

Problem Based learning by Evaluating Students Learning Preferences Using VARK

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ABSTRACT

Introduction: Learning methodology preference is one of different components of learning fashion. Sensory learning methodology inclination is one of the various components of learning fashion which decides the person's ability to obtain modern information. It is one of the dimensions of the complex framework of inclinations that make up a person's learning fashion.

Objective: The objective of the study is to describe the learning styles of medical students.

Material & Method

Study design: quantitative cross sectional

Settings: Continental Medical College, Lahore

Duration: Six months i.e. 1st July 2021 to 31st December 2021

Data Collection procedure: It was quantitative cross sectional study conducted on a private sector medical college. Pre validated questionnaire was used to evaluate the students learning preferences using VARK.

Results: There are hundred students participating in the study in which sixty were females and forty was males. The average age of the students is around 20-24 years. Mean and standard deviation were calculated after pre and post test.

Conclusion: Most students are able to memorize successfully as long as the instructor provides different learning exercises within the zones surveyed in VARK. Dynamic learning might be upgraded in huge classrooms by showing models and demonstrations, discussions, wrangles about, replying questions, and part playing.

Keywords: Problem based learning, learning, Preferences, VARK

INTRODUCTION

Learning methodology preference is one of different components of learning fashion. Sensory learning methodology inclination is one of the various components of learning fashion which decides the person's ability to obtain modern information. It is one of the dimensions of the complex framework of inclinations that make up a person's learning fashion. Additionally, the modern curricula ought to investigate other strategies in effectively conveying curricular objectives and meeting the desires of students^{1,2}.

Traditionally instructing students is in English using lectures and instructional exercises in educational program that focus on the substance of teaching, instead of the process of learning. Clearly, this had to modernize both from the viewpoints of addressing students' differing needs and from curricular plan. One could not happen without the other.

In order to address diverse learning styles, it is necessary to adjust instructional methodologies and evaluate their viability. One non-traditional curricular approach is problem-based learning (PBL), which in contrast to conventional educating centers on the process of learning instead of the content of teaching. PBL requires teachers to alter their educational roles and makes a difference to extend students' self inspiration by centering on their learning needs, rather than just obtaining truths. It is expected that the use of PBL will result in students

performing well in learning activities and be better arranged for life-long learning. Learning inclination is important to be investigated in more detail, whereby there are promptly accessible tools to encourage this, one of these instruments is VARK³.

VARK is used for Visual, Aural, Read/Write, and learning styles in one such instrument. Visual learners are said to favor clarification of concepts diagrammatically or through pictures. Read/Write learners prefer printed words and content as a means of information intake. These learners prefer, for example, to arrange course address notes into diagrams, and study through past-papers. Aural learners concentrate on what teachers say. Additionally, aural learners may conversation out their answers or tune in to taped discussions around exam subjects. Kinesthetic learners use involvement and commonsense illustrations in order to learn. For the reason of the current study, the terms learning style and learning preference were used interchangeably⁴.

In any case, it is critical to keep in mind that learning styles don't tell educators about students' capacities or insights, but they can offer assistance teachers get it why students find some tasks less demanding than others. There are few studies directly related to research including learning styles to PBL⁵.

Learning styles: Learning styles, as a bunch of cognitive, affective, and physiological characteristics, are utilized as indicators of how a learner sees, interacts with, and reacts

to the learning environment. Learning styles have been characterized as “personal qualities that impact a student’s capacity to procure information, to interact with peers and the teachers, and something else take an interest in learning experiences. An individual’s learning style describes how unused data is prepared, internalized, and held. Most of the published writing either centers on the relationships between students’ learning styles and, for example, attitudes approximately learning or on the achievement of results, or completion and drop-out rates. As students change in their learning inclinations, our conceptualization of learning has to accommodate this variation. Students take part in process of information in a variety of ways: by seeing and hearing, reflecting and acting, thinking, analyzing and visualizing. Facilitators preferring to supply information through addresses, a few focus more on memorization, others attempt to effectively develop understanding. The substance of the syllabus and the logic of the program can show the approach to utilize, with a few subjects lending themselves more to one approach than to another. Adults generally have an mindfulness of their learning styles and regularly look for to collaborate with their instructors. With mutual benefit as educators’ understanding of students’ learning styles, it can offer assistance to make strides their choice of directions conveyance in environments conducive to learning^{6, 7}.

Development of PBL: The advancement of PBL is attributed to the medical school at McMaster College in Canada, in the early 1970s. It was derived from data processing theory which clarifies the need for effective retrieval and re-processing of information within practical settings. Modern information is obtained through building modern data onto existing information, and has its roots in constructivist educational hypothesis. PBL is both a curriculum and a process. The curriculum consists of carefully chosen and designed problems that emerge from the learner’s acquisition of basic information, problem-solving proficiency, self-directed learning procedures, and teamwork. The handle duplicates the commonly utilized systematic approach to settling issues or meeting life’s challenges.

