

The Future is Here: Changing the Way People Learn

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Abstract

This article briefly documents the rapid acceleration of mobile technologies globally with illustrations of how these technologies can support learning. Considerations for how schools can best begin to adopt these technologies for enhanced teaching and learning are offered.

A teacher's task is inherently future oriented.
Ted Ward¹

Where, when, and how one engages in learning is changing dramatically around the globe. Learning individually is giving way to the stimulation of learning in dialogue with others – located anywhere in the world. The rapid, and unrelenting adoption of new technologies (mobile phones, rural wireless networks, solar powered technologies) is changing how people learn, and more importantly, how they want to learn. A recent study of a small sample of theological schools across the majority world indicates that students, regardless of age, expect a greater inclusion of interactive technologies in their courses. They want a greater connection with their teacher, and with classmates in their courses. Furthermore, graduates from programs that have integrated online technologies want to continue being connected with their peers for encouragement and continual learning. Those from historically oral cultures want to use mobile phones for conversation about their course or to demonstrate their knowledge orally, not just through writing.²

One of the unexpected discoveries of that research study, focused on unconventional theological education in the majority world, was the influence of technology on students of various ages and in diverse locations, both rural and urban. On numerous occasions students identified the need to incorporate a greater level of technology into their educational programs; yet most faculty and administrators seldom expressed a similar concern. However, in each instance, one or two visionary leaders did identify the need to increase the use of contemporary technology in their educational programs. One African leader acknowledged, "Internet technology has spread much faster than we expected. The majority of our students are now online." An Asian principal confessed that, "The students are changing. They know much more today. They are exposed to so much more from the Internet. We really need to use technology more, to bring it in more to our classes and our teaching." Even in his small Asian country and in a school located in the mountainous, jungle covered interior the Internet is accessible and is having a recognizable impact on the students, pressing educators to respond.

¹ Ted Ward, "With An Eye On the Future. In *With An Eye On The Future: Development and Mission in the 21st Century*, ed. Duane Elmer and Louis McKinney (Monrovia, CA: MARC publications, 1996), p. 13.

² *Unconventional Educational Practices in Majority World Theological Education*. A research study conducted in 2011-2013 commissioned by Overseas Council International. Researcher: Dr. Meri MacLeod.

As students become familiar with interactive technologies, their educational expectations begin to change. Whether a young adult or a middle-aged pastor, the adult learners described ways that technology could improve their educational experience. Their examples included being more connected by mobile phone with their professor, incorporating Internet websites and other relevant resources in their study, and as support to students from oral cultures. One such illustration came from an African leader who is also a theological student. He described how rural pastors call him regularly on his “mobile just to talk.” After many years in South Sudan he moved back to the African city where he was raised. Now working to complete his theological education he reflected on how a mobile conversation with his instructors could supplement the written communication he now experiences. He said,

I wonder how it would work if through Skype or through mobile phones this lecturer could actually give the student those comments in person, talk to him. How can one convert that [the written email communication] to a more personal way? [O]ur guys there in the field [South Sudan], in the most remote areas they all can buy one cent of airtime. That’s how the African market works. . . . You don’t go and buy a whole supermarket full of stuff . . . You buy a little tomato. You can buy one cent of airtime. I tell you they want to be connected and the mobile phone makes them connected. They like talking. That’s where the oral part [of their culture] comes in. . . . You will find the guy in the deepest bush, if he has a signal he will have a mobile phone, no doubt. That poses another possibility. They already have these most advanced [mobiles] . . . They actually download their assignments from these things. They’re on the thing all the time. Maybe restructuring coursework, maybe break it more into typical African style, two and three tomatoes, not big assignments like that but small pieces. . . . I think in many rural parts where writing skills are not great, maybe discuss with the guy and hear from him, does he understand the concept? Maybe the difficulty is in writing the thing, but maybe if he speaks to the lecturer and the guy can actually say aha, this guy actually has the concept; he understands.

