**Title and Focus of Activity:** Student Teaching Lab *Linking foundational and clinical skills*

**Contributor(s):** Susan Joy Leach, PT, PhD, NCS, CEEAA; [leachs@gwu.edu](file:///C:\Users\hspsjl\Downloads\leachs@gwu.edu); Elizabeth Ruckert, PT, DPT, NCS, GCS; [eruckert@gwu.edu](mailto:eruckert@gwu.edu) The George Washington University, School of Medicine and Health Sciences, Program in Physical Therapy & Healthcare Sciences, Washington, DC

**Course Information:**  Neuroscience for Rehabilitation II; 2 credits; 3rd semester of the curriculum (1st year, Summer semester)

**Learning Activity Description:** Context: In the *Teaching in Physical Therapy Practice* course (previous semester), students learn to structure teaching/learning sessions for a variety of audiences (patient, professional peers/colleagues, and family members) in one-on-one and in group settings. In the present course students are required to teach neurology content to their peers. Purposes: 1. competently perform and interpret neurologic examination techniques; 2. practice and improve their teaching skills in clinically-relevant scenarios; 3. re-visit previously-presented neurologic content by teaching it at an in-depth level

* Students are assigned a partner and a topic area. Students have 10 minutes to teach their classmates (as peers/colleagues in this course) a specific skill or technique.
* In the first Student Teaching Lab, *Applying Neuroanatomy to Neurologic Examination Tests and Measures*, each pair teaches/demonstrates examination of a body structure and function (BSF) restriction, and then correlates the results to probable neuroanatomic lesions. For example, a pair demonstrates the Modified Ashworth Scale and/or the Tardieu Scale, and then correlates exam results to an upper motor neuron lesion as a result of an MCA CVA. The BSF Teaching Lab acts as a review for the midterm written exam which includes content on correlating signs and symptoms to neuroanatomical lesions.
* In the second Student Teaching Lab, *Activity and Strategy Assessment for Patients with Neurologic Disorders*, each pair teaches/demonstrates examination of activity level restrictions using an appropriate outcome measure. Students must apply the outcome measures to a specific patient case (played by a student) with stroke, spinocerebellar degeneration, or Parkinson’s Disease. Sample tests include the Clinical Test of Sensory Interaction in Balance and the Timed Up and Go. The activity level Student Teaching Lab acts as a review for the practical exam which involves BSF impairment and activity testing for 1 of the 3 cases covered i.e. CVA, PD, and CD.
* This presentation format requires students to be skilled at their assigned task, to synthesize material that they need to apply in their presentation (e.g. linking neuroanatomy to the neurologic examination), and to teach effectively.
* Students have previously been exposed to the neuroanatomy, conditions, cases and outcome measures via lecture, lab, discussion, photographs and videos. A further goal for the teachers and the learners in the student teaching lab is to solidify both lecture and lab content using a practical application.  Typically the content is presented at a more in-depth level or applied differently from the original exposure during the Student Teaching Lab as the student educators become more knowledgeable for their assigned task.
* During the Student Teaching Lab, students must share roles, including role-playing as patient and physical therapist.
* Students determine the effectiveness of their presentation by assessing the audience’s learning (e.g. via quiz, discussion questions, or repeat demonstrations).
* The Student Teaching Lab presentations are videotaped to allow students to revisit/review the material prior to practical examinations. All videos are available to all students.
* Sample YouTube links are available:

<https://www.youtube.com/watch?v=GtSdW7Y2d9g&feature=youtu.be>

<https://www.youtube.com/watch?v=21hsISqesmw&feature=youtu.be>

* Examples of topics covered in the two Student Teaching Labs:
  + Applying Neuroanatomy to Neurologic Examination Tests & Measures
    1. Mental status exam
    2. Sensory testing (including higher order sensory processing)
    3. Reflex testing (DTRs, superficial, etc.)
    4. Coordination testing
    5. Frontal lobe function tests
    6. Cranial nerve screen
    7. Tone assessment (Modified Ashworth Scale, Tardieu)
    8. Abnormal synergy assessment (Fugl-Meyer)
    9. Communication assessment with patient with aphasia
  + Activity & Strategy Assessment for Patients with Neurologic Disorders
    1. Gait speed
    2. Timed Up & Go
    3. Berg Balance Scale
    4. Dynamic Gait Index/Functional Gait Assessment
    5. Clinical Test of Sensory Interaction and Balance (CTSIB)
    6. Performance-Oriented Mobility Assessment (POMA aka “Tinetti”)
    7. Gait Assessment Rating Scale (GARS)
    8. Strategy testing: bed mobility
    9. Strategy testing: sit to stand
    10. Strategy testing: stairs

