

Innovative Pharmacy Education in ASEAN Countries, with focus on Malaysia

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OUTLINE

- **Pharmacy Education**
- **Areas of Innovation: Curriculum**
 - Duration**
 - Modes of delivery**
 - Methods of assessment**
 - Types of degrees and specialization**
- **Studies on Interprofessional Learning**
- **e-learning**

PHARMACY EDUCATION

- ❖ Equip pharmacy graduates with sufficient knowledge and skills on pharmaceutical sciences and practical aspects of professional pharmacy
- ❖ Furnish them with lifelong learning

PHARMACY EDUCATION

- ❖ **A new breed of students – Millennials**
- ❖ **Digital natives**
- ❖ **Cell phones, instant messaging, access to quick, accurate and comprehensive information**
- ❖ **Highly networked, interactive and social connection**
- ❖ **Prefer group-oriented than individual activities**
- ❖ **Learning needs to be flexible, connected, collaborative and technology-rich**



AREAS OF INNOVATION

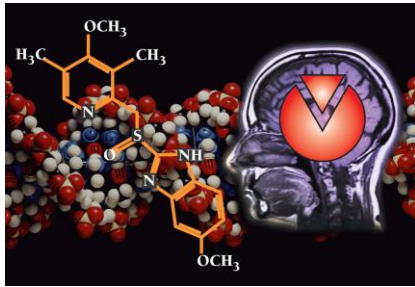
- **Curriculum**
- **Duration**
- **Modes of delivery**
- **Methods of assessment**
- **Types of degrees and specialisation**





CURRICULUM

- ❖ **Patient-oriented rather than product-oriented**
- ❖ **More emphasis on societal and public health issues**
- ❖ **More practical training than classroom theories**
- ❖ **Integration of sciences and practice**



Basic Medical and Pharmaceutical Sciences

- Anatomy, Physiology & Pathology
- Biochemistry
- Microbiology & Immunology
- Pharmaceutical Chemistry
- Physical Pharmacy
- General Pharmacology



Pharmaceutical Sciences

- Clinical Pharmacology
- Compounding & Dispensing
- Pharm. Technology
- Quality Assurance
- PKs & Biopharmaceutics
- Pharmacognosy
- Pharm. Biotechnology

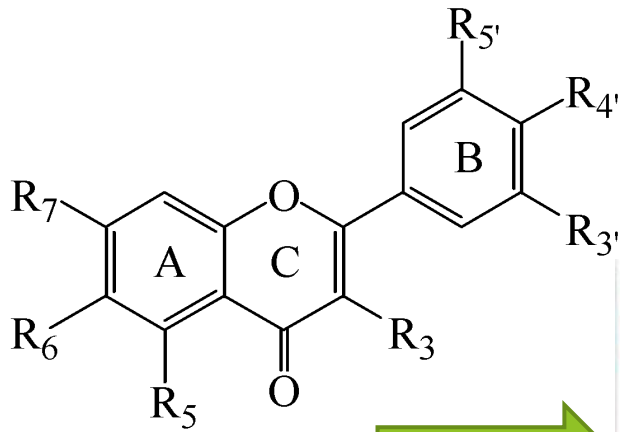


Pharmacy Practice

- Industrial Training
- Community Pharmacy
- Social Pharmacy
- Pharmaceutical Care
- Clinical Pharmacy
- Hospital Pharmacy



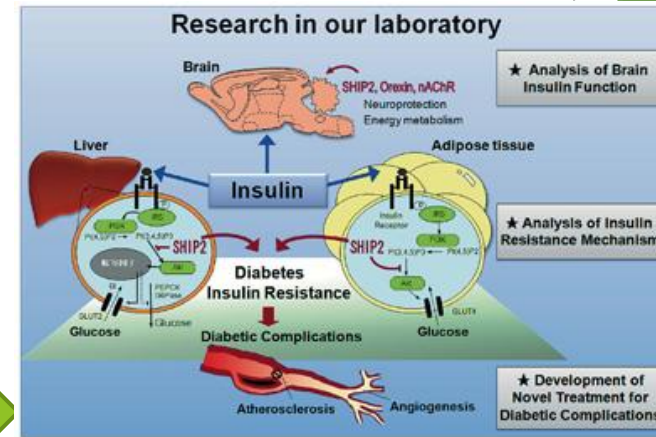
Integration of sciences and practice



Molecule



Medicine



Pharmacology



Patient

Incorporation of Current Pharmacy – Related Topics

- ❖ **Health Promotion – including smoking cessation**
- ❖ **Pharmacoeconomic**
- ❖ **Pharmacogenomic**
- ❖ **National Medicine Policy**

