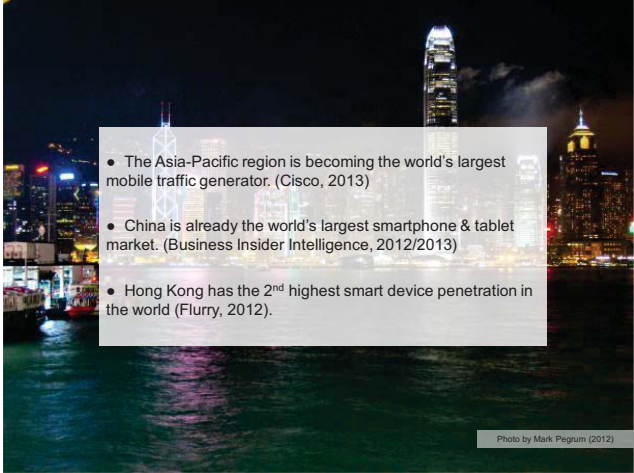




Please note that due to copyright restrictions on the electronic distribution of images, the majority of pictures have been removed from this document.



- The Asia-Pacific region is becoming the world's largest mobile traffic generator. (Cisco, 2013)
- China is already the world's largest smartphone & tablet market. (Business Insider Intelligence, 2012/2013)
- Hong Kong has the 2<sup>nd</sup> highest smart device penetration in the world (Flurry, 2012).

Photo by Mark Pegrum (2012)



- Sub-Saharan Africa (2000-2012): 44% mobile phone growth vs 34% for developing countries & 10% for developed countries

- Latin America (2011): 17:100 computers: people but ~ 100:100 phones: people

• Asia (2010):

Hong Kong	<del>100:100</del> <b>210:100 in 2011</b>
Singapore	144:100
Indonesia	92:100
Philippines	86:100
China	64:100
India	61:100
Pakistan	59:100
Bangladesh	46:100
Afghanistan	41:100
Nepal	31:100
Myanmar	1:100

Source: Deloitte (2012) / UNESCO (2012)



- An average European spends a little over 1% of their monthly income on mobile communication.

- An average African spends 17%.

Source: UNESCO (2012)

Device	Capabilities	Device	Capabilities
Basic mobile phone	<p>Network services, including:</p> <ul style="list-style-type: none"> <li>Voice telephony and voice mail</li> <li>SMS (short message service)</li> </ul> <p>USSD (unstructured supplementary service data)</p> <p>SMS-based services, such as mobile money</p> <p>USSD services, such as instant messaging</p>	Smartphone	<p>As Featurephone plus:</p> <ul style="list-style-type: none"> <li>Video camera</li> <li>Web browser</li> <li>GPS (global positioning system)</li> <li>3G+ internet access</li> <li>Mobile operating "platform" (such as iOS, Android, Blackberry)</li> <li>Ability to download and manage applications</li> </ul> <p>VoIP (Voice over Internet Protocol)</p> <p>Mobile TV (if available)</p> <p>Removable memory card</p>
Featurephone	<p>As basic mobile phone plus:</p> <ul style="list-style-type: none"> <li>Multimedia Messaging Service (MMS)</li> <li>Still picture camera</li> <li>MP3 music player</li> <li>2.5G data access</li> </ul>	Tablet	<p>As smartphone plus:</p> <ul style="list-style-type: none"> <li>Front and rear-facing video cameras (for video calls)</li> <li>Larger screen and memory capability</li> <li>Faster processor, enabling video playback</li> <li>Touchscreen with virtual keyboard</li> <li>USB (universal serial bus) port</li> </ul>

**Note:** The list of capabilities is not exhaustive, and not all devices have all features.

Source: World Bank (2012) under CC BY 3.0 licence / <http://pop.d/WDZDN> (06 May 2013)



