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Acceleration of Education Quantity and Quality with the use of ODL in Cambodia

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1. Present Situation of the Cambodian Education System

The human resources for education in Cambodia were non-existence over the past 30 years due to conf ict and instability. In 1979 national education restarted from zero and has gradually developed and progressed up to the present system. Since 1996 the Cambodian schooling system has been reformed to 12 years (6+3+3). For the academic year 2006-2007, the total number of students was 3,387,310 (female: 1,574,900) and the number of educational staff grew to 94,723. There were 9,018 schools with a total 80,733 of classrooms. On the other hand, there were 66 higher institutions (26 public and 40 run private). For teacher training, currently there are 18 Provincial Teacher Training Colleges (PTTCs) for primary school teachers, 6 Regional Teacher Training Colleges (RTTCs) for lower secondary school teachers, 1 National Institute of Education (NIE) for upper secondary school teachers, and 1 Pre-school Teacher Training Center for pre-school teachers.

Since 2000, the Ministry of Education, Youth and Sport (MoEYS) has embarked on a policy-based sector-wide reform, guided by its f ve year rolling Education Strategic Plan (ESP) and Education Sector Support Program (ESSP), design to accelerate achievement of Education for All (EFA). This has been a challenging process, requiring extensive

research and analysis of sector performance and trends in order to formulate new reform policies and strategies based on the existing educational major policies: to universalize 9 years of basic education and developing opportunities for functional literacy; to modernize and improve the quality of education through effective reform; to link education/training with labor market and society; to rehabilitate and develop youth and sport sub-sector.

In terms of ICT in education, the Government is taking steps to restore its human resource base, as such The Ministry uses ICT to broaden access and improve the quality of education, adopting a longer-term systemic strategy to narrow the digital gap.

2. Situation of ICT in the Cambodian Education System

a. Applicable Policy and Plans

In January 2005 the Cambodian Ministry of Education, Youth and Sport approved the document *"Policy and Strategies on Information and Communication Technology in Education in Cambodia"* as the lead policy to form clear direction in the use of Information and Communication Technology (ICT) in education, thereby directing major lines of work required for Cambodia to effectively integrate technologies for teaching and learning across all education sectors, including the use of Open and Distance Education.

- **Vision**

The long term vision of Education for All in Cambodia is to ensure equal access to quality basic education for all citizens and to prepare its citizens to play an active role in reconstructing the country as well as integrating Cambodia to the knowledge-based global community. The Ministry is introducing various initiatives to facilitate greater integration of information and communication technology (ICT) to improve the effectiveness of education at all levels and to produce the technologically literate, productive and critical

thinking workforce for the country.

- **Goals**

> To increase access to basic education for all, both formal and non-formal, using ICT as one of the major tools for learning, teaching, searching and sharing information.
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> To improve quality of basic education.
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> To promote independent and lifelong learning, specif cally for post-primary education.
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> Availability of workforce with the ICT skills needed for employment and use in a knowledge-based society; to ensure that Cambodia can compete and cooperate in an increasingly interconnected world.

- **Objectives (technical)**

> To provide access to ICT for all teachers and students.
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> To emphasize the role of ICT as a tool for teaching and learning.
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> To increase access to information.
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> To promote education for all through usage of all types of electronic media.
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> To use ICT to increase eff ciency and effectiveness of the school system (for both education and school management).

In addition to the aforementioned policy, ICT is prominently highlighted as a tool of development in education and non-education sector policies and statements. In particular, the **Education Sector Support Program 2006-2010** also specif es the need of providing ICT training for teachers and students, using ICT to improve the quality of teaching, and automation of school management and f nance, using ICT to enhance school eff ciency.

In July 2007 the report "**Enhancing Education Quality Project**" was released in support of an Asian Development Bank grant calling for quality improvements in schools,

especially at the secondary level. Particular mention of remedies focuses on ICT measures including training of teachers, equipping teacher training centers and creating a system of one upper secondary school per province to serve as a resource center of ICT in education.

As a first step to implement the mentioned policies, **MoEYS and the Open Institute** have started the **Open Schools Program**, a joint venture to prepare a **Master Plan for ICT in Education**, to identify needs, to develop curricula, to provide widespread ICT training to in-service and pre-service teachers, and to study possibilities of the use of Distance Education (e-Learning), connectivity and development of educational content for school use and teacher training. The program also plans to do research on technologies that will be best adapted for classroom use in Cambodia, especially considering the issue of sustainability, and emphasis on low-power-consumption computing. The Master Plan covers a four-year period.

b. Assessment

The Ministry of Education, Youth and Sport is at present undertaking two large surveys to understand the situation of the use of ICT