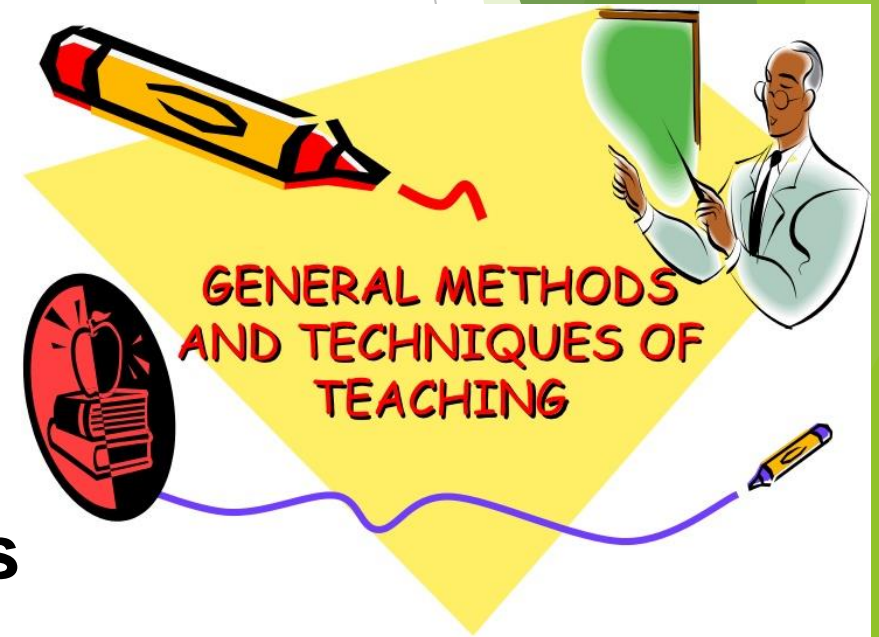
DURATION

- ❖ **BPharm - Mainly 4 years (8 semesters)**
 - 5 years with one-year training??
- ❖ **MPharm (UK) – 4 years**
- ❖ **PharmD - 6 years**

- **Governing Bodies - Pharmacy Board/Council**
- **One year internship**
- **Board Examination**

Modes of Delivery

- Less didactic, more experiential learning
- Self-directed learning
- Problem-based learning
- Role play
- **Interprofessional Learning**
- Massive Open Online Courses (MOOCs)
- **Blended learning and e-learning**



INTERPROFESSIONAL Education (IPE)

❖ **FIP (2015) – Interprofessional Education in a Pharmacy Context: Global Report**

❖ **The World Health Organization (WHO) has defined interprofessional education (IPE) as:**

“the occurrence of two or more health or social professions learning interactively about, from and with each other, all with the common goal of enabling effective collaboration and improving patient health outcomes (Reeves et al 2015)

 **leads to a collaborative, practice-ready workforce**

In MALAYSIA ...

- ❖ **Interactions between the health professionals are still mainly based on referrals – Multi-professional.**
- ❖ **Joint case management is not common and only in the wards and special clinics.**
- ❖ **Collaborative practice in between community pharmacists and GPs are almost non-existent.**
- **In 2007 - a nationwide project which involved pharmacists, GPs, nurses and dietitians in the management of metabolic syndrome and CV diseases in the community
⇒ successful, but not sustainable.**

CORFIS

Community-based Cardiovascular Risk Factors Intervention Study

CHRONIC DISEASE	TREATMENT GOAL	ACHIEVEMENT CONTROL GROUP	ACHIEVEMENT INTERVENTION GROUP	P VALUE
Diabetes	HbA _{1c} <7%	23 %	43%	0.01
Hypertension	BP<140/90mm Hg or 130/80mm Hg if Diabetes or CKD	34 %	57%	0.001
Hyperlipidaemia	LDL <4.1mmol/L; or <3.4 mmol/L if 2 or more CVD risk factors or <2.6mmol/L if diabetes or CKD	32 %	50%	0.027

Chronic care model in primary care: can it improve health-related quality of life?

❖ Mean (SD) EQ-5D index scores:

Intervention group = 0.92 (0.10) vs 0.95 (0.08); $P < 0.01$

Control group = 0.94 (0.09) vs 0.95 (0.09); $P = 0.084$.

❖ More participants in the intervention group reported improvements in their QoL compared with the control group.

