



Health Care

Education

Entrepreneurship

Public Safety

Environment

Singapore Education



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**Partners**

- Microsoft, Inc.
- Nan Chiau Primary School
- National Institute of Education
- Nokia
- SingTel
- University of Michigan
- Wireless Reach initiative

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**2011 Statistics**

- Life expectancy: 83.75 years
- Population: 5,353,494 (July 2012 est.)
- GDP per capita: \$59,900 (est.)
- Internet penetration: 77.2%
- Mobile penetration: 149.6%

Sources: Ministry of Information, Communications and the Arts (MICA) <http://app.www.sg/who/default.aspx>

## Project Description

### WE Learn: Building the 21st Century Classroom with 3G Smartphones in Singapore

Qualcomm's Wireless Reach<sup>™</sup> initiative, in collaboration with partners, is putting the power of computers in the pockets of third-grade students at Nan Chiau Primary School in Singapore. The "WE Learn" mobile education project uses 3G-enabled smartphones to transform learning from a traditional, teacher-centric model to a student-centric, inquiry-oriented, collaborative model. By enabling 24/7 access to resources in and out of the classroom, the project allows students to acquire and practice 21st century competencies and knowledge.

### Challenge

- The Singapore Ministry of Education (MOE), in its third Masterplan for Information and Communications Technology (ICT) in Education, promotes a framework to enhance the development of 21st century competencies and further transform the learning environment for students.
- The plan focuses on two key skills – self-directed learning and collaborative learning. MOE's Masterplan 3 aims to better prepare the nation's students to thrive in a fast-changing and highly-connected world.
- As an MOE-designated "Future School in Singapore," Nan Chiau Primary School is leading the way with a 21<sup>st</sup> century classroom that implements the MOE's framework and serves as a model for primary schools throughout Singapore and Asia.

### Proposed Solution

- Provide 3G-enabled smartphones powered by Snapdragon<sup>™</sup>, mobile broadband connectivity and educational applications to 350 third-grade students and their teachers, giving students 24/7 access to educational content, web-based resources and a broad range of learning tools that support self-directed learning and collaborative learning.
- Use those 3G mobile technologies to enable teachers to become mentors who provide personalized guidance and to give students the means to take responsibility for their own learning.
- Create customized curriculum in English, Science and Chinese that leverages the benefits of mobile, Internet-connected learning devices.
- Construct MyDesk, a next-generation mobile learning platform (MLP) that leverages the capabilities of Microsoft's Windows Phone operating system.
- Use MyDesk and a broad range of educational applications to enable students to access their assignments, visit relevant websites, view podcasts and video, and create multiple media artifacts.



A third-grade Nan Chiau Primary student demonstrates self-directed learning via the MyDesk application on her mobile device.

- Back-up and synchronize files created by students on their MyDesk-enabled smartphones to a cloud-based Teaching Management System, thus providing an electronic portfolio for each student that teachers can access for grading and feedback purposes and that parents can examine to better understand how their child is performing in school.
- Provide professional development experiences for Nan Chiau teachers in the WE Learn pedagogy.
- Monitor and assess the impact of the WE Learn effort on Nan Chiau.

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### The Technology

- 3G-enabled, Windows Phone smartphones powered by Qualcomm Snapdragon processors.
- 3G mobile broadband connectivity via SingTel's 3G wireless network.
- MyDesk, a MLP running on top of Windows Phone and populated with a range of educational apps that are essential tools for 24/7 learning. The MLP also contains an always-visible, digital Classroom Message Board and a cloud-based Teaching Management System.

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### Project Partners

- **Microsoft, Inc.** is providing Windows Server infrastructure software and the Windows Phone operating system.
- **Nan Chiau Primary School**, a government-designated Future School in Singapore, is a model for how to scale up and sustain the use of 3G mobile technologies to support 21<sup>st</sup> century learning.
- **National Institute of Education**, Learning Sciences Lab is assisting teachers with professional and curriculum development as well as providing support for project monitoring.
- **Nokia** is providing Lumia 710 smartphones for students and teachers.
- **SingTel** is the preferred ICT solution partner in enabling mobile learning over SingTel's 3G wireless network.
- **University of Michigan** undergraduate students are building the mobile learning platform, including MyDesk, educational applications, Teaching Management System and Classroom Message Board.
- **Qualcomm's Wireless Reach initiative** is providing project funding and management support.

### Qualcomm's Wireless Reach™ Initiative

Qualcomm believes access to 3G and next-generation mobile technologies can improve people's lives. Qualcomm's Wireless Reach initiative is a strategic program that brings wireless technology to underserved communities globally. By working with partners, Wireless Reach invests in projects that foster entrepreneurship, aid in public safety, enhance the delivery of health care, enrich teaching and learning and improve environmental sustainability. For more information, please visit [www.qualcomm.com/wirelessreach](http://www.qualcomm.com/wirelessreach).