1.08	0.299
	male	24.72				
avoiding	female	30.11	287	0.029	8.56	0.004
	male	27.91				
independent	female	26.05	287	0.021	6.25	0.013
	male	24.62				
Engagement	female	42.34	287	0.481	0.631	0.357
	male	42.77				
Academic progress	female	16.57	287	0.05	3.05	0.002
	male	16.09				

indicated that students prefer dependent learning style in comparison with independent learning style, and participatory learning style in comparing with avoiding style and competitive learning style in comparison with cooperation learning style. Consequently, in accordance with the research, the preference for participatory learning style indicates that learning is dependent on the presence in the class.

Generally, they are good students in the class and mostly attempted to complete their assignments. These results are consistent with the study of Safari (5) which showed the students' interest for group works and participation in the class. Therefore, the students that use participatory learning style take part in class activities and what occurs in the class is important for them. They are eager to collaborate with students and teachers and value their teachers' opinions highly. It should be noted that participatory skills are very essential for the future life and career. The preference for competitive style shows that the students are interested in competing in the class.

The results of the second question of the research were about students' academic progress. Although the findings presented that the students prefer participatory, avoiding and competitive styles, none of the learning styles could predict the variance of students' academic progress. This result is consistent with the findings of the current study, Mohammadi and his colleagues (16), Kassim (17), Faraj Allahi et al (22) and Eftekhari (23), all of them confirmed the relationship between learning styles and educational success. It seems that avoiding and participatory learning styles have the highest relationship with the students' academic success that should be considered by teachers and authorities and educational centers in order to increase students' success.

Furthermore, the results of the study indicated cooperation, dependent and independent learning styles does not have an impact on students' academic achievement. However, further studies are recommended in this respect. It should be noted that different learning styles should be used to achieve success at the university.

The results of the third question of the study presented that there is a significant positive difference between engagement and academic progress of the students. Student engagement is an internal factor that is influenced by four factors: setting (environment and external stimuli), nature (the inner state of the organism), purpose (purpose of behavior), and means (means of achieving the goal). This factor provides sufficient stimuli to complete an assignment successfully, achieve a goal and gain a determined level of qualification.

The eager students show more interest in study and make greater efforts to gain their educational goals. While the students that are less motivated and are not interested in education, make less effort to gain their educational purposes. These results are consistent with Safari (5) and Mohammadi et al (24) that state the students with higher motivation and engagement make better educational development.

It could be concluded that engagement results in better communication with peers, acceptability among peers, social adjustment, and efficiency in problem solving and emotion management. Therefore, the students with less engagement cannot make a good communication with their teachers and classmates that results in negative mental and social consequences and influences their academic progress. Low engagement along with lack of motivation leads to reluctance to learn.

The results of the fourth question of the study indicated that there is a significant difference between learning styles of males and females. The male students are more interested in

avoiding style, while the female students prefer dependent, participatory and cooperation styles. These results are consistent with the study of Javadi and his colleagues (25) which studies the differences in male and female learning styles. However, it is not consistent with the study of Mohammadi et al (16) that denied this difference.

CONCLUSION

Consequently, the educational system of the university requires a multidimensional model. There is a significant relationship between student engagement and academic progress. Therefore, it is concluded that if the student engagement and eager to continue study increases, the students will use the learning styles that assist them to become successful.

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