

Transition from Problem-based learning (PBL) to Task-based Learning (TBL)

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International Medical University (IMU)



**Clinical
School
In
Malaysia**

Phase I

(2 1/2 Years)

KL



Phase II



(2 1/2 Years)

Phase II

**Partner
Medical
School
Overseas**



**(2 to
3 1/2
years)**

IMU Medical curriculum: Outcome-based 8 major outcome domains

IMU = International Medical University



IMU Programme (Malaysia)



IMU medical Programme- 5 years

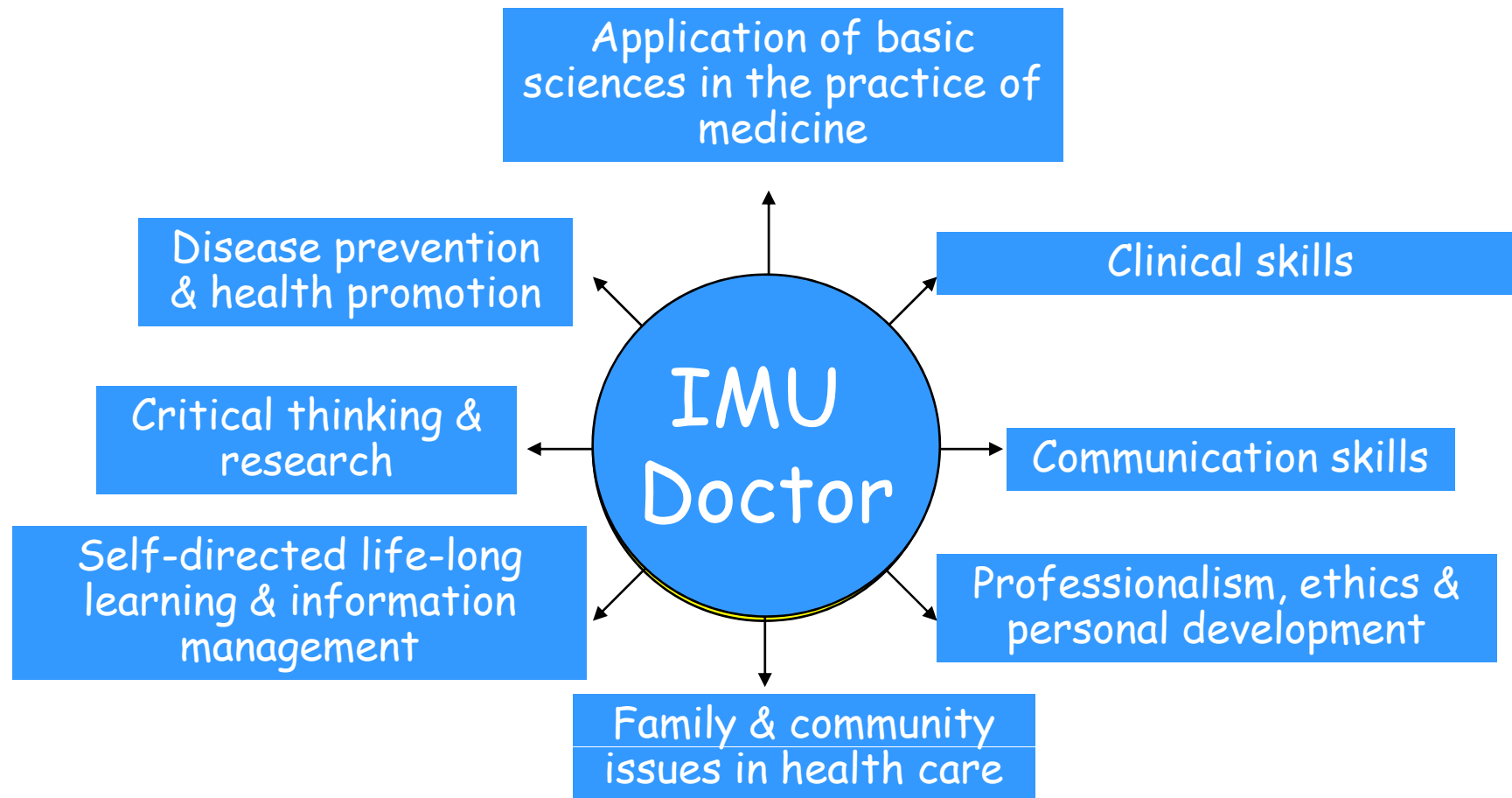
Phase I (Pre-clinical) 2½ years

Phase II (Clinical) 2½ years

Pre-clinical: Semesters 1-5

Clinical: Semesters 6-10

The 8 IMU OUTCOMES



Phase 1



Semester 1	Semester 2	Semester 3	Semester 4	Semester 5
<p>Foundation I Course (15 weeks) <i>Includes Cells & Molecules, Human Biology, Behavioural Sciences, Genetics & Statistics</i></p> <p>Community Oriented Project (3 weeks)</p> <p>Foundation II Course (8 weeks) <i>Includes General Pathology, Microbiology, Immunology, Parasitology, Pharmacology, Community Medicine/Clinical Skills</i></p>	<p>Foundation II Course (4 weeks) <i>Includes General Pathology, Microbiology, Immunology, Parasitology, Pharmacology, Community Medicine/Clinical Skills</i></p> <p>First Professional Exam</p>	<p>Cardiovascular System (5 weeks)</p> <p>Respiratory System (4 weeks)</p> <p>Haematology System (4 weeks)</p> <p>Gastrointestinal System (6 weeks)</p> <p>Rotations (5 weeks)</p> <p>Elective (3 weeks)</p> <p>Second Professional Exam</p>	<p>Endocrine System (4 weeks)</p> <p>Reproductive System (5 weeks)</p> <p>Renal System (4 weeks)</p> <p>Selectives (3 weeks)</p> <p>Rotations (5 weeks)</p> <ul style="list-style-type: none"> • Family medicine • Community health • Clinical skills lab • Medical labs • Rural hospital 	<p>Community Health & Medicine (2 weeks)</p> <p>Musculoskeletal System (5 weeks)</p> <p>Nervous System (6 weeks)</p> <p>Third Professional Exam</p>

Phase 2: Clinical Training



Semester 6	Semester 7	Semester 8	Semester 9	Semester 10
