Digital Learning In South East Asia : The Role Of Seamolec

Dr. Abi Sujak, M.Sc
Director of SEAMOLEC
Corresponding E-mail: abi.sujak@seamolec.org

ABSTRACT

Digital Learning provides unlimited opportunity to people. Now, more than 43 percent of world population are online. The internet creates the global interconnected knowledge. As a consequence, education is entering revolution. We are educating students for an unknown future. Reffering to Richard Rile – in a knowledge-based world, we need to prepare students for jobs that haven‘t been created, using technologies that haven‘t been invented in order to solve problems that may not even yet exist‖.

In 21st century, the paradigm changes from teaching to learning. Learning is unique for everyone, because each person has different background, learning styles, and pace of learning . The role of technology in education can support the individuals‘ needs.

Technology is a vehicle to support learning.

A comparative analysis of ICT integration and e-readiness in school across Asia was conducted by UNESCO and UNESCO Institute for Statistic in 2014. Several data shown from this study, such as ;

- In 2012, computer ratio in Lower Secondary Schools in Cambodia 1 :>500,Philippines 1 : 49, Malaysia 1:12, Thailand 1:12, Indonesia (Primary and Secondary) 1 : 136, Singapore (Primary and Secondary) 1:4.
- Computers have been used as assisted instruction in Secondary Schools in Singapore (100%), Thailand (97%), Philippines (8%), Indonesia (7%)
- Percentage of schools with internet assisted instruction are as follow : Singapore and Brunei Darussalam, primary and secondary schools (100%), Thailand, Primary and Secondary Schools (97%), Malaysia (>95%). Indonesia‘s internet access (70% of Primary and Secondary Schools have internet access).

In congruent with this data and in conjunction with SEAMEO & Priority Agenda, SEAMEO SEAMOLEC takes role to build ICT Culture in South East Asia, specifically, Bandung City as a model. In this program, Social Learning Network is used as a virtual class platform. It is commonly used as a means of communication, as well as to announce information, quizzes, share learning materials and many more. It gives special feature to each users based on their roles : teachers, students, or parents, and affecting the types of communication access for them.

WELCOME
TO BORDERLESS ACCESS WITH UNLIMITED OPPORTUNITY

The situation facing educators worldwide:
in a knowledge-based world, we need to prepare students for jobs that haven't been created.

- Using technologies that haven't been invented
- In order to solve problems that may not even yet exist

(Richard Rile)

DIGITAL ECONOMY

(Don Tapscott, Digital Economy)

THEME 1: **KNOWLEDGE ECONOMY**

The New Economy is Knowledge Economy (Smart Cards; Smart House with burgler and fire alarm; Smart Roads – Roadbeds will monitor traffic and weather, ect.

THEME 2: **DIGITIZATION**

The New Economy is Digital Economy Information is in digital form: Bits

THEME 3: **VIRTUALIZATION**

As information shifts from analog to digital, physical things can become virtual – changing the metabolism of economy, the types of institutions and relationships, and the nature of economic activity itself.

THEME 4: **MOLECULARIZATION**

The new economy is molecular economy (clusters of individuals
and entities as the basis of economy

THEME 5: **INTEGRATION/ INTERNETWORKING**

The New Economy is a networked economy, integrating molecules into clusters that network with others for the creation of wealth. (Smart Cards; Smart House with burgler and fire alarm; Smart Roads – Roadbeds will monitor traffic and weather, ect.

THEME 6: **DISINTERMEDIATION**

Middleman functions between producers and consumers are being eliminated through digital networks.

THEME 7: **CONVERGENCE**
In the new economy, the dominant economic sector is being created by three converging industries (Computing, Communication, Content Industries)

THEME 8: **INNOVATION**

The new economy is an innovation based economy.

"Obsolete your own product". If you dont make it obsolete, some one else will.

THEME 9: **PROSUMPTION**

In the New Economy the gap between consumers and producers blurs

THEME 10: **IMMEDIACY**

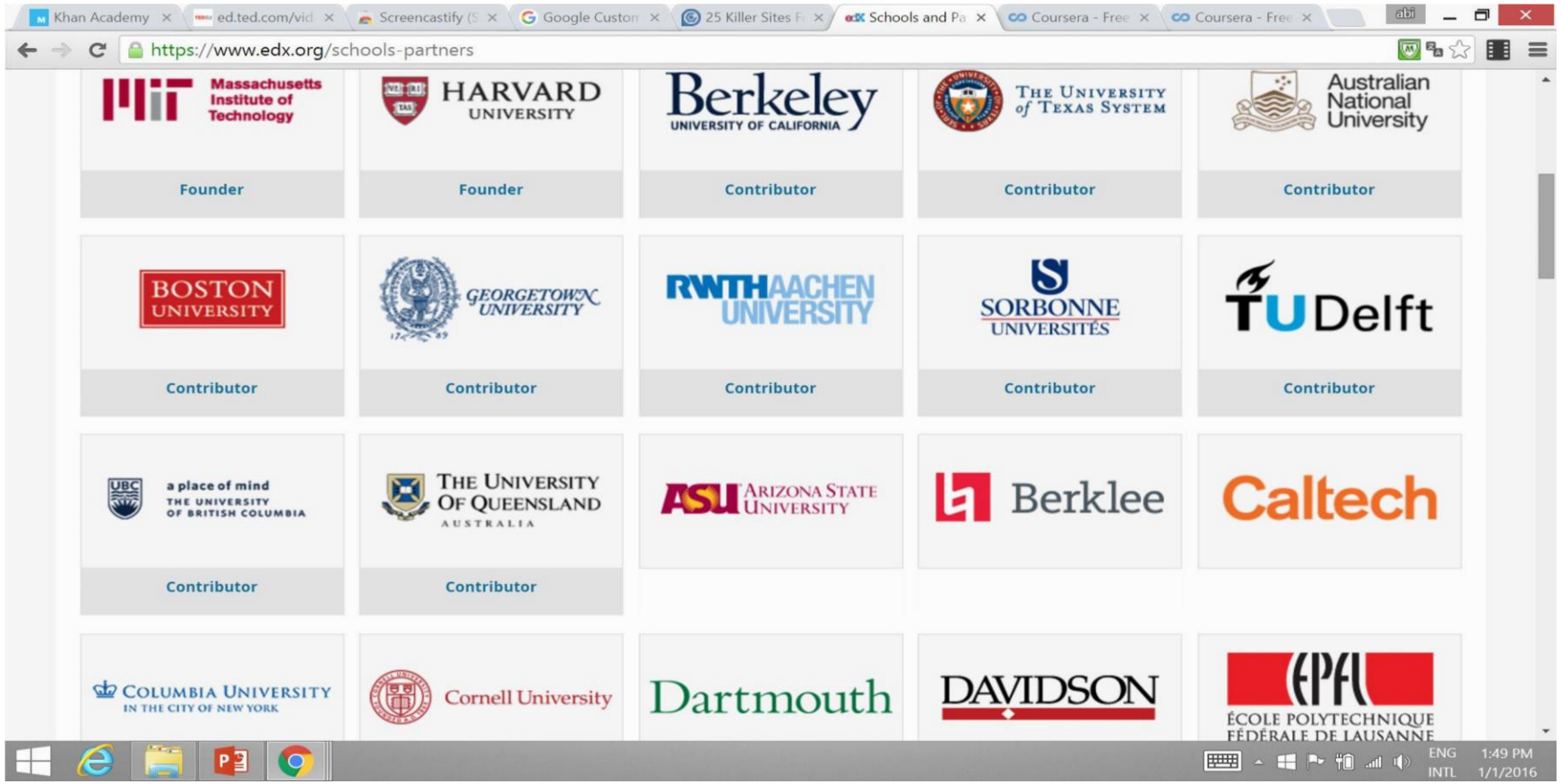
In an economy based on bits, immediacy becomes a key driver and variable in economic activity and business success.

THEME 11: **GLOBALIZATION**
The new economy is a global economy.

THEME 12: **DISCORDANCE**
Unprecedented social issues are beginning to arise, potentially causing
massive trauma and conflict.

ERA OF NETWORK AND COOPERATION

www.edx.org (Free online course, > 5 million participants)



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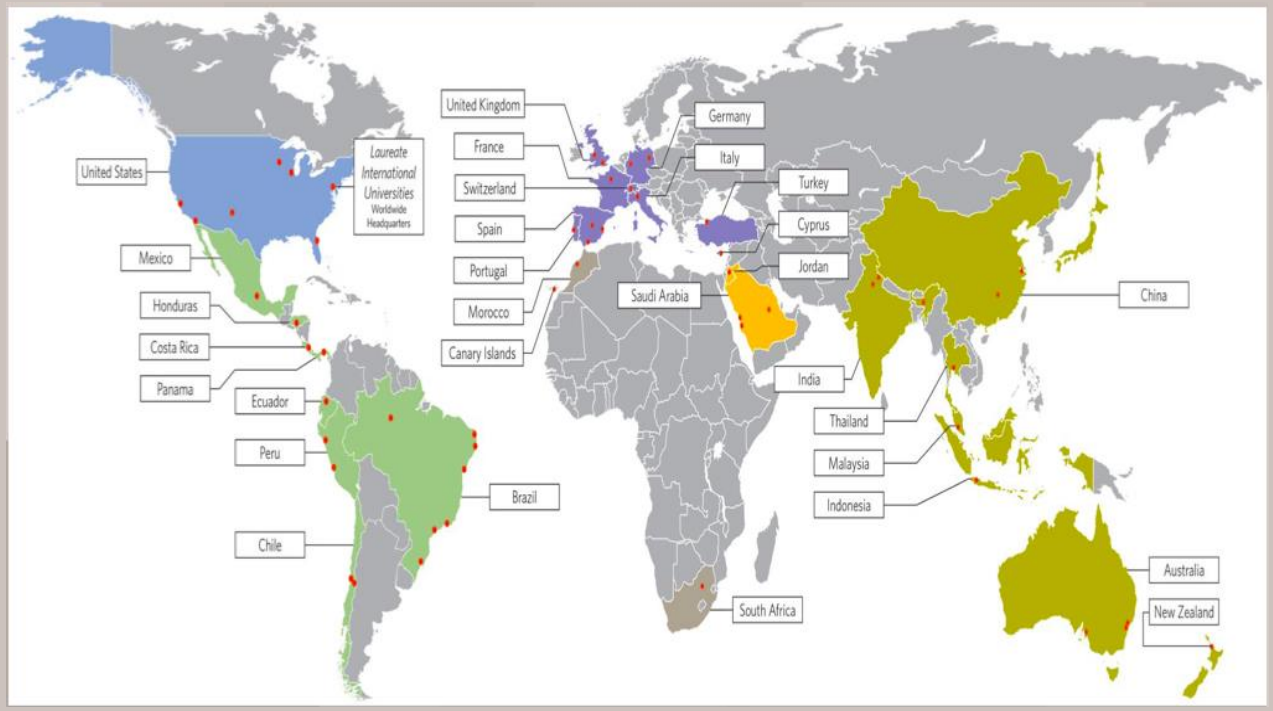
Laureate is the Leader in International Higher Education : >1.000.000 STUDENTS,



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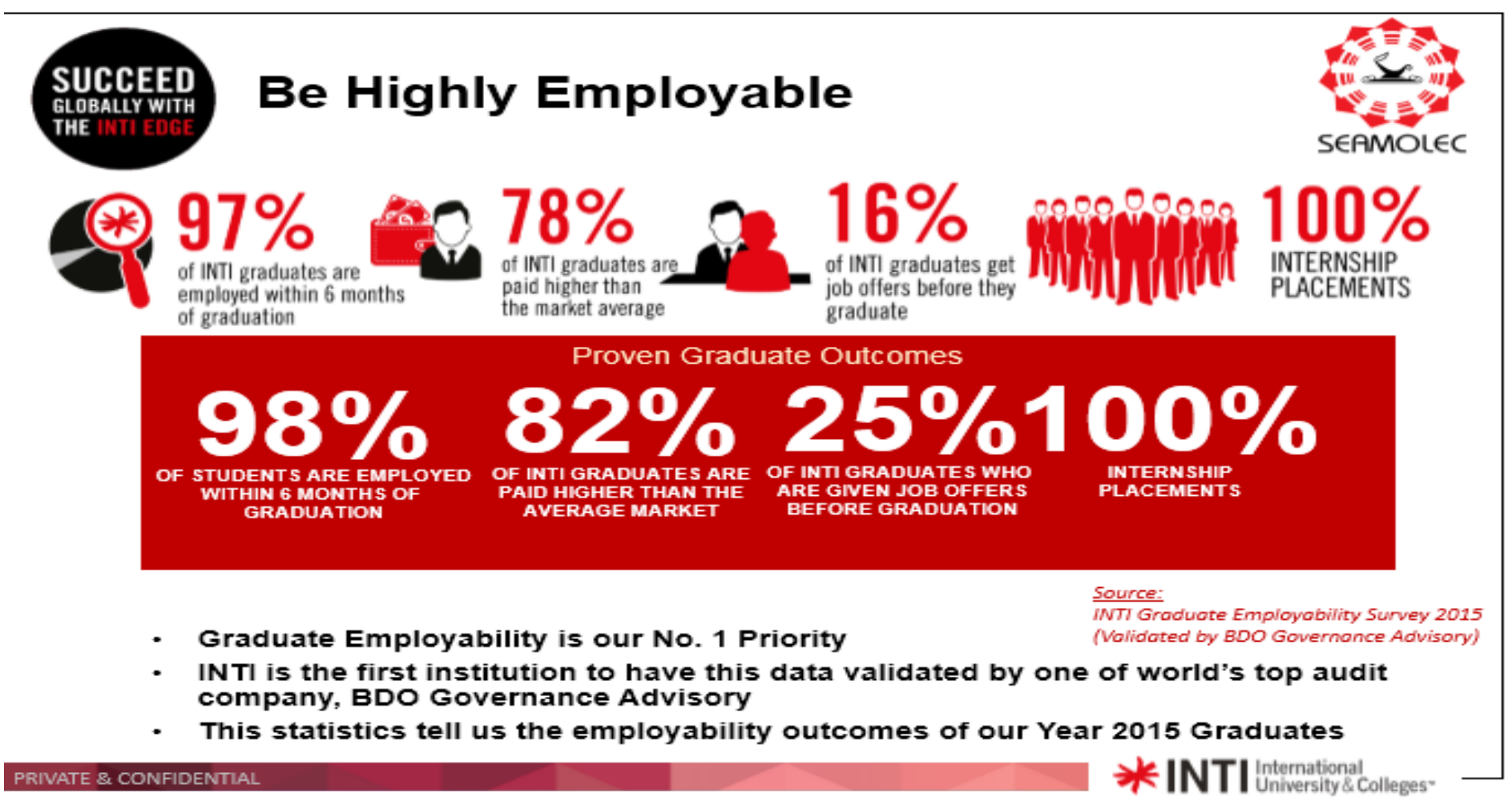
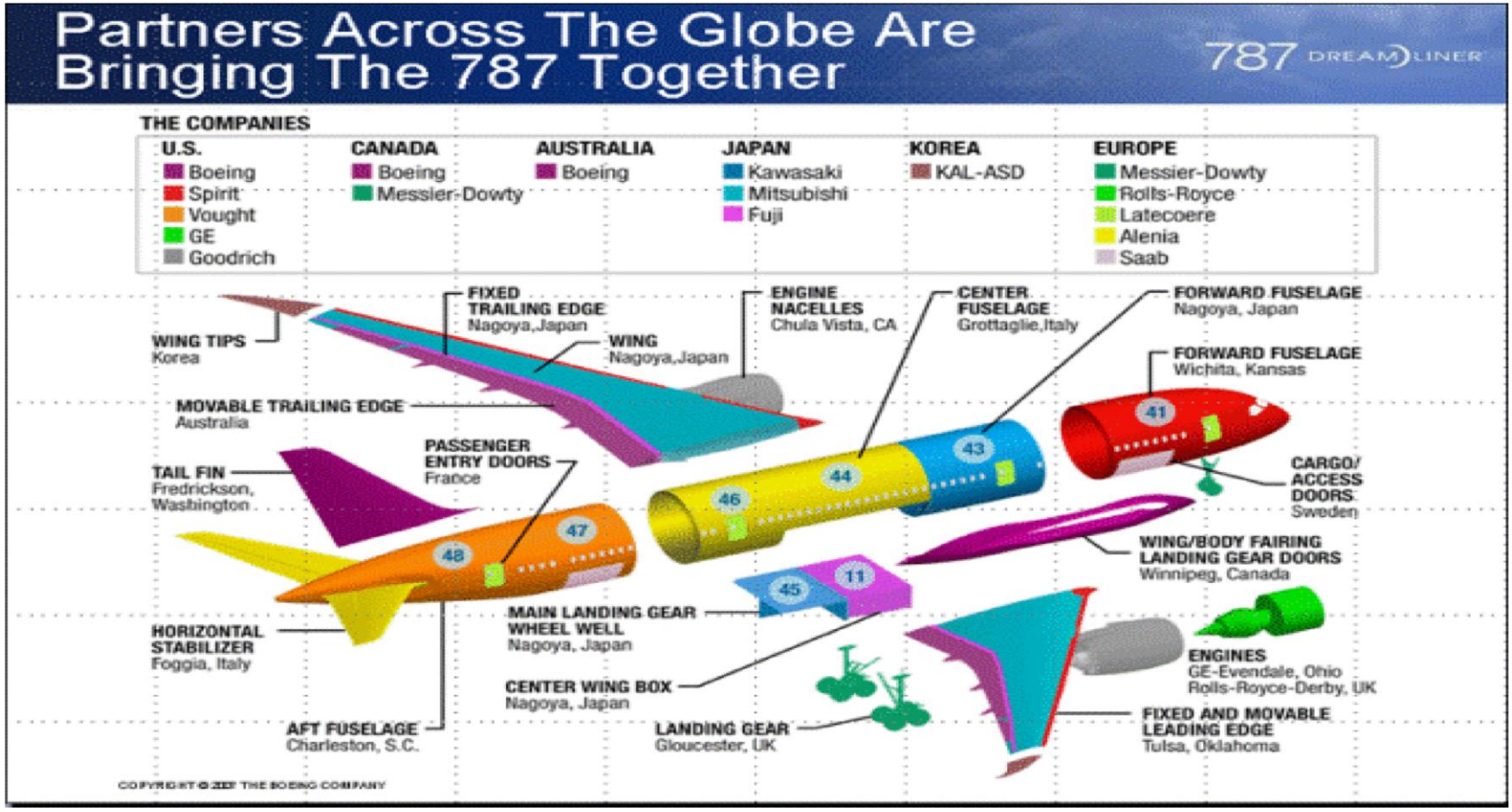
Unleash Your Potential


SUCCEED GLOBALLY WITH THE INTI EDGE
Be Highly Employable
SEAMOLEC
97%
of INTI graduates are employed within 6 months of graduation
78%
of INTI graduates are paid higher than the market average
16%
of INTI graduates get job offers before they graduate
100%
INTERNSHIP PLACEMENTS
Proven Graduate Outcomes
98%
OF STUDENTS ARE EMPLOYED WITHIN 6 MONTHS OF GRADUATION
82%
OF INTI GRADUATES ARE PAID HIGHER THAN THE AVERAGE MARKET
25%
OF INTI GRADUATES WHO ARE GIVEN JOB OFFERS BEFORE GRADUATION
100%
INTERNSHIP PLACEMENTS
Source:
INTI Graduate Employability Survey 2015
(Validated by BDO Governance Advisory)
• Graduate Employability is our No. 1 Priority
• INTI is the first institution to have this data validated by one of world's top audit company, BDO Governance Advisory
• This statistics tell us the employability outcomes of our Year 2015 Graduates
PRIVATE & CONFIDENTIAL
INTI International University & Colleges

HIGH TECH NEEDS STRONG TEAMWORK AND NETWORK

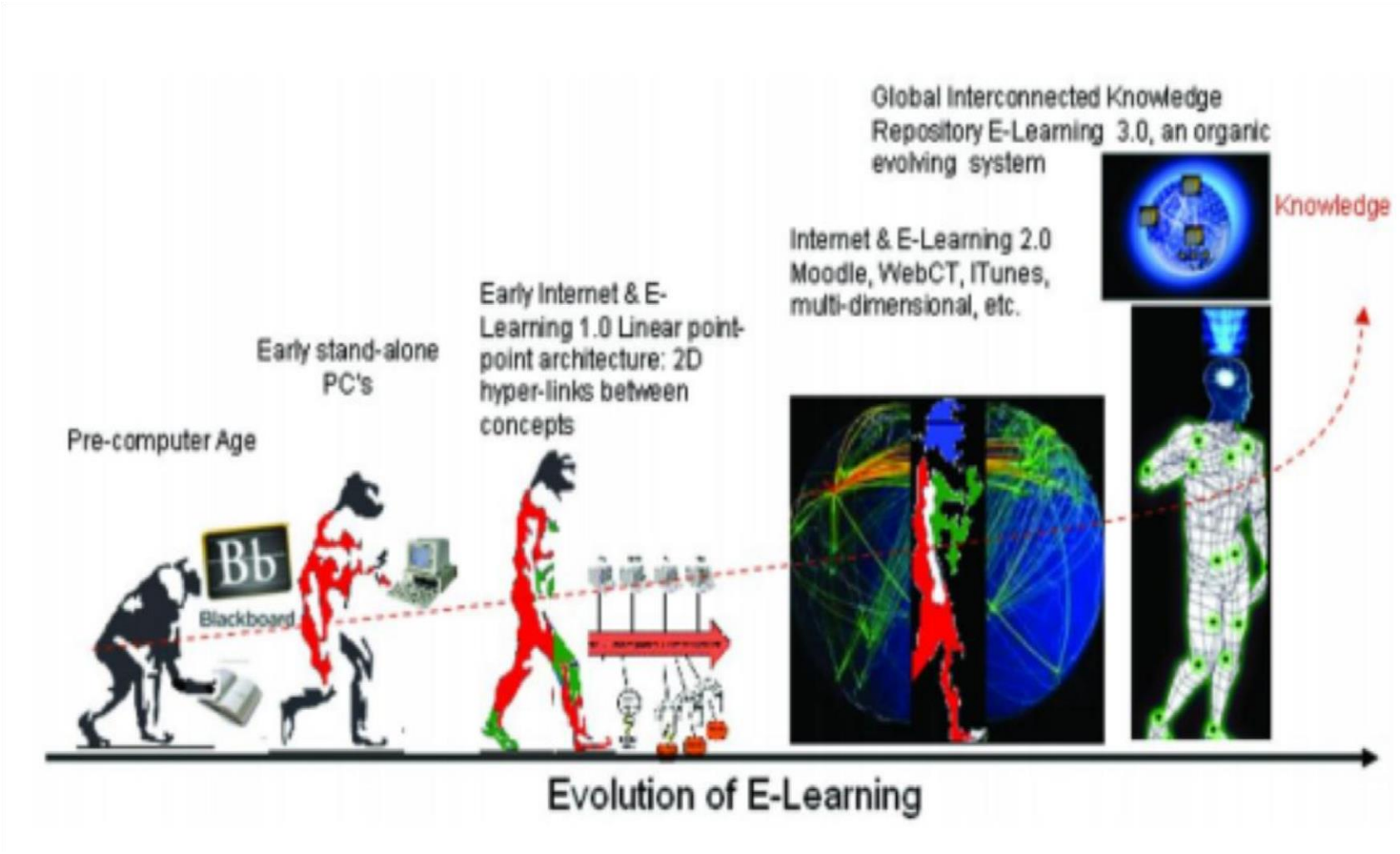


INTERNET USERS*)

International Telecommunications Union:

43 percent of the world's population is now online (3.2 billion), 2 billion (developing countries) (ITU, 2015).

