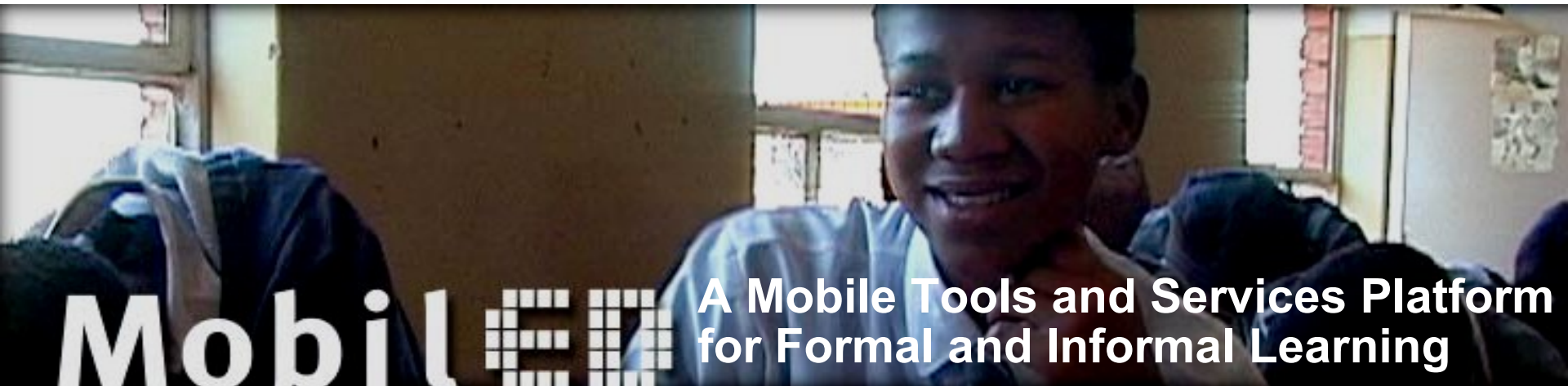




African Advanced Institute for Information
& Communications Technology



**A Mobile Tools and Services Platform
for Formal and Informal Learning**

<http://mobiled.uiah.fi/>

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The **MobilED (Mobile EDucation)** initiative is aimed at designing formal and informal learning and teaching environments that are meaningfully enhanced with mobile technologies and services.





MobilE Principles

- Social constructivist pedagogy
 - Group-centred learning
 - Project-based learning
 - Problem solving
 - Inquiry learning
- Open Source and Open Content
- Creating the ability for ALL to access and, more importantly, CONTRIBUTE their knowledge to the Information Society



Mobil Objectives

- Explore and comprehend the **cultural, social** and **organizational** context of young people in and out of school in several developing (and developed) countries.
- Develop **research-based models** and **scenarios** of how mobile phones could be used for teaching, learning and empowerment of students within and outside the school context.
- Develop **concepts, prototypes, platforms** and **sustainability plans** that will facilitate and support the models and scenarios developed.
- **Test, evaluate** and **disseminate** the scenarios, models, concepts and prototypes.

2006 - 2008



- Mobile devices: GSM phones, multimedia/smart phones, Internet tablets, PDAs, OLPC
- Wireless networks: GSM, 3G, WLAN
- Voice, speech and language technologies: speech interfaces, audio information systems etc.
- Social software: Mediawiki, blogs, Knowledge Building tools.
- Wikipedia: The Free Encyclopaedia.





