

TECHNICAL ASSISTANCE COMPLETION REPORT¹

Division: RSDD/RSGP

TA No., Country, and Name: TA 6278-REG : Innovative Information and Communications Technology in Education, and Its Potential for Reducing Poverty in the Asia and Pacific Region		Amount Approved: \$1,000,000 consisting of \$800,000 ADB financing and \$200,000 ADBI parallel financing Revised Amount: \$920,000 consisting of \$800,000 ADB financing and \$120,000 ADBI joint financing	
Executing Agency: Asian Development Bank	Sources of Funding: - Poverty Reduction Cooperation Fund (PRF) ² - Asian Development Bank Institute (ADBI)	Amount Undisbursed: \$188,189	Amount Utilized: \$731,811
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Description

Through support to a series of international conferences in 2004 – 2007 ADB helped to examine with DMC stakeholders e-learning as a means to improve access to quality schooling. It was evident that the potential of new learning technologies was stimulating DMC governments to incorporate Information Communications Technology (ICT) in their education sector operations. However, it was equally evident that DMCs' approach for ICT in education and training predominantly continued to be based on rather narrow approach, namely the supply and use of PCs and software, and where feasible, linked with internet access. This was not proven to be the most cost-efficient approach in many DMCs due to (i) high ICT infrastructure costs, (ii) often inappropriate selection of hardware and software and safeguards for installation and regular maintenance of equipment, and (iii) expensive and often wrongly focused in-service training of teachers undertaken in support of the use of ICT in schools. There was an increasing concern that DMC's reliance on this approach alone may actually accentuate the digital divide and increase inequity in access to knowledge and education, particularly as such a high cost approach has not proven feasible in all areas and for all groups of the society in DMCs.

Improved computing power combined with improved wireless and user friendly satellite technology and reduced telecommunication costs increasingly contributed to reducing space and time barriers for information access and exchange. These opportunities for utilizing more cost-efficient and user friendly ICT solutions in education, and to reach all groups of society, including the poor, users in remote areas, and other disadvantaged groups, were becoming increasingly feasible also in poorer DMCs. In addition, partnerships with private sector in this field were becoming important in DMCs. As the technology was improving rapidly toward more cost-efficient, innovative solutions, there was a need to provide knowledge and capacity development to DMCs on these promising technological developments and opportunities in the education sector, and on corresponding policy and strategy development issues. Thus, the RETA 6278 was designed to implement policy and strategy studies to support development of broader ICT in education frameworks, as well as specific pilot studies on ICT and e-learning innovations to provide in-depth understanding of their potential and feasibility in DMCs.

¹ In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

² Contributor: The Government of the United Kingdom

Expected Impact, Outcome and Outputs

The expected impact of the TA is appropriate and increased utilization of innovative ICT in education in DMCs. The outcome is a consensus on the appropriate, innovative ICT in education solutions and their applicability, replicability, and sustainability in a larger scale in DMC country contexts. Outputs included (i) policy and strategy studies, (ii) specific pilot country studies, and (iii) an international conference held with participation of DMCs and private sector.

Delivery of Inputs and Conduct of Activities

Policy and strategy studies explored ICT in education trends and issues in the region, drawing on a desk study and consultations in Cambodia, Philippines, Thailand, Bangladesh, Samoa, Mongolia, and Nepal. In addition, the specific pilot studies focusing on innovative, cost-efficient and user-friendly ICT in education solutions were implemented in the latter four DMCs. These DMCs were selected for the pilot studies to provide perspectives of a range of ICT in education contexts and potential, ranging from a densely populated country (Bangladesh) to an island country with a small population (Samoa), and from a country with vast flat land area (Mongolia) to a very mountainous country (Nepal). The pilot studies piggybacked ongoing ADB-funded projects in the sector which had ICT in education development activities in their scope, i.e., L2101-BAN Teaching Quality Improvement in Secondary Education, TA4305-SAM the Samoa SchoolNet and Community Access Pilot Project, G9044-MON Information and Communications Technology for Innovating Rural Education, and L1840-NEP Teacher Education Project, respectively. The pilot studies in Bangladesh and Mongolia had an emphasis on e-teacher training while pilots in Samoa and Nepal focused more on e-resources for teaching and learning. However, this was not designed to be and was not implemented in the pilots as an absolute demarcation as e-teacher training and e-resources are very much intertwined dimensions, and this close linkage was, therefore, acknowledged in the pilots.