Global Investment to Accelerate Access

Technology is spreading and getting cheaper. “The small country of Rwanda is crisscrossed with fiber optic cables and getting more wired by the year.”³ According to a 2007 survey of South African university students, cell phone ownership is ubiquitous (98.5% in 2007) and there is no social differentiation among the users. Additionally, mobile Internet connectivity in South Africa “is among the least expensive in the entire world.”⁴ Now, in 2014 it would be expected that the use of mobile phones has significantly expanded. And the University of Cape Town is on the leading edge incorporating cell phones for learning.⁵

Individual countries and other major entities, such as the United Nations, have focused global attention and significant resource investments on the urgent issue of creating accessible technologies that will offer millions access to life changing technologies at dramatically reduced costs. Examples include:

³ <http://www.scientificamerican.com/article/big-data-make-big-inroads-into-schools/> Last Accessed February 18, 2014

⁴ http://www.academia.edu/2073966/Cell_phones_and_Higher_Education_increasing_access_for_all Last Accessed February 18, 2014

⁵ <http://cain.blogspot.com/2010/06/sakai-sms-q-and-course-evaluations.html> Last Accessed February 18, 2014

- India pressed the U.K.-based company Datawind to provide an accessible tablet for education. As a result, a basic Android tablet has been produced for \$40.11 with the Indian government making it available for about half that cost.⁶
- The United Nations Millennium Goals emphasis has worked to energize individual nations and western corporations. The U.N. goal reports no longer keep track of the installation of “landline” telephone poles as it did when the thrust on Millennium Goals first began. Now the progress per country of infrastructure installation for mobile phones is the only statistic recorded.⁷
- The U.N. has pressed corporations to make mobile phones more accessible and affordable.⁸
- The World Bank and African Development Bank report 650 million mobile users in Africa, surpassing the number in the United States or Europe. In some African countries more people have access to a mobile phone than to clean water, a bank account or electricity.⁹
- Research engineers at Google are racing to bring the new floating Internet balloons to market, tested in 2013 in New Zealand, so remote populations around the world will have free access to the Internet.¹⁰
- Other major investments focused on providing access to the Internet are coming from Microsoft and QUALCOMM such as the new solar energy devices to power rural wireless networks.¹¹
- Global manufacturers, such as Apple, Samsung and Nokia race to offer more affordable mobile communication and computing devices (tablets or mobile phones) to compete for a global market share in new markets such as Asia and Africa, while energy companies work to create the first renewable energy sources for mobile phone towers.¹²
- Collaborations are beginning between a mobile device provider, Internet provider, social media, and universities to offer free courses across Rwanda.¹³

One thing is certain, *affordable* communication and mobile technologies are developing rapidly; yet most theological schools are behind the curve. As theological educators continue to assume that these technologies remain out of reach of their students, those same students are logging on and

⁶<http://www.scientificamerican.com/article/big-data-make-big-inroads-into-schools/> Last Accessed February 18, 2014

⁷<http://www.worldbank.org/en/news/press-release/2012/07/17/mobile-phone-access-reaches-three-quarters-planets-population>. The rapid pace of mobile phone penetration has surprised even the World Bank. See *Assessing Progress in Africa towards the Millennium Development Goals*, 2013. Available at [http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Millennium%20Development%20Goals%20\(MDGs\)%20Report%202013.pdf](http://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/Millennium%20Development%20Goals%20(MDGs)%20Report%202013.pdf). p. 56. Last Accessed February 18, 2014

⁸<http://www.reuters.com/article/2010/10/14/us-telecoms-poverty-idUSTRE69D4XA20101014>; http://sites.tufts.edu/jennyaker/files/2010/09/aker_mobileafrica.pdf Last Accessed February 18, 2014

⁹<http://www.un.org/africarenewal/magazine/may-2013/africa's-mobile-youth-drive-change> Last Accessed February 18, 2014

¹⁰<http://www.wired.com/gadgetlab/2013/08/googlex-project-loon/> Last Accessed February 18, 2014

