

# Instructional preferences of medical students of first and third semester medical students in athletics training

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## Abstract

**Background:** Athletics training is given using personality models, information processing models, social interaction models and instructional preference models. This study uses the VARK (Visual Auditory Read/Write Kinesthetic)- visual, auditory, read/write, and kinesthetic inventory to gather information as per instructional preference model for assessing learning preferences among first and third semester MBBS students with reference to athletics training. **Aim:** This study is designed to evaluate and compare instructional learning style preferences of first and third semester medical students in a peripheral medical college in India. **Materials and Methods:** This study was conducted on first and third semester MBBS students with each group having 100 students each. VARK inventory version 7.1 was administered to determine the preferred instructional mode based upon the four sensory modalities- visual, auditory, read/write and kinesthetic with reference to athletics training. **Results:** About 80% of the first semester students had unimodal learning preferences out of which 11%, 49%, 5% and 15% students preferred visual, auditory, read/write and kinesthetic modes respectively. In comparison, significantly higher percentage (51%) of third semester students had multimodal learning preferences. Their unimodal learning preference was 4% visual, 6% auditory, 5% read/write and 14% kinesthetic modes. First semester students' auditory instructional style as the most preferred method, whereas the third semester students, preferred the kinesthetic mode. **Conclusion:** With the passage of time in the medical course, students adapt to a multimodal method of instruction. It is, therefore, in the interest of students to strengthen, encourage and adopt a multimodal approach to physical training rather than resorting to the conservative unimodal approach.

**Key words:** Learning preference in athletics, bachelor of medicine bachelor of surgery students, visual auditory read/write kinesthetic

## INTRODUCTION

Workers in the field of education have generally opined that every individual has a specific innate learning style, and learning is more effective if instruction is delivered by this method.<sup>[1]</sup> This assumption has a physiologic

basis depending upon the sensory modality students prefer to use while assimilating information. Teaching methodologies in medical colleges have to be in line with learning preferences of the present generation of medical students. The VARK - visual, auditory, read/write and kinesthetic questionnaire is widely accepted for assessing instructional preferences and is, therefore, a valuable tool in the assessment of student learning preferences.<sup>[2]</sup> VARK version 7.1 (VARK Learn Company, VARK Learn Limited, Christchurch, New Zealand) is the latest in this series capable of assessing four modalities of above mention learning preference parameters. It has been demonstrated by earlier workers that visual preference in the context of learning preferences includes use of diagrams and pictures, graphs and flow charts. Auditory preferences include

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hearing discussions, lectures and tutorials. Read/write preferred reading printed material. Simulation of real life experiences, field trips, demonstrations, workshops and hands-on experiences are preferred by kinesthetic learners.

Unimodal learners in this study are that group of students who prefer a single method of information presentation, whereas multimodal learners prefer > 1 method. VARK inventory method has been widely used in various countries to assess learning method preferences. Learning styles of students in the medical college is bound to change over a period. Students from a diverse background gain admission in a peripheral medical college in India. It would be interesting to know and compare their learning method preferences at the time of joining the medical college in the first semester with that in the third semester after a short duration of exposure to medical teaching.

This study is designed to evaluate and compare instructional learning style preferences of first and second semester medical students with reference to athletics training experiments using 7.1 version of VARK questionnaire.

## MATERIALS AND METHODS

This study was conducted on medical students studying at PES Institute of Medicine, Kuppam. Ethical clearance was obtained from the institutional ethics committee. Students of the first semester ( $n = 100$ ) participated in the study. Voluntary informed consent was obtained for the study. VARK version 7.1 questionnaires was administered. The questionnaire consists of 16 multiple choice questions, and it measures four perceptual learning preferences (visual, auditory, reading/writing and kinesthetic). Each question carried four options. Participants were permitted to choose one or more than one options as found suitable. A total of 100 respondents completed the questionnaires. Questionnaires were evaluated on the basis of previously validated scoring instructions available on the VARK site.<sup>[2]</sup>

This method was repeated to assess the responses of the students in the third semester.

Statistical analysis was performed to calculate percentage of students with unimodal and multimodal preference in both sets, percentage of students in each category of learning

style preference in the two semesters, dominant learning preference in each study group using Chi-square test.

## RESULTS

VARK inventory results for the first and third semester medical students are shown in Table 1.

The data shows that 80% of the first semester students had unimodal learning preferences out of which 11%, 49%, 5% and 15% students preferred visual, auditory, read/write and kinesthetic modes, respectively. In comparison, significantly higher percentage (51%) of third semester students had multimodal learning preferences. Their unimodal learning preference was 4% visual, 6% auditory, 5% read/write and 15% kinesthetic modes.

First semester students' auditory instructional style as the most preferred method, whereas the third semester students, preferred the kinesthetic mode. The number of third semester students preferring the auditory method was significantly lower than the first semester.

Students in the third semester had a broader outlook in their learning preferences as encompassed in their choice for multimodal learning methods.

## DISCUSSION

This study was designed to evaluate and determine the learning preference of first semester students of medicine with that in the third semester. Athletics training was used as a reference. Learning preferences of students help coaches to practise effective teaching methods. The present study revealed that the most preferred unimodal learning style in first semester students was auditory. These findings are similar to other Indian workers like Jindal *et al.*,<sup>[3]</sup> Shah *et al.*<sup>[4]</sup> This is in contrast to similar studies in the West where read/write method was preferred by fresh students. Malaysian students had preferred kinesthetic method in one of the studies.<sup>[5]</sup> The difference in preferences in this group of fresh medical students is most likely due to their earlier training methods before entry into the medical college. A similar view is opined by workers in this field.<sup>[6]</sup> Gender influence on learning

**Table 1: Comparison of unimodal and multimodal instructional methods**

Semester-MBBS	Visual %	Auditory %	Read/Write %	Kinaesthetic %	Multimodal %
First	11	49	5	15	20
Third	4	6	5	14	51
<i>P</i>	0.400	0.0001	0.607	0.605	0.001

style methods was not studied here as there is a lot of difference of opinion on this.<sup>[4]</sup>

The present study revealed that learning style preferences were significantly different in the second semester when compared to the first. The learners preferred unimodal methods in the first semester when compared to the second where a majority preferred multiple combinations of instructional methods. Lack of adequate teaching infrastructure and trained manpower in developing countries results in unimodal auditory methods being used predominantly in the school level. Training in a medical college encompasses multiple modes of teaching methodologies including tutorials and practical training. Hence, there is more of a multimodal exposure in the medical college.

## CONCLUSION

It is important to know the learning preferences of the present generation of medical students in order to understand the felt need of students. Preferences in instructional methods varies with the passage of time in the medical college. With the passage of time in the medical course, students adapt to a multimodal method

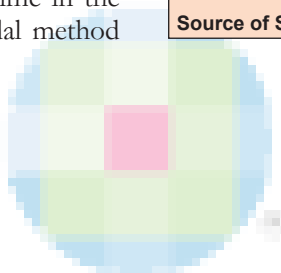
of instruction. It is therefore in the interest of students to strengthen, encourage and adopt a multimodal approach to lab teaching rather than resorting to conservative unimodal approach.

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