

LEARNING STYLE PREFERENCE OF UNDERGRADUATE DENTAL STUDENTS

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ABSTRACT

The aim of this study was to evaluate the learning style preference of dental undergraduate students. A cross-sectional study directed on dental undergraduates of the primary year to conclusive year of Baqai Dental College, amid the academic year of 2016-2017. A total number of 272 students participated in this study. The visual, auditory, read and kinesthetic (VARK) survey created by Fleming was utilized to distinguish the learning style. The VARK survey has 16 self-detailed, different decision questions. The most favorite learning style of students throughout their four years of dental education was kinesthetic and this particular learning style tops the other categories; with increasing interest from unimodal to multimodal sensory modal from first year to final year. In the inclination of single learning mode, the most widely recognized was kinesthetic. The result of this study gives valuable bits of knowledge to upgrading the learning encounters for dental students using the VARK method.

Key words: Dental Students, visual, auditory, read/write, kinesthetic, learning style

INTRODUCTION

Habit of acquiring knowledge through study or experience creates the learning style of an individual; it is the way that learners prefer over other ways in their content learning process.¹ Thus, personal style of receiving, processing, saving, and remembering new information retains the long term memory.² Every student seems to possess a unique learning habit, and when matched with the similar teaching methods the results seem to increase by leaps and bounds.³ Teaching in dental school can be carried out in various ways, the tutor should actively involve students to participate in class, emphasize students on their creative thinking, interpretations and problem-solving abilities to enhance their cognitive skills.⁴ Although, it should be appreciated that students will attain all information in such environment and their attitude towards awareness, that their level of competency will increase and can work in complex circumstances.⁵ In medical profession, students are expected to retain knowledge and applied it in their training years.⁶ Previous study showed that there were more than 70 different learning styles models have been proposed.⁷

The VARK is one of the learning style where visual

(V), aural (A), read/write (R) and kinesthetic (K). This is the standardized tool which is created by Fleming in which

MATERIALS AND METHODS

This cross-sectional survey was conducted on dental undergraduate students of Baqai Dental College, amid the scholastic year of 2016-2017. The ethical approval was obtained from the ethical committee of Baqai Medical University. The VARK questionnaire consists of 16 multiple choice queries with four options. All the options individual learning style is evaluated on the basis of four sensory modalities.⁸ The VARK model is also useful in identifying a student's preferred learning mode and helps to categorize a student as 'unimodal', i.e. having a preference of only one learning modality, or 'multimodal', i.e. having a preference for a combination of learning modalities.⁹ Coordinating student learning styles inside an encouraging system have come about enhanced scholastic results, while confuse between learning styles and educational programs has prompted bring down academic outcomes.¹⁰ In any case, there are number of critical issues that must be precluded to restrain the space between the students and educational modules configuration, including the connection between learning styles and academic accomplishment.¹¹ The aim of this study was to determine the learning style influence of undergraduate dental students.

Corresponded to the four sensory modalities measured visual, aural/auditory, read/write, and kinesthetic. The respondents were permitted to select more than one option(s), to identify the preferences for multiple learning styles. The data were analyzed by IBM SPSS, version 20.

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RESULTS

The results of individual groups of students from different years of dental education according to their preferred learning style via VARK classification. A total number of 272 students participated in this study. From which 74 students were from the first year, 75 from the second year, 55 from third and 68 from final year. First year student showed 2 visual 29.4% and kinesthetic 28.3% is the most preferred learning style, followed with read/write 25.4% and auditory 16.9%. In second year, kinesthetic 31.5% is most prevalent style than visual 26.2% is the second most chosen style followed with read/write and auditory with 23.2% and 19% respectively. Whereas, 32.8% students of third year showed kinesthetic style preference with interest of auditory 23.3% and visual 22.5% and read/write 21.4%. Final year showed highest interest in kinesthetic learning style 35.2% and then auditory style 26.3% followed with visual 22.4% and read/write 16.1%. The other part of this study assessed the different modalities of students of all years and results appeared with the gradual decrease of single mode learning style higher in first year 58.1% to second year 49.3% to third year 34.5 to least 11.8 in final year.