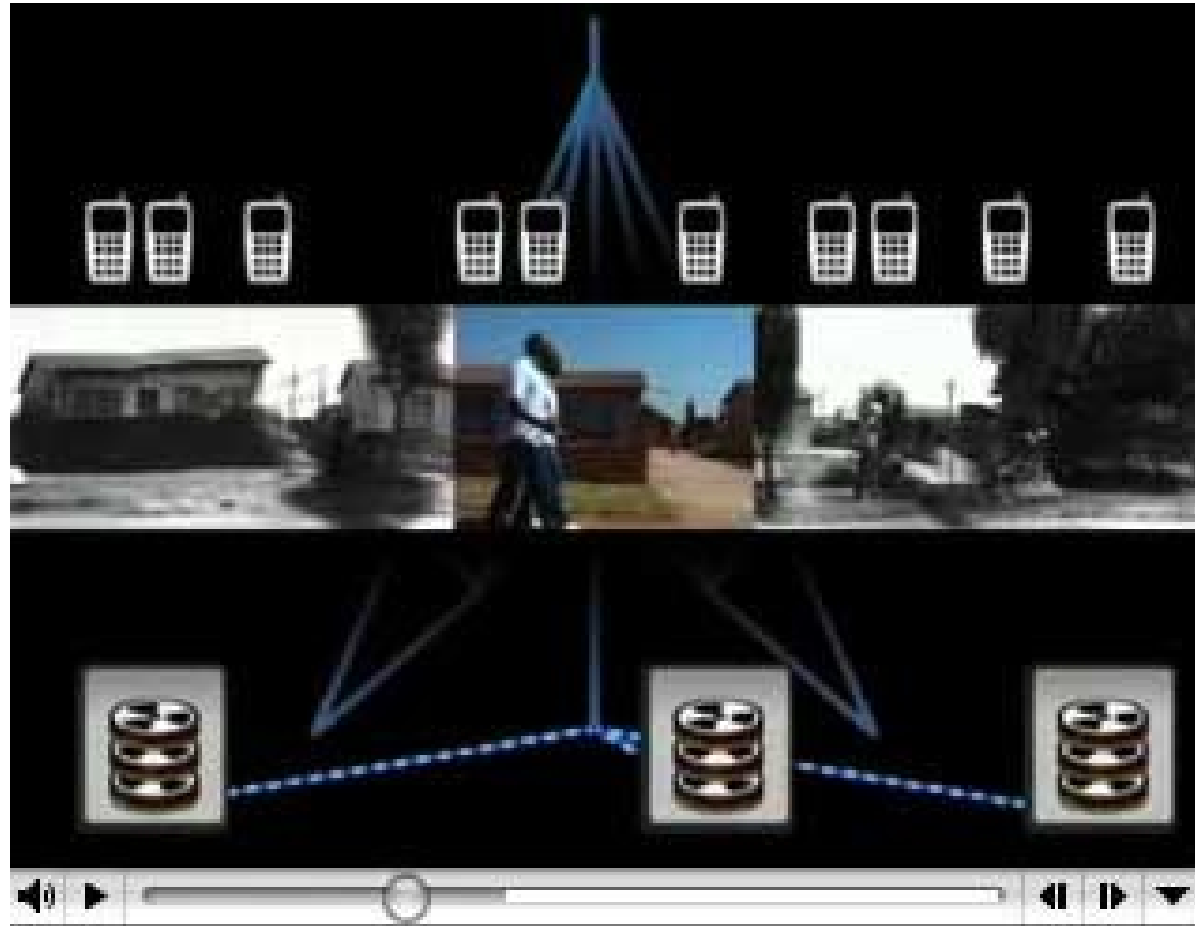
- Use of the **mobile/cell phone** in a **school** environment
- Focus on the mobile/cell phone technology most accessible in South Africa - standard phones capable of sending text messages (**SMS**) and making and receiving **voice** calls
- Use of the world's most used free online encyclopedia – **wikipedia**
- Pilot in advantaged and disadvantaged schools in South Africa

A mobile audio encyclopedia is born!

