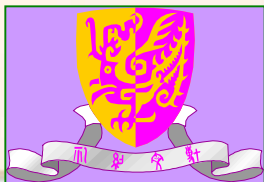


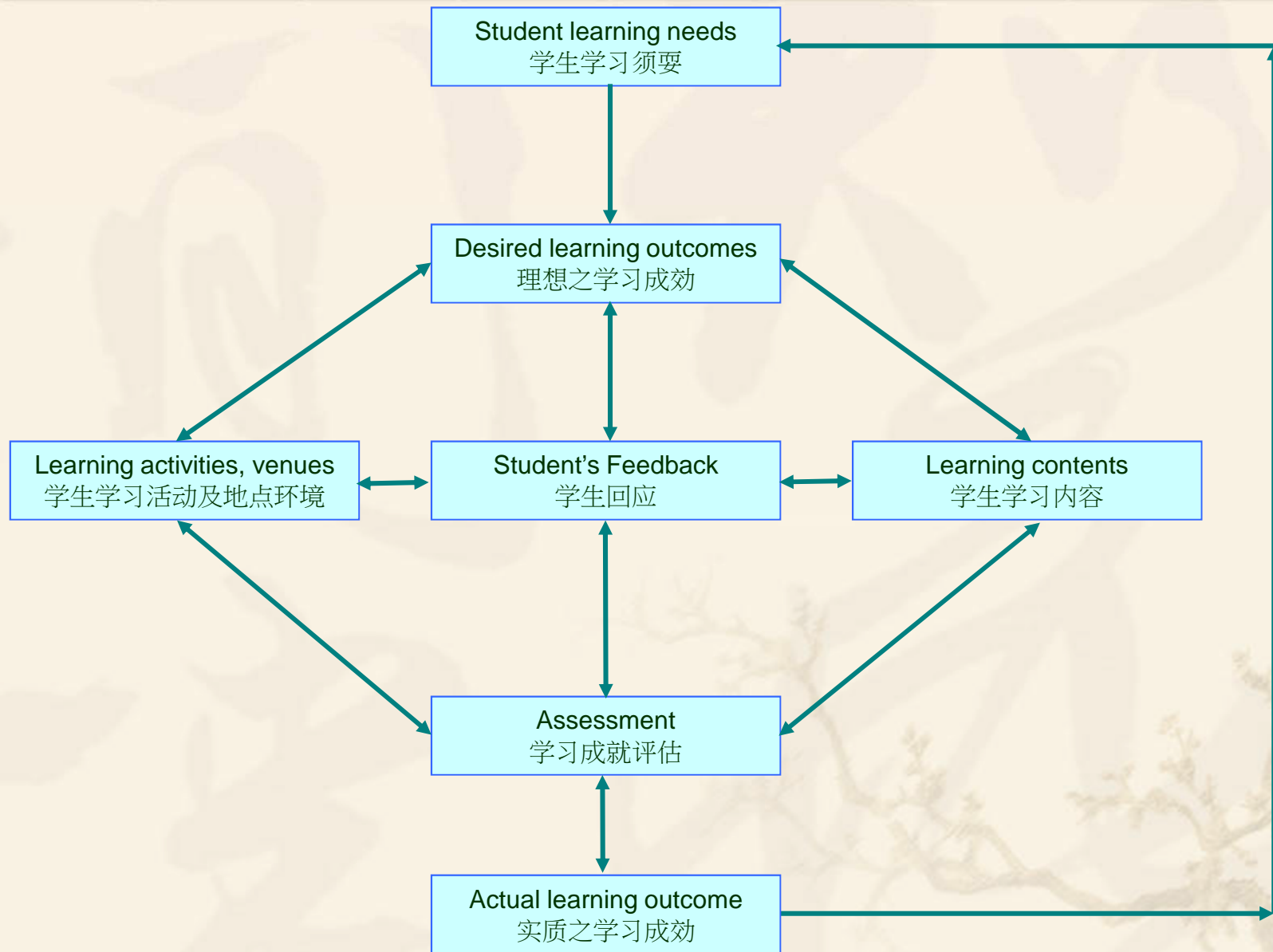
An Innovative Web-based Platform for Enhancement of Outcome-based Learning in Orthopaedics

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Objectives of the SLO Mapping Platform (SMP) Project

- ❖ To set up a generic SMP
 - ❧ Facilitation of student's learning
 - ❧ Facilitation of teaching
- ❖ Composition of SMP
 - ❧ The Student Learning Outcomes
 - ❧ Learning Materials
 - ❧ Self Assessment Exercise

The SLO Tree

The screenshot displays the SLO Mapping Platform interface. The browser address bar shows the URL: <http://slo.ort.cuhk.edu.hk/Learning/SloList.aspx?id=7>. The page title is "SLO Mapping Platform" with the subtitle "For Enhancement of Outcome-based Learning". Navigation links include "logout", "dashboard", "profile", and "about".