Conclusion: **An interdisciplinary team CCM approach** should be encouraged, which ultimately results in improved QoL of the patients.

IPL in Malaysia

- ❖ A “jigsaw learning” technique, prescribing skills workshops, as IPL between medical and pharmacy undergraduate students.
- ❖ Part of the pharmacy curriculum – currently, also medical curriculum
- ❖ Since 2009 - eight cohorts of medical and pharmacy students have attended these workshops.

The workshops can be taken as a starting point to ignite and inspire a stronger sense of collaborative learning in an ultra-competitive Asian educational culture.

Prescribing Skills Workshop



Briefing on workshop



Discussion on 6 cases



Role play



Expert station



Interaction between students

Outcome of IP Prescribing Skills Workshop

- ❖ **Developed and validated the Student Acceptance of Inter-Professional Learning (SAIL-10) instrument**
- ❖ **Published two journal papers**

	Total no. of students	Total SAIL-10 score		Domain 1		Domain 2	
				Facilitators of inter-professional learning		Acceptance of learning in groups	
		Median (IQR)	Mean rank	Median (IQR)	Mean rank	Median (IQR)	Mean rank
Pre-workshop	270	72 (18)	81.66	25 (8)	89.58	12(4)	96.67
Post-workshop	270	82 (22)	131.93	28 (7)	124.27	12(5)	100.12
z-value			-9.950		-10.310		-4.471
p-value			<0.001**		<0.001**		<0.001**

In MALAYSIA

- **2011 - A 2-credit, co-curricular module introduce the concept of IPL and collaborative practice.**
- **First-year students in allied health, audiology and speech therapy, dentistry, medical imaging, medicine, nursing and pharmacy (n=87).**
- **The groups met every Saturday for seven consecutive weeks.**
- **Group activities: observation and presentation of the roles of a health profession, IPL case studies and a community project.**

IN SINGAPORE

The NUS IPE Steering Committee:

- School of Medicines
- Nursing
- Department of Pharmacy
- Faculty of Dentistry
- Department of Social Work

In Philippines

- **The IPL comprised of six whole-day sessions.**
- **The activities were held in the community, off campus.**
- **Whole-day session: lectures on concepts related to healthcare, small group activities for IP team building, home visit and case management discussions.**
- **Participants learnt new approaches to patient management and appreciated their roles as healthcare providers with a collaborative practice perspective.**



