

**Title:**

Cognitive Neuroscience, Adaptive Learning, and Innovative Teaching Methods: Increasing Student Learning Outcomes

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**Session Title:**

Education Posters Session 2

**Keywords:**

Adaptive learning, Nurse educators and Teaching methods

**References:**

Bradshaw, M. J., & Lowenstein, A. J. (2014). *Innovative teaching strategies in nursing and related health professions*. Burlington, MA: Jones & Bartlett Learning.

Ghassemi, E. A. (2016). "Innovation in course design: Increasing nursing student engagement and interaction in a course in mental health psychiatric nursing." *The Journal of New York State Nurses Association*, 44 (2), 20-25.

National Council of State Boards of Nursing – NCSBN (2016): <https://www.ncsbn.org/index.htm>

**Abstract Summary:**

This presentation discusses effective teaching methods based on a learner-centered approach and recent cognitive sciences in designing dynamic activities to provide a supportive learning environment for improving student learning outcomes. The implications of the pilot review of students' performance in a Mental Health Nursing course will be introduced.

**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
1. The learner will be able to define students' adaptive learning based on the recent cognitive sciences.	Explain students' adaptive learning based on recent cognitive sciences. Discuss the challenges of effective teaching and the role of educational environment in academic motivation.
2. The learner will be able to list the benefits of using technology and diverse teaching methods in increasing student learning outcomes.	Discuss the impact of using multiple teaching modalities and technology on students' performance. Introduce the preliminary findings and the implications of a pilot review of students' performance in a Mental Health Nursing course.

**Abstract Text:**

Instructors should empower students to take ownership of their academic pursuit by promoting democratic interactions in the classroom where students are encouraged to demonstrate critical thinking skills as they share their ideas and questions. A teacher's goal is to facilitate the students' acquisition of

knowledge and critical thinking skills (Mc Keachie, 2002). An educator creates an atmosphere in the classroom that helps foster these skills by using dynamic activities and knowing that learners can differ in their interpretation of apparently similar opportunities and differentially respond to them (McCaslin, 2009).

The presentation goals include: 1) to discuss the applications of recent cognitive discoveries in teaching methods to increase students' adaptive learning (consistent with the Convention's second objective & NLN Core Competency I); 2) to explain the benefits of using technology and diverse teaching methods in providing supportive learning environment for students to better meet the demands, needs, and goals that are required for their academic success.

Based on the teaching philosophy that features a learner-centered approach and cognitive neuroscience, the presenter used multiple teaching modalities including: interactive lecture discussion; audiovisual teaching (film clips, animations, educational DVDs, and online textbook resources); role play; and case studies. To explore the impact of using multiple teaching modalities and technology on students' performance, the presenter reviewed and compared nursing students' final grades, completion of the offsite course assignments and activities, and their Academic Testing Institute (ATI) nursing specialty test grades in an undergraduate Mental Health Nursing course taught in four semesters. A research project pertaining to the topic is in progress. ATI standardized tests are used to predict student performance in the National Council of Licensing Examination for Registered Nurses (NCLEX-RN). The implications of the preliminary review of students' performance in a Mental Health Nursing course will be discussed in relation to challenges of effective teaching in nursing education.