Options of Dental Students on Learning Methods in Riyadh Elm University: A Questionnaire-Based Study

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ABSTRACT

The most important challenge experienced by dental educators presently is enhancing the learning environment, and improve student satisfaction with the curriculum. The recent dental students reflect a variety of cultures, backgrounds, attitudes, and learning styles. Therefore, a questionnaire-based study was implemented in the dental students. The aim of this research is to describe and compare male and female dental students' preferences on various aspects of teaching, demonstration and assignment of various dental colleges in the Riyadh city. This study has been designed as a questionnaire-based one and the questionnaire was categorized into three parts. A total of 150 students from couple of dental colleges from different institutes such as King Saud University and Riyadh Elm University, participated. The questionnaire was distributed to male and female undergraduate dental students and a stratified random sampling method was applied to collect the targeted samples. In this study, 58% were males and 42% of them were females. The 52.7% of majority of the students have opted the visual teaching method with 67.3% as multiple-choice questions. However, overall 14% of the students opted the all the choices. Among the innovative teaching methods, 58% of them opted the short quizzes and 55.3% of them opted the small group discussions. Among the combines teaching methods, 50.7% of the students have opted the exhaustive text book content and recent update from the journals. Additionally, 55.3% of the students were interrupted with the lecture timings. The present study concludes that the majority of respondents favored 45 minutes of lecture classes in the morning hours. The most favored teaching aid was the visual method, while the most preferred method for assessment was multiple choice questions and assignment. Nevertheless, respondents were of the belief that novel approaches should be adopted to promote the process of learning. The key factors for disinterest in a class were the pacing of the lecture and the length of the class. In terms of the average percentage of the lecture material they were able to understand, a substantial gap between male and female research subjects was noted.

KEY WORDS: LEARNING STYLES, LEARNING METHODS, TEACHING TYPES, INNOVATIVE METHODS AND DENTAL STUDENTS.

INTRODUCTION

Deep learning systems have been implemented in recent years, one of the artificial intelligence tools for different clinical tasks. Communicative skills are an important component of medical and dental education and contribute positively to many facets of health care, including the performing of a thorough evaluation, the proper diagnosis and the creation of a detailed plan (Nourein et al., 2021,

Yuzbasioglu, 2021). Professionalism and ethics are required for the academic programs of accredited dental schools in the American Dental Education Association (AlHamdan et al., 2016). Professionalism in education is fundamental to dental education and necessary for life-long education and good dental practice. In general, the word "learning style" defines the preferred way to collect, process, interpret, organize and evaluate knowledge by a person. In accordance with sensory methods involved in the taking of information, the VARK model developed by Fleming et al., (1992) provides students profile of their learning styles. VARK is an acronym for sensory modalities such as Visual (V), Auditory (A), Read/Write (R) and Kinesthetic (K). If they can see it the visual students better process knowledge. Audience students enjoy hearing knowledge. The students of read-writing tend to see the written words. The students enjoy the know-how and experience of kinesthetics (Kharb et al., 2013, Al-Khalifa et al., 2020).

Existing teaching trends have shown that increased enrollment in online courses and programs provides learners with the ability to gain credit towards graduation from secondary education remote learning. These online services can be hosted in different ways: a combined learning center in remote schools supervised by a school or agency without a computer in a student's home or alternate settings such as residential treatments, hospitals and home health centers (Kenrick et al., 2020). There are many types, systems and patterns of learning mentioned in the book; 71 schemes have been identified in one review. The most widely used models are VARK and Kolb. Learning models. The inventory of Kolb's learning styles (LSI), probably one of the most common and most commonly used surveys, uses Kolb's learning styles to help students recognize their style of learning.

It also offers information on how educators can better support students through this information and potential methods for integrating various types of learning. The successful learning system relies on four different modes of learning: concrete experience (CE), retrospective reflection (RO) and abstract conceptualization (AC). Students need to be able to completely, freely and without prejudice to active experiences (CE). The students need to reflect and observe these experiences from a wide range of viewpoints. They need to construct ideas that incorporate insights into logically-sonic hypotheses (Hernandez et al., 2020).

Universities face new difficulties which put growing pressure on learning environments to be created. Many such challenges concern the use of modern pedagogical methods, the quick evolution of education technologies, the diversification of the population of non-traditional students in need of flexible courses, and the increasing demands about the skills required for today's and future working lives. These changes often align themselves with the major transition that Barr et al., (1995) defines as a shift from an instructional model to a learning paradigm, or from transmitting information to students in the construction of knowledge.