❖ MOOC



OPEN EDUCATION
free education for all



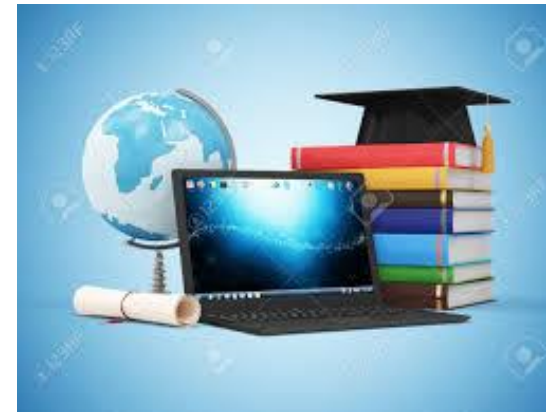
Massive **O**pen **O**nline **C**ourse

e-Learning

Electronic Educational Technology

❖ Moodle = Open source software for online learning → Spectrum/ Times

- Upload lectures etc
- Submit assignment + turnitin
- Forum
- Quiz
- Rewind



KAHOOT

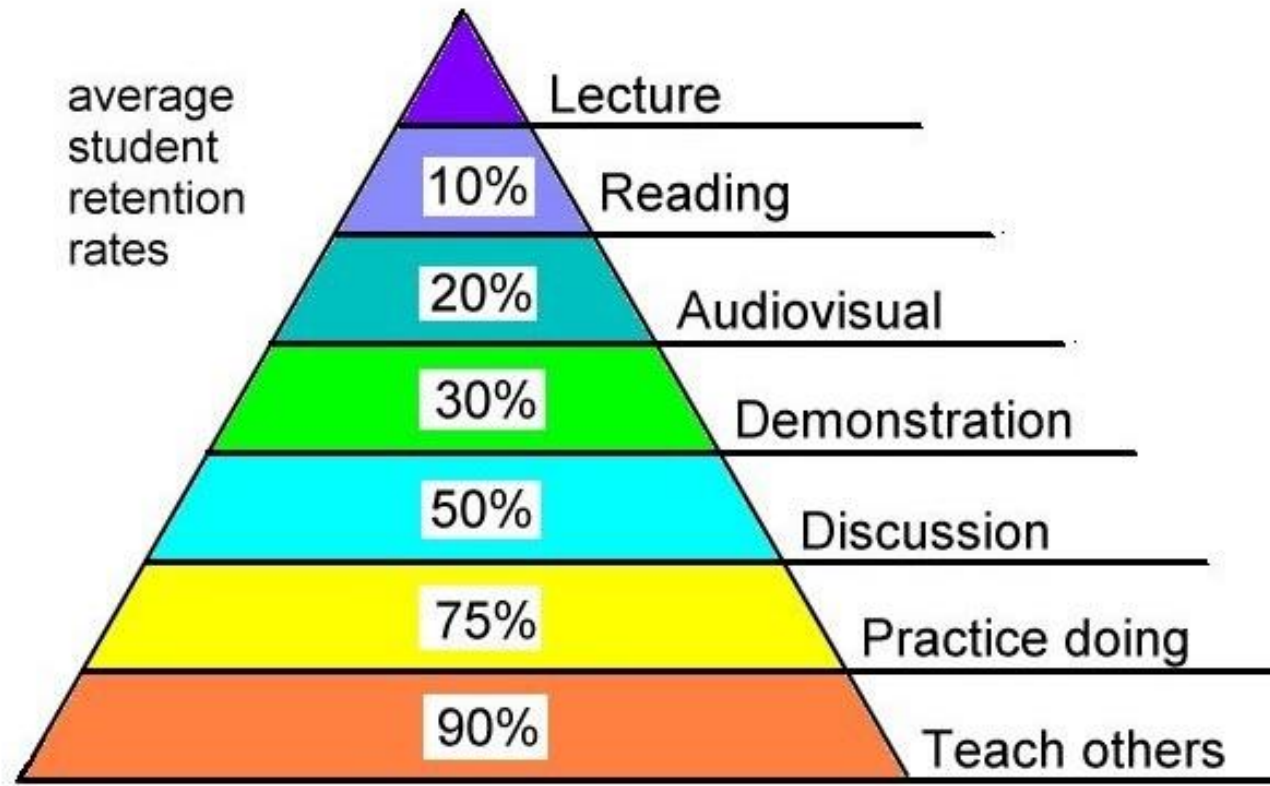
- Quiz/ Survey/ Discussion
- A free game-based learning platform
- Any subject, in any language, on any device