***) ITU (2015) in Mariana Patru and Venkataraman Balaji (Editors), Making Sense of MOOCs A Guide for Policy-Makers, UNESCO and Commonwealth of Learning, France, 2016, p. 11.**[3]


Global Interconnected Knowledge Repository E-Learning 3.0, an organic evolving system
Knowledge
Internet & E-Learning 2.0 Moodle, WebCT, iTunes, multi-dimensional, etc.
Early Internet & E-Learning 1.0 Linear point-point architecture: 2D hyper-links between concepts
Early stand-alone PC's
Pre-computer Age
Bb
Blackboard
Evolution of E-Learning


generasi
milenial
Blogger
facebook
Bloglines
vimeo
reddit
BitTorrent
WIKIPEDIA
twitter
skype
Basecamp
myspace.com
Picasa
FeedBurner
LinkedIn
Google
flickr
digg
amazon.com
netvibes
tripadvisor
Pageflakes
newsgator
WordPress
craigslist
Technorati
eBay
PayPal
YouTube
15
15

Open Distance Learning

2012-2014 :
> 10.000.000 STUDENTS ENROLLED IN 3 MOOC,
in THOUSANDS COURSES (Coursera, Udemy, edX)

CYBER E-LEARNING

SourcePicture : epsu.cetl.hku.hk


THE 21st CENTURY LEARNER
Collaboration
Knowledge
and
Content
Critical Thinking
and Reasoning
Technology
Literacy
Self Direction
Information
Literacy
Invention

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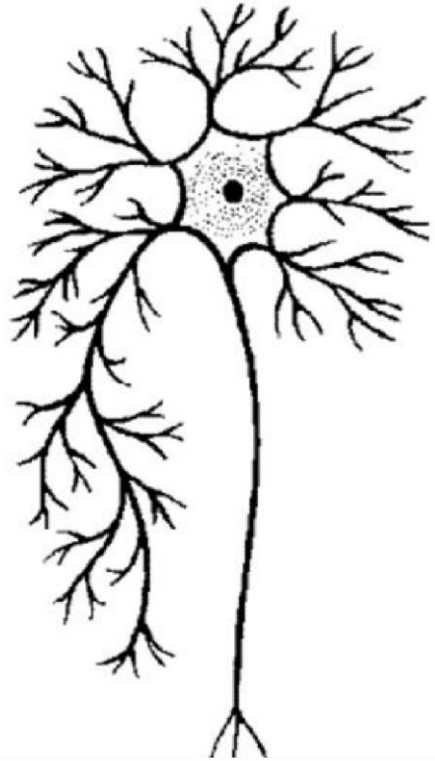
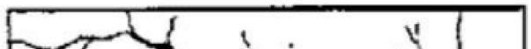
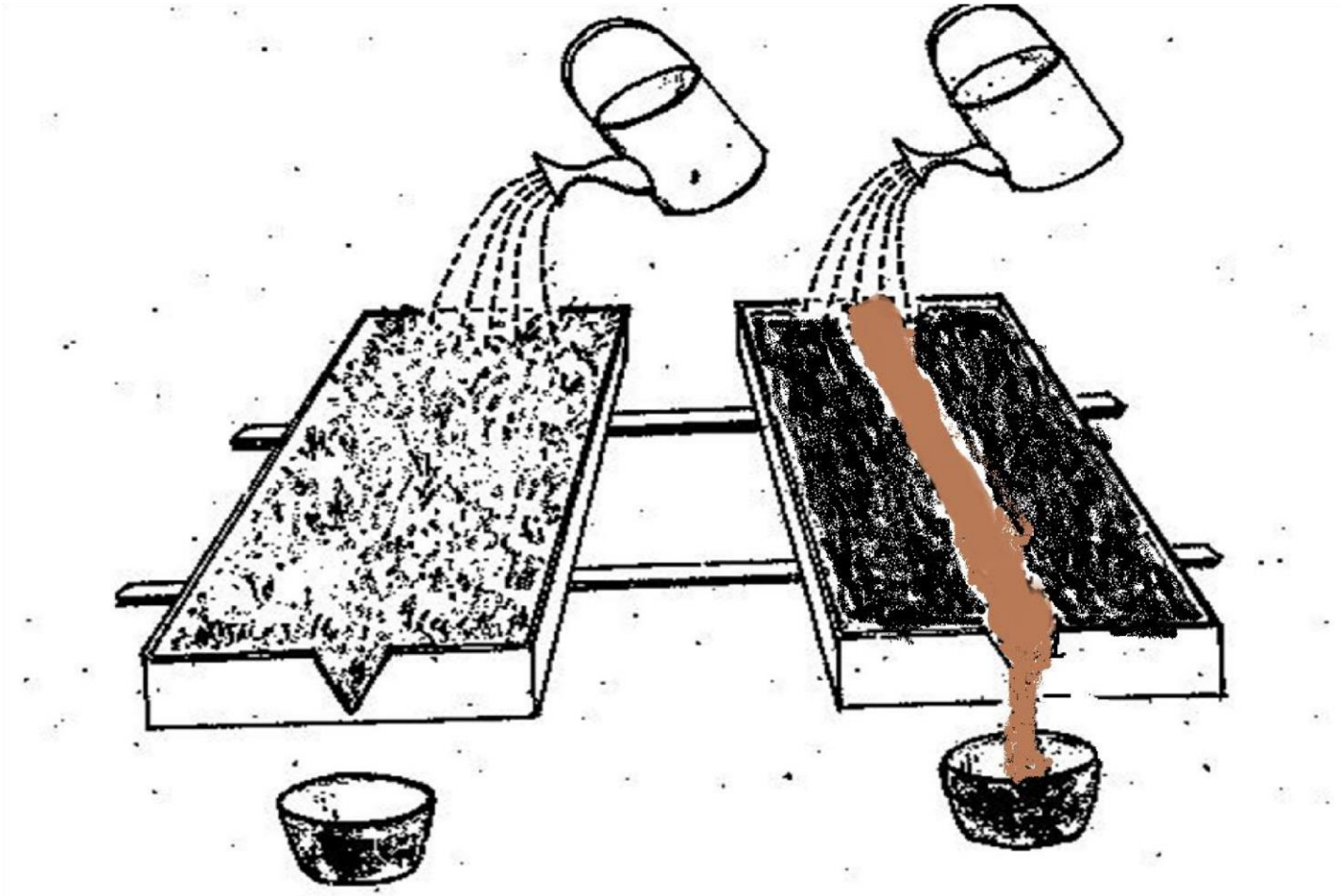
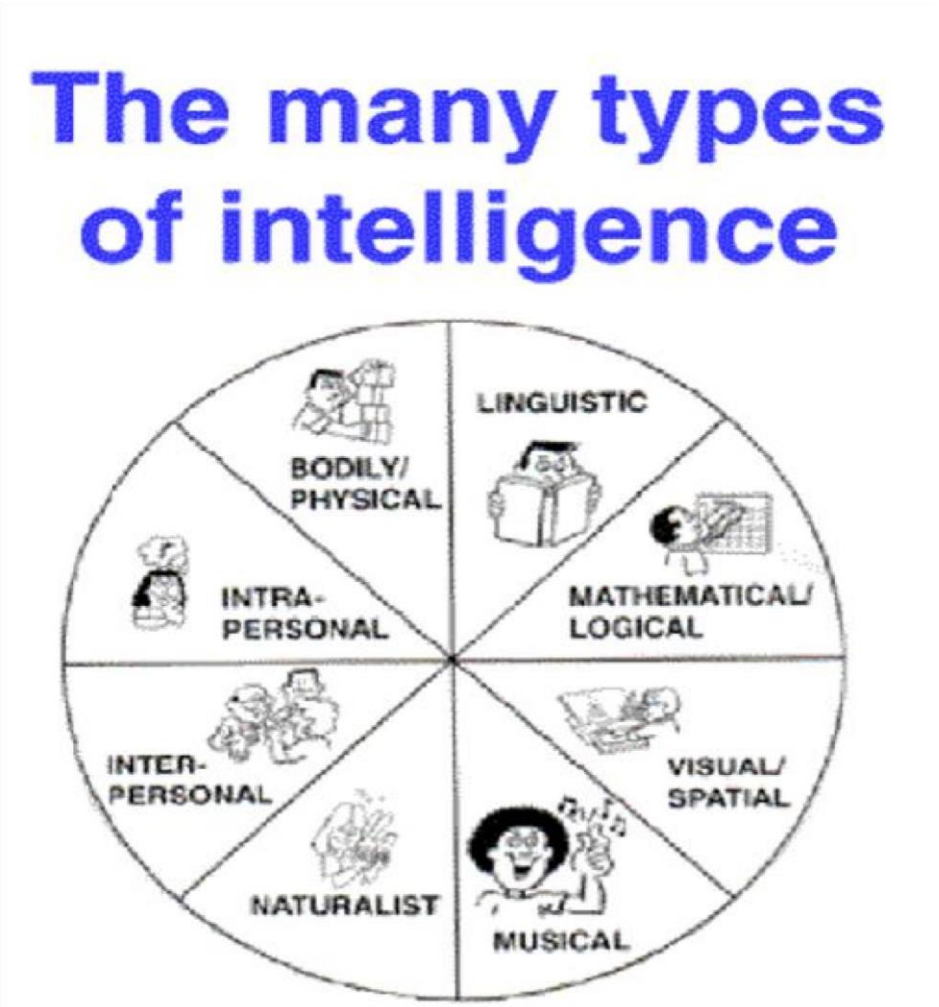
Your brain has 100 billion active cells, each with up to 20,000 connections



The unstimulated and stimulated brain






The many types of intelligence
LINGUISTIC
BODILY/ PHYSICAL
MATHEMATICAL/ LOGICAL
INTRA- PERSONAL
VISUAL/ SPATIAL
INTER- PERSONAL
NATURALIST
MUSICAL

Learning = f(C, M, Ti) x Tech

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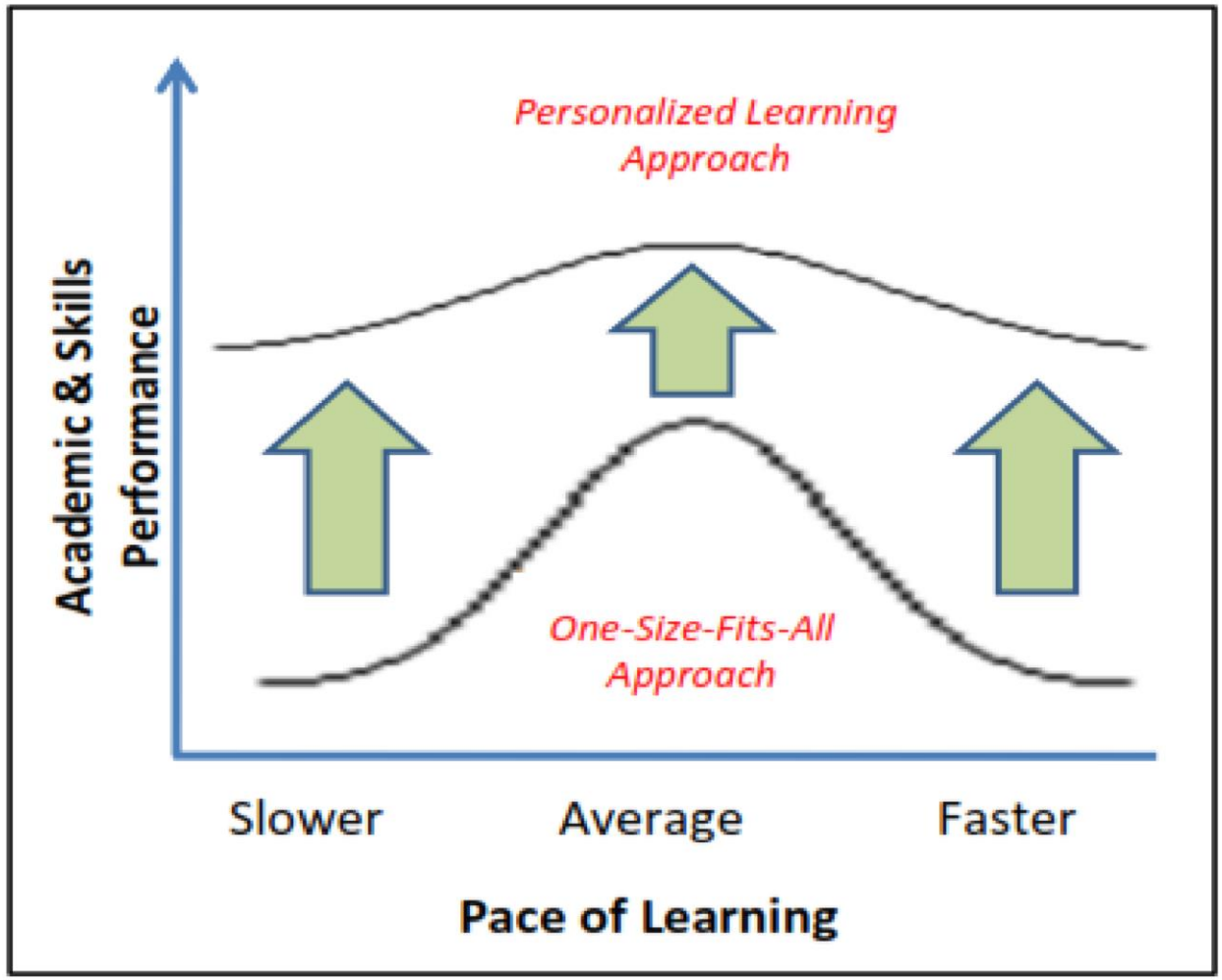
C = Content

M = Motivation

Ti = Time

Tech = Technology


Personalized Learning Approach
Academic & Skills Performance
One-Size-Fits-All Approach
Slower
Average
Faster
Pace of Learning


e
LEARNING

CHALLENGES FOR EDUCATORS

- Education in the 21st Century is about LEARNING not TEACHING.
- Learning is unique to each individual.
- Differentiated Learning is essential – no two individuals share exactly the same approach to learning nor do they come from the same background.
- Technology is a vehicle to support learning .
- Learning is without boundary.

CHALLENGES FOR EDUCATORS

- Interactive learning is essential.
- Education today is still mostly designed for standardization, NOT customization.
- Technology can help empower teachers and students to reach their true, individual potential.
- Use of technology provide opportunity to transform from fits for all to personalized learning , prepare for the real world, empower students to flourish their potential, to provide more

equal opprtunity to achieve their personal and economic potential;

Benefits of technology in Education (Robert Fogel, 2016)

- Eliminate printed textbooks to reduce cost and offer students new rich and immersive learning experiences
- Create and share content
- STEM/STEAM (Science, Technology, Engineering, Arts and Math)
- Software coding/programming
- Better communication between teachers, students, parents, and school administrators
- Constructive involvement of parents in their children's education

- Provide feedback on results and progress, used to help facilitate the teaching and learning process
- Bridge the divide between rural and urban communities

Teacher's concerns and fear

Computers will replace me

Using a computer for teaching will only add work

I won't be able to manage the classroom

Parents don't want their children to use computers/Internet

The Reality

Technology is backbone of our global economy and society

- **It will happen with or without you**
- **Technology solves most of the problems**

- **Technology is used to create and innovate in ways we never imagined**

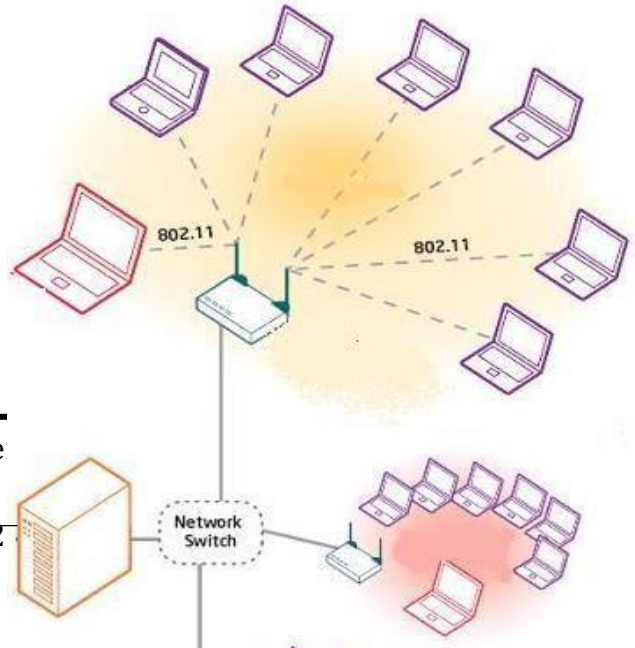
E-Learning

From Computer Lab
to Wheel Class room
to Fully Integrated Access

Computer lab

Computers on wheel classro

Fully integrated; any time, any where access



FLIP CLASSROOM

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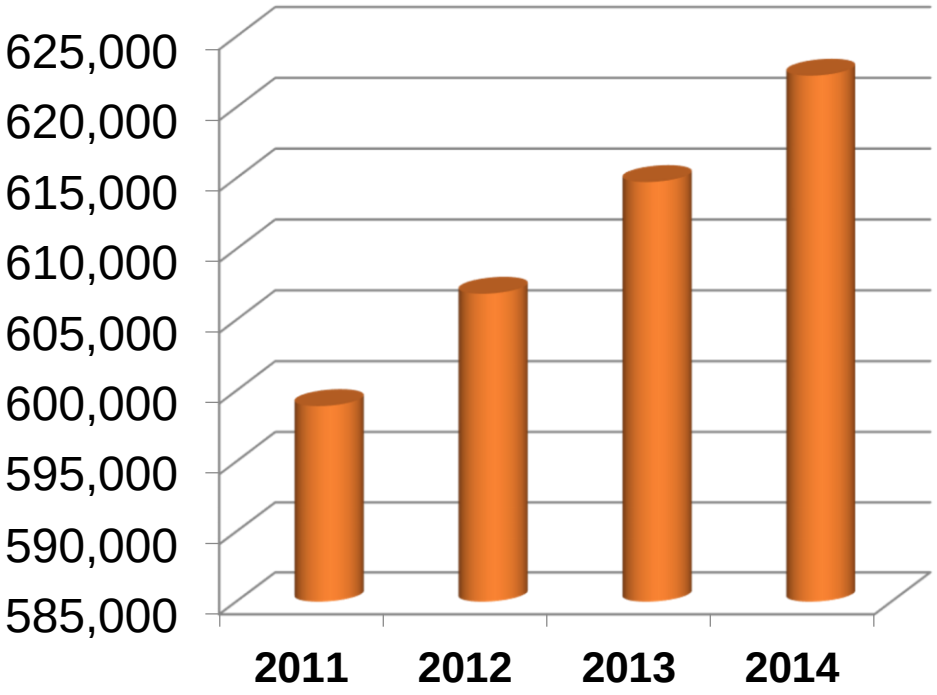
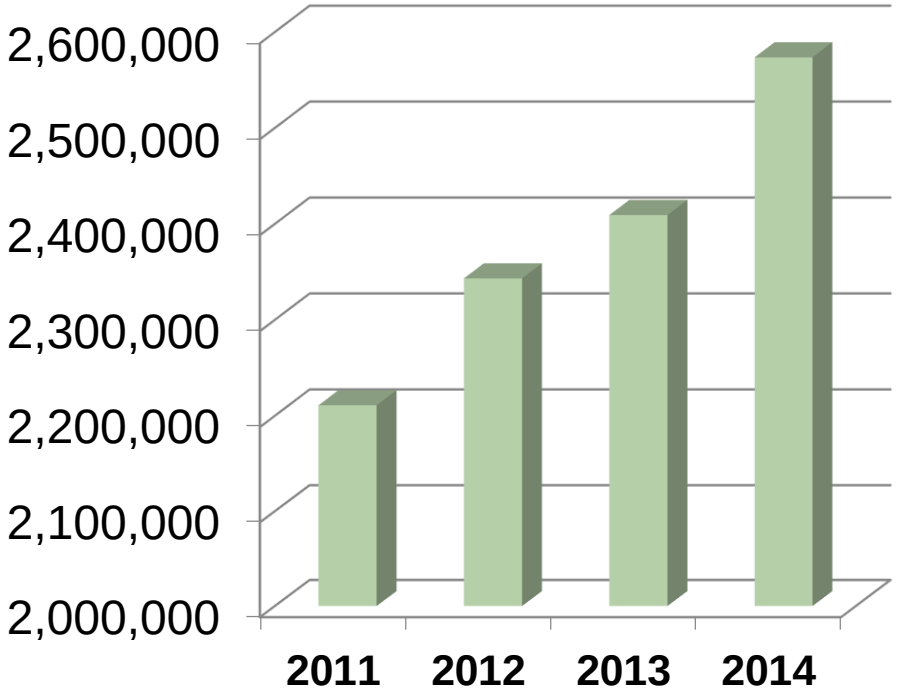
SOUTH EAST ASIA