¹¹<http://www.newscientist.com/article/mg21729045.900-microsoft-brings-solar-wifi-to-rural-kenya.html#.UwO4sl6V9Ng> Last Accessed February 18, 2014

¹²<https://sv.tie.org/event/tie-sig-energy-powering-india's-poor-mobile-phones-mini-grids-and-community-power> Last Accessed February 18, 2014

¹³http://chronicle.com/blogs/wiredcampus/quickwire-edx-partners-with-facebook-to-offer-courses-in-rwanda/50693?cid=wc&utm_source=wc&utm_medium=en Last Accessed February 25, 2014.

becoming connected globally—some even enrolling in courses offered by schools from outside their country. Spanish-speaking church leaders and pastors, located anywhere in the world, now have an array of online course options for evangelical theological education taught by Latino(a) educators. They can study with a community of peers in their first language with educators who bring contextually focused theological education to them. The future is here!

Technologies Make A Difference in Learning

Today's mobile technologies can enhance the quality of teaching and learning, and at the same time, make theological education more accessible. Teachers can develop the new skills needed to foster significant learning, even with just a mobile phone. When a teacher includes dialogue or incorporates a student's local experience through class presentations or case study analysis, these technologies enrich their learning. Once students discover how meaningful their community of colleagues can be through online interaction many want to stay connected with their supportive learning community after graduation. While ease of access to these technologies is inconsistent globally, governments and global leaders are intent on improving technological infrastructure as quickly as possible. For many, student readiness for such technology integration far exceeds faculty readiness.

Even a simple MP3 player can make a big difference as educators documented in their project with rural schoolteachers in Bangladesh.¹⁴ A similar approach could make a valuable contribution to the education of many pastors and other leaders widely dispersed and limited to occasional face-to-face classes of long days of lecturing. By providing these students with lectures in advance of their face-to-face class (the "flipped classroom") students can listen to their lectures at their own pace and as often as they wish. Teachers then may use class time to dialogue with students guiding them to a deeper understanding of the lectures. Examples of mobile technology in learning include:

- The introduction of tablets to a class in Jordan
<http://newswatch.nationalgeographic.com/2012/07/18/wireless-learning-how-mobile-technology-is-transforming-classrooms-and-empowering-young-women-in-jordan/> Last Accessed February 18, 2014
- Moving lectures to out-of-class time in the "flipped" classroom -
<http://campustechnology.com/Articles/2013/01/23/6-Expert-Tips-for-Flipping-the-Classroom.aspx?Page=1> Last Accessed February 18, 2014
- http://flippedlearning.org/cms/lib07/VA01923112/Centricity/Domain/41/LitReview_FlippedLearning.pdf Last Accessed February 18, 2014
- <http://about.gmu.edu/a-new-way-of-learning-the-impact-of-hybrid-distance-education-on-student-performance/> Last Accessed February 18, 2014

Many faculty examples and research papers, easily available online in open databases, continue to present strong documentation that an informed and appropriate use of interactive technologies does have a positive impact on student learning.¹⁵

¹⁴ M. Mahruf C. Shohel and Tom Power. *Introducing Mobile Technology for Enhancing Teaching and Learning in Bangladesh: Teacher Perspectives*. *Open Learning: The Journal of Open and Distance Learning*, Vol. 25 (3), pp. 201-215. Available at:

http://oro.open.ac.uk/23533/5/Shohel_and_Power_2010.pdf Last Accessed February 18, 2014

¹⁵ http://sloanconsortium.org/sloanc_publications; <http://www.nmc.org>;
<https://mitpress.mit.edu/books/future-learning-institutions-digital-age> or
http://mitpress.mit.edu/sites/default/files/titles/free_download/9780262513593_Future_of_Learning.pdf Last Accessed February 18, 2014