The main content area is divided into three vertical panels:

- Teaching Menu:**
 - > Manage SLO
 - > Your SLO
 - > Question Bank
 - > User Guide
- Learning Menu:**
 - > Programme Index
 - > Orthopaedics
 - > PMUS1
 - > Search
 - > Portfolio
 - > SLO Tree
- Administration Menu:**
 - > Admin Home
 - > Security
 - > Application
- Your Profile:**
 - > Profile
 - > Change Password
 - > User Guide

The central panel, titled "SLO Tree", displays a hierarchical list of learning objectives. A legend indicates that green checkmarks represent "Completed" items and red crosses represent "Not completed" items. The tree structure is as follows:

- Orthopaedics
 - Introduction
 - General Learning Objectives (Not completed)
 - Basic and Advanced Items (Completed)
 - Formats of Teaching (Completed)
 - Assessment of Learning (Completed)
 - General Orthopaedics (Not completed)
 - Generic Clinical Skills (Not completed)
 - Clinical Skills – History taking (Not completed)
 - Clinical Skills – the generic approach to physical examination (Not completed)
 - Physical Examination – Upper Limbs (Completed)
 - Physical Examination – Lower Limb (Not completed)
 - Physical Examination – the Spine (Not completed)
 - Med 3 Review Session by Dr Patrick Yung (Not completed)
 - Med 5 Review Session by Dr Patrick Yung (Not completed)
 - AJR (Adult Joint Replacement) (Not completed)
 - Spine (Not completed)
 - Sports (Not completed)
 - Shoulder (Not completed)
 - A Case Study on ACL Tear (Completed)
 - A Case Study on PCL Tear (Completed)
 - A Case Study on MCL Tear (Not completed)
 - A Case Study on LCL Tear (Not completed)
 - A Case Study on Meniscus Injury (Not completed)
 - A Case Study on Tendo Achilles Injury (Completed)
 - Paediatric Orthopaedics (Not completed)
 - Trauma (Not completed)
 - Hand (Not completed)
 - Foot and Ankle (Not completed)
 - Infection (Not completed)
 - Tumour (Not completed)
 - Rehabilitation (Not completed)

The Student Learning Outcomes

Orthopaedics > Generic Clinical Skills > Physical Examination – Upper Limbs

SLO: Physical Examination – Upper Limbs Edit SLO

Description / Objectives:	Upper Limb	Minimum requirement	Advanced requirement
a) Shoulder	Palpate bony landmarks – acromion, coracoid, lateral & medial end of clavicle, scapular spine, blade, proximal humerus. To demonstrate the range of motion, impingement of rotator cuff, Hawkins' impingement sign, painful arc, scapulohumeral rhythm. Tests for shoulder instability including the Apprehension test, sulcus signs, Load and Shift Test. Tests for bicipital tendinitis.		<i>Testing of individual rotator cuff muscles</i>
b) Elbow	Palpate epicondyles, lateral condyle, olecranon process of ulna and the radial head. Comment on varus & valgus deformity. (Carrier's angle). Demonstrate tests for Tennis Elbow and Golfer's elbow. Palpate ulnar nerve at the cubital tunnel. Measure range of motion at the elbow joint and degrees of forearm rotation (supination and pronation). Assess collateral ligamentous laxity		
c) Hand & Wrist	Comment on hand deformities – swan neck, boutonniere, mallet finger, Heberden's node, gouty tophi, claw hand and wrist drop. Describe hand deformity in rheumatoid arthritis. Detection of thenar wasting, interosseous wasting, trigger finger. Differentiate between FDS Vs FDP action. Test for Carpal Tunnel Syndrome (Tinel's sign, Phalen's and reverse Phalen's Test). Palpate the anatomical snuff box, radial and ulnar styloid process. de Quervain's test for stenosing tenosynovitis. Demonstrate the range of movement at the finger joints and wrist joint complex. (flexion, extension, radial and ulnar deviation, forearm supination and pronation). Tests for circulation : Allen's test.		<i>Demonstrate key grips -> precision pinch, lateral, pulp pinch, power grip. Measurement of grip strength with dynamometer. Demonstrate patient dexterity in activities of daily living (buttoning, putting on clothes, using chop-sticks, picking up coins etc). Volkmann's contracture, Dupuytren's contracture. Test for DRUJ</i>
d) Neurological Examination	To assess and determine the level of lesion of axillary, radial, ulnar and median nerve – motor and sensory. Demonstrate Froment's sign, intrinsic muscle action, thumb opposition and Horner's syndrome,		<i>Differentiation from cervical radiculopathy. Assessment of thoracic outlet syndrome : Roos' test</i>

