Title:

COMPARISON OF EDUCATIONAL METHODS AS RELATES TO MEDICAL STUDENT ENGAGEMENT AND LEARNING DURING VIRTUAL LECTURES

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Introduction:

The ongoing COVID-19 pandemic has forced medical education to continue on a virtual space using video conference software that allows learners to attend lectures remotely. However, it can be challenging for speakers to make lectures interactive and promote participation from the audience using these platforms. Audience response systems (ARS) can enhance traditional lectures by enabling participants to interact anonymously with the educator's presentation. By promoting continuous participation, the educator gets real-time feedback on the learners' understanding and can make the necessary adjustments to focus on areas of uncertainty.

Purpose:

The purpose of the study is to compare a traditional format (facilitator-led interactivity) versus an ARS (Poll Everywhere@) format in a virtual session for fourth-year medical students about the use of ultrasound in trauma. The objectives are to assess learners' perception of the interactivity and level of engagement during the session and evaluate the comprehension of the lecture's objectives.

Methods:

Fourth year medical students taking a lecture on the use of ultrasound in trauma during their emergency medicine clerkship will be divided into a traditional format or an ARS format lecture. Both groups will take a pre-session and post-session test, which will address their perception of the use of ARS and their understanding of educational objectives by assessing performance in pre-conference and post-conference tests.

Results:

At the moment, two groups have participated in the course. These are divided into ARS group (n=7) and the traditional format group (n=8). Mean pre-test scores (max score=15) from the ARS and traditional format group were 10.57(CI 95% 7.70-13.44) and 12.38 (CI 95% 10.97-13.78) respectively; t-Test P-value=0.178. Mean post-test scores (max score=15) from the ARS and the traditional format group were 12.71 (CI 95% 11.44-13.99) and 12.13 (CI 95% 10.37-13.88) respectively; t-Test P-value=0.539. In the ARS group, the Likert Scale items (scale from 1-5) had a median of 5 in response to the statements "ARS software was easy to use during the lecture" and "I would like to use Poll Everywhere in future lectures."

Conclusions:

Such results show no statistical difference in the pre and post-test scores between the two groups. However, when comparing pre and post-test mean scores from the same group, the medical students in the ARS group improved +20.27% compared to a decrease of -2.02% in the traditional format group. Likert scale items (scale from 1-5) included in the post-session quiz showed that both groups had similar attentiveness and understanding of the materials discussed during the

presentation. Even though the ARS format lecture was well accepted by students, there is not enough data to properly assess if there is a difference in post-test outcomes between the groups. However, we will continue to collect data from future sessions and assess for any changes in the results.