Clinical rotations in: Internal Medicine (7 weeks) Surgery (7 weeks) Family Medicine (7 weeks)	Clinical rotations in: Obstetrics and Gynaecology (5 weeks) Orthopaedics (5 weeks) Paediatrics (5 weeks) Psychiatry (5 weeks) End of Semester Exam	Specialised postings (8 weeks): ENT, Dermatology, Emergency Medicine, Ophthalmology (2 weeks each) Selectives & Electives (8 weeks) <u>Second rotation of major postings</u> Family Medicine (4 weeks) Orthopaedics (2 weeks) Psychiatry (2 weeks)	Clinical rotations: Internal Medicine (4 weeks) Paediatrics (4 weeks) Surgery (4 weeks) Obstetrics and Gynaecology (4 weeks) Anaesthesiology (2 weeks) Radiology (2 weeks) End of Semester Exam	Senior Clerkship (20 weeks): Internal Medicine (5 weeks) Surgery (5 weeks) Paediatrics (5 weeks) Obstetrics and Gynaecology (5 weeks) CFCS Portfolio & Viva Long case and Portfolio Examination



← Community and Family Case Study →

History - PBL



1969:

- o The Faculty of Medicine at McMaster University in Canada -1st educational institution to adopt this model.

1970's:

- o Dr. Howard S. Barrows (USA) was responsible to apply problem-based learning to medical education



**Dr. Barrow's idea came from
the concepts of adult learning**

Adult learning behaviors

Factors that facilitate learning in adults

- o **Autonomy (independent / self-directed)**
- o **Building on previous knowledge and experiences**
- o **Opportunity for immediate application**
- o **Learning that relates to and uses their own experiences**

History - PBL



After McMaster

- o The University of Limburg at Maastricht in the Netherlands
- o The University of Flinders and U of Newcastle in Australia
- o The University of New Mexico in USA
- o University Sains Malaysia (USM) in Malaysia- 1981

History -PBL

- o Schools have adopted PBL with several modifications to suit local needs and understanding.
- o Heterogeneous and continuously evolving.

Traditional Vs PBL

Traditional teaching methods:

- o Concepts first, apply them to examples later.

PBL environment:

- o Examples first; learn relevant concepts as it relates to the examples

Why PBL?

- o **Active learning**
- o **Learning within a context**
- o **Able to apply knowledge to seek solutions**

Key principles of PBL:

- o The "problem" drives the learning.
- o Students discover that they need to learn some new knowledge before they can (a) better understand the problem and (b) solve the problem.

Why PBL?

