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1. Education Policy
Building National Capacities to Develop Appropriate Policies and Plans for the Integration of ICT into Education

Context

Rapid developments in information and communication technologies (ICT) in recent years have resulted in significant changes in the way the world operates and communicates. This in turn has had an impact on educational needs, both in terms of the content and the delivery of educational services, and has also put pressure on decision-makers to acquire new technologies. At the same time, forms of ICT are multiplying, with an increasing array of ICT options for decision-makers to choose from when integrating ICT into education.

In order to make successful use of ICT in enhancing the reach and quality of teaching and learning, policy makers need to be aware of how ICT can be of best value in their country’s education system, and of the need to develop a supportive policy environment and framework at the national level for the integration of ICT into their education systems.

Project

ICT in Education Policy Project

This project began in 2003 and has so far involved participants from 16 countries in the Asia-Pacific region.

Achievements

• Awareness raised and networks created

With the aim of raising awareness of the issues surrounding ICT in education, and of bringing together policy makers from the Asia-Pacific region to share ideas and form networks, a policy makers’ workshop, the High-level Seminar and Workshop for Decision-makers and Policymakers in Asia and the Pacific was convened from 18 to 21 February 2003 and from 22 to 25 April 2003. Twenty-five Ministry of Education participants, including several Ministers and Vice Ministers of Education from ten Asia-Pacific Member States attended this event. The workshop was organized in four phases: two face-to-face meetings in Bangkok and two online sessions.

An important outcome was the recommendation by the participants that tools be developed to help them integrate ICT effectively in their education systems. It was agreed that a “Toolkit” would be developed which would translate the expertise of key specialists and organizations into guiding principles. The Toolkit would thereby help guide education policy makers to formulate, plan, implement, monitor and evaluate policies which ensure the judicious and effective use of ICT to enhance the quality of teaching and learning in their respective countries. This proposed Toolkit would also provide a forum for interactions between policy makers, planners and practitioners in different countries.

• Policy maker needs assessed

In order to prepare the policy makers’ Toolkit, it was necessary to first assess the needs of policy makers. The UNESCO ICT in Education Unit undertook a needs-assessment through a series of questionnaires and through interviews with policy makers in the Ministries of Education of UNESCO Asia-Pacific Member-States. Results were documented in a publication entitled, “Needs Assessment of ICT in Education Policy Makers in Asia and the Pacific: Towards the Development of a Toolkit for Policy Makers”, published in 2004. The publication is available through the ICT in Education e-library.

• Results and impacts evaluated, published and disseminated

Six months after the workshop, the impact of the workshops in the participating countries was assessed in an external evaluation. The results were documented in a publication entitled, “Report of the South-East Asian ICT Advocacy and Planning Workshop for Policy makers and National ICT Coordinators, 15 December 2003 and the Sub-Regional Meeting of National ICT Coordinators on Project Planning and Management, 16-18 December 2003”, published in 2004, widely disseminated to policy makers, experts and educators, and made available online.
• Capacity of decision-makers enhanced

Through a series of workshops and from publishing and disseminating the resulting findings and lessons-learned, policy makers in the Asia-Pacific region have been provided with locally-relevant information about the ways in which ICT can contribute to enhancing the quality of teaching and learning in the region, as well as about the potential pitfalls of investing in ICT. Through their involvement in the workshops and in the process of preparing the Toolkit the capacity of policy makers to develop appropriate ICT-in-Education policy and strategies has been enhanced. Ongoing activities will expand on these achievements and further build national capacity.

• Toolkit for policy makers developed

The basic outline and features of the Toolkit were discussed by participants at the Developing the ICT in Education Policymakers Toolkit Workshop, held from 2 to 4 March 2004. The framework and content of the Toolkit were developed, based on these discussions. In March 2005 the first version of the Toolkit (version 1.1) was reviewed by over 30 participants, including ICT-in-education specialists from research institutions and international organizations, and policy makers from several Ministries of Education in the Asia-Pacific region. Based on the feedback received, Toolkit versions 1.2 and 1.3 came out in April and July 2005, respectively. In September 2005 Toolkit version 1.3 was used to train educational planners from three Asia-Pacific countries (Pakistan, Philippines and Thailand) during the Toolkit Training Workshop held in Chiang Mai, Thailand.

