

Seoul National University

서울대학교





A World Leader
in applications of ICT

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Computers in Education: Dreams, Disappointment and Disruption

Sir John Daniel, KNOU Fellow

PLAN

- The Dream: Computers in Education

PLAN

- The Dream: Computers in Education
- Disappointment: Schools

PLAN

- The Dream: Computers in Education
- Disappointment: Schools
- Disruption: Higher Education

PLAN

- The Dream: Computers in Education
- Disappointment: Schools
- Disruption: Higher Education
- Achieving the Dream

WHY

do

ICT

inspire dreams

of

transforming education

???

Teaching and Learning

=

Manipulation of symbols
(Words, Numbers, Formulae,
Images...)

The Practice of Education

“the Internet is an extraordinary vehicle for the wide distribution of information, knowledge and educational material at low cost.”



A World Leader
in applications of ICT

PLAN

- The Dream: Computers in Education
- Disappointment: Schools



The OLPC XO-1 laptop

One Laptop Per Child

“he wanted children in the developing world to ‘learn learning’ through a methodology called constructivism”



The OLPC XO-1 laptop

A FAILURE?

JOHN S. DANIEL

open &
flexible
learning
series



MEGA-SCHOOLS, TECHNOLOGY AND TEACHERS

ACHIEVING EDUCATION FOR ALL

ROUTLEDGE



4 PROBLEMS

- No clear aims
- Little educational software
- No Teacher Training
- Poor logistics

Education in Peru

Error message

A disappointing return from an investment in computing

Apr 7th 2012 | LIMA | from the print edition

 Like

2.3k

 Tweet

796



eyevine



HOLE IN THE WALL



Sugata Mitra

The Slumdog Professor



Findings:

- Learning happens in groups





Minimally invasive education

Findings:

- Learning occurs in groups
- Getting started a challenge



Findings:

- Group membership changes constantly
- Everyone an expert



Findings:

- Develops intellectual maturity
- Does not help rote learning
- Parents & communities like it



CONCLUSIONS

- OLPC in classroom but no teacher training
- HITW in playgrounds

CONCLUSIONS

- OLPC in classroom but no teacher training
- HITW in playgrounds

Therefore:

Embed programmes in school systems

What about Secondary?

Surging to Secondary



200 to 400 million youth

Develop and expand

OPEN SCHOOLING

and

INTEGRATE IT

with other approaches

‘there are no technology shortcuts to good education. For primary and secondary schools that are underperforming... efforts to improve education should focus... on better teachers and stronger administrations.

Technology has a huge opportunity cost (compared to) more effective non-technology interventions.’

Toyama (2011)

What about Higher?

WCHE New Dynamics

- Rising demand (massification)
- Diversification (providers & methods)
- Private provision
- Distance education
- Cross-border education
- Quality assurance
- Teacher education



United States

Enrolments in eLearning
courses increased by 21%
between
2009 and 2010
compared to
2% for campus enrolments.