ASEAN : BASIC DATA INDICATORS

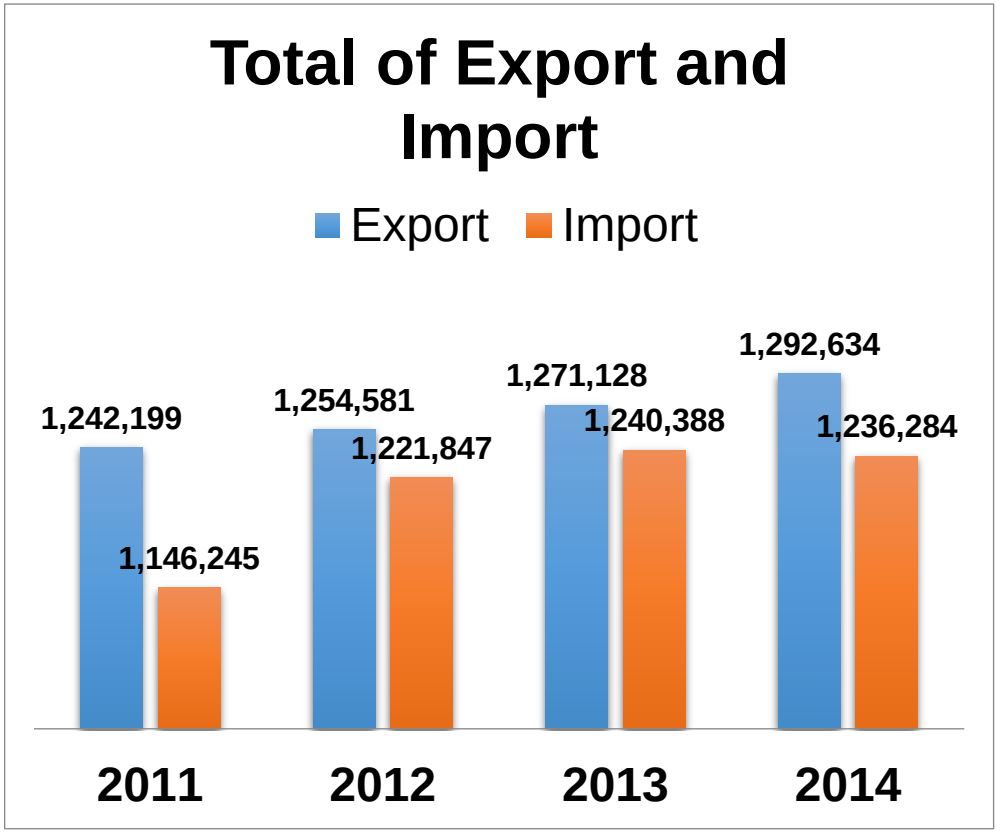
Total population
(in thousands)

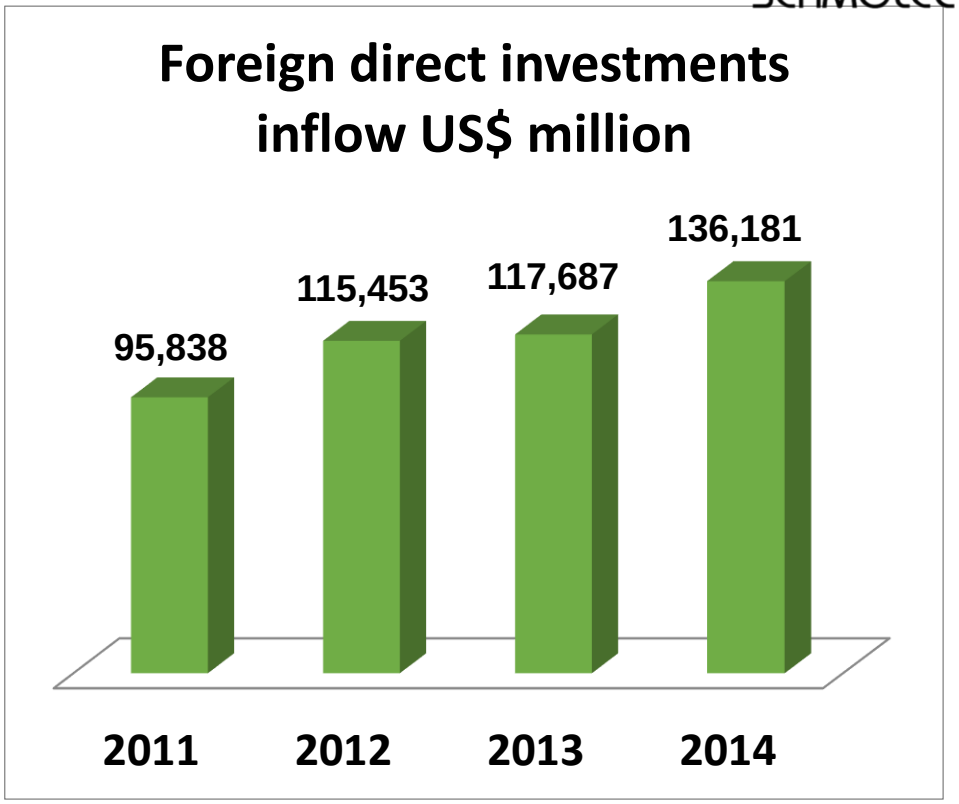


Gross domestic product at current prices US$ million

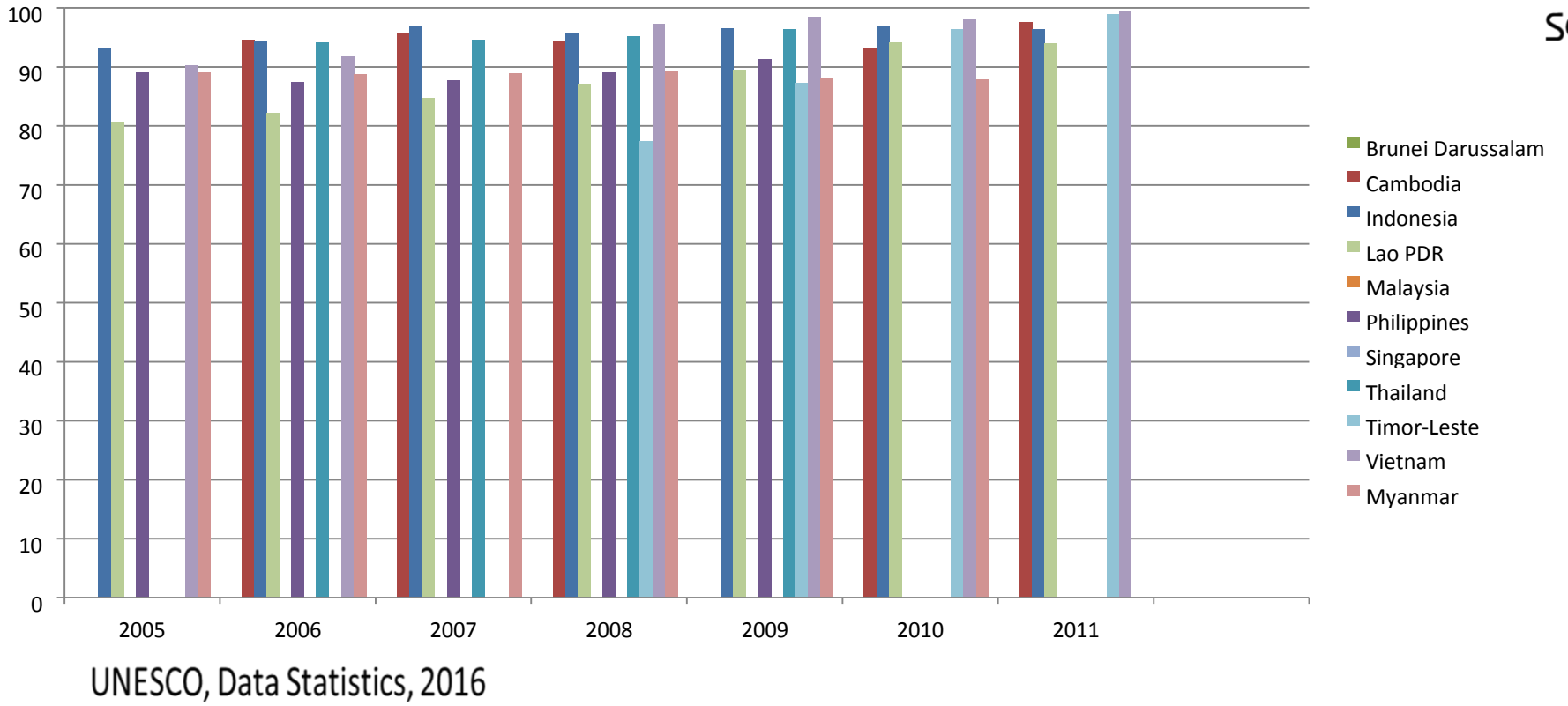


ASEAN : BASIC DATA INDICATORS



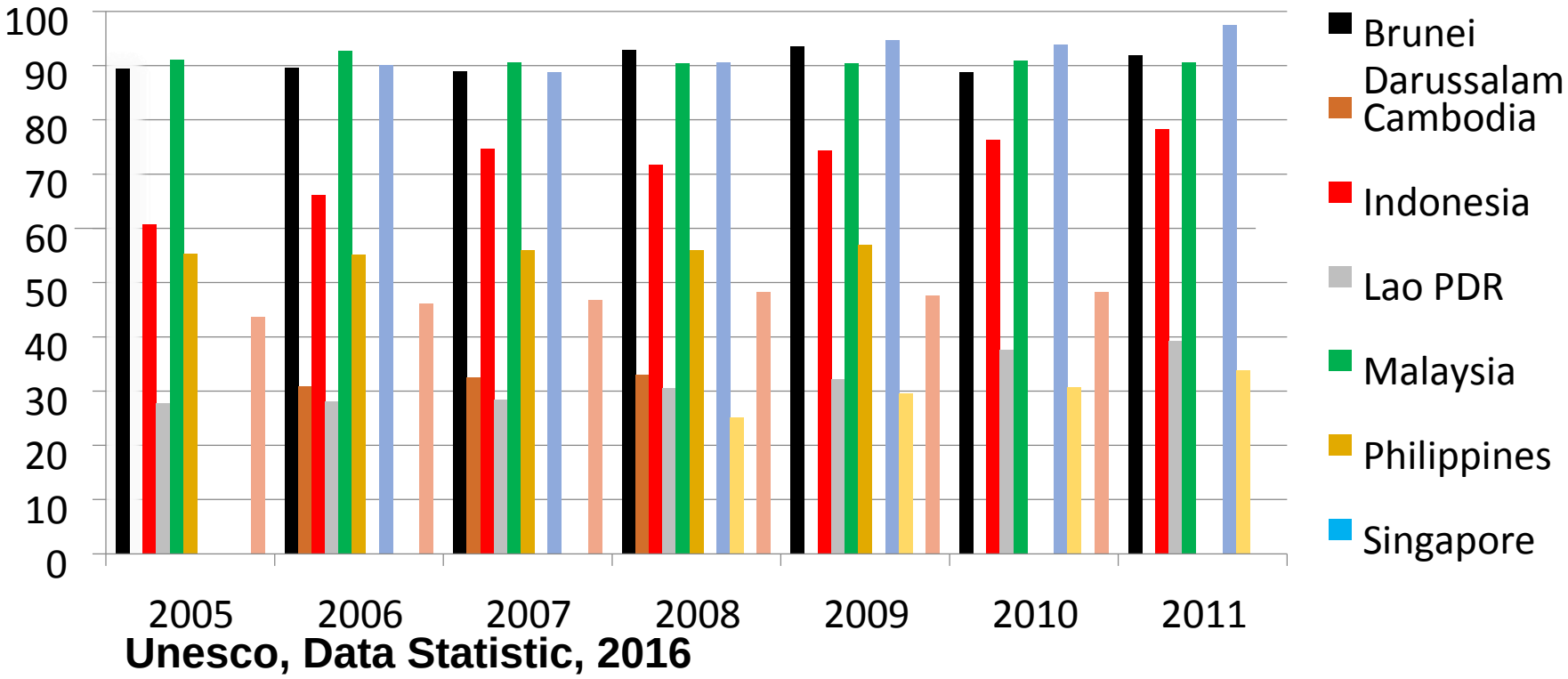


Adjusted net enrolment rate, primary, both sexes (%)



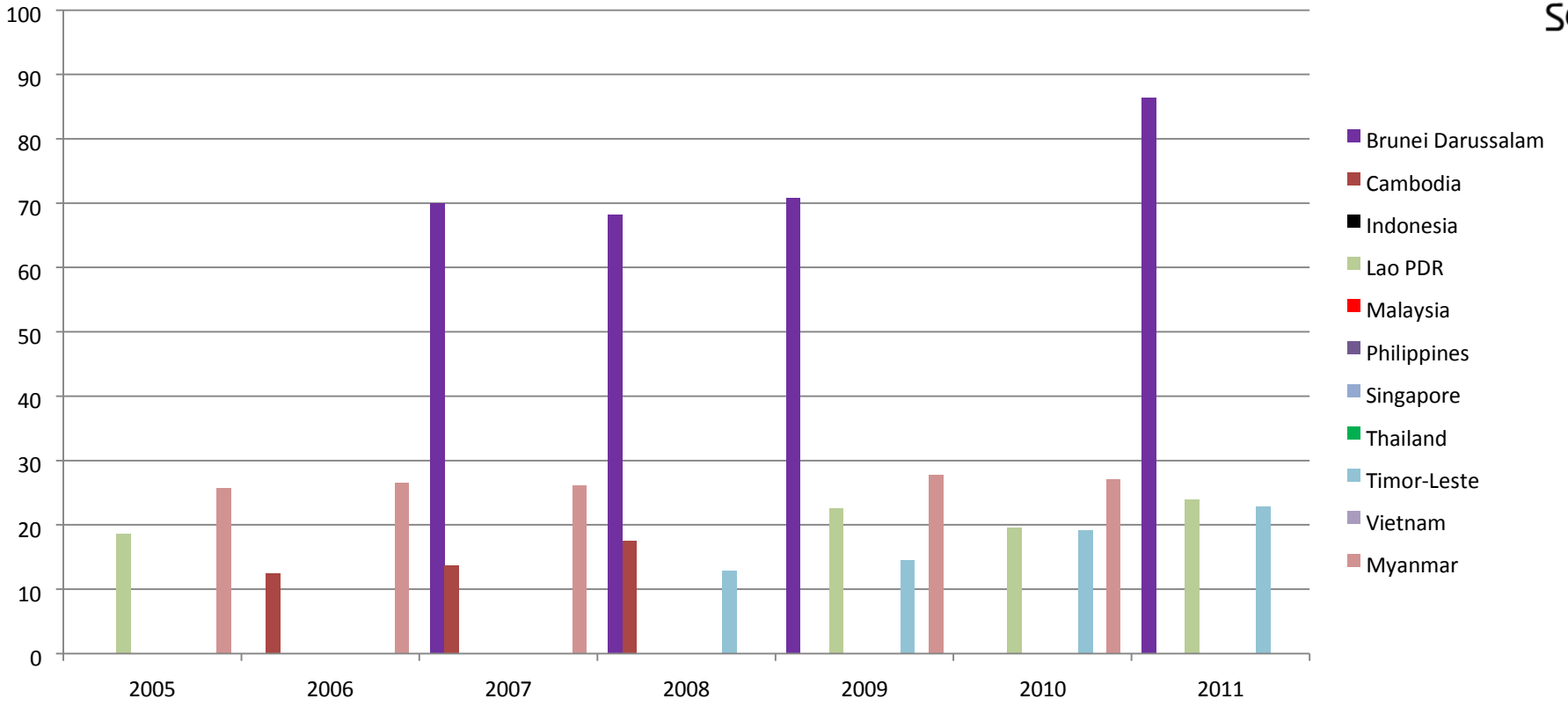
UNESCO, Data Statistics, 2016

Adjusted net enrolment rate, lower secondary, both sexes (%)

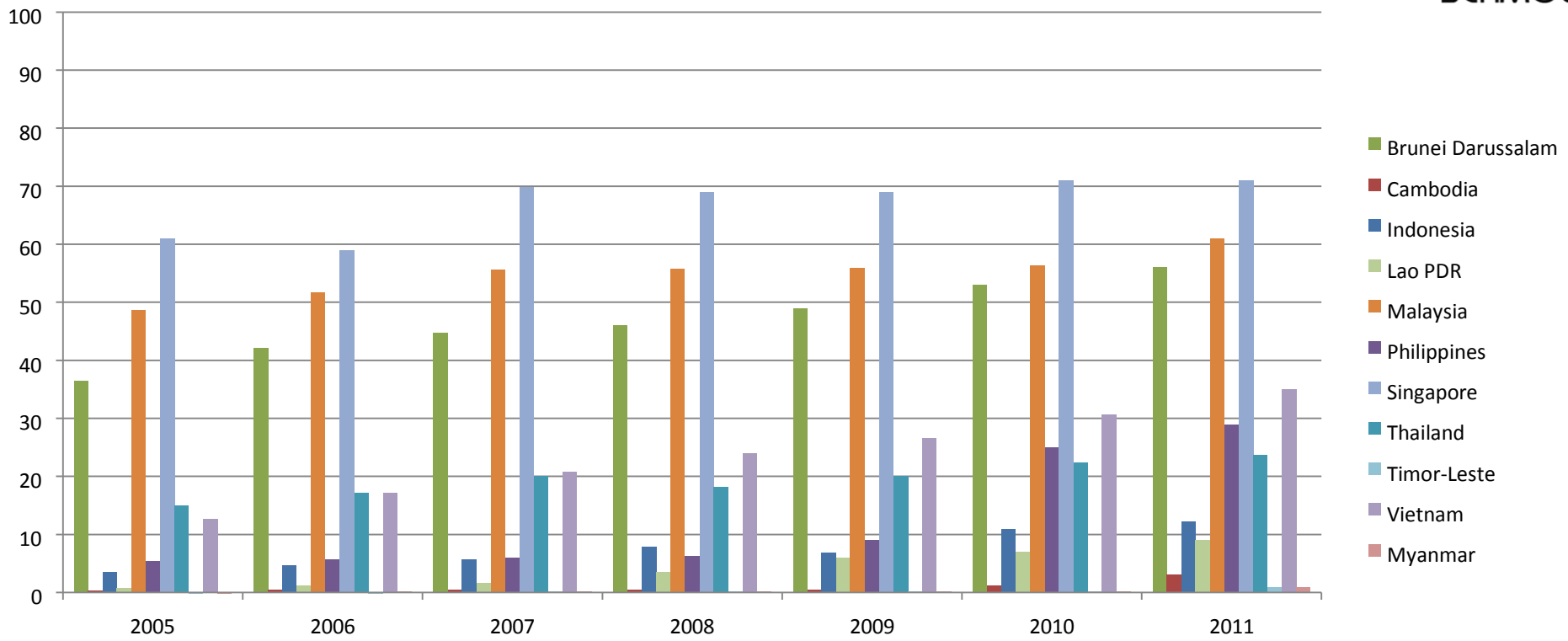


Unesco, Data Statistic, 2016

Adjusted net enrolment rate, upper secondary, both sexes (%)



Internet users (per100 people)



Labor force with primary education (% of total)

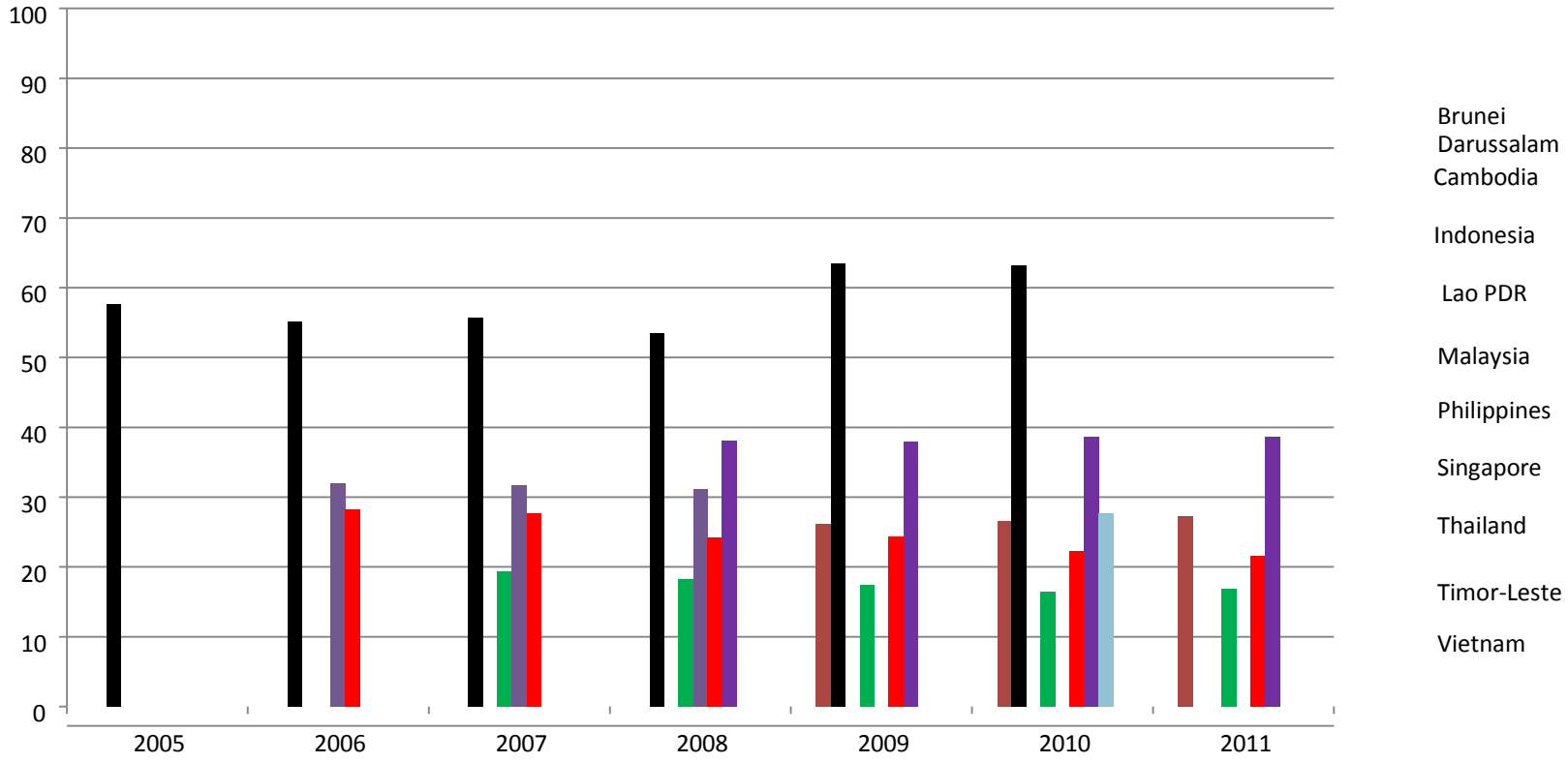
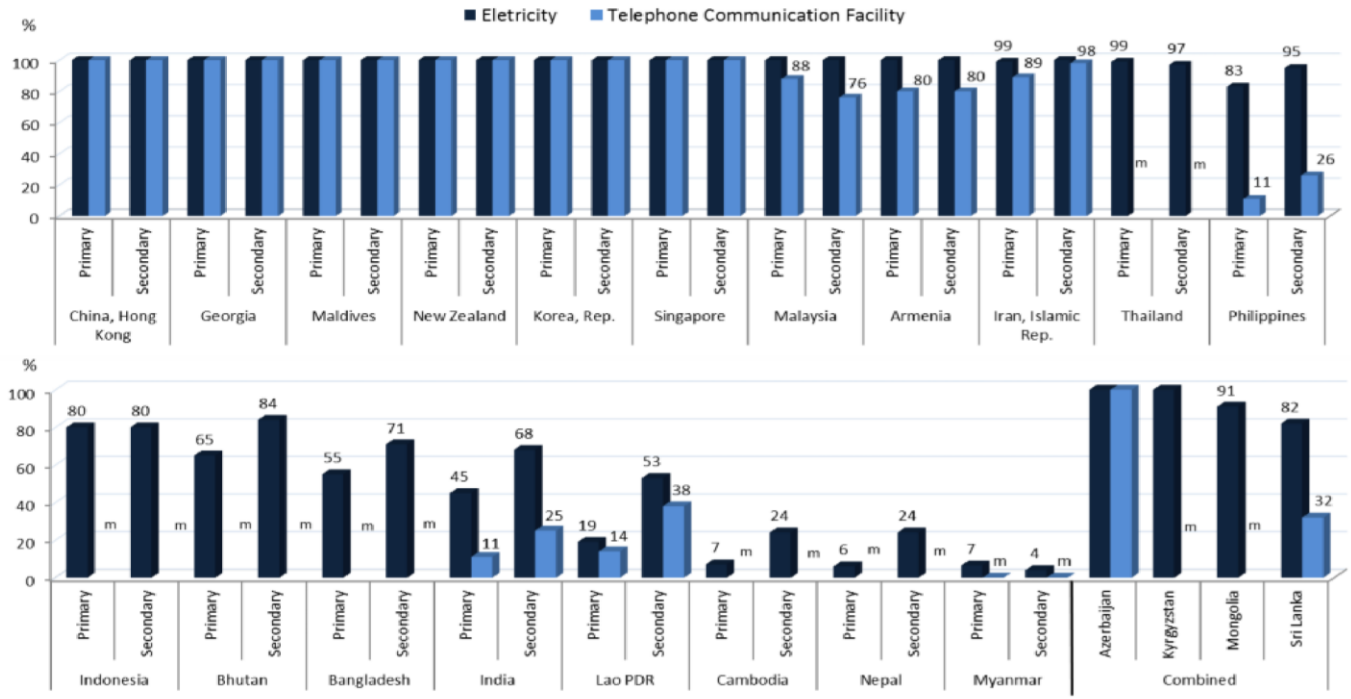