The Toolkit was designed and developed by UNESCO, Knowledge Enterprise Inc. (KE) and the Academy for Educational Development (AED), with input from over 40 institutions and individuals worldwide, including the Commonwealth of Learning (CoL); Education Development Centre Inc; North Central Regional Education Laboratory (NCREL); Pacific Resources for Education and Learning Star Schools (PRELStar); the World Bank Institute, World Bank Information for Development Program (infoDev), and policy makers and practitioners from Cambodia, Indonesia, Pakistan, Philippines, Samoa and Thailand.

• Policy makers introduced to the toolkit and trained in its use

At the Toolkit Training Workshop held in Chiang Mai, Thailand, between 5 and 10 September 2005, the ICT in Education Toolkit for Decision Makers, Planners and Practitioners was introduced to policy makers from three pilot Asia-Pacific countries: Pakistan, Philippines and Thailand. The policy makers were trained in the use of the Toolkit and gave feedback and suggestions for further developing the toolkit. The Toolkit is now in the finalization stage.

The final version of the first-ever online policy Toolkit will be made available in early 2006. There have already been requests for the Toolkit from all over the world, and various training schemes based on this Toolkit are currently being explored.

Further Information

Further information about the project goals and activities is available online at www.unescobkk.org/education/ict/policy. Publications can be accessed through the ICT in Education elibrary: www.unescobkk.org/education/ict/elibrary.
2. Training of Teachers

Building the ICT-Capacity of those at the Heart of Education

Context

The 2005 Education for All (EFA) Global Monitoring Report highlights the importance of high quality education in the achievement of EFA goals as follows:

“... the achievement of universal participation in education will be fundamentally dependent upon the quality of education available. For example, how well pupils are taught and how much they learn, can have a crucial impact on how long they stay in school and how regularly they attend. Furthermore, whether parents send their children to school at all is likely to depend on judgements they make about the quality of teaching and learning provided – upon whether attending school is worth the time and cost for their children and for themselves.”

The EFA Global Monitoring Report also confirms the central role of teachers in any education system, emphasizing that the quality of education is directly linked to how well teachers are prepared for teaching.

In today’s world teachers need to be equipped not only with subject-specific expertise and effective teaching methodologies, but with the capacity to assist students to meet the demands of the emerging knowledge-based society. Teachers therefore require familiarity with new forms of information and communication technology and need to have the ability to use that technology to enhance the quality of teaching and learning.

Many countries in Asia and the Pacific region have realized the need for providing teachers with training in ICT and have launched various professional development initiatives. However, many of the training activities to date have been one-off, crash courses which focus on computer literacy and do not enable teachers to integrate ICT in their day-to-day teaching activities and master the use of ICT as an effective tool to improve teaching and learning.

With the goal of enabling teachers to use ICT to enhance the quality of teaching and learning, the UNESCO ICT in Education Programme has implemented a range of regional, sub-regional and national projects, as listed below.

Project A:

Training and Professional Development of Teachers and Other Facilitators for Effective Use of ICT in Improving Teaching and Learning

This project began in 2003 and has been implemented in 11 countries so far in the Asia-Pacific region. This project is coordinated by the UNESCO Asia-Pacific Programme of Educational Innovation for Development (APEID).

Project B:

Bridging the Within-Country Digital Divide in Education: Improving Education in Western China through Innovative Use of ICT

This initiative is a sub-project of the project listed above. This project began in 2003 and targets the People’s Republic of China where there is a within-country digital divide between the eastern region and the disadvantaged west. It is being implemented in urban and rural areas of three provinces: Gansu, Qianghai, and Ningxia/Guizhou and is coordinated by the Chinese National Commission for UNESCO through the Gansu Provincial Education Commission.

This project is developing innovative, practical models and pedagogies that will work in disadvantaged schools and communities where infrastructure for ICT application remains underdeveloped.

