Teachers, Teaching and ICTs:

What we know, what we believe -- and what we don’t

Michael Trucano
Sr. ICT & Education Specialist
The World Bank

Seoul: 22 October 2013
What do we know about using technology in education in developing countries?
What do we know about using technology effectively in education in developing countries?
What do we know about using technology ineffectively in education in developing countries?
What do we know about using technology cost-effectively in education in developing countries?
Who is a ‘developing country’?
We all are
This short presentation will provide **quick snapshot** of what the research literature and emerging 'good practice' tells us about a number of key topics related to the use of informational and communication technologies (ICTs) **by teachers**, and about **ICT use in teaching**, of potential relevance to policymakers and planners.
It is not meant to be an exhaustive catalog of everything that is known (or is debated) about this topic.

Instead, it attempts to summarize and give shape to a very large body of knowledge based on practical experiences around the world,

pointing to key general assertions and gaps in our collective knowledge base
to help inform discussions of potential strategies and approaches around how best to support teachers in their use of educational technologies.
excerpt from an upcoming World Bank publication
to be previewed on the World Bank EduTech blog
blogs.worldbank.org/edutech
1. Teachers remain central to the learning process in the digital age

2. The promise and potential of ICT use by teachers is recognized but largely unmet

3. Innovative pedagogical practices are increasingly linked to the effective use of ICTs

4. Incentives and support mechanisms need to be put in place to motivate and support teachers in their use of new technologies

5. Teacher training is a critical component if investments in ICTs are to be maximized
Topics

1. **Pedagogy** and teaching practices: the relevance of ICTs

2. Teacher technical **abilities** and knowledge of ICTs

3. Teacher **usage** of ICTs

4. Teacher confidence and **motivation**

5. Teacher subject knowledge and content mastery

6. Teacher **professional development**

7. Selected factors **enabling** ICT use by teachers
Pedagogy and teaching practices: the relevance of ICTs

1. ICTs are seen as tools to help teachers create more 'learner-centric' learning environments

2. ICTs can be used to support change and to support/extend existing teaching practices

3. Introducing technology alone will not change the teaching and learning process

4. Require acquisition and mastery of new skills by teachers to take advantage of new technologies

5. Lesson planning is crucial when using ICTs

6. Using ICTs as tools for information presentation is of mixed effectiveness
Teacher technical abilities and knowledge of ICTs

1. Few teachers have broad 'expertise' in using ICTs in their teaching

2. Preparing teachers to benefit from ICT use is about more than just technical skills

3. 'One-off technical training' is not sufficient

4. In OECD countries, the use of ICTs to promote 'computer literacy' is seen as less important than in using ICTs as teaching and learning tools

5. Students are typically seen to be more ‘sophisticated’ in their use of technology than teachers, although this belief often obscures the important role teachers play in student use of ICTs

6. Global standards for ICT-related teacher competencies are now available and being adopted in many countries
Teacher usage of ICTs

1. How teachers use ICTs is dependent on their general teaching styles – and their abilities

2. Teachers most commonly use ICTs for administrative and routine tasks

3. More knowledgeable teachers rely less on "computer assisted instruction"

4. Teaching with ICTs takes more time

5. Teacher usage of ICT outside school can impact in-school effectiveness

6. Targeted teacher laptop (tablet) programs are often seen as important tools to promote teacher use of ICTs

7. Most teachers have mobile phones, few use them in their teaching
Teacher confidence and motivation

1. Few teachers report being confident users of ICTs

2. Access to ICTs is the single most significant factor in whether teachers use them

3. Incentives must be developed to promote effective teacher participation in continuing professional development

4. ICTs motivate (some) teachers, at least at the start
Teacher subject knowledge and content mastery

1. Teachers' **subject knowledge** influences how ICTs are used

2. Teacher content mastery and **understanding of student comprehension** make ICT use more effective

3. **Exposure** to new/additional information via ICTs is *not enough*

4. ICTs can aid teacher **self-learning** in subject matter

5. **Support of school principals** can be of *critical importance* in enabling or restricting the potential productive use of ICTs by teachers
1. **On-going** teacher training and support is critical to the successful utilization of ICTs in education.

2. Teacher professional development is a **process, not an event**.

3. Introducing ICTs **expands the needs** for on-going professional development of teachers.

4. **Successful** teacher professional development models can be divided into three phases.

5. Effective teacher professional development should **model effective teaching practices**.

6. Teacher **development of digital learning resources** can be an effective tool to support their professional development.

7. Training in ICT-enabled **assessment methods** is important.

8. Effective professional development requires **substantial planning**.

9. On-going, **regular support** for teachers is crucial.
Selected factors enabling ICT use by teachers

1. A variety of changes must be implemented to optimize teacher use of ICTs

2. Functioning technical infrastructure is (obviously) crucial

3. Introducing ICTs takes time

4. Support from school administration and the community can be important

5. Communities of practice can be important tools to support teacher professional development

6. Concerted, constructive engagement with teacher organizations (including unions) can be critical to the successful adoption and use of ICTs by teachers

7. Lessons learned from introducing ICTs in education need to be shared
more information:

Michael Trucano
mtrucano@worldbank.org

blogs.worldbank.org/edutech
worldbank.org/education/ict

Twitter: @trucano @WBedutech