Original Article

Evaluating Study Approach of Dental Students in Palestine using a Study Process Questionnaire: A Cross-Sectional Study

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ABSTRACT

Background: Learning approach strategies are an important factor to obtain knowledge in any professional course. Surface approach learning and deep approach learning are two main types of learning strategies. **Aim:** The aim of present study was to evaluate the study approach strategies of dental students in Palestine. **Materials and Methods:** The present study follows a cross-sectional study design, which includes 250 students from first year to fifth year at Al Quds University. The present study evaluated the study approach using a questionnaire called R-SPQ-2F that was filled by all the students using Google forms. The assessment scores from the curriculum assessment examination were also compared with the scores of the R-SPQ-2F questionnaire. SPSS software was used to analyze data. **Results:** The results of the ANOVA show that the students in the fifth years had significantly higher mean scores of deep learning approaches than other years ($P < 0.001$). The students having curriculum assessment scores above 80% showed significantly more deep learning strategies than surface learning strategies ($P < 0.05$). **Conclusion:** Deep learning approach can provide better academic outcome. Newer teaching strategies that enhance the deep learning approach should be encouraged in the dental curriculum.

KEYWORDS: *Dental students, questionnaire, study approach*

INTRODUCTION

Education in a professional institute aims to provide expertise in the practical scenario. It involves more application-based methods wherein the student should not only imbibe the theoretical knowledge as well as understand its use in a clinical scenario (Annan-Diab and Molinari 2017).[1] Dental professional courses in addition to the application-based knowledge, also demand additional clinical skills as well as interpersonal skills (Field *et al*. 2018; McGleenon and Morison 2021).[2,3]

Education system is largely dependent on the assessment of the curriculum, which provides students an insight into their performances (Gerhard-Szep *et al*.[4] 2016; Kubota n.d.). The performances of students are largely dependent on the study methods of each student. According to the learning approach concept by Marton and Saljo, there are two different approaches to learning. They described surface approach learning and deep approach learning (Marton and Säljö 1976).

The surface approach involves students who just try to fulfil the minimum requirement of the curriculum and focus their learning methods on memorizing the information. This method involves the superficial retention of the subject (Gordon and Debus 2002; Mirghani *et al*. 2014).[5,6] The deep approach involves the student to understand and analyze critical information as well as comprehend important concepts, which can be linked to the specific practical skills. This provides a more holistic learning in students, and hence, the deep approach should be encouraged. Deep learning can be encouraged by students' attitude, an integrated curriculum, and constructive alignment (Mc Cune and Entwistle n.d.).

Since the outcome of the student performance is largely dependent on the type of study approach, it is essential

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to understand the current student approaches. This can contribute to the changes in the current teaching styles to encourage more deep approach learning among students. Hence, the present study aims to understand the learning approaches of the dental students in Palestine and its outcome on the academic performances.

MATERIALS AND METHODS

The present study follows a cross-sectional study model. It is a questionnaire-based study conducted on dental students in Al-Quds University in Palestine. The dental program in Al-Quds University is a 5-year program, wherein the first two years involve theoretical and pre-clinical education and the third, fourth, and fifth years involve clinical education.

A total of 250 students were included in the present study. A questionnaire was distributed to all the students through google form. The present study used a previously validated questionnaire called R-SPQ-2F questionnaire, which is a 20-item questionnaire that measures the surface or deep approach of learning (Biggs *et al*. 2001). The questionnaire has 10 questions based on surface approach and other 10 based on deep approach, which were randomly distributed. Each student noted the response for each question using the Likert scale as never or only rarely true for me; sometimes true for me; true for me about half the time; frequently true for me; and always or almost always true for me. Correspondingly, the total score obtained for each student in the curriculum assessment examination was correlated with the results of the study approach using the questionnaire.

All the data obtained in the present study were tabulated in a spreadsheet using Microsoft Excel software. The data were analyzed using SPSS software version 26. Frequency was calculated for sex distribution. Mean and standard deviation was calculated for surface approach group scores and deep approach group scores. T-test was used to compare the statistical differences of the assessment score between the two groups for students in each year. One-way ANOVA was used to compare the mean values for all the 5 years. T-test was used to compare values between study approach and the scores of the curriculum assessment examination.