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1 UNESCO, Education For All Global Monitoring Report 2005, p.28
**Project C:**

**Establishing the Effective Use of ICT in Education for All in Cambodia**

This project is based on the premise that the innovative and appropriate use of ICT can both improve the quality of learning and help reach those excluded from learning in Cambodia. This project began in 2003 and is coordinated by UNESCO Phnom Penh.

**Project D:**

**Training of Teachers in Information Technology to Meet the Emerging Needs of the New Learning Environment in Sri Lanka**

This project was launched in 2003 and is managed by UNESCO New Delhi.

**Achievements**

- **Teacher-educators trained in ICT-pedagogy integration**

  At the “First National Training Programme for Teacher Educators on ICT-Pedagogy Integration” held in Penang, Malaysia, between 6 and 10 June 2005, teacher educators were trained in how to integrate ICT into pedagogy. This workshop was followed by a second training programme in Bangalore, India, between 29 August and 2 September 2005. These training programmes came about as a result of extensive planning and discussion, with the participation of education experts, educators, and administrators, in a series workshops and seminars. Modules that were studied by the teacher-educators included:
  - Integrating ICT for pedagogical innovations.
  - Integrating ICT productivity tools into learning practices.
  - Enhancing teaching and facilitating learning using multi-modal instruction.
  - Integrating open and flexible learning strategies in online education.
  - Integrating the UNESCO Four Pillars of Education into classrooms in the information age.

- **Guidelines developed for integrating ICT into teaching and learning**

  A series of workshops, held as part of the “Training and Professional Development of Teachers and Other Facilitators” project, resulted in a publication which provides guiding principles and models for integrating ICT in teaching and learning; a curriculum framework for integrating ICT with pedagogy in teacher education programmes; and regional performance standards for teacher competencies. This publication: *Regional Guidelines for Teacher Development for Pedagogy- Technology Integration*, was widely disseminated and can be downloaded from the ICT in Education e-library.

- **Online forum created to facilitate networking and information exchange between educators**

  An e-forum was created to encourage networking and cooperation between teachers, teacher trainers and facilitators, and the exchange of ideas and resources on the effective integration of ICT in teaching and learning.

- **Assisted in education policy development**

  As part of the “Establishing the Effective Use of ICT in Education for All in Cambodia” project, the UNESCO ICT in Education programme supported and facilitated the formulation and adoption of a Cambodian national policy and strategy on the effective use of ICT in Education.

- **Integrated ICT into teacher-training courses**

  ICT integrated into the training courses of 25 teacher-training centres in Cambodia.

- **Training provided in how to integrate ICT into teaching**

  Trained (in Cambodia) 600 teacher-educators, 2,000 teachers, and the personnel of two community learning centres and nine non-formal learning organizations, in how to integrate ICT into teaching.
3. Teaching and Learning

Developing and Delivering Content using ICT

Context

ICT pervades modern society to the extent that many countries now regard the mastery of information and communication technology as a core element of basic education alongside literacy and numeracy. But ICT is more than just another subject for students to study; ICT has the potential to be a valuable tool in enhancing the quality of teaching and learning. For example the use of radio programmes in classrooms can provide interesting and relevant content in a range of subjects, including social studies and English language; while computer simulations and visualization technologies can help students to learn complex concepts in more concrete ways.

An examination of countries in the Asia-Pacific region has shown that in this region ICT is not being used to its full potential in enhancing the quality of teaching and learning. There are both technical and capacity-related barriers that have to be overcome. Many countries of the region do not make use of ICT at all in their education systems due to technical barriers (such as lack of infrastructure, equipment and connectivity) but even in countries where the technical barriers have been overcome and ICT is present in classrooms, other kinds of barriers remain. In these countries, ICT is often used simply as a supplement for existing pedagogical practices. However in order to fulfil the potential of ICT as a tool for enhancing teaching and learning, ICT must be fully integrated into pedagogical processes, which requires a cognitive shift on the part of educators, curriculum developers, administrators and policy makers.

With the goal in mind of overcoming the technical and capacity-related barriers, and fully integrating ICT into education in the Asia-Pacific region so as to enhance the quality of teaching and learning, the ICT in Education programme has implemented several cross-cutting projects. These projects bring together teacher-training initiatives with schemes to develop locally-relevant and innovative content.

