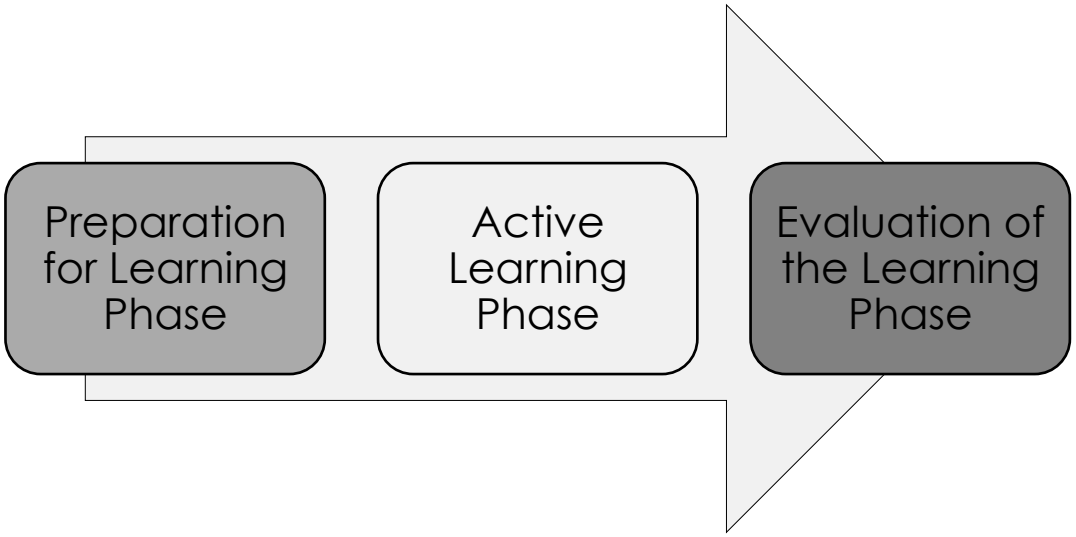
Models for teaching and learning manipulation techniques

Scott Whitmore BScPT, MClSc (manip), FCAMPT
Lenerdene Levesque BScPT, MClSc (manip), FCAMPT

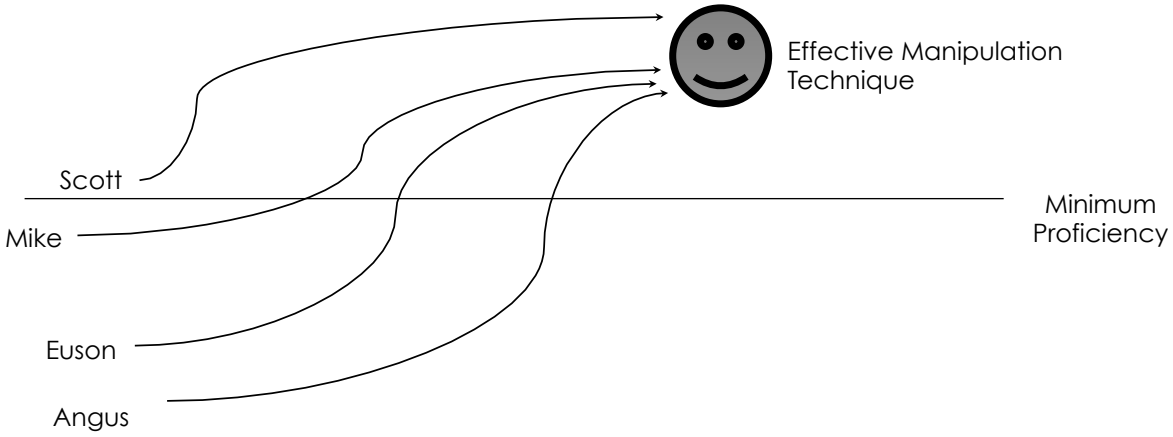
Objectives

- To present theoretical background of different teaching models for practical skill acquisition
- To discuss the use of video feedback and present supporting evidence
- In small groups, enhance teaching strategies for a spinal and peripheral manipulation technique integrating the principles presented