Others: Socrative

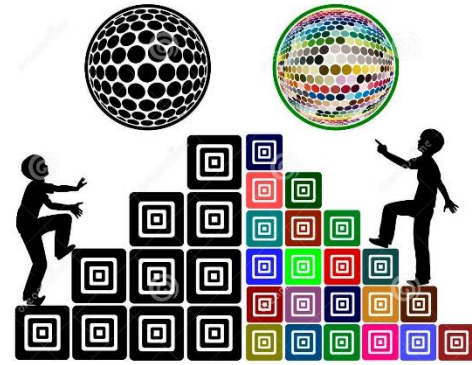


**“Tell me, and I will forget.
Teach me, and I will remember.
Involve me, and I will learn.”**

Learning Pyramid



Source: National Training Laboratories, Bethel, Maine



Download from
Dreamstime.com

8271448
Sergio11/Dreamstime.com

STUDIES ON TEACHING METHODS



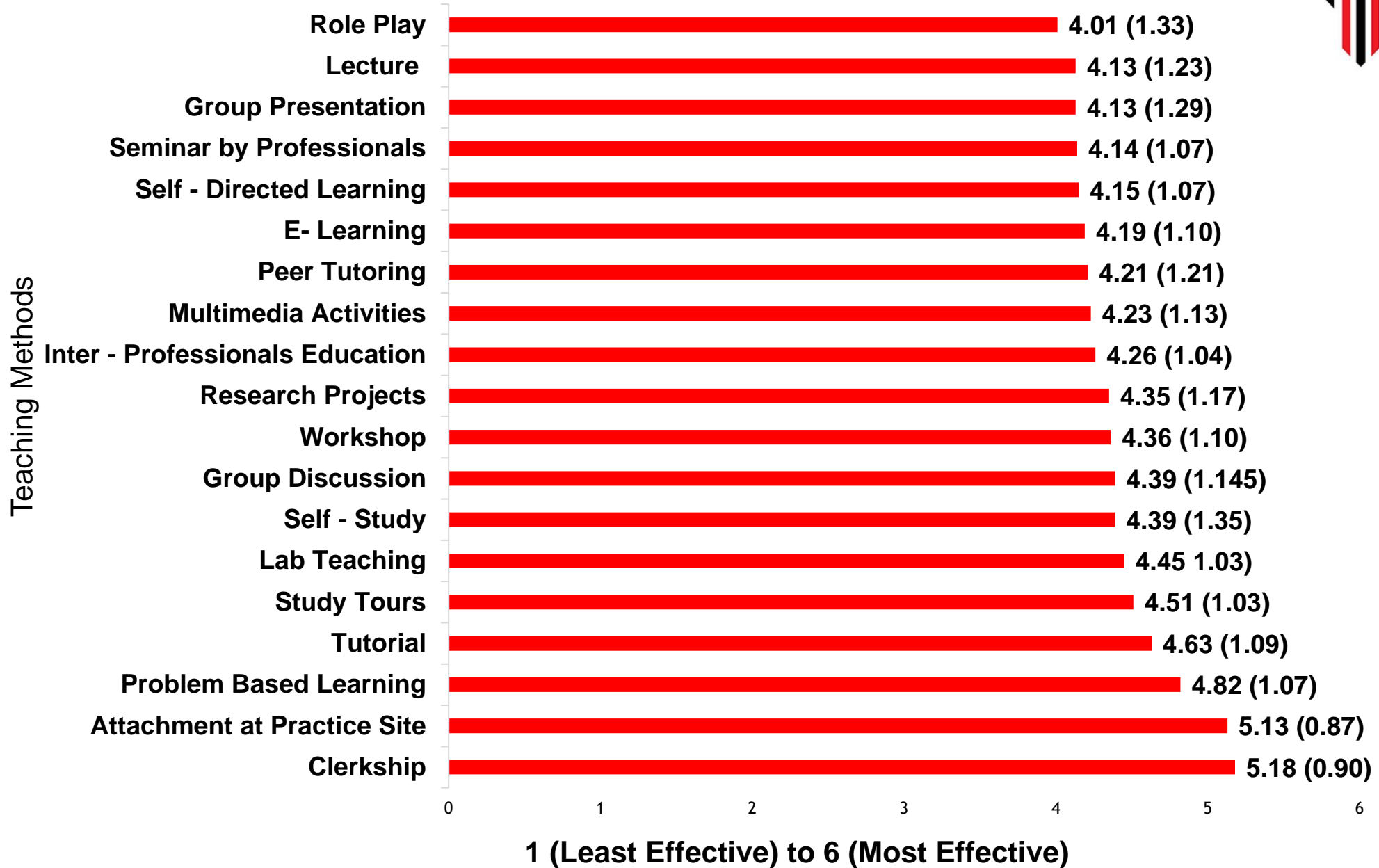
Author (Country)	Study population	Most Preferred Teaching Methods
Yousif et al., 2014 (Saudi Arabia)	300 pharmacy students from selected colleges	Lecture (53.7%)
Al Maghraby & Alshami, 2013 (Saudi Arabia)	53 university students of physical therapy	Hands-on training or practical (87%)
Dash et al., 2013 (India)	337 medical students	Lecture (77.02%)
Kharb, 2013. (India)	100 first semester medical students	Practical / Dissections (39%)
Ismail et al., 2004 (Malaysia)	50 preclinical medical students	Lecture (72%)

Study in Malaysia

- 2016
- Final year students
- Four pharmacy programmes
- University A = 73 students
- University B = 70 students
- University C = 95 students
- University D = 78 students