Established an e-learning bus

An ICT-equipped bus was set up which travels across Cambodia providing access to ICT equipment and services for many deprived schools and communities.

Produced and disseminated local ICT-based content

Produced (in Cambodia) local content on selected topics in print, CD-ROM and VCD, and widely disseminated this local content.

Training conducted in using ICT for research and materials development

Fifty staff members at the National Curriculum and Book Development Centre in Cambodia were trained to use ICT for research and in the development of locally-relevant and good-quality educational materials.

Further Information

Details about these teacher-training projects are available online at: www.unescobkk.org/education/ict/teachertraining. The teachers’ online forum can be accessed through the following website: www.unescobkk.org/education/ict/teachertraining/forum. And useful information for teachers, trainees and learners can be found at the “Portal for Teachers”: www.unescobkk.org/education/ict/teachertraining/portal.
Project A

The ASEAN SchoolNet: Strengthening ICT in Schools and SchoolNet Project in ASEAN Setting

This project was launched in July 2003 and has been piloted in 24 schools in eight participating ASEAN (Association of South-East Asian Nations) countries: Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Philippines, Thailand and Viet Nam. The project focuses on three subject areas: languages, mathematics and science.

What is SchoolNet?

SchoolNet is an initiative that aims to promote the effective use of information and communication technologies (ICT) in learning by promoting the connection of schools to the Internet and by creating a network of schools. SchoolNet envisages this network as being a means by which to: build connections among students, teachers and schools; share information and resources; and prepare learners for knowledge-based societies. SchoolNet also encourages the creation of locally-relevant and high-quality educational resources through ICT and champions lifelong learning.

Project B

Improving Management and Delivery of Technical and Vocational Education through the Application of ICT.

Technical vocational education (TVE) is concerned with the preparation of learners for employment through the provision of knowledge, skills and attitudes desirable in the modern working environment. With our working world now fully permeated with ICT, it is vital that TVE includes training in ICT applications.

Achievements

- Infrastructure provided

Twenty-four schools in the eight participating ASEAN countries were provided with computer equipment and internet access.

- Capacity raised of teachers and technical personnel

Teachers and technical personnel in the 24 pilot schools in eight ASEAN countries were trained in ICT operational skills, materials development using ICT, webpage development and SchoolNet network management.

- Teaching-Learning materials compiled and distributed

Existing ICT-based lessons and materials for teaching language, mathematics and science were compiled (from the internet and other sources). These lessons and materials were examined and analyzed by teachers and curriculum developers, and the most useful and effective ones were included on a CD-ROM for distribution to schools in the ASEAN countries.

- Locally-relevant teaching-learning materials created

Teachers were assisted to create (in their own languages), in cooperation with curriculum developers, ICT-based lessons and materials for integration into language, mathematics and science teaching in secondary schools. The best lessons and materials were translated into English and shared with other schools.
• ICT integrated into curricula and teaching-learning

Using the materials that had been developed, the project systematically integrated ICT into curricula and into the teaching of mathematics, science and language subjects in 24 schools in eight ASEAN countries, thereby enhancing the quality of teaching and learning in those subjects.

• Lessons-learned compiled and disseminated

The good practices and lessons-learned about ICT integration in education and SchoolNet experiences were compiled and documented in three publications, which have been disseminated to schools, teacher-training institutes and education ministries across the Asia-Pacific region.

• Telecollaboration activities initiated

In order to strengthen SchoolNet and the sharing of knowledge, telecollaboration activities were initiated among the 24 pilot schools, through the use of the Learning Circle model.

• Advocated for curriculum change

Through networking, advocated for changes in policies and programme strategies for integrating the use of ICT in the national education curriculum of ASEAN countries.

• Conducted a situational analysis of ICT in Technical and Vocational Education

Reviewed the current status of ICT equipment and related infrastructure in Technical and Vocational Education (TVE) departments in the seven targeted countries (Bangladesh, Bhutan, Cambodia, Lao PDR, Myanmar, Nepal, Viet Nam), and highlighted the equipment needs.

