Spring 2015 Physical Therapist Assistant Program
Assessment Project Synthesis

Apply Learning: How rubric implementation and assessment improved PTA assessment practices for laboratory learning

Contributors

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Background

In spring 2013, a PTA faculty team developed a rubric for "Apply" to assess student learning over a series of lab courses. Our goal was to:

1. Analyze student self-assessments of "Apply learning" over time.
2. Use the data to inform refinements to the "Apply learning" rubric and to further refine the rubric and refine classroom assessment techniques (CATs) and other assessments used to inform how PTA students progress with CLO "apply learning".

Goals

We wanted to explore how the Apply Rubric may be used to inform the program about student learning and to examine ways in which faculty might integrate its elements into curricular activities and assessments.

Methods

We used a cross section, longitudinal study design to examine student growth over time in "Apply learning". Eighteen (18) Students from a single cohort were sampled in winter 2014 (term 2) and winter 2015 (term 5). We collected qualitative and quantitative student self-assessment of "Apply learning" by directing students to score themselves on a 1-4 scale in each rubric element. Students were asked to support their numeric rating with an example. During winter 2015, we collected artifacts from second year students (term 5) and compared against data from this same cohort collected in 2014.

**Concurrent rubric development process**

In winter 2015, PTA faculty (Howard, Reynolds, and Wilkinson) held discussions around methods to improve student learning and practical exam performance by continuing to provide explicit criteria, while increasing visibility of the fluid nature of effective patient communication and reflective clinical reasoning. Quite simply, we discussed how students could move from a *checklist* approach and *meeting criteria* to a *holistic, patient-centered approach*. We looked to our existing clinical standards and aligned our prior lab exam outcomes with language from Lane's CLOs. Our goal was to better prepare students to "apply learning" as they prepared to enter their first clinical internship, by encouraging reflection and allowing for more qualitative student feedback. The result was a new PTA 103L LabExam1 Rubric (term 2). For the purpose of this report, we have included PTA 103L rubric elements that align with the CLOs, as noted in the "evidence" column of the rubric (See Appendix).

We used this new rubric for the PTA 103L midterm and then conducted norming sessions (blinded and with discussion) for three random samples: there was strong inter-rater reliability. PTA lab faculty (Howard, Reynolds, and Veach) met in spring 2015 and used a similar approach to update lab practical rubrics for PTA 104L (term 3). Howard and Veach also completed a norming session for PTA 104L Exam 1 using 3 random samples and affirmed inter-rater reliability.

Results

PTA Students in term 2 self-assessed themselves on the lower end of the rubric ("beginning to developing"), which is consistent with anticipated development in the program. As students completed their final lab experience, self-assessments were "proficient-to-accomplished". Growth over time is represented by the bar graph below.

	Winter 14 Mean Score	Winter 15 Mean Score	Difference
Connect	2.13	3.51	1.39
Apply	1.86	3.41	1.55
Solve	2.36	3.39	1.09
Integrate and Reflect	2.15	3.32	1.17
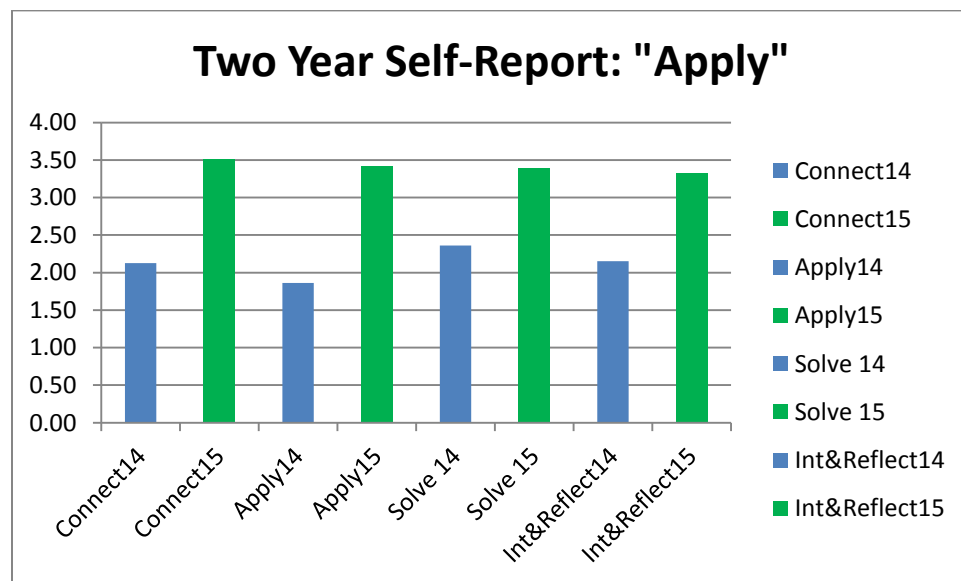
Qualitative feedback was reviewed to help inform how students interpreted the rubric. Sample excerpts of student feedback illustrate the reflective processes students used when applying the "apply learning" rubric to their own learning:

Term 2 Examples

Connect: *"I feel as if I can choose a correct method of Rx and apply it safely, but I would prefer to either refer back to previous course material or receive feedback from an instructor before actually applying it to a real patient as well as wanting the instructor to watch me first"*

Apply: *"I feel comfortable with the skill we have learned but I still rely on feedback from supervisors on which skill to pull out of my box when there are few cues and clues"*

Solve: *"I feel pretty easy with interpreting scales and graphs"*

Integrate and Reflect: *" I feel I understand how functional and disability can affect the patient and I try to include what I've learned from text, peers, and teachers"*

Term 5 Examples

Connect: *"On my ability to connect the information and skills that I have acquired in this program, I would currently rate myself between the proficient and accomplished level. This is because I do seek input from my supervising PT 100% of the time when I am unsure about how to safely approach a treatment. I also feel that my skills have been developing, and that I have been able to demonstrate this improvement during my clinical rotations. However, I have recently required prompting from instructors to complete coursework on time, and strongly desire to improve in this area. "*

Apply: *"Proficient - This continues to improve, and I know that I will be able to dig in deeper wherever I am working to be able to problem solve and come up with effective treatment plans. I know some of my skills are getting out of practice because I haven't had much practice with certain interventions such as modalities, but the good news is that I seem to be able to pick things back up fairly quickly. Whenever I was presented with a new or unfamiliar condition or case during clinical, I would take the time to look it up if that was an option or to discuss it with my CI so I feel I do try to continue to learn more and more. I do some research online just for the sake of my own curiosity. In the hospital, many treatment sessions were unpredictable as to what I might be able to do with a patient so I learned to go in with an open mind and a few options so that if we were limited to bed activities I was ready or if the patient was feeling stronger and we could ambulate, I was prepared for that too."*

Solve: *"Proficient to Accomplished - I think I possess good judgment and have been able to problem solve with many of my patients during clinical so far. I have not worked too much with the cognitively-challenged, but I did see many patients with CHF or respiratory issues where I had to take vitals and make a call as to what was safe to do. An example is when a physician asked us to trial a patient to ambulate on room air when they had only recently been taken off oxygen, so I sat them up and checked O2 sats, which were okay, then brought an oxygen tank and their nasal canula along just in case, and took periodic readings with portable pulse oximetry - keeping a close eye on O2 sats and HR."*

Integrate and Reflect: *" I would rate myself as proficient. I am able to reflect on my performance and identify areas where I need to continue to improve and grow. I incorporate not only personal reflection but also that of my instructors, patients, clinical instructors, and supervising physical therapists in order to be a more effective member of the team. I am committed to life-long learning and I demonstrate that through my interactions with the patient care team at my clinical sites." (Student 16)*

PTA Faculty Howard and Thorpe met to discuss the potential impacts of the PTA Apply learning self-assessment on informing our understanding of student learning over time. Our accreditation body, CAPTE, has new standards that require programs to show evidence that students are at "entry-level", and we discussed if this assessment may help provide evidence of attaining this threshold. However, we concluded that students already have a valid self-assessment in place for clinical learning and workplace assessment (a "Clinical Performance Instrument"), so we questioned the utility and benefit of an additional, self-assessment activity as robust evidence for "entry-level".

