

ORIGINAL ARTICLE

Learning Style Preference of Medical Student in University of Lahore

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ABSTRACT

Objective: The aim of the study was to identify learning styles of medical students and find out gender difference in learning style preference.

Study Design: Descriptive cross section study.

Place and Duration of Study: This study was conducted at University College of Medicine and Dentistry, Lahore from June to August 2015.

Materials and Methods: A total of 115 out of 170 students from 3rd year MBBS and 32 out of 50 students from 2nd year BDS completed the questionnaire. VARK(visual, auditory, reading/writing, kinesthetic) questionnaire was used to assess preferred learning style of medical students. The validity of the questionnaire was assessed through experts' views and its reliability was calculated by using Cronbach's alpha coefficients ($\alpha=0.86$). Data were analyzed by using SPSS software.

Results: The result indicate that 67 (46%), prefer single learning style, out of these 44(66%) visual, 4(6%) auditory, 7(10%) read/write and 12(18%) prefer kinesthetic. 80 student (54%) select more than one learning style, in which 59(74%)binary learning style, 19(23%) tertiary learning style and 2(3%) prefer quaternary learning style. There is no gender difference in learning style selection. Visual and kinesthetic were the most preferred learning style in both male and female.

Conclusion: In the present study the preferred learning styles of medical students were Visual and kinesthetic. Knowledge of learning style of medical student will be help full in teaching, but we will have to assess learning style of other classes of MBBS and BDS as well.

Key Words: Learning Style, Medical Students, VARK.

Introduction

Learning style is defined as the individual's preferred way and the setting in which learners most effectively and efficiently perceive, process, store, and recall what they are going to learn.¹ As we know that students have diverse learning styles and single teaching approach is not effective for all students or even most students so it is a responsibility of the teacher to tackle this diversity of learning styles of students and develop appropriate learning

strategies.^{2,3} Teacher should have sufficient knowledge of the subjects taught to the students as well as characteristics(learning style, learning strategies) of the students to be a successful teacher.⁴ There are various method for assessing learning styles of the students; the most recent is the VARK questionnaire.^{5,6} It was developed by Neil Fleming, in 1998.⁷ This method defines the preference in the learning style in terms of the sensory modality in which a student prefers to take in new information.^{8,9} Four sensory modalities of learning have been defined: visual, auditory, read-write and kinesthetic according to the student interaction and response to learning environment which recognizes student's interest for particular modes of information presentation.¹⁰ Learning approaches are also different for the four different VARK Learning Styles. Educational researchers hypothesize that every student has his own learning style and, if teaching is modified to accommodate that style, it is anticipated that learning will be improved.¹¹

One reason of student's frustration towards the curriculum is contradiction between learning

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content and teaching methods. In order to enhance motivation and get better student performance, it is necessary to modify and select appropriate teaching methodology and assess their efficacy.¹²

Learning style has significant impact on academic performance of undergraduate medical student. Learning outcome could be highly achieved if learning was coordinated with main learning style. It is not necessary that student learn all subject with same learning style. Different subjects need different learning style and instruction to benefit the student.¹³

We are interested to assess appropriate learning style of medical student to develop teaching strategies accordingly. Majority of previous studies on learning style of undergraduate medical student was conducted in other countries. Less research was conducted to know the learning style of undergraduate medical students in Pakistan. Flemings VARK questionnaire was used to know the learning style.¹⁴

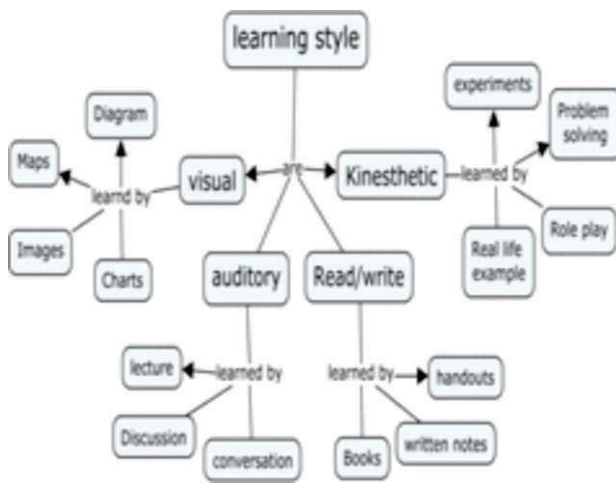


Fig 1:Activities that accommodate VARK learning styles²

Materials and Methods

This is a descriptive cross sectional study. This study was conducted in University College of Medicine and Dentistry, Lahore from June to August 2015. In this study we used VARK questionnaire (version 7.8)¹⁵ to assess the learning style of medical student after taking permission from the author. VARK questionnaire was developed by Neil Fleming.¹⁶ Instructions were given to the students prior to attempt the questionnaire. The validity of the questionnaire was assessed through experts' views,

and its reliability was calculated by using Cronbach's alpha coefficients ($\alpha=0.86$). Data were analyzed by using SPSS software.