Scenario 1: The concept - using a mobile phone in an informal learning situation

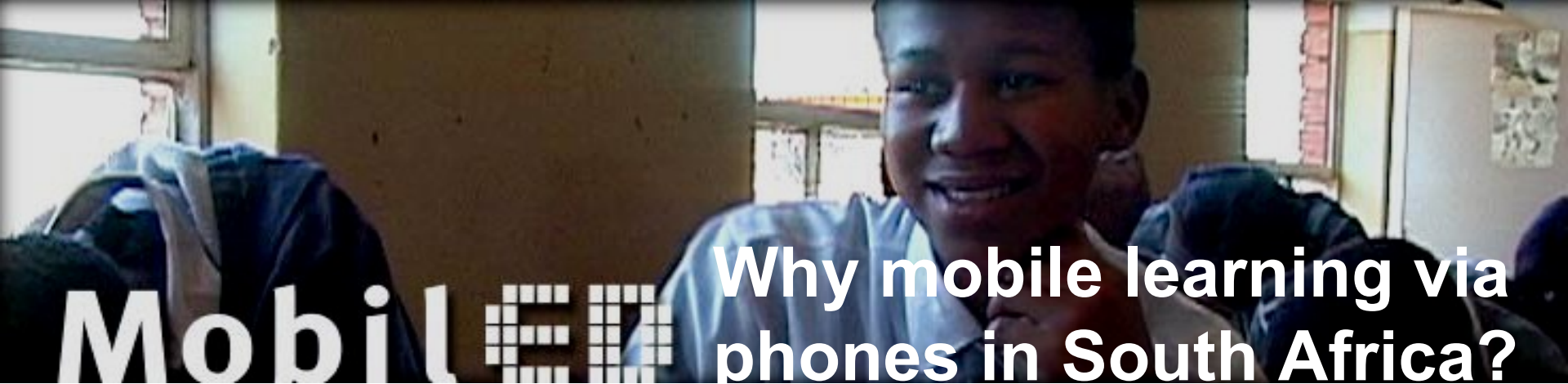


Scenario 2: How the mobile audio encyclopedia works



Scenario 3: Using the mobile audio encyclopedia in a school environment



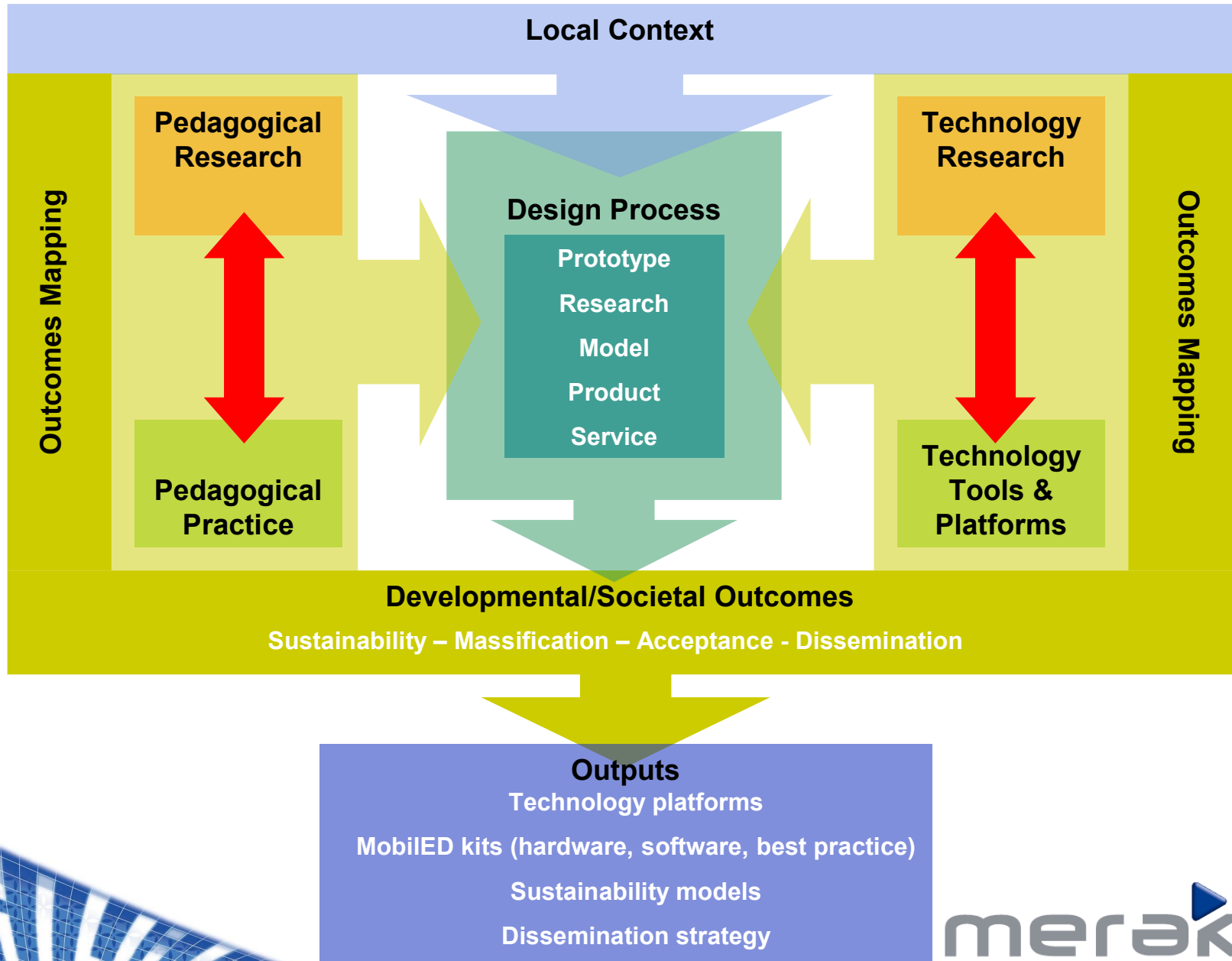


Why mobile learning via phones in South Africa?

