Commonwealth Heads of Government Meeting
Vancouver, 1987
To help Commonwealth governments and institutions use technologies to improve and expand access to education and training.
Learning for Sustainable Development
Leveraging New & Existing Technologies
Plan

• Context
• HRD in Asia
• Lifelong Learning
• Role of Open Universities
• Road Ahead
Context
GER Tertiary Education- Global

Tertiary Education - East Asia and Pacific

Tertiary Education - South and West Asia

Figure A6.1. **Relative earnings of adults, by educational attainment (2015)**  
25-64 year-olds with income from employment; upper secondary education = 100

**Note:** Tertiary education includes short-cycle tertiary, bachelor’s, master’s, doctoral or equivalent degrees.  
1. Year of reference differs from 2015. Refer to the source table for details.  
2. Earnings net of income tax.  
3. Index 100 refers to the combined ISCED levels 3 and 4 of the educational attainment levels in the ISCED 2011 classification. Countries are ranked in ascending order of the relative earnings of 25-64 year-olds with tertiary education.  
**Source:** OECD (2017), Table A6.1. See Source section for more information and Annex 3 for notes ([www.oecd.org/education/education-at-a-glance-19991487.htm](http://www.oecd.org/education/education-at-a-glance-19991487.htm)).  
**StatLink** — [http://dx.doi.org/10.1787/888933557375](http://dx.doi.org/10.1787/888933557375)
Countries with High GERs

- South Korea: 93.26
- Chile: 88.34
- United Kingdom: 57.29
Skills Shortage

‘Countries have skills shortages, not degree shortages’

Andreas Schleicher
Skills Gap

Countries where employers have the most difficulty filling roles

Source: https://www.manpowergroup.com/talent-shortage-2016
Employers with difficulty filling jobs

Source: ManpowerGroup Talent Shortage Survey, 2010 and 2016  
https://economicgraph.linkedin.com/research/skills-gap-or-signalling-gap  page 28
Impact of Technology

The effect of today’s technology on tomorrow’s jobs will be immense

- The Economist

47% of today’s jobs could be automated in the next 20 years

- Oxford University Study
Re-educating Rita

• Technological progress, and artificial intelligence in particular, will require big changes in the way education is delivered....

• Automation could have a much bigger impact in developing economies ...because much of what they provide is...embodied labour.
## Skills in Demand

<table>
<thead>
<tr>
<th>Survey</th>
<th>No.</th>
<th>Skill 1</th>
<th>Skill 2</th>
<th>Skill 3</th>
<th>Skill 4</th>
<th>Skill 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PayScale (2016)</td>
<td>63,924</td>
<td>Critical Thinking</td>
<td>Attention to detail</td>
<td>Communication</td>
<td>Leadership</td>
<td>Teamwork</td>
</tr>
<tr>
<td>NACE (2016)</td>
<td>260</td>
<td>Teamwork</td>
<td>Leadership/Problem-Solving</td>
<td>Communication</td>
<td>Organisation</td>
<td>Information Processing</td>
</tr>
<tr>
<td>EvolveScientific (2016)</td>
<td>142</td>
<td>Critical Thinking</td>
<td>Independence</td>
<td>Adaptability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LinkedIn (2016)</td>
<td>291</td>
<td>Communication</td>
<td>Organisation</td>
<td>Teamwork</td>
<td>Punctuality</td>
<td>Critical Thinking</td>
</tr>
</tbody>
</table>

Link between GDP and work

• Growth will slow down, except for India (7.4%) and China (6.6%), to 1.9% in Asia-Pacific

• Labour market will also slow down

• Employers find it harder to attract and retain workers

• Increased vacancies due to gap between skills required by industry and produced by universities

Source: The Hays Global Skill Index 2018 - Investing in the skills of tomorrow; Avoiding a spiralling skills crisis
Human Capital in Asia

• Asian countries top World Bank “human capital index” – a measure of youth mortality, schooling and health.

• Singapore tops: universal healthcare, education results and life expectancy figures.

• Top five include South Korea, Japan, Hong Kong.

• Increasing health and education investment could double lifetime earnings.

Source: The Guardian - Asian countries dominate World Bank's new index of investment in 'human capital
East Asia

• Singapore, Japan, Korea, Rep. strongholds of human capital success,

• Vietnam, Indonesia have made remarkable progress in educational attainment

• Malaysia has strong scores in Capacity, Development and Know-how.

Future of Jobs

Sixty-five per cent children entering primary school today will ultimately end up working in completely new job types that don’t yet exist.
Preparing people for the future of work

Gap in human capital development, by region, 2017

What kind of HRD for Millennials?

