

Understanding ICT innovations in HE

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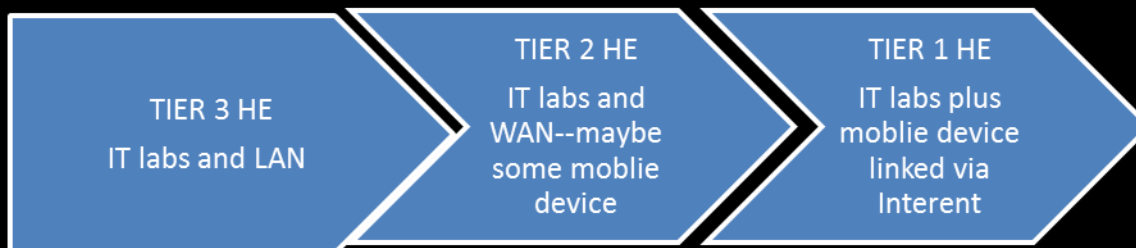
Professor: Queensland University of Technology
Brisbane, Australia

ICT innovation drivers in HE

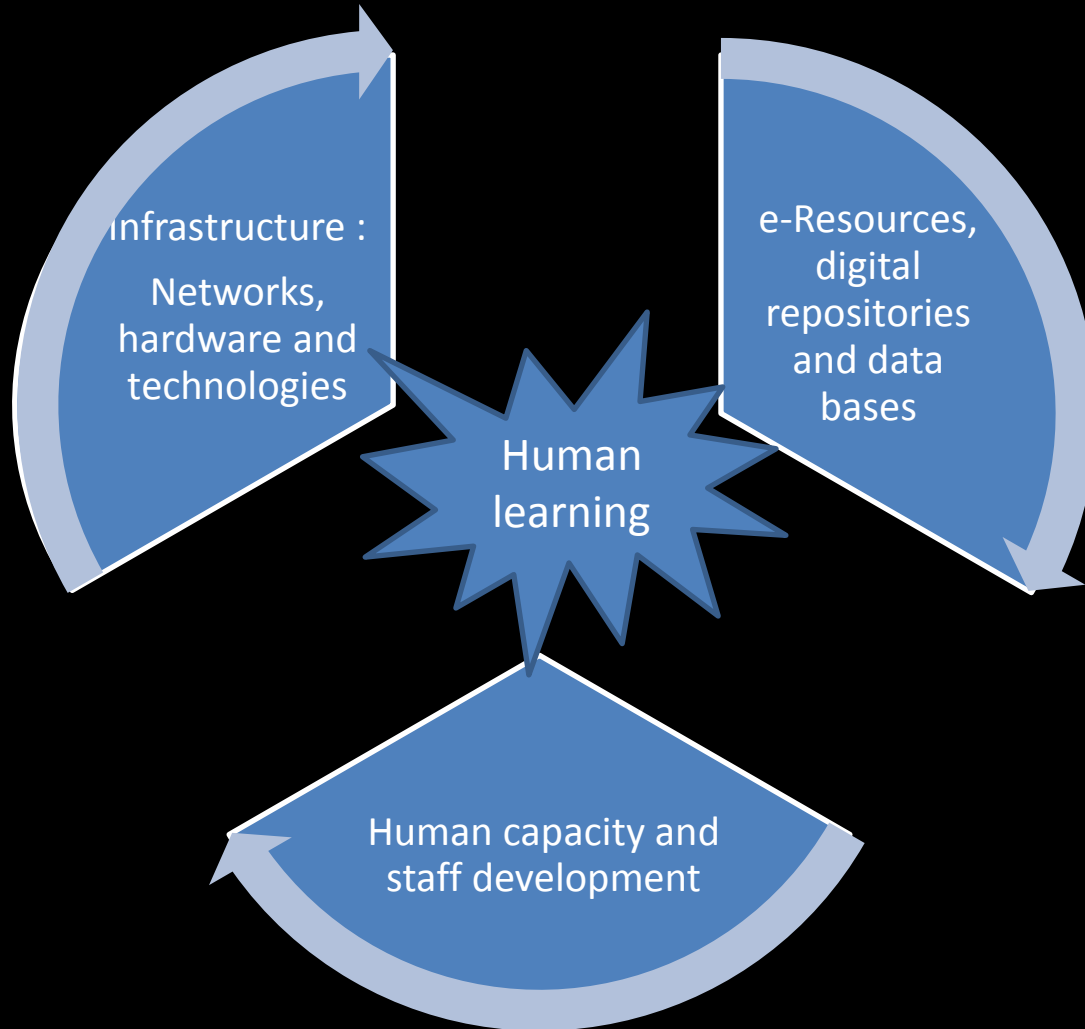
- Increased demand for HE in Asia-Pacific Region
- Western HEIs & TEIR 1 Asian HEIs seek to capture share of the Asian HE market
- ICT expansion in Asia generally and the emergence of new technologies, access to digital content and emerging learning platforms
- ICT as institutional management and support tool
- Perceived quality and cost benefits and contribution to economic growth
- Increased access to HE by underserved areas

