May 2nd, 12:00 AM

Creation and Implementation of a Flipped Jigsaw Activity to Stimulate Interest in Biochemistry Among Medical Students

Charlene Williams
Rowan University

Susan Perlis
Rowan University

John Gaughan

Sangita Phadtare
Rowan University

Follow this and additional works at: https://rdw.rowan.edu/stratford_research_day

Part of the Educational Methods Commons, and the Medical Education Commons

Let us know how access to this document benefits you - share your thoughts on our feedback form.

Williams, Charlene; Perlis, Susan; Gaughan, John; and Phadtare, Sangita, "Creation and Implementation of a Flipped Jigsaw Activity to Stimulate Interest in Biochemistry Among Medical Students" (2019). Stratford Campus Research Day. 5.
https://rdw.rowan.edu/stratford_research_day/2019/may2/5

This Poster is brought to you for free and open access by the Conferences, Events, and Symposia at Rowan Digital Works. It has been accepted for inclusion in Stratford Campus Research Day by an authorized administrator of Rowan Digital Works. For more information, please contact brush@rowan.edu.
Learner-centered pedagogical methods that are based on clinical application of basic science concepts through active learning and problem solving are shown to be effective for improving knowledge retention. As the clinical relevance of biochemistry is not always apparent to health-profession students, effective teaching of medical biochemistry should highlight the implications of biochemical concepts in pathology, minimize memorization, and make the concepts memorable for long-term retention.

Here, we report the creation and successful implementation of a flipped jigsaw activity that was developed to stimulate interest in learning biochemistry among medical students. The activity combined the elements of a flipped classroom for learning concepts followed by a jigsaw activity to retrieve these concepts by solving clinical cases, answering case-based questions, and creating concept maps. The students’ reception of the activity was very positive. They commented that the activity provided them an opportunity to review and synthesize information, helped to gauge their learning by applying this information and work with peers. Students’ improved performance especially for answering the comprehension-based questions correctly in the post-quiz as well as the depth of information included in the post-quiz concept maps suggested that the activity helped them to understand how different clinical scenarios develop owing to deviations in basic biochemical pathways.

METHODS AND MATERIALS

Before the session: Each disease was assigned a color. Color and group assignments and review questions and cases were posted in the course website a week before the session. The students were asked to read the cases and prepare answers to the review questions assigned to their color.

Mono-color session: Students took the pre-quiz as a group. Colored materials with the case questions correctly in the post-quiz as well as the depth of information included in the post-quiz concept maps suggested that the activity helped them to understand how different clinical scenarios develop owing to deviations in basic biochemical pathways.

Rainbow session: Students then formed rainbow groups. Each student presented his/her materials to their group. During the session they were asked to make sure that their group achieves mastery over the four diseases. This is important as peer-teaching is pivotal aspect of this session. The students took the post-quiz as a group. Faculty facilitators were going around asking questions and providing help as needed during both sessions.

RESULTS

Quantitative representation of the students’ evaluation data of the flipped jigsaw with respect to (A) learning objectives, (B) organization and facilitation, and (C) relevancy and motivation.

Statistical analysis of students’ performance in pre- and post-quizzes

Majority of groups drew the concepts maps in the form of chain (left hand side) in the pre-quiz, while majority of groups drew them in the form of complex net (right hand side) in the post-quiz.

ACKNOWLEDGEMENTS

The authors received approval from the Human Subjects Protection Program Institutional Review Boards (IRB) at the Rowan University. The authors thank Ms. Gisselle Mayock for providing administrative help for this activity.

REFERENCES