• Facilitated planning and project implementation

A workshop brought together 21 representatives from the seven beneficiary countries to familiarize them with the “Improving Management and Delivery of Technical and Vocational Education through the Application of ICT” project, including the expected results. At the meeting, the participants were also acquainted with several examples of the application of ICT in the delivery of TVE. The participants pledged to select contact points for the project upon their return to their countries. The identification of training needs was initiated; and the equipment-needs were confirmed. The participants left the planning meeting with an understanding of their roles and responsibilities in the implementation of the project.

Further Information

For detailed information about these projects visit: www.unescobkk.org/education/ict/teachinglearning. Specific information about the SchoolNet project can be obtained from the project page: www.unescobkk.org/education/ict/schoolnet.

All publications can be downloaded from the ICT in Education elibrary: www.unescobkk.org/education/ict/elibrary.
4. Non-Formal Education

Using ICT to Bring Education to Out-of-School Youth and Adults

Context

While more children are going to school than ever before, many drop out before grade five of primary school or graduate without mastering even a minimum set of literacy skills. In many countries of the Asia-Pacific region there is a lack of coordination and support for the education of these children, and little provision of literacy and continuing education for youth and adults.

In view of this situation, UNESCO’s Asia-Pacific Programme of Education for All (APPEAL) supports Member States in their efforts to systematize non-formal education (NFE), and assists them through training personnel and developing learning materials for NFE. Since the late 1990s, APPEAL has also been promoting the concept of Community Learning Centres (CLCs) for generating grassroots-based interest and participation in literacy, basic education and continuing education activities for disadvantaged people.

Recognizing the potential of ICT to transform the teaching-learning process in the Non-Formal Education context, as well as its potential in changing the way educators and learners gain access to knowledge and information, APPEAL has developed, through the ICT in Education programme, a number of projects which focus on using ICT to enhance the reach and quality of teaching and learning in the NFE context. Such projects have the ultimate aim of assisting learners in expanding their livelihood opportunities and in enabling them to improve their quality of life.

Project A

ICT for Community Empowerment through NFE

This project began in mid-2003 with pilot activities in five countries – Indonesia, Lao PDR, Sri Lanka, Thailand and Uzbekistan. In 2004, the programme expanded to include pilot projects in the People’s Republic of China, India, the Islamic Republic of Iran, Philippines and Viet Nam.

The project makes use of a range of ICT tools to improve the quality of teaching and learning in NFE, empower communities, facilitate the sharing of experiences, and enhance policy dialogues. These tools include audiotapes, CD-ROMs, computers, digital cameras, the internet, mobile vans, radio, television and videotapes. This project is coordinated by the UNESCO Asia-Pacific Programme of Education for All (APPEAL).

Project B

Tajikistan-Uzbekistan Silk Road Radio Project

The Silk Road Radio Project was launched in 2000 and uses a widely accessible form of information and communication technology, radio, to reach large audiences in an innovative and engaging way. The project involves the production of a twice-weekly radio drama series, which is transmitted in both Uzbek and Tajik languages. The radio series builds on the centuries-old tradition of story-telling to provide information and education on topics such as reproductive-health and other contemporary issues, to people in remote regions.
Achievements

• Country-level action plans developed and implemented

Participating countries in the “ICT for Community Empowerment through NFE” project gathered together in 2003 to develop specific action plans for their country in terms of using ICT to enhancing non-formal education. These action plans were based on the results of a needs-assessment survey conducted prior to the meeting. The action plans have been implemented over the past three years through national-level activities.

• Country experiences, knowledge gained and lessons-learned shared

The experiences, knowledge and lessons-learned of each participating country as a result of the implementation of the “ICT for Community Empowerment through NFE” project activities were shared at a regional workshop held in Vientiane, Lao PDR from 22 to 25 June 2004. The results were compiled and published in a report entitled Information and Communication Technologies (ICTs) for Community Empowerment through Non-formal Education: Experiences from Lao PDR, Sri Lanka, Thailand and Uzbekistan. The report was disseminated to educators, Community Learning Centres, and Education ministries across the region.

