



United Nations  
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Education Policy Note — Mobile Learning Week 2016

# Mobile Learning: Innovating to Provide Quality Learning Opportunities for All

## The rise of mobile technology is an opportunity for mobile learning

Mobile technology is reshaping sectors as diverse as business, politics and medicine. It also holds enormous potential for education. This potential is dependent on connectivity that provides a seamless and, ideally, fast connection to the internet; on hardware that can render educational content usable and dynamic; and on the affordability of connectivity and hardware for people from different socioeconomic backgrounds. These conditions have been met in some countries and are close to being met in other countries, although the high price of connectivity in relation to level of income poses a serious barrier in many regions and communities.

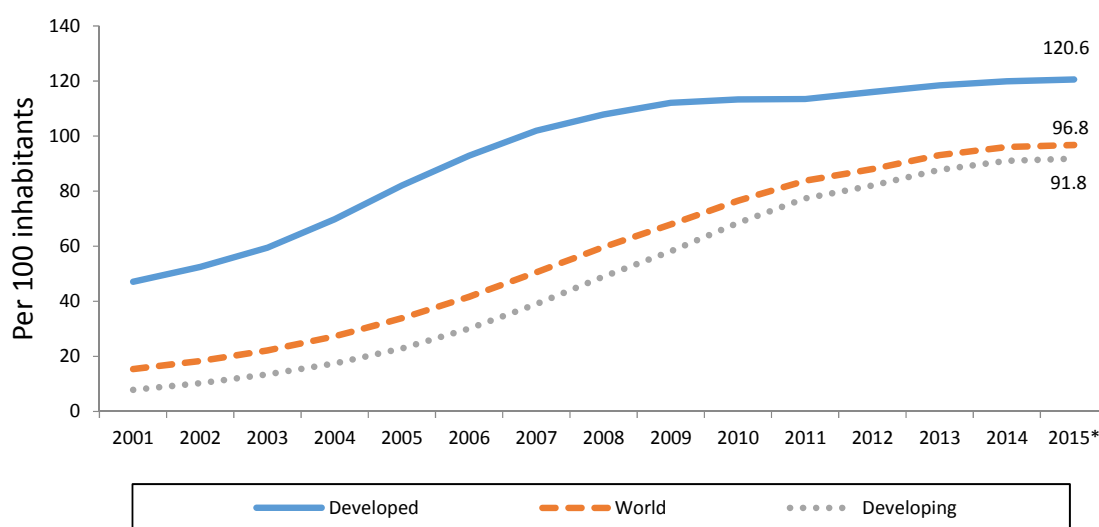
Smartphones — which have far more potential for education than less advanced mobile phones — have gone from 10 per cent market penetration to over 40 per cent market penetration in less than 10 years, growth that is faster than any other consumer technology in history. At the same time, the price of mobile connectivity has also dropped but in many countries still remains prohibitively expensive.

The figure below, drawing on ITU data, shows the steady increase in mobile subscriptions since 2001. It demonstrates that the pace of growth has been impressive in developing countries, with an estimated 91.8 of active mobile subscriptions per 100 inhabitants in 2015. Yet, the distribution of access still remains unequal, particularly from a gender perspective. In developing countries, average monthly fixed broadband prices (in PPP\$(Purchasing Power Parity in dollars)) are 3 times higher than in developed countries; mobile broadband prices are twice as expensive as in developed countries which explains why inequalities still exist.<sup>1</sup> In 2014, the top Mobile Learning countries in terms of expenditures were the US, China, India, Japan, and South Korea. It is forecast that by 2019, the top spending country will be China, followed by the US, India, Indonesia, and Brazil.