Time for student to complete the activity: 1. preparation for activity outside of/before class: Students must spend time practicing their assigned skill and developing their presentation. Students are scored on their presentation sequence, content, and delivery, so they are expected to rehearse ahead of time. 2. class time completion of the activity: 10 minutes per pair of students; total class time depends on class size (at GW this is usually 4 hours)

Readings/other preparatory materials:

* To design their presentation for their peers/colleagues, students review:
  + Plack M & Driscoll M. 2011. Design Considerations: Adapting Instruction for Varied Audiences and Formats in Teaching and Learning in Physical Therapy: From Classroom to Clinic. Slack Incorporated, NJ.
* For the neurology content, students utilize the course textbook, course lecture, and lab handouts, as well as additional resources as needed.
  + Course textbook: Shumway Cook A & Woollacott MH. 2012. Motor Control: Translating Research into Clinical Practice.4th Edition. Lippincott Williams & Wilkins, PA.

Learning Objectives: 1. Demonstrate correct neurologic examination/intervention techniques and interpretation. 2. Design a presentation that is tailored to a specific audience commonly encountered by physical therapists (i.e. patient, peers/colleagues, family/caregiver). 3. Demonstrate effective and professional communication skills throughout the presentation, including language that is appropriate to the given audience. 4. Utilize appropriate techniques to assess the audience’s learning at the conclusion of the session.

For the Applying Neuroanatomy to Neurologic Examination Tests & Measures 1.Use BSF test/measures to correlate examination results (clinical signs and symptoms) to probable neuroanatomic lesions. For the Activity & Strategy Assessment for Patients with Neurologic Disorders 1. Interpret the results of a case example’s (client with stroke, spinocerebellar degeneration and/or Parkinson’s Disease) performance on the test/measure.

Methods of evaluation of student learning:

* Students are graded by instructors using the rubric included below.
* In addition, students participate in a peer review process. Each student is assigned to provide feedback to 3 student pairs. Feedback must include aspects that were strengths in the presentation, as well as areas for constructive feedback. See below.

**INSTRUCTOR GRADING RUBRIC EXAMPLE**

**Student Teaching Lab Grading Rubric**

**[Sample for Neurologic Examination Tests and Measures/Neuroanatomy Teaching Lab]**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Not done/  unacceptable  (0) | Needs improvement;  not clear  (1) | Meets Expectations  (2) | Comments |
| Engagement of the audience  (including use of hook as appropriate) |  |  |  |  |
| Maintenance of the safety of the patient, therapist and fellow students |  |  |  |  |
| Brief overview of test/measure |  |  |  |  |
| Description of procedure to an audience of colleagues (DPT students) |  |  |  |  |
| Demonstration of correct examination technique(s) on simulated patient (including body mechanics) |  |  |  |  |
| Modeling of patient-friendly language during examination instruction |  |  |  |  |
| Appropriate language and content for therapists performing the test/measure with a future patient |  |  |  |  |
| Description of how test/measure links to neuroanatomical structures and anticipated test results |  |  |  |  |
| Assessment of audience knowledge  (class as a whole or individuals within the class) |  |  |  |  |
| Level of refinement of presentation (time management, clearly rehearsed) and  equal division of presentation by presenters. One person in the group should not dominate the presentation. |  |  |  |  |

**Total: /20**

The feedback component will be scored out of 5 points based on the following criteria:

* Be mindful that the feedback you provide will **NOT** be anonymous
* Complete the feedback electronically as instructed before the end of the class
* Use professional language (1 pt)
* Provides meaningful feedback for improvement (1 pt)
* Completes the entire peer feedback form for each pair evaluated (3 pts)

1 2 3 4 5

Instructor Comments:

**STUDENT PEER FEEDBACK FORM EXAMPLE**

**PT8418: Student Teaching Lab Peer Feedback**

* **Note: This is NOT Anonymous Feedback. Please provide constructive criticism to your peers.**

**Presentation Group/Pair # \_\_\_\_\_\_ Student Evaluator**

|  |  |  |
| --- | --- | --- |
|  | Student Name #1: | Student Name #2: |
| One thing I think this presenter did well: |  |  |
| One thing I think this presenter could improve upon: |  |  |
| Other comments: |  |  |