• Community learning centres supported and enhanced

In Lao PDR, the “ICT for Community Empowerment through NFE” project focused on improving the capacity of community learning centres (CLCs) to serve as resource centres for enabling rural youth in Namon Nuea and Chahom villages in Vientiane province to improve their livelihood options and increase their incomes.

The project has provided CLC staff with training in planning and management and in the skills needed to use ICT for such things as accounting, maintaining a community database, and the marketing of community products, as well as with the capacity to provide local youth and other community members with ICT equipment for accessing news and information about how to improve their life skills and generate income.

• Community telecentres established

In Sri Lanka, the “ICT for Community Empowerment through NFE” project has assisted the Sarvodaya Shramadana Movement in establishing telecentres, with the aim of facilitating community development in Rathnapura, Gampaha and Kuliaputiya districts. These community telecentres will serve the Sarvodaya’s village banks as well as six CLCs operated under the NFE Unit of the Ministry of Education.

Other project activities in Sri Lanka include the development of community databases and the dissemination of useful information to villagers and entrepreneurs through Sarvodaya’s Mobile Multimedia Unit, as well as provision of computer training for village bank staff, village volunteers and CLC officials.

• Rural communities empowered through provision of ICT skills

In Thailand, under the Northern Regional NFE Centre, the “ICT for Community Empowerment through NFE” project is empowering the members of rural communities who want to use ICT, in particular, computer programs, for facilitating better accounting processes and financial management (both for families and community stores).

The project was initially implemented in Ban Samkha, and was extended to three other villages in Mae Ta district, Lampang province: Ban Tung, Ban Gom and Ban Don Fai. The training was extended by means of ICT laboratories, through which project staff have coordinated the sharing of the ICT skills among all residents of the targeted villages.
• Databases and networks developed

Under the “ICT for Community Empowerment through NFE” project, the National Commission for UNESCO of Uzbekistan is using ICT to assist in developing community databases and documentation for community planning and management. Other activities have included establishing an ICT network among CLCs in the target areas: Samarkand, Andijon and Bukhara, and providing ICT training to all personnel and community people at the project sites. In addition, the project has involved the development of NFE teaching-learning materials using ICT.

• Training provided

Training (managerial and technical) was provided in 2002 to build the capacity of writers, editors, producers, technical staff and others involved in producing the Silk Road radio programme.

• New radio programmes supported

A spin-off radio programme, inspired by the Silk Road drama series has been developed in Russian. The “Silk Road Radio” project provided training for those involved in this new drama series.

Further Information

Information about NFE projects, as well as useful resources on ICT and NFE are available through the following website: www.unescobkk.org/education/ict/nfe

Publications on ICT for Non-Formal Education can be accessed via the ICT in Education elibrary: www.unescobkk.org/education/ict/elibrary.

5. Monitoring and Measuring Change

Monitoring and Measuring the Impact of ICT in Education using Performance Indicators

Context

It is generally believed that the use of ICT in education can enhance the quality of teaching and learning and empower teachers and learners, but data to support these beliefs are limited and results of studies are mixed. While many examples of success stories exist, they have not been compiled and analyzed. Furthermore, projects implemented to integrate ICT into education are often initiated in the absence of widely accepted standard methodologies and indicators, making it difficult to subsequently monitor and assess their impact and demonstrate accountability to funding sources and the public.

In response to this situation the ICT in Education programme initiated a project to develop performance indicators to monitor the use and outcomes of the technologies, and to demonstrate accountability.

Project

Performance Indicators on ICT Use in Education

This project was developed in 2002 with the long-term objective to develop a structure of indicators to measure ICT use in education and provide a basis for policy planning and programme improvements, specifically demonstrating if and how the use of ICT in education enhances the quality of teaching and learning; serves as a catalyst for educational change; and empowers teachers and learners. This project is coordinated by the Assessment, Information Systems, Monitoring and Statistics (AIMS) Unit of the UNESCO Bangkok office.
Achievements

• **Comprehensive situational analysis conducted**
  
  This situational analysis was conducted in order to determine what indicators have been used so far in other projects to measure the impact of ICT in education.

