CASE STUDY: Innovation in teaching delivery or learning technology

Group activities and game-based learning to keep students connected to their academic communities

H.M. Fadda

College of Pharmacy and Health Sciences, Butler University, USA.

Summary: Challenges experienced by students with online teaching include maintaining connectivity to the academic community. To overcome students feeling 'silo-ed' and to maintain their motivation, the faculty at Butler University enhanced group activities with game-based learning. Group activities included problem-based learning exercises and students working together to expand concept maps. These provided the opportunity for students to interact with the content, to interact with their peers and to interact with faculty. Students found these group activities effective ways of applying their knowledge in a timely manner. Game-based learning platforms that were utilised included quizzes that took place in-class as well as during review sessions. These enabled students to keep abreast of the material they were learning in class and identify gaps in their comprehension. The quizzes generated dynamic class discussions which enabled students to learn from each other.

Background and Context

One of the most significant challenges experienced with online learning was the drop in student engagement and maintaining a sense of community. As courses at the College of Pharmacy and Health Sciences, Butler University transitioned online, students did initially report a feeling of isolation. It is imperative that students remain connected to their academic community, both to their professors and peers. At the College of Pharmacy and Health Sciences, Butler University, the vast majority of students were new to online learning and some of the initial concerns also raised by students were the struggle to maintain motivation and time management. In response to these challenges, group activities and game-based learning exercises were enhanced to provide the opportunity for students to engage with each other and to stimulate class discussions.

Educational Description

Synchronous classes in pharmaceutics were adopted, and students were provided with the opportunity to ask questions throughout the lectures using a group chat option (questions were visible to the whole class), private chat option (questions only visible to the instructor) as well as verbally at specific times during the class. Online review sessions and online office hours were set-up which focused on faculty addressing questions from students as well as game-based learning. During class time, quizzes using PollEverywhere and game-based learning were adopted to engage active participation while providing an opportunity for students to test their knowledge. Kahoot, an online timed, multiple-choice, game quiz was utilised whereby students compete and the winner is revealed. It allows students to keep abreast of the material they are learning in class and identify gaps in their comprehension. The quizzes generated dynamic class discussions which enabled students to learn from each other. Jeopardy! based games were utilised for the live review sessions whereby students were presented with answers and they needed to phrase their responses as questions.

Challenges that have also been reported with online classes include the difficulty to contribute to class discussions. To address this, breakout rooms were created online whereby students could work on an exercise in small groups. Summaries of the aggregated group discussions were posted for the entire class. Breakout rooms were used for problem-based learning exercises including the design of liquid and solid dosage formulations based on information provided on the patient population, drug indication and physicochemical properties. Students worked on these exercises in small groups and posted their formulations and rationale. The optimal formulations were shared and discussed with the entire class. This provided the opportunity for students to interact with the content, to interact with their peers and to interact with faculty members.

Good time management is critical for student success in online classes and additional assignments were created to foster this. Concept maps are a good tool for illustrating and integrating the relationship between different aspects of the subject (Chiou *et al*., 2008). Students were provided with the backbone of concept maps and assigned to add their own branches as a means of constructive learning.

Outcomes and Recommendations

Students greatly appreciated the in-class quizzes as a means to self-check their knowledge and monitor their comprehension. Students wanted to see even more quizzes in class. The game-based platforms adopted did not have a point value and while they did engage the majority of the class, not all students participated. Including quizzes with point value is advisable to maintain student motivation and attentiveness in class. Students found the online live review sessions helpful and provided the opportunity to further connect with faculty and peers.

While the group chat function was strongly encouraged, most questions appeared in the private chat during the virtual classes. Enabling private chat is important so students are not deterred from asking questions. If feasible, a moderator would be helpful to monitor the chat.

Students found that the concept maps provided a great study tool. Feedback on assignments needs to be provided promptly with online teaching to keep students motivated. As students become more exposed to online classes, they will develop autonomy to work on their own and therefore become more efficient and innovative (Buvoltz *et al*., 2008). This will contribute to preparing them for their career as pharmacists, who need to be lifelong learners.

References

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