Fig 1. Teaching Methods Deemed Effective by Respondents



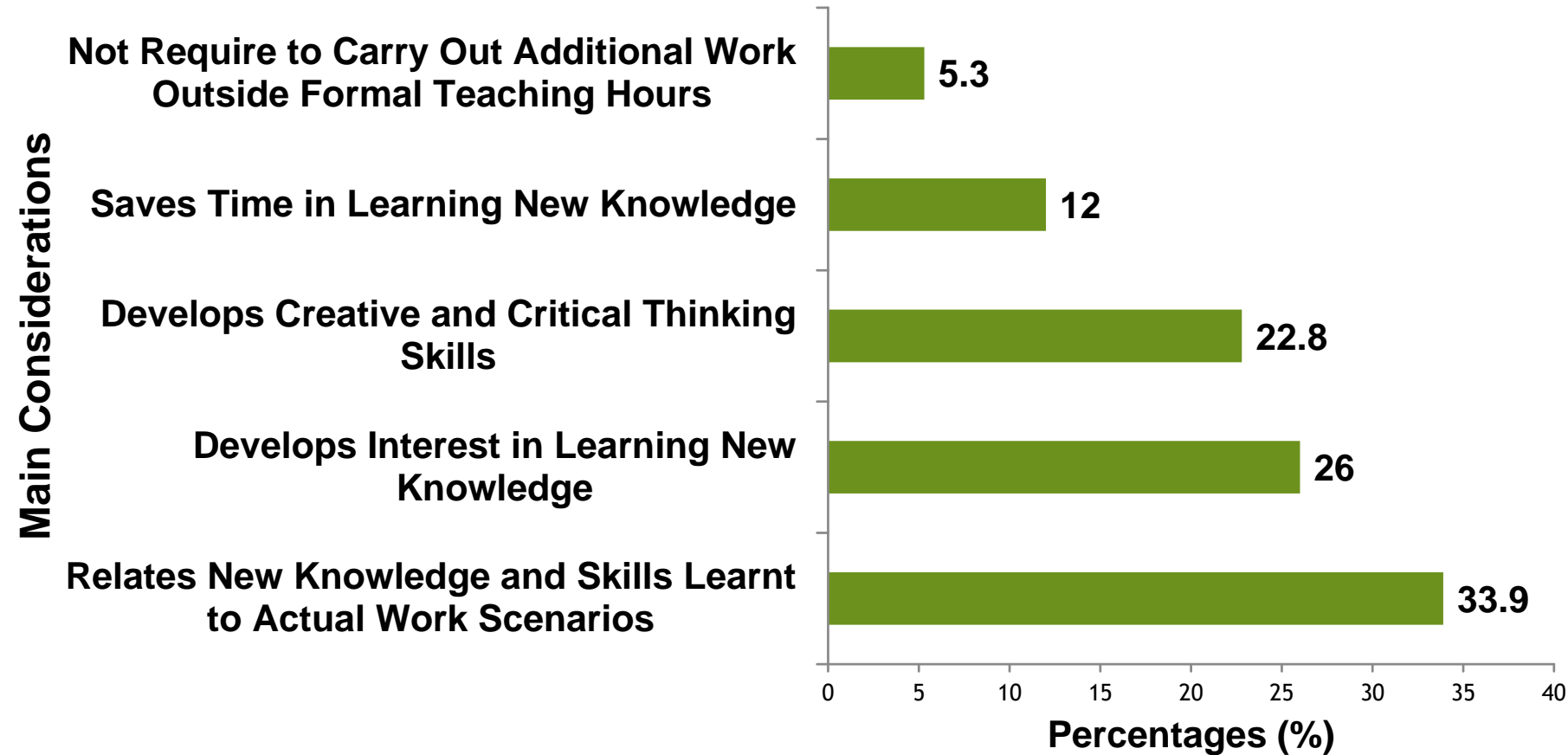


Figure 2. Main Considerations in Defining Effectiveness of a Teaching Method

METHODS OF ASSESSMENT

- ✓ Mid-Semester Test
- ✓ Examinations – MCQ, SAQ, LAQ
- ✓ Practicals, Reports, Assignments
- ✓ Internships, attachments
- ✓ **OSP_hE/OSCA (OSCE)**
- ✓ Presentations
- ✓ Portfolios

Types of degrees and specialisation

- **4 years or 5 or 6 years**
- **BPharm or MPharm or PharmD**
- **Specialisation:**
 - Clinical Pharmacy**
 - Industrial Pharmacy**
 - R & D**



NEEDS-BASED APPROACH TO PHARMACY EDUCATION

FIP advocates the consistent use of a needs-based approach to education with an emphasis on linking pharmacy education with the health needs of the population and national priorities.

International Pharmacy Federation (FIP) is a global organization that represents both pharmacists and pharmaceutical scientists

EVOLVING PHARMACY EDUCATION

WHO 7-STAR PHARMACIST

- Caregiver
- Decision-maker
- Communicator
- Manager
- Life-long learner
- Teacher
- Leader
- *Researcher*
- *Team-player*



*“Education is the most powerful weapon
which you can use to change the world.”*
- Nelson Mandela

Source: <http://tinyurl.com/ofshz75>

ACKNOWLEDGEMENTS

- ✓ **Emeritus Prof PT Thomas for sharing some of his slides**
- ✓ **FIP Education Initiative: Interprofessional Education in a Pharmacy Context: Global Report 2015**
- ✓ **Kimball Learning: Evolution of the Learning Environment**



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THANK YOU