Conclusion
PTA students do progress in their ability to "Apply Learning", progressing from "beginning to developing" to "proficient to accomplished" due to program experiences (lecture, laboratory, and clinical). This was affirmed by student cohort self-assessment using the program-developed "Apply Learning" rubric. Qualitative and quantitative indicators provide support for how students interpreted the rubric when reflecting on their own skills and abilities.

Overall, this approach informed our curriculum and learning assessments and resulted in some impactful changes in how we assess student learning over time in our clinical laboratory courses. We were able to recognize the opportunity to increase visibility of CLOs in the context of clinical decision-making and clinical reasoning by revising our lab rubrics. Preliminary data from the winter 2014 Apply Learning self-assessment guided our faculty discussions toward *what and how* we wanted our students to learn. Specifically, we revised our lab rubrics to make reflecting-in-action and reflecting-on-action a visible and integral part of laboratory learning. The result allowed for more robust student feedback, integration of multiple CLOs in a PTA context. Faculty were able to norm their assessment of student learning in a case-based context, creating high confidence in our collective abilities to evaluate and guide students. Because of this project, we have created a rubric template for our first year clinical lab exams and we will be able to show evidence of CLO and skills assessment throughout the first year of the PTA program.

Term 5 student feedback about the "Apply learning" rubric indicated that students thought it may help faculty, but it did not help students understand their learning in deeper ways. Given the time-intensive and clinically rich component of our program, we question whether to replicate our current methods. These students also affirmed the high-impact of internships and workplace supervisors on their clinical reasoning and on their ability to self-identify as emerging members of the physical therapy profession.

Discussion and Future Considerations
After the term 5 self-assessment, students received their term 2 assessments back for review. Many appreciated the chance to "look back" at their former selves and see how far they had come in their reflective and clinical learning over the course of a year. The program may want to consider implementing a program portfolio, so students can examine, reflect, and display this learning over time. A portfolio may also help provide evidence of our students as lifelong learners, and allow students to consider how the PTA curriculum provides quality work and engagement within and outside the clinic.

Preliminary qualitative data from the "Apply learning" self-assessment indicate we may want to consider increase the visibility of a quantitative reasoning construct in PT decision-making versus "math". When term 5 students provided an explanation to support their rationale for "Solve" within the Apply rubric, virtually all students connected physical tests and measures during patient care with their clinical reasoning and decision-making processes. We might consider activities and assessments that look to strengthen students' understanding of how quantitative reasoning skills aid in effective patient care.

The impact of internships on student identity and learning was very clearly supported by student examples within the "Apply learning" self-assessment. The program may consider how to integrate CLOs into the professional development of our clinical instructors, so we can develop a shared understanding of how we can continuously improve teaching skills for clinical faculty and learning outcomes for our students.

Lastly, we are guarded about the utility and applicability of our spring 2013 "Apply learning" rubric as a tool to inform the program and students about their learning. We plan to have faculty discussions around its future application at our data and assessment retreat scheduled for the end of June 2015.

Acknowledgements
The PTA faculty thanks the Assessment Team and the college for providing us the resources, framework, and support for our project.

Appendix 1

Note: The CLOs listed in the "Evidence" column are for reference-only. The rubric provided to students has a blank "Evidence" column, and evaluating instructors provide qualitative feedback during the examination to support the √+, √, and √- ratings.