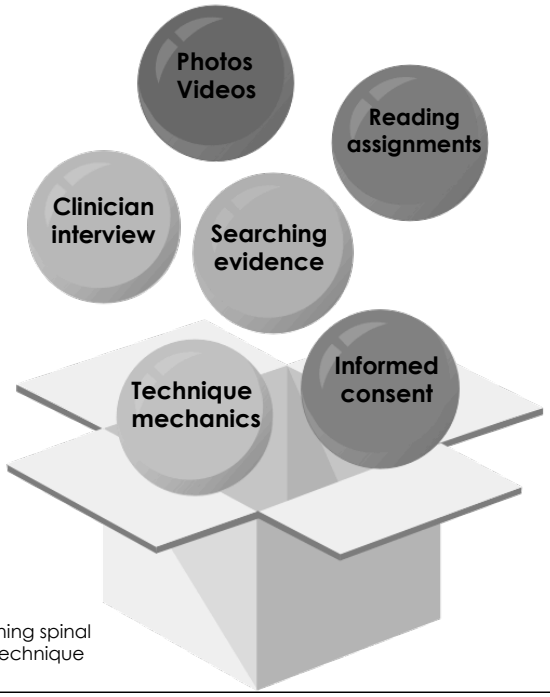
Wise CH, Schenk RJ, Lattanzi JB. A model for teaching and learning spinal thrust manipulation and its effect on participant confidence in technique performance. JMMT. 2016;24(3):141-150

INDIVIDUAL LEARNING RATES

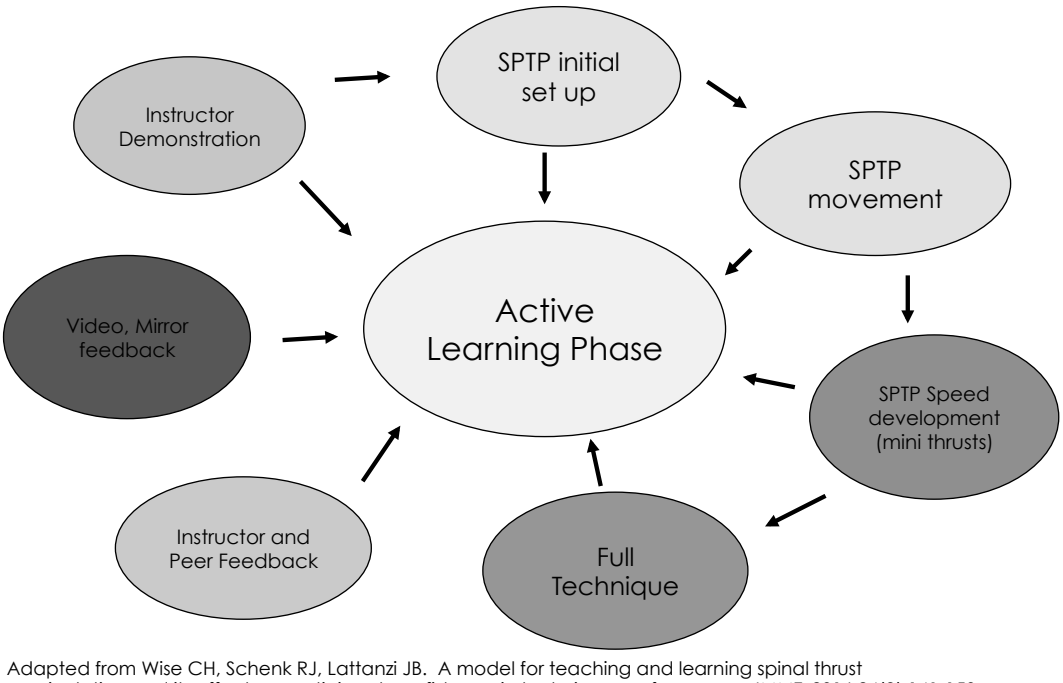


The names portrayed on this slide are fictitious. No identification with actual persons (living or deceased) is intended or should be inferred.