In consultation with stakeholders and the on-going ADB-funded projects in DMCs, the international consultants in the RETA designed the studies and associated workshops, planned their schedule of implementation, identified the resource persons to be involved, procured equipment, and coordinated and monitored implementation. The domestic consultants assisted in coordination of study activities, organization of workshops, and monitoring and evaluation in the pilot study schools. As necessary, minor adjustments in the schedule of studies were made.

There was a more significant change in the international conference component. During RETA implementation a decision was made to organize a one larger combined international conference, instead of two smaller conferences originally planned. This change in the conference component was made due to the following reason: CWRD was implementing a concurrent RETA focusing on costs and financing of ICT in basic education in particular, involving DMCs in Central Asia, and had included a conference in its original plans. It was decided to combine the efforts of the RETA with those of CWRD RETA in conference organization to provide an Asia-Pacific wide platform for networking and knowledge and experience sharing in the timely development issues in ICT in education. Therefore, a larger conference was organized at ADB HQ jointly with CWRD RETA, titled "Optimizing ICT for Education, Sharing Practical Experiences from the Asia and Pacific Region: What Works, What Doesn't, and in What Circumstances." About 100 delegates from 27 DMCs participated in the combined conference, which included also a session stream on partnerships with strong participation by private sector stakeholders. The conference included also an exhibit of latest technologies. The total number of conference participants was 146.

Studies of the RETA, and their emerging results, were discussed in the conference. Drawing on the studies, RETA consultants prepared analytical papers for the conference and served as facilitators in the specific session streams during the conference. The feedback received in the conference was useful for finalizing the study reports. Also external expert speakers were engaged in the conference and participating DMC delegates presented country reports on ICT in education issues. An interactive web-based wiki - facility was provided for the participants to support knowledge sharing and dialogue during and after the conference.

ADBI was included as conference co-financier in original budgets of both RETAs. The change of plans to organizing a joint conference necessitated a change in ADBI financing from parallel financing to joint financing and administration of such joint financing by ADB under RETA 6278. In addition, as part of the conference costs were covered by CWRD RETA, ADBI financing was reduced from \$200,000 to \$120,000 under the RETA 6278.

The 4 review missions fielded by ADB to review RETA progress in participating DMCs were adequate to effectively monitor RETA progress. In addition, ADB and the RETA consultant team had regular consultations through videoconference facility. The RETA was implemented by a consultant firm Research Triangle Institute (RTI) International, in partnership with iEARN-USA. The performance of the consultant firm was generally satisfactory and required an exceptional amount of guidance in contract management and administration from ADB. In addition, completion of the policy and strategy study component required close support and supervision from ADB, due to a weak performance of the consultant in that component. It was not feasible to change the consultant as the performance issues arose only after the implementation of the study component had progressed to an advanced stage.

Evaluation of Outputs and Achievement of Outcome

The RETA achieved its objectives and completed its planned outputs within the original project timeframe of 2 years. Studies on (i) policy and strategy on ICT in education, and (ii) innovative approaches in areas of e-teacher training and e-resources for teacher/learning, were completed. The international conference focused on a comprehensive range of current ICT in education issues, lessons learned, and best practices, including broader policy and strategy issues as well as innovative approaches, practical solutions, hands-on toolkits, cost implications, and sustainability of benefits of ICT for education. The conference helped to raise awareness and share knowledge on these issues and the importance of pursuing strategies and technological solutions which are cost-efficient and can reach also students in remote areas, and other disadvantaged groups. The conference participants included senior policy makers and planning officers, researchers, private sector stakeholders, NGOs, and development partners.

The study results highlighted the need to develop comprehensive national ICT for education policies and strategies with appropriate supporting regulatory frameworks. In addition, it was stressed that successful and sustainable adoption of ICT to support education delivery and quality in DMCs require coordination and cooperation between education, finance, and infrastructure sectors/line ministries in planning and implementing ICT for development. Too often infrastructure perspective and procurement of computer equipment have been the only drivers for planning and decision making in the education sector in DMCs. The RETA results provided evidence, and the conference with participation of DMCs delegates, private sector, and other stakeholders, reached a clear consensus upon the importance of shifting the approach from ICT in education (which reflects ICT infrastructure/procurement perspective only) to *ICT for education* – approach. The latter approach promotes the need to determine the feasibility of ICT solutions for improving education in the specific contexts of each DMC. This “optimizing” and analysis of feasibility of ICT solutions for improving education delivery and quality is important prior to making decisions on infrastructure and equipment procurement, to ensure that such decisions will adequately and in a sustainable way support education quality and delivery also to students in remote areas and other disadvantaged groups. Comprehensive ICT for education policies and strategies, and regulatory frameworks are needed to help guide and ensure the adoption of the correct approach and corresponding ICT solutions in the sector, which suit circumstances of an individual DMC. In DMCs, where comprehensive national ICT for development policies and strategies exist already (often with support from a specific national ICT ministry or equivalent body), the determination of the feasibility of ICT solutions for the needs of specific sectors (such as the education sector) is more comprehensive.

