

Does Urban/ Rural Divide Exist in the Type of Learning Style Preferred by the First Year Medical Students in a Private Medical College in South India?

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Abstract:

Student's admission in medical colleges in India comprises a diverse pattern. A few years ago, Entrance Examination for school final (plus-two) students was abolished in many states. This is because the rural students were assumed to be not good with the analytical questions (MCQ's) than the students who studied in urban areas. In PSGIMS&R medical college in the first year, urban students represent 78% while rural students represent 22% of the total population. Will such a urban/rural difference among the medical students affect their individual learning styles? Will the Instructor has to modify his teaching style to cater the needs of the vibrant student community? Urban students are those who had their schooling in urban areas while rural students are those who had their schooling in rural areas. So, the VARK Questionnaire was administered to all the 55 students who were chosen randomly in the class. URBAN- 30 students. RURAL – 25 Students. The expansion of VARK type of learning styles are: V (Visual)- Learning from graphs, charts and flow diagram, A (Auditory)- Learning from speech, R (Read/ write)- Learning from reading and writing, K (Kinesthetic) – Learning from touch, hearing, smell, sight and taste. Out of this, the preference of learning style by majority of students is Multimodal (i.e.) 57% in urban students & 60% rural students. The unimodal modality that was chosen by majority of both urban and rural students was of Kinesthetic type.

Keywords: Visual, Auditory, Read/Write, Kinesthetic, VARK, Learning Styles, Gender Difference.

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Introduction

For the past several years in Tamil Nadu, in the standard XII public examination (the school final examination), the number of rural students who got selected into medical college showed a rising trend.

So the following question arose: "Is there any urban/rural divide exist in the learning styles of first year medical students in South India?" Because the answer for this question would definitely facilitate the instructors in devising the suitable lesson plan for teaching. So by using the standard VARK questionnaire, the student's learning style was evaluated. Learning style is significant for the academic success of the student.

Initially, there were only three domains – VAK - in the evaluation of learning styles. Then Fleming & Miles [1] added the R domain to the list of learning styles.

Aims & Objectives:

Primary Objective: To find out the differences in learning styles among the urban and rural students attending a private medical college in the first year in South India.

Secondary Objective: To propagate the conclusion obtained in the study to all the faculty in all the colleges and use it to enrich the knowledge obtained by the students in lecture classes.

Materials & Methods:

Population and sample: The participants in the study consisted of first year medical students attending PSGIMS&R. A total of 55 students who attended the class were administered with the test. Previously this study was approved by Institutional Human Ethics Committee. The version of VARK questionnaire used was 8.01.

Instrumentation: The VARK questionnaire developed by Fleming was used to identify the sensory modality preferred by first year medical students in PSGIMS&R. The questionnaire is a 16 item multiple choice questions that can be completed in 15 to 20 minutes. The respondents are permitted to omit a question or to choose 2 or more responses for each item.

Analysis: The version of SPSS statistical analysis used for the study was 28.

The analysis of the questionnaire was done in the following manner. For each question, the four choices represent either one of the domains. The difference between the two highest scores was taken up for analysis. Then by using the tabular column given below, the particular sensory modality preferred by the student was noted down. For example, (for responses less than 17), if the difference between the two highest scores is zero or one, then the result is Multi-Modal type of learning style. For responses between 17&22, if the difference between the two highest scores is zero, one or two, then the result is Multi-Modal type of learning style.

For the responses between 23 & 26, if the difference between the two highest scores is zero, one, two or three, the result is Multi -Modal type of learning style.

For the responses more than 26, if the difference between the two highest scores is zero, one, two, three or four, then the result is Multi-Modal type of learning style.

The statistical significance was set at a 'p' value of <0.05.

Result:

Among 55 study participants, 78% belonged to urban and 22% belonged to rural area. The most common pattern was KVAR (20%) followed by KAVR (18.2%) and AKVR (10.9%). The first preference was Kinesthetic in 56%, Aural in 27%, Visual in 10% and Read-Write in 7%. There was statistically significant difference in the total number of responses between rural and urban areas with p value of 0.014. The urban participants had higher number of responses compared to rural. In independent t test, there was no statistically significant difference in V,A, R, K scores between rural and urban participants.

