Government’s **2014 Action Plan** reminds us that the 2004 White Paper on e-education referred to the role of *information and communication technologies (ICTs)* in education as revolutionary. However, while technology can enhance teaching and learning, it is vital that lack of access does not reinforce educational disadvantages.

Evidence from around the world does indeed point towards the ability of ICTs to enrich teaching and learning and to take educational outcomes to a new level. Ensuring that all learners gain access to ICTs as soon as possible reduces the dangers of an entrenched digital divide in future. (2014 p.92)

**TRENDING**

BRIDGE’s focus on ICTs as a cross-cutting theme in education has recently taken centre stage in several contexts. An important concern is to make sure that the device is not the goal; technology must support teaching and learning rather than overwhelming it.

In this BRIDGE ‘What’s Trending Update’ we take you on a quick tour of recent discussions and interesting developments in ICTs in education throughout BRIDGE’s Communities of Practice. The Teachers Upfront summary highlights a number of ‘hot topics’ in the ICTs debates. This is followed by a series of implementation stories, giving examples of working practice in ICTs.
Here is an overview of some of the ideas that are trending on this topic.

ICTs in education

- Why use ICTs?
  - The relationship between medium, content and the pedagogical practice
  - The mindset shift
  - Gaps between policy and operational levels
  - Implications for teacher training
  - Impacts on teacher / learner relationships
  - Context is key
  - Digitalising learning: diversity in devices
  - Implementing ICTs
  - Blended learning and getting the dosage right

Here’s how some of these elements have played out in different discussion spaces.

Teachers Upfront Seminar

Using ICTs in Teaching and Learning: Issues & Challenges: 30 September 2014

Implementation lessons:

- Experiment with different devices: take your time; find the one that suits the context and the budget.
- Be creative.
- Make sure you have sufficient connectivity; use intranet over internet if necessary. Intranet allows for monitoring and security.
- Identify teacher champions to work with reluctant teachers.

Pedagogical Lessons:

- Teach in the way children learn: use their language, the language of technology.
- Understand that technology is more than a textbook on a tablet.
- Use for management of learning: five minute on-screen test at start of each lesson consolidates learning and gives immediate feedback.
- Help learners compete globally.
- Shift teacher mindset to accept that teachers can learn from students.

Link to presentation Practical challenges of implementing ICT in schools (Ansie Peens, Sunward Park High)
 ICTs should not replace teachers; we still need pedagogical strategies.
 ICTs must be socially situated; they should not be used in isolation from group contexts or collaborative learning.
 Do not impose ICTs on teachers and learners; they need to actively participate in integrating ICTs into schooling.
 Monitoring and evaluation of ICT programmes and ICT implementation in the South African context is required.
 Integration into schools needs to take a number of variables into account: for example, teachers need to be confident users themselves; and environments need appropriate infrastructure and support.

- We use ICTs in teaching and learning because technology is emerging as the dominant and powerful medium in many contexts; THEREFORE we must make sure that ICTs enhance learning rather than constrain it. Pedagogy and content must drive ICT, rather than the other way round.

- Beware of myths: we need to understand the gap between the promise and the practice. Technology does not produce learning; learning produces learning.

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We need more evidence of the impacts of technology on learning.

Link to presentation *Using ICT in Teaching and Learning: Issues and Challenges* (Reuben Dlamini, Wits University)

Link to presentation *ICTs as Ideology* (Tom Waspe, Wits University)
Pre-service teacher data shows that the majority of students (i) have not had the use of ICTs modelled by their own teachers; and (ii) don’t themselves know how to learn with and through technology.

- Providing support for pre-service teachers to use technology to build their own learning networks has been effective; collaboration online is seen as motivational.
- Encouraging student teachers to enrol in MOOCs (massive open online courses) has also helped them integrate ICTs into their own learning.
- BUT they find obstacles when they leave university and enter the realities of a school: older teachers defend the status of ‘born before technology’, and young teachers may find themselves in resistant environments. Pre-service teacher training may need to include understanding of change management to deal with these attitudes.

**Link to presentation** [ICT in education: When Reality Bites](https://example.com) (Jacqueline Batchelor, UJ)

- Integrating ICTs into teaching and learning is a long journey; we need to understand what it entails and why we are doing it.
- We need to understand the South African conditions for teacher development and implementation of ICTs.
- Basic computer literacy amongst teachers comes first, before assuming that they can use ICTs in their teaching.
- We must look past the technology to the learning experience.

**Link to article**: [Digital learning needs a light touch](https://example.com) (Barbara Dale-Jones, BRIDGE)
In-service teacher training at North West University uses annotated videos of their students conducting micro-teaching sessions as a learning tool. Peer groups are able to assess, comment and share on screen as the video plays, thereby building up a dialogue within a learning community. The many benefits of this approach include the following:

- Unlike live observations, the videos can be replayed, so that the student concerned can go back to details to reflect on his/her own good and bad practices.
- The lecturer can draw key teaching points from common teaching behaviours across videos.
- This approach is more time-efficient than live observations. It also means that students can conduct more than one micro-lesson.
- While the student being observed benefits from the peer assessments and commentary, so too does the learning group as they have to reflect and formulate critical commentary. The quality of the assessments tends to become more meaningful during the course of the year. The community itself becomes a training tool.