Education outcomes are best served when ICT is embedded and mainstreamed in education programs and their delivery. During the pilot studies in Mongolia and Samoa, e-resources in teaching and learning were used to strengthen capacity of teachers in computer skills, pedagogy and teaching methodology. Pilot studies showed that communities can match their infrastructure deficiencies with the innovative approaches for ICT for education, and contribute to reduction of digital divide in the sector by promoting cost-efficient ICT solutions which are feasible also in remote and other disadvantaged areas, i.e., mobile phones in Bangladesh, stand alone ICT technologies in Nepal, and solar and wind power to operate ICT infrastructure in Mongolia. Often the sophisticated standard PC based technology is not the most appropriate and cost-efficient option for these circumstances.

The RETA complemented and further informed the implementation of on-going ADB-funded projects in education in the pilot countries. In Mongolia and Samoa the RETA pilot study helped to identify critical information on what works, what does not, and under what circumstances in integrating e-resources into classrooms, In Bangladesh and Nepal, the RETA supported operational planning and implementation of existing ADB-funded teacher training projects. Future efforts in leveraging ICT to support teacher training, especially in rural and remote areas and for marginalized populations were identified.

The RETA produced summary reports from each study, analytical papers and flyers, and conference proceedings (web-based). In the end of the RETA these outputs were incorporated into a final report.

Overall Assessment and Rating

The planned outputs of the RETA were achieved. These outputs facilitated evidence-based knowledge sharing with a wide range of DMCs, and contributed to reaching the consensus as specified in RETA's expected outcome. The RETA addressed gaps in policy and strategic planning, capacity development, and infrastructure/equipment provision for ICT for education, thereby strengthening awareness and planning in the sector in DMCs. The RETA produced, and effectively disseminated, through the international conference, guidance for policy and strategy formulation, and for adoption of innovative, more feasible and cost-efficient ICT for education approaches and technical solutions, which are contextualized (optimized) to suit the circumstances in individual DMCs, and will therefore be more sustainable investment in the long term. The RETA studies generated high interest in international ICT and education development community.

The RETA outcome highlighted also the need to produce a hands-on "tool" on ICT for education issues for ADB

education sector staff and DMC officers in the sector, to guide dialogue in this field, and to further support the development of appropriate policies, strategies, and implementation plans, and increased utilization of innovative ICT in Education in DMCs (Impact of the RETA). The guideline is also a useful tool for the design of larger scale ICT for education projects. The study reports and other material produced by the RETA have been utilized for the preparation of the guideline.

In the light of the above, the RETA is rated *highly successful*.

Major Lessons

In a rapidly evolving development field, such as ICT for education, there is a need to implement studies on a regular basis, to update and share knowledge on the latest developments. This will support assessment of feasibility and adequacy of planned investments in DMCs, and help ADB and other possible financiers of such investments to promote the most cost-efficient, and strategically and technically the most optimal solutions suited for circumstances of individual DMCs. As ICT for education has become an important area in ADB's education sector portfolio, regular evidence-based knowledge sharing on latest developments in this field will continue to be important between ADB and its DMCs.

Recommendations and Follow-Up Actions

DMCs to ensure that

- (i) major investment decisions in ICT for education are based on appropriate contextualization and needs analysis taking into consideration the circumstances and realities of the individual DMC,
- (ii) comprehensive cost estimation, particularly total cost of ownership (TCO) analysis, and sustainable financing issues, including potential for private-public partnerships, are included in the investment planning, and
- (iii) adequate ICT for education policies and strategies are in place to support the implementation of the investments in the sector;

ADB to promote and support

- (i) innovative and evidence-based ICT for education strategies in ADB's education sector assistance,
- (ii) implementation of further studies, capacity development initiatives and awareness programs with stakeholders and partner organizations to continue to facilitate timely knowledge sharing on best practice in this fast evolving development field;
- (iii) preparation of a tool on good practice in ICT for education to support dialogue between ADB staff and DMCs in this field, and to support design and implementation of education projects with ICT for education component or stand-alone ICT for education projects (The tool has been finalized and disseminated after the completion of the RETA).

Prepared by: Jouko Sarvi Designation: Principal Education Specialist, RSDD