



DOES THE LEARNING STYLE OF DENTAL UNDERGRADUATES CHANGE OVER A PERIOD OF TIME? - A LONGITUDINAL STUDY

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ABSTRACT Bachelor of Dental Surgery (BDS) is a four years of academic course with one year of mandatory internship. The first two academic years are preclinical years where the students learn by reading and doing on models. The next two academic years are clinical years where students actually work on patients. So, the students learning may change as they acquire real experiences by actually performing on patients and understand the topic.

Aim - To assess any change occur in learning style of undergraduate dental students when they progress from first BDS to final BDS.

Material And Methods- A longitudinal study was conducted among the 2016 BDS batch students of VSPM DCRC Nagpur (Maharashtra). The study instrument was the VARK questionnaire developed by Fleming N (2001) to identify the students learning style. This questionnaire was distributed to this batch when they were in first and final year to explore any change has occurred in their learning styles.

Result- Out of 79 dental undergraduates; 53% unimodal students shifted to 24%; 30% bimodal shifted to 19%; out of 9% trimodal shifted to 28% and out of 8% quadrimodal students shifted to 29%.

Conclusion- The learning style of dental undergraduates changes over a period of time.

KEYWORDS : Learning style, dental undergraduates, VARK questionnaire, and academic year.

INTRODUCTION-

During the undergraduate years, students have to become flexible life-long learners, able to gather and organize information from many sources and prepared to apply the relevant knowledge to the solution of the patient's problems in a humanitarian healthcare context (1).

As the students enter in higher academic years, he becomes mature and also 'visit' different styles when faced with new learning challenges and adds new learning skills to their repertoire (1).

AIM-

To assess any change occur in learning style of undergraduate dental students when they progress from first BDS to final BDS.

MATERIAL AND METHODS-

Institutional ethical committee approval was obtained from the institute. A longitudinal study was conducted among the 2016 BDS batch students of VSPM DCRC Nagpur (Maharashtra). Oral consent of the students was obtained to conduct the study. The study instrument was VARK questionnaire developed by Fleming N (2001) (2) to identify the students learning style. This questionnaire was distributed to this batch when they were in first year. Again the same questionnaire was redistributed when they have entered in final year. The submitted questionnaires was scored and tabulated to find out the students learning styles. The current learning style of students was compared with the previous learning style when they were in the first BDS to find out whether any changes has occurred during their preclinical to clinical years journey of BDS course.

RESULT-

The study instrument was the VARK questionnaire developed by Fleming N (2001) (2).

Learners may be unimodal if they prefer single sensory modality of learning or multimodal if they prefer more than one sensory mode. Multimodal learners are sub classified into bimodal, trimodal or quadramodal if they prefer two, three or four sensory modes respectively.

In the first year, the VARK questionnaire was distributed to 81 students, but in final year out of 81; 79 participants filled the questionnaire, so we excluded the two students and only 79 participants were considered to compare the result.

The students were enlisted according to their names and their learning style were written in two column of first and final year's learning style respectively to avoid any mistakes.

Learning Style Of Students When They Were In First Year-

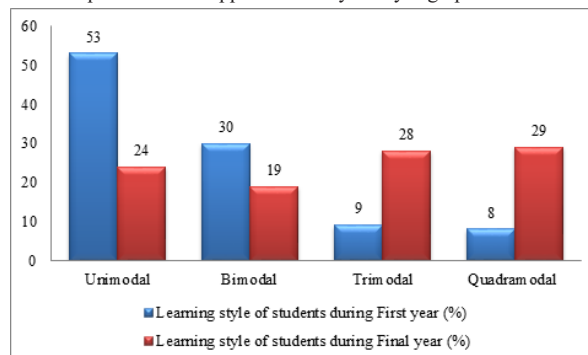
Out of 79 participants, 42 (53%) were unimodal; 24 (30%) were

bimodal learner, 7 (9%) were trimodal and 6 (8%) were quadramodal type of learner.

Learning Style Of Students When They were In Final Year-

Out of 79 participants, 19 (24%) were unimodal; 15 (19%) were bimodal learner, 22 (28%) were trimodal and 23 (29%) were quadramodal type of learner.

This comparison can be appreciated very nicely in graph 1.



Graph 1- Learning Style Of Dental Undergraduates In First BDS And Final BDS

Change Of Learning Style From First To Final Year-

In final year, out of 42 (53%) unimodal learner of first year have been shifted to 10 (24%) bimodal, 10 (24%) trimodal, 13 (31%) quadrimodal and only 9 (21%) participant leftovers as unimodal type of learner. It is very surprising to see that out of this 9 unimodal learner; there were about 3 kinesthetic and 3 auditory learners who have not changed their learning style also at all in these four year journey. Also the other three unimodal learner who were kinesthetic have shifted to auditory learner.