The Learning Materials

Learning Material

Item	Description	View	
Shoulder P/E (Med 3)	Demonstration video for physical examination of the shoulder. Please click here for individual chapters of this video and their podcastin ((more...))	5	<input checked="" type="checkbox"/>
Elbow P/E (Med 3)	Demonstration video for physical examination of the elbow region .	3	<input checked="" type="checkbox"/>
Hand & Wrist P/E (Med 3)	Demonstration video for physical examination of the hand and wrist. Please click here for individual chapters of this video and their podc ((more...))	2	<input checked="" type="checkbox"/>
Median Nerve P/E (Med 3)	Demonstration video for physical examination of the Median Nerve. Please click here for individual chapters of this video and their podcas ((more...))	20	<input checked="" type="checkbox"/>
Radial Nerve P/E (Med 3)	Demonstration video for physical examination of the radial nerve. Please click here for individual chapters of this video and their podcas ((more...))	3	<input checked="" type="checkbox"/>
Ulnar Nerve P/E (Med 3)	Demonstration video for physical examination of the ulnar nerve. Please click here for individual chapters of this video and their podcast ((more...))	4	<input checked="" type="checkbox"/>

[Self Assessment Exercise](#)

The Self-assessment Exercise

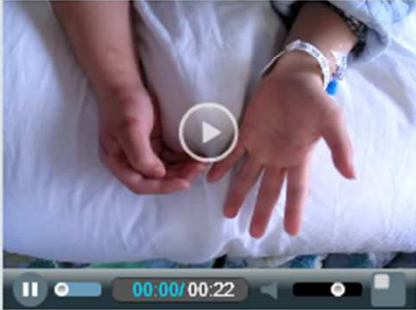
Demonstrate tests for Tennis Elbow and Golfer's

Self Assessment Exercise : ID 26 -

Formative Assessment 2

Question No.1

Take a look at this video on a patient with elbow injuries. What is the nerve affected?



Median Nerve palsy

Radial Nerve palsy

Posterior Interosseous Nerve palsy

Ulnar Nerve palsy

Anterior Interosseous Nerve palsy

Answer

Score:	0
Progress:	0

MCQ List

Q1	
Q2	

Assessment Info

Special Feature

- ❖ The SLO signage: help students to orientate where they are within the SMP

The screenshot displays the SLO Mapping Platform interface. At the top, it says "SLO Mapping Platform For Enhancement of Outcome-based Learning" with links for "logout", "dashboard", and "profile". On the left, there are two main menu sections: "Teaching Menu" with options like "Manage SLO", "Your SLO", "Question Bank", and "User Guide"; and "Learning Menu" with options like "Programme Index", "Orthopaedics", "Search", and "Portfolio". The main content area shows a breadcrumb trail: "Home > Orthopaedics > Generic Clinical Skills > Physical Examination – Lower Limb". A dropdown menu is open from the last item, listing various options including "Clinical Skills – History taking", "Clinical Skills – the generic approach to physical examination", "Physical Examination – Upper Limbs", "Physical Examination – Lower Limb", "Physical Examination – the Spine", "Med 3 Review Session by Dr Patrick Yung", and "Med 5 Review Session by Dr Patrick Yung". A table is partially visible below the breadcrumb trail, with columns for "Description / Objectives:", "Lower Limb", and "Minimum requirement". The table contains one row for "a) Hip Joint" with a detailed description of the assessment requirements.

Description / Objectives:	Lower Limb	Minimum requirement
	a) Hip Joint	Assessment of gait, squaring, assess leg length discrepancy (apparent length), tibial Vs femoral shortening. Must be able to locate bony landmarks around the hip (anterior superior iliac spine and posterior superior iliac spine, the greater trochanter and ischial tuberosity). Locate the femoral pulse. Demonstrate Flexion deformity (Thomas' test)

Special Feature

- ❖ Indicators tracking reading history

The screenshot displays a software interface titled "SLO Tree". It features a hierarchical list of topics on the left, each preceded by a small icon. A green oval highlights a section of the list. On the right side, there are two buttons: "Expand all" and "Close all". Below these buttons is a legend with two entries: a green checkmark icon next to the text "Completed" and a red 'x' icon next to the text "Not completed".