In other words, more student-centered teaching and learning activities have been shifted. Although these references are relatively old, they still apply to current development goals. Based on the Horizon annual reports, physical environments require improvements to best fulfill the requirements of the pedagogical activities of today, which underline the active role of students. The conventional university lecture halls make it possible to change learning environments to meet the needs of neither contemporary pedagogy nor the efficient use of modern technology (Valtonen et al., 2020).

Teaching to speak is important if someone only learns English for academic purposes and is not able to speak English, which is very uncommon. Strong command on speech skills gives learners a real sense of progression and reinforces their confidence. Written communication is a valuable lesson, since it is a fundamental skill in life. Students can need notes, forms, letters, papers, stories, etc. Many need to complete comprehensive health, education and job questionnaires.

Adequate writing ability gives one the faith and characterizes one's language knowledge (Hossain et al., 2015). The downside of lecturing is that the audience has little to no interaction. The principal goal of education at all levels of education is to transform the learner fundamentally and strengthen the process of transmission of knowledge (Reymus et al., 2020; Szabo et al., 2020). Limited studies have been implicated in the Saudi population and current study aimed to perform a questionnaire-based study in the dental students. Therefore, the aim of this study is to describe and compare male and female dental students' preferences on various aspects of teaching, demonstration and assignment of various dental colleges in the Riyadh city.

MATERIAL AND METHODS

Study design: For this study, ethical approval from an IRB Research Center in Riyadh Elm (REU) was granted. The informed consent document has been signed by all participants before the data from participants was collected. This was a sectional survey, performed by the general population of Saudi Arabia through an online survey. The survey was required both for men and women under the age of 18 who were eligible to participate in the report. In the social media, 200 students were contacted. An online questionnaire with questions regarding personal and demographic details was prepared using Google forms based on awareness and questions relevant

to preferences. The e-questionnaire is categorized into three phases and Phase-I consisted of the three parts: Gender,

Student Level and University: Phase-II, covered details about the length and timing of lectures, schedule notes, participation, material preferences before the session, interactive sessions and clinical demonstration and handouts; and Phase-III, covering preferences. Preferences A 3-point Likert scale (1 = accept, 2 = neutral and 3 = disagree) was used to answer most questions. The questionnaire was circulated to students of both the KSU and the REU. The selection of a sample of 200 participants representing dental students in the couple of schools included a stratified random sampling process. In order to assess the acceptability and ensure that the questionnaire is true and clear, a pilot study was conducted on 20 students. Minor modifications were made prior to the delivery of the questionnaire, based on the responses (Tulbah et al., 2019).

Validity and reliability of the instrument: In order to determine the validity by Chronbach's alpha coefficient, a pilot study was performed with 20 parents and the data inserted in SPSS Version 22. The reliability of the survey was checked by passing it to professional REU researchers and their suggestions and comments will allow improvements.

Statistical analysis: The data was analyzed both descriptively and inferentially with the SPSS version 22. Comparisons have been made between groups and the importance value was held below 0.05 (Khan et al., 2019).

RESULTS AND DISCUSSION

The study comprises a survey of 150 graduate students, interns and graduate dentists. The study participants had an average age of 18 to 27 years. There were 58% of male and 42% of female respondents were involved in this questionnaire-based study. Most of the participants chose classes for lectures over afternoon (20%) or evening (11.3%) during morning hours (62%), and time for 6.7% participants didn't matter. Although, 82.7% of students preferred to take lecturers for at least 30 to 45 minutes (34 and 90 respectively), while, 13.3% preferred lectures for 60 minutes and for 4% of subjects no time was important. The preferred teaching method by category was visual (52.7%), while general estimates were the least preferred teaching method.

Fifty percent of respondents were interested in audio vision and 42% were interested in audiovisual vision, 18.7% in blackboard, 20% in LCD projection, and 6.7% in OHP projections. The remaining 14.7% of learners were involved in oration lectures and 17.3% chose assignments.

In Table-1, the full details have been listed. The students were mainly selected for 49.3% of assignments, 67.3% for MCQs, 20% for periodic examinations, and 8.7% for Viva Voce. Nevertheless, 14% of students selected all the teaching strategies. In Table 2, the complete information have been documented.