Sample Size

Study participants consist of 170 students of 3rd year MBBS and 50 students of 2nd year BDS at University College of Medicine and Dentistry, Lahore. A total of 115 out of 170 students from MBBS and 32 out of 50 students from BDS completed the questionnaire (Male and Female).

Procedure

Informed consent was taken from the students prior to attempt the questionnaire and confidentiality of data was ensured. In August 2015, Data were collected by using a hard copy of questionnaire which has two parts. The first part included bio-data (age, gender), and the second part was use of VARK standard questionnaire from the students of 3rd year MBBS and 2nd year BDS during regular classes. 220 questionnaires were distributed to all medical students, who were available at the time of the study. 147 questionnaires were completed and collected.

Results

From 170 students, 147 students completely filled the questionnaires that were analyzed. Among 147 students MBBS were 78% and BDS were 22% in which females were 92(63%) and males 55(37%) as shown in Table I.

Table I: Gender Distribution among MBBS & BDS

Categories	BDS	MBBS	Total
Female	20 (62%)	72 (63%)	92 (63%)
Male	12 (38%)	43 (37%)	55 (37%)
Total	32(22%)	115(78%)	147(100%)

Students responded in two ways. First, preferred single learning style, second, preferred multiple learning styles.

Table II depicts the Group wise and collective distribution of preferred learning style. Student's preferred, single learning style were 67 (46%), and students preferred, multiple learning styles were 80

Table II:Preferred Learning Styles

Learning Styles	BDS	MBBS	Total
Single	13 (41%)	54 (47%)	67(46%)
Multiple	19 (59%)	61(53%)	80 (54%)
Total	32 (22%)	115 (78%)	147 (100%)

(54%).

Table III illustrates single preferred learning style. 44 students (66%) prefer visual, 4 students (6%) prefer auditory, 7 students (10%) prefer read/write and 12 students (18%) prefer kinesthetic. Visual learning

Table III: Single preferred Learning Styles

Learning Styles	BDS	MBBS	Total
Visual(V)	7 (54%)	37 (68%)	44(66%)
Auditory(A)	1(8%)	3 (6%)	4 (6%)
Read/Write(R)	1 (8%)	6 (11%)	7 (10%)
Kinesthetic(K)	4 (30%)	8 (15%)	12(18%)
Total	13 (19%)	54 (81%)	67 (100%)

style was the most preferred learning style among MBBS (68%) and BDS (54%) students. 2nd preferred learning style was Kinesthetic. 80 students (54%) select more than one learning style, in which 59 students (74%) prefer binary learning style, 19 students (23%) prefer tertiary learning style and only 02 students (3%) prefer quaternary learning style.

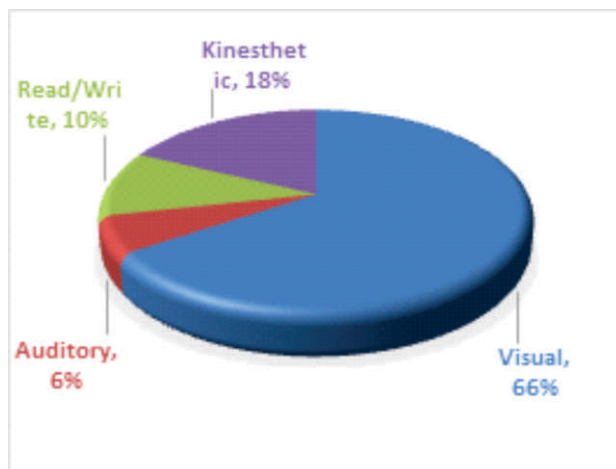


Fig 2: Single preferred Learning Styles

The most preferred multiple learning styles were visual and kinesthetic in both groups i.e MBBS (39%) and BDS (42%) illustrated in Table IV.

In Table V, 44.6% female prefer single learning style while male were 34.5%. Most preferred style was visual and kinesthetic in both groups. Majority of male (63.6%) and female (55.4%) students select multiple learning styles.