Topic	Status
Orthopaedics	Not completed
Introduction	Not completed
General Learning Objectives	Not completed
Basic and Advanced Items	Completed
Formats of Teaching	Completed
Assessment of Learning	Completed
General Orthopaedics	Not completed
Generic Clinical Skills	Not completed
Clinical Skills – History taking	Not completed
Clinical Skills – the generic approach to physical examination	Not completed
Physical Examination – Upper Limbs	Not completed
Physical Examination – Lower Limb	Not completed
Physical Examination – the Spine	Not completed
Med 3 Review Session by Dr Patrick Yung	Not completed
Med 5 Review Session by Dr Patrick Yung	Not completed
AJR (Adult Joint Replacement)	Not completed
Spine	Not completed
Sports	Not completed
Shoulder	Not completed
A Case Study on ACL Tear	Not completed
A Case Study on PCL Tear	Not completed
A Case Study on MCL Tear	Not completed
A Case Study on LCL Tear	Not completed
A Case Study on Meniscus Injury	Not completed
A Case Study on Tendo Achilles Injury	Not completed
Paediatric Orthopaedics	Not completed
Trauma	Not completed
Hand	Not completed
Foot and Ankle	Not completed
Infection	Not completed
Tumour	Not completed
Rehabilitation	Not completed

Special Feature

- ❖ Automatic indexing function
 - 🌀 User to insert index items
 - ❖ The indexing function will be enhanced with times.
 - ❖ Applicable for video clip, ppt file, word file and pdf files
 - 🌀 User can also rate indexed entries

Ulnar Nerve P/E (Med 3)

1st DI / AP

IPJ Flexion

Froment's Sign

ain 190.041s - 266.92s

1 votes
Rating: 2 / 5

Froment's sign

516.075s

538.645s

Add new tag

08:58 / 20:33

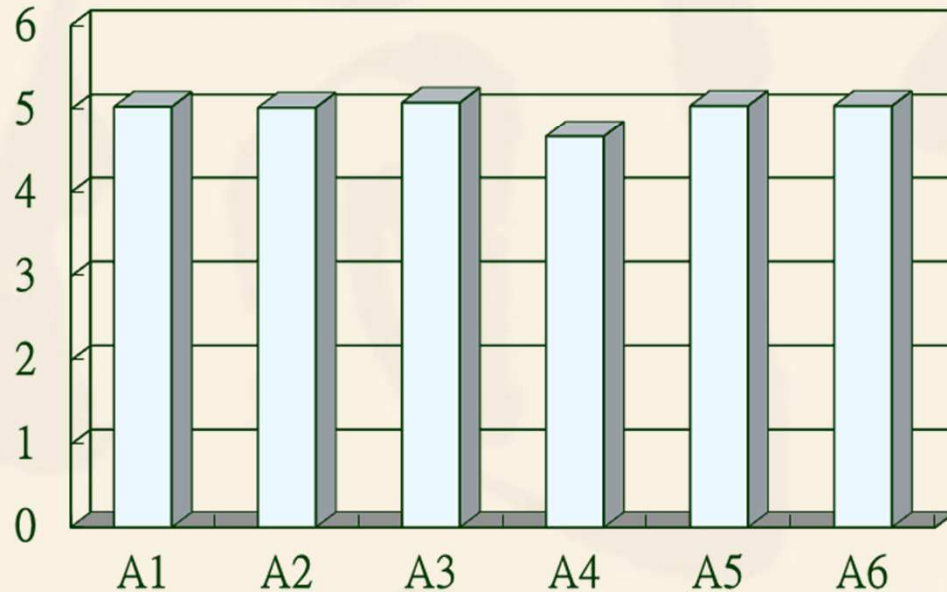
Benefits - for students

- ❖ Get a solid idea what they are expected to achieve right at the start
- ❖ Standardized materials for learning
 - ❧ Theoretic knowledge
 - ❧ Hands-on skills
- ❖ Learning under a multimedia environment
 - ❧ Text
 - ❧ Images
 - ❧ Video
- ❖ Learning at their own pace
- ❖ Self assessment with multimedia exercises
- ❖ Can better prepare themselves before the teaching sessions
 - ❧ More time can be devoted to points of queries
 - ❧ Allow more student-teacher interaction

Benefits – for teachers

- ❖ One-off effort
- ❖ Teaching objectives, contents and materials can be standardized
- ❖ They know exactly what they need to teach.
- ❖ Spend more time with students on points of queries, thus promoting critical thinking and scientific analysis.
- ❖ SMP : generic in nature, suitable for various teaching programs