• **Purpose**: meaningful work that they can connect easily

• **Growth**: supporting environment

• **Well-being**: flexibility of when and where to work

• **Trust**: transparent leadership and open communication for employees to feel engaged and valued

Strategic Human Resource Development

• People focused approach for national development
• Human resources viewed as capital needed for economic growth
• Proactive system to prepare people for change
• Preparing people for the future

Source: https://www.researchgate.net/publication/243999843_The_emergence_of_strategic_human_resource_development
From Human Resource to Human Capital

**Production Economy**
- Human resource as tools or facility
- Development of skills through training
- Focus is on optimizing use
- Reactive

**Knowledge Economy**
- Human resource as value creation
- Investing in people to create capital
- Focus is on increasing ‘worth’
- Proactive
“The Future Of Your Career Depends On Lifelong Learning”

“Average human knowledge is doubling every 13 months, and IBM predicts that in the next couple of years, the volume of information will double every 11 hours.”

In USA

... and most workers see continuous training as essential or important to career success

% saying training/skills development throughout their work life will be ...

- **Essential**: 54%
- **Important, but not essential**: 33%
- **Not important**: 12%

Note: Employment data (top panel) are based on civilians ages 16 and older who are currently employed. “Job preparation” is a combination of education, experience and training. Survey findings (lower panel) are based on adults (ages 18+) who are in the labor force.


PEW RESEARCH CENTER

Source: http://www.pewsocialtrends.org/2016/10/06/the-state-of-american-jobs/st_2016-10-06_jobs-01/
Lifelong Learning
Lifelong Learning means

... shifting to learner-centric approaches, the need for self-directed learning and the view that learning can take place in a variety of settings and contexts.
Integration of Three Approaches

Andragogy

Heutagogy

Pedagogy
Three Levels

Level 1: Pedagogy (Engagement)
- Learner maturity and autonomy required (-)

Level 2: Andragogy (Cultivation)
- Instructor control and course structuring required (+)
- Learner maturity and autonomy required (-)

Level 3: Heutagogy (Realization)
- Instructor control and course structuring required (-)
- Learner maturity and autonomy required (+)

Heutagogy in Practice

• Nursing, engineering and education professions found heutagogy a credible response to the critical issues that the learners are faced with

• The University of Western Sydney has implemented the heutagogical approach for teacher education

• Heutagogical approach in three HEIs in the UK have led to reflective learning with learners demonstrating capacity and capability.
Implementing Lifelong Learning

- Leaner defined outcomes
- Flexible curriculum to match individual learner needs
- Learner directed discussions and questions
- Flexible assessment, including assessment of prior learning
- Collaborative learning
Lifelong Learning in Practice: Singapore

- Lifelong learning policy (2015)
- SkillsFuture
- All Singaporeans aged 25 and above will receive an opening credit of S$500 from January 2016
Lifelong Learning in OUs

"To widen access to quality education and provide lifelong learning opportunities by leveraging on technology... providing a conducive...learning environment at...affordable cost"

Source: http://www.oum.edu.my/?q=node/1
Lifelong Learning in OUs

Sukhothai Thammathirat Open University aims to be a world-class open university utilizing a distance education system to provide lifelong learning for all.

Source: http://www.stou.ac.th/Eng/Vision.aspx
Lifelong Learning in OUs

"To enhance access to high quality, affordable and relevant education ...and ensure lifelong learning opportunities to face challenges in a knowledge society."

Lifelong Learning is essential for human resource development and preparing for the future
Role of Open Universities
Fourth Industrial Revolution

<table>
<thead>
<tr>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanization, water power, steam power</td>
<td>Mass production, assembly line, electricity</td>
<td>Computer and automation</td>
<td>Cyber Physical Systems</td>
</tr>
</tbody>
</table>

CC BY-SA Source: [https://commons.wikimedia.org/wiki/File:Industry_4.0.png](https://commons.wikimedia.org/wiki/File:Industry_4.0.png) (User:ChristophRoser)
ODL in the Four Stages

• From elite to mass
• Correspondence model
• Multi-media model
• Intelligent flexible learning model

Gen 1  Gen 2  Gen 3  Gen 4
Strengths of Open Universities

• Focus on **social justice** agenda
• Expertise in **technology** use in education
• Expertise in **adult learning** and material production
• **Innovation** as open to new ideas
• Caters to all level of education, including **non-formal** education
What Courses do we Offer?

Source: Open Universities in the Commonwealth: At a Glance.
Impact of ODL on Development

• mission statements of 12 major open universities focus on: access, equity, equality, democratization, social justice, transforming society, with an emphasis on development;

• “nowhere is there proposed a theoretical and substantive understanding of what [human] development is, or how it works, nor ...what should be done in terms of curriculum and pedagogy to support such aims” (Tait, 2014, p.8).

<table>
<thead>
<tr>
<th>Innovations for Lifelong Learning?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emerging</strong></td>
</tr>
<tr>
<td>MOOC/Blended learning</td>
</tr>
<tr>
<td>Blockchain</td>
</tr>
<tr>
<td>Micro-credentials/Badges</td>
</tr>
<tr>
<td>Open Education/OER</td>
</tr>
</tbody>
</table>
Asian MOOC initiatives

• Major MOOC initiatives in China, India, Japan, Korea, Malaysia

• Thousands of courses available in Asian languages: Chinese, Japanese, Korean, Thai

• AAOU MOOC initiative for members
# MOOCs & Employability

## The Career Benefits of MOOCs

As reported by those who stated career benefits as their primary reason for completing a MOOC.