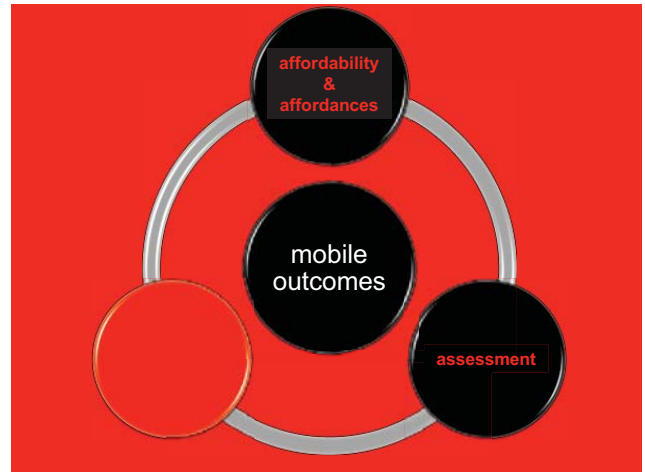
- 3 sets of affordances
- global and local (*contextualised, situated, embodied*)
  - user-generated contexts
- extended and episodic (*chunked, granular, bite-sized*)
  - constant flickering of learning
- social and personal (*individualised, customised*)
  - personal learning networks (PLNs)
  - personal learning environments (PLEs)



### 3 types of m-learning

- ✓ devices ✗ learners ✗ learning experience
  - connected classrooms
  - devices as classrooms (distance learning / mMOOCs)
- ✓ devices ✓ learners ✗ learning experience
  - moving around the classroom
  - learning on the go
  - independent learning
- ✓ devices ✓ learners ✓ learning experience
  - making & sharing multimedia records
  - just-in-time learning (push or pull mode)
  - augmented reality learning

- high affordances  
- low affordability



- do digital technologies improve learning outcomes?
- the evidence is limited
  - Thomas Russell's *No Significant Difference*
    - slight difference with digital tech
  - US Dept of Education (2009/2010) *Evaluation of Evidence-Based Practices in Online Learning*
    - small improvement with online learning
    - most improvement in blended learning tech
- the evidence isn't just about digital tech
  - enthusiastic teachers use tech affordances
  - courses reshaped in line with tech affordances
- the evidence depends on what we assess
  - traditional (hard) outcomes
  - new (soft) outcomes like 21<sup>st</sup> century skills, digital literacies



- formative assessment
- set up PLNs/PLEs
- manual review by teachers & students of learning data
  - plans, drafts, conversations, corrections
- automated review of learning data for teachers & students
  - big data
  - learning analytics
  - open learner models/personal dashboards

- the area to watch ...



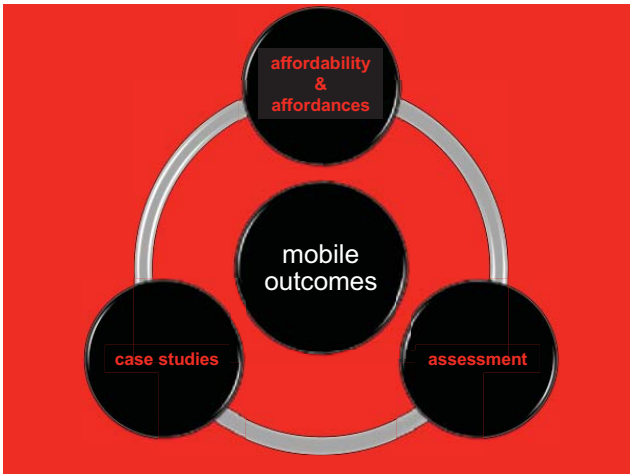
Learning analytics is envisioned as an effective, efficient way to assess student responses, provide immediate feedback, and make adjustments in content delivery and format. Those invested in the field of learning analytics see its potential to **foster personalized learning environments that adapt to the learning behaviors of students.**