Innovation for the diverse HEIs in Asia

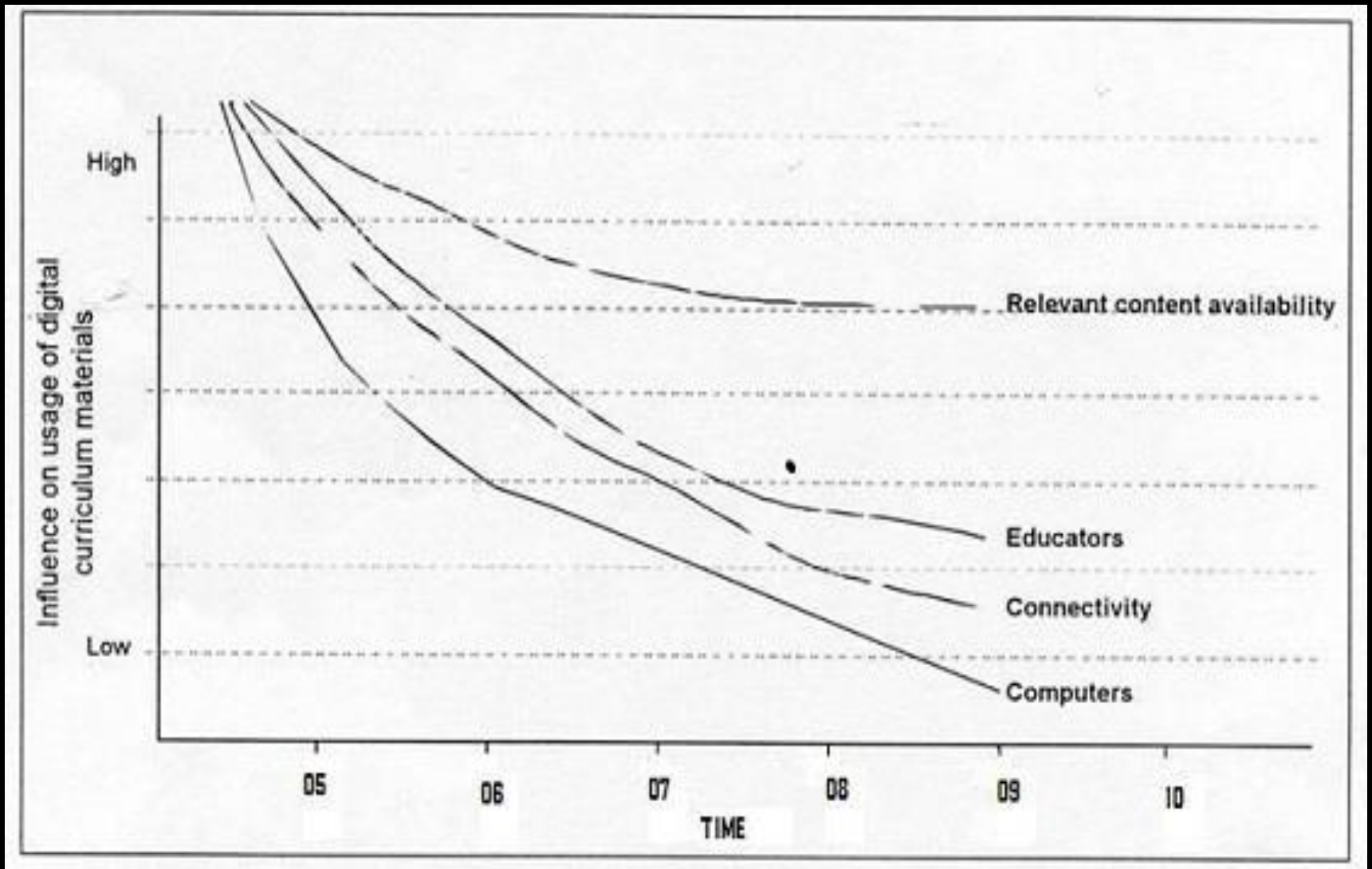
- Relative and Incremental nature of Innovation
- How to support an inclusive development approach
 - Shared vision but staged implementation
 - Variations in priorities and means