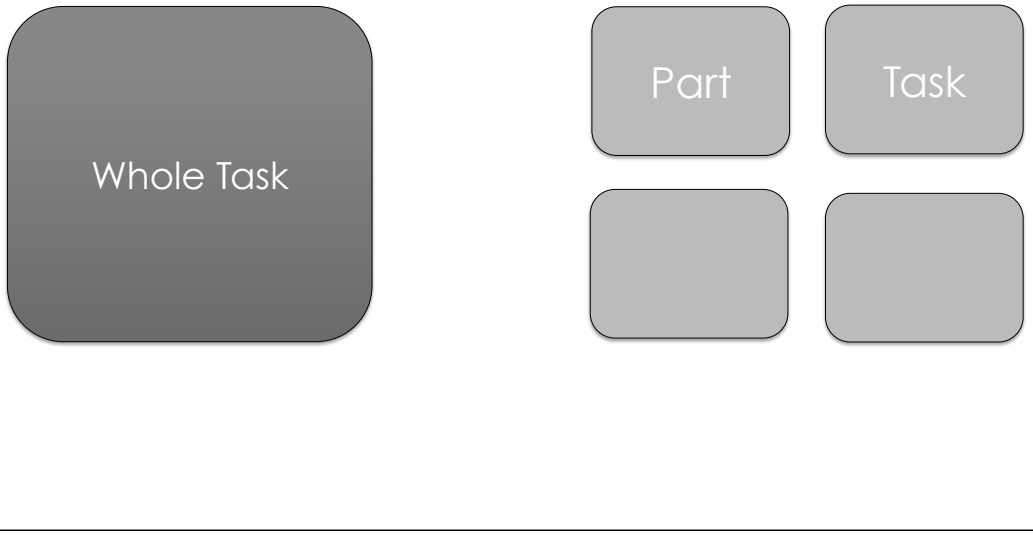
Preparation for Learning Phase

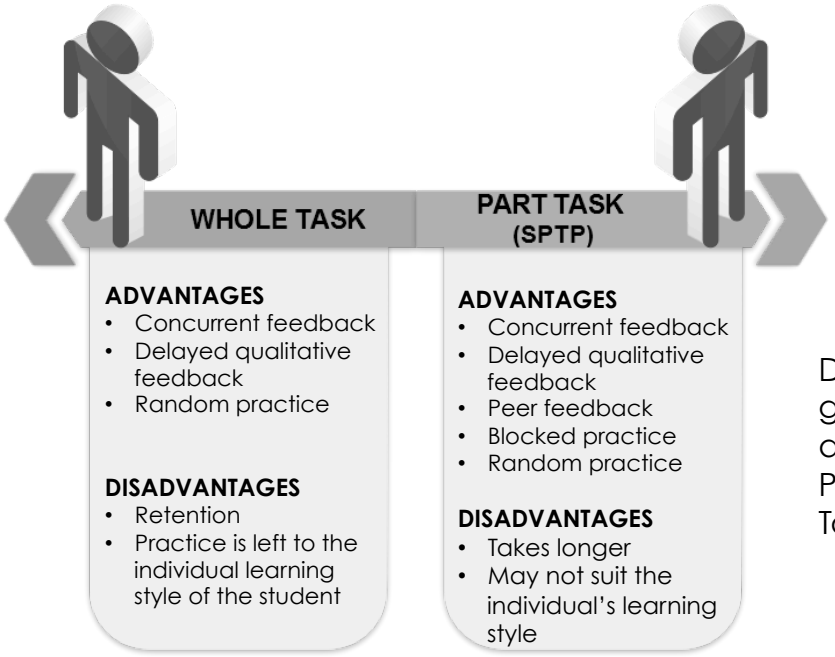


Wise CH, Schenk RJ, Lattanzi JB. A model for teaching and learning spinal thrust manipulation and its effect on participant confidence in technique performance. JMMT. 2016;24(3):141-150



Adapted from Wise CH, Schenk RJ, Lattanzi JB. A model for teaching and learning spinal thrust manipulation and its effect on participant confidence in technique performance. JMMT. 2016;24(3):141-150





Discuss within your groups the advantages and disadvantages of Part Task versus Whole Task Instruction.

In the context of other methods used to teach hands-on skills throughout the curriculum, what did you like most about this method?