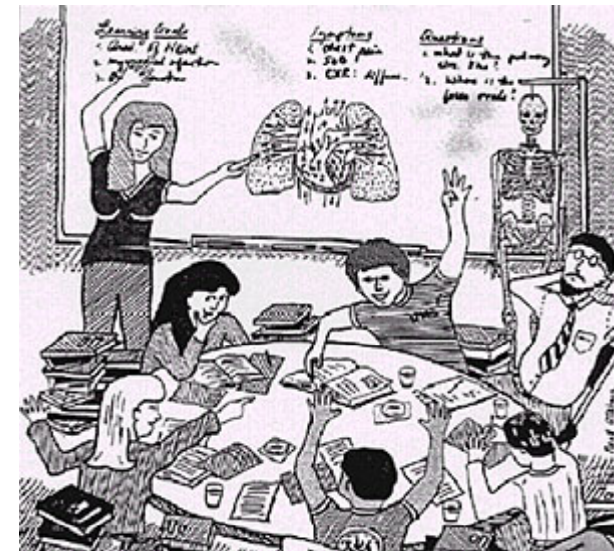
As problems are used to engage students' curiosity and initiate learning

- o PBL prepares students to think critically
- o Challenges students to "learn to learn,"

Characteristics of the students:

Students working in a PBL environment should be skilled in problem solving & critical thinking

i.e. they must be able to "think on their feet"



Early orientation / induction program for PBL

1. Plenary: 'Introduction to the IMU-PBL'
2. Plenary and demonstration of:
 - o 'How to utilise resources',
 - o PBL exercise 1 and 2
3. Plenary and discussions on
 - o 'PBL and Assessment',
 - o A critique on a video presentation and
 - o Students' feedback on PBL sessions

Role of Facilitator:

- o Appropriate questioning is one of the most important means of facilitating learning.
- o Summarise the issues periodically
- o Learning to tolerate silence.

What is Task-based learning?

The focus for learning is a set of "tasks" commonly addressed by doctors in clinical practice...

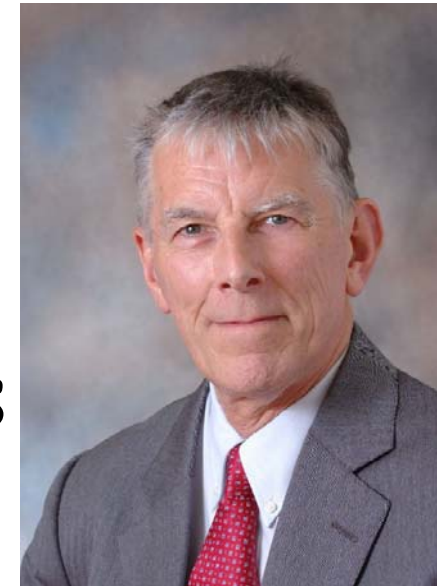
e.g. diagnosis of a patient with "fever" or management of "chest pain" etc.

History

Year 1996:

Prof Ronald M Harden

- o **Medical education innovations; SPICES, OSCEs etc**
- o **Introduced task-based learning in medical education**



Harden RM et al AMEE Guide No. 7. Task-based learning: an educational strategy for undergraduate, postgraduate and continuing medical education, *Medical Teacher* 1996;18:1:7-13



What is Task-based learning?

Learning is built around the “tasks” and learning results as student tries to understand not only the tasks but also the underlying mechanisms and concepts related to the tasks.

TBL uses the same principles as PBL and makes learning more relevant to clinical practice.

Task-based Learning

Focus is on:

- o Developing in-depth knowledge related to the tasks and
- o Developing generic transferable skills

Generic transferable skills

Communication skills:

Patient education etc (role-play)

Clinical skills

Diagnostic / clinical decision making skills

Professionalism:

- o Appreciation of diverse viewpoints / Ability to take criticism
- o Team collaboration
- o Self-reflection
- o Leadership skills
- o Recording / documenting

Transition from PBL to TBL

- o Generally, by the time students reach the clinical years, they are familiar with the process of PBL and adult learning principles
- o Theoretically, at this stage student groups should have reached a level of maturity to be able to undertake TBL on their own
- o **BUT?**... Does this generally happen?

Transition from PBL to TBL

- o Early in the clinical phase, guidance to undertake TBL should be provided
- o Differences between PBL and TBL must be emphasised so that students can prepare themselves better for the transition

Steps in PBL:



Session 1 (PBL 1)

- o Read the scenario
- o Brainstorm
- o Hypothesise
- o Identify learning issues

Session 2 (PBL 2)

- o Gain new knowledge
- o Use new knowledge to understand the problem

Differences between PBL & TBL

In PBL, the first session is for "brain storming" the paper scenario.