Feedback Results from Med 3 and Med 5 Students, n = 232



□ Score

- | | |
|-----|--|
| A1. | The SMP is well organized |
| A2. | The SMP has a clear layout |
| A3. | The SMP will help me to learn Orthopaedics |
| A4. | Tracking on the completion of reading the materials are useful |
| A5. | I am satisfied with this SMP as an IT tool for learning |
| A6. | I feel other teaching programs (Panels or Clinical Modules) should be equipped with similar SMPs |

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

Free-text feedbacks

- Really appreciate the well organization of SMP
- The content and layout are detailed and structured
- Thank you so much for the effort/labourous work

1. Please freely write down your feelings and feedbacks about the SMP.

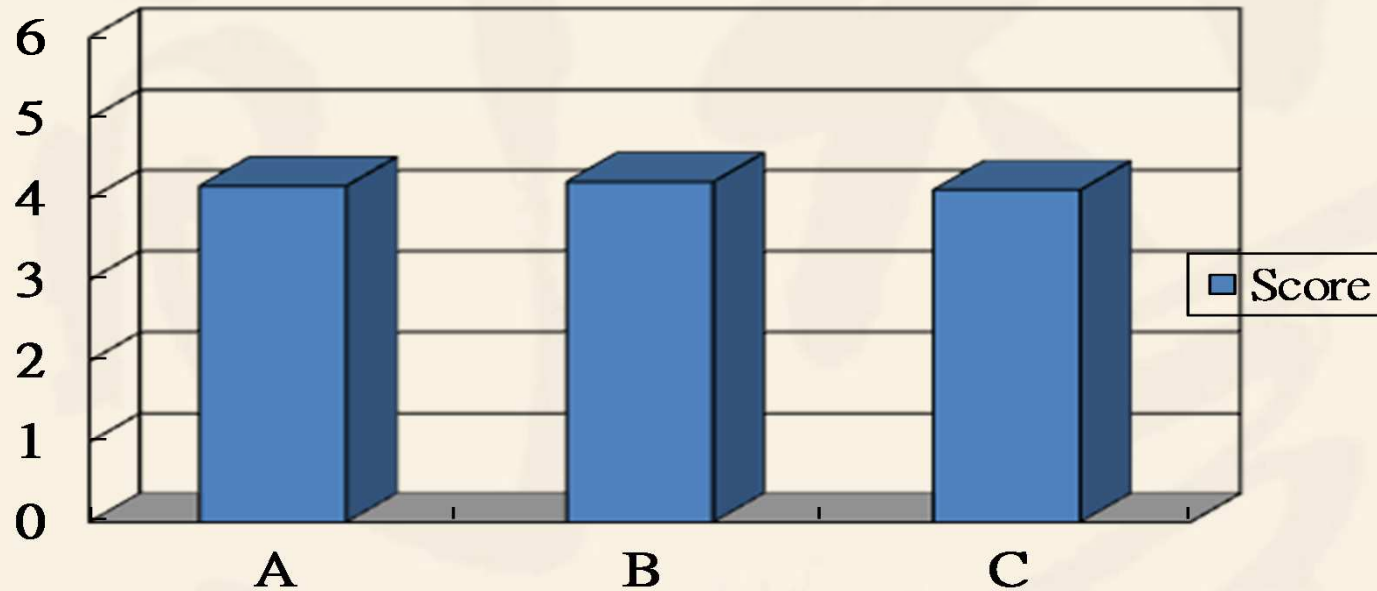
S ensational

M agnificent

P erfect

Student's performance during teaching sessions

19 teachers responded



A. As compared to 2009-10, students of 2010-11 look more knowledgeable during my teaching session

B. As compared to 2009-10, students of 2010-11 seems better prepared for my teaching session

C. As compared to 2009-10, students of 2010-11 are more active in participating discussion at my teaching session

Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
1	2	3	4	5	6

Student's academic performance

Examination Part	2009-10 marks (before SMP) N = 132 Mean+/-SD	2010-11 marks (after SMP) N = 136 Mean+/-SD	p
Written Part(MCQ)	83.0+/-10.1	89.2+/-5.4	<0.001 **
OSCE on History Taking	70.6+/-9.9	73.2+/-11.1	0.043 **
OSCE on Physical Examination	73.5+/-16.1	70.1+/-15.0	0.074
Overall Average Mark	75.7+/-7.9	77.5+/-6.4	0.041 **

** p < 0.05

Conclusion

- ❖ SMP now in operation
- ❖ Students and Teachers
 - ☞ Feedback very positive
- ❖ Positive impacts on:
 - ☞ Students' performance at teaching sessions
 - ☞ Student's academic performance
- ❖ Can not replace teacher-student interaction
- ❖ Student can better prepare themselves for the teaching session.

Thank You