• **A set of proposed indicators generated**
  
  Through a series of consultative workshops and meetings, the project produced a set of core performance indicators. These core indicators are grouped into five areas:
  
  - ICT-based policy and strategy
  - ICT infrastructure and access
  - Curriculum and textbooks
  - Teaching process and outcomes
  - Learning process and outcomes

• **Performance indicators pilot-tested in three countries**
  
  Three countries, India, the Philippines and Thailand, were selected to pilot-test the performance indicators that were developed. In these countries, key personnel were trained on survey design and data collection, installation and the use of software for data collection, storage, analysis and dissemination. The Office of the Regional Advisor for the UNESCO Institute for Statistics served as the key source of technical advice in support of these national-level activities.

• **Results published and disseminated**
  
  The results of the project have been published in two key publications:
  

These reports were disseminated for use by other countries, enabling them to develop performance indicators to assess the impact of ICT in education in their countries.

**Further Information**

For more information about these projects please refer to our website: [www.unescobkk.org/education/ict/indicators](http://www.unescobkk.org/education/ict/indicators).

Publications can be accessed through the ICT in Education elibrary: [www.unescobkk.org/education/ict/elibrary](http://www.unescobkk.org/education/ict/elibrary).
6. Research and Knowledge-Sharing
Collecting, Creating and Disseminating Information and Knowledge about ICT in Education

Context

A wealth of information has been created and more is published every day about the value of ICT skills and about how specific forms of ICT can be used to enhance the quality of education, as well as about what works or does not, and why. Generally, however, policy makers, educators, managers and learners lack the time required to sift through the large volume of information to find what they need in order to come to decisions regarding the use of ICT in their local context. Also, there is often little information available that is relevant to the Asia-Pacific region. Experiences in the use of ICT in education in the Asia-Pacific region have until recently not been adequately documented, compiled, analyzed and disseminated, with the result that best practices and lessons-learned were not being shared and knowledge was not being expanded on how best to use ICT to enhance the reach and quality of teaching and learning. The potential users of this valuable information were therefore unable to gain useful knowledge to enable them to achieve their educational goals.

Faced with this situation, the ICT in Education programme implemented two projects which, as well as providing support for the other projects, provide a means of ensuring that relevant information about the use of ICT in education in the Asia-Pacific region is disseminated widely and lessons-learned are made available to all.

Project A
Regional Clearinghouse in Support of the ICT in Education Programme

This project was established in 2003 and serves both to support the other UNESCO Asia-Pacific ICT in Education projects and to collect, create and disseminate information and knowledge about ICT in Education in the region.

Project B

Meta-Survey on the use of Technologies in Education in Asia and the Pacific (2003 – 2004)

The Meta-Survey project began in 2003 and mapped the use of ICT in the education systems of the entire Asia-Pacific region by gathering information about the state of ICT use in primary and secondary, non-formal, technical and vocational education in 44 countries in the Asia-Pacific region. The Meta-Survey also examined issues relating to ICT use and gender equality in order to identify areas for further efforts to ensure that girls and women are not excluded from the educational benefits ICT offers.

Achievements

- Project results and lessons-learned collected, analysed and disseminated

All of the results, lessons-learned and publications from the various projects that make up the ICT in Education programme are shared via the Clearinghouse project which disseminates these results through a regular newsletter, distributes project publications and maintains a comprehensive website. The Clearinghouse thereby ensures that the knowledge created through the ICT in Education programme is accessible and usable by decision-makers, educators and learners everywhere.

- Information compiled in databases and portals

Through ongoing research and information-gathering, several databases have been established which contain information relating to the use of ICT in education in the Asia-Pacific region. These databases are a source of reference material for researchers, and for those involved in: professional development and training; policy development; educational materials development; and monitoring and assessment of the impact of ICT in improving the quality of teaching and learning. In addition, a portal has been created (in cooperation with Teacher Training projects), containing a collection of online resources relating to the use of ICT in the professional development of teachers.
• Project results, materials, databases and library made available online

A website has been created that not only promotes the UNESCO ICT in Education programme activities, but also provides a means of sharing and disseminating information about other programmes and projects in the region that relate to ICT in Education, and about the issues and lessons-learned. The website includes the above-mentioned databases and portals, a virtual library, and resources, including links to online training courses and other useful services. An online forum for teachers and trainee-teachers has also been established which enables the exchange of information and resources among and between teachers and trainees.