Students identify learning issues for self-study

Steps in TBL:



Session 1 (SDL)

- o Occurs in the ward or clinic during real patient encounter
- o Prior preparation must be done independently by the student

Session 2 (TBL class/SDL)

- o Small group discussion
- o Elect a leader
- o Summary of real case presented (as a "trigger")
- o Share learning issues derived during clinical encounter
- o Derive further learning issues and discuss
- o Reconvene and discuss with lecturer / facilitator

Differences between PBL & TBL

- o In TBL, the trigger is a real patient encountered by the students and not a “paper scenario” as in PBL
- o Clinical encounters are used to learn more in-depth knowledge and generic skills

Differences between PBL & TBL

o However, for TBL, the actual “problem solving” (similar to “brain storming”) occurs during the bedside / clinic teaching activities.

(if not in the wards/ clinic,

CSU in IMU offers such an opportunity to examine real patients)

Differences between PBL & TBL

**Based on real patient encounter
students prepare for TBL**

**IMU clinical students can use the
study guides to prepare for TBL's**

**Study guides identify learning issues
categorised under IMU 8 outcomes**

Clinical School Study Guides

	General
1.	Diabetes Mellitus
2.	High Blood Pressure
3.	Obesity
4.	Palliative Care
	Changes in Cardiovascular / Respiratory System
5.	Chest Pain
6.	Breathlessness
	Changes in the Nervous System
7.	Headache
	Changes in Gastrointestinal and Hepatic Function
8.	Dyspepsia
9.	Dysphagia
10.	Haematemesis and Melaena
11.	Altered Bowel Habits
12.	Intestinal Obstruction
	Changes in Urinary System
13.	Haematuria
	Changes Haemopoiesis / Haemostasis
14.	Pallor
	Changes in Joint / Skeletal System
15.	Bone Tumors
16.	Upper Limb and Shoulder Girdle
17.	Lower Limb and Pelvis
	Changes in Behaviour
18.	Alcohol Dependence
	Changes in Anatomy
19.	Lumps in the Neck
20.	Lumps in the Breast
21.	Lumps in the Groin
22.	Scrotal Swellings
	Changes in Reproductive System

120 core clinical topics

Dyspepsia

An example: Study Guide



Changes in Gastrointestinal and Hepatic Function

The aim of this Study Guide is to help you understand important aspects of the following clinical problem. Please print and utilise the various sections as a workbook:



Core Topic: Dyspepsia

Contents (Revised December 2005)

1	Case Study
2	Objectives to be achieved in the 8 IMU Outcomes
3	Prerequisites
4	Issues for in-depth study in different semesters
5	Issues to focus in the various clinical settings (inter-disciplinary issues)
6	Practical skills – CSU / clinical setting
7	Links to other relevant study guides
8	References

Definition of Dyspepsia

- Episodic or persistent abdominal pain or discomfort centred in the upper abdomen
- Includes symptoms like upper abdominal fullness, bloating, early satiety, belching, nausea, vomiting & regurgitation
- Bowels generally remain unaltered

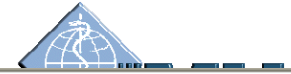
1 Case Study

The use of case studies makes learning of medicine relevant and stimulating. We hope this will develop your skills in deep learning and critical thinking.

Record a relevant case and derive learning issues relevant to the patient:

© IMU

An example: Study Guide (cont.)



Issues for in-depth study in different semesters

Keeping in mind that the main learning objective is mastery of clinical skills, students should study the following issues in-depth:

Semester 6/7

- Learn to take relevant & adequate history, including alarm features in patients presenting with dyspepsia
- Practice physical examination especially examination of the abdomen & PR examination
- In every patient, formulate a list of differential diagnoses based on

Prerequisites for a successful TBL:

Two Prerequisites

- o Prior patient encounter as the initiating point for a TBL
- o Prior preparation for TBL.

Differences between PBL & TBL

Learning related to a particular task in TBL occurs through out the clinical years and in different clinical settings.

This must be emphasised to the students

Differences between PBL & TBL

Since TBL is not a one-off process; students must be prepared to continue with their learning (related to a particular “task”) through further patient encounters.

Additional information at a much higher level must be gathered as student's progress through their clinical phase.

Sem 6 Sem 7 Sem 8 Sem 9 Sem 10



Differences between PBL & TBL

Students must also be prepared to take the responsibility for integrating information related to a task across various disciplines-

(for e.g. in "abdominal pain" as a clinical topic, integrating issues related to this topic in different clinical settings will be the responsibility of the student.)

