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## The survey of the relationship between the learning style and academic performance in students of Medical Sciences (2016)

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### ABSTRACT

According to the fact that the individuals store what has been taught to them as appropriate information in their memories and make an effective use of it. They also have been indicated to have positive attitude to what has been learnt, there is this possibility that the individuals' learning style can be effective on their academic performance. Therefore, the present study intended to examine the relationship between learning style and the academic performance. The present study is a descriptive-analytical research which has been conducted on 220 students who were selected based on a randomized method in 2015. The data collection tool was a questionnaire which comprised of two parts. The first part was related to the demographic information and the second part pertained to the Vark learning style standard questionnaire. The data were analyzed by SPSS 19 software and descriptive statistics, chi-square test, Pearson's correlation, independent t-test and the variance analysis were used. In the present study the students' average age was  $21.73 \pm 3.83$ . The individuals' total score average was  $15.21 \pm 1.55$ . Among the study sample volume, 128 individuals (58.2%) were male. The relationship between age and gender with academic performance and the learning style was not found to be statistically significant ( $P > 0.05$ ). The learning style frequency among the university students was, respectively, belonging to reading and writing (41.4%), kinesthetic sensory (17.7%), multimodal dimensions (17.7%), visual (15.0%) and auditory (8.2%). The relationship between the learning style and the academic performance was not statistically significant ( $P = 0.676$ ). The results of the present study indicated that there is no significant relationship between the learning style and academic performance.

**Keywords:** academic performance, learning style, Vark

### INTRODUCTION

Nowadays, although there are different and various models regarding the learning styles, almost all of the theoreticians believe that the individuals use different methods to perceive, organize and analyze and process the information and experiences. There are various definitions provided for the learning style. For instance Hohan has stated that the term "learning style" is used to refer to the beliefs, preferences and the behaviors that the individuals

use and which are contributory to their learning in certain situations [1]. Peirce has defined learning style as a method which is preferred by the students in learning their lesson materials [2]. Felder and Silverman have offered a model for the learning styles which includes five dimensions and each dimension is indicative of two opposite and contradictory learning styles. Two aspects of such dimensions have been clipped from the model suggested by Myers-Brigs which resulted in the formation of the Kolb's model. The dimension of perception (sensory-intuitive) is similar to the perception aspects of the Myers-Brigs and Kolb's model and the processing aspect (active-reflective), as well, which is present in Kolb's model. Moreover, the aspects of the Felder-Silverman's model include three other aspects of the throughput (visual-verbal), organization (inductive-deductive) and discernment or conception (consecutive-general) [3]. The individuals whose learning styles conform to the professors' teaching methodologies are shown to have a better performance [4, 5]. That means such individuals store the information in their memories because they have been properly and appropriately taught and they make a practical use of such information and they show a positive attitude to what has been taught to them [6]. This way, the difference in the individuals' learning style can be of great influence in their academic performance. Improving the students' curriculum status is one of the fundamental objectives pursued by the contemporary education systems. Academic performance is literally intended to mean an upward progress or advancement and also in a positive direction and theoretically the academic performance is a term used to refer to the students' test scores averages in reaching to and fulfilling the predetermined lesson and class objectives from a current status to an optimum level. The students' academic underachievement and school quitting and dropout besides the problems it incurs the students and their families would be accompanied with a lot of harms and losses to the society and the country as a whole, so it is of a great importance [7] and lack of taking a step in harnessing it causes a reduction in the scientific knowledge levels and the country's students efficiencies in the years to come [8].

According to the importance of the academic performance among the university students and also the effect that can be exerted by the learning style on the academic performance the present study has been conducted with the objective of the survey of the relationship between the learning style and academic performance among students of Zahedan University of Medical Sciences.

#### MATERIALS AND METHODS

The current study is a descriptive-analytical research in which it has been dealt with the survey of the relationship between the learning styles among the students with their academic performance. The students were selected by randomized method from various school of Zahedan University of Medical Sciences including the medicine, dentistry, nursing, Health, paramedic, rehabilitation schools during the academic year 2015-2016. The participants were 220 individuals in the current study who have been selected based on a randomized method. Inclusion criteria and priority was given to the student who had succeeded in at least passing one term. The data gathering tool for the current study was a questionnaire which was consisted of two parts. The first part of which was related to the demographic characteristics (age, gender and the students' ID number) and the second part pertained to the Vark's learning styles standard questionnaire which contained 16 questions inquiring about four learning styles (visual, aural, reading, writing and kinesthetic-motor). Each of these fields include the following descriptions, respectively: 1-visual style: in which the learners can better discern the material through watching and demonstrative presentation of the information, 2-auditory style: in which the learners can understand the material better through listening and oral teaching methods, 3- reading-writing style: in which the learners can better learn the teaching materials through taking notes and reading the written contexts and texts, 4- the kinesthetic sensory-movement styles: in which the learners can better conceive the instructional material through performing the practical, experimental and object manipulation via something more of a physical process. The questions pertaining to the individual's performance have been designed for various situations. Every question is made up of four choices and each of the choices and options assesses one of the aspects of the learning styles. In this way, every individual obtains at most a score equal to 16 and at least 0. The main style chosen by the respondent is a style in which the individual obtains the highest score and in case that the individual acquires equal or high scores in two or more fields it can be considered as a learning style with multiple functions or modalities. The questionnaire validity has been confirmed and its reliability was verified by Javadinya et al through the use of retest method in which the reliability was found to be of a value equal to 0.80 [9]. To collect the required data and information for the current study, after the study sample volume was determined at first the study plan objective was explained to the students and after an oral consent was acquired the questionnaires were distributed among the men and women participants. After the questionnaires were completed, they were collected by another researcher and they were revised and in case that they were found imperfect or in cases that there were some parts missing the questionnaires were again returned to the students and

the students were asked to complete the questionnaires again. When the questionnaires were complete, the individual's average lesson scores were acquired for every participating student No. from the educational vice chancellorship of the university to be used as their academic performance scale. Finally, the data were analyzed by taking advantage of the SPSS 19 and descriptive statistics, Chi-square test, Pearson's correlation test, independent t-test and variance analysis and the significance level was considered to be 0.05.