Johnson, Adams & Cummins, *Horizon Report*, 2013



- **summative assessment**
- **turn PLEs into e-portfolios**
- **set up clear expectations**
  - number & type of assessed pieces
  - assessment criteria for those pieces
  - combination of teacher, peer, self-assessment
  - assessment of metanarrative of learning
- **include traditional assessments**
  - assessments of linguistic competence
  - learning analytics

*- the area to watch ...*



**Project: MOBILE BASED POST LITERACY PROGRAMME**

- **Location:** Punjab & Khyber Pakhtunkhwa Provinces, Pakistan
- **Participants:** 3250 women approx. 15-30 by end 2012; upscaling in 2013
- **Dates:** 2008 onwards
- **Partners:** UNESCO, Punjab Dept of Literacy, Bunyad, Nokia, Mobilink
- **Language:** Urdu
- **Focus:** follow-up practice, info access, basic digital literacy
- **Format:** SMS messages, books, app
- **Hardware:** Nokia feature phones, books



**CHALLENGES**

- **literacy issues**
  - adult literacy rate of 67%, for women 42%
- **cultural issues**
  - opposition to female education
  - NGO Bunyad worked to convince communities
  - content was carefully selected
- **technological issues**
  - typing Urdu (in Arabic script)
  - 70-character limit




**SUCSESSES**

- **Hard outcomes**
  - improvements between pre-/post-evaluations
- **Soft outcomes (individuals)**
  - learning about health, child care, agriculture, religion
  - learning about women's rights, voting, peace
  - digital literacy: some move to computers (in 8 mths)
  - personal security & greater freedom
- **Soft outcomes (communities)**
  - sharing of lessons in families
  - bringing family members to literacy centres




**Project: LEARN ENGLISH FROM THE BRITISH COUNCIL VIA NOKIA LIFE**

- **Location:** China
- **Participants:** 2.5 million by May 2013
- **Dates:** 2010 onwards
- **Partners:** British Council, Nokia, China Mobile, China Unicom
- **Languages:** English
- **Focus:** 3 vocab levels (CEF A1, A2 & B1)
- **Format:** richly formatted messages with phrase of day, quiz questions & answers
- **Hardware:** Nokia feature phones




**CHALLENGES**

- **technological issues**
  - 49-character limit
  - lack of multimedia content & interactivity
- **logistical issues**
  - need to work with local operators
  - local technological, infrastructural & legal limitations
  - cost & sustainability
- **evaluation issues**
  - data sometimes held by telecoms
  - difficult to reach users in remote regions
  - difficult to isolate users in informal learning




**SUCCESES**

- **Hard outcomes**
  - 2.5 million users have accessed learning opportunities
  - 89% surveyed by Nokia say they are engaged
- **Soft outcomes (anecdotal)**
  - general perception of usefulness of content
  - general perception of relevance for education: parents & teachers subscribe



**Project: HERITAGE TRAILS**

- **Location:** Singapore
- **Participants:** 80,000 by March 2013; upscaling to 300,000
- **Dates:** 2008 onwards
- **Partners:** LDR Consortium, IDA, MOE, A\*STAR
- **Languages:** English & Mandarin; Tamil will be added
- **Focus:** inquiry-based learning integrated with language/ literacy, 21<sup>st</sup> century skills & digital literacies
- **Format:** 35 interactive AR Heritage Trails for iOS or Android
- **Hardware:** Samsung Note tablets; other Android or iOS devices



**CHALLENGES**

- **technological issues**
  - need ecology of institutions to keep up with technology
  - congested 3G bandwidth in CBD
- **cultural issues**
  - need for change of mindset on mobiles for learning



**SUCCESES**

- **Hard outcomes**
  - survey: 75% improved understanding in real world
  - survey: 77% active participation
- **Soft outcomes (individuals)**
  - learning actively about heritage in context
  - using multiple languages in context, codeswitching
  - developing digital literacy through creating multimedia
- **Soft outcomes (communities)**
  - peer collaboration on data collection & submission
  - teacher-student collaboration on user-generated trails