RESULTS

Out of the 250 students included in the present study, 61.2% were females and 38.8% were males. The sample size of 250 was equally distributed among 1st year to 5th year. The results of the curriculum assessment examination showed that around 30% of students scored

above 80%, 40% of students scored above 70%, and the remaining 30% had scored between 50%-69.99%.

The mean value for the surface approach in the first year, second year, third year, fourth year, and fifth year is 27.83 + 7.2, 26.72 + 5.3, 28.54 + 8.2, 28.75 + 2.3, and 26.01 + 4.7, respectively. The mean value for the deep approach in the first year, second year, third year, fourth year, and fifth year is 23.15 + 3.9, 25.93 + 6.3, 27.93 + 4.3, 29.01 + 5.6, and 30.12 + 3.4, respectively. The results of the ANOVA show that there is a significant difference in the deep approach values in the 5th year as compared to the first year, second year, third year, and fourth year ($P < 0.01$). The results of ANOVA show that the mean values of surface approach in 5th year are significantly lower than that of 1st year to 4th year ($P < 0.05$).

The results of the *t*-test showed that students who scored more than 80% had significantly more deep approach scores than surface approach scores ($P < 0.05$). On the other hand, there was no significant difference between the deep approach score and surface approach scores for students who scored above 70% and between 50 and 69.99% ($P > 0.05$).

DISCUSSION

Students should be provided with the best available method of learning to inculcate more practical and clinical knowledge that will in turn improve the outcome for patients (Postma 2013).[7] Teaching methods should be constantly updated to accommodate the learning demands of the students. This can be best achieved by knowing the existing study approach of students. Hence, the present study was conducted to understand the learning approaches using a standardized R-SPQ-2F questionnaire.

The present study used R-SPQ-2F questionnaire for the evaluation of the leaning approaches since it is a standardized questionnaire with tested validity (Biggs *et al*. 2001).[8] A similar questionnaire has also been used in another study by Alahmari *et al*. in 2013 that evaluated the study approach in a similar cross-sectional study in Saudi Arabia (Alahmari *et al*. 2023).[9] No similar study has been conducted in Palestine.

The present study shows that the students in the 5th year follow a deeper approach to learning than students of other years. This can be attributed to the fact that there is an increased exposure to clinicals in the fifth year, which can enhance the application-based knowledge as compared to more theoretical knowledge in other years. Similar results were obtained in another study by Alahmari *et al*. in 2023 (Alahmari *et al*. 2023).[1] In this study, both the students of 4th and 5th year had deep

approach strategies of learning. Similar results have been obtained in another study by Bana and Fatima in 2019, which showed more deep approach learning strategies for high standards than lower standards (Bana and Fatima 2019).[10] However, the results of this study were not statistically significant. Another study by Haghparast *et al*. in 2017 also showed similar results, wherein there is significant decrease in the surface approach strategies from first to fifth year (Haghparast *et al*. 2017).[11]

In the present study, students who had higher scores in the curriculum assessment followed a deeper approach strategy than those who scored below 70%. Similar results were obtained in another study by Alahmari *et al*. (Alahmari *et al*. 2023).[1] However, this study measured the scores in GPA, whereas the present study measured their score in percentage. This result can be associated that more deep approach learning strategies can provide better academic performance due to a more application-based approach of learning.[12-14]

The results of the present study show that deep approach-based learning strategies should be included for better academic outcomes. This provides a need for more application-based learning approaches, which were absent in the early years of dental education, especially in the first and the second year, which is purely based on theoretical knowledge. A balance between knowing the theoretical knowledge and clinical basis of learning should be an ideal format for dental education. More studies testing the effects of newly developed curriculum focusing on deep learning strategies for all academic years will provide more predictable learning outcomes.

Conclusion

The study has illuminated the intricate relationship between student demographics, curriculum assessment performance, and learning approaches. A diverse performance spectrum was observed, with students in the 5th year displaying distinctive shifts towards deeper learning approaches. The results underscore the importance of deep learning approaches for students achieving scores above 80%, emphasizing the link between high academic performance and profound learning strategies. This research provided valuable insights into the dynamic nature of student learning across academic years and accentuated its relevance for educational strategies, offering potential pathways for enhancing the educational experience.

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