Learning in the Digital Revolution

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Digital Revolution

Has unleashed pedagogical and commercial competition to make learning more:

- Accessible
- Affordable
- Imaginative
- Socially engaging
- Student centered
- Flexible
- And OPEN
The Accessibility Challenge

Number of students pursuing post-secondary education around the world has skyrocketed:

- 28.6 million in 1970 to 152.5 million in 2007 (five-fold)
- In East Asia and the Pacific growth has been twelve-fold, from 3.9 million from 1970 to 46.7 million in 2007
The Accessibility Challenge

Tertiary enrolment by region, 1970 to 2007

Note: Data before 1998 are classified according to ISCED76. Some programmes classified as post-secondary non-tertiary education with ISCED97 were included in tertiary education using ISCED76. To provide consistent time series, tertiary enrolment data after 1998 include post-secondary non-tertiary education. This accounts for more than 100,000 students in Australia, Canada, Kazakhstan, Morocco and the United States. Therefore, enrolment presented here exceeds regional figures based on ISCED97 by approximately 3 percentage point.

Source: UNESCO Institute for Statistics, Time Series Data, Table 1.
The Accessibility Challenge

- How can we meet this challenge?
- Can we massify quality learning at a reasonable cost?
- ICT-enhanced education (open and distance learning, virtual universities, e-learning open educational resources) very likely to become a significant driver of post-secondary education into the future
Global Uptake of ICTs


- Indicates that Asia has the highest percentage of users as a percentage of the world total of internet users.

- Trends will continue in the next decades creating significant opportunity for both learners and providers.
## Global Uptake of ICTs

### World Internet Users and Population Stats

<table>
<thead>
<tr>
<th>World Regions</th>
<th>Internet Users Dec. 31, 2000</th>
<th>Internet Users Latest Data</th>
<th>Penetration (% Population)</th>
<th>Growth % 2000-2009</th>
<th>Users % of Table</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>4,514,400</td>
<td>67,371,700</td>
<td>6.8 %</td>
<td>1,392.4 %</td>
<td>3.9 %</td>
</tr>
<tr>
<td>Asia</td>
<td>114,304,000</td>
<td>738,257,230</td>
<td>19.4 %</td>
<td>545.9 %</td>
<td>42.6 %</td>
</tr>
<tr>
<td>Europe</td>
<td>105,096,093</td>
<td>418,029,796</td>
<td>52.0 %</td>
<td>297.8 %</td>
<td>24.1 %</td>
</tr>
<tr>
<td>Middle East</td>
<td>3,284,800</td>
<td>57,425,046</td>
<td>28.3 %</td>
<td>1,648.2 %</td>
<td>3.3 %</td>
</tr>
<tr>
<td>North America</td>
<td>108,096,800</td>
<td>252,908,000</td>
<td>74.2 %</td>
<td>134.0 %</td>
<td>14.6 %</td>
</tr>
<tr>
<td>Latin America/Caribbean</td>
<td>18,068,919</td>
<td>179,031,479</td>
<td>30.5 %</td>
<td>890.8 %</td>
<td>10.3 %</td>
</tr>
<tr>
<td>Oceania / Australia</td>
<td>7,620,480</td>
<td>20,970,490</td>
<td>60.4 %</td>
<td>175.2 %</td>
<td>1.2 %</td>
</tr>
<tr>
<td><strong>WORLD TOTAL</strong></td>
<td><strong>360,985,492</strong></td>
<td><strong>1,733,993,741</strong></td>
<td><strong>25.6 %</strong></td>
<td><strong>380.3 %</strong></td>
<td><strong>100.0 %</strong></td>
</tr>
</tbody>
</table>


(Internet usage information used in this site comes from data published by Nielsen Online, by the International Telecommunications Union)
Global Uptake of ICTs

Internet penetration:

- Developed countries = 64% (end of 2009)
- Developing countries = 18%
- Will continue to increase
Global Uptake of ICTs

Internet penetration:

- Cost of ICT services is falling
- Economies with the lowest price of ICT services relative to income include Singapore, Hong Kong (China), Luxembourg, Denmark, and the UK
Mobile Broadband Sector

- Emerging markets worldwide, such as China and India, account for the fastest growth in the overall mobile subscriber base.
- Worldwide subscriber base is expected to continue to come from the Asia Pacific region, Africa, the Middle East and...
Mobile devices including cell phones, smart phones, and PDAs are used to access educational and other content at a time and place of the user’s choosing.

Most major educational publishers have launched mobile content.
Mobile Learning

Mobile Learning: Transforming the Delivery of Education and Training

edited by Mohamed Ally

It is an ebook that can be downloaded free of charge at www.aupress.ca
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Increased Access to Scholarly Publications
Increasing Access to the Learning Environment

- Currently no more 20% of learning is nontraditional and only a fraction of that 20% ICT based
- How can we massify quality learning at low cost through ICT emerging technologies and practices?
Increasing Access to the Learning Environment

Use of ICT’s to replicate existing pedagogical forms common in paper based, broadcast based, or residencially based instruction is not the answer to democratizing education in the New World Order.

“The abundance of resources and relationships made easily accessible via the Internet is increasingly challenging us to revisit our roles as educators in sense-making, coaching, and credentialing.”* 

E-based Learning Environment

Learners will continue to demand a more aggressive e-based pedagogy that will include mobile learning devices, new pedagogies shaped by the learning and the learner, and new software.
MuchLearning

Muchlearning is a Highly Effective educational platform for learning, instructing, and authoring.

For Students
For Instructors

It's Effective! It's Efficient! It's Online!
Engage students to solve problems. Practice, practice, practice.

E.g. This calculus textbook has many problems for each section with full step-by-step solutions.
MuchLearning Design Principles

- Web 2.0 Browser based technology
- Interactive and adaptable/flexible
- Easy to use
- Allow Active Learning
  - Feedback and testing
  - Social interaction and peer support
  - Choice in approach/content
  - Engaging and visually appealing
- Remove barriers to deliver effective courses globally for the digital student
Case Study: 20% Improvement

56% class average to just over 75% with online interventions
Mass Individualization of Learning

- Continuous online assessment and feedback
- Course management systems
- Online tutorials
- Automated assessments
- Increased interaction among students
- Can increase student success, drive down costs, and contribute to mass individualization of learning
Yet Barriers and Challenges Still Exist

- Antipathy and fear toward e/distance learning
- Some nations restrict e-learning opportunities
- The quality question hangs over e learning like a dark cloud
We Must Accept the Challenge

- Identify e-Learning Quality Guidelines
- Embrace ICT based learning
- Remove the barriers!