• Website enhanced

The contents of the ICT in Education website are regularly updated and in March 2005 the Clearinghouse Project redesigned the website to enable greater ease of navigation in accessing its useful resources and services, and to facilitate flow, exchange and use of information.

• Increased exposure

An analysis of the ICT in Education website conducted in March 2005 showed that visits to the site had increased to more than 10,000 per month, up from 8,500 per month in September 2004 (not including visits by UNESCO staff).

• Newsletter disseminated to an ever-widening audience

During 2004, fortnightly e-newsletters were sent to a list of over 1,440 subscribers worldwide. Since January 2005, over 3,000 e-mail addresses have been added to the mailing list, with the result that the e-newsletter now reaches over 4,000 subscribers. The list continues to be expanded rapidly.

• Regular reviews and analysis of website content

An advisory team was set up to not only to review the Clearinghouse website contents but also to ensure that changing needs continue to be identified and met.

• Mechanisms established to ensure information is accessible to all

Publications are disseminated widely, with an emphasis on ensuring that those in remote and hard-to-reach areas have access to the information they need. The website is continually updated and the website contents are regularly put onto CD-ROMs, which are distributed to schools, teacher-training institutions and other organizations in regions that lack access to the internet (or which have an unreliable internet connection).

• Evaluation of educational software conducted

In order to assist decision-makers when deciding which educational software to choose, 250 pieces of educational software being used in the Asia-Pacific region, (particularly in Australia, India, Indonesia, Malaysia, Philippines and Thailand), were compiled and evaluated. Results of this evaluation have been made publicly available through the ICT in Education website databases, and can also be accessed directly through the following link: www2.unescobkk.org/education/ict/EduSWEval_2/search.asp.

• Catalogue of Key Publications published and distributed widely

A catalogue entitled Integrating ICTs into the Curriculum: Analytical Catalogue of Key Publications, was compiled which contains information about a range of resources, including books, CD-ROMs, online publications, websites and articles, that provide teachers, school managers, curriculum developers and administrators with guidelines and strategies for integrating ICT effectively into teaching and learning. This catalogue was disseminated in print form and also via the ICT in Education website.
The catalogue is divided into six sections, each with a particular focus area:
» General Principles and Strategies for Integrating Technology in Education and the Curriculum.
» Integrating Technology into the Classroom and Developing Lesson Plans that Integrate ICT.
» Technology Integration into Specific Subjects.
» Requirements for and Barriers to Effective Technology Integration.
» Evaluating Effectiveness of Technology Integration.
» Case Studies of Successful Technology Integration in Schools.

• **Meta-Survey results published and widely disseminated**

The results of the Meta-survey were compiled, analyzed and published, and this publication was disseminated in print form, CD-ROM and via the ICT in Education website.

The survey includes an Asia-Pacific region overview and a country-by-country analysis of the following themes:
» National polices regarding use of ICT in education.
» Current levels of ICT infrastructure.
» Initiatives for training teachers in use of ICT.
» Access to and use of ICT in various learning environments.
» Constraints on the use of ICT in education, and opportunities for UNESCO assistance.

• **Mobile-learning report compiled and published**

In cooperation with the Asian Development Bank Institute (ADBI), a report of the recent *International Workshop on Mobile Learning for Expanding Educational Opportunities*, held in Tokyo from 16 to 20 May, 2005, was prepared and published. The report includes the papers presented at the workshop which cover the broad range of issues associated with the integration of mobile technologies into education. Also included in the report are the country reports and action plan summaries from each participating country, including Bangladesh, Cambodia, India, Indonesia, Lao PDR, Mongolia, Nepal, Pakistan, Philippines, Sri Lanka and Thailand.

**Further Information**

Please refer to the ICT in Education website for information about the projects and activities: www.unescobkk.org/education/ict.

Publications can be accessed through the ICT in Education elibrary: www.unescobkk.org/education/ict/elibrary.