Integrated ICT system to support sustainable HE innovations



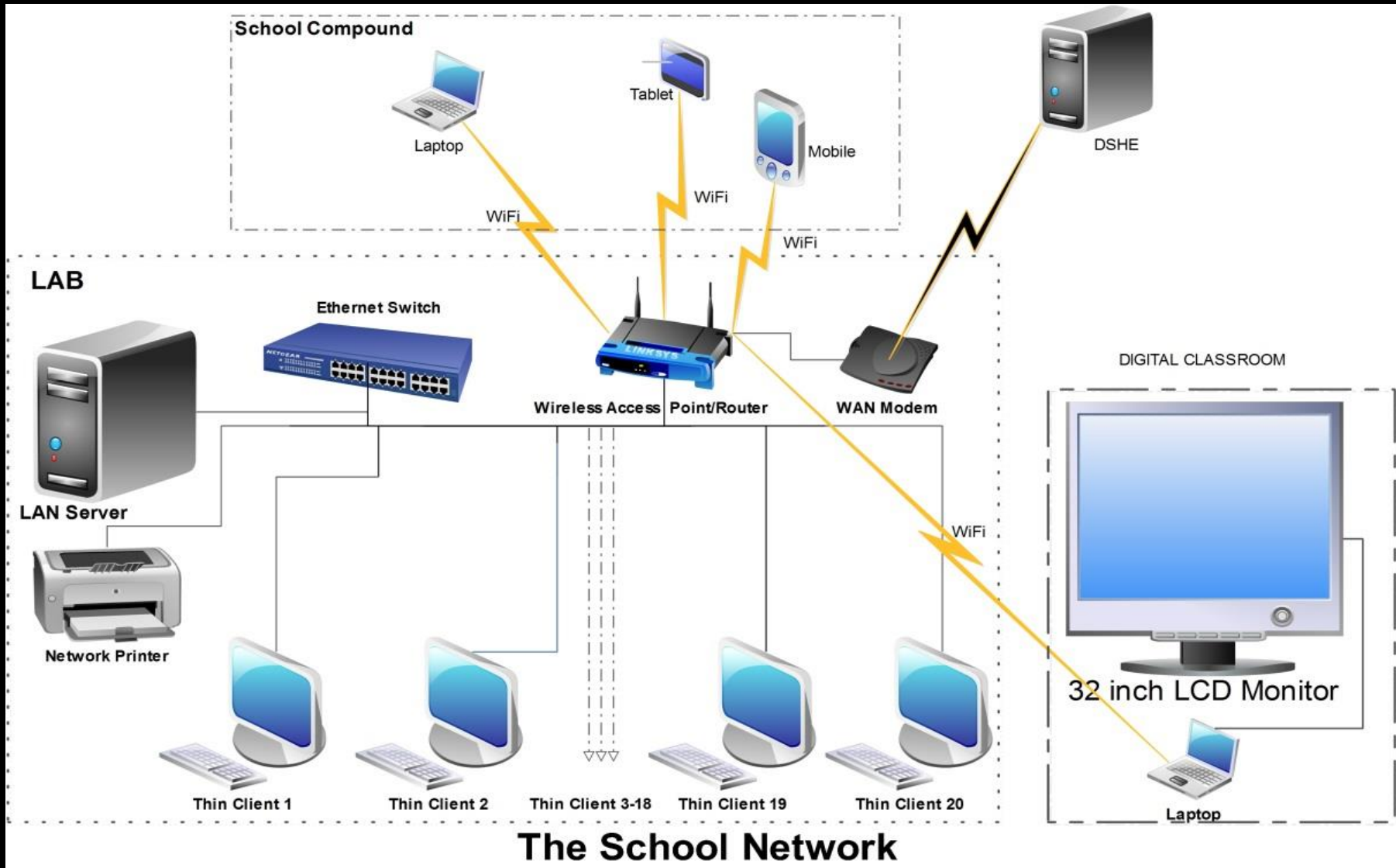
International trend in ICT adoption



Connectivity & Infrastructure Design

- ICT based learning is NOT about internet connectivity?
- Lab design and learning spaces
 - LAN- WAN- Internet to Wi-fi enhanced (BYOD)
- Software's selection – OS vs proprietary, compatibility between softwares
- Standardisation of hardware and softwares
- ICT as HE management and student support tool

Networks



KOICA Design Client-Server



ICT for teaching and learning

- Ubiquity of learning --HEI role within this framework is confronted with increasing expectation
- Human learning theories --Resource based learning– e-textbooks, videos, simulations, lecture note, interactive materials, PPTs etc
- Problem solving , Active learning, Reflective learning, Situated and context based learning

Managing Learning

- LMS, MOOC and OCW delivery platforms
 - Self-directed learning (its more then learner centred)
 - Interactive learning and communicative learning— with the material or with the teacher and peers?
 - Virtual learning networks
 - Attrition rates

Learning Management System

The screenshot shows the QUT Blackboard Learning Management System interface. The browser address bar displays the URL: http://blackboard.qut.edu.au/webapps/portal/frameset.jsp?tab_tab_group_id=_4_1&url=%2Fwebapps%2Fcmsmain%2Fwebui%2Fcourses%2FE7DR703_12se1%3Faction%3Dframeset%26subaction%3Dview. The