United States

2014

80% of students online

2009

44% of students online

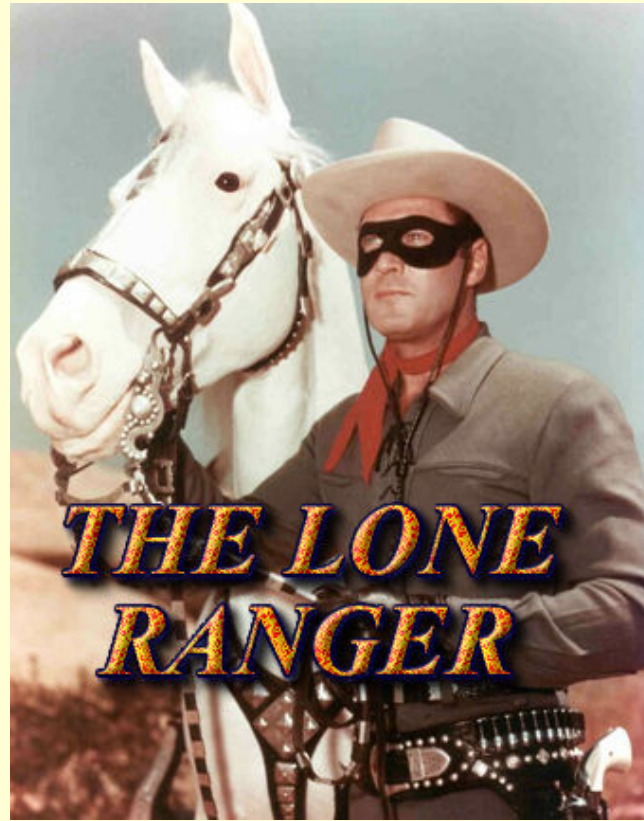


United States

the for-profit sector has a much higher proportion of the total online market (32%) compared to its share of the overall higher education market (7%).

BUT...

- goals for eLearning are unambitious
- costs are rising
- no evidence of better learning outcomes
- failure to meet quality standards



Better to work in
teams!

Higher Education: a Great Divide?

Teaching

Research



Higher Education: a Great Divide?

Teaching



Private

Research



Public





الجامعة العربية المفتوحة
Arab Open University



中央广播电视大学
THE OPEN UNIVERSITY OF CHINA



มหาวิทยาลัยสุโขทัยธรรมมาธิราช
Sukhothai Thammathirat Open University



ANADOLU ÜNİVERSİTESİ



The Open University

Allama Iqbal Open University



AFRICAN VIRTUAL UNIVERSITY
UNIVERSITE VIRTUELLE AFRICAINE
UNIVERSIDADE VIRTUAL AFRICANA

دانشگاه پیام نور



The **Open** University of Sri Lanka
LIFE LONG LEARNING THROUGH DISTANCE EDUCATION

Korea National Open University



Athabasca
University



Open Educational Resources

‘educational resources that are freely available for use by educators and learners, without an accompanying need to pay royalties or license fees’

A screenshot of the Open University website. The header features a large image of Earth from space, the Open University logo (a stylized 'U' inside a shield), and the text 'The Open University' written vertically. Below the header is the main slogan 'World class learning, anywhere' in white and blue text, followed by a warning: 'Warning! Content may transform your life'. The main content area is divided into several sections: 'OU Learn' with a list of subjects; 'Featured Content' with three featured items: 'Social Science' (Living in a Globalised World), 'OU Life' (The Vice Chancellor on the Open U...), and 'OU Life' (Lord David Puttnam on New Media ...); 'Subjects at the OU' with three featured items: 'Arts and Humanities', 'Childhood and Youth', and 'Computing and ICT'; 'OU Power Search' with a search bar; 'TOP DOWNLOADS' with a list of five items; and 'OU Links' with a list of links. The background is dark blue with a subtle grid pattern.

World class learning, anywhere

Warning! Content may transform your life

The Open University

OU Learn

- Arts and Humanities
- Childhood and Youth
- Computing and ICT
- Engineering and Technology
- Environment
- Languages
- Law
- Maths
- Science
- Social Science
- OU Life

Featured Content

Social Science
Living in a Globalised World

OU Life
The Vice Chancellor on the Open U...

OU Life
Lord David Puttnam on New Media ...

Subjects at the OU

Arts and Humanities

Childhood and Youth

Computing and ICT

OU Power Search
Search The Open University

TOP DOWNLOADS

1. **What iTunes means for the OU**
The Open University
2. **Positive political influences on t...**
The Open University
3. **Population registration tests**
The Open University
4. **Britains Imperial role**
The Open University
5. **Save Britain's Heritage**
The Open University

OU Links

- The Open University
- Study at the OU
- About the OU
- Research at the OU
- Contact the OU

Links

450,000 downloads of the UKOU's materials per week account for 10% of all iTunesU traffic



Martin Bean
Vice-Chancellor
Open University

“the task of
universities today is
to provide paths
from their informal
cloud of learning
towards formal study
for those who wish
to take them”



James
Taylor



Students
awarded
credible degree or
credential



Participating
institutions grant
credit for
courses



Open assessment
from participating
institutions



Open student
support via
"Academic Volunteers
International"



Learners
access courses
based solely
on OER



The OER university concept. Adapted from Taylor (2007)

Defining Technology

Technology is the application of scientific and other organized knowledge to practical tasks by organizations consisting of people and machines...