Asia is the only region in the world where telecommunication companies sell inexpensive 'education editions' of smartphones preloaded with learning content, effectively making them personal learning devices. NTT DoCoMo in Japan is the latest telecom company to do this launching

<sup>1</sup> *The World in 2015, ITU.*

## Active mobile subscriptions per 100 inhabitants, 2001-2015



Source: ITU 2015 Indicators

their Smartphone for Juniors device in January 2013. The phone comes preloaded with an English-Japanese dictionary, eBook reader, and “an education navigator app” called docomozemi.<sup>2</sup>

## Mobile learning as a game changer

The penetration of mobile connectivity has provided a window of opportunity for the exploration of mobile learning as a viable channel to improve access, quality and equity in education. Mobile learning refers to the personal use of mobile devices to access digital content and applications with learning purposes, either during formal instructional time (school lessons, for instance) or in informal and often open settings (as when doing homework or participating in e-learning courses). Mobile learning allows people not only to learn “anytime, anywhere” but also to personalize the learning experience.

Over the past decade, mobile learning, which emerged as a number of scattered and often

isolated innovations and experiments, has increasingly become part of mainstream technology-supported innovation policies in education and is recognized as a possible game changer for the transformation of education by many practitioners provided that an enabling environment exists.

## The contribution of mobile learning to ensure Quality Learning Opportunities for All

Sustainable Development Goal 4 sets an ambitious global education goal for 2030: to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The internationally agreed Education 2030 Framework for Action specifically calls on countries to ‘harness’ information and communication technology (ICT) to ‘promote quality and effective learning’<sup>3</sup>.

<sup>2</sup> The 2014-2019 World Wide Mobile Learning Market, 2015

<sup>3</sup> UNESCO 2015. *Education 2030: Incheon Deceleration and Framework for Action*. Paris, France.

Drawing on the evidence of past experiences, it is apparent that mobile learning policies and practices already contribute to this goal. For example, the Library For All (LFA) seeks to provide students with high quality, relevant educational resources via its cloud-based digital library that is accessible via computers, tablets, and mobile phones. Currently, LFA has piloted this platform in Haiti with the objective of providing students with access to classic and culturally relevant literature in English, French, Creole, and Spanish in order to improve literacy and allow equal access for all. These projects are examples of how mobile learning can contribute to improve education equity by introducing new learning pathways that utilize affordable mobile devices to complement existing educational investments such as textbooks.

Mobile technologies can enable young people to learn on their own or collaboratively with on-line access to qualified teachers using digital resources whose benefits can be extended beyond the individual student, providing learning opportunities and other benefits for their family and community. Mobile devices can also be used to provide girls with access to education, ICT training, and work opportunities in areas where there are few learning opportunities for them. This is the case for the AkiraChix training programme in Nairobi<sup>4</sup>. It is a one year free, full-time course targeted at girls living in informal settlements who have completed secondary school and are ready to work. The level of the training requires a baseline academic standard that is used to identify suitable candidates. In addition to this, the programme gives priority to girls who are economically disadvantaged and have strong motivation. The training focuses on technical ICT training alongside skills training including web development and mobile development. The training seeks to produce well-rounded citizens who are ready for the job market whether as entrepreneurs or employees who are ready to engage as giving citizens in their community.

<sup>4</sup> Center for Educations Innovations, 2015

## Drivers and barriers to mobile learning in developing countries

In developing countries many factors are driving the development of mobile learning<sup>5</sup>, ranging from the rise in mobile connectivity to policy initiatives to foster access to the digital economy. Among these is the exceptional growth of mobile phone subscriptions, mainly due to the rapid advancement in mobile technologies and declining costs for mobile devices and data plans. One of the reasons for this growth is the deregulation of the telecommunications sector that has led to massive private investments. A second driver is the increasing use of approaches of the “bring your own device” type, which maximizes the potential of devices with which students may be already equipped. In addition, there seems to be wide political consensus about the role that digital skills play in fostering economic and social development. A study by the U.S. Department of Commerce, for instance, concluded that information technology investments by U.S. firms in recent years had a widespread and lasting impact on the revival of U.S. productivity growth,<sup>6</sup> suggesting that ICTs, when used effectively, can help organizations use resources more efficiently and become more competitive. Lastly, another driving factor is the need to explore educational innovative approaches that may lead to better education outcomes, particularly in contexts where failures in the traditional delivery of education require innovative responses.