page header includes the QUT logo, the text "QUT Blackboard", and navigation links for "QUT website" and "Staff Gateway". The user is logged in as "Hitendra Pillay" and can click "Logout".

The main navigation bar includes "QUT Blackboard Home", "Unit Finder", "Community Finder", and "Help". The breadcrumb trail shows "Files > EDR703_12se1".

The left sidebar contains a navigation menu with the following items:

- Interdisciplinary in Education Studies (Advanced Seminars) (EDR703_12se1)
- Announcements
- Unit Details
- Learning Resources
- Assessment
- Collaboration
- Contact Us
- Feedback
- ePortfolio
- My Groups
 - Supervisors
 - Teaching Team

The main content area is titled "Files: EDR703_12se1". It includes a description of Unit Files and a "More Help" link. Below the description are buttons for "Upload", "Create HTML Object", "Create Folder", and "Set Up Web Folder". The "Upload" button is expanded, showing options for "Upload Files" and "Upload Zip Package".

Below the upload options is a table of files:

<input type="checkbox"/>	File Type	Name	Edited	Size	Permissions
<input type="checkbox"/>		confirmation.pptx	10/01/2013 8:34:32 AM	184.7 KB	
<input type="checkbox"/>		Research Design Seminar HP Jan 2013.pdf	10/01/2013 8:33:44 AM	237.3 KB	
<input type="checkbox"/>		Theorising your project.pptx	10/01/2013 8:34:07 AM	63.7 KB	