Table 1. List of availability of teaching methods involved in this study

S. No	Types of Teaching methods	Number	Percentages
1	Audio	75	50%
2	Visual	79	52.7%
3	Audiovisual	63	42%
4	Blackboard	28	18.7%
5	LCD Production	30	20%
6	OHP sheets	10	6.7%
7	Oration lectures	22	14.7%
8	Assignments	26	17.3%

Table 2. List of availability of teaching option methodologies

S. No	Additional options	Number	Percentages
1	Assignments	74	49.3%
2	Multiple choice questions (MCQs)	101	67.3%
3	Periodic Tests	30	20%
4	Viva Voce	13	8.7%
5	Combination of all	21	14%

Table 3. List of innovative methods applied in teaching

S. No	Innovative Teaching methods	Number	Percentages
1	Video clips	63	42%
2	Small group discussions	83	55.3%
3	Short quizzes	87	58%
4	Handouts of study material	27	18%
5	Problem solving sessions	39	26%

The students have opted 58% as short quizzes for innovative methods along with 55.3% of small group discussions, 42% for video clips, 18% for handouts of study material. Finally, 26% of the students have opted for problem solving sessions. The respondents thought that the content of the ideal theory class should include a mixture of content from a detailed textbook, recent

newspaper updates and free use of audiovisual materials. The complete details have been listed in Table 3.

The participants believed that the content of an ideal theory class would include 8.7% of Exhaustive textbook content, 8.7% of recent update from journals and 50.7% opted the combined combination of exhaustive textbook content cum recent update from journals. Only, 6.7% of the students have opted the liberal use of audiovisual aids and 25.2% of students requested for all the above options. The complete details have been shown in Table 4. The timing of the lectures (55.3%) and duration of classes (45.3%) were the key reasons for student disinterest in a lecture class and the timing of boring lectures (37.3%) and Unimpressive presentation by the lectures (23.3%). The complete details have been documented in Table 5.

Table 4. List of combined additional teaching methods			
S. No	Combined Teaching methods	Number	Percentages
1	Exhaustive textbook content	13	8.7%
2	Recent update from journals	13	8.7%
3	Combination of S. No 1 and 2	76	50.7%
4	Liberal use of audiovisual aids	10	6.7%
5	All of the above	38	25.2%

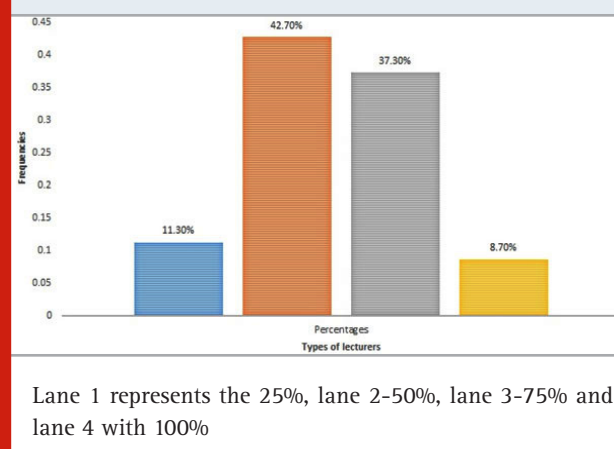| Table 5. List of combined additional teaching methods			
S. No	Unimpressive Teaching methods	Number	Percentages
1	Duration of classes	68	45.3%
2	Timing of Lecture	83	55.3%
3	Boring lecture content	56	37.3%
4	Unimpressive presentation of the lecture	35	23.3%

The categorization and frequencies of lecturers are listed in Figure-1 and 42.7% of students reported that 50% of lecturers could only understand and 37.3% of students reported that 75 % of lecturers could understand for different reasons. Nonetheless, 11.3% and 8.7% of the students indicated that 25% of the lecturers and entire lectures were followed without confusion. Table 6 has been categorized as per the gender wise criteria and

38.6% of males and 61.4% of females were involved. The male students have been given high priority for understanding 25% and 50% of appreciated lecturers for 12.1% and 44.8% respectively. For the remaining 75% and 100% of appreciated lecturers, 38.1% and 9.8% of female students were given high priority and the complete details were recorded in Table 6.

Table 6. Gender variation frequencies about understanding of lecturers			
S. No	Frequency of lecturer understanding	Males (n=58)	Females (n=92)
1	25% of appreciated lecturer	07 (12.1%)	10 (10.8%)
2	50% of appreciated lecturer	26 (44.8%)	38 (41.3%)
3	75% of appreciated lecturer	21 (36.2%)	35 (38.1%)
4	100% of appreciated lecturer	04 (6.9%)	09 (9.8%)

Figure 1: prevalence and frequencies of understanding the lectures

Lane 1 represents the 25%, lane 2-50%, lane 3-75% and lane 4 with 100%

The aim of this study is to identify and compare the preferences of male and female dental students on various aspects of dental school teaching, demonstration and assignment in Riyadh. This study was carried out in couple of dental colleges in the capital city of the kingdom i.e., dental colleges at KSU and REU. In the present study, the majority of study participants chose morning hour classes, which may be attributed to the opportunity to better understand things during that time span. This result is in line with the findings of the

previous studies which have been linked to improved morning focus, (Parolia et al.,2012; Thilakumara et al., 2018; Tulbah et al., 2019; Faust, 2020; Al-Khalifa et al., 2020).