## RESULTS

In the current study the students' average age was  $21.73 \pm 3.83$  and the students' overall scores average was  $15.21 \pm 1.55$  and from among the students, 128 individuals (58.2%) were male. Pearson correlation test was not indicative of a significant relationship between age and the academic performance and independent t-test also was not suggestive of the significant relationship between the gender and the academic performance. Also, chi-square test was not reflective of a significant relationship between the students' gender and learning styles and the variance analysis test also did not show any statistically significant relationship between age and learning styles ( $P > 0.05$ ). The students' learning styles frequency was respectively found to be belonging to reading and writing (41.4%), kinesthetic sensory (17.7%), visual (15.0%) and auditory (8.2%).

The relationship between the learning styles and academic performance in the students has been tabulated as table (1).

**Table 1: the relationship between the learning style and academic performance(ANOVA)**

		N	Mean	Std. Deviation	Minimum	Maximum	P Value
VARK Learning Styles	Kinesthetic	39	15.49	1.57	12.21	17.99	0.676
	Auditory	18	15.21	1.70	12.33	17.99	
	Read/Write	91	15.19	1.53	11.02	19.66	
	Visual	33	14.93	1.56	11.88	17.75	
	Multiple styles	39	15.23	1.52	12.06	18.03	
	Total	220	15.21	1.55	11.02	19.66	

## DISCUSSION

The results of the present study indicated that the relationship between the learning styles and the academic performance was not found to be statistically significant. In some of the other studies there was not found a significant relationship between learning styles and academic performance [10]. But, Valenta et al in a study dealt with the survey of the students' attitudes and the type of the learning styles and the individuals' academic performance and they came to this conclusion that the students' learning styles can be effective on their academic performance [11]. In the study conducted by Jegede et al which was conducted in Hong Kong University on the university students the researchers concluded that the learning styles can influence the academic performance [12]. In another study which was conducted aiming at the survey of the learning styles and academic performance in the students it was indicated that among the fourfold learning styles only one aspect is in a relationship with academic performance [3].

One of the reasons behind such a discrepancy can be attributed to the fact that every society fosters and educates the students through making use of a certain type of education and training philosophy and such a philosophy can be subjected to the beliefs and values and the past history of the region. Therefore, the learning style can change under the influence of the cultural and social factors. Also, among the other reasons for such a difference is that in the other studies regarding the academic performance there is an average score considered which had been presented by the students in a self-report manner but in the present study the students' average scores were acquired from the university educational vice chancellorship. The methodical styles are for learning, recognition and thinking and pondering. Of course, style should not be taken as equivalent to a pervasive capability; rather, it is a method by the use of which the individual can take his or her abilities into practical use. As the individuals' competencies and abilities are important for succeeding in their lives the recognition and understanding of the learning styles are also important.

In the present study the individuals who chose kinesthetic sensory style as their preferred style showed a higher level of academic performance. Segal stated in his study that one of the best learning strategies is the kinesthetic style.

Transferring the information to the medical students for the purpose of learning takes place through the speeches and lectures made by the professors, but its manifestation and demonstration in the hospitals and at the patients' bedsides in a practical manner determines that expanding the students' learning abilities is in need of a kinesthetic style [13]. Mohammadi *et al* also in their studies indicated that during the course of education and training the professors should provide the students with an opportunity to carry out practical works such as offering theoretical models of the human body anatomy in anatomy classes in order for the students' kinesthetic skills to be enhanced [14]. Therefore, it is suggested that there should be paid more attention to the kinesthetic learning styles. Since medical sciences fields of study are completely communicational, people-oriented and scientific professions and the attractions and the convergent individuals are less attentive to the topics entailing working and having relationship with the other individuals and people it is required that the university masters and professors pay more attention to the topics such as these to cause the required competencies and qualifications to enhance and elevate for this group of the learners in educational environments through the use of various educational and pedagogical strategies and change such learners into active future work forces and in the end it has to be mentioned that it may be possible to increase and augment the information learning processes in an increasingly ascending manner in this very important occupation through concentrating on the students learning styles and changing and shifting the teaching methodologies accordingly.

Among the constraints and the limitations we were faced with in the current study was the study population which was confined to Zahedan medical sciences university students and also another limitation was the method of data collection which was through students' self-reports, although the study instrument has been a standard questionnaire but it is acknowledged by Fleming that Vark's instrument does not seem to hold true for the determination of the learners' learning styles in the long-run, rather the objective is the learners' perception of his or her own learning style priorities and preferences when completing the questionnaire [15-17].

### CONCLUSION

The results of the current study indicated that there is no significant relationship between learning styles and academic performance.

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