- Significant penetration in the market (90% plus)
- The focus is on the **affordability** and **accessibility** of these devices – the mobility (of the user) is a secondary consideration



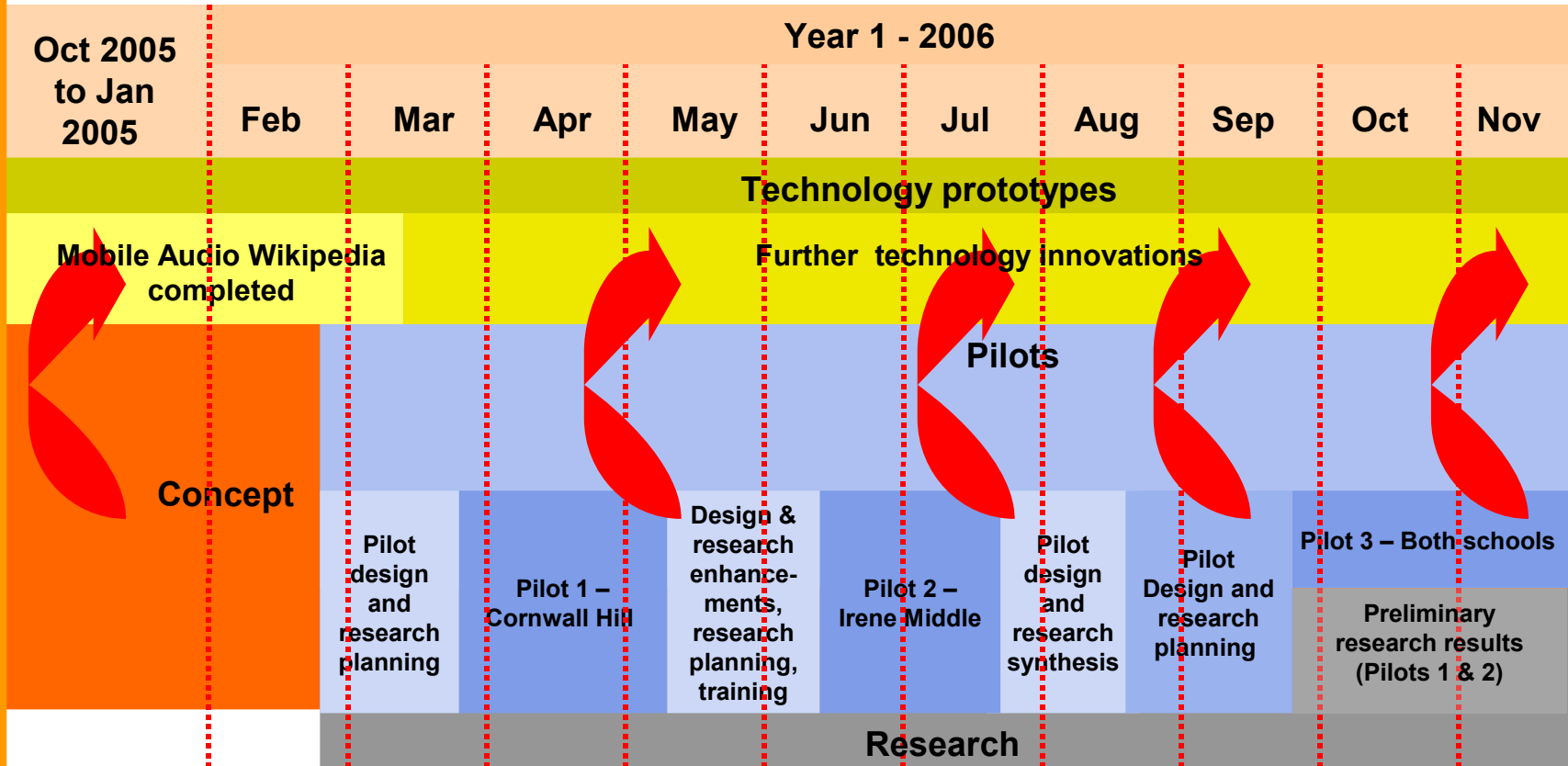
Overview of research framework



MobilED Partners

- The current principle partners of the MobilED initiative are the **Meraka Institute** of the Council for Scientific and Industrial Research (CSIR), South Africa and **Media Lab** of the University of Art and Design Helsinki, Finland.
- The network of Associated Partners and Advisers includes **Centre for Research on Networked Learning and Knowledge Building, University of Helsinki (FI)**; **Tshwane University of Technology (SA)**; **University of Pretoria (SA)**; **Escola do Futuro Universidade de São Paulo (BR)**; **WikiMedia Foundation, (US)** and **Center for Knowledge Societies (IN)**.
- The initiative is funded by the **Department of Science and Technology, South Africa** and the **Finnish Ministry of Foreign Affairs**. Handsets have been sponsored by **Nokia**.

Project plan – YEAR 1 (2006)



MobilED tools developed



MobilED KIT – a box with mobile tools, software and a guidebook that a teacher can use in a classroom or club to carry out collaborative mobile learning projects.