Link to presentation: Blended Learning (Christo van der Westhuizen, NW University)

BRIDGE Facilitator Pat Sullivan reflects on how the Community of Inquiry model which underpins the North West University approach links to the values of the Community of Practice approach. (See presentation for this slide.)
Teacher development in maths faces various challenges, including teachers’ own grasp of mathematical concepts (their subject matter expertise) and their pedagogical competence in teaching mathematics. This in turn affects learner outcomes.

Nokia Mobile Mathematics is an app that aims to help learners improve their maths competence. One way in which it does this is through offering practice activities, so that maths operations can be performed confidently and competently. It can also be used to support teachers, either as a diagnostic tool for teacher remediation or to help teachers gain the procedural fluency they need for effective teaching.

Some of the benefits are:

- It provides broad access as it doesn’t need a smartphone, it is free to register and free to use with an MTN sim card.
- It is CAPs aligned for Grades 10, 11 and 12.
- It has content practice activities, examples and theory.
- It uses digital incentives (‘gamification’) by offering scores and ranking options, and learners find it fun.
- It can be used as a resource for differentiation in the classroom.
- It allows for learning groups.

**Hot Topics from Group Discussions:**

- How does this type of app affect relationships between teachers and learners? Where does the centre of knowledge reside? With the teacher or the phone? What if learners ask teachers questions they can’t answer? This could undermine the teacher, but at the same time could keep teachers on their toes. Could learners use the content without understanding? What if teachers prefer to sequence learning slightly differently, based on an understanding of their particular group of learners? Good teachers will be able to mediate the content; teachers with low knowledge base or low self-esteem will perceive ICTs as a threat.

“This doesn’t go on strike. This sets and marks my homework.” (Learner about MoMaths)

- There are no standards for the content on ICT devices. How do we know what’s good? We need a central review mechanism for all educational apps. Providers should be able to upload their apps and these would be reviewed by expert panels against criteria as a service to the educational community and broader public.
Our Maths and Science focus group on Monitoring and Evaluation shared a presentation from the Benita Williams Team and the developmental approach they currently use on an ICT intervention programme in the rural Cofimvaba district in the Eastern Cape.

**Key lessons shared from their evaluation include:**

- Use ICTs champion to support less comfortable teachers.
- Training and support both pre- and in-service is crucial to the adoption of ICTs in classrooms.
- Provide incentives and rewards (e.g. Earn-as-you-learn) to make it worth a teacher’s while.

[Link to presentation](ICT4RED. CSIR Meraka. (Ford M)).

**Principals Community of Practice**

The BRIDGE principals have also embraced technology in their recent meetings, growing their own knowledge and confidence with different devices and platforms. As part of the Gauteng MEC’s initial tablet roll out, many of their schools received tablets for use in the classroom by both teachers and learners. Principals are keen to supplement their own knowledge so that they can successfully lead their teams through the integration process.

Principals of a Gauteng East principals’ community of practice now have an [e-learning kiosk](#) provided by the CoZa Cares Foundation. This is a content repository of Open Education Resources (OERs) available offline for teachers and learners.

School leaders play a key role not only in setting the direction and pathway for the adoption of ICTs in schools, but also as examples for their communities. This is a recurring theme that our principals grapple with every day. The need to set clear guidelines, manage expectations and develop support systems for both teachers and learners has become evident.
Rethink Education is an online education content provider. Their aim is to deliver content in non-traditional ways, thereby engaging youth who use technology to communicate. Their maths and science content is written for the South African CAPS syllabus, and is delivered through MXIT apps and Web platforms.

**Key Features**

- Present content in small and accessible chunks: make learning fun
- Present content in a chat online format, giving opportunities for interaction
- Allow for monitoring of progress by teachers
- Learners can preview content before lessons
- MXIT as a low tech option with a free app targets underprivileged school users.

**Hot Topic:** The Rethink experience again highlights the importance of buy-in and support from principals and teachers so that digital learning is integrated into the overall learning experience. At the same time, however, if the platform is sufficiently accessible and low cost, learners can become self-driven and bypass unsupportive teachers.

**Link to presentation:** *Interactive Online Learning for SA High Schools* (Nik Hoernle, Rethink Education)

Using twitter to share during Rethink presentation!
**Sunward Park High School: Lessons for the sector**

BRIDGE Visit 11 October 2014

The BRIDGE team recently met up with the Principal and Deputy of Sunward Park following their presentation on the school’s experience of going fully digital at our Teacher’s Upfront Seminar.

Here are some TOP tips for school leaders thinking about ICT integration:

- Don’t go cheap! Find tough and durable technologies that suit your context and will fit into your learners’ and teachers’ lives.
- Devices + portal + connectivity: all three of this ICT trinity must function.
- Internet vs Intranet; know the difference. The right intranet portal can go a long way in saving you money and security issues down the line. Invest in an option that can integrate both classroom management systems and security features.
- Learn to say all the right things. A good communication strategy for your parents, governing body, SMT and teachers will help build cohesion and support around this bold step.
- Be patient and understanding with all staff, pace them, train them and get more enthusiastic teachers to champion the cause. Acknowledge and reward efforts for trying.

**South African Extraordinary Schools Coalition National Meeting**

EdTech Summit Presentations: 6 August 2014

Participants at the SAESC Community of Practice meeting in August had the opportunity to experiment with various devices and platforms, and view a range of digital content, at the EdTech Summit hosted by Harvest High School in KZN in August. BRIDGE’s Resource Page provides access to a range of resources.