

A BLENDED APPROACH TO THE DEVELOPMENT OF PSYCHOMOTOR SKILL IN THE BEGINNER LEARNER

Catherine Bilyeu, PT, DPT, OCS and Dana L. Judd, PT, DPT, PhD

UNIVERSITY OF COLORADO, PHYSICAL THERAPY PROGRAM, DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION, AURORA, CO



University of Colorado
Anschutz Medical Campus

Background

- Physical therapists provide patient care within a dynamic, evolving health care system for an increasingly complex patient population.
- Proficient psychomotor skill performance is necessary for effective clinical practice
- The COVID-19 pandemic necessitated the transition from in-person learning to blended (hybrid) delivery, forcing educators to grapple with how to best teach psychomotor skills in this learning environment
- Providing meaningful course structure to promote learning in the blended environment, particularly for the development of psychomotor skills in beginner learners, became essential.
- Contemporary evidence on psychomotor skill development in medical education outlines specific recommendations on how to teach complex psychomotor skills which could be adapted for hybrid learning.

Purpose

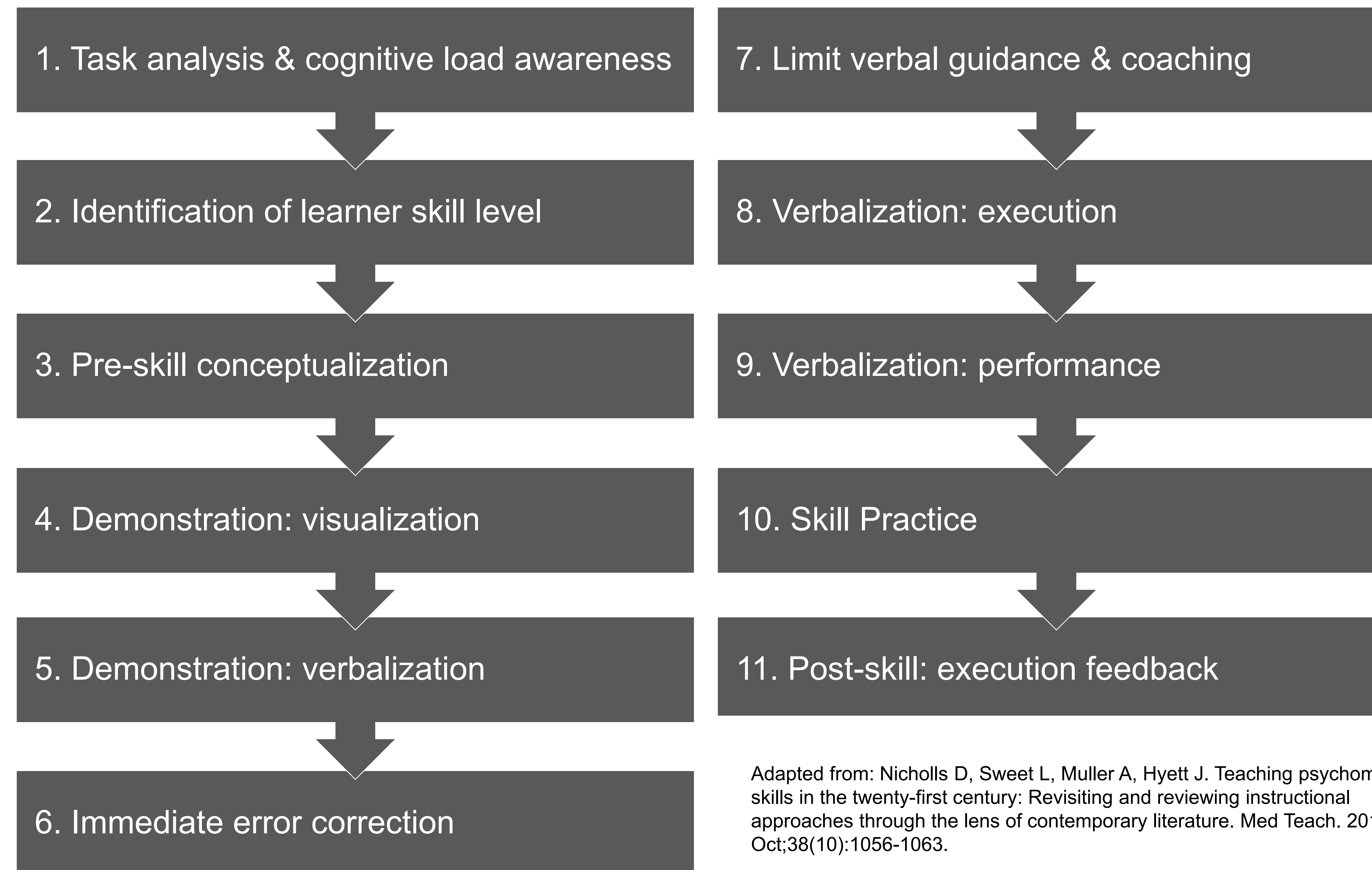
The purpose of this project is to describe an evidence-based framework for teaching psychomotor skill to the beginner learner in a blended (hybrid) learning environment