Principles of Technology

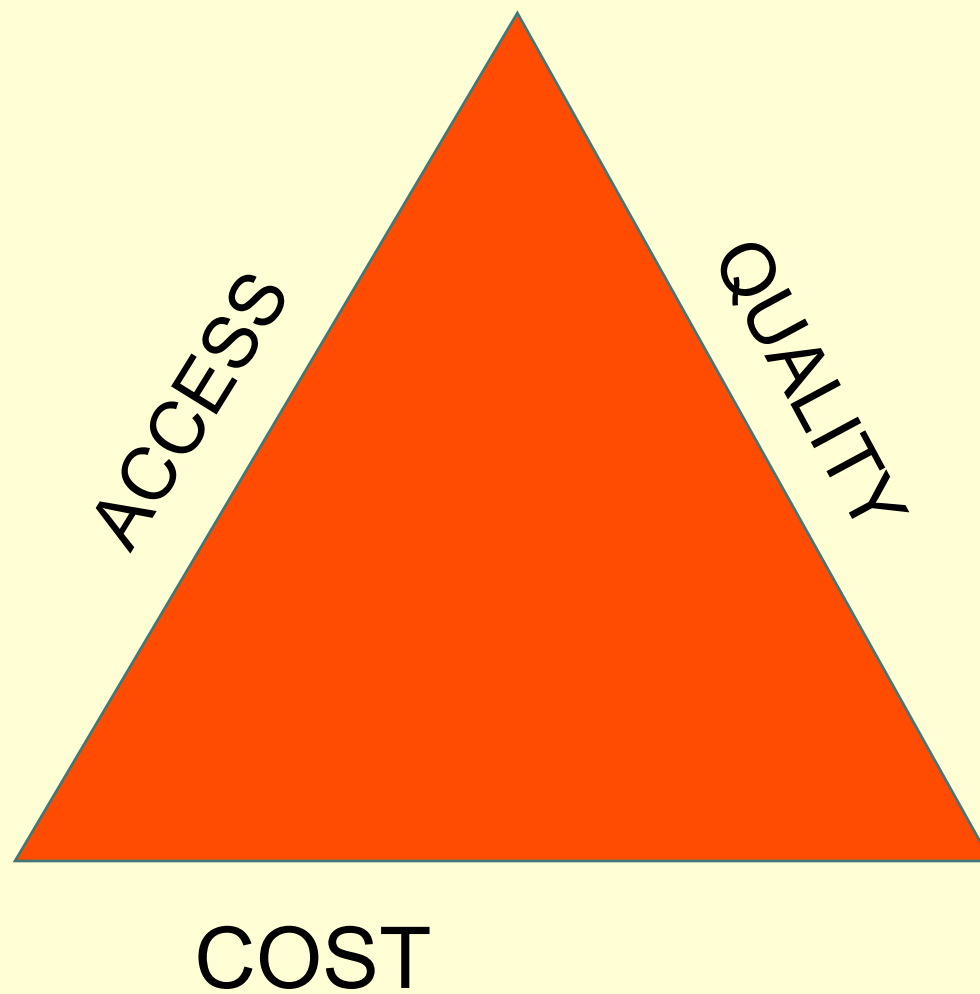
- Division of labour
- Specialisation
- Economies of scale
- Machines and ICTs



