



A CROSS - SECTIONAL STUDY ON THE LEARNING STYLES AND THE NEET SCORE - 2025 OBTAINED BY THE NEWLY ADMITTED STUDENTS IN FIRST YEAR MBBS IN A PRIVATE MEDICAL COLLEGE IN SOUTH INDIA

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ABSTRACT

Students adopt multiple learning styles in internalizing information. Learning styles is a term used to refer to the methods of gathering, processing, interpreting, organizing and thinking about information. Neil Fleming proposed the VARK model of learning style. Some like to learn by Visual (V), Auditory (A), Read / write (R) and Kinesthetic (K) modalities. The NEET is the one of the most crucial examination for aspiring medical professionals in India. With fierce competition and high stakes, it is essential to optimize the learning process to excel in this exam. Recognizing the dominant learning style of an individual can revolutionize the way of study and retain information. To maximize NEET score, one has to identify the individual learning preference and adapt study techniques to suit them, incorporating a mix of methods for better retention and recall. A cross - sectional study was conducted among 232 students in the First year MBBS course at PSGIMS& R Medical College in South India. This method revealed the correlation between the learning style and their NEET score. The results showed that the most common pattern was KAVR followed by AKVR and KVAR. There was no statistically significant association between First / Second / Third / Fourth preference in VARK and NEET score using oneway ANOVA.

KEYWORDS : Visual (V) / Auditory (A) / Read / write (R) and Kinesthetic (K) / VARK questionnaire.

INTRODUCTION :

Learning is the process by which individuals can acquire knowledge, skills & behaviour during their life time. Learning style is said to be the manner in which learners most efficiently and effectively learn and they store and recall information whenever needed.

Every individual has a unique learning style. This is due to the fact that an individual gathers, understands, organizes and remembers information in a unique way. Also the learning style of an individual does not stay the same throughout. The learning style changes and evolves. It is just the preferred way of learning and not their only way of learning. An individual prefers to learn differently under different situations in their life time.

Out of the about 70 different learning style models identified in a recent review, VARK type of learning style is the one chosen for this study. The VARK questionnaire was developed by Neil Fleming and Miles in the year 1987^[1]. The acronym VARK's expansion is Visual / Auditory / Read - Write / and Kinesthetic preference.

Students with visual preference use diagrams, pictures, mind maps and symbolic devices such as graphs and flow charts. Auditory learners gather information best by hearing and enjoy discussions, lectures, tutorials and podcasts. Read - Write learners prefer written or printed material like text books, notes and summaries to gain knowledge. Kinesthetic learners prefer simulations of real life experiences, field trips, experimenting demonstrations, workshop, practical applications and hands on experiences.

AIMS AND OBJECTIVES :

Primary Objective: To correlate the NEET score with the learning styles among the newly admitted students in First year MBBS in a private medical college in South India.

Secondary Objective: To propagate the result obtained in the study to all the students preparing for next year NEET examination and make them score high marks in the NEET exam.

MATERIALS AND METHODS :

- **Study Design:** Cross - sectional study
- **Study population:** The 232 medical students who were admitted in the First year MBBS in a private medical college in South India.
- **Sample size and its Justification :** Using Cochran's formula, the sample size was estimated to be about 235. This sample size gives adequate strength for the study.

METHODOLOGY :

Flow chart : 232 students attending the First year MBBS in a private medical college were selected (both males & females)

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VARK Questionnaire contains 16 multiple choice questions.

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20 minutes time was given for the students to fill the questionnaire

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The students were permitted to choose one or more than one option or omit a question as found suitable.

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Scoring chart was used to analyze the results from 232 students.

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The strength and the types of learning styles were found out.

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Results were used in drawing the pie chart and bar diagram

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Final data was used for publication in indexed journal

Inclusion Criteria And Exclusion Criteria

Inclusion criteria :

1. First year students
2. Studying at PSGIMS& R
3. Age 18 years and above.
4. Both male and female students
5. Who are interested in the study
6. Students getting any amount of marks in formative assessment

Exclusion criteria :

1. Second year and above MBBS students
2. Age less than 18 years
3. Who are not interested in the study
4. Students from outside PSGIMS& R

RESULTS :

232 students participated in the study. The most common pattern was KAVR (26.7%) followed by AKVR (17.2%) and KVAR (16.8%). The mean NEET score was 485.8 with a SD of 41.0

The first preference was Kinesthetic (57.4%) followed by Aural, Visual and Read - Write. There was no statistically significant association between first method of preference in VARK and NEET score using oneway ANOVA. Oneway ANOVA was done to look for differences between groups based on their learning styles. Similarly percentages for each of the learning style were obtained in second preference, third preference, and fourth preference values. Questionnaires were evaluated on the basis of scoring instructions available on the VARK website. The data thus obtained was compiled using Microsoft Excel spreadsheet and statistically analysed with SPSS version 28. The other three methods of preference in VARK and NEET score were not statistically significant.

The statistical significance was set at a 'p' value of <0.05. But the value of the 'p' obtained in the study was 0.978. So this value was not statistically significant.