"If you messed up in the beginning, it was no big deal cause you practiced again and again and it becamce more fluid and easy to do."

"Breaking it into pieces is really helpful for someone like me who can only take little bits of information at a time."

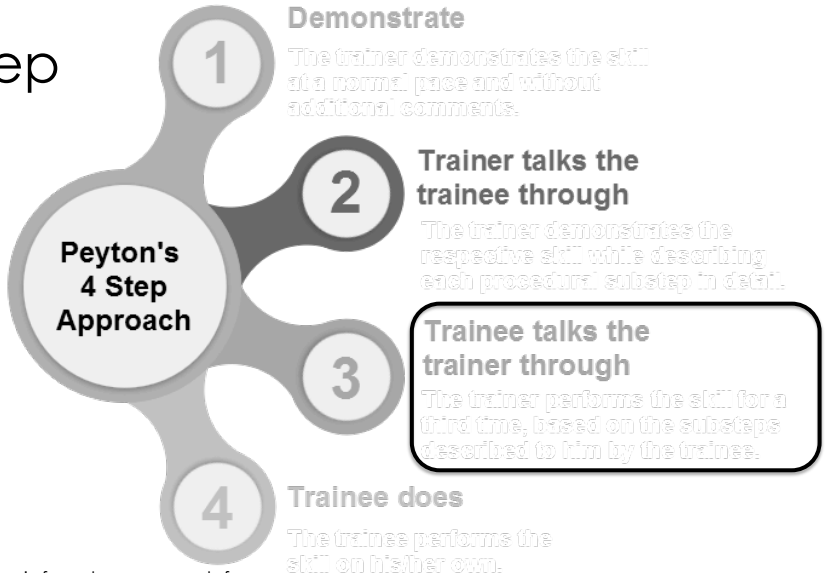
"Breaking it up into steps so you formulate a diagram in your mind. It helped me to visualize each step and then come back and put it all together into a whole."

Wise CH, Schenk RJ, Lattanzi JB. A model for teaching and learning spinal thrust manipulation and its effect on participant confidence in technique performance. JMMT. 2016;24(3):141-150

Model phase of Learning	Learning experience	Dominant learning domain	Dominant phases of learning cycle
Preparation for learning phase	Reading assignment Preparatory questions Literature review Clinician interview Video demonstration	Cognitive Affective	Abstract conceptualization
Active learning phase	Instructor demonstration Set up SPTP Hand placement SPTP Force-application SPTP Whole technique SPTP Peer, self assessment Critical application cases Video self reflection	Cognitive Psychomotor	Active experimentation Concrete experience Reflective observation
Evaluation of learning phase	Written examination Oral examination Practical examination Follow-up examination	Cognitive Affective Psychomotor	Abstract conceptualization Active experimentation

Wise CH, Schenk RJ, Lattanzi JB. A model for teaching and learning spinal thrust manipulation and its effect on participant confidence in technique performance. JMMT. 2016;24(3):141-150

Peyton's 4 Step Approach



Gradi-Dietsh G, Lubke C, Horst K et al. Peyton's four-step approach for teaching complex spinal manipulation technique – a prospective randomized trial. BMC Med Ed. 2016;16:284

Example – Stage 3

Video Podcasts (Vodcasts)

Theme 1: Revision

- Students reported that the vodcasts were very useful in helping them to review for practical examinations.

"I used the podcasts in my study time to revise for practical examinations…..to help me to put theory into practice and better revise. I think you need a good balance between reading, watching and practising."

Hurst KM. Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. Nurse Ed Today. 2016;45:206-211

Video Podcasts (Vodcasts)

Theme 2: Developing a Step by Step Process

- Students used vodcasts and books to enable them to construct their own process for each new skill to be learnt. The vodcasts and the ability to watch and replay the podcasts were seen as crucial in allowing them to develop their own order and understanding of a skill.

"I can create and learn my own step-by-step process from podcasts and books together. Making up my own steps or process from watching and reading is better for my own learning."

Hurst KM. Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. Nurse Ed Today. 2016;45:206-211

Video Podcasts (Vodcasts)

Theme 3: Repetition

- The access at anytime and anywhere and the ability to watch, pause, replay was seen by all students as a key feature of the vodcasts.

"I liked being able to constantly look back and rewind it and replay it whenever I wanted to. This is good for any kind of learner and especially helpful in this fast-paced course."

Hurst KM. Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. Nurse Ed Today. 2016;45:206-211

Video Podcasts (Vodcasts)

Theme 4: Refinement of Skills

- Students reported using the vodcasts to enable them to refine their own skills, often whilst simultaneously watching the vodcasts and adjusting their performance. Students worked together to practise, watch and refine their skills techniques.

"I watched the podcasts whilst I was practicing. It helped me to know where to put my hands and I got better at each skill each time I watched it."

Hurst KM. Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. Nurse Ed Today. 2016;45:206-211

Video Podcasts (Vodcasts)

Theme 5: Confirmation/ Comparison

- Students used the vodcasts to check their own performance against that seen on the screen. This served to confirm their handling, positioning and choice of language. This checking was seen to be a key feature of the Vodcasts.

"The podcasts were like a gold standard. They served as a comparison. I was able to judge my performance against the podcasts and see if I was doing it right."

Hurst KM. Using video podcasting to enhance the learning of clinical skills: A qualitative study of physiotherapy students' experiences. Nurse Ed Today. 2016;45:206-211

Video Podcasts (Vodcasts)

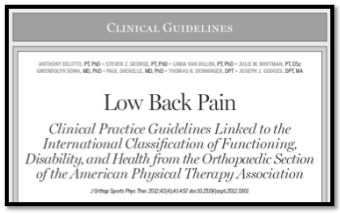
Theme 6: Authenticity/Quality

- The fact that the vodcasts were accessed through the students' virtual learning environment and were created/endorsed by the teaching team was important. These served as a standard for the students, allowing the students to know that the material being used provided a standardised and consistent approach to skills acquisition.

"I think the fact that these were MMU podcasts and not just ones on "You tube" made me know I could trust them"

Example – Lumbar Oblique Gap

Preparation for Learning Phase


CLINICAL GUIDELINES

Low Back Pain

Clinical Practice Guidelines Linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association


Contents lists available at ScienceDirect

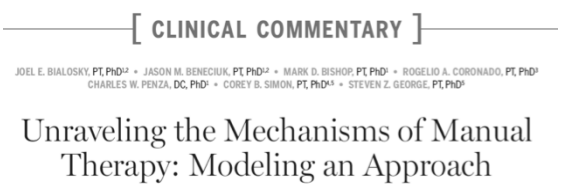
Manual Therapy

journal homepage: www.elsevier.com/math

Professional issue

Articular dysfunction patterns in patients with mechanical low back pain: A clinical algorithm to guide specific mobilization and manipulation techniques

V. Dewitte, B. Cagnie*, T. Barbe, A. Beernaert, B. Vanthillo, L. Danneels


[CLINICAL COMMENTARY]

JOEL E. BIALOSKY, PT, PhD[1,2] • JASON M. BENECIUK, PT, PhD[1,2] • MARK D. BISHOP, PT, PhD[3] • ROGELIO A. CORONADO, PT, PhD[3] CHARLES W. PENZA, DC, PhD[1] • COREY B. SIMON, PT, PhD[4,5] • STEVEN Z. GEORGE, PT, PhD[5]

Unraveling the Mechanisms of Manual Therapy: Modeling an Approach


Perspective

Treatment-Based Classification System for Low Back Pain: Revision and Update

Muhammad Alrwaily, Michael Timko, Michael Schneider, Joel Stevans, Christopher Bise, Karthik Hariharan, Anthony Delitto

M. Alrwaily, PT, MS, PhD, Department of Physical Therapy, School of Health and Rehabilitation Sciences, University of Pittsburgh, Bridgeside Point 1, 100 Technology Dr, Ste 470, Pittsburgh, PA 15219 (USA), and Department of Physical Therapy, King Fahad Specialist Hospital, Dammam, Saudi Arabia. Address all correspondence to Dr Alrwaily at: mza7@pitt.edu.

M. Timko, PT, MS, FAAOMPT, Department of Physical Therapy,

Example – Lumbar Oblique Gap

Preparation for Learning Phase

Demonstrate passive physiological mobility testing of the L4/L5 segment.

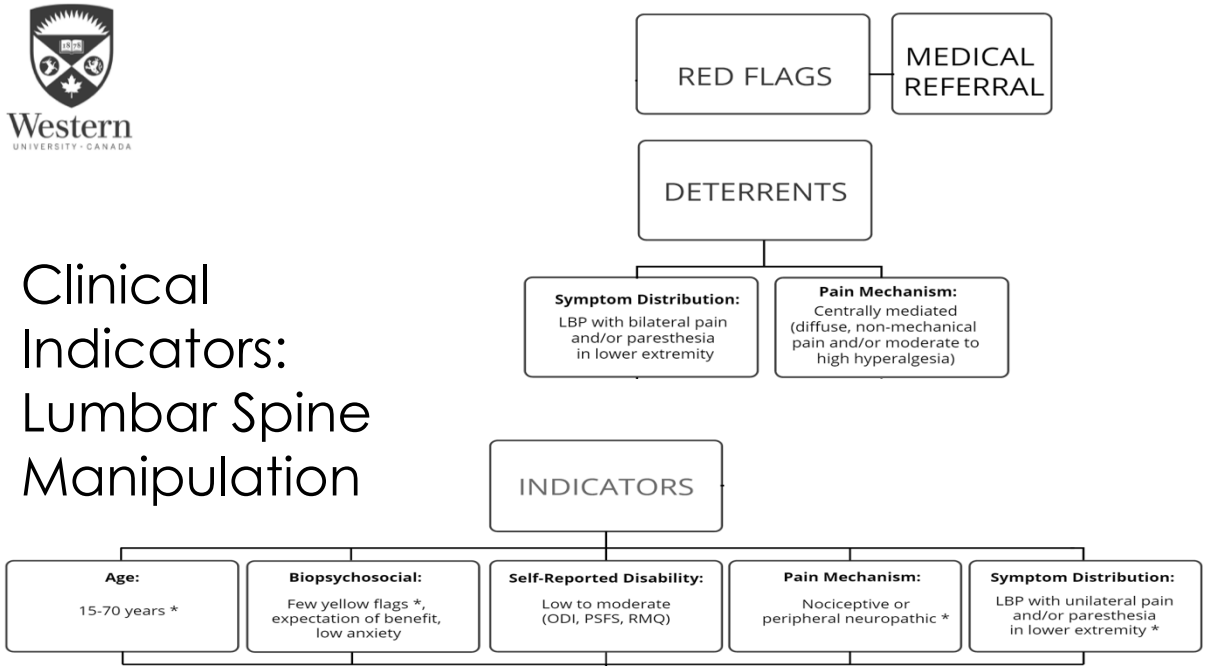
Demonstrate a grade 4 passive mobilization technique to restore flexion/right side flexion and left rotation at the L4/L5 segment.

Discuss the indications for a manipulation and the subjective and physical examination findings that would lead you to consider manipulation as a treatment intervention.

Subjective Factors	Physical Examination Factors

Prescribe 2 exercises that you would give the patient given that he is a 45-year old avid golfer. Discuss your exercise parameters.

Clinical Indicators: Lumbar Spine Manipulation



Example – Lumbar Oblique Gap

Preparation for Learning Phase

Example – Lumbar Oblique Gap

Active Learning Phase

-
-
  steps
- Bring the components together and practice in a neutral position
- Increase the speed of the movement in neutral
- Take the target joint into mid range and practice slow progressing to mini thrusts
- Mobilize at end range progressing to mini thrust just short of end range
- Increasing force will be the last component added to complete the manipulation

Interactive Activity

Each group will be assigned a peripheral or spinal manipulation.

J-stroke manipulation for the talocrural joint

lumbar unilateral extension manipulation

ulnohumeral lateral thrust manipulation for an abducted ulna

Interactive Activity

Video one of the members in the group performing the technique.

Using the principles presented, develop a teaching strategy for the assigned manipulation (break down components)

and illustrate potential part task sequences

Share with your colleagues any teaching tidbits or innovative ideas that you have found useful.

Each group will present one of the manipulations and discuss their strategies.