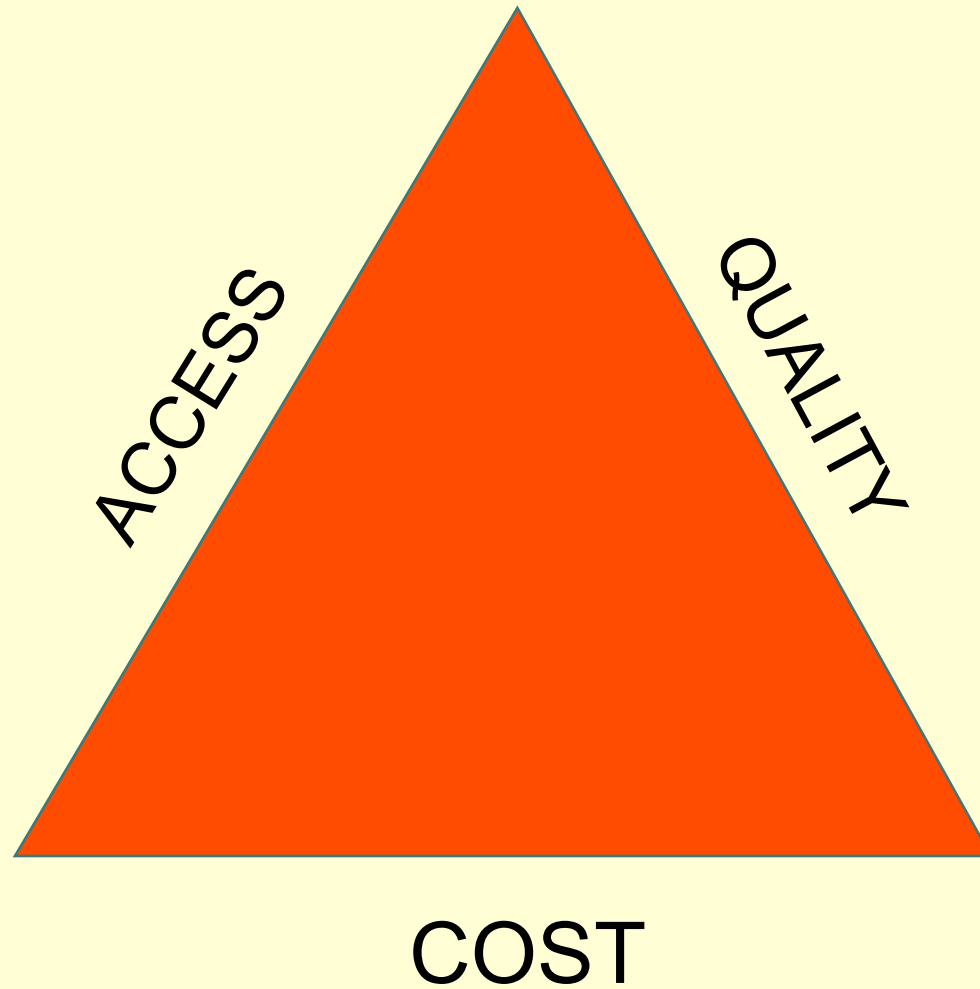
Adam Smith
1723-1790

The Central Challenge

- ACCESS (wider)
- QUALITY (higher)
- COST (lower)



