EdQual

A Research Programme Consortium on
Implementing Education Quality in Low Income Countries



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Using ICT to Support Science and Mathematics Education in Rwanda

Alphonse Uworwabayeho

Paul Denley

Rosamund Sutherland

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Research background

- The EdQual ICT project was grounded within the Rwandan national development vision that the country will achieve middle income status by 2020.
- Education plays an important role in achieving this goal
- Cultivating the interest of students in science and technology is also emphasised .
- There has been a range of initiatives for providing basic ICT infrastructure and computers in schools.

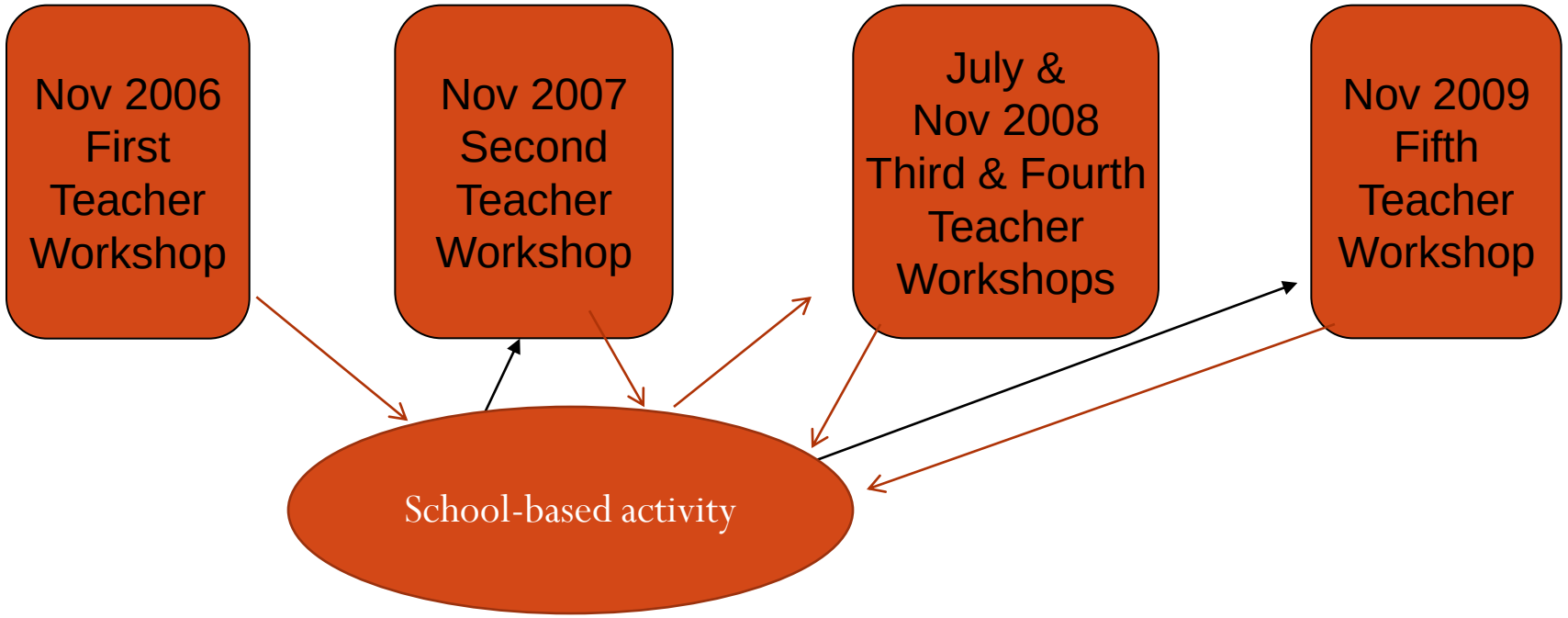
Research Questions

- How can ICT be used to support teachers and students in teaching and learning of mathematics and science?
- How can collaborative enquiry and intervention centered on the use of ICT in science and mathematics improve the quality of education in disadvantaged schools?
- What is the current status of ICT infrastructure and application in schools in Rwanda, especially in disadvantaged schools in both rural and urban settings?
- What level of ICT know-how exists in schools among teachers, learners and school administrators?
- Can the use of ICT narrow the gender divide and change attitudes towards the teaching and learning of mathematics and science?

Collaborative professional development model

- The collaborative professional development model focused on teachers developing innovative classroom scenarios through active 'hands-on' experimentation with ICTs and reflection and discussion with other teachers.
- Video data was invaluable in both sharing practice and for analysing teaching and learning.

Professional development cycle



Findings at a glance

- Provision of ICT in schools is only the first step towards its embedding in teaching and learning
- Project teachers became confident in using ICT to develop innovative classroom environment, with relatively small amounts of external support through workshops
- Access to ICT out-of-school is mainly through internet cafes, where young people are able to gain hands-on experience of ICT.

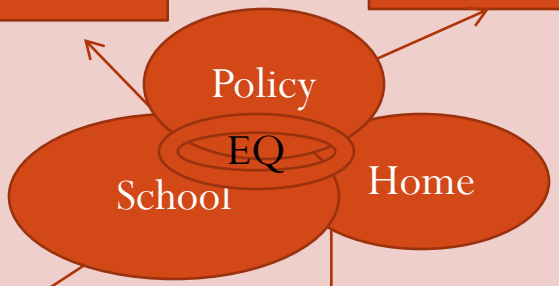
Findings at a glance (cont'd)

- Whereas schools in urban areas may have internet connectivity, only a small number of schools in rural areas are connected to the internet.
- unequal access to ICTs in the community could exacerbate gender differences as well as a rural and urban divide

Recommendations

Teacher networks could be promoted throughout Rwanda, using digital video to share ideas in order to transform teaching and learning.

Professional development should involve teachers in working collaboratively and engaging with the realities of their practice.



ICT can be used to enhance the teaching and learning of mathematics and science.

Policy makers and teachers should be aware that out-of-school use of ICT impacts on learning in school

Key Policy Messages

Teacher professional development networks should be promoted throughout Rwanda, building on the model developed in the EdQual ICT project and supporting teachers to:

- **Allow student-centered learning with ICT;**
- **Exploit available technology, including mobile technology (e.g. "One laptop per child");**
- **Understand how out-of-school use of ICT impacts on learning in school and develop positive strategies to address this;**
- **Contribute to quality education by communicating innovative classroom practices.**

Provision of ICT in schools is only the first step

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Embedding ICT in teaching and learning

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