Methods

- Using a modified 11-step framework, 4 foundational skills courses in a Doctor of Physical Therapy Program were redesigned.
- The framework is designed to help students build a sequential cognitive and motor plan for approaching the learning of psychomotor skills.
- Substantial portion of the psychomotor skill content was delivered *and* preliminarily assessed online using a variety of technologies, prior to lab experience.



Framework



Adapted from: Nicholls D, Sweet L, Muller A, Hyett J. Teaching psychomotor skills in the twenty-first century: Revisiting and reviewing instructional approaches through the lens of contemporary literature. *Med Teach*. 2016 Oct;38(10):1056-1063.

Results

- Evaluative data included assessment scores, course evaluations, student feedback and faculty feedback.
- Data from course evaluations indicated scores were equal or improved over scores from previous years.
- Mean scores on assessment linking psychomotor and clinical reasoning skills; 93.4%.
- Students reported high satisfaction (based on course evaluations) with these courses, emphasizing the opportunities to engage with the material on an ongoing basis and extended opportunities in lab to practice skills.
- Faculty commented that students were better prepared and more self-directed for lab-based practice and instruction compared to previous course structures.

Discussion

- Learning is enhanced in beginner learners when common language and frameworks are utilized in any type of learning environment.
- Using this 11-step modified framework for teaching psychomotor skills in a blended delivery format is received favorably by students and aligns with learning theory and evidence regarding deep learning and motor skill development.^{3,4}

Future Directions

- Doctor of Physical Therapy education has a heavy psychomotor skill component; therefore, consideration could be given to implementing a similar approach to teaching and learning across courses with modifications for more advanced learners.

References

- DeBourgh GA. 2011. Psychomotor skills acquisition of novice learners. A case for contextual learning. *Nur Educ*. 36:144-149.
- Jensen GM, Mostrom E, Hack L, Nordstrom T, Gwyer J. *Educating Physical Therapists*. Thorofare, NJ: Slack Inc. 2019.
- Leppink J, Heuvel A. 2015. The evolution of cognitive load theory and its application to medical education. *Perspect Med Educ*. 4:119-127.
- Nicholls D, Sweet L, Muller A, Hyett J. Teaching psychomotor skills in the twenty-first century: Revisiting and reviewing instructional approaches through the lens of contemporary literature. *Med Teach*. 2016 Oct;38(10):1056-1063.

Results

Student Comments:

"I've been exposed to both methods of teaching FI, both before and after COVID, & all I can say is although it was exhausting, I've learned so much more and gained more confidence from the current method."

"Well organized and clear. I think the course was set up well and I liked how there was videos and readings that we could refer back to as needed."

"The recorded lectures and directed videos/readings were helpful. Summer immersive lab was where I learned the most."