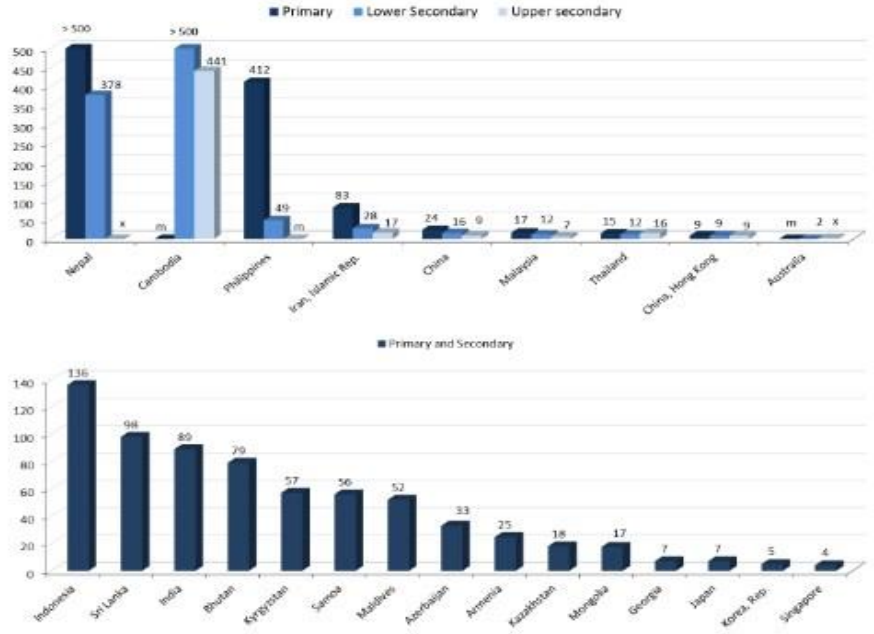
Figure 2. Proportion of educational institutions with basic electrical and telecommunications infrastructure by level of education, 2012



Notes: m = missing. Data for Cambodia cover pre-primary, primary and secondary education. For Indonesia, the Philippines and the Republic of Korea, data for secondary education only include the lower secondary level. Data for the Republic of Korea refer to 2009. Data for Malaysia, Singapore and New Zealand refer to 2011. Data for Cambodia, the Philippines and the Republic of Korea cover the public sector only. Data for India do not cover secondary-level independent schools.
Source: UNESCO Institute for Statistics database and Statistical Tables 3 and 4

Figure 3 shows the LCRs for primary, lower secondary and upper secondary education. At the primary level, data show that available computer resources are greatly overstretched in the Philippines (412:1) and the Islamic Republic of Iran (83:1). In Nepal, where the proportion of primary schools with CAI is less than 0.5%, the national LCR is high, at more than 500 primary school pupils per computer. Based on combined data for the primary and secondary levels, computer resources are also greatly overstretched in Indonesia (136:1), Sri Lanka (98:1), India (89:1) and Bhutan (79:1).

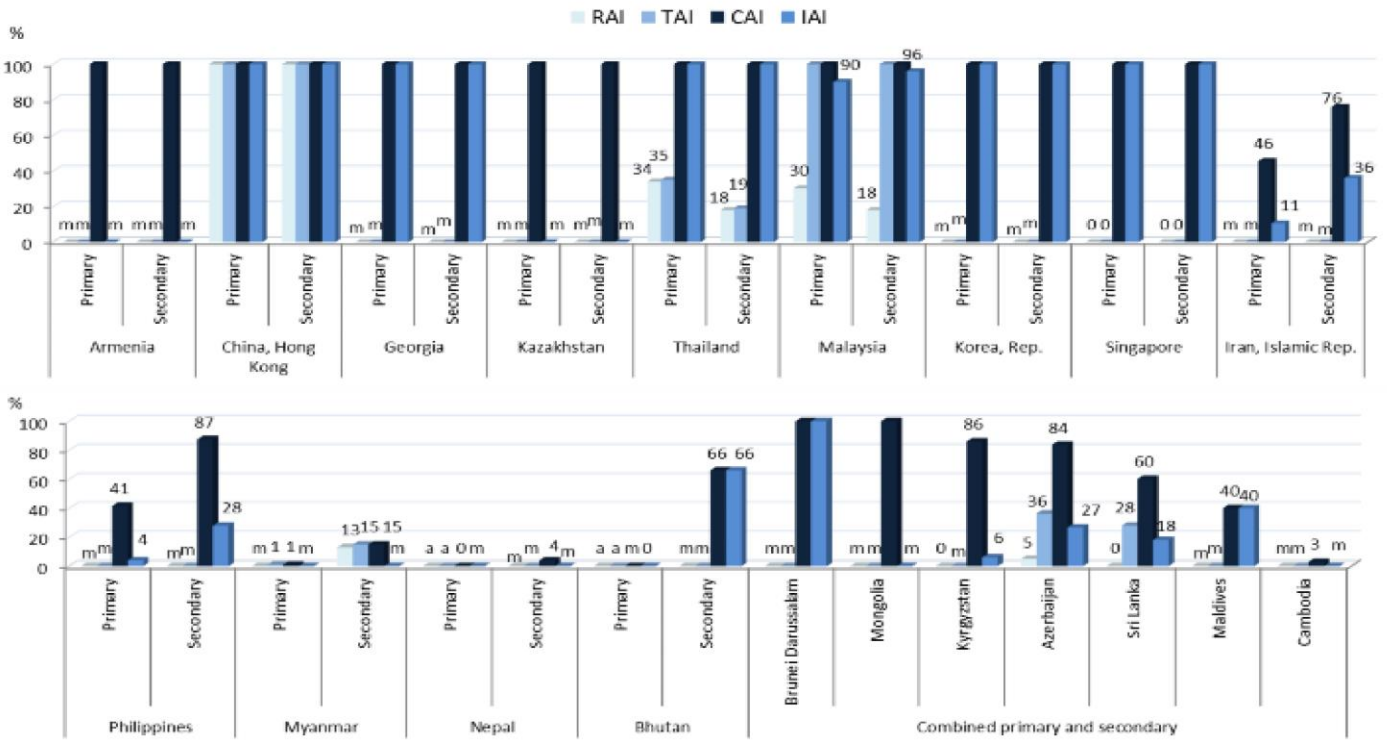
Figure 3. Learner-to-computer ratio (LCR) by level of education, 2012



Notes: m = missing. Data for Hong Kong Special Administrative Region of China, Georgia, Japan, Kazakhstan and Thailand are country estimates. Data for the Republic of Korea, China and Japan refer to 2008, 2010 and 2013, respectively. Data for Kyrgyzstan, Malaysia and Singapore refer to 2011. Data for Azerbaijan, Cambodia, China, Japan, Kazakhstan, Malaysia, Philippines, Singapore and Sri Lanka cover public schools only. Data for Bhutan, Cambodia, China, India, Nepal and Samoa represent UIS estimates. Secondary data for Nepal and Australia reflect combined secondary education.

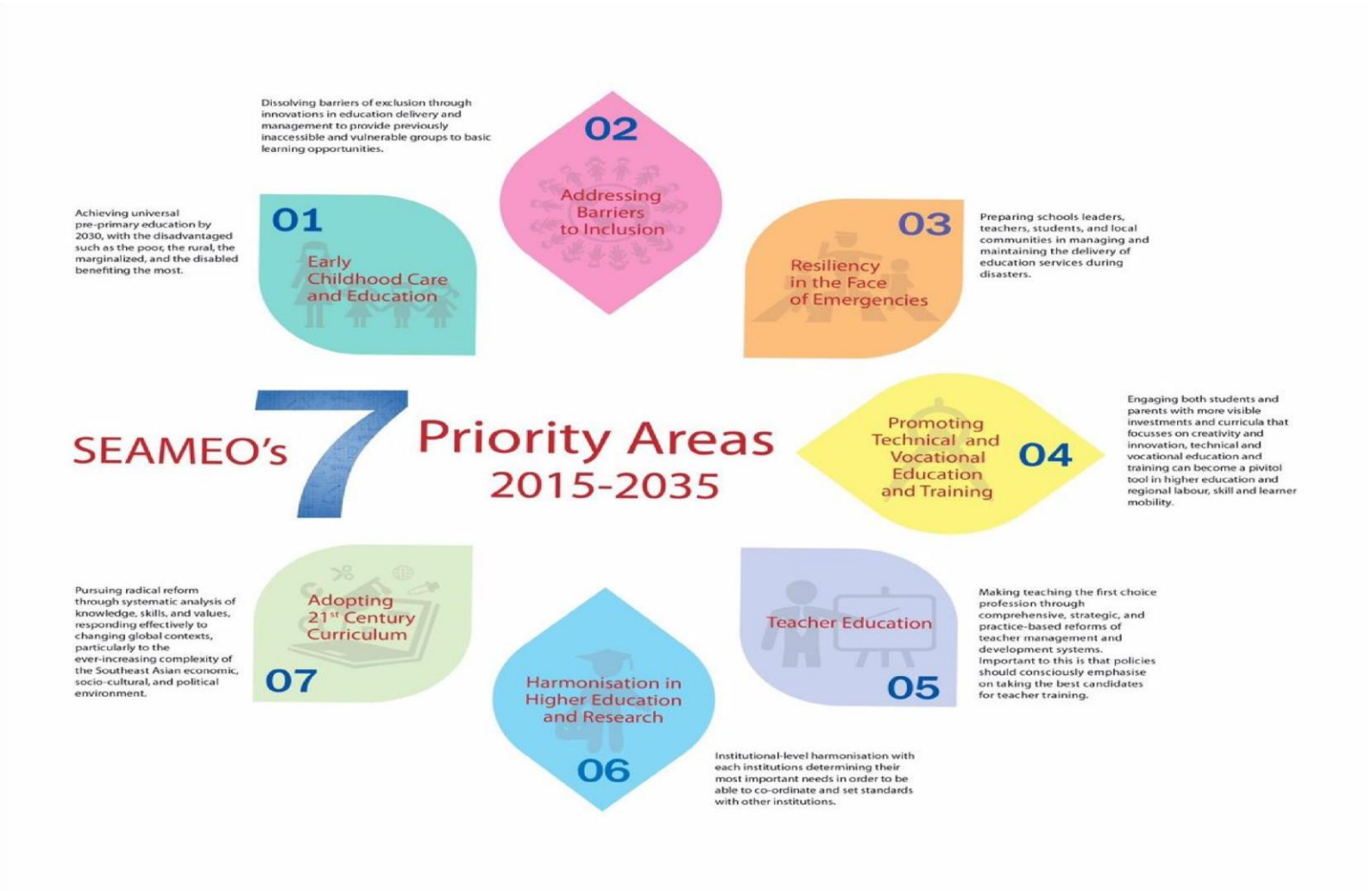
Source: UNESCO Institute for Statistics database and Statistical Table 5

Figure 7. ICT-assisted instruction by type and level of education, 2012

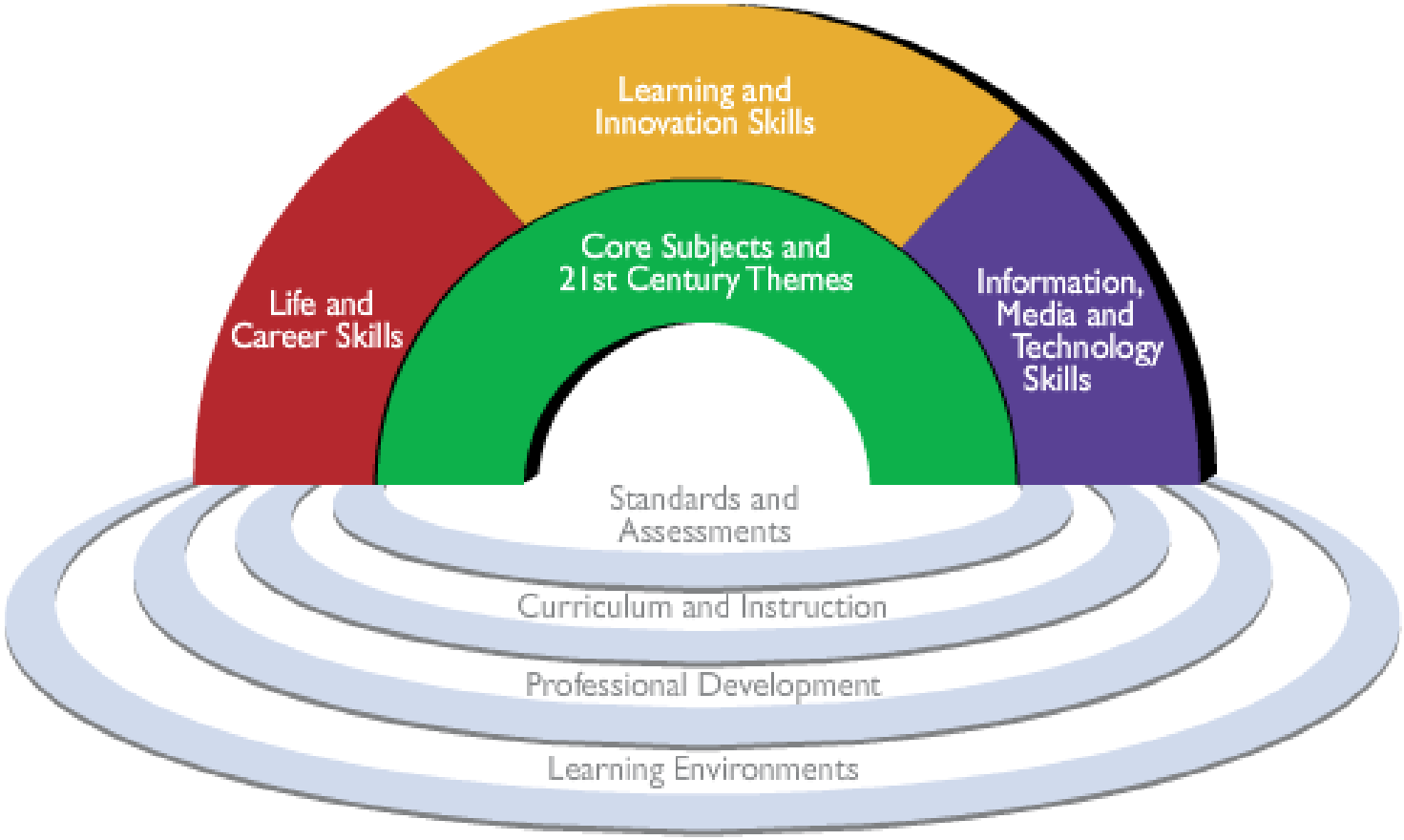


Notes: m = missing data; a = category not applicable. Data for Bhutan, Brunei Darussalam, Cambodia, Kazakhstan, Myanmar and the Republic of Korea are UIS estimates. Data for Brunei Darussalam refer to 2009, while data for Malaysia and Singapore refer to 2011. Data for Azerbaijan, Bhutan, Kyrgyzstan, Malaysia, Maldives, the Philippines, Singapore and Sri Lanka cover public schools only. Secondary data for Indonesia and the Philippines cover lower secondary education only.

Source: UNESCO Institute for Statistics database and Statistical Tables 3 and 4.


SEAMEO's 7 Priority Areas 2015-2035
01
Early Childhood Care and Education
Achieving universal pre-primary education by 2030, with the disadvantaged such as the poor, the rural, the marginalized, and the disabled benefiting the most.
02
Addressing Barriers to Inclusion
Dissolving barriers of exclusion through innovations in education delivery and management to provide previously inaccessible and vulnerable groups to basic learning opportunities.
03
Resiliency in the Face of Emergencies
Preparing schools leaders, teachers, students, and local communities in managing and maintaining the delivery of education services during disasters.
04
Promoting Technical and Vocational Education and Training
Engaging both students and parents with more visible investments and curricula that focusses on creativity and innovation, technical and vocational education and training can become a pivitol tool in higher education and regional labour, skill and learner mobility.
05
Teacher Education
Making teaching the first choice profession through comprehensive, strategic, and practice-based reforms of teacher management and development systems. Important to this is that policies should consciously emphasise on taking the best candidates for teacher training.
06
Harmonisation in Higher Education and Research
Institutional-level harmonisation with each institutions determining their most important needs in order to be able to co-ordinate and set standards with other institutions.
07
Adopting 21st Century Curriculum
Pursuing radical reform through systematic analysis of knowledge, skills, and values, responding effectively to changing global contexts, particularly to the ever-increasing complexity of the Southeast Asian economic, socio-cultural, and political environment.