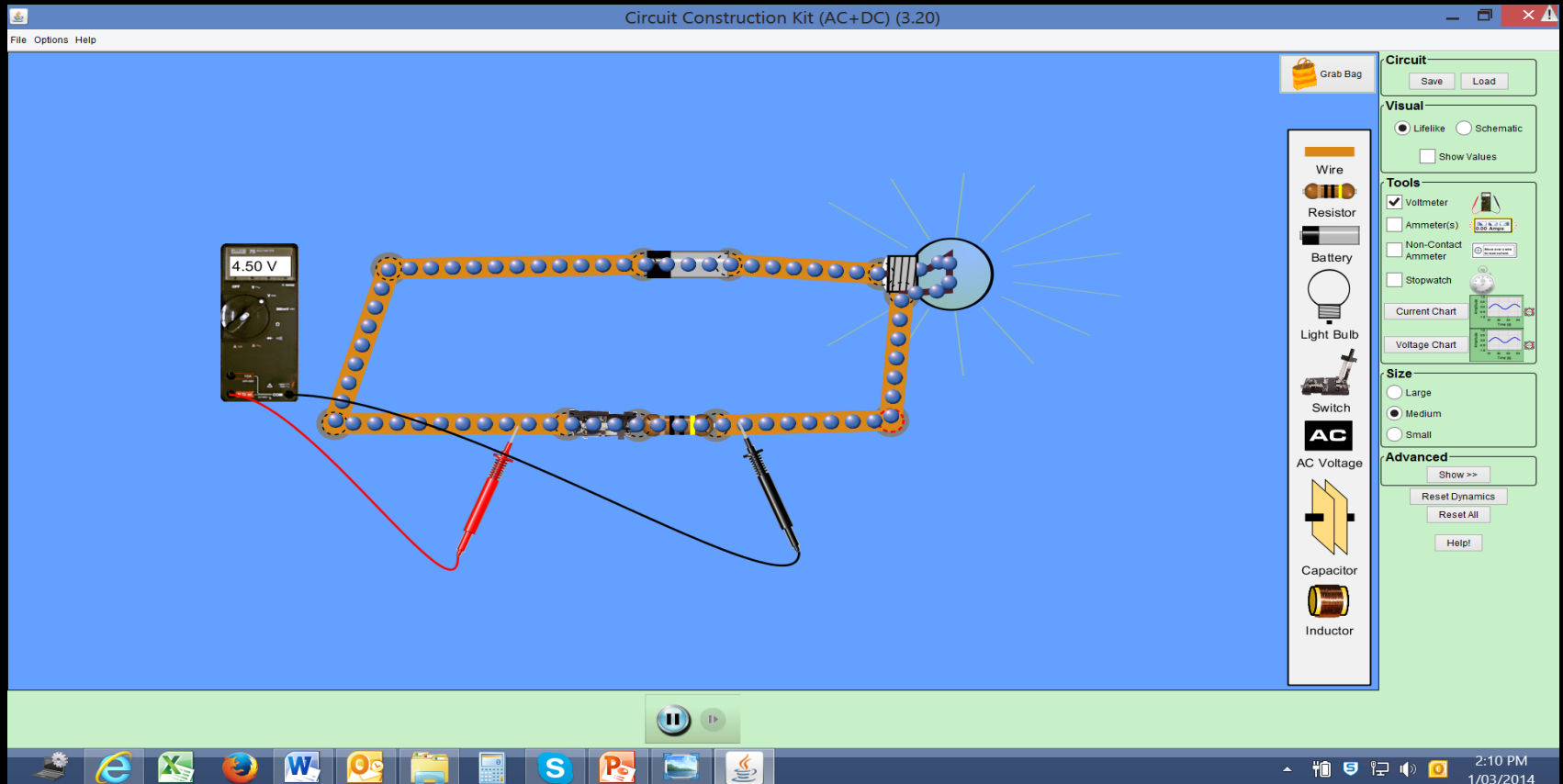
At the bottom of the file list are buttons for "Download Package", "Copy", "Move", "Delete", and "Refresh".

The Windows taskbar at the bottom shows the system clock as 12:25 PM on 17/06/2014, along with various application icons.

e-Resources for teaching and learning

- Should we all develop own e-Resources or should we borrow, procure and adapt? How do we decide what to develop and what to procure?
- Quality of resource materials (instructional design/human learning)
 - Traditional materials digitised and upload
 - Instructive material (Khan academy, MIT open courseware)
- Convergence of available e-Resources presents challenges of interoperability of the digital repositories.
- What the developing world needs is not just commodity content, but customized curricula — specifically scalable, consistently produced online courses that target and complement local universities in the developing world.

Interactive materail



Integrated server-based repository

Browser address bar: yteach.whome.local/

Samoa SchoolNet e-Library

MEASC

Login

Browse resources using...

Enter keyword


Browse


- Biology
- Chemistry
- Physics
- Mathematics**
- English


Welcome to the **SchoolNet e-Resource Library**


Select resources with the 'Browse'-Buttons on the left or from the pages below. Create own content and access your own SchoolNet area by Login.

Email

Simulations
More interactive simulations, games and animations for Math and Science.
Select an activity.
[PhET-Simulations](#)


All English
Stories, Poems and interactive exercises to enhance English language skills.
Make your selection.
[e-English](#)


Your Textbooks
All Secondary School textbooks on screen, ready for print out and copying.
Choose year & subject.
[All Textbooks](#)


Quizzes
Interactive Quizzes for English, Math and Science. Have fun practicing.
Choose your quiz.
[All Quizzes](#)


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Windows taskbar icons: Start, File Explorer, Google Chrome, Task Manager, and a folder icon.