MobilED SERVER – a technology platform that makes it possible to take most out of the MobilED KIT. Governments, organizations or operators willing to support the use of mobile phones in collaborative learning projects may install the technology platform. There are also many other applications in non-educational type environments (such as e-government).

DialogPalette
asterisk telephony service designer

Pilot 1: Cornwall Hill College



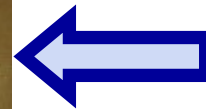
- The MobilEd platform was used to assist in a lesson to Grade 10 learners about HIV/AIDS
- Students could **access** information via the MobilEd server and
- **contribute** information back by adding voice clips with their contributions to existing articles (pseudo “podcasting” environment)



Pilot 1: Cornwall Hill College

Stage 1

- The mobile audio wikipedia can be accessed by sending an SMS with a key word.

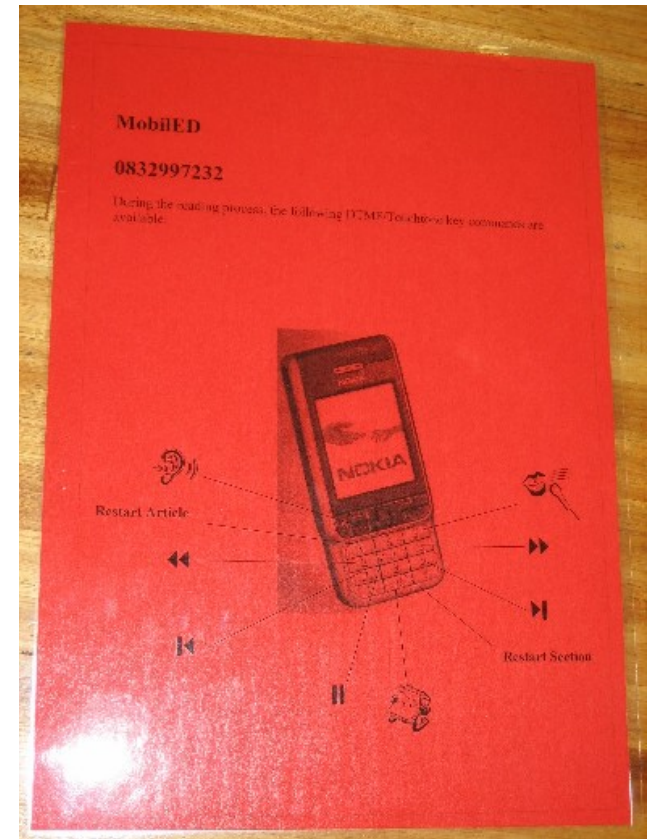


- The service calls back and plays the information, making use of text to speech conversion.

Pilot 1: Cornwall Hill College

Stage 1

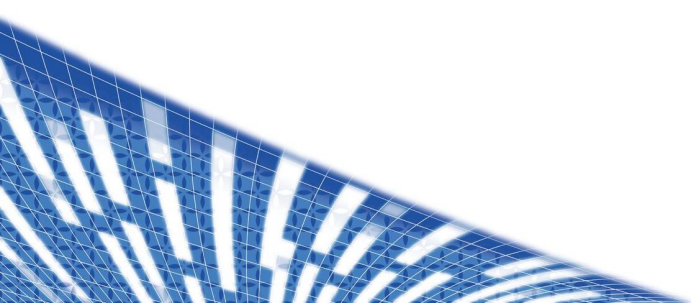
- While the article is read to you, there are various navigation options:
 - **“Fast forward”**; skip ahead one sentence in the same section
 - **“Rewind”**; skips back one sentence in the same section
 - **“Next section”**; skips to the next section of the article
 - **“Previous section”**; skips to the previous article section
 - **“Pause”**; pauses playback - if any other DTMF key is then pressed, playback continues from where it was paused.