COMPETENCE FRAMEWORK 21st Century



The Launching of Digital Class PROGRAM

- **28 January 2015**
- At SEAMOLEC Office
- By **President of SEAMEO Council** (Ministry of Education of Vietnam)

LAUNCHING: ADOPTING 21st CENTURY CURRICULUM THROUGH SEA-DIGITAL CLASS, BANTEN-INDONESIA, 19 September 2015

SEA Digital Class

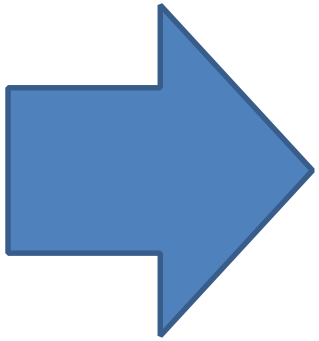
Digital Class: THE PLATFORM

SEAMOLEC

e-LEARNING

Digital Class: THE PLATFORM

Social Network



Social "Learning" Network

ONLINE TEST – SOUTH EAST ASIA

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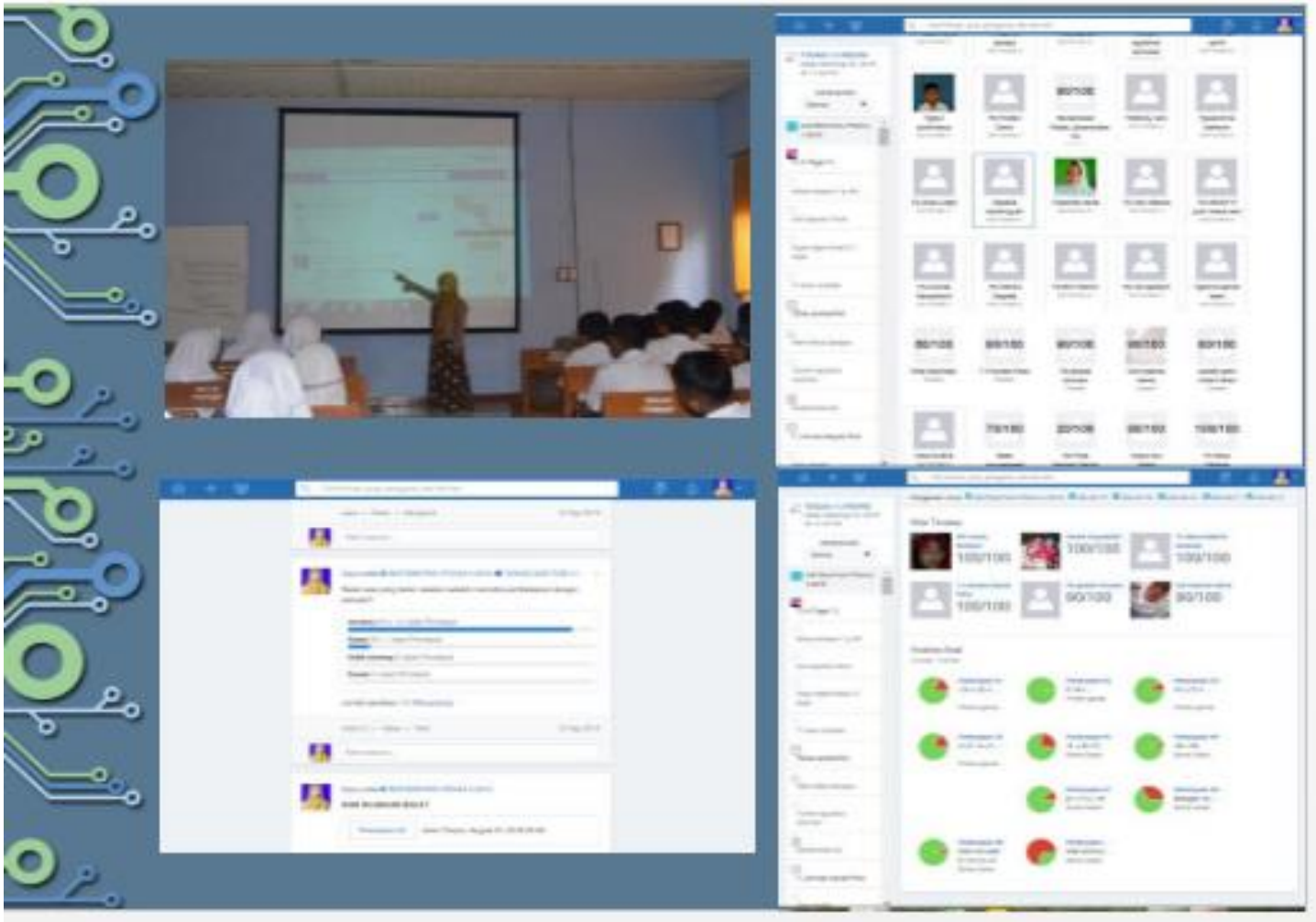
SMPN 4 DOMPU, NTB: ULANGAN ONLINE

SEKOLAH MENENGAH KEBANGSAAN AIR PUTIH KUANTAN MALAYSIA

HANOI VIETNAM

KOTA BANDUNG: ULANGAN HARIAN ONLINE

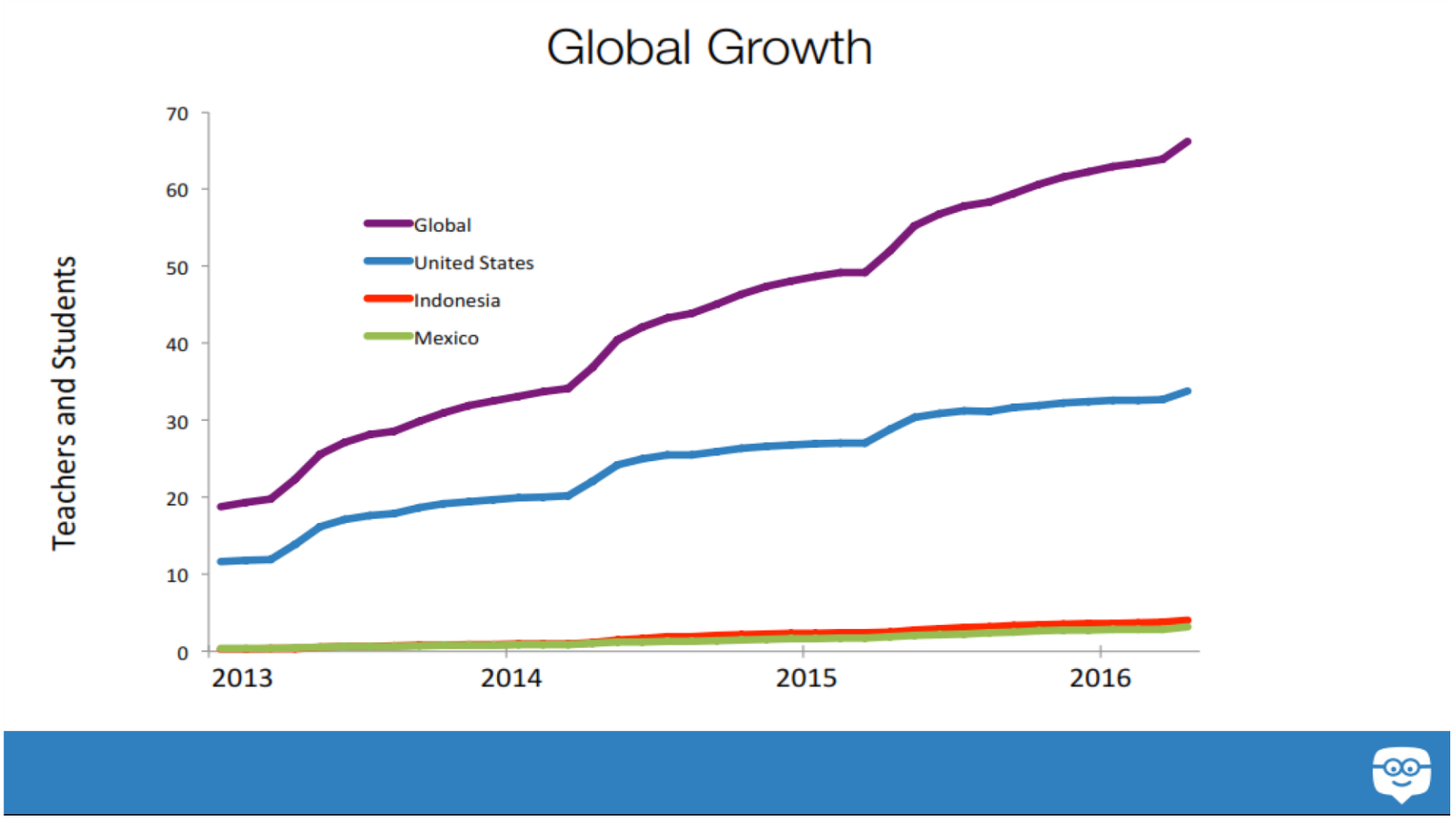
SEA-DIGITAL CLASS



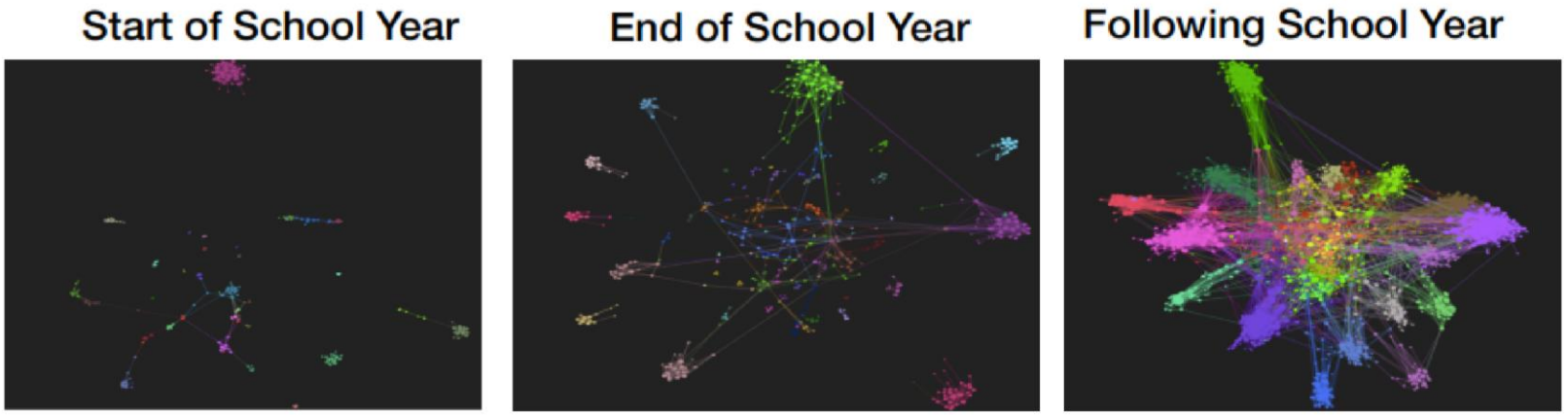

SEAMOLEC
Digital Class

Regional Comparison Table: Sep 1, 2015-16

Country	Population	2016 Teachers	2015 Teachers	2016 Students	2015 Students
Indonesia	250M+	330K+	220K+	3,700K+	2,300K+
Philippines	100M+	145K+	120K+	1,800K+	1,250K+
Malaysia	30M+	45K+	30K+	360K+	270K+
Singapore	5M+	45K+	35K+	350K+	290K+
Brunei	.5M+	3K+	2K+	28K+	21K+


Global Growth
Teachers and Students
70
60
50
40
30
20
10
0
2013
2014
2015
2016
Global
United States
Indonesia
Mexico

Network Effect of Teachers



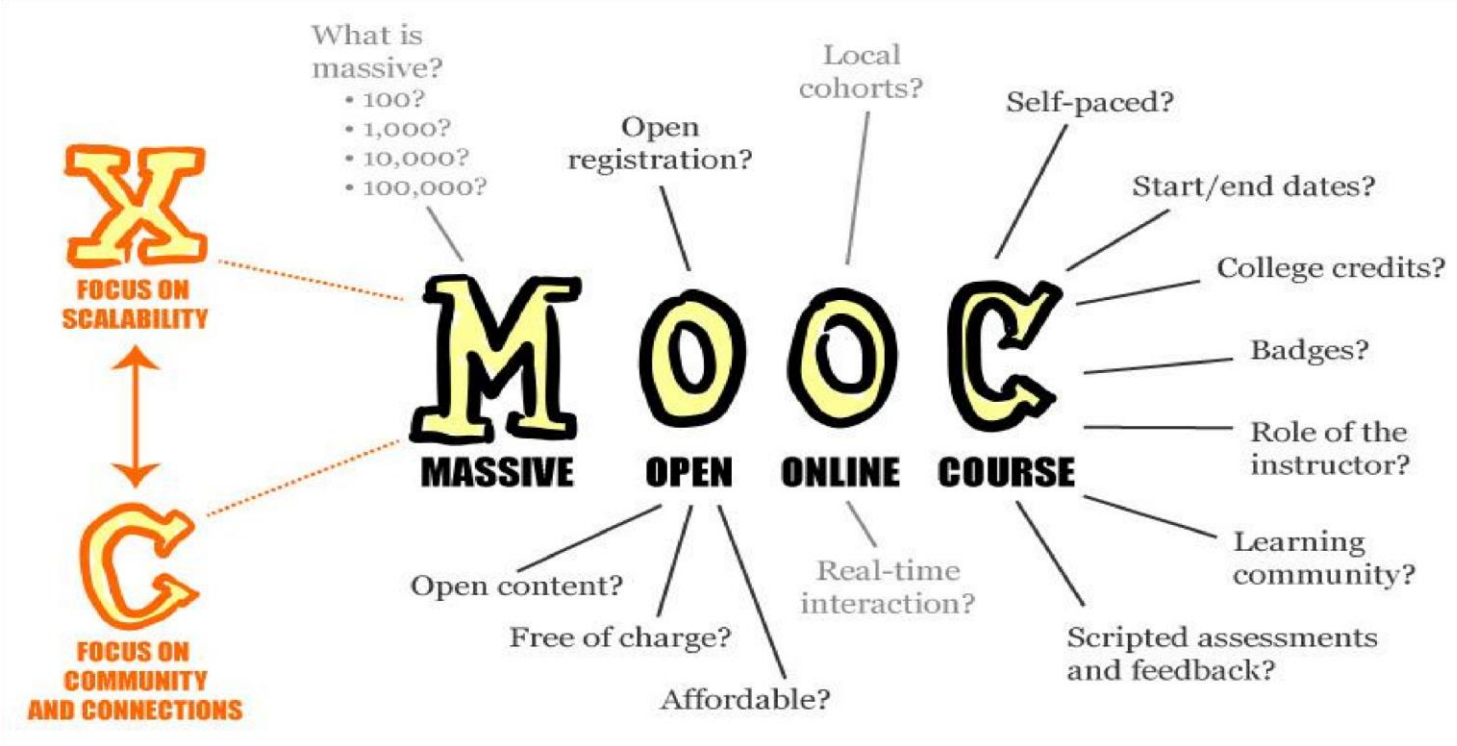
Teacher connection graph of Edmodo in Chesterfield County Virginia is a similar pattern followed by many other highly adopted Edmodo districts


Digital Book
SEAMOLEC
BAB III MEMFORMAT DAN MEMBACA BUKU DIGITAL
DAFTAR ISI


SIERRA
SEAMOLEC
The device
• The size is only as big as a credit card
• Needs less electricity, only 15 Watt
• Possible use of Power Bank or Solar Cell


Indonesian Students in Kinabalu are accessing SIERRA
SEAMOLEC

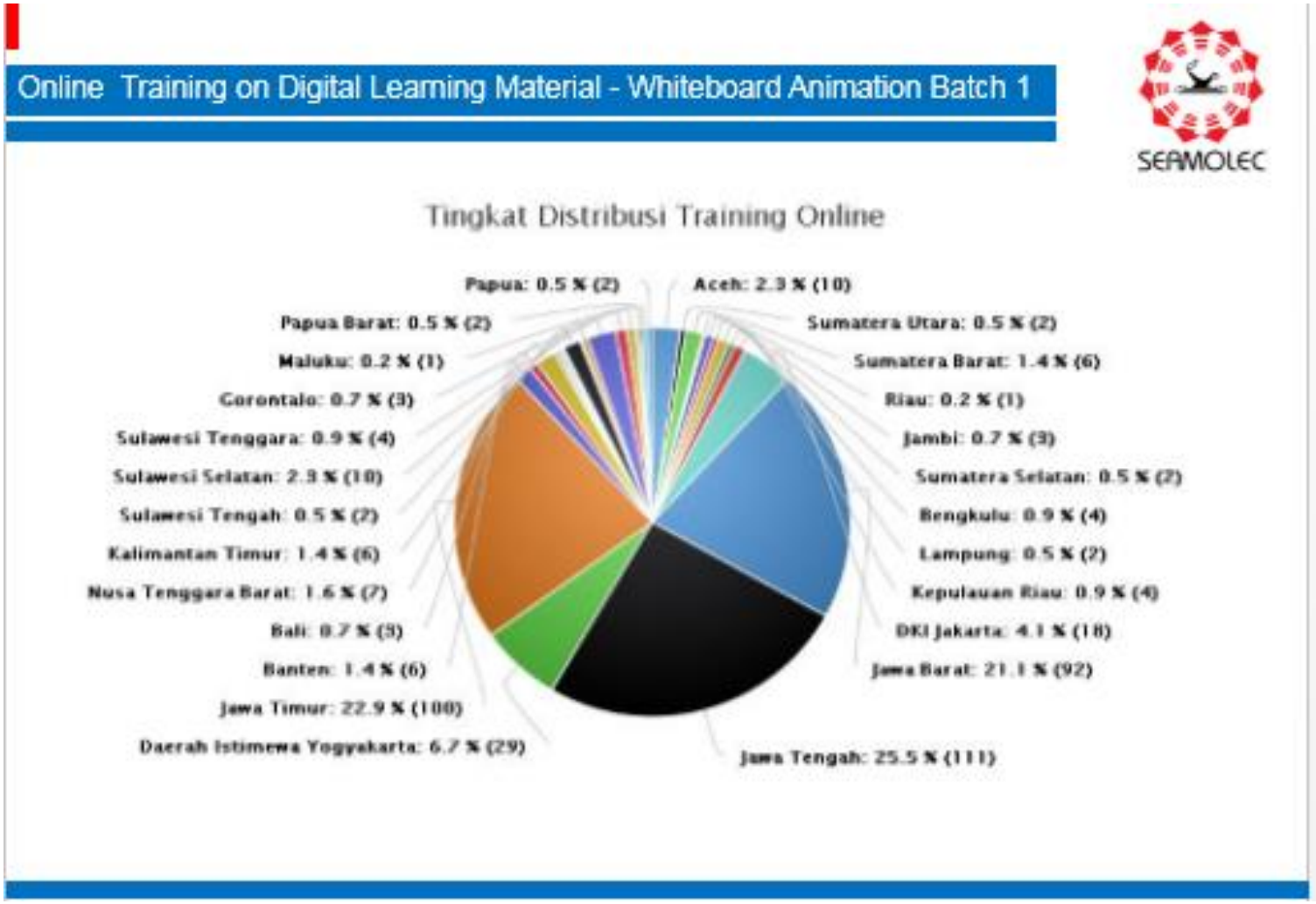
SEAMOLEC's MOOC



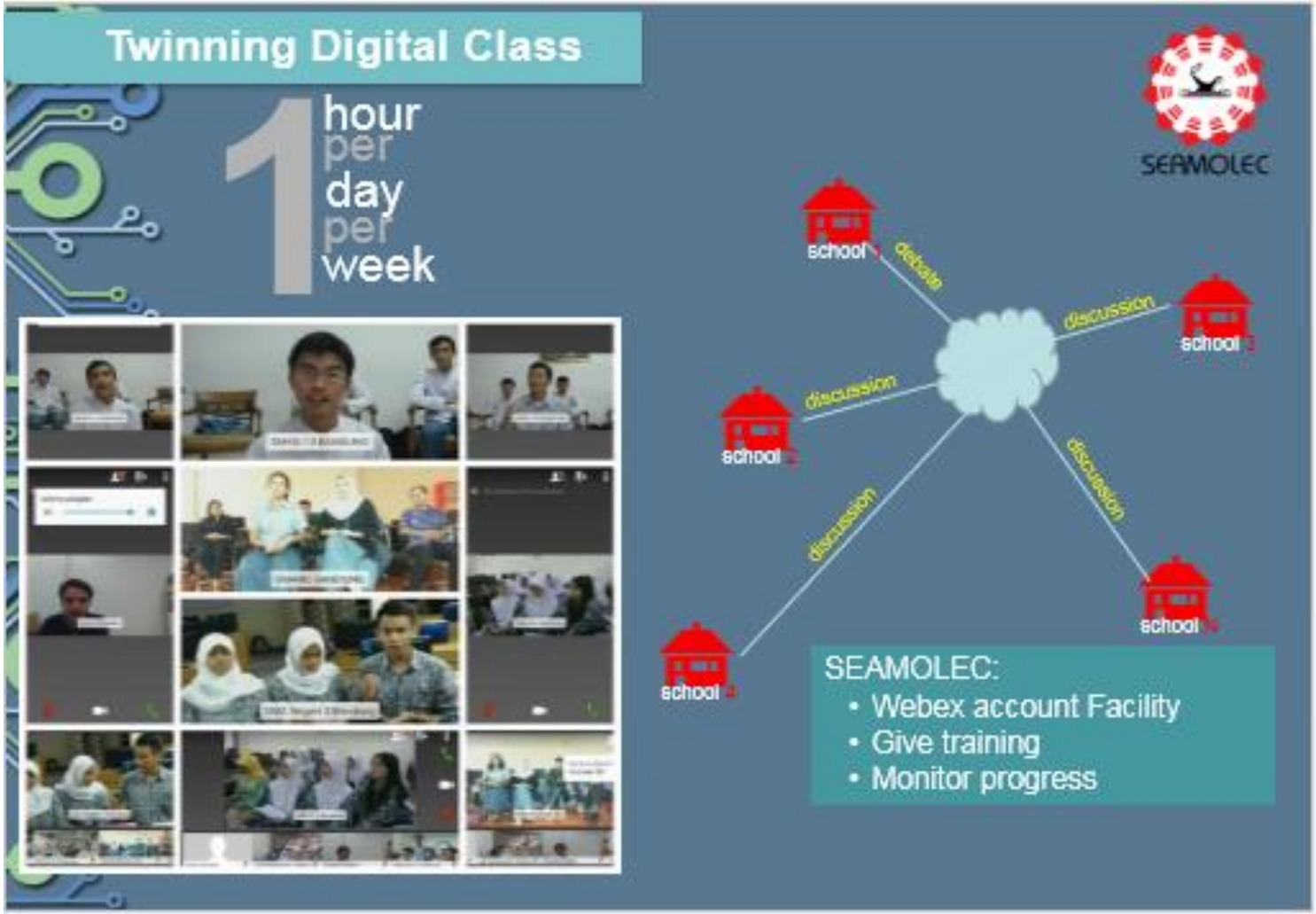

http://mooc.seamolec.org
Flip
SEAMOLEC
CompTIA
edX
MOOCs
NCLEX-RN
Popular Course
Launched on 28 April 2016


SEAMOLEC's MOOC
SEAMEO-DAAD
Lecture Series
May 11th, 2016
Optimise the expertise of the DAAD alumni for the contribution to education development in Southeast Asia region
Aim
strengthen the network
social responsibility
Popular Course
NCLEX-RN
CISCO
Ultimatics
OER
MOOC
DAAD

