

## LEARNING STYLES AMONGST FIRST YEAR MEDICAL STUENTS AT S.R.T.R. GOVERNMENT MEDICAL COLLEGE, AMBAJOGAI, INDIA

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### ABSTRACT

Learning style is defined as the manner and the conditions under which learners most efficiently and effectively perceives, process, store and recall what they are attempting to learn. We are interested in developing teaching approaches to address the learning needs of all of our medical students. To better understand our learners and their learning style characteristics, we administered Fleming's VAK questionnaire for assessing sensory modality. Participants in this study consisted of 1st year Medical students at S.R.T.R. Government Medical College, Ambajogai, India. A total of 133 students completed the questionnaire. The VAK questionnaire was used to identify one facet of student learning styles, the sensory modality by which they prefer to take information. Most of the students 58.64 % of the students preferred a single mode of information presentation. Among these students, 10.52 % preferred visual (learning from graphs, charts, and flow diagrams), 19.54 % preferred auditory (learning from speech), and 28.57% preferred kinesthetic (learning from touch, smell, and taste.). In contrast, 41.35 % students preferred multiple modes [two modes (39.84%), three modes (1.5%)] of information presentation. As teachers, we need to assess and understand how to reach all students by understanding how to present the information in multiple modes. We can help students more effectively; both in and out of the classroom, if we are aware of their learning style.

**KEYWORDS:** Learning styles, VAK questionnaire, Medical students.

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### INTRODUCTION

A learning style or preference is the complex manner in which learners most efficiently and most effectively perceive, process, store, and recall what they learn [1].

However, it is important to recognize two factors that influence learning; stimuli (environmental, emotional, sociological, physical and psychological) and preference for learning/processing new information [2]. Disparity between learning and delivery of instruction may lead to frustration in students. This can be reduced by knowing the students learning style preferences

which can be employed to teach them. When students exhibit significantly different learning styles, the instructor need to address this fact and develop appropriate learning approaches as it can enrich the learning experience [3] Academic demands of medical students are rigorous since medical education involves a large volume of content and different ways of delivery of information and knowledge. Today's medical students are quite heterogeneous in terms of age, experience, culture, ethnicity, educational backgrounds and level of preparedness as well as learning preferences.

Health professionals usually require several simultaneous skills involving sensory components such as visual (deciphering graphic content in research articles), auditory (listening to patients or clients), reading-writing (reading journal articles and keeping records), and kinesthetic (learning or performing physical examination and procedures). In that sense, an instructor's most important responsibility and challenge is to present information through a variety of teaching methods since teaching and student learning styles may affect student academic success. Therefore, faculty members must have content knowledge, pedagogical knowledge, and knowledge of the learner and his/her characteristics to be effective teachers[4] First and foremost we need to be aware of learning styles to avoid mismatches in the styles between instructors and learners.

Many learning style tests are available for example, those from Dunn, Kolb, Keefe, Gregorc, Felder Fleming and Soloman. Fleming introduced VAK questionnaire to test the learning preferences. [5]

Though learners use all of these sensory modes of learning, one mode is often dominant and preferred. For example, visual learners learn through seeing drawings, pictures, and other image-rich teaching tools. Auditory learners learn by listening to lectures, exploring material through discussions, and talking through ideas whereas kinesthetic learners learn through touching and experiences that emphasize doing, physical involvement, and manipulation of objects.

### MATERIALS AND METHODS

Participants in this study consisted of 1st year medical students at S.R.T.R Government Medical College, Ambajogai, India. A total of 133 students completed the questionnaire. The VAK questionnaire developed by Fleming was used to identify one facet of student learning styles, the sensory modality by which they prefer to take information. We administered the questionnaire as a hard copy that was completed in classroom. Students were allowed to choose multiple answers per item to adequately describe their preferred response(s) to the situation presented. The total number of student respon-

ses was tallied for each of the three sensory modalities (V, A, and K) and for all possible combinations of modalities (e.g., VA, VK etc.). The scoring algorithm on the VAK web site was then applied to identify each student's modality preferences. The number of students who preferred each mode of information presentation was divided by the total number of student responses to determine the percentage of students in each category.

