Models for teaching and learning manipulation techniques

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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
Preparation for Learning Phase  
Active Learning Phase  
Evaluation of the 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. JMMS. 2016;24(3):141-150

INDIVIDUAL LEARNING RATES

Effective Manipulation Technique

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. JMHT. 2016;24(3):141-150

Active Learning Phase

Instructor Demonstration

Video, Mirror feedback

Instructor and Peer Feedback

SPTP initial set up

SPTP movement

SPTP movement

SPTP Speed development (mini thrusts)

Full Technique

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. JMHT. 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 became 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

<table>
<thead>
<tr>
<th>Model phase of Learning</th>
<th>Learning experience</th>
<th>Dominant learning domain</th>
<th>Dominant phases of learning cycle</th>
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<tbody>
<tr>
<td>Preparation for learning phase</td>
<td>Reading assignment Preparatory questions Literature review Clinician interview Video demonstration</td>
<td>Cognitive Affective</td>
<td>Abstract conceptualization</td>
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<tr>
<td>Active learning phase</td>
<td>Instructor demonstration Set up SPTP Hand placement SPTP Force-application SPTP Whole technique SPTP Peer, self assessment Critical application cases Video self reflection</td>
<td>Cognitive Psychomotor</td>
<td>Active experimentation Concrete experience Reflective observation</td>
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<tr>
<td>Evaluation of learning phase</td>
<td>Written examination Oral examination Practical examination Follow-up examination</td>
<td>Cognitive Affective Psychomotor</td>
<td>Abstract conceptualization Active experimentation</td>
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Peyton’s 4 Step Approach

1. Demonstrate
   The trainer demonstrates the skill
   of a certain procedure and provides
   verbal instructions.

2. Trainer talks the trainee through
   The trainer explains the procedures
   and expected outcome in detail.

3. Trainee talks the trainer through
   The trainee performs the skill and
   describes their experiences and
   questions.

4. Trainee does
   The trainee performs the skill
   autonomously.

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.”


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.”

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."


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."

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.”


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 COMMENTARY
Jill A. Sullivan, PT, MPT,  Kinesiologist, Kinesiology, and Physical Therapy
Joel E. Sullivan, PT, MPT,  Kinesiologist, Kinesiology, and Physical Therapy
Joan A. Sullivan, PT, MPT,  Kinesiologist, Kinesiology, and Physical Therapy
Joan B. Sullivan, PT, MPT,  Kinesiologist, Kinesiology, and Physical Therapy

Unraveling the Mechanisms of Manual Therapy: Modeling an Approach

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/extension 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.

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<tr>
<th>Subjective Factors</th>
<th>Physical Examination Factors</th>
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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

• Demonstrate the full technique
• Break the technique down into component 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.