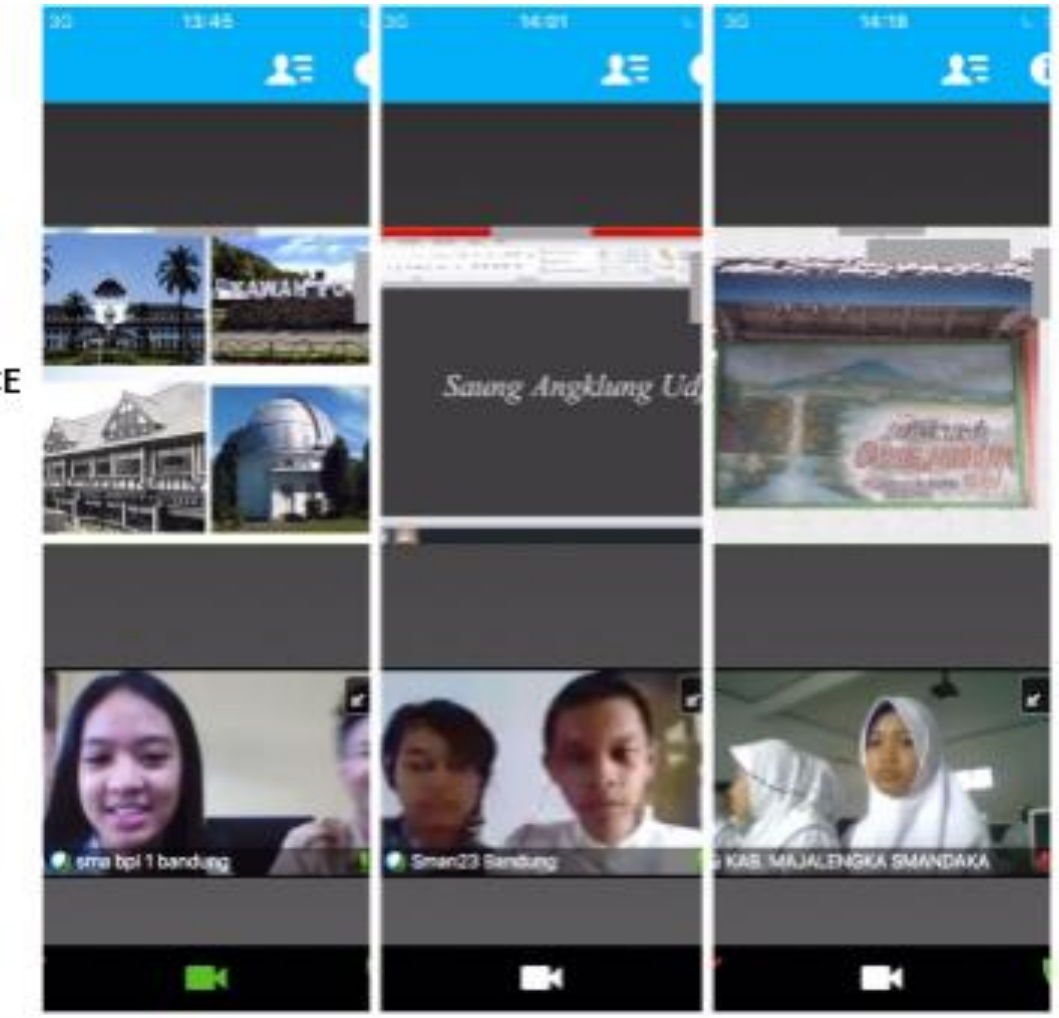

Online course activity
SEAMOLEC's MOOC
SEAMOLEC
Training Online Batch 4.4 Sesi 2
Rindri SEAMOLEC


Online Training on Digital Learning Material - Whiteboard Animation Batch 1
SEAMOLEC
Tingkat Distribusi Training Online
Papua: 0.5 % (2)
Papua Barat: 0.5 % (2)
Maluku: 0.2 % (1)
Gorontalo: 0.7 % (3)
Sulawesi Tenggara: 0.9 % (4)
Sulawesi Selatan: 2.3 % (10)
Sulawesi Tengah: 0.5 % (2)
Kalimantan Timur: 1.4 % (6)
Nusa Tenggara Barat: 1.6 % (7)
Bali: 0.7 % (3)
Banten: 1.4 % (6)
Jawa Timur: 22.9 % (100)
Daerah Istimewa Yogyakarta: 6.7 % (29)
Aceh: 2.3 % (10)
Sumatera Utara: 0.5 % (2)
Sumatera Barat: 1.4 % (6)
Riau: 0.2 % (1)
Jambi: 0.7 % (3)
Sumatera Selatan: 0.5 % (2)
Bengkulu: 0.9 % (4)
Lampung: 0.5 % (2)
Kepulauan Riau: 0.9 % (4)
DKI Jakarta: 4.1 % (18)
Jawa Barat: 21.1 % (92)
Jawa Tengah: 25.5 % (111)

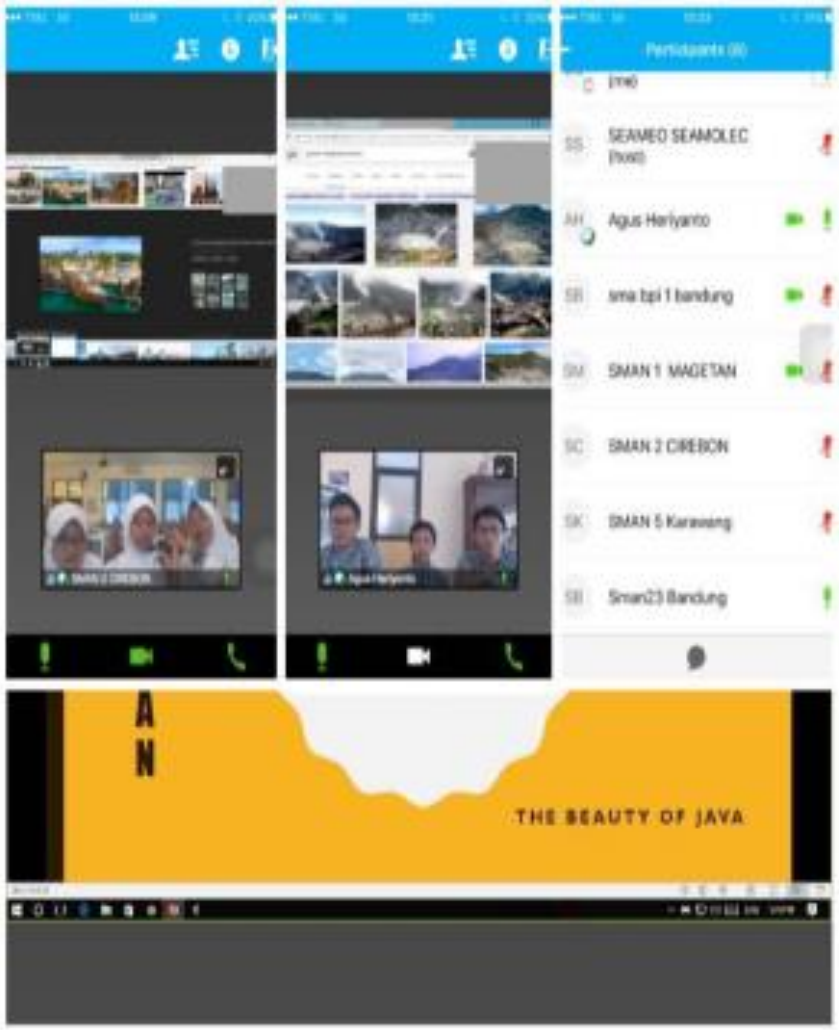

Mentoring Process
SEAMOLEC


Twinning Digital Class
1 hour per day per week
SEAMOLEC
school
debate
discussion
school
discussion
school
discussion
discussion
school
school
SEAMOLEC:
• Webex account Facility
• Give training
• Monitor progress

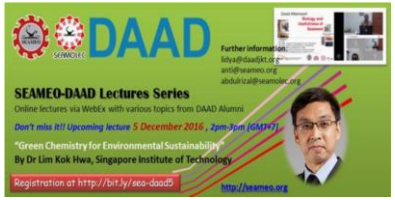
VIDEO CONFERENCE



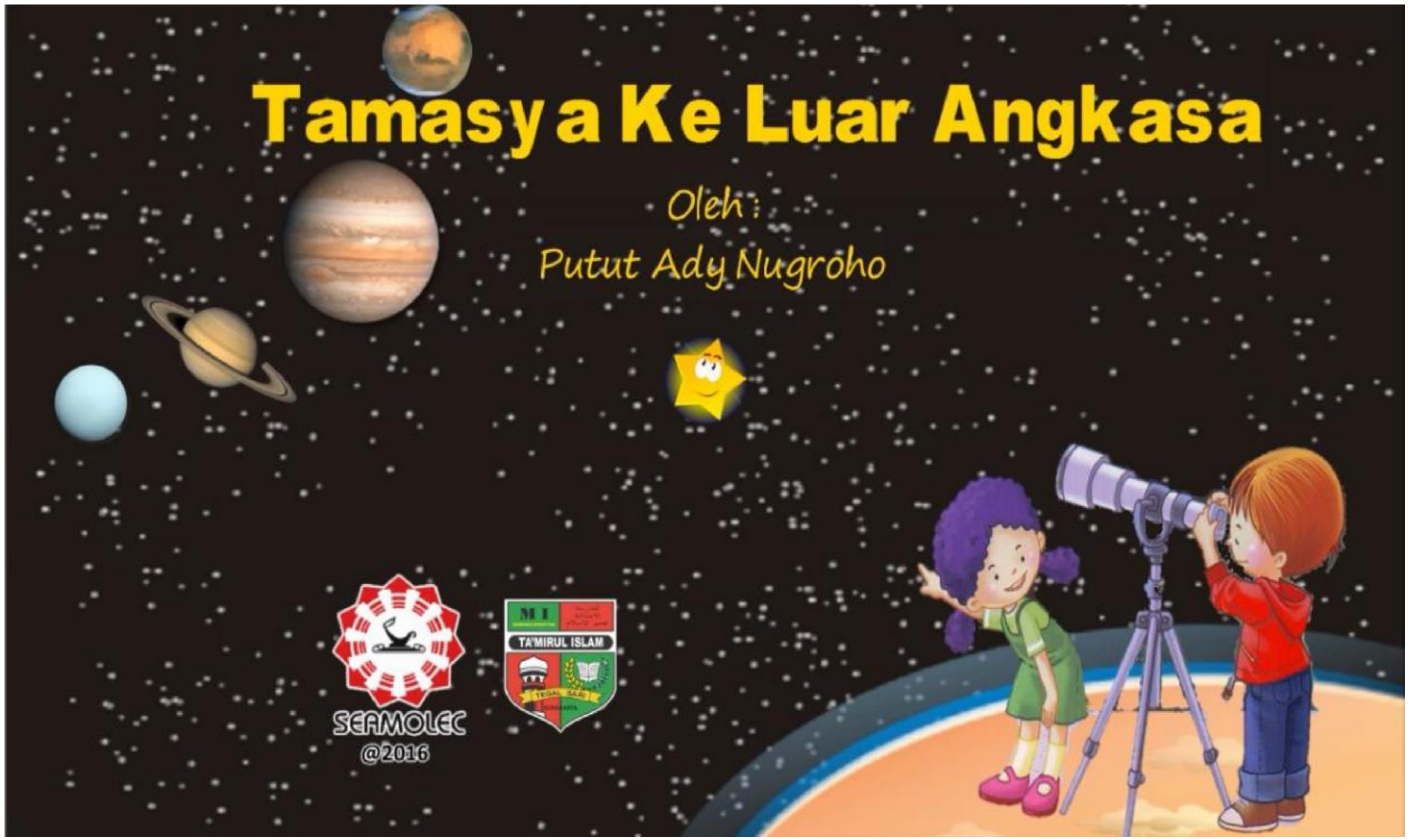
VIDEO CONFERENCE: ENGLISH DEBATE, CROSS CULTURE UNDERSTANDING

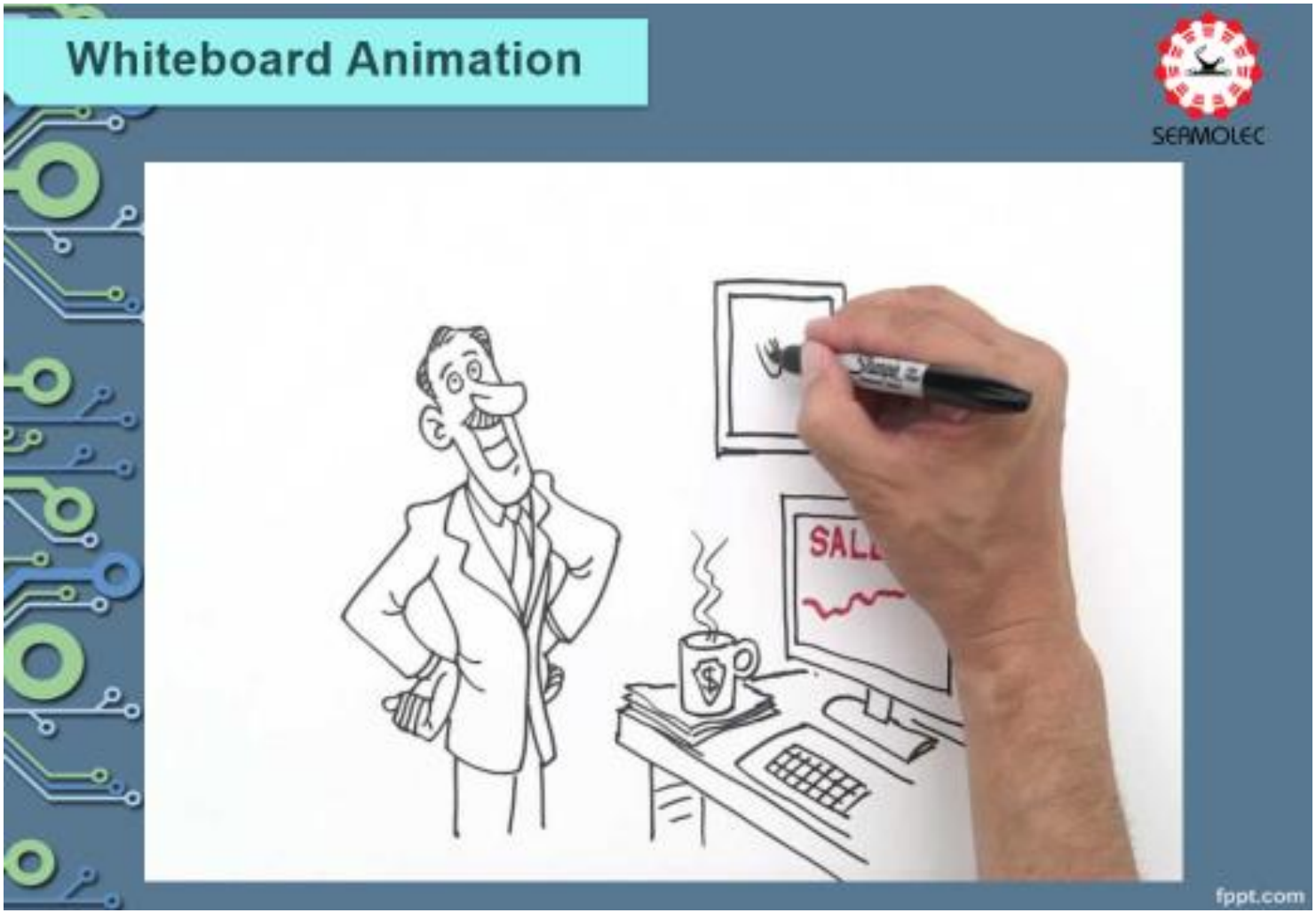


ONLINE SEMINAR

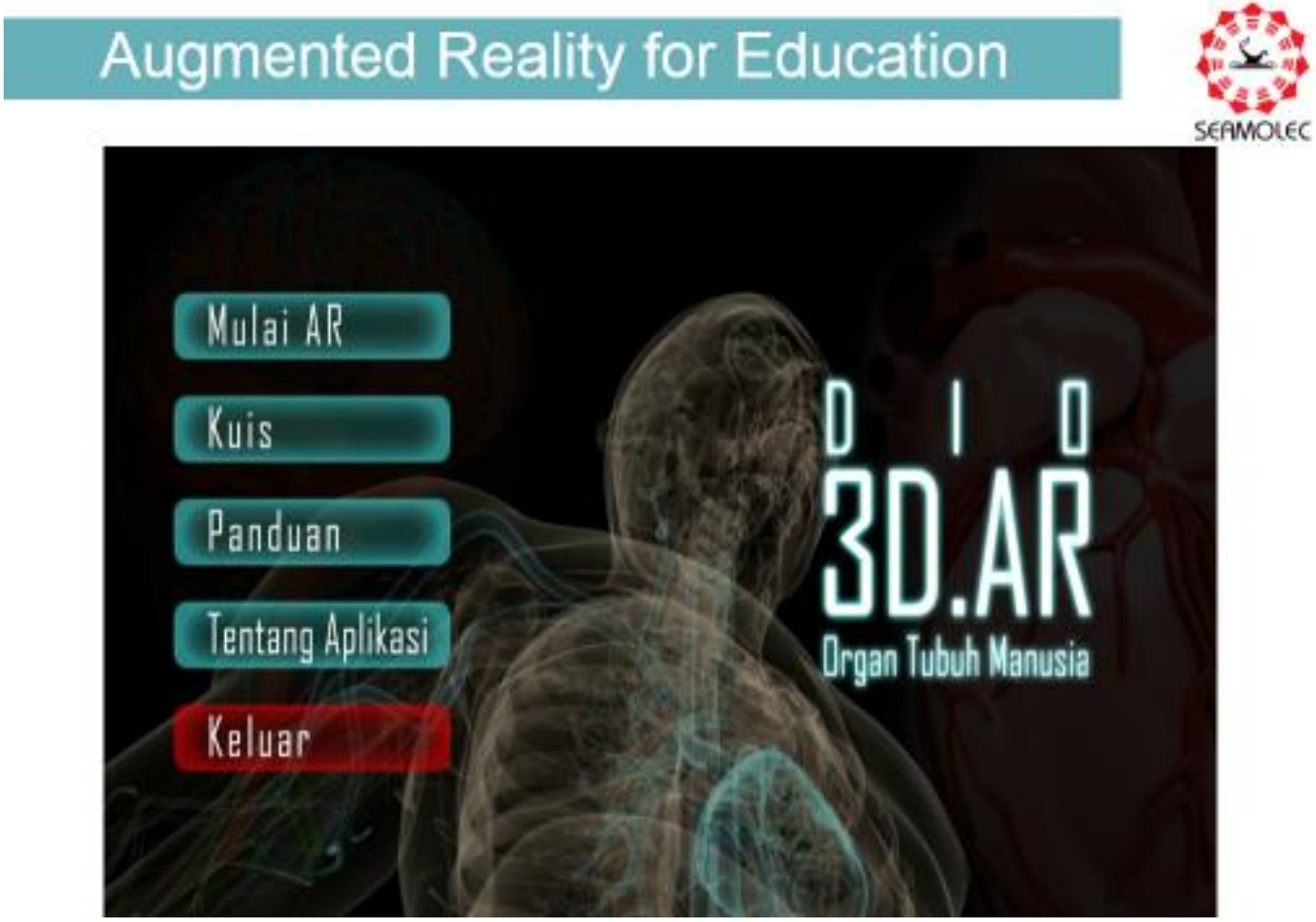


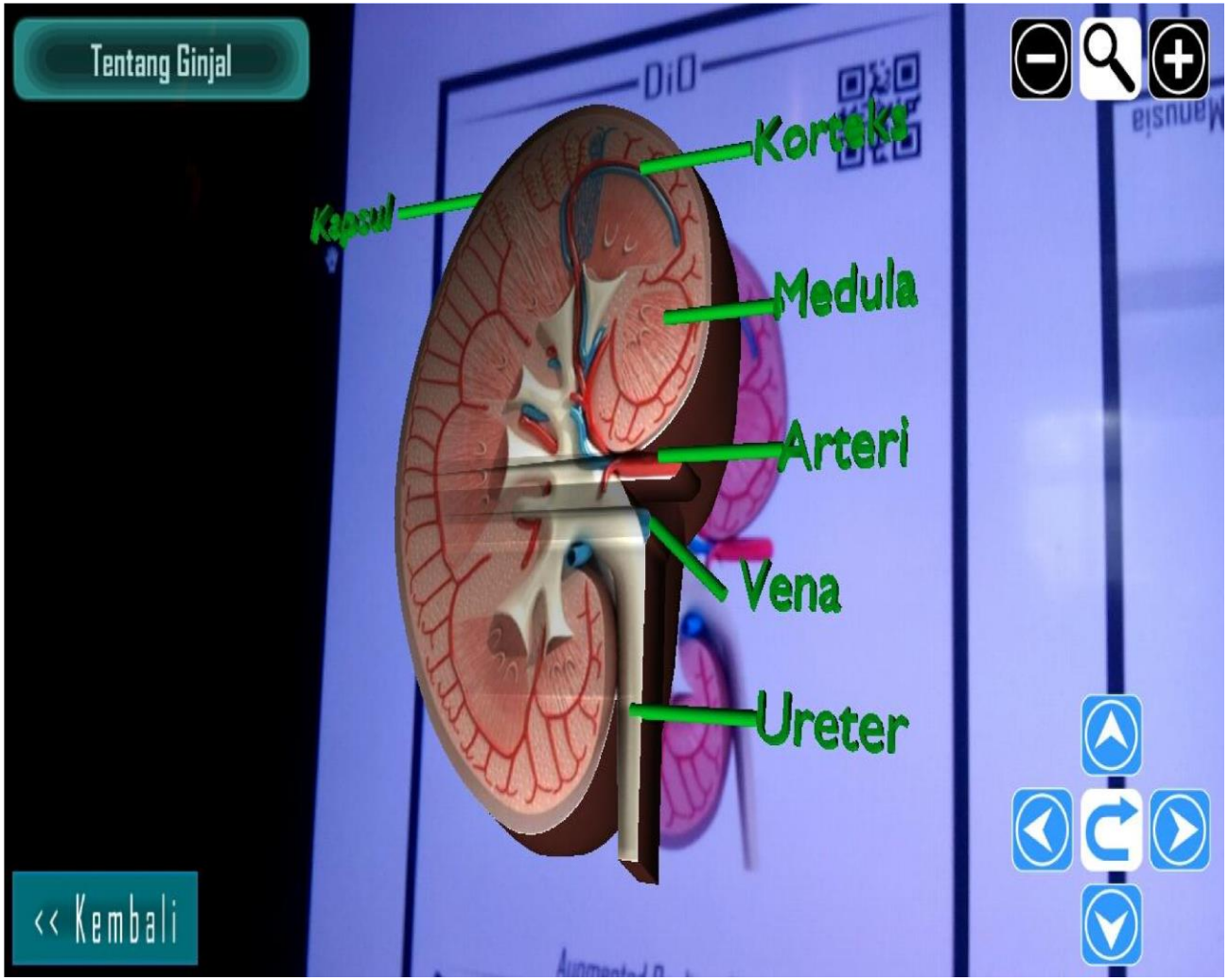
ANIMATIONS


Tamasya Ke Luar Angkasa
Oleh :
Putut Ady Nugroho
SEAMOLEC
@2016
MI
TA'MIRUL ISLAM


Whiteboard Animation
SEAMOLEC
fppt.com


Whiteboard Animations
SEAMOLEC
PORTOFOLIO
http://animasi.seamolec.org/portofolio/
fppt.com