The pie chart was drawn for first preferred learning style among the study participants. The values were : Kinesthetic - 57.6% / Aural 28.4% / Visual 9.5% / Read - Write 4.3% . Also a bar diagram was drawn for preference of learning style among the study participants.

DISCUSSION

Among the four different learning styles, there is no one - size - fits - all approach to learning.

There is no single BEST learning style for NEET. No learning style is superior. Learning in the preferred style makes learning easier and enjoyable. Also such preferred learning style can optimize the learning potential and improve the chances of achieving a good score. Understanding the learning style is critical for students academic success^{[9][10]}. Students learn effectively by the delivery of the subject in the predominant learning style of the student.

Learning style and its NEET application :

- **Visual learners:** Use flashcards, flowcharts, diagrams, and colourful highlighters for notes and concept mapping.
- **Auditory Learners:** Record lectures and listen back, discuss concepts with peers or teachers, and use audio mnemonics.
- **Kinesthetic Learners:** Actively write down notes, use 3D models and incorporate physical activities or study breaks to stay engaged.
- **Read / Write Learners:** Create detailed notes, summaries, and practice writing out solutions to problems.

In a study conducted among first - year medical students in Kayseri, Turkey,^{[2][3][4]} showed that 23.3% were Kinesthetic, 7.7% were auditory, 3.2% were visual and 1.9% were Read - Write learners. The remaining were multimodal learners.

In a study from west of Iran,^[5] about 141 first year medical students at Ilam University was given the VARK questionnaire.

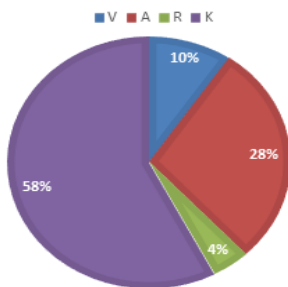
Overall 41.6% of the students preferred to be unimodal. Remaining 58.4% showed that first year medical students preferred multiple learning styles^[6]. Among the unimodal learners, 17.7% preferred Aural, 17% preferred read - write, 6.2% preferred Kinesthetic style and 0.7% preferred Visual style.

According to learning styles study by Kharb/ Samanta P/ Jindal M,^[7] 39% of the respondents had one strong (unimodal) learning preference. The most common of the unimodal preference was Kinesthetic followed by Visual, Auditory and Read - write.

Studies have shown that students learn better by using Active learning strategies^[8]. Examples of Active learning strategies are discussion in class, co-operative learning exercises, role play, simulations, models, debate and games.

The most common hypothesis about instructional relevance is the "Meshing Hypothesis". According to this, instruction is best provided in a format that matches the preference of the learner. Also according to Malcolm Knowles theory, it is based on the principle that learning should be learner centered.

FIRST PREFERRED LEARNING STYLE



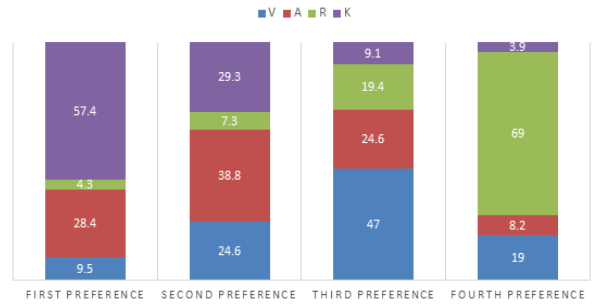
VARK AND NEET SCORE RESULTS

Frequencies

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
AKRV	13	5.6	5.6	5.6
AKVR	40	17.2	17.2	22.8
ARKV	6	2.6	2.6	25.4
AVKR	5	2.2	2.2	27.6
AVRK	2	.9	.9	28.4
KARV	15	6.5	6.5	34.9
KAVR	62	26.7	26.7	61.6
KRAV	5	2.2	2.2	63.8
KRVA	4	1.7	1.7	65.5

KVAR	39	16.8	16.8	82.3
KVRA	9	3.9	3.9	86.2
RAKV	2	.9	.9	87.1
RAVK	1	.4	.4	87.5
RKAV	3	1.3	1.3	88.8
RKVA	2	.9	.9	89.7
RVAK	1	.4	.4	90.1
RVKA	1	.4	.4	90.5
VAKR	5	2.2	2.2	92.7
VARK	5	2.2	2.2	94.8
VKAR	9	3.9	3.9	98.7
VKRA	1	.4	.4	99.1
VRKA	2	.9	.9	100.0
Total	232	100.0	100.0	

PREFERENCE OF LEARNING STYLE AMONG STUDY PARTICIPANTS



In the pursuit of success in NEET Exam, understanding students learning style is paramount. By identifying students preferred mode of learning and adapting their study strategies accordingly, students can maximize their learning potential and enhance their chances of achieving their goals.

Future Directions:

The future directions of the present study is to find out any differences in gender (boys and girls)^{[11][12]} and NEET score with the same learning style. This will enable us to correlate the NEET score and learning style in higher secondary students in both boys and girls.

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