DISCUSSION

It's been observed in students of different level have different learning fashion, they adopt various style according to the need of their class. Students studying basic dental sciences subjects are more bookish and stick to their conventional learning methodology, while pre-clinical and clinical year students were often preferred motor sensory modalities with the recall memory of previous knowledge and were more interested in personal experiences.¹² The sample size was limited in this study of total 272 students. In this study students of 1st and 2nd year choose kinesthetic learning style with 31.1% and 28.3% respectively followed with visual

style in first year 26.2% and auditory in second year 25.3% which indicates may be due to the foundation year students are preferred to get involved with simulate on the phantom head, 3 demonstrations, practical tests, lab tests and lab reports with the conventional lectures. In the first year, more than half students were unimodal 58.1%, and rest of the most chose bimodal learning style 40.5%. Similarly, in 2nd year the ratio was almost equal between the unimodal 49.3% with the multimodal 50.7%. The ratio was drastically less in contrast with 1st year, which indicates that interest of students was gradually modifying with their level. The VARK study on dental and medical students on different populations showed almost similar results, in the Saudi study, first three years of dental students highly choose kinesthetic learning; 48.4% of first year, 61.5% of second year and 55.6% of third year choose multimodal sensory modality¹³, Australian study on 1st year midwifery and nursing students showed multimodal and preferred kinesthetic learning style¹⁴, Indian study on 2nd year medical students found Kinesthetic was the predominant with 61% multimodals¹⁵, other Indian study on 1st year dental students also showed similar results with 47.22% kinesthetic learning style and 64% multimodals.¹⁶ The same study was done before in Pakistan on 1st, 2nd and 3rd year's dental and medical students also preferred the kinesthetic learning style followed with auditory style but showed unimodal learning preference.¹⁷ The other West Indian study on pre-clinical years of medical students showed more preferences of reading/write among first three years of dental students followed with kinesthetic and choose multimodal mode of learning.⁶ In Thailand and Turkey, a study was done on students of 1st year medical also showed kinesthetic preference with multimodal style.^{18,19} One of the most interesting finding of this study was students gradually increases their interest towards multimodal learning mode from first year to final year in Table 2. The pre-clinical and clinical

TABLE 1: VALUE OF LEARNING PREFERENCES OF DENTAL STUDENTS

	Visual	Auditory	Read/Write	Kinesthetic
First year	29.4%	16.9%	25.4%	28.3%
Second year	26.2%	19%	23.3%	31.5%
Third year	22.5%	23.3%	21.4%	32.8%
Final year	22.4%	26.3%	16.1%	35.2%

TABLE 2: SCORING OF DIFFERENT SENSORY MODALITIES OF DENTAL STUDENTS

Class	Unimodal	Multimodal
	No and %	No and %
First year	43 (58.1%)	31 (41.8%)
Second year	37 (49.3%)	33 (50.7%)
Third year	19 (34.5%)	36 (65.5%)
Fourth year	8 (11.8%)	60 (88.2%)

year's students also showed results of kinesthetic with 32.9% of 3rd year and 32.1% of 4th year students which indicates that the kinesthetic learning is dominant in dental students as the students engage in a high proportion of lab and clinical practice. Like in 3rd-year, students become more multimodal than unimodal and in final year 88.2% were multimodal that they were adapt and comfortable with the various style of learning modes in their clinical years. Similarly, a study was done on clinical year dental students in India showed that most students had chosen the kinesthetic

mode of learning with multimodal learning style²⁰, another study on Australian chiropractic students of also preferred kinesthetic mode in their clinical years than consider to other leaning modals.²¹ Malaysian students of pre-clinical years also had a kinesthetic approach to their studies.²² In Egypt, graduation year students preferred aural mode with unimodal learning preference.²³ In pre-clinical years of medical student of Oman had also multimodal perspective to their studies.²⁴ The teachers follow the single style of teaching for all students comparing it is a ease of passing the information, the need to complete the syllabus, and teachers' own choice of delivering lectures, which may not be suitable all the time.²⁵ Our survey showed that dental students are more likely to learn through motor skills while studying, such as, touch, feel, perform and move. They preferred hands-on work, practical, project, and real experiences while learning.⁸ The 4 results of this study will induce the teachers the teaching style of instructor and deflect to or instructors to adopt different tools of choose other teaching tactics, which will information conveyance. This may influence definitely affect the results of students.

CONCLUSION

In conclusion, using the Fleming's validated questionnaire of VARK, this study showed in sensory modality the most widely recognized was kinesthetic. Students were improved their learning modality from first year to final year through unimodal to multimodal

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CONTRIBUTIONS BY AUTHORS

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| 1 Fatima Naseem Ahmed Khan: | Conception, design and analysis and interpretation of data. |
| 2 Muhmmad Rashid Ahmed: | Data collection and write up drafting of data. |
| 3 Muhammad Farhan Khan: | Data collection and final drafting of the manuscript. |
| 4 Syeda Seemein Raza: | Compilation of write up drafting of data and provided substantial help in various aspects. |
| 5 Ruqayyah Hashmi: | Formulation of tables and interpretation of data. |
| 6 Rubab Jawed: | Analysis and interpretation of data. |