21st Century Skills for Sustainable Development

Dr Tony Mays: ES Open Schooling

DEASA 2020, December 4th 2020
Overview

- 21st C context
- 21st C skills
- 21st C teaching
- 21st C technology
21\textsuperscript{st} C context

21\textsuperscript{st} Century Skills for Sustainable Development
GOAL 4

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

SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal
• **Access** Globally, 88% of children complete primary school, 72% complete lower secondary school and 53% of youth complete upper secondary school.

• **Learning** In one out of four countries in sub-Saharan Africa, more than half of students at the end of primary school achieve below the minimum proficiency level in reading.

• **Quality** : Globally, most teachers are trained but in sub-Saharan Africa, the percentage of trained teachers fell gradually from 84% in 2000 to 69% in 2018.

Fourth Industrial Revolution

1st: Mechanization, water power, steam power
2nd: Mass production, assembly line, electricity
3rd: Computer and automation
4th: Cyber Physical Systems

CC BY-SA Source: https://commons.wikimedia.org/wiki/File:Industry_4.0.png (User: ChristophRoser)
Africa’s Population

1.2 billion

By 2050 Africa will have 2.4 billion people. (AfDB, 2019)
21\textsuperscript{st} C Skills

21\textsuperscript{st} Century Skills for Sustainable Development

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UNESCO, 1996 ("the Delors Report")

- Learning to know
- Learning to do
- Learning to be
- Learning to live together
Essential Skills of 21st Century Learning

Connect
Collaborate
Citizenship
Communicate
Create
Critical Thinking
Laar, et al., 2020

- Information digital skills
- Communication digital skills
- Collaboration digital skills
- Critical thinking digital skills
- Creative digital skills
- Problem-solving digital skills
Changing how and what we teach
Learn anything, anytime, anywhere
21st C teaching

21st Century Skills for Sustainable Development
What can be done?

- Institutional culture
- Quality
- Pedagogy
- Assessment
- Learner support
- Business models

Institutional culture?

- Leadership: collaborative and participatory
- Decentralisation: nurturing champions
- Data & evidence-based decision-making
- Supporting inter-disciplinary innovation
- Ongoing professional development
Quality?

- Culture of continuous improvement
- Responsiveness to expectations of students, employers & society
- Emphasising outcomes and graduate competences
- Providing value for money
- Ensuring student engagement and satisfaction

http://oasis.col.org/handle/11599/2046
Pedagogy?

• Emphasis on what is learned rather than what is taught
• Revisit notions of pedagogy, andragogy, heutagogy (and ubuntugogy?)
• Adopting more blended approaches

https://www.nap.edu/catalog/24783/how-people-learn-ii-learners-contexts-and-cultures
Assessment?

- Authentic and multi-dimensional
- Recognition of prior learning
- Assessment as formative
- Continuous feedback and recognition
- Transnational qualifications frameworks for mobility

https://unesdoc.unesco.org/ark:/48223/pf0000264428
Learner support?

• Online support hubs 24/7
• Ethical use of learning analytics
• Support for entire learning journey
• Keep the human touch

https://teachonline.ca/sites/default/files/tools-trends/insights/pdf/student_support_services_for_online_learning_re-imagined_and_re-invigorated.pdf
Business models?

Key questions
Does the business model support student learning?
How to change access into success for all?

Sub-questions
• Value proposition?
• Channels of provision and communication?
• Resources needed?
• Cost structure?
• Revenue streams?

https://static1.squarespace.com/static/5b99664675f9eea7a3ecee82/t/5bb8e52e24a69421855f8d039/1538843963467/Models-report-April-2018_final.pdf
Audio-based MobiMOOCs

Source: Kanwar, 2020: http://oasis.col.org/handle/11599/3656
How many children and young people have internet access at home?

The Cheapest Countries for 1 GB of Data

Even among the cheapest countries for mobile data, the cost variation is significant. Here's a look at the top five cheapest countries for 1 GB of data:

<table>
<thead>
<tr>
<th>Overall Rank</th>
<th>Country</th>
<th>Average price of 1GB (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>India</td>
<td>9¢</td>
</tr>
<tr>
<td>2</td>
<td>Israel</td>
<td>11¢</td>
</tr>
<tr>
<td>3</td>
<td>Kyrgyzstan</td>
<td>21¢</td>
</tr>
<tr>
<td>4</td>
<td>Italy</td>
<td>43¢</td>
</tr>
<tr>
<td>5</td>
<td>Ukraine</td>
<td>46¢</td>
</tr>
</tbody>
</table>

The Most Expensive Countries for 1 GB of Data

On the other end of the spectrum, here are the top five most expensive countries for one gigabyte of mobile data:

<table>
<thead>
<tr>
<th>Overall Rank</th>
<th>Country</th>
<th>Average price of 1GB (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>155</td>
<td>Malawi</td>
<td>$27.41</td>
</tr>
<tr>
<td>154</td>
<td>Benin</td>
<td>$27.22</td>
</tr>
<tr>
<td>153</td>
<td>Chad</td>
<td>$23.33</td>
</tr>
<tr>
<td>152</td>
<td>Yemen</td>
<td>$15.98</td>
</tr>
<tr>
<td>151</td>
<td>Botswana</td>
<td>$13.87</td>
</tr>
</tbody>
</table>

https://www.visualcapitalist.com/cost-of-mobile-data-worldwide/?fbclid=IwAR2u8mFnduB21NsDJDWkO6oXFepSiWlpOlkaaX2mrY-4Xgb4MbD7nDe7w
Thinking systemically...
Education system

Higher education sub-system, including open higher education

TVET sub-system, including open TVET

Schooling sub-system

Open schooling

Hybrid/blended schooling

Face-to-face schooling
Some useful additional links ... 

- Education for the most marginalised
- Faculty Quick Start Guide for OER & OL
- From response to resilience
- Towards more resilient schooling
- Open schooling
- Guidelines for OER policies
- Teaching in a Digital Age
- Technology Enabled Learning
- Quality Assurance of Open Schooling
- Journal of Learning for Development
Thank You