Factors to Consider When Incorporating Interactive Technologies

1. Anticipate the near term future – 2-3 years

Look ahead, not behind when planning for the integration of technologies for learning. User demands and global investments are focused on providing increased access globally to interactive mobile technologies, such as cell phones and tablets rather than expensive desktop computers. When integrating cost effective new technologies into educational programs focus on those technologies that connect students with each other, with expanded online resources, and with their teachers. Past generations of online platforms that used technology to largely transmit static information and test taking with nearly no interaction is costly and ineffective for learning. Plan for the time it will take to prepare teachers and course designs to use mobile devices effectively. While a small portion of current students may appear to have limited Internet access today, anticipate that this situation will change rapidly. Prepare courses and train faculty ready to meet the demand, which is literally just around the corner. Test new course designs with a few students and improve them from year to year until all courses are enhanced by interactive technologies. Where necessary seek out special support for pilot projects to develop the skills faculty need for this next generation of teaching and learning.

2. Focus on Educational Needs not on What is Familiar

Many theological schools that ventured into educationally oriented technology for their courses often embraced older more familiar technologies. It is important to distinguish these older technologies that do not support current interactive demands, from those particularly designed and well tested for the interactive educational needs and expectations of the future.¹⁶ While familiar online platforms, such as Moodle, may be adaptable to some degree to the expectations of 21st century use, it is an especially costly undertaking with limited effectiveness. New technologies created with collaboration and learning as their focus continue to emerge and in some cases, such as with Big Blue Button (www.bigbluebutton.org) provide important features for teachers, all without any costs to users. Both the online platform of Sakai and the web-meeting tool of Big Blue Button are examples of software created with no license fees and focused on the 21st century expectations for interactive learning.

3. Think sustainability and connectedness

The adoption of new technologies does reduce a variety of costs in higher education. As a result, an emerging model for financially accessible online education for majority world schools is becoming a reality. Three essential elements have come together and have proven to reduce the costs of online education for individual schools. First, cloud computing is now linked with non-licensed, open software and community for online learning. These two technologies are brought together in a consortial organizational structure where costs are distributed across the members. Small schools may now form their own consortium in order to distribute the costs of online learning. As the number of members increases, costs per institution are reduced creating a sustainable strategy for online education.

Models of this type of consortia for small schools has been in existence for a number of years. For example, the LAMP consortium (<http://lampschools.org>) began in 2004 with many Christian schools among its members. In 2008 the leadership received the prestigious Mellon Foundation award (<http://lampschools.org/Mellon%20Award/>) in recognition of their work in reducing technology costs for small schools. Following this success the same team of leaders began a second consortium, LikeBerea (<http://www.likeberea.org>) for various kinds of Christian organizations and schools, and located anywhere in the world. Current members include schools, global mission and ministry organizations, a church denomination and an individual church. As a result of the LikeBerea consortium

¹⁶ For a summary review of the paradigm shift in online education from individual self study to interactive engagement see the author's paper, Distance Learning Paradigms: An Overview at <http://digitalseminarian.com/resources/> Last Accessed February 18, 2014

a global online Spanish graduate seminary (ProMETA) has become a member in order to experience the benefits of a supportive consortium, especially one that functions as an open-source community.¹⁷ In this arrangement each school has its own private web access and institutionally distinct courses using a world-class platform oriented to interaction and collaboration (<https://sakaiproject.org/>). Each school is able to maintain its own distinctive “branding”, including its preferred language of use.¹⁸

About the Author



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¹⁷ Go to <http://digitalseminarian.com/resources/> Under Resources<Resources for Administration are five Powerpoint presentations prepared for the ProMeta board. The LikeBerea Overview presents a brief summary the Consortium. Three other presentations (Building Communities ProMeta, LikeBerea Consortium—ProMeta Presentation, and ProMeta Vision 2024) give helpful information about the benefits of a consortium, and how Sakai and the LikeBerea infrastructure benefit an actual organization. The five presentation, Moodle vs Sakai, compares these learning management platforms to educate possible users about strengths and limitations so that an informed decision can be made.

¹⁸ See a more complete description of the LikeBerea Consortium in this issue of CGJ.