Discussion

Every student has a unique learning style. Identification of learning style of student in initial year of study is helpful for students to select

Table IV: Multiple preferred Learning Style

Learning Style	BDS	MBBS	Total
VA	1 (5%)	4 (7%)	5 (6%)
VR	1 (5%)	8 (13%)	9 (11%)
VK	8 (42%)	24 (39%)	32 (40%)
RK	2 (11%)	5 (8%)	7 (9%)
AK	3 (16%)	3 (5%)	6 (8%)
Binary	15(79%)	44(72%)	59(74%)
VAK	1 (5%)	4 (7%)	5 (6%)
VRK	3 (16%)	6 (10%)	9 (11%)
VAR	0 (0%)	5 (8%)	5 (6%)
Tertiary	4(21%)	15(25%)	19(23%)
VARK	0 (0%)	2(3%)	2 (3%)
Quaternary	0	2(3%)	2 (3%)
Total	19(24%)	61(76%)	80(100%)

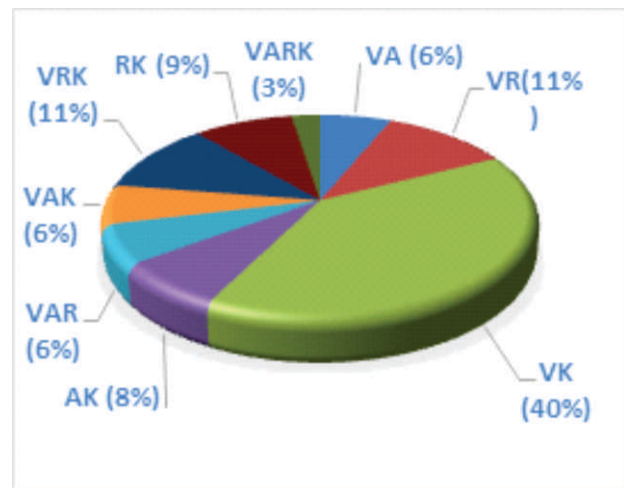


Fig 3: Multiple preferred Learning Style

Table V: Gender wise Distribution of Preferred learning style

Categories	Learning Styles	Gender		Total n %age
		Female n %age	Male n %age	
Multiple learning style	Visual	31 (69%)	13 (59%)	44 (66%)
	Auditory	3 (7%)	1 (5%)	4 (6%)
	Read/Write	5 (11%)	2 (9%)	7 (10%)
	Kinesthetic	6 (13%)	6 (27%)	12 (18%)
	Total	45 (49%)	22 (40%)	67 (46%)
Multiple learning style (MLS)	VA	1(2%)	4 (12%)	5 (6%)
	VR	5(11%)	4 (12%)	9 (11%)
	VK	21 (45%)	11(33%)	32 (40%)
	RK	5 (11%)	2(6%)	7(8%)
	AK	4 (8%)	2 (6%)	6 (7%)
	VAR	2(4%)	3(9%)	5 (6%)
	VAK	3(6%)	2(6%)	5 (6%)
	VRK	5 (11%)	4 (12%)	9 (11%)
	VARK	1(2%)	1 (3%)	2 (2%)
	Total	47 (51%)	33 (60%)	80 (54%)
	Grand Total	92 (63%)	55 (37%)	147(100%)

appropriate style to improve their learning and teacher select appropriate teaching strategy according to student's preference towards learning.¹² This can prove very helpful for students who need attribution training when they fail to pass examinations because of their inability to understand a specific discipline, topic or subject.

In present study 67 students (46%) prefer single learning style. 80 students (54%) preferred multiple learning styles. Most of the participants (MBBS, BDS) in current study prefer more than one (multiple) learning style. This favors the approach of the teaching students with multiple teaching strategies. In single and multiple learning style 50% students prefer visual and kinesthetic. This strengthens the ideology of teaching students with learning situations where knowledge delivery is not the sole aim and combining knowledge with skills is more appealing for the students.¹⁷ Active learning promote concept formation, decision making reasoning, and problem solving.¹⁸ Similar preferences were reported in a study done in Michigan show that majority of medical student (64%) prefer multiple learning style to acquire knowledge. comparable to preferences reported by Karim H that 58.2% preferred using multiple learning style and 41.8% of participants preferred single learning style.¹⁹

The present study further demonstrated that dominant single learning style was visual forty four students (66%) acquire knowledge through charts, images, maps, and diagram., Second common learning style was kinesthetic. Twelve students (18%) preferred learning by experiments, real life example, hands on approach and role play. Visual learning style was the most preferred single learning style among MBBS (68%) and BDS (54%) students. Second preferred single learning style was Kinesthetic which was mainly preferred by BDS (30%). A recent study was done in Isphahan university of Medical sciences. It was found that (48.4%) preferred only one learning style, (51.6%) preferred multiple learning style. Preferred single learning style was read/write and auditory which is contradictory from our finding.¹² it was observed in present study that both male and female preferred multiple learning style. Slater et al., also supported this finding that both males and females preferred multiple learning style.²⁰

Students may change their way of learning according to the situations, goals and interest. Every one need to be improve their weaknesses and translates information into their preferred style.¹⁸ Student also switch learning styles depending on what they are studying. Although changing a preferred way of learning offers flexibility, it is also good for capitalizing on learning strengths.

Conclusion

According to the results of this study students require diversity in teaching method because of different learning style of the students. They never feel burden if information presentation style match with the learning style of students and it enhance learning.¹² Learning style of student of other medical college should be comparing to reach in consensus

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