

Learning the Cranial Nerves: A Low-Tech Gamified Teaching Strategy

Educators continually face the challenge of engaging students in learning activities. Gamification is emerging as a strategy to enhance nursing education. In addition to being fun, games can also promote learning (Roche, Wingo, & Willig, 2017). First-semester nursing students are required to learn and apply concepts in a fundamental health assessment course. However, performing a neurologic assessment can be difficult for nurses. To adequately perform a neurologic assessment, it is important for students to grasp the function of each cranial nerve. This article describes the use of a low-tech game to teach the functions of cranial nerves and their assessment techniques to undergraduate nursing students.

Method

Heads Up! (Telepictures Productions Inc., 2013), a popular smartphone app played by Ellen DeGeneres, inspired the development of our cranial nerve game. Similar to charades, players guess what term their teammate is describing without seeing the actual term.

Students completed readings on module content and learning objectives, in addition to a baseline assessment of knowledge prior to the game. Classes of 120 students played our game in sections of 15 students over a 3-hour period. To begin, each player fashioned a headband using ACE™ bandages or Coban™ self-adherent wrap. Next, faculty distributed sets of 3x5-inch laminated cards displaying either a cranial nerve name or number. Faculty dealt the cards facing down to ensure that players could not see the printed

terms. In teams of two, students decided which player would provide clues and which player would guess first. Without looking at the printed side, the player who guessed first secured the cards to his or her forehead using the headband. The player who provided clues described assessment strategies or associated terms regarding the particular cranial nerve on the card, while the other player guessed the name or number of the cranial nerve on his or her head. For example, if the card specified “cranial nerve VII,” the player providing clues might say, “Assess this nerve by having the patient make certain facial expressions such as smiling, frowning, or shutting the eyes.” The name of the nerve “the facial nerve” could also describe this term. Each time the guessing player identified a term correctly, that team received a point. Teams had 60 seconds to gain as many points as possible. After the first 60-second round was complete, players swapped roles for another round of the game. The team with the highest score at the end of the two 60-second rounds won.

Results

Student feedback during activity debriefing and on course evaluations was overwhelmingly positive. In keeping with gamification learning theory (Lee & Hammer, 2011), students reported that they enjoyed learning in a fun and stress-free environment and also stated that playing the game helped apply knowledge learned during lecture, rather than just memorizing facts. Most importantly, students thought that the activity improved their cranial nerve assessment performance by helping them to recall the function and test for each cranial nerve.

More than 360 students have played our cranial nerve game in their health assessment course beginning in the fall of 2015. Over time, faculty have determined that reusing ACE™ bandages to assemble headbands instead of disposable Coban™ self-adhesive wrap is more cost effective.

Conclusion

This novel approach to learning the cranial nerves is an ideal strategy for actively involving students in the learning process. Gamified learning provides the opportunity to enhance student engagement and has strong pedagogical benefits for teaching cranial nerve assessment to first-semester nursing students. Outcomes related to student perception of engagement and retention of knowledge related to this activity need further exploration.

References

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