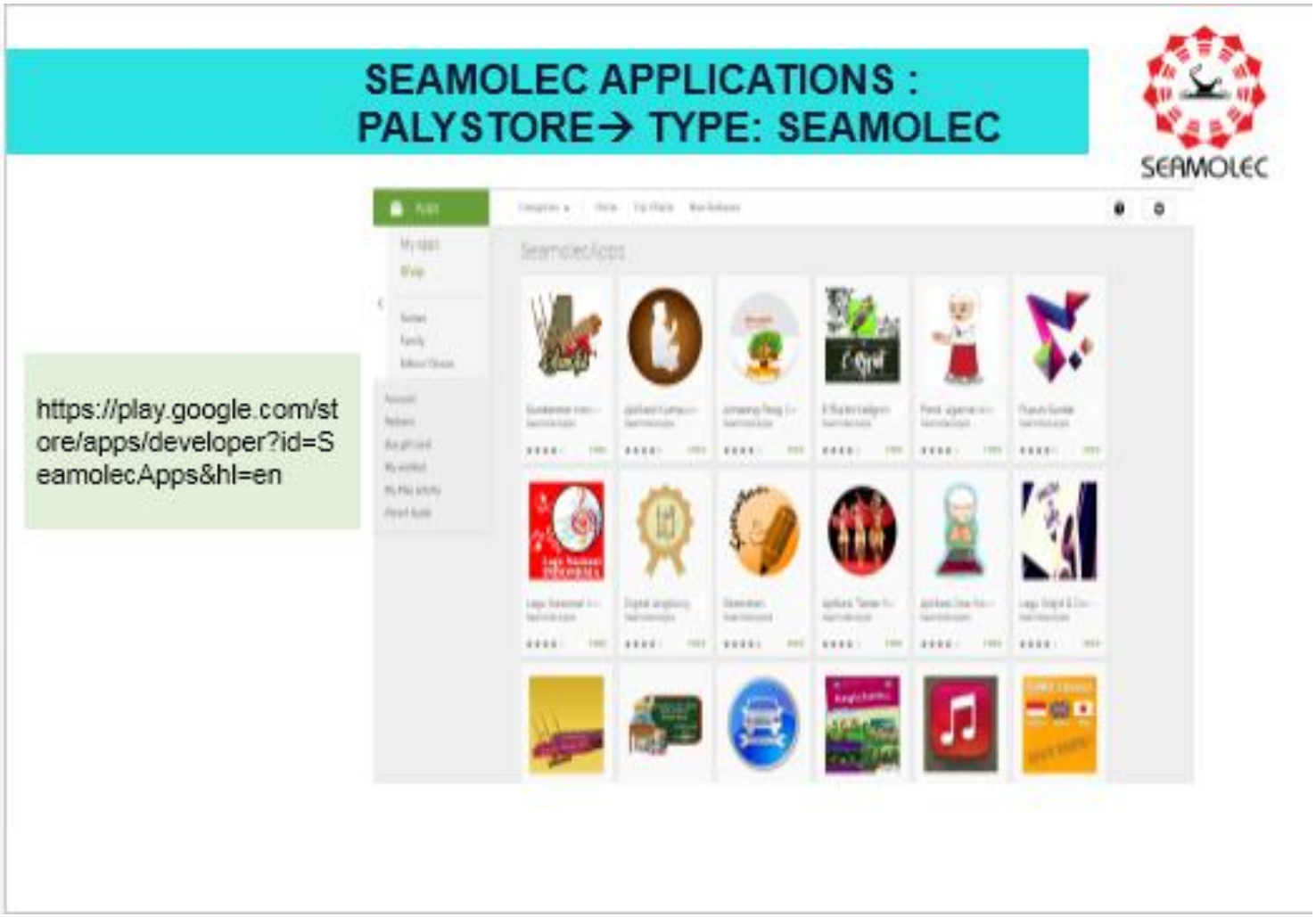

Augmented Reality for Education
SEAMOLEC
Mulai AR
Kuis
Panduan
Tentang Aplikasi
Keluar
D I O
3D.AR
Organ Tubuh Manusia

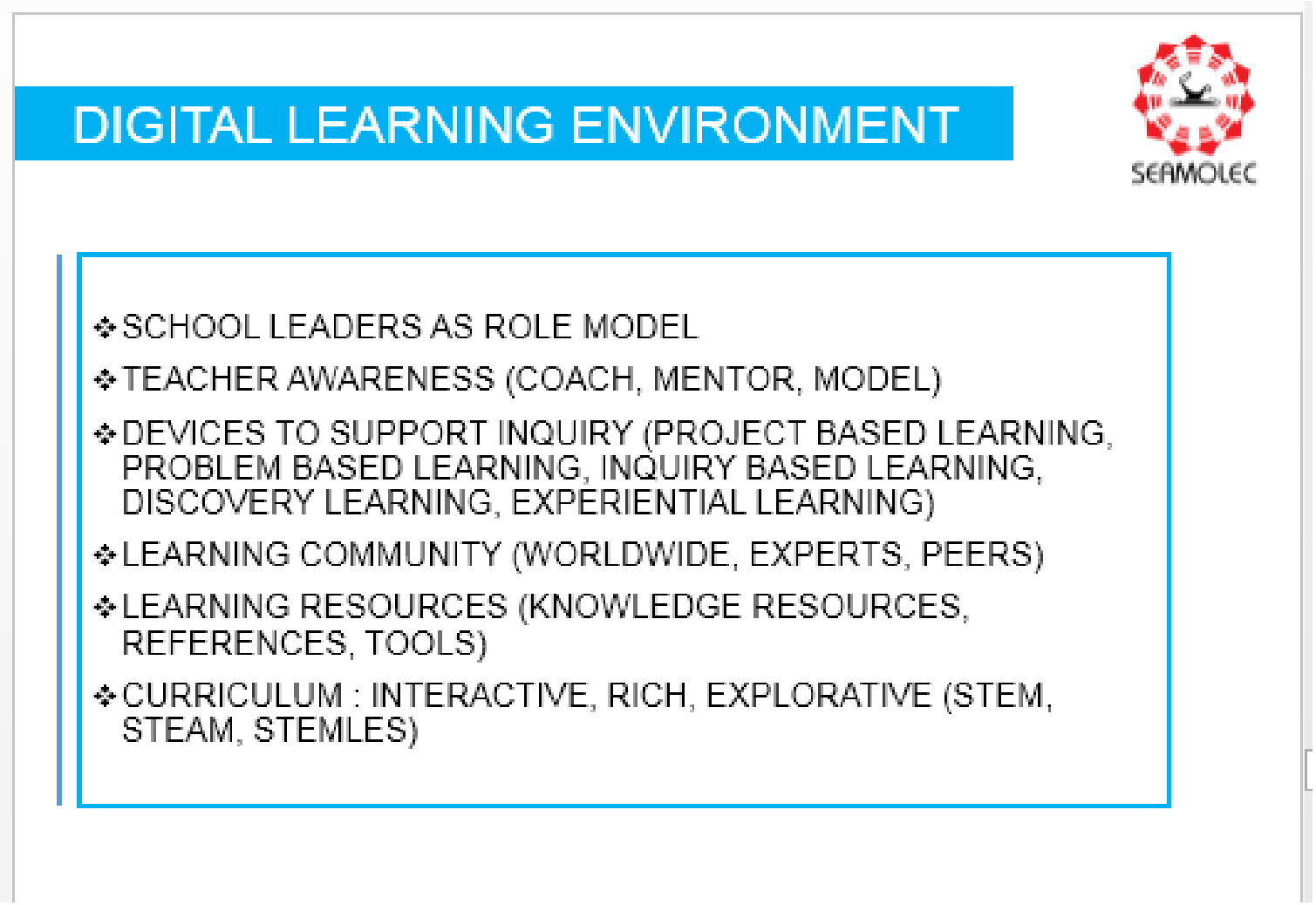

Tentang Ginjal
Kapsul
Korteks
Medula
Arteri
Vena
Ureter
<< Kembali

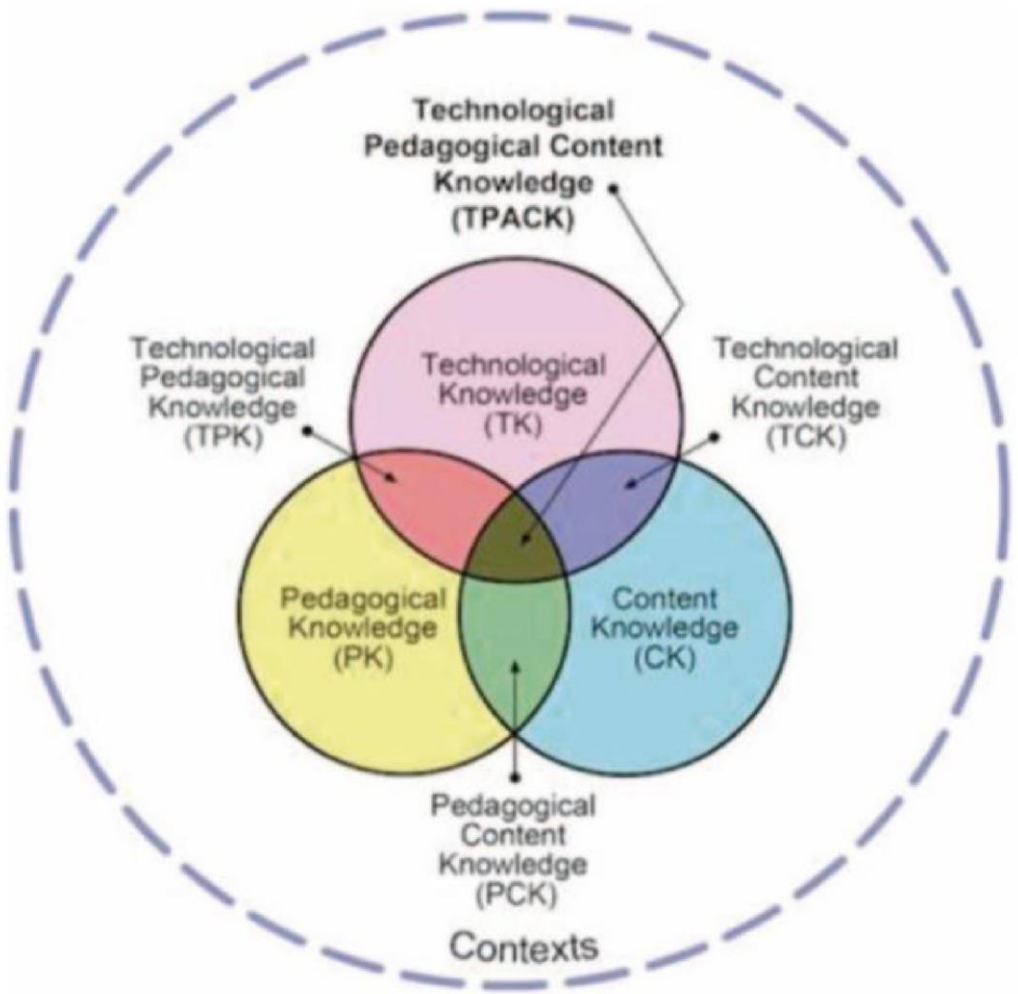

Virtual Reality for Education
SEAMOLEC

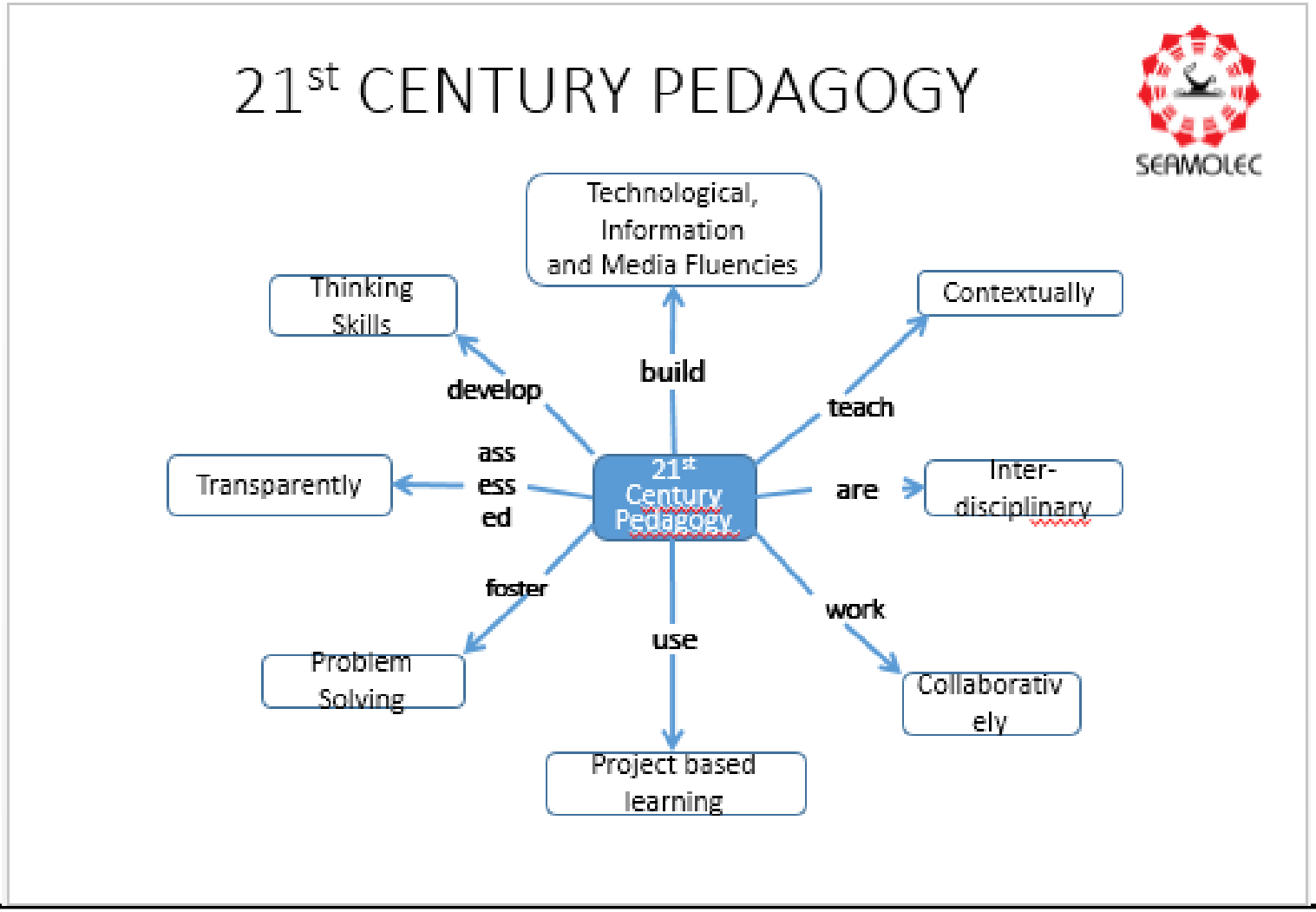

Virtual reality : Seamolec's Library
SEAMOLEC

EDUGAMES
Goothe Institute – Seamolec

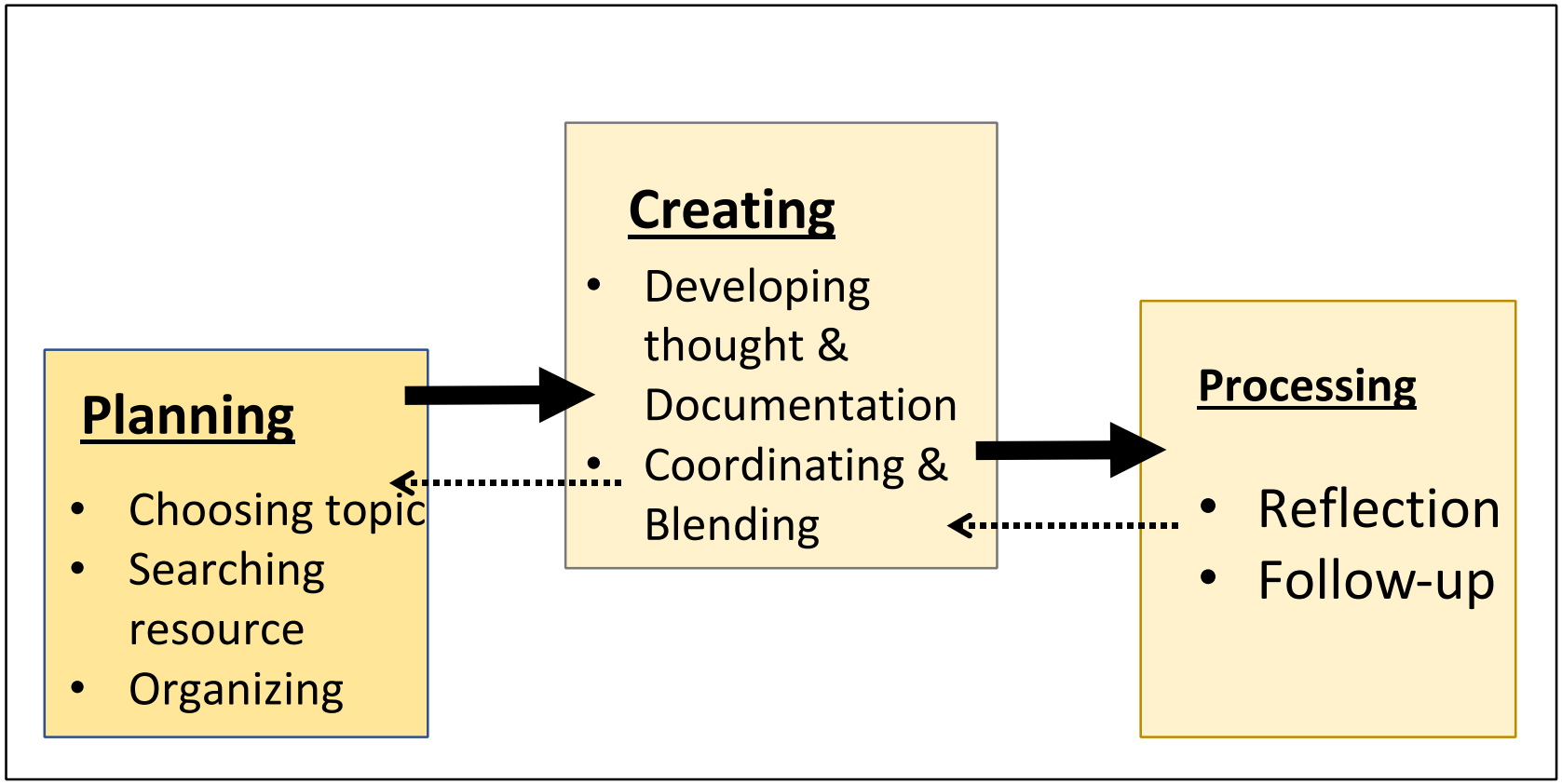

SEAMOLEC APPLICATIONS :
PALYSTORE→ TYPE: SEAMOLEC
SEAMOLEC
https://play.google.com/store/apps/developer?id=SeamolecApps&hl=en


DIGITAL LEARNING ENVIRONMENT
SEAMOLEC
SCHOOL LEADERS AS ROLE MODEL
TEACHER AWARENESS (COACH, MENTOR, MODEL)
DEVICES TO SUPPORT INQUIRY (PROJECT BASED LEARNING, PROBLEM BASED LEARNING, INQUIRY BASED LEARNING, DISCOVERY LEARNING, EXPERIENTIAL LEARNING)
LEARNING COMMUNITY (WORLDWIDE, EXPERTS, PEERS)
LEARNING RESOURCES (KNOWLEDGE RESOURCES, REFERENCES, TOOLS)
CURRICULUM : INTERACTIVE, RICH, EXPLORATIVE (STEM, STEAM, STEMLES)


Technological Pedagogical Content Knowledge (TPACK)
Technological Pedagogical Knowledge (TPK)
Technological Knowledge (TK)
Technological Content Knowledge (TCK)
Pedagogical Knowledge (PK)
Content Knowledge (CK)
Pedagogical Content Knowledge (PCK)
Contexts


21st CENTURY PEDAGOGY
SEAMOLEC
Technological, Information and Media Fluencies
Thinking Skills
Contextually
build
develop
teach
ass ess ed
Transparently
21st Century Pedagogy
are
Inter-disciplinary
foster
work
use
Problem Solving
Collaboratively
Project based learning