Conducting a TBL class - student's role

Initiation and conduct (~One hour)

- o Present the **case summary** as a trigger for discussion (maximum of 5 minutes)
- o Choose a student to **lead** the group
- o Brainstorming and identification of **learning issues** for about 10 minutes
- o A broad-based **discussion** of learning issues as listed under IMU 8 outcomes
- o The student leader and facilitator should attempt to **engage** all students in the discussion

Conducting a TBL class- facilitator's role



Cont...

Reconvene the groups (remaining ~30 mins):

- o Facilitator may ensure if students understood the underlying mechanisms / scientific principles
- o Opportunity to discuss similar cases seen by students
- o Facilitator encourages the development of generic skills; through role-play for e.g. patient education, breaking bad news, informed consent etc

Conducting a TBL class- facilitator's role

Cont (in the last 30 mins)...

- o Highlights key issues and summarises the key points.
- o Facilitator may encourage students to use the same knowledge in a different context and share their personal experience
- o Facilitator will then give appropriate feedback on group dynamics etc.

Teacher's role

What is our main role today?

- o Is it teaching?

- o Is it in ensuring how much the students/ trainees have learnt?

Teacher's role

Changing roles - more of

- o Facilitating,
- o Guidance /mentoring,
- o Providing feedback
- o etc

Approaches to Education



Traditional Learning Environments	New Learning Environments
Teacher-centred instruction	Student-centred instruction
Single media	Multimedia
Isolated work	Collaborative work
Information delivery	Information exchange
Passive learning	Active/exploratory/inquiry-based learning
Factual, knowledge-based	Critical thinking and informed decision making
Reactive response	Proactive/planned action

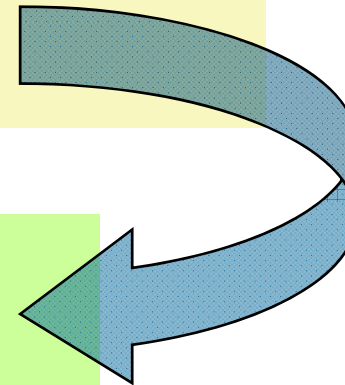
Approaches to Education

The Old Way

- o Focus on the teacher
- o Transmit, absorb, regurgitate (Passive)
- o Content driven

The Newer Way

- o Focus on the student
- o Active/collaborative learning
- o Student driven
- o Community-based



TBL in IMU



Tutors role is similar as for PBL.

However, for TBL the tutors should generally be **content experts**

Teacher's role

Teachers must play a role in consolidating and strengthening skills / competencies that have been acquired through **"self-directed learning"**, **"informal teaching / learning encounters"** and **"observations"**

TBL- tutors' role

Use open-ended questions

Questions that may

- o Elicit a students' reasoning process.
- o Encourages students to make connections.
- o Ask higher order questions.

Encourage students to use same knowledge to a different context

TBL- tutors' role

- o Highlight key issues
- o Summarise the key points as and when needed.
- o Sharing of personal experiences / genuine examples

TBL- tutors' role

Encourage development of generic skills - preferably through role-play for e.g. patient education, breaking bad news, informed consent etc

TBL- tutors' role

Feedback

- ✓ on professionalism
- ✓ on participation

Process of TBL - IMU



- o Enquire about prior **patient encounter**
- o Enquire about prior **preparation**
- o Allow **brief** presentation of case summary
- o **Sequential** release of case summary preferred with some "brainstorming"
- o Ensure that students have the **learning resources** - guides, books etc

Process of TBL - IMU



- o A leader is chosen within the group
- o Discussion of learning issues - using IMU 8 Outcomes
- o Attempt to engage all students and engage them in a discussion
- o Encourage students to apply new knowledge to enhance their understanding

Summary

Differences between PBL and TBL have been highlighted; as the transition that students need to achieve to maximise the benefits of a Task-based learning approach.

Summary



- Task-based learning, study-guides and the 8 IMU outcomes are thus closely **linked** and integrate various components of the curriculum.
- The use of learning guides for TBL can integrate a particular **core topic** across the boundaries of various disciplines.
- Well designed learning guides can guide as well promote self-directed/independent and deep learning. These are essential in developing **life-long learning** skills

Competence



TBL: Benefits



- o Contextual learning / experiential learning
- o Opportunity to develop a wide range of essential skills
- o Spiraling concept: Gathers higher order knowledge and skills as the student proceeds
- o Integrate information across disciplines

Conclusion

Emphasis is on the way we need to prepare our students for the future-
i.e. to help them to be better prepared for the practice of medicine

Task-based learning approach is useful to achieve this objective

Clinical attachments



References



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Thank you for your attention

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