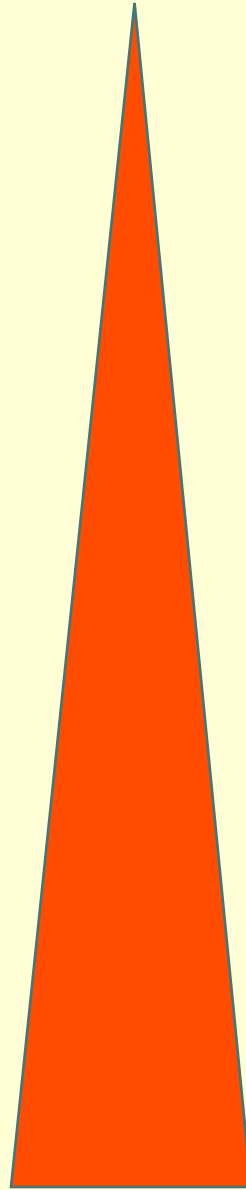
The Iron Triangle



ACCESS

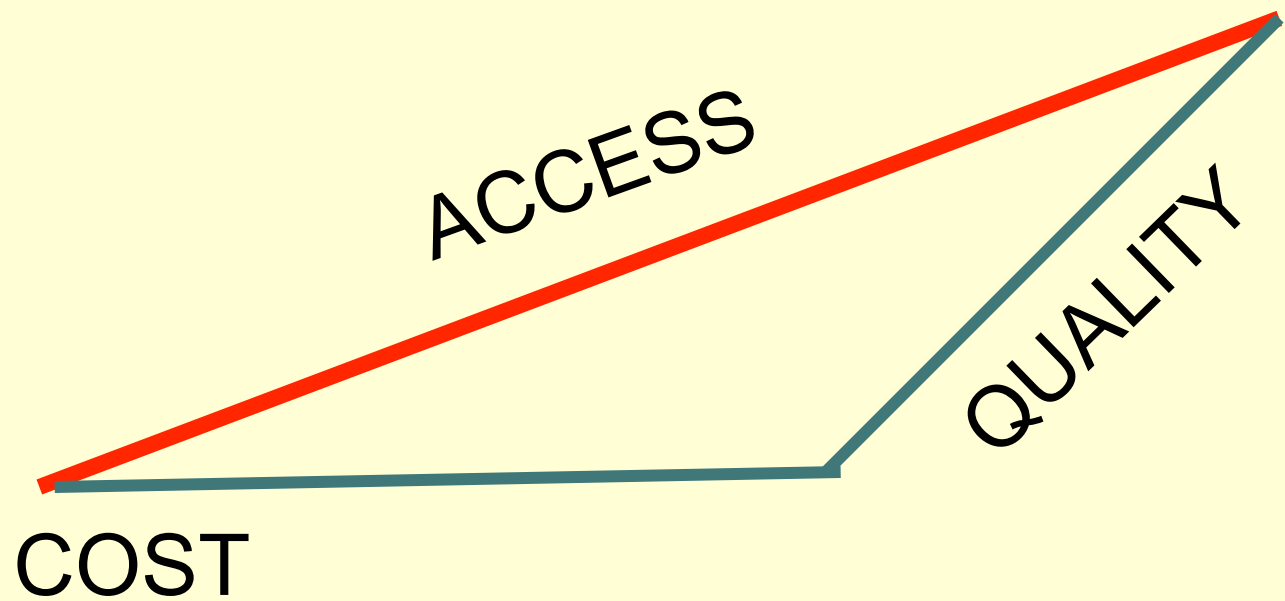
QUALITY

COST

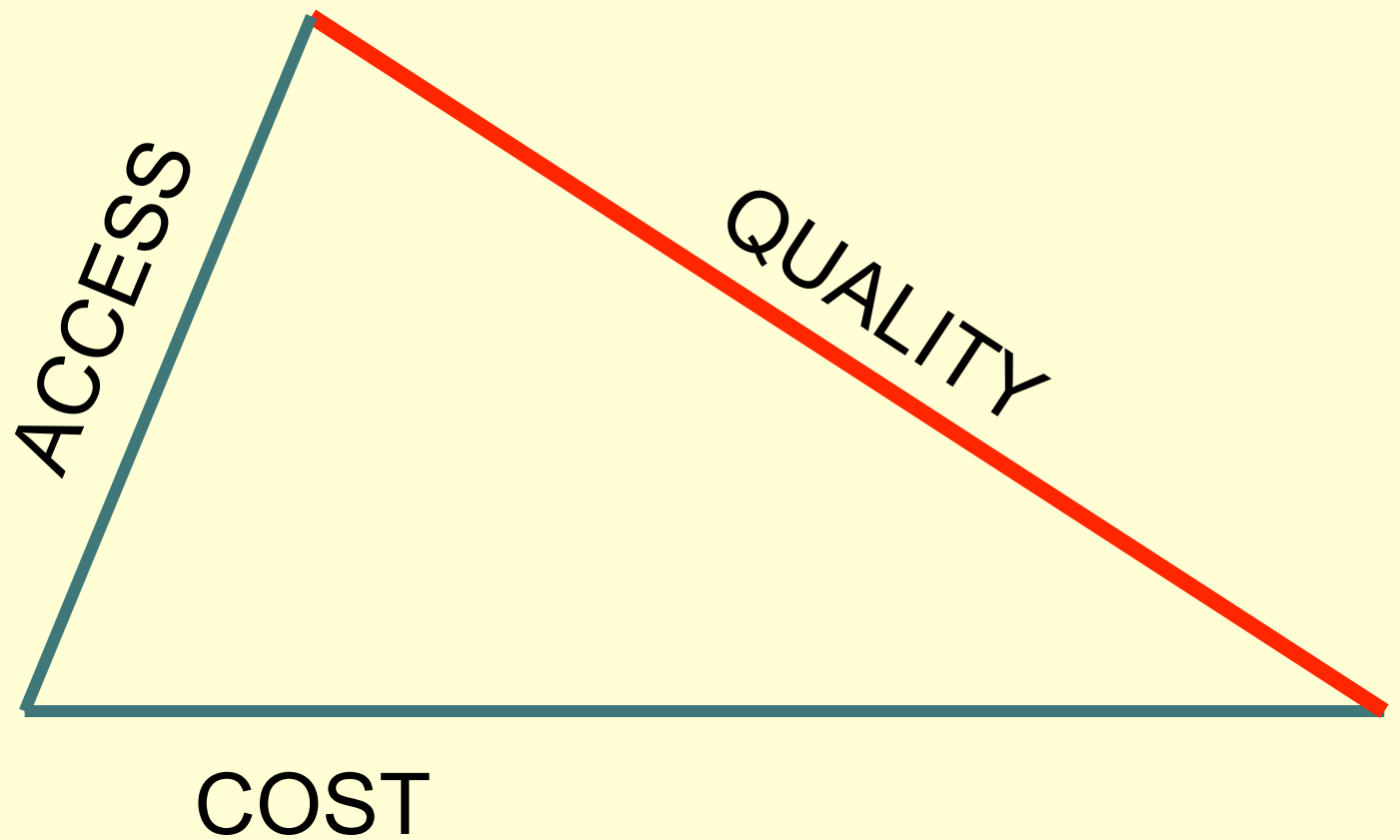




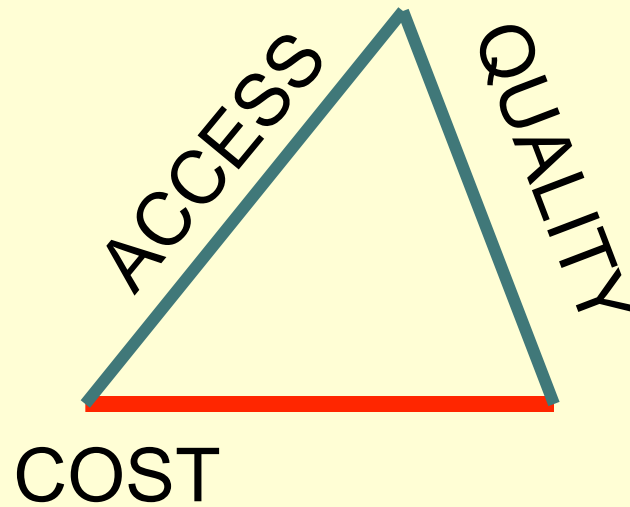
The Iron Triangle



The Iron Triangle



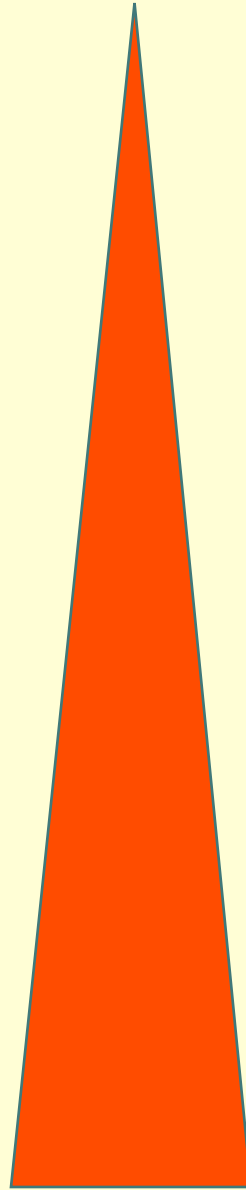
The Iron Triangle



ACCESS

QUALITY

COST



The Digital Divide

Is now

a wealth gap

within countries



UNESCO HQ Paris

**2002 Forum on the Impact of Open CourseWare
for Higher Education in Developing Countries**

Online version of
this document:



PROGRAMME



United Nations
Educational, Scientific and
Cultural Organization



Open
Educational
Resources

**2012 World
Open Educational Resources
Congress** Paris
20-22 June
UNESCO Headquarters
Paris, France

World Congress on
Open Educational Resources
Paris – June 20-22 – 2012



The Paris Declaration

World Congress on
Open Educational Resources
Paris – June 20-22 – 2012

‘that educational materials
developed with public funds be
made available under open
licenses’

The Paris Declaration

**‘The growing
availability of OER will
