Original Article

Preferred Learning Styles and Perception Regarding Present Curriculum among MBBS Students of a Peripheral Medical College in West Bengal, India

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Abstract

Background: Learning style of an individual refers to the method through which one learns the best. There has been a paradigm shift in medical education in recent years.

Objectives: To identify preferred learning styles among MBBS students of a tertiary Medical College in West Bengal, India and to assess their perception regarding present curriculum.

Methodology: An observational, analytical, cross-sectional study was conducted among the undergraduate medical students of Bankura Sammilani Medical College using VARK questionnaire (version 8.01) to identify preferred learning styles of the students. The questionnaire also included a set of 11 items to assess the perception of students about the present curriculum system using a 5-point Likert scale.

Results: Majority (83.5%) of the students preferred a single mode of learning (unimodal) style. The most preferred unimodal style of learning was Kinesthetic (44.7%). Most of the students agreed that the current method of teaching was satisfactory.

Conclusions: Exploring different learning styles could potentially be used in the curriculum so that instructors could plan appropriate teaching learning method according to their learning needs. New medical curriculum was reported as satisfactory by the students.

Key-words: Learning Styles; Unimodal; Kinaesthetic VARK; Medical students

Introduction

Medical education is a dynamic process where both students and facilitators should always update themselves. There are several challenges the medical students face such as acquiring a large amount of knowledge within a limited time period in a manner so that it is effectively retained, interpreted and

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remembered by the students. This has resulted in important changes in the field of medical education, with a shift from conventional teaching to the use of problem-based, student-centered learning and interactive. Most medical curricula have implemented creative methods of teaching and learning to changeable degrees.[1] It has been argued that facts of learning styles can be helpful for both facilitators and students, in that the facilitators can chose a proper teaching-learning style to associate with the learning styles of students alike, students with knowledge of their learning styles could be empowered to identify and use the techniques of learning best right to their individual styles, resulting in better educational satisfaction.[2,3]

VARK (Visual, Aural, Reading and Kinaesthetic) questionnaire has been specifically designed to identify the learning styles as it can identify whether a student has a strong learning preference or whether the student is a "flexible" learner who can take in information from multiple methods. Students have different learning style preferences in the ways they take in and process the information, so the students who have a combination of learning preferences are multimodal, whereas those who prefer only one learning method have a single-mode preference. Students with a visual learning preference prefer to take in and give information holistically and often draw pictures and diagrams to explain concepts. Students with an aural learning preference prefer to listen and talk when learning. Students with a read-write learning preference prefer lists, handouts, and textbooks to understand new material while students with a kinesthetic learning prefer hands-on approach, including trial and error, real-life examples, and application of new material.[4]

Since there are few published data on learning styles among undergraduates in medical colleges in eastern part of India, we decided to undertake this project to identify the learning styles of Phase II & Phase III MBBS students in one of the peripheral medical colleges in eastern India along with their perception about the present curriculum system.

Objectives:

This study was conducted with the following objectives: (i) To identify preferred learning styles among MBBS students of a peripheral Medical College in West Bengal, and (ii) to assess their perception regarding present curriculum

Methodology

An observational, analytical, cross-sectional study was conducted among the undergraduate medical students of Bankura Sammilani Medical College, West Bengal during the months of Mar-June of 2023 to assess the preference of learning styles and their perception about the present curriculum system. Students under new curriculum, as proposed by National Medical Commission (NMC) and completing at least one year of MBBS course were included in our study as study participants. All students fulfilling the inclusion criteria, and approachable on the days of data collection were included in the study. The final sample size was 188. First, the students were explained the purpose and procedure of the study. After receiving informed written consent from each of them, data were collected using a pre-designed, pre-tested, structured, self-administered questionnaire. The questionnaire included different socio-demographic variables (age, gender, religion, caste, parents' education and occupation, socioeconomic status, residence etc.), VARK questionnaire (version 8.01) to identify preferred learning styles of the students.[5] The questionnaire also included a set of 11 items to assess the perception of students about the present curriculum system using a 5-point Likert scale (responses ranging from strongly disagree to strongly agree).[6] Data entry and analysis were done on IBM Statistical Package for Social Sciences trial version.

