

Learning Styles Preferences of First Year Medical Students Of J N Medical College Belgaum: A Single Institute Experience In Karnataka, India

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Abstracts: Background: Researchers agree that in addition to cognitive factor, non-cognitive factors like learning style are predictors of performance. Students use different sensory modalities for assembling knowledge and information. This study was aim to recognize preferred learning styles of first year medical students at KLE university's J N Medical college Belgaum India. Methodology: A cross sectional study was conducted on 150 consented students .The students were subjected to VARK learning style questionnaire to identify their learning styles preferences. The questionnaires which identify four learning style preferences/modes as visual (v), auditory (A), read and write(R) and kinaesthetic (K). Descriptive statistics was used to identify the learning styles of the students. Results: Hundred present students preferred multimodal style of learning, while 92%preferred quadrimodal, 7% trimodal , 1% bimodal. Among the four learning style preferences it was found that 99% of them preferred kinaesthetic, followed by, auditory, read/ write and visual modality. Conclusion: This study gives insight that no single teaching –learning strategy can work for effective teaching learning in medical students. Faculty teaching first year medical students has to adopt multi modal teaching-learning strategies to create effective teaching and learning environment. [Kulkarni N et al NJIRM 2015; 6(3):80-83]

Key Words: learning style, VARK questionnaire, medical students.

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Introduction: Nature of the professional courses is complex and when instructional strategy do not match the learning style of students, lead to may cause exam phobia, failure in the course and dropout from the college.¹Teaching learning methods in India are different at schools, colleges and different professional courses. Students struggle more during the transit from school to college and to professional courses.²

According to theory of adult learning adults learn differently and there is a need to tailor the instructions that match the needs of adult learners .^{3,4} Major change taking place in medical curriculumis, it is transforming from teacher centered to student centered education. Students differ intellectually, in approaches to learning and their learning styles. "Learning style is the composite of cognitive, affective and physiological characteristics that serve as relatively stable indicators of how a learner perceives, interacts and responds to the learning environment."⁵

Various studies done on learning styles in other countries but the results vary.^{6,7,8} Many researchers agree that learning style has impact on students' performance and teaching strategies are to be modified according to their learning

style.^{7,8,9}Increasing awareness among students regarding their learning style preferences may enable them more effective learning and improve their performance.^{9,10} Students use different sensory modalities for assembling knowledge and information for their learning ¹¹ The aim of the present study was to recognize the learning style preferences of first year medical students of JN Medical College, Belgaum, India using VARK questionnaire , in order to formulate teaching learning strategies for effective learning of the struggling students.

Material and Methods: Ethical clearance was obtained from Institutional Review Board. A cross sectional study was conducted in 2013 on first year medical students in J N Medical College Belgaum, India. The study was explained to the students and one hundred and fifty consented studentswere enrolled in the study. All students were subjected to VARK questionnaire whose satisfactory level of reliability and validity has been reported using factor analysis techniques.¹²The questionnaire measures four sensory modalities (Visual (V), Auditory (A),Readand write(R) and Kinesthetic (K). It consists of 16 questions with four options each. Students can choose more than one option to identify their learning style.

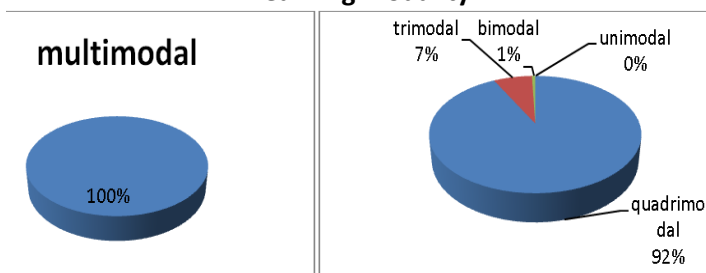
Statistical Analysis: The distribution of VARK preferences were calculated in accordance with the guidelines given in the VARK website.¹³ Descriptive statistics were used for each VARK component to calculate the percentage

Results: As analyzed by VARK inventory, hundred present students preferred multimodal style of learning, while 92% preferred quadrimodal, 7% trimodal, 1% bimodal, no student preferred unimodal learning style. Among the four learning style preferences (Visual, auditory, read-write and kinaesthetic) it was found that 99% of them preferred kinaesthetic modality, followed by auditory (98.67%), read and write(96.67%) and visual (94.66%). The findings on VARK are summarized in Table 1 and Fig 1

Table 1: Percentage of students scoring on individual mode of VARK inventory

Factors	Male n=81	%	Female n=69	%	Total n=150	%
Visual	76	93.82	66	95.65	142	94.66
Auditory	80	98.77	68	98.55	148	98.67
Read /write	78	96.30	67	97.10	145	96.67
Kinesthetic	80	98.77	69	100.00	149	99.33

Fig 1: percentage of students scoring on VARK learning modality



Discussion & Limitations: The VARK results in present study showed that 100% students enrolled in this study were multimodal, indicating that students use a combination of learning style. This finding is similar to the findings reported by earlier studies^{6-8,14-17} however the percentage of students with multimodal learning style preferences in those studies varied

In the present study not a single student was unimodal. The findings of this study were dissimilar to results of the study conducted by Dissanayaka T

D¹⁸ who found 73% unimodal and only 24 % students preferred were multimodal learning style where as Shah C et all¹⁷ found 43.30% unimodal learning style students in their study. In the present study among the four sensory modalities the most preferred mode was kinaesthetic and this finding is similar to that of Baykan and Nacar.⁸ However Dapson² reported that among students learning physiology most of them were visual learners while according to Kumar L R¹⁹ Lujan and Dico¹⁴ studies most preferred learning style was read /write in medical students. Nuzhat²⁰ and Shah C¹⁷ reported that the auditory mode was the most preferred one, while the present study showed it to be the second preferred mode.

In the unimodal learning style we found that the most preferred mode was kinaesthetic one and these types of learners prefer hands on approach and therefore active learning strategies would be more beneficial for this type of learners than traditional lecture format which is most of the time passive type of learning. The lecture mainly helpful for auditory learners, which was second most preferred mode in this study. Using charts, diagrams flow charts etc in teaching learning strategy may be helpful for visual learners, while small group discussion will be useful for kinaesthetic as well as auditory learners. Read write learners can be approached with written information about learning. It is scientifically proved students remember only 20% when they read, 30% when they hear, 40% what they see and 50% what they say and 60% what they do, the retention of information increases when they hear, see, say and perform.²¹ To achieve effective learning, student must read, write and talk and actively involved in task while learning. All this can be possible in active learning like small group discussions which will generate motivation and enthusiasm. Active learning strategies not only encourage the critical thinking but also improve problem solving, co operative learning with exchange of knowledge with peers and also become lifelong learner which is essential for medical profession.

This study was done only on one batch of first year students of one institution.

Conclusion: The traditional teaching learning modes in medical school are in form of lectures, tutorials conducted for large group etc where students are passive listeners. Knowing the learning preferences and modifying teaching strategies accordingly, may boost the knowledge, skill, attitudes and make student more competent. This study gives insight that no single teaching – learning strategy can work for effective teaching learning in medical students. Faculty teaching first year medical students has to adopt multi modal teaching-learning strategies to create effective teaching and learning environment, to enjoy learning.

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