### RESULTS

**Table 1:** Possible combinations of VAK modes.

Single mode	Dual mode	Trimode
V	VA	VAK
A	VK	
K	AK	

Table 1 shows the possible combination of VAK modes of responses given by the students

**Table 2:** Overall distribution of students with VAK learning style preferences.

S. No.	Preferred style	n	%
1	Single mode	78	58.64%
2	multimode	55	41.35%
3	Double mode	53	39.84%
4	Triple mode	2	1.50%

Table 2 Shows percentage of students who preferred single mode (58.64 %), two modes (39.84 %), and three modes (1.5%) of information presentation.

**Table 3:** Students' distribution with subgroups of VAK learning style preferences.

SM	n	%	DM	n	%	TM	n	%
Visual (V)	14	10.52%	VA	17	12.78%	VAK	2	1.50%
Auditory (A)	26	19.54%	AK	21	15.78%			
Kinaesthetic (K)	38	28.57%	VK	15	11.27%			

SM= Single mode, DM= Dual mode, TM= Trimode.

As shown in Table 3 Most of the students (58.64%) preferred single mode of information presentation with visual (10.52%), auditory (19.54%) & kinesthetic (28.57%). Among the all students, 41.35% students preferred more than one (multiple) mode of information presentation; 39.84% preferred two modes, and 1.5% preferred three modes Among the students who preferred two modes of information presentation, 12.78% students preferred visual and auditory, 15.78% students preferred auditory and kinesthetic, and 11.27% students preferred visual and kinesthetic.

## DISCUSSION

Learning style as defined by Keefe is the composite of characteristic cognitive, affective and physiological characters that serve as relatively stable indicators of how a learner perceives, interacts with and responds to the learning environment [6].

The knowledge of student preferred learning style is vital if we as educators are to provide tailored strategies for individual students. The results of the VAK questionnaire should convince teachers to use multiple modes of information presentation. When instructing in undergraduate courses matched student's learning style preferences, students achieved higher scores than when mismatched [7] Rochford [8] found that using learning style responsive material to instruct remedial writing students at an urban community college resulted in significantly higher achievement. Miller [9] found that both student examination scores and students attitude toward learning scores were significantly higher when presentation was matched with student learning styles. Grasha [10] argued that an environment in which delivery of the material is matched to the learner's preferred style would eventually bore the student, causing the learner to disengage. Mismatching is suggested as an occasional teaching strategy employed to stimulate interest, and not as an alternative for matching Students. Regarding the single mode learning style preferences, one study [11] has reported that the percentages of students preferring a single mode in descending order were K (16%), R (15%), A(5%), and V (4%).

In our study, we administered the VAK questionnaire to our first-year Medical students to determine their preferred modes of information presentation. 133 students out of 150 students (88.66%) returned the completed questionnaire. Most of the students preferred a single mode (58.64%) of information presentation (visual, auditory or kinesthetic). Among the students who preferred a single mode of information presentation, only 10.52% of the students preferred the visual. These students prefer information to arrive in the form of graphs, charts, and flow diagrams. They are

sensitive to different or changing spatial arrangements and can work easily with symbols. Similarly, only 19.54% of the students preferred receiving information by speech, which arrives to the learner's ear and is therefore coded as auditory by the questionnaire. Only 28.57% of the students preferred their learning by using all their senses, including preferred their learning by using all their senses, including touch, hearing, smell, taste, and sight. This group was described as kinesthetic. These students prefer concrete, multisensory experiences in their learning. Although learning by doing matches their needs, they can easily learn conceptual and abstract material provided it arrives with suitable analogies, real-life examples, or metaphors. [12] Among the hundred and thirty three students 41.35% preferred more than one (multiple) modes of information presentation. 39.84% preferred two modes of information presentation with visual and auditory 12.78 %, auditory and kinesthetic 15.78% & visual and kinesthetic 11.27%. Only 1.5% students preferred all the three visual, auditory, and kinesthetic modes of information presentation.

Results of our study matched well with Breckler J.Joun [11] and Prabha V. [13].

## CONCLUSION

1. When students exhibit significantly different learning styles, the instructor need to address this fact and develop appropriate learning approaches as it can enrich the learning experience.
2. When the students are exposed to a teaching style that matches their learning style, students do well in their academics than those not taught in their learning style.
3. We can help students to build confidence and more effectively manage their own learning.
4. We can avoid to treat all students in a similar way. If we wish students to have optimum learning in our class, we must change the way we deliver lecture.
5. It stimulates the teachers to change from their preferred mode(s) to using others and thus the teaching style that is both effective for students and comfortable for the professor, with a dramatic effect on the quality of learning.



**Conflicts of Interests: None**

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