PTA 103L Lab Practical 1 – W '15 -

🚩 **Critical Safety Elements** are noted in **BOLD.** These are **PASS/NO PASS.** Omission of critical safety elements during formal assessment will result in **a zero grade and the lab final must be successfully repeated in order to be eligible to pass the course. Students are expected to demonstrate prior learning for "red flag" patient and personal safety.** V+ or V indicates safe and effective treatment; V- indicates omissions, ineffective Rx, below appropriate level; Repeat indicates unsafe and/or ineffective Rx

Treatment Planning – Assessed with examiner before starting treatment	Evidence *LCC CLO*				
Demonstrates knowledge of the context and complexity of patient scenario	*Think critically*	√+	√	√-	
Supports proposed treatment session with contextually appropriate and accurate examples, includes quantitative reasoning (e.g., HR max, RPE, VS)	*Apply learning*	√+	√	√-	
Determines if there is a need for clarification with supervising PT prior to initiate treatment	*Communicate effectively*	√+	√	√-	
Selects and prepares appropriate equipment consistent with clinical standards	*Creates* effective treatment/patient care environment	√+	√	√-	

Portrays of expectations for professional SPTA behaviors (dress, prepared with materials, timeliness, name tag) with fidelity	*Creates* effective treatment/patient care environment	√+	√	√-	
▉ **verbalizes signs and symptoms of an emergency (cyanosis, marked change in A&O, s/sx of uncontrolled HTN)**	*Think critically*				▉Repeat
Comments					Score /20
SPTA-Patient Communication – Assessed throughout treatment scenario	Evidence				
Collaborates with patient to achieve shared goals	*Engage diverse values with civic and ethical awareness*	√+	√	√-	
Determines need for specific subjective information; integrates other relevant patient concerns and questions into pre-treatment data collection	*Communicate effectively* *Apply Learning* *Create ideas and solutions*	√+	√	√-	
Demonstrate honesty, openness to alternative plan, and respect for patient	*Communicate effectively*	√+	√	√-	
Check for patient understandings or misunderstandings allow for questions and respond professionally; screens for A&O status	*Communicate effectively*	√+	√	√-	

Communication style, tone, and approach is reflects understanding of patient's cognitive status and ability to attend	*Communicate effectively*	√+	√	√-	
Integrates case evidence and communication skills to safely and effectively encourage patient as an active participant	*Think critically* *Communicate effectively* *Apply learning*	√+	√	√-	Repeat
Comments					Score /30
Application of Intervention	Evidence				
Demonstrates respect and value of privacy and cultural norms for modesty and personal space **(e.g., includes draping and manual contact considerations)**	*Engage diverse values with civic and ethical awareness*	√+	√	√-	Repeat

		√+	√	√-	
Selects appropriate interventions to progress toward patient goals ☐ Therapeutic exercise ☐ Activity tolerance ☐ Breathing exercises or airway clearance ☐ Pt educ. in incentive spirometer	*Apply Learning* *Create ideas and solutions*	√+	√	√-	
Monitor patient response (e.g., observation, RPE, VS, s/sx of physiological stress); discontinues Rx as needed based on patient response	*Think Critically*	√+	√	√-	Repeat
Interventions reflect strong clinical reasoning, are connected to evidence and data collected, and align with patient goals and plan of care	*Think critically* *Apply learning* *Create ideas and solutions*	√+	√	√-	
Instructional are consistent with motor learning principles, includes adaptations as needed for impaired cognition, hearing, vision, etc.	*Communicate effectively* *Apply learning* *Create ideas and solutions*	√+	√	√-	
Demonstrates workplace expectations for time and case management; organizes session for efficiency	*Apply learning*	√+	√	√-	
Comments					Score /30
Outcomes – SOAP Note	Evidence	√+			

Name:

Summarizes treatment in writing according to ethical (includes care provided, no additions or significant omissions, errors handled correctly) and professional standards of practice (e.g., date, time, signature, professional designation, other parties present, third party communications)	*Engage diverse values with civic and ethical awareness* *Communicate effectively* *Apply learning*	√+	√	√-	
Includes interventions and relevant data that support skilled and medically necessary service	*Think critically* *Apply learning*	√+	√	√-	
Includes data collected that is functional, measureable and relevant to effective clinical decision making	*Think critically* *Apply learning*	√+	√	√-	
Draws appropriate conclusions: assesses treatment outcomes	*Think critically* *Apply learning* *Create ideas and solutions*	√+	√	√-	
Reflect on successes and obstacles; writes a relevant follow-up plan	*Create ideas and solutions*	√+	√	√-	
Comments					Score /20

Final Score (100 pts possible) =   Additional comments:

Name: