Flipping the Classroom: A Pedagogical Approach to Maximize Student Learning

Scott Heinerichs EdD, LAT
Associate Professor of Sports Medicine
West Chester University

Objectives

 Evaluate the need for student-centered learning and teaching techniques
 Demonstrate the process of planning and implementing the 3 phases of the "flip"
 Discuss the challenges and opportunities of the implementation of the flipped classroom (FC)

Literature

 Health professions classroom needs to change
 FC is not new and revolves around active learning
 Allied health professions research regarding approach.
Applying Bloom’s to Flipping

Traditional Class

Flipped Class

FLIPPED CLASSROOM

Millennial Learners (1981-1996)
**Planning Tool for the “Flip”**

**Topic: Chronic Lower Leg Injuries**

**Students will be able to:**
- Discuss how specific chronic lower leg injuries can be prevented.
- Explain the process for evaluating these injuries.
- Identify specific chronic injuries that occur in the lower leg region and discuss plans for management.

<table>
<thead>
<tr>
<th>Before Class (online)</th>
<th>During Class (face-to-face)</th>
<th>After Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>To complete</td>
<td>Presentation</td>
<td>Problem-based Learning</td>
</tr>
<tr>
<td>Activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Read - Case Study</td>
<td>Cluster Questions</td>
<td></td>
</tr>
<tr>
<td>Read - Text, pp. 532-545</td>
<td>Mini-lecture</td>
<td></td>
</tr>
<tr>
<td>Watch Videos</td>
<td>Think-Pair-Share</td>
<td></td>
</tr>
<tr>
<td>Complete “ticket-in” assignment</td>
<td>Practical Exam</td>
<td></td>
</tr>
</tbody>
</table>

**BEFORE CLASS**

**DURING CLASS**

**AFTER CLASS**
Helpful Hints - Before Class

- Have a plan
- Students are digital natives
  - Tutorials are necessary
- Basic understanding of how to use technology
  - Screen capture software
- Chunking of videos
  - Screen capture software

Resources for Before Class

- Screencasting software
- Richard Mayer’s principles for multimedia learning
  - Segmenting
  - Coherence
  - Redundancy
  - Signaling

Impingement

- S&S
  - “diffuse” pain around the acromion
  - painful arc—between 70° & 120°
  - unable to sleep on involved side
  - TTP greater tubercle OR Long head biceps OR ant. Lat. Edge of acromion.
  - GIRD may be present
  - potential + tests:
    - drop arm
    - empty can
    - Neer shoulder impingement
    - Hawkins Kennedy

Example Using Mayer’s Principles

stages of impingement syndrome—management—restrict motion; standard acute, rehabilitation, must look at role of scapula and know what is impinged!!!
Example of Mayer’s Principle:

- Impingement
  - Signs and Sx
  - Observations
  - Palpations
  - Special Tests
  - Treatment

Shoulder impingement tests
- Neer test (1): Neer’s Test
- Hawkins-Kennedy test (2): Hawkin’s Kennedy Test
- Speed’s Test (3): Speed’s Test
- Empty Can (4): Empty Can Test
Helpful Hints for During Class

- Avoid cognitive overload
- Be consistent
- Hold students accountable
Resources for During Class

Techniques
 Individual
  • clickers
 Question and Answer
  • Fishbowl
 Share/Pair
  • Think-Pair-Share
 Cooperative Learning
  • Jigsaw

After Class

It is assessment which helps us distinguish between teaching and learning.

Topic: Chronic Lower Leg Injuries

Students will be able to:
• Discuss how specific chronic lower leg injuries can be prevented.
• Explain the process for evaluating these injuries.
• Identify specific chronic injuries that occur in the lower leg region and discuss plans for management.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Problem-Based Learning</th>
<th>After Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Written Exam</td>
<td>Practical Exam</td>
</tr>
</tbody>
</table>
Formative and Summative Assessment

**Formative Assessment**
Assessment during any point of the learning process.

EXAMPLE: One Minute Paper, Muddiest Point, Clicker Questions.

**Summative Assessment**
Assessment of knowledge after learning has ended.

EXAMPLE: Exam, Paper, Presentation.

Helpful Hints- After Class

- Not everything has to be assessed in summative ways
- Think of creative ways to get the information you want to demonstrate student learning
- Make it a regular part of your daily work

www.wcupa.edu
Collect Action Research

What is SoTL?

What my students liked best...

application discussion class
myowntime flexibility pause
rewind paidattention
before start time conflict classactivities
continuous learn learnstart
accessible prepare notbored focus
rehistory
activities rewatch
myownpace
rewatch prepared

responsible learning
What my students liked least...

- Couldn’t ask questions during lecture
  - Set up discussion board with email alerts for “muddy” questions
- Lectures too long
  - Used chunking
  - Really thought about what I wanted them to know/learn
- Got distracted & Difficulty paying attention
  - Aligned Mayer’s principles
  - Questions interspersed in lecture
  - Ask thinking questions
- Requires a lot of motivation
  - Stress importance of independence

How I fixed it

Summary

"Sage & Guide"

SoTL

Learners

Plan First

Sell it!

Flipped Classroom

SO WHAT?

NOW WHAT?
References