Results

Majority of the students (73.4%) participating in this study were from 5th semester, while the rest were 3rd semester students. The mean and median age of the students were 21.9 ± 0.082 years and 22 (IQR = 2) years respectively. The age of the students ranged between 19 and 25 years, but did not follow normal distribution. About 60.4% students were male. Most of the students (86.2%) followed Hinduism, while the rest followed Islam (10.6%), Christian (0.5%) and other religions (2.7%). Based on caste, 63.8% belonged to general caste, 16% SC, 4.8% ST and 15.4% OBC. Most of these students (85.1%) were from nuclear families. Mothers of 55.9% students and

fathers of 80.9% students completed education up to graduation or above. The mothers of 80.3% students were homemaker. Based on BG Prasad's SES scale, updated for August 2023, 68.1% were class I, 16% class II, 8% class III, 6.9% class IV and 1.1% were class V. More than half (52.1%) students had their schooling in English medium, while 41% had Bengali medium. The permanent residency of 61.2% students were in urban areas. More than two-third (67.6%) students stayed in hostel, while 22.3% stayed as paying guest, 8.5% stayed in their own home, during the time of their undergraduate course.

Based on VARK Questionnaire responses it was found that majority (83.5%) of the students preferred a single mode of learning (unimodal) style, while 16% students preferred bimodal and 0.5% students preferred multimodal style of learning [Figure 1]. The most preferred unimodal style of learning was Kinesthetic (44.7%), followed by Aural (29.3%), Visual (6.9%) and Read/write (2.6%). Aural and Kinesthetic were the most preferred bimodal style of learning (6.4%), followed by Visual and Kinesthetic (4.8%), Visual and Aural (2.6%), Visual and Read/write (1.1%) and Aural and Read/write (1.1%). The only multimodal style of learning preferred by the students included Aural and Read/write and Kinesthetic altogether [Table 1].

When the perception of the students about the present curriculum was explored, it was found that majority of the students ***agreed*** that the current method of teaching was satisfactory, there was good interaction between the students and teacher during the class, the multiple mode of assessment would help the students to excel, the laboratories in different departments give the students sufficient materials for learning and experimenting, the self-directed leaning (SDL) is a very effective approach for learning, the viva voce system is an effective method for evaluation and the semester system is satisfactory. Majority of students also ***strongly agreed*** that the lectures should be accompanied by multimedia tool such as animation and videos, problem based learning (PBL) should be incorporated in the learning process, small group discussions (SGD) give better understanding regarding the subjects and that there is huge academic workload faced by the students [Table 3].

Table 1. Preferred mode of learning (N=188)

Mode of learning	Frequency (%)
Visual (V)	13 (6.9)
Aural (A)	55 (29.3)
Read/write (R)	5 (2.6)
Kinesthetic (K)	84 (44.7)
Visual and Aural (VA)	5 (2.6)
Visual and Read/write (VR)	2 (1.1)
Visual and Kinesthetic (VK)	9 (4.8)
Aural and Read/write (AR)	2 (1.1)
Aural and Kinesthetic (AK)	12 (6.4)
Aural and Read/write and Kinesthetic (ARK)	1 (0.5)
Total	188 (100.0)

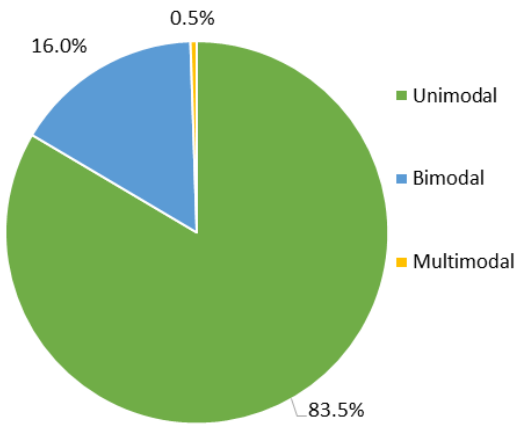

Figure 1. Pie chart showing preferred mode of learning.

Table 2. Relationship between preferred learning style and different variables (N=188)

Particulars	Variables	Unimodal style	Multimodal style
		Frequency (%)	Frequency (%)
Semester	5th semester	114 (82.6)	24 (17.4)
	7th semester	43 (86.0)	7 (14.0)
Age group	21 years and below	50 (78.1)	14 (21.9%)
	22 years and above	107 (86.3)	17 (13.7)