Majority of participants preferred multimodal pattern (59%) followed by unimodal (41%) pattern. Using chi square test, it was found out that there was no statistically significant difference between rural and urban participants in reference to unimodal or multimodal learning style.

Table 1: Tabular column

Column	The difference between any two highest scores was:						
My total number of responses is	Zero.	One.	Two.	Three.	Four.	Five.	Six Or More
Less than 17	Multi-Modal	Multi-Modal	Mild	Strong	Very Strong	Very Strong	Very Strong
Between 17 and 22	Multi-Modal	Multi-Modal	Multi-Modal	Mild	Strong	Very Strong	Very Strong
Between 23 and 26	Multi-Modal	Multi-Modal	Multi-Modal	Multi-Modal	Mild	Strong	Very Strong
More than 26	Multi-Modal	Multi-Modal	Multi-Modal	Multi-Modal	Multi-Modal	Mild	Strong

Pattern :

		Frequency	Percent
Valid	AKRV	3	5.5
	AKV	1	1.8
	AKVR	6	10.9
	ARKV	2	3.6
	ARVK	1	1.8
	AVKR	1	1.8
	KARV	5	9.1
	KAV	2	3.6
	KAVR	10	18.2
	KRAV	1	1.8
	KVAR	11	20.0
	KVRA	2	3.6
	RAKV	1	1.8
	RKAV	1	1.8

	RKVA	2	3.6
	VAK	1	1.8
	VAKR	2	3.6
	VKAR	2	3.6
	VKRA	1	1.8
	Total	55	100.0

Table 2:

		Frequency	Percent
Valid	Multimodal	32	58.2
	Mild	6	10.9
	Strong	6	10.9
	Very Strong	11	20.0
	Total	55	100.0

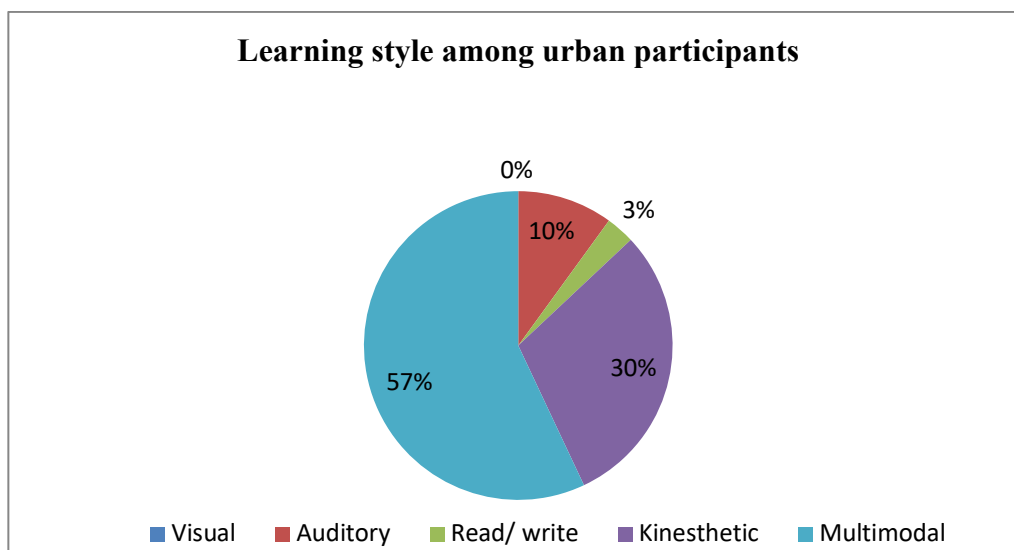


Figure 1: Learning style among urban participants

Legend: Multimodal -57 %, Visual -0%, Auditory-10%, Read/Write -3 %, Kinesthetic-30%