dramatically increase
the potential of ICT in
education’**

5 Key Questions for the use of ICTs:

5 Key Questions for the use of ICTs:

1. WHY?

What are the objectives?
Planning and policy

5 Key Questions for the use of ICTs:

2. WHAT?

Introduced into what system?

Planning

5 Key Questions for the use of ICTs:

3. BETTER LEARNING OUTCOMES?

Existing curriculum or
new curriculum?

(reform a major task!)

5 Key Questions for the use of ICTs:

4. MORE COST-EFFECTIVE?

Planning

Substitute capital for labour

5 Key Questions for the use of ICTs:

5. EXIT STRATEGY?

Avoid lock-in by hardware or software

SYSTEMATIC APPROACH

Take a systematic approach
that addresses these issues

THREE VITAL PRELIMINARY STEPS

- Objectives: to achieve what?



Bangkok

SYSTEMATIC APPROACH

4 elements need attention:

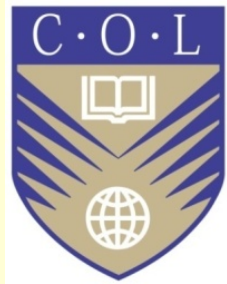
- Training teachers
- Curriculum materials
- Organisation
- Computer network

PRELIMINARY STEPS

- Objectives: to achieve what?
- **Trained teachers**



ICT Competency Framework
for Teachers



Commonwealth Certificate
for Teacher ICT Integration

PRELIMINARY STEPS

- Objectives: to achieve what?
- Trained teachers
- ICT-rich Learning Material
Open Educational Resources

Collaborative Development of OER

COL & Hewlett Foundation



20 sets of self-instructional materials
in the secondary curriculum
(each is a complete syllabus for one grade 10 or 12 subject)

ORGANISATION

“Technology involves
organised ways of doing
things”

Develop and expand
OPEN SCHOOLS
and
INTEGRATE THEM
with the system



विद्यया धनं सर्वधनं प्रधानम्

राष्ट्रीय मुक्त विद्यालयी शिक्षा संस्थान

National Institute of **Open Schooling**

(The Largest Open Schooling System in the World)

COMPUTER NETWORK

“Independent professional advice”



The Potential of ICT

- ACCESS (wider)
- QUALITY (higher)
- COST (lower)

ALL AT THE SAME TIME!

PLAN

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5 Key Questions for the use of ICTs:

SYSTEMATIC APPROACH

4 elements need attention:

- **Training teachers**
- Curriculum materials
- Organisation
- Computer network



THANK YOU

For text and slides:
www.sirjohn.ca