As this community forms the future of dentistry, dental graduates are the subjects of several research studies. There is a need to review the current teaching framework and put about the requisite improvements in order to improve the learning process of dental students. While the most widely used form of teaching is lecturing, previous studies have highlighted the importance of incorporating other active approaches to promote learning. The majority of respondents in the current study favored a 30-minute lecture class followed by 45 minutes, which is consistent with the findings of the prior studies (Parolia et al., 2012; Stuart and Rutherford, 1978).

One of the previous studies by Stuart and Rutherford (1978) stated that the student concentration was maximal for the initial 10 to 15 minutes and subsequently declined. A total of 1,760 lecture hours for undergraduate dental education is recommended by the Dental Council of India in its 2007 guidelines. It may not be feasible to introduce 30 to 45-minute lecture classes if these recommendations are to be achieved. Therefore, 60 minutes of lectures using different novel teaching techniques are suggested to combat students' limited attention span.

Allers (2010) carried out a study among dental students and stated that strong visual modalities such as video/TV, posters/charts, models, and simulations were preferred by them. A previous study by Parolia et al., (2012) found that the most favored teaching modes were the PowerPoint display, chalkboard, and clinical demonstrations. In the present research, respondents favored various teaching aids with no clear option, such as audiovisual, blackboard, PowerPoint presentations. Similarly, respondents were of the opinion that for the evaluation of students, different assessment modalities should be used without any clear preference for a single modality.

The current subjects of the study claimed that exhaustive textbooks, latest updates from journals with liberal use of audiovisual aids should be included in the contents of the ideal class. Such results can be due to the dynamic nature of dental education, which involves stimulation of the dental students' different senses to grasp and assess the composite dental curriculum. Lecturing is the most widely done modality of teaching, which has a significant downside of losing contact between the lecturer and the students. When asked about the level of comprehension of the substance of the lecture,

In our study, only 13 study subjects indicated that they were able to comprehend the entire content of the lecture, while the remaining participants ranged from 25 to 75% in their comprehension of the lecture content. These findings are consistent with the previous studies (Amini et al., 2010; Keefe, 1978), who found that each person's learning styles are different and improved learning occurs if effective learning methods are used. It is important to implement other active teaching methods, such as handouts, workshops, problem-based learning, discussions, tutorials, etc in order to promote learning among all students. The primary reasons for being disinterested in a lecture class were the timing of a lecture and class length.

By incorporating more imaginative and active learning methods that encourage a healthy relationship between the students and the lecturer, lecturers should avoid becoming passive orators and facilitate learning among the students. We analyzed the variations in learning styles based on gender in the current research. In understanding the content of the lecture, a significant difference was observed between male and female subjects, although no significant difference was observed between other questionnaire objects. While designing teaching plans, these findings can be significant. One of the prior studies by Khan et al., (2017) have contributed to a paradigm change from in-class lectures and discussion to mobile learning. WhatsApp M-learning can be an alternative, imaginative and interactive method for achieving the necessary objectives in medical education.

Although the study findings for a more precise and validated finding have to be checked in a larger sample size. In addition, questionnaire-based studies are vulnerable to prejudices that need to be considered when evaluating their findings. The following aspects of teaching are illustrated in the present study: While lecturing is the most common form of teaching, it is associated with major disadvantages, especially the lack of interaction between the lecturer and the audience. The current research has policy implications for improvements in the patterns of teaching conducted at present times. In order to address the disadvantage of lack of engagement and also to promote learning for all learners, more constructive learning initiatives need to be implemented (Lone et al., 2019; Jum'ah et al., 2020).

CONCLUSION

In conclusion, the maximum participants preferred 45 minutes of lecture classes in the morning hours. The most favored teaching aid was the visual method, while the most preferred method for assessment was multiple choice questions and assignment. Nevertheless, respondents were of the belief that novel approaches should be adopted to promote the process of learning. The key factors for disinterest in a class were the pacing of the lecture and the length of the class. In terms of

the average percentage of the lecture material they were able to understand, a substantial gap between male and female research subjects was noted. Future studies should be implemented with the large sample size.

Conflict of Interest: None

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