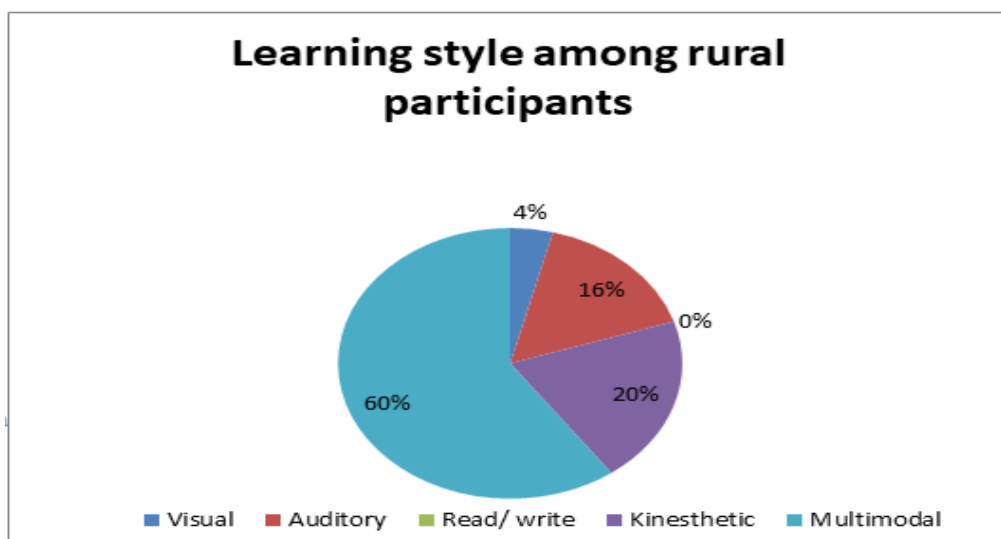


Figure 2: Learning style among rural participants

Legend: Multimodal -60 %, Visual -4%, Auditory-16%, Read/Write- 0%, Kinesthetic-20%.

Discussion & Conclusion

Several studies were conducted so far [2,3] for the students with a wide variation in the selection of

subjects. Majority of the studies were from United States of America, some were from the Gulf region. Such studies are so far absent in Indian student community. In one of the studies conducted in Wayne State University, Michigan, USA using first year medical students [2,3] as subjects, 54.2% of females and only 12.5% of males preferred a single mode of information presentation. Among the 54.2% in female students, 33.3% preferred kinesthetic mode, 16.7% preferred R (Read Write) modality, 4.2% chose preference for visual modality and none chose A (Auditory) method of information presentation. In the 12.5% among the male students, they chose the domains ARK (Auditory /Read-Write/ Kinesthetic) almost equally of about 4.1% each while 0% chose V (Visual) domain. In another study conducted at the same place a year later, showed a different pattern—both male (56.1%) and female students (56.7%) preferred a multiple modality of information presentation. Not only were that, the percentage of students and types of sensory modality chosen not significantly different between the genders.

Knowing the learning style of the students is a valuable tool in Education. Because it helps educators to devise a method by which the majority of students can effectively learn [4]. So make the class room sitting more stimulatory and interactive. If learning is made pleasurable the performance in the examination will improve. The onus is on the teacher to understand student's learning style and get adapted.

In another study by H. L. Lujan and S.E. DiCarlo [4], most of First year medical student (63.8%) preferred multiple modes of information presentation. When compared between First year medical education in college and school final education in schools, there is a dramatic increase in the volume of content. Furthermore, today's medical students represent a broad spectrum in terms of age, experience, culture as well as learning preference and styles. So it represents a challenge for instructors to meet the educational needs of all students.

In the present study, about 58% of both urban and rural students exhibited multimodality indicating that they use a combination of learning styles for gaining knowledge. These findings are coherent with previous study. Also it is a good idea to retake the VARK annually to ensure that you are using the right study methods for teaching.

In conclusion, in the passive lecture format, all students are assumed to be 'Auditory Learners'. But only 26% were found to be Auditory Learners.

The studies have shown that students learn better by active learning strategies [5] like debates, role play,

discussion in the class, simulation, modules and games.

So drastic reduction in passive lecture hours is advised and the teachers should provide a blend of V, A, R, K activities in their lecture classes.

Future Directions

The future directions of the present study is to find out any difference in medium of Instruction (Tamil/ English) will affect the learning styles and whether any difference exists in the scoring of marks and the type of learning modality preferred by the students.

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