Pilot 1: Cornwall Hill College

Stage 2

- Learners could make their own audio castings on related topics.
- This information is added to the audio wikipedia for other people to listen to.



Some results

- Enthusiastic support from the learners
- Learners needed more time to familiarise themselves with the particular cell phone model used
- Gender issues – boys tended to monopolise the cell phones
- Learners wanted individual access to cell phones
- The text-to-speech engine was a major problem, resulting in poor quality audio
- The sound quality from the speakers was poor
- There were a few technology “hiccups”



Unexpected consequences (!)

- Request from Cornwall Hill teachers for an additional pilot – Pilot 1A
- Learners taken on a field trip to Gold Reef City as part of a science project (gravity, acceleration, etc.)
- Learners used their own phones
- All information communicated was via SMS
- A wiki was seeded with information they would need
- MobileD platform extended to provide information via SMS
- MobileD used to gather information “in the field” and the phones used to record the information (video clips, audio clips, notes)

Some results from Pilot 1A

- Spontaneous sharing of capabilities amongst the learners
- Learners responded positively to the SMS option (both with teacher and mobile audio wikipedia)
- Learners preferred to use their own phones
- See the mLearn paper: “*When wiki’s grow up and go for outings*” by Adele Botha
- Pilot 1B (!?)

Pilot 2 – Irene Middle School



- Similar lesson about HIV/AIDS, building on the results of Pilot 1 (also Grade 10)
 - More time for learners to experiment (with the phones and technology)
 - Printouts of a Wikipedia webpage
- Improvement of the technology
 - Improved speakers
 - Different text-speech system
 - Fewer bugs

Some results from Pilot 2



- Enthusiastic support from learners (once again)
- Issues like language a “non-issue”
- Learners happy to share the cell phones in the group
- Learners comfortable with the technology in a short period of time
- Spontaneous use of audio wikipedia for other learning areas



Outputs of one of the teams



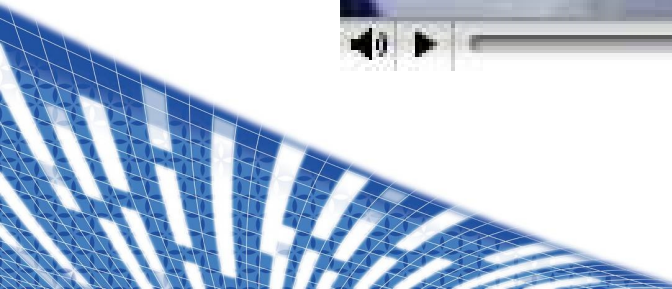


- Expand the use of the **mobile/cell phone** in a **school** environment
- Joint project between the advantaged and disadvantaged schools
- Use the MMS and digital photo capability of the phones

The “Street Memory” project is born!



Scenario 4: “Street memory” project-based learning concept



Next steps

- Pilot 3 (joint project between the schools)
 - First session 2 weeks ago
 - Follow-up session early next year
- Many new ideas of applications of the technology – e.g. teacher support and training, cookery classes, etc, etc.
- Planning for pilots for next year
- Data synthesis and analysis for all pilots in progress (3 Masters dissertations)
- Similar pilots in Finland, Brazil, Colombia, New Zealand, India



If you're interested...

Additional MobilED papers here at mLearn:

- *“The digital profile of the teenage mobile phone user”* by Christa Oelofse
- *“When wiki’s grow up and go for outings”* by Adele Botha
- *“Moving Beyond a Pilot: Implementation of Mobile Learning in a Secondary School Setting”* by Jaqueline Batchelor



SA MobileD Project participants

- A huge thank-you to:
 - Teemu Leinonen
 - Madelein van den Berg
 - Victor Zimu
 - Jaqueline Batchelor
 - Adele Botha
 - Christa Oelofse
 - Annette de Jager
 - The “techies” – Francois Aucamp and JP Tolmay
 - The headmasters and teachers of Cornwall Hill College and Irene Middle School
 - AND... the learners who displayed enthusiasm and interest throughout the pilots – you are all stars!



Thank – you!

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