Browse

Biology

Chemistry

Physics

Regular

< Back

Forces

- 1. Forces
- 2. Addition of forces
- 3. Force measurement
- 4. The moment of a force
- 5. Equilibrium
- 6. Levers and pulleys
- + Motion
- + Forces and motion
- + Energy
- + Gravitation
- + Matter
- + Pressure
- + Heat
- + Electrostatics
- + Direct current
- + Magnetism
- + Alternating current
- + Electronics
- + Oscillations and mechanical waves
- + Sounds
- + Electromagnetic waves
- + Light
- + Nuclear physics
- + Earth and the Universe

Mathematics

English

Display: 30 | 60 | 90

Sort by: Title

Resources: 1 – 6 Total: 6

Addition of forces

Lesson contents

- What is the net force on an object?
- What is the net force on an object?
- Addition of vectors
- Newton's second law of motion
- Force and acceleration
- Force and velocity
- Force and displacement
- Force and work



Class activity. Play >

more ▾

Equilibrium

Lesson contents

- What is equilibrium?
- What is the net force on an object in equilibrium?
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- What is the net force on an object in equilibrium?
- What is the net force on an object in equilibrium?



Class activity. Play >

more ▾

Force measurement

Lesson contents

- What is force?
- How is force measured?
- What is the unit of force?
- What is the unit of force?
- What is the unit of force?
- What is the unit of force?
- What is the unit of force?
- What is the unit of force?



Class activity. Play >

more ▾

Levers and pulleys

Lesson contents

- What is a lever?
- What is a pulley?
- What is a lever?
- What is a pulley?
- What is a lever?
- What is a pulley?
- What is a lever?
- What is a pulley?



Class activity. Play >

more ▾

The moment of a force

Lesson contents

- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?
- What is the moment of a force?



Class activity. Play >

more ▾

Resources: 1 – 6 Total: 6

Global Partners (663) · US State Institutions (16)

Sort by Starting soon ▾

☐ Starting Soon

48

☐ Always Open

3

Eligible For

☐ Specialization Certificates

45

☐ Verified Certificates

320

☒ All Languages

663

☐ English

583

☐ Chinese

56

☐ Spanish

26

☐ French

22

☐ Russian

14

☐ Turkish

9

☐ Portuguese

8

☐ Ukrainian

4

☐ German

3

☐ Hebrew

2

☐ Japanese

2

Courses



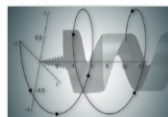
Stanford University

Child Nutrition and Cooking 2.0

with Maya Adam

Go at your own pace.

Learn now!



The Ohio State University

Calculus One

with Jim Fowler

Go at your own pace.

Learn now!



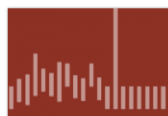
Ludwig-Maximilians-Universität München (LMU)

Competitive Strategy

with Tobias Kretschmer

Go at your own pace.

Learn now!



Princeton University

Algorithms, Part I

with Kevin Wayne & Robert Sedgewick

Jun 13th 2014

6 weeks long



Stanford University

Machine Learning

Jun 16th 2014

10 weeks long

ICT for Research and Innovation

- Similar to the Ubiquity of learning every inquiry based experience is called research
- Sharing knowledge products through repositories and publication (OE journals)
- Collaboration—twining TEIR 1 and TEIR 3 institutions to develop capacity
- Staff exchange, diaspora, alumni to support joint research
- Language as a barrier to collaborations and knowledge sharing
- Knowledge networks and knowledge transfer

Research Network



- Development of policy recommendations on national and on the EU level. This includes organization of TUNING networks to support, EU policymakers, encourage research partnerships between HE institutions and private enterprises.

Conclusion

- Innovations in ICT can increase access and improve quality
- HEIs need to develop clear priorities and strategy for adopting ICT as a tool to enhance its service delivery
- Value for money analysis is essential at every stage of expansion.
- Separating advocacy from evidence-based information and adopting deeper understanding of human learning
- Planning should be system-wide but implementation maybe staged and bottom up.
- Need to be cognisant of the diversity in Asian HEIs