

Submitting Author: Jeremy Moeller, MD
Innovation in Education

Poster Title

A "flipped" approach to EEG education in neurology residency

Authors

Jeremy J. Moeller – Pue Faroque – Gary Leydon – Michael Schwartz

Abstract

Objective: To support the learning of foundational principles of EEG interpretation using a "flipped" learning model.

Background: Residents spend much of their time on EEG rotations becoming acquainted with basic concepts, and do not have time to engage more deeply in practicing EEG interpretation. The "flipped classroom" model of education is based on a format where basic concepts are reviewed online, when the learner is alone, and interactive time is used for deeper engagement with concepts. We developed a "flipped" curriculum for EEG education within our residency program.

Methods: The clinical neurophysiology rotation was redesigned for the 2014-2015 academic year, so that every morning was spent doing EEG interpretation, while afternoons were spent in the electromyography laboratory. 10 EEG teaching videos were developed, based on the Neurology Milestones Competencies. These videos were linked to multiple choice questions (MCQ), and residents watched the videos and answered questions during their free time on the rotation. Residents then applied their newly-learned skills to interpreting EEG, which was then reviewed with the attending neurophysiologist, and feedback was provided. The goal was to support a process of experiential learning.

Results: 16 residents (8 PGY2 and 8 PGY3) are participating in the curriculum. At the end of the academic year, residents and attending neurophysiologists will complete a survey with questions about the impact of this curriculum on learning, patterns of usage of the videos and MCQ questions, and recommendations for improvement.

Future Directions: The curriculum will be refined on the basis of feedback from residents and faculty. We will then attempt to test it in other neurology residency programs in North America. In addition, we are interested in exploring how this curriculum and similar ones could be designed to support the acquisition of "threshold concepts"4 when learning complex skills

References

1. Tatum WO. How not to read an EEG: introductory statements. *Neurology* 2013;80:S1-3
2. Prober CG, Khan S. Medical education reimaged: a call to action. *Academic medicine : journal of the Association of American Medical Colleges* 2013;88:1407-1410
3. Kolb, DA. 1984. *The Process of Experiential Learning*. Experiential Learning: Experience as a The Source of Learning and Development. Englewood Cliffs, New Jersey: Prentice-Hall, Inc.
4. Meyer JHF, Land R. Threshold Concepts and Troublesome Knowledge: linkages to ways of thinking and practising within the disciplines. In: Rust C, editor. *Improving Student Learning - Ten Years On*. Oxford: Oxford Centre for Staff and Learning Development; 2003