In final year, out of 24 (30%) bimodal learner of first year have been shifted into 4 (17%) unimodal, and 8 (33%) each into trimodal and quadrimodal type of learner. While 4 (17%) of bimodal learner have not changed their learning style. Also out of these four learners three were sticked to their learning style ie auditory and kinesthetic type (AK), while one is shifted from visual and auditory to read/write and kinesthetic (RK) type of learner.

In final year, out of 7 (9%) trimodal learner of first year have been shifted into 5 (71%) unimodal and no students have been shifted to bimodal and quadramodal type of learner. 2 (29%) of the learners

remained unchanged in shifting their learning style, they were of auditory, read/write and kinesthetic type of learners (ARK).

In final year, out of 6 quadramodal type of learner of first year have been shifted into 1 (17%) each of unimodal and bimodal type of learner. While 2 (33%) shifted to trimodal type. And 2 (33%) of them remained unchanged in shifting their learning style.

If we see the above result of this present study, the participants who have not shifted from their learning style either of any type of learner they were strongly in favour of their learning style.

To prove this, out of 9 unimodal; 6 were unchanged, out of 4 of bimodal, three were unchanged and two of trimodal and two of quadramodal have not shifted to other learning style.

It is also surprising that in all these auditory and kinesthetic type of learning style is superimposed.

It is also observed that, as the student progress into higher academic years, there are addition occurs in grasping their knowledge by increasing in the number of learning style. It may happen because of maturity level of students increases also the clinical exposure of the student's increases and they learn by gaining the real experiences.

The change in learning style from first year to final year is tabulated in table 1.

Table 1- Change Of Learning Style From First Year To Final Year

Learning of students in first year N (%)	Change of learning style during final year			
	Unimodal N (%)	Bimodal N (%)	Trimodal N (%)	Quadramodal N (%)
Unimodal-42 (53%)	09 (21%)	10 (24%)	10 (24%)	13 (31%)
Bimodal-24 (30%)	04 (17%)	04 (17%)	08 (33%)	08 (33%)
Trimodal-07 (9 %)	05 (7%)	-	02 (29%)	-
Quadramodal -06 (8 %)	01 (17%)	01 (17%)	02 (33%)	02 (33%)

DISCUSSION-

In the dental curriculum the scholars acquires the knowledge by first learning on models within the preclinics. But once they enter within the clinics in third and final year they begin learning by directly on patients where they get real experiences. This exposure to patients enhances their learning by inculcating the various learning styles. Many studies are conducted to ascertain the change in learning style over a period of time (3-6) in medical, postgraduate and accounting student but no study has been conducted among dental undergraduates. In modern teaching the teachers are devoting themselves for delivering the best to each and every student by taking the assistance of latest innovative ideas and technology (7) for the easy understanding of students where the students of any learning style easily imbibe knowledge. It also helps them to enhance new learning styles in their learning.

Grasha also suggested that some faculty members introduce different modes of instructional delivery to acknowledge the range of the learners that they teach (8). If teachers use a diversity of teaching methods and styles, learners are exposed to familiar and unfamiliar ways of learning that provide comfort and tension during the course, ultimately giving the learners multiple ways to excel (9).

Al-Saud (10) in his study informed their students that the learning reference results were a way for self-knowledge and weren't intended to limit or label them to a certain mode of learning. Some dental students may undergo a shift in learning preferences, as the learning environment changes from lecture hall to preclinical laboratory to patient clinic (11). The most effective learners are able to acclimate to the style that the learning situation requires. Teachers can help them to develop strategies for adapting to differing situations, especially when learning styles don't fit the task (9).

In the present study also 42 (53%) unimodal learners decreased to 19 (24%) and 6 (8%) quadramodal learners increased to 23 (29%) during their first to final year journey. This figure acknowledged that as the academic year advances number of learning style also increases. But there are certain exceptions who strongly remain adheres to their learning style, then rather they're of unimodal or multimodal as present

in present study participants also.

Limitations & Future Directions-

The present study sample was small. So, the future perspective will be assessing more batches to find out the more conquer result.

CONCLUSION-

The learning style of dental undergraduates changes over a period of time. The students adapt the different learning style as they reach to higher academic years. Although there are few students who remained unchanged in changing their learning style but their number is quite less.

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