



## INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

# Using ICT to Enhance Education and Training

ICT provides powerful tools to inform decision making, improve education policies and practices, and promote lifelong learning. RTI International uses ICT to

- support management, administration, and governance of education
- enhance teaching and learning
- facilitate training

RTI collaborates with host organizations to build capacity to manage education systems and deliver education services. RTI expert advisors mentor counterparts to develop their ability to use information effectively and to build sustainable, demand-driven education management information systems (EMIS). Providing a wealth of international experience, RTI teams work with local partners to enhance teaching practices using ICT; develop, evaluate, and integrate electronic teaching and learning aids; and support school-, district-, and national-level change management for effective ICT integration. RTI develops distance-learning approaches, with careful consideration of sustainability and alignment with lifelong learning objectives. RTI builds on its experience in education and policy systems ([www.rti.org/idg\\_education](http://www.rti.org/idg_education)) to leverage ICT for decision-support and local capacity building.

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*Mongolian teachers review electronic teaching and learning materials and prepare lesson plans with a focus on effective pedagogic integration of ICT. [Photo: Carmen Strigel]*

### Improving the management, administration, and governance of education

***Education Sector Reform Assistance (ESRA) Program (USAID 2002–2007)*** RTI leads a consortium of international and national partners working together on policy and planning, professional development, literacy, public-community partnerships, public-private partnerships, and ICT to improve education in Pakistan. As part of this effort, RTI and its partners conducted an EMIS assessment and implementation program to identify information needs and sources, assess current information flows, and modernize the data-collection and publishing infrastructure. Initial pilot activities (such as the Sindh province) targeted data collection on exams and attendance, use of simulation tools for decision making, and dynamic publishing of results on the Web.

***More Effective Decentralized Education Management and Governance Project (USAID 2005–2010)*** RTI is implementing an innovative ICT grants program to enhance education management and **governance** in the country. Grants are focused on providing access to education resources and information via ICT-supported “education hotspots” and to encourage local design and public-private partnerships to implement demand-driven, innovative ICT applications to improve communication among education stakeholders, information sharing among education administrators, and information-based decision making on the district level.

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**Kano EMIS Capacity-Building Project (USAID, 2003–2005)**, RTI experts helped to develop a computer-based information system for the State Primary Education Board (SPEB) in Nigeria. RTI also trained SPEB staff to use the information to perform analyses, modeling, and education research, as well as to make decisions concerning personnel management, education planning, and budget development. RTI and its local counterparts revised data-collection instruments, upgraded hardware and software, engaged stakeholders (including civil society groups) in dialogue about data-driven system management, and created information products and dissemination strategies. The impact of the Kano EMIS has been significant: it encouraged the federal Ministry of Education to promote a decentralized EMIS strategy. All report formats developed by RTI were replicated in the national EMIS reporting system, and the GIS school-mapping process fostered by RTI was replicated in other states. A number of census questions from the Kano EMIS were added to federal data-collection requirements. Finally, following practice established by the Kano EMIS, the federal EMIS links student learning to school inputs.

“We are deeply impressed with what we have seen of EMIS... We have seen a ready-made database, which is very informative and valuable for all stakeholders and the larger society. We’re returning to Lagos with an entirely different idea of what the Northern part of the country could do, as exemplified by Kano State.” – Mrs. A. O. Adelaja, Leader, EMIS Study Team, Nigeria Federal Ministry of Education (From “EMIS – How Kano blazes the trail” by Hassan S. Indabawa, *This Day*, April 2007.)

### Enhancing teaching and learning

#### **STEP-AP, the regional Study of Technology in Education to Reduce Poverty—Asia and the Pacific**

(ADB, 2006–2007) RTI developed small-scale interventions to promote effective integration of electronic teaching and learning materials in classroom teaching in “information-poor” and remote areas of Mongolia and Samoa. In Nepal and Bangladesh, the RTI team supported the use of ICT to increase access to and quality of training for teachers in remote schools and underserved communities. Based on these initiatives, the RTI team will conduct research to identify good practices of ICT integration, assess and share lessons learned, analyze critical conditions that influence the impact on improved teaching and learning, identify policies and strategies that drive successful practices, and highlight promising models of systemic ICT integration.



School selection screen from Nigeria’s Kano State Primary Education Board (SPEB) EMIS allows users to enter and view school data.

### Facilitating training

#### **Training Model Primary Providers Project (USAID 2005–2006)**

RTI worked with Iraq’s Ministry of Health (MOH) to develop and initiate a national program of model primary health care, primarily through technical and clinical skills building combined with strategic and management capacity building. RTI developed a training management information system and a skills assessment system adapted by the MOH during the life of the project. RTI used a free and open source Web-based Learning Management System to enable the MOH to provide convenient online access to curricula, learning objects, and related information.

#### **Zambian Electronic Perinatal Record System (ZEPRS) Project (Bill & Melinda Gates Foundation/University of Alabama at Birmingham, 2002–2007)**

RTI is delivering an open-source electronic perinatal medical records system to the University Teaching Hospital and 24 clinics in the Lusaka health district. This system operates over a high-speed wireless data network. Together with the Center for Infectious Disease Research of Zambia, RTI created an online application to train nurses and midwives, assessed the efficacy of this training (through exams), and collected feedback during the phased training project to improve curriculum for follow-up sessions. This system supports continuous education by providing new reference material, curriculum extensions, and updates.

RTI International is one of the world’s leading research institutes, dedicated to improving the human condition by turning knowledge into practice. With projects in more than 40 countries and a staff of more than 2,600, RTI offers innovative research and technical solutions to governments and businesses worldwide in the areas of health and pharmaceuticals, education and training, surveys and statistics, advanced technology, democratic governance, economic and social development, energy, and the environment. For more information, visit [www.rti.org](http://www.rti.org).

RTI International is a trade name of Research Triangle Institute.