<table>
<thead>
<tr>
<th>CAREER BENEFITS</th>
<th>TANGIBLE</th>
<th>INTANGIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any</td>
<td>33%</td>
<td>85%</td>
</tr>
<tr>
<td>Found a new job</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Started my own business</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Received a pay increase</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Received a promotion</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Enhanced skills for current job</td>
<td>62%</td>
<td></td>
</tr>
<tr>
<td>Improved candidacy for a new job</td>
<td>43%</td>
<td></td>
</tr>
<tr>
<td>Changed to a new career</td>
<td>19%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>9%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: Coursera Survey Data*

Blockchain

Credit: Knowledge Media Institute, The Open University
Some Examples

- Life Skills for MOOC used blockchain for certification
- Blockcerts from MIT Lab
- Pagemajik and Authorship using blockchain that could help track reuse of OER
- A Blockchain University coming up.
Implications of Blockchain

Present
- Paper certificates
- Verification challenge
- Manual authentication of work (such as portfolios)

Future
- Digital permanent certificates
- Complete online verification
- E-Authentication of work (ePortfolios)
Micro-credentials

Industry-Academic Partnership
- Short duration
- Modular approach
- Skills based

Online Learning
- Community learning
- Self-paced
- Mentoring support

Proctored Test
- Verifiable credential
- Project-based

Credits for formal learning and/or Employment
- Job-ready
- Reduced cost
- Blended with F2F for formal degree
Unbundling higher education

- Unbundling essential for lifelong learning
- Competency-based just-in-time flexible learning
- Cost-effective
- Micro-credentials make it possible
Implications of Micro-credentials

**Present**
- Semester courses
- Less flexibility
- Limited mobility

**Future**
- Shorter courses
- Unbundling/accumulation of credits
- Transferability of credentials
Open Educational Resources (OER)

Materials that are:

• Free and freely available
• Suitable for all levels
• Reusable
• Digital
Implications of OER

**Present**
- High costs of textbooks
- Institutional Teams
- Student as consumer

**Future**
- Free quality content
- Global Teams of course developers
- Student as producer
Implications for Open Universities

• Rise of the Multi-Varsity network
  ...learners can move from education to society and back

• Micro-qualifications: rapid acquisition of highly specific knowledge and skills rather than a degree

• The Faculty to become Lifelong Learners -- focus on new modes of delivery and pedagogy

Multi-versity: term introduced by Clark Kerr (1963) http://openvault.wgbh.org/catalog/A_0DF915F352B044EFB1A31CCC71E8F9BF
Road Ahead
GOAL 4

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

SUSTAINABLE DEVELOPMENT GOALS

More at sustainabledevelopment.un.org/sdgsproposal
Digital Native: C21

• ‘Digital Native’: technology-savvy learners, usually young school-leavers
The Learner in 2035

- Division of Learning: “Maker, Doer, Thinker”
- Artificial Intelligence: Holographic Advisor Bot
- Advanced Communication: Language translation implants
- Micro-courses
- Learning at home: Immers-A-Casts
- Broadened classrooms & Blended courses: linking of multiple f-f classes via technology (mega-pixel walls)

Reference: BIG SHIFTS ARE COMING! LOOKING BACK FROM 2035.
www.contactnorth.ca
Skills for the Future

- Interdisciplinary skills
- Creative & Analytical skills
- Entrepreneurial skills
- Leadership skills
- Digital & technical skills
- Global awareness and civic education

Source: *Worldwide Education for the Future Index*: The Economist Intelligence Unit, 2018
I. Embrace Lifelong learning

• Simply reforming current education systems ...to meet future skills requirements is not going to be enough....

• Ageing countries ...will need wholesale reskilling of existing workforces throughout their life
II. Integrate Employability

• Balance between theory and practice; hard and soft skills
• Engage industry: internships; apprenticeships
• Link QA to employability
• Career support
• Measure competence rather than number of hours
Employability pathway

- Sensitisation
  - Before Admission
- Career Counselling
  - After Induction
- Evaluation Drills
  - Penultimate Year
- Career Support
  - Upon Graduation
Vietnam Model

• Partnerships: 21 colleges partnered with UK colleges to provide international education.

• Focus on quality: development of quality assurance system for vocational training

• Emphasis on global skills and employability: providing people with opportunities for livelihoods

III. Focus on Innovation

- Mainstream F2F Higher Education
- Top-tier F2F Higher Education institutions
- Open Universities and Dual-mode institutions
- Time
- Low-end
- High-end

- MOOCs
- Online and blended courses
- ODL as innovation
- Face-to-face teaching: sustaining trajectory
Three Key Literacies for OU’s

Human  Data  Technological

Literacies

Thank you

www.col.org
BT Murrayfield, Edinburgh, Scotland
9 - 12 September 2019
www.pcf9.org