The commercial interests of digital companies are also a driving factor. These companies invest large amounts of money in developing tools and devices for educational purposes, and they need governments and schools to buy their products. Private sector interests may align with UNESCO’s and other stakeholder’s goals in fostering education access, quality and equity, but

<sup>5</sup> UNESCO Working Paper Series on Mobile Learning: Turning on Mobile Learning in Africa and the Middle East (2012)

<sup>6</sup> U.S. Department of Commerce, *Digital Economy 2002*.

this is not always the case. Yet, regardless of the rapid growth of mobile connectivity, the mainstreaming of mobile learning in developing countries is still relatively weak. The awareness about the potential of mobile phones to support and deliver quality education for all is not widespread in all countries and there seems to be important barriers relating to education and policy issues, although most important are those related to technical problems.

Technically speaking one of the greatest barriers is limited connectivity and, often, electricity in poorer communities. Connectivity and access to high-end new phones is restricted in many areas by the cost of hardware and data as well as the limited availability of high-speed networks. This is a paradox as these are the communities that could benefit most from mobile connectivity. In 2014, in 111 countries the price of a basic (fixed or mobile) broadband plan corresponded to less than 5% of average GNI per capita, thus meeting the Broadband Commission target. In developing countries, average monthly broadband prices are twice as expensive as in developed countries. From an educational perspective, the vast majority of teachers worldwide have never had the experience of benefiting from mobile learning from their own professional development. This alone may make them reluctant to explore areas in which they do not have either the appropriate training, experience or support. In addition, teacher working conditions in many developing countries would have to be dramatically improved before any debate about the transformation of teaching and learning makes sense –class sizes are a clear example of a powerful barrier to personalized learning, for instance.

From a policy perspective, the lack of human resource capacity within Ministries of Education also stands out as a significant impediment to mobile learning. In addition, both Ministries of Education and also of Technology have often failed to reach an appropriate level of inter-sectoral cooperation where investments on connectivity and equipment made by Ministries of Technology

could only lead to educational benefits if duly aligned with the needs of teachers and pupils in the wider context of education quality improvements plans. If not, technology is underused and the value of huge public investments lost. Recent research conducted by UNESCO in Colombia, Costa Rica, Peru, and Uruguay revealed that national governments are already creating better coordination mechanisms to effectively promote mobile learning.

Lastly, the risks of inappropriate usage of mobile technology, such as cheating, cyber-bullying and sexual content in mobile chat platforms, form a significant barrier to mobile learning. Policy-makers need to consider ways to raise awareness and promote the safe and responsible use of technologies in schools.

The use of new technologies not only promotes learning, but unavoidably transmits social values and norms. It is very important to invest in skills in order to promote equal opportunities in a digital world. Differences in access to digital resources in general, across students of different socio-economic status have narrowed considerably over recent years. However, not all students have the knowledge and skills to be able to benefit from the resources that are available to them.

Another barrier to be analyzed is the fact that mobile learning devices are usually used to teach in a traditional way. The potential of ICTs is not fully being utilized. Having innovative tools and devices does not mean you are automatically innovating learning, or improving education quality. Thus, more research, discussion, and reflection are needed for ICTs to contribute fully to system-wide teaching and learning improvement.

## Policy recommendations and the way forward

What can be done to create enabling environments for mobile learning? What policy instruments and initiatives can make the best use of mobile learning as a lever for quality learning for all?

