Knowledge Map on Information & Communication Technologies in Education
Topic: Content & Curriculum issues

Guiding Questions:

- What is known about how ICTs can enhance access to and dissemination of educational content?
- What is known about the relationships between ICT use, curricula and standardized testing?
- What is known about language and content issues related to ICT use in education?

Current knowledgebase
What we know, what we believe -- and what we don't

- **"Accessing information" is the main use of ICTs in education**
  "Access to information" is considered to be one of the most important benefits of the uses of ICTs in education. Accessing information -- not using ICTs for communication purposes -- is the most common use of the Internet in schools beyond providing a tool for the development of basic computer literacy skills.
- **Learning materials in electronic format are most useful when they are directly linked to the curriculum**
  The absence of educational content directly linked to curricula is one of the key inhibiters of ICT use by teachers and learners.
- **Creating digital/electronic content is difficult, and expensive**
  Adapting and/or digitizing curricular content for access via ICTs is a lengthy and expensive process. This holds for digitized content accessible on PCs, and is especially true with regards to educational television and video production. Radio dissemination may offer cost savings. The large up-front costs related to the adaptation and/or digitization of curricular content for access via ICTs may make such initiatives attractive for donor aid.
- **Simply importing educational content is to be avoided**
  Where indigenous educational content expertise familiar with the uses of ICT does not exist, it is necessary to have international and local groups work together. Simply importing existing educational content and expertise from abroad is fraught with difficulties; total reliance on local companies and organizations is often not practical in the early stages.
- **Digital clearing houses and evergreen curricula are useful**
  Establishing a clearing house or digital libraries of ready-to-use and customizable ICT-based resources promotes better use of ICT in teaching and facilitates quick and easy access to resources for making lesson plans and for teaching.
- **Evaluation of 'imported' content for cultural relevance must not be neglected**
  Guidelines, resources and mechanisms for evaluation of content are critical if such content is to be culturally relevant.
- **Digitizing content has important equity implications**
  Because of large up-front costs in digitizing content, minority language use may suffer when ICTs are introduced in education and minority language users are at risk of becoming further marginalized. Because of limitations in using minority languages to disseminate content via the Internet, radio may provide a more appropriate mechanism for disseminating content in minority languages.

- **ICT use in testing requires new processes**
  When ICTs are introduced into the testing and assessment processes and procedures, such processes and procedures need to be evaluated and possibly reconfigured.
- **Public-private partnerships can be key**
  Public-private partnerships are often crucial for the development of digital content.
- **ICT use often promotes English language use**
  ICT-enabled teaching and learning is often seen as an important vehicle for the development of English (and other *linguas francas*) language competencies by teachers and learners. This is especially true with science and mathematics instruction, which are delivered in English in many countries where English is not an indigenous or dominant local language. This raises important issues related to learner equity and access to education.
- **Intellectual property issues are very real**
  Intellectual property issues are of tremendous importance when developing digital content for use in education. Ownership of content developed is a key issue to consider. Licensing of content is often an option, but may contain hidden costs.
- **Official guidelines and directives enhance use of ICT-enabled content**
  Guidelines from the Ministry of Education relating to the integration of ICTs in and with the curriculum greatly facilitate the use of ICTs in schools.

Comments

General

- At first glance, content issues related to ICT use in education might seem to some to be of minor importance. After all, access to the Internet (to cite one example) means access to an entire world of educational resources. Access to the Internet provides access to seemingly endless sets of educational resources -- and indeed it does. However, experience shows that there is a dearth of educational resources in a format that makes them easily accessible and relevant to most teachers and learners in LDCs, especially as they relate to a given country's current curriculum.
- Experience tells us that, unless electronic educational resources are directly related to the curriculum, and to the assessment methods used to evaluate educational outcomes (especially standardized testing), lack of appropriate and relevant educational content is actually an important *barrier* to ICT use in schools.

Applicability to LDC/EFA context

- The applicability of all content issues noted above to an LDC/EFA context is quite clear. The use of ICTs to create, disseminate and/or access educational content can have profound impacts on issues of equity and access to education.

Some areas for further investigation and research

- What are the best practices for creating electronic/digital curricular content?
- What is the relationship between uses of ICTs, curricular issues and standardized testing?
- What special issues relate to the creation, dissemination and use of curricular content in indigenous languages?

Knowledge Map: Content & Curriculum

Some Recommended Resources

to learn more ….

- *Enhancing Learning Opportunities in Africa: Distance Education and Communication Technologies for Learning* [Murphy 2002]
- *ICTs in African Schools: Using Information and Communication Technologies (ICTS) in Education: Challenges for Curriculum Integration and Strategies for Success in African Schools* [Ngu 2003]
- *Interactive Radio Instruction: Twenty-three Years of Improving Educational Quality* [Bosch 1997]
- *Integrating ICTs into Education: Lessons Learned* [UNESCO-Bangkok 2004]
- *IT in Education Innovation for Development - Interfacing Global and Indigenous Knowledge* [UNESCO-ACEID 2003]
- *The Second Information Technology in Education Study: Module 2 (SITES: M2) Case Reports* [ISTE 2003]
- *Teacher Education through Distance Learning: Technology, Curriculum, Evaluation and Cost. Summary of Case Studies: Brazil, Burkina Faso, Chile, China, India, Mongolia, Nigeria, South Africa (two studies), United Kingdom* [UNESCO 2001]
- *Schoolnet Toolkit* [UNESCO-Bangkok 2004]

About these Briefing Sheets:

*info*Dev's series of Knowledge Maps on ICTs in education is intended to serve as quick snapshots of what the research literature tells us about a number of key areas of information related to ICT use in education. Each Knowledge Map is not meant to be an exhaustive catalog of everything that is known (or is debated) about the use of ICTs in education in a particular topic; rather, taken together they are an attempt to limn the general shapes of a very large body of knowledge and highlight certain issues in a format quickly accessible to busy policymakers. In general, the *info*Dev knowledge mapping exercise is meant to point to key general assertions and gaps in the knowledge base of what is known about the use of information and communication technologies (ICTs) in education, *especially as such knowledge may relate to the education-related Millennium Development Goals (MDGs).*