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Sex	Male	97(85.1)	17(14.9)
	Female	60(81.1)	14(18.9)
Religion	Hindu	136 (84)	26 (16)
	Muslim	17 (85)	3 (15)
	Christian	0(0.00)	1(100%)
	Others	4(80)	1(20)
Caste	General	94 (78.3)	26 (21.7)
	Scheduled Caste	28 (93.3)	2 (6.7)
	Scheduled Tribe	8 (88.9)	1 (11.1)
	Other Backward Class	27 (93.1)	2 (6.9)
Family Type	Nuclear	132 (82.5)	28(17.5)
	Joint	25(89.3)	3 (10.7)
Medium of school	Bengali	69 (89.6)	8 (10.4)
	English	77 (78.6)	21 (21.4)
	Hindi	9(81.8)	2(18.2)
	Others	2(100.0)	0(0.0)
Permanent Residence	Urban	94 (81.7)	21 (18.3)
	Rural	63 (86.3)	10 (13.7)
Current Residence	Hostel	108 (85.0)	19 (15.0)
	Paying guest	34 (81.0)	8 (19.0)
	Own house	15(78.95)	4 (21.05)

Table 3. Perception of students about curriculum system (N=188)

Questions	**Strongly disagree**	**Disagree**	**Neither disagree nor agree**	**Agree**	**Strongly agree**
	Frequency (%)	**Frequency (%)**	**Frequency (%)**	**Frequency (%)**	**Frequency (%)**
1. Current method of teaching is satisfactory	13 (6.9)	31 (16.5)	8 (4.3)	111 (***59.0***)	25 (13.3)
2. There is good interaction between students and teachers during the classes	8 (4.3)	26 (13.8)	8 (4.3)	118 (***62.8***)	28 (14.9)
3. The multiple mode of assessment helps the students to excel	4 (2.1)	8 (4.3)	5 (2.7)	117 (***62.23***)	54 (28.7)
4. Lectures should be accompanied with multimedia tool such as animation and video	1 (0.5)	2 (1.1)	2 (1.1)	50 (26.6)	133 (***73.7***)
5. The laboratory gives sufficient lab materials for experiments	21 (11.2)	45 (23.9)	7 (3.7)	86 (***45.7***)	29 (15.4)
6. Problem based learning should be applied in the learning process	0 (0.0)	0 (0.0)	2 (1.1)	68 (36.2)	118 (***62.8***)
7. Small group discussion gives better understanding regarding the subject	3 (1.6)	4 (2.1)	7 (3.7)	83 (44.1)	91 (***48.4***)
8. Self-directed learning is a very effective method of learning	4 (2.1)	21 (11.2)	10 (5.3)	93 (***49.5***)	60 (31.9)
9. The viva voce system is effective	4 (2.1)	4 (2.1)	9 (4.8)	104 (***55.3***)	67 (35.6)
10. There is huge academic workload	3 (1.6)	18 (9.6)	3 (1.6)	67 (35.6)	97 (***51.6***)
11. Satisfied with the semester system	16 (8.5)	19 (10.1)	11 (5.9)	117 (***62.2***)	25 (13.3)

Discussion

This study was conducted among 188 MBBS students of Bankura Sammilani Medical College to assess their preferred learning style and to assess the perception of students about the present curriculum system.

In this study majority (83.5%) of the students preferred unimodal style of learning. The most preferred unimodal style of learning was Kinesthetic (44.7%) where as Aural and Kinesthetic were the most preferred bimodal style of learning (6.4%). The only multimodal style of learning preferred by the students included Aural and Read/write and Kinesthetical together (0.5%). A survey from Iran, by Peyman H et. al. found that about 58.2% of the study participants preferred to use multiple mode of learning styles and 41.8% preferred only one learning style. Around 27.6%, 13.4% and 17.0% preferred quad-modal, tri-modal and bi-modal learning styles respectively.[7] A study done by Liu and Ginther on students of America found that around 40% percent preferred visual style, 20-30% preferred aural style and 30-40% preferred either reading/writing and kinesthetic or their combination.[8].In a study by Husmann PR et. al. on anatomy students (2018)in the USA found that most common mode of learning style was kinesthetic.[9] A study by Habibpour et al (2016), on medical students in Iran found that reading-writing was most common learning style[10].

In this study 49.5% students agreed that self-directed leaning (SDL) is a very effective approach for learning. A study done by Premkumar et al. evaluated the self-directed learning readiness of medical students across the training years and found the importance of SDL in medicine, the current curriculum may require an increase in learning activities that promote SDL. [11]In a study by Dayananda R et al. the majority of the students agreed that in small-group teaching they learned and retained information better.[12]In our study 48.4% students strongly agreed that small group discussions (SGD) give better understanding regarding the subjects.

Conclusion

The preferred learning styles among medical students in this study were kinaesthetic followed by aural. Exploring different learning styles could potentially be used in the curriculum so that instructors could plan appropriate teaching learning method according to their learning needs. Self-directed learning, small group discussion, problem-based learning were reported as satisfactory by the students as per the new curriculum.

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Conflicts of Interest: None

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