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Peer-assisted Learning Associated with Team-based Learning in Dental Education

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Abstract

Peer-assisted learning is one of many educational strategies that can assist students' learning and their professional development. Its value could be enhanced if combined with a student centered learning strategy such as team-based learning.

Purpose: The aim of this pilot study is to evaluate the impact of peer-assisted learning associated with team-based learning on the learning experience of dental students.

Method: Forty-two dental students participated in peer-assisted learning associated with team-based learning activities and 6 of them took the role of tutors in the team-based learning sessions. A structured on-line questionnaire was sent to 42 students to evaluate their perception regarding the impact of peer-assisted learning associated with team-based learning on their learning experience. Thirty-eight (90.5%) participants out of 42 answered the questionnaire. Sixteen students volunteered to participate in focus-group interviews for verification of the questionnaire responses.

Results: Thirty-two participants (84%) agreed that peer-assisted learning associated with team-based learning improved the way they study and increased their interest in the subject. Thirty-five students (94%) indicated that they enjoyed this learning experience. In addition, they would recommend this program to their colleagues. Thirty-one (82%) agreed that peer-assisted learning associated with team-based learning improved their teaching skills. Furthermore, thirty-one students (82%) indicated that it increased their communication skills. All participants agreed that they were satisfied with the overall program. The results obtained from both students' survey and focus-group interviews were consistent.

Discussion: Our findings suggested that peer-assisted learning associated with team-based learning was a valuable strategy to enhance learning among students. It can also provide these students with teaching experience which could help their professional development.

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Keywords: Cooperative learning; Dental Education; Students' centered education; Team-based learning; Peer-assisted learning

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1. Introduction

Peer-assisted learning (PAL) is one of many educational strategies that can assist students learning in many higher education institutes. PAL is defined as people from similar social groupings who are not professional teachers helping each other to learn and

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learning themselves by teaching. The important points to note are that those helping their peers to learn have less extensive knowledge of subject matter but they are from similar social groupings to the learners and not necessarily from the same course or year of study. The PAL rationale lies in the fact that students, whether tutors or tutees, share a similar knowledge base and learning experience, which allows the peer tutors to use language that their learners understand and to explain concepts at an appropriate level.^{2,3} Furthermore, student learners feel more comfortable with peer teachers because of their similar social roles. This phenomenon is called "social congruence". 4,5 There are many benefits of PAL mentioned in the medical education. These include alleviating the faculty teaching burden, providing role models for junior students, enhancing intrinsic motivation, and preparing physicians for their future role as educators. Evidence suggests that participation in PAL can provide leadership, coaching, learning skills training, enhance confidence and intrinsic motivation, and may also promote an interest in academic careers.^{5,6}

Team-based learning (TBL) is an active learning, student-centered, holds students responsible for their preparation for class engagement, and expects them to apply knowledge to solve real problems. It is a flexible strategy, well suited for large or small classes, and only requires one instructor. TBL provides frequent opportunities for peers to enhance learning as students discuss together to reach a consensus decisions. Faculty encourage teams to explain and support their choices to other teams, and give justification for the best answer. In addition, application questions require students to employ critical thinking, rather than to retrieve relevant knowledge. Faculty often observe considerable energy and engagement of students during discussions.⁸ Adding TBL as the main approach of teaching, can enhance student-centered education and support cognitive and meta-cognitive students' competencies. Studies of the impact of peer-teaching on students' academic performance have led to contradictory results. 10-14 However, researchers agree that peer-teaching does strengthen the student-teacher's own knowledge and skills, so learning is reinforced by teaching the material to others. Research into cooperative learning has shown that such learning processes enhance students' achievement and positively enhance self-esteem and the ability to work cooperatively. 15

PAL can be related to constructivism as learning being an active process and learner take control over the learning process. Adults adopt this process of constructivism as they become self-directed learners, become aware of context, and appreciate the active process enabled by experiential learning. ¹⁶ PAL draws on cooperative learning as small groups of students work together to maximize their own and each other's learning. ¹⁷ It is an extension of experiential and self-directed learning.

Team based learning demonstrates the value of the constructivism theory of learning. It incorporates group dynamics and problem solving approaches using reallife problems. 18 Students perform tasks, which health care professionals are facing in real life. To perform the tasks, students employ an active learning process and are responsible for their learning. Learning results from the process of understanding the concepts and mechanisms underlying these tasks. 19 Students in TBL develop interpersonal and team skills through immediate feedback on how well they have used their knowledge in making decisions. 20 Hence, TBL is an instructional strategy that is an excellent fit with structured PAL program intended to enhance students' learning. There are many papers about TBL only as well as PAL but we could not identify any research in PAL literature that used TBL as a teaching method for the intervention. Hence, this project is using a novel approach of PAL associated with TBL in high education.

The aim of this study is to evaluate the impact of combining two student-centered educational strategies of PAL associated with TBL on student learning and social development. The objectives of this project are to develop a pilot module of PAL initiative using TBL as the main approach of teaching, and to evaluate students' perceptions of PAL when combined with TBL as an educational strategy to enhance dental students' learning. In order to measure the impact of PAL associated with TBL on students' learning experience, on-line questionnaire and focus group interviews were used.

2. Methods

2.1. Participants

All second year students enrolled in the dental college (BDS program) of the University of Sharjah during 2014–2015 were invited to participate in this study on voluntary basis. Forty-two out of 100 students (42%) volunteered to participate in the study. The 58 remaining students followed the regular course activities as lectures, laboratory, and tutorial sessions. The 42 participants were randomly divided into six groups with one student tutor in each group. All participants signed a consent form specifying that their participation

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