

## Using Scaffolding to Increase Student Learning with Evidence Based Practice

Kelly Potteiger, PhD, ATC

The 5<sup>th</sup> Edition of the Educational Competencies requires athletic training programs to teach evidence based practice techniques.<sup>1</sup> Undergraduate students often lack the skills necessary to thoroughly evaluate the evidence.<sup>2</sup> Therefore, incorporating evidence-based practice techniques within the clinical setting can be confusing or even daunting. Scaffolding is an educational technique used to simplify complex activities in order to reduce the cognitive load and allow for increased learning.<sup>3</sup> This presentation will demonstrate how to scaffold activities in an undergraduate evidence based practice course to allow students to critically appraise a topic of their choosing based on their own clinical experiences. Benefits, challenges, and assessment of the activities will also be discussed.

### Scaffolding Activities:

1. Clinical Question: The student will develop a PICO question based on his/her clinical experience.<sup>4</sup> Collaboration with preceptor is encouraged.
2. Literature Search: The student will map a literature search<sup>5</sup> conducted to identify 3 articles that may be used to answer his/her clinical question.
3. Scavenger Hunt: The student will use one article identified in the literature search to identify the various types of research components in a published manuscript.
4. Level of Evidence: The student will use both the CEBM<sup>6</sup> and SORT<sup>7</sup> criteria to identify the appropriate level of evidence for his/her research article.
5. Literature Appraisal: The student will appraise his/her article for measures of validity using the PEDRO<sup>8</sup> and Jadad scales.<sup>9</sup>
6. Building a Critically Appraised Topic (CAT): The student will create a clinical appraisal of his/her article using CATMaker software<sup>10</sup> from the Centre for Evidence Based Medline. This will be accomplished by compiling all the information from previous assignments plus answering the following three questions: 1) What are the results? 2) Are the results valid? 3) How can I apply the results to patient care?

### References:

1. *Standards for Accreditation of Educational Programs for the Professional Preparation of the Athletic Trainer*. Austin, TX: Commission on Accreditation of Athletic Training Education;2012.
2. Norman G, Shannon S. Effectiveness of instruction in critical appraisal (evidence-based medicine) skills: a critical appraisal. *Can Med Assoc J*. 1998;158:177-181.
3. Reiser BJ. Scaffolding Complex Learning: The Mechanisms of Structuring and Problematizing Student Work. *Journal of the Learning Sciences*. 2004;13(3):273-304.
4. Aslam S, Emmanuel P. Formulating a researchable question: a critical step for facilitating good clinical research. *J Sex Transm Dis*. 2010;31(1):47-50.
5. Cleary M, Hunt G, Horsfall J. Conducting efficient literature searches: strategies for mental health nurses. *J Psychosoc Nurs Men Health Serv*. 2009;47(11):34-41.
6. Howick J, Chalmers I, Glasziou P, et al. The 2011 Oxford CEBM Levels of Evidence (Introductory Document)
7. Ebell M, Siwek J, Weiss B, et al. Strength of recommendation taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. *Am Fam Physician*. 2004;69(3):548-556.
8. deMorton N. The pedro scale is a valid measure of the methodological quality of clinical trials: a demographic study. *Aust J Physiother*. 2009;55(2):129-133.
9. Clark H, Wells G, Huet C, et al. Assessing the quality of randomized trials: reliability of the Jadad scale. *Control Clin Trials*. 1999;20(5):448-452.
10. CATMaker and EBM Calculators. <http://www.cebm.net/catmaker-ebm-calculators/>, 2015.