MATERIAL AND METHODS

It was quantitative cross sectional study conducted on a private sector medical college after the approval of IRB letter. Pre validated questionnaire was used to evaluate the students learning preferences using VARK. Sample size is 100 in which sixty were females and forty was males.

Table 3: 3 Relationship between students learning and grades

No.	Learning Preference	Letter Grade								Total	%
		AN	%	Bn	%	Cn	%	DN	%		
1	V	2	(8)	2	(8)	0	(0)	0	(0)	4	(4)
2	A	3	(12)	3	(12)	2	(5)	1	(10)	9	(9)
3	R	4	(16)	5	(20)	4	(10)	1	(10)	14	(14)
4	K	5	(20)	6	(24)	6	(15)	3	(30)	20	(20)
5	Multi	11	(44)	9	(36)	28	(70)	5	(50)	53	(53)
6	Total	25	100	25	100	40	100	10	100	100	100

DISCUSSION

In spite of the fact that the overwhelming learning inclination of the students was the read/write preference

Students’ responses were graded to represent their learning preferences, which were at that point ranked according to VARK rules. Scores were computed by calculating the full number of each response, V (Visual), A (Aural), R (read/write, and K kinesthetic). Four questions were asked in which first one is regarding learning style, second question regarding difference in male and female learning style, third question about PBL has any effect on students learning and fourth is about relationship of students learning and subject grades. There are four grades allocated in the students. Grade range 86-95 fall in category A, grades range 76-85 fall in category B, grade range 60-75 fall in category C and grade range 50-60 fall in the category D. The data were entered in SPSS version 23 and analyzed.

RESULTS

There are hundred students participating in the study in which sixty were females and forty was males. The average age of the students is around 20-24 years. Mean and standard deviation were calculated after pre and post test. Table 1 highlighted mean and standard deviation in all learning preferences. A significant difference in all learning preferences observed in four categories of students. Multimodal preference was more significant after the use of PBL. Multimodal student’s highest grades as eleven score in A grade, nine score in B grade and twenty eight score in C grade. Read and write have mean & sd (4.4 & 1.90) followed by Kinesthetic (4.1 &1.80) were the most learning preferences.

Table 1: Pre and Post test with Mean and SD (n=100)

No.	Learning Preference	Pres Test			Post Test		
		Min-Max. score	Mean	SD	Min-Max. score	Mean	SD
1	V	0-6	2.6	1.39	0-8	3.3	1.69
2	A	0-9	3.3	1.85	0-9	3.9	2.1
3	R	1-10	4.4	1.90	1-10	5.0	1.89
4	K	0-9	4.1	1.80	1-9	4.6	2.22

Table 2: Difference in Pre Post test VARK score and p value

No.	Learning Preference	Mean difference between Pre & Post test score	P value
1	V	0.71	<0.01
2	A	0.62	<0.01
3	R	0.63	<0.01
4	K	0.54	<0.03
5	Total	2.50	<0.01

followed by the kinesthetic, still most of the students represented a multimodal learning preference. The discoveries of the current consider were reliable with discoveries of Murphy et al. (2004) in which analysts

detailed the read/write preference to be positioned as the highest preference. Besides, analysts detailed that the multimodal preference is reliable with characteristics of grown-up learners. Multimodal learners can be more adaptable in taking in the data than learners with a single preference. They are more likely to be able to match their preferences with whatever modes are being utilized. In any case, multimodal learners can be challenging for the teachers since they need to have at least two, three or four modes involved in learning some time recently they are fulfilled⁸.

Discoveries of the current study displayed similarities between medical students explored in the current study and students from other nationalities as said prior, in this manner, this study might offer assistance teachers fascinated by fitting courses that suits learning interface on students from different cultural foundations. The procedure of using multiple instructing strategies can offer assistance students develop different learning inclinations and enjoy their learning experience. The critical contrast within the learning preferences of the students within the pre-post test might be explained as a alter within the students' approach of thinking. Enhancing students' capacities to receive new learning modalities has been appeared to improve the handle of learning as well as their understanding of the genuine life environment^{9, 10}.

CONCLUSION

Most students were able to memorize viably when the instructor gives diverse learning activities in the areas assessed in VARK that is Visual, Auditory, Read/Write, and Kinesthetic. Dynamic learning might be improved in expansive classrooms by presenting models and demonstrations, discussions, collaborative testing, debates recreations, and replying questions, controlling models and part playing. However, a few students incline toward one particular learning methodology. Such students require special attention from the educators since they could struggle to get it the subject fabric on the off chance that their particular learning inclination isn't predominant in the course. This needs encourage ponder, and in case substantiated, could be a encourage driver for teachers to

transition from a conventional to a liberal approach such as PBL.

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