- 1 **Put education needs first.** Policies intended to promote the use of digital technologies should have education objectives and outcomes as priority number one. Yet, in contrast to past experiences, this emphasis should not be merely equated with providing access to equipment, but rather with serving the needs of end-users in education — teachers and students — in order to provide quality learning opportunities for all. Mobile learning should help end-users to address their teaching and learning needs, rather than pose them additional problems. Mobile technology is a tool in a repertoire of other tools that may or may not be the most adequate solution to address specific educational needs and challenges. For example, some countries are leaning towards ‘technology-driven solutions’ to solve persistent educational challenges that cannot be solved with technology.
- 2 **Rather than prohibiting, set the conditions for the appropriate, safe and effective use of mobile connectivity in the classroom.** Governments should work with schools, teachers and parents to revisit existing in-classroom policies that may be overly restrictive regarding the use of mobile technology at schools and universities.
- 3 **Use mobile learning strategically.** The promotion of mobile learning *per se* will not lead far. Governments need to think strategically about mobile learning, and focus on how it could enhance access to education in remote areas, how it could contribute to the development of digital skills, and under which conditions it could spur innovations that may transform education? Rather than having strategies, mobile learning should be embedded into wider education quality improvement plans.
- 4 **Empower teachers as a precondition for success.** Mobile learning policies have to target first the empowerment of teachers through the effective development of their professional capacities and skills to use mobile technologies for instruction. Training, however, is not enough. Governments should provide teachers with an appropriate working environment that rewards meaningful innovation efforts, provides support and contributes to the development of professional communities of teachers.
- 5 **Leverage existing investments.** Governments should take stock of ongoing initiatives and past experiences in technology in education to avoid any duplication of efforts or repeating of past mistakes. Drawing on what exists, either in classrooms or as students’ personal possessions, will always payoff; investments in mobile learning would work better if they were well-orchestrated with already available resources.
- 6 **Ensure long-term commitments to broadband connectivity, making the Internet universal, affordable, open for educational use, and safe.** Schools and universities should be connected as a first step in the journey to universal connectivity. It is at schools that connectivity is likely to pay the greatest dividends; where a measure of equity can be assured for students who do not have connectivity at home. Major national mobile learning initiatives have sometimes been discontinued due to government changes. Although national strategies for the universal provision of equipment are debatable, when it comes to connectivity, governments should ensure that public educational institutions get access to affordable broadband and that, in the long term, they benefit from the best connectivity opportunities. Many countries have successful experiences in funding mobile learning initiatives through dedicated funds, such as Universal Service Funds, usually nurtured from telecom taxes.
- 7 **Promote inter-sectoral cooperation.** Governments should endorse cooperation between ministries in mobile learning and,

more generally, in all policy work focused on empowering digital development. In particular, in the case of education, inter-sectoral cooperation involving ministries of technology or communications, education, higher education and quite often the regulators and finance ministries, should be based on the principle that ministries of education take the lead. In countries where local authorities have relevant responsibilities in education their participation should also be ensured so as to make vertical coordination equally feasible.

- 8 **Contribute to the development of local industries and services.** Mobile learning has the potential to generate huge market opportunities and qualified jobs. Governments should recognize this and generate the appropriate incentives for local initiatives to flourish. Technology-based solutions to educational needs and challenges are especially effective when addressed at the local level. Governments should help local developers realize their competitive advantage.
- 9 **Provide opportunities for dialogue and partnerships with the private sector.** The private sector, particularly in the domain of mobile technologies and communications, is far more than a service provider. Economic/profit incentives allow private companies to be especially nimble and innovative when it comes to technology solutions to social needs and problems. Governments should work to

align these profit incentives with needs in the educational sector. The best ideas should rise to the top and the originators of these ideas should be rewarded. Governments should recognize their own legitimate interests in the promotion of digital skills and provide them with opportunities to express their voice and embark on public-private partnerships that are both balanced and efficient.

- 10 **Protect the privacy of learners.** As ICTs become more deeply integrated in education, governments will need to take steps to assure student privacy. Learners will leave deeper digital footprints in schools, and much of this information will be sensitive: test scores, progress reports, portfolios of work, and teacher comments. Governments will need to determine who owns student information; whether advertising can be targeted to learners; how and when parents can access their children's digital dossiers; processes by which errors can be corrected; and how, when and for what purposes different stakeholders can collect and use data. Issues related to privacy will become increasingly important as more and more learning unfolds in digital mediums where every record can be stored and keystroke logged. It is vital that governments define guidelines and legislation to ensure student privacy and transparency for all parties.

*This Policy Note was prepared by a joint ITU-UNESCO team.*