PROJECT-BASED LEARNING



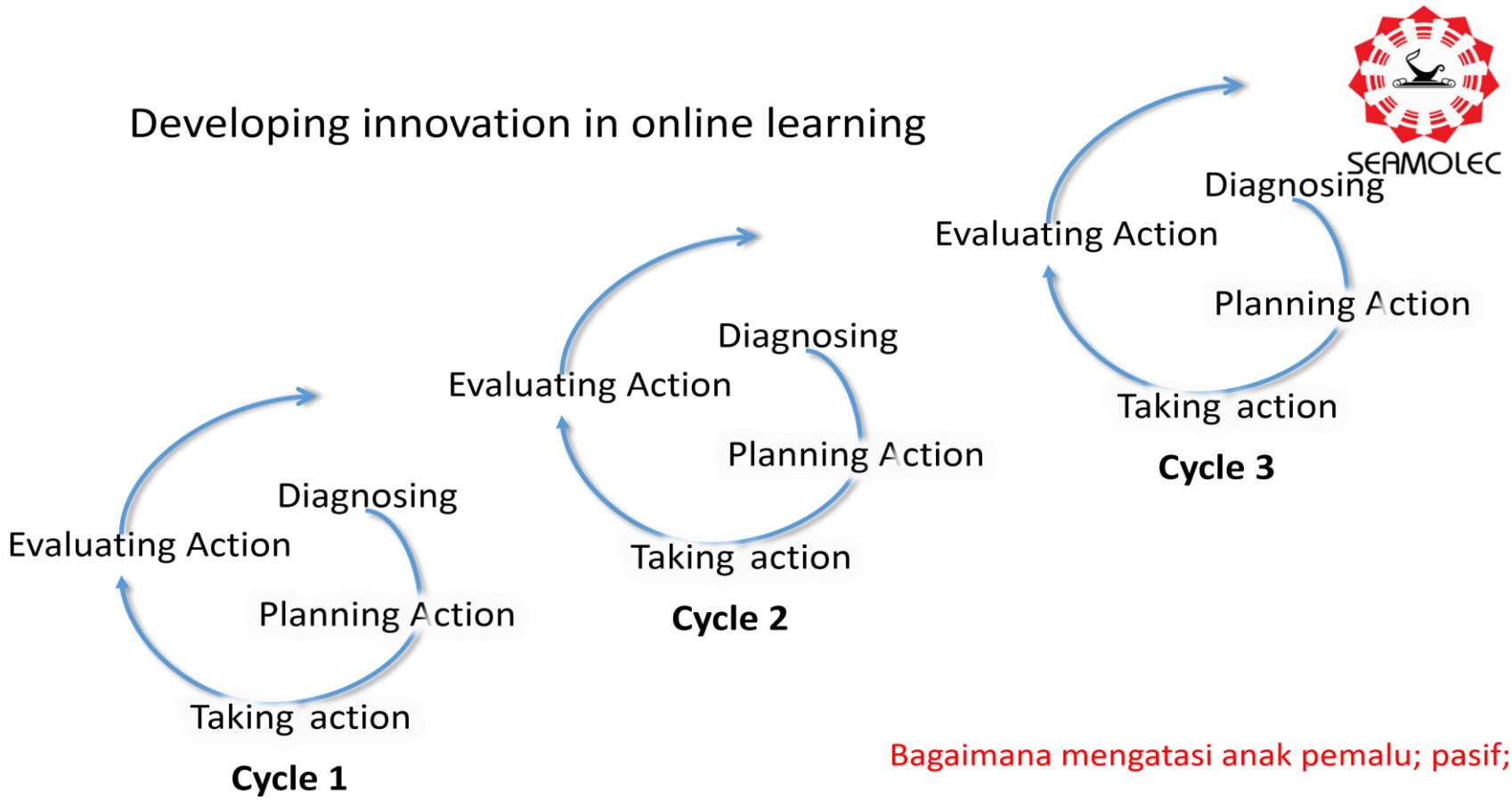
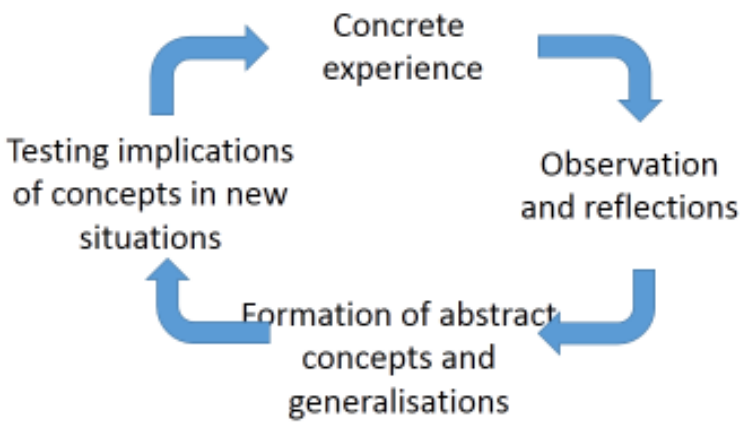
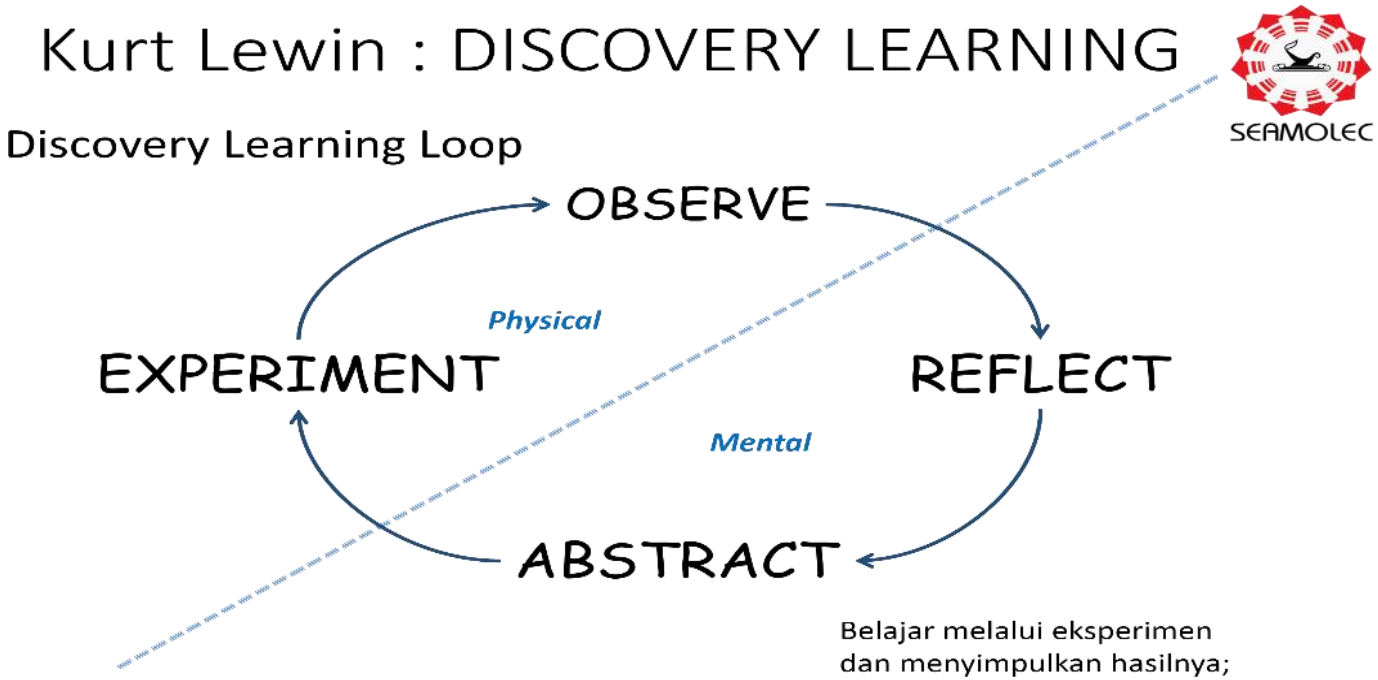


Figure: Spiral of action research cycle (Coghlan and Brannick, 2001:19)

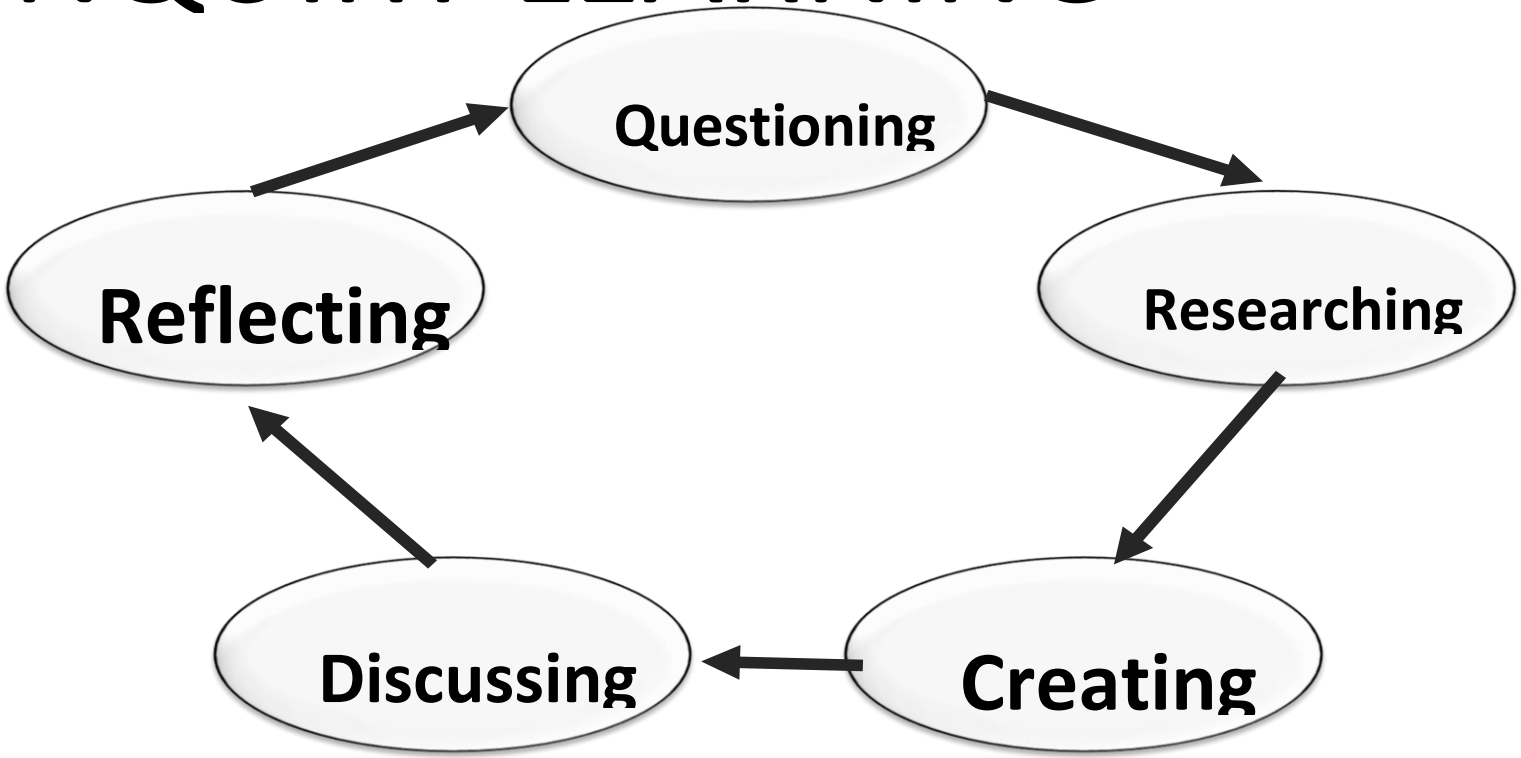
Experiential Learning, Kolb (1984)



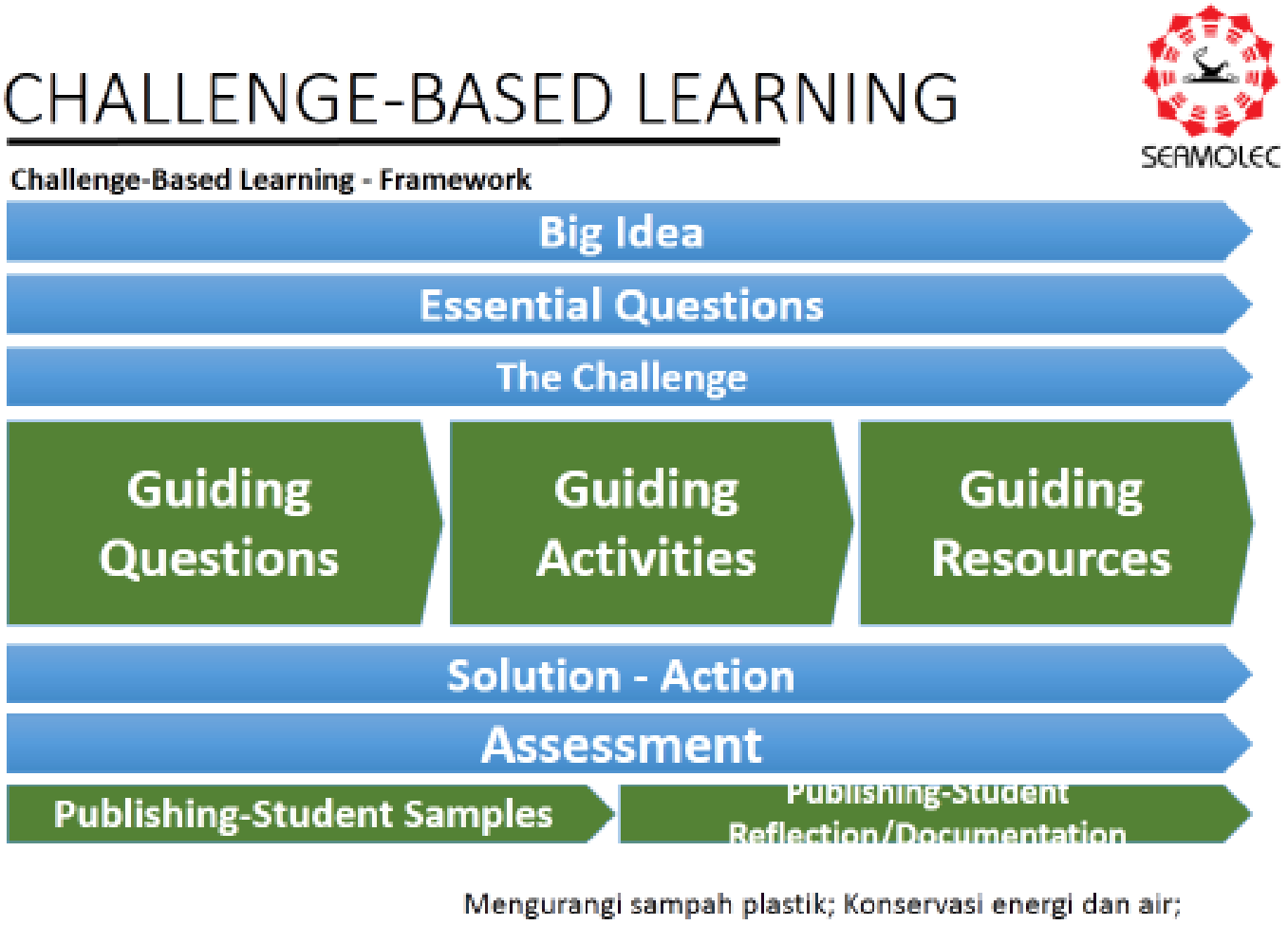
Magang; kunjungan lapangan;
Bagaimana menanamkan
nilai belas kasih – panti sosial;

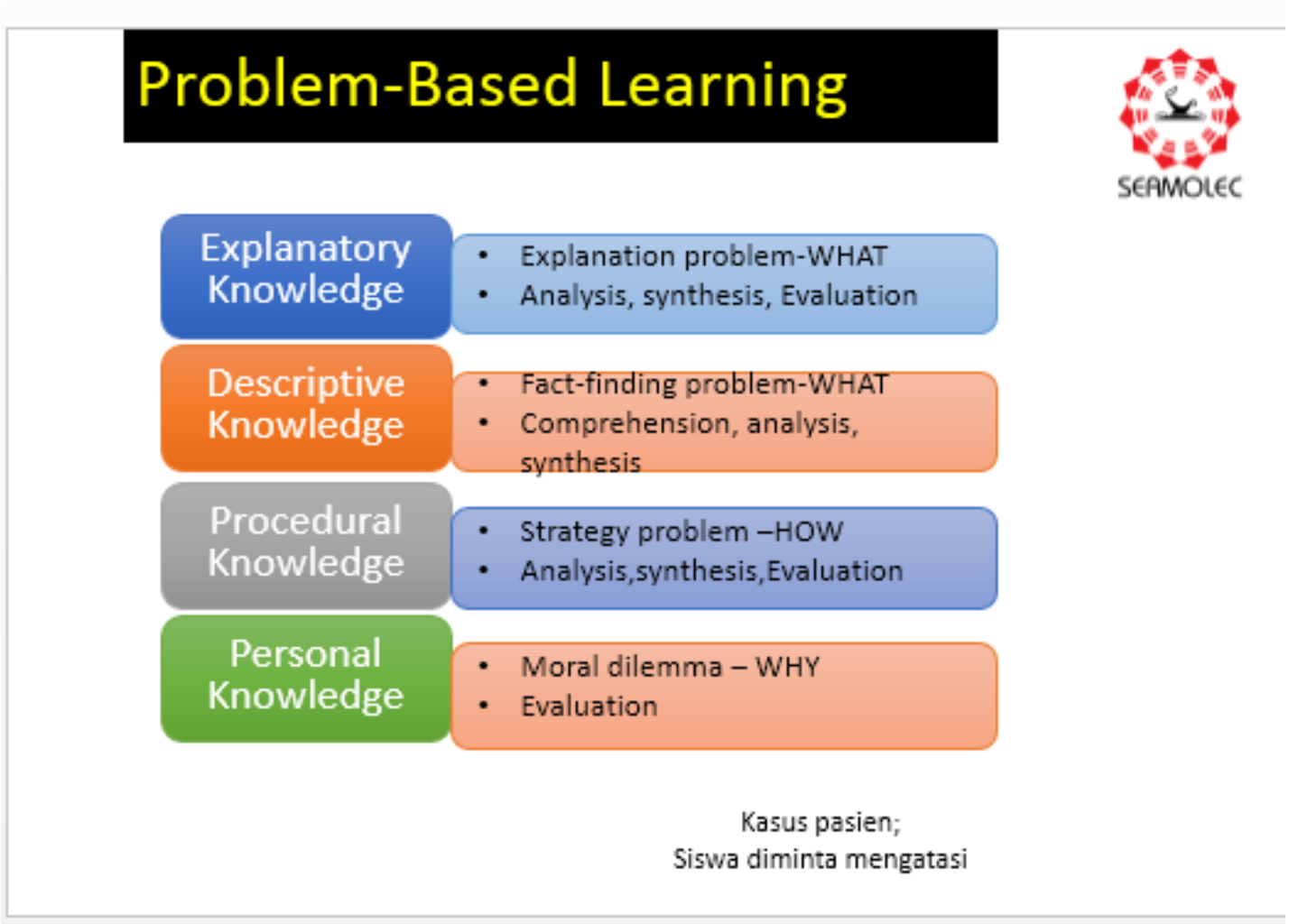

Kurt Lewin : DISCOVERY LEARNING
SEAMOLEC
Discovery Learning Loop
OBSERVE
Physical
EXPERIMENT
REFLECT
Mental
ABSTRACT
Belajar melalui eksperimen
dan menyimpulkan hasilnya;
Contoh: diberi contoh lukisan Afandi,
Siswa diminta berkreasi melukis;

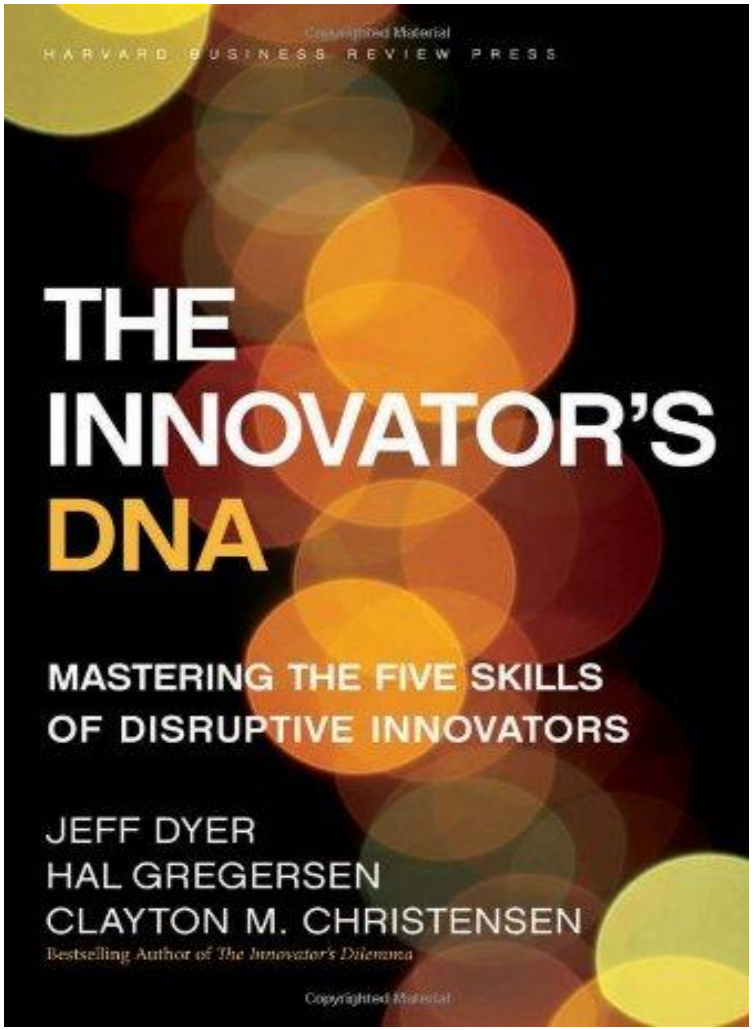
INQUIRY LEARNING



Mengapa orang membuang sampah sembarangan?


CHALLENGE-BASED LEARNING
SEAMOLEC
Challenge-Based Learning - Framework
Big Idea
Essential Questions
The Challenge
Guiding Questions
Guiding Activities
Guiding Resources
Solution - Action
Assessment
Publishing-Student Samples
Publishing-Student Reflection/Documentation
Mengurangi sampah plastik; Konservasi energi dan air;


Problem-Based Learning
SEAMOLEC
Explanatory Knowledge
Explanation problem-WHAT
Analysis, synthesis, Evaluation
Descriptive Knowledge
Fact-finding problem-WHAT
Comprehension, analysis, synthesis
Procedural Knowledge
Strategy problem –HOW
Analysis,synthesis,Evaluation
Personal Knowledge
Moral dilemma – WHY
Evaluation
Kasus pasien;
Siswa diminta mengatasi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THE INNOVATOR'S DNA
MASTERING THE FIVE SKILLS OF DISRUPTIVE INNOVATORS
JEFF DYER
HAL GREGERSEN
CLAYTON M. CHRISTENSEN
Bestselling Author of The Innovator's Dilemma
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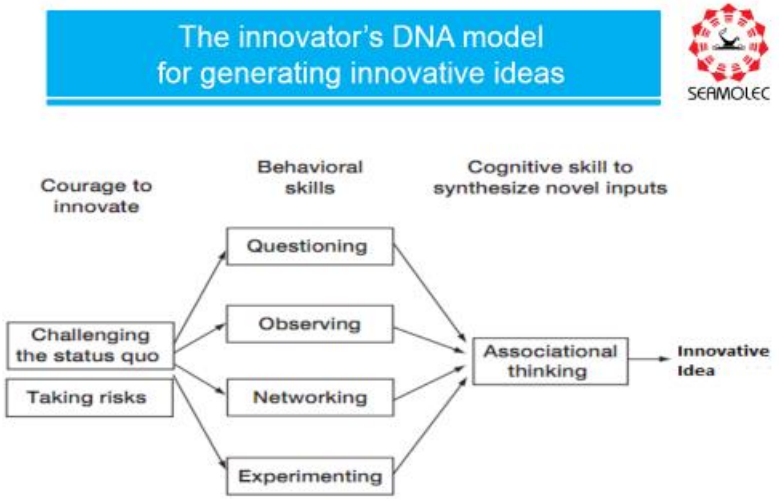
The innovator's DNA model for generating innovative ideas
SEAMOLEC
Courage to innovate
Behavioral skills
Cognitive skill to synthesize novel inputs
Challenging the status quo
Taking risks
Questioning
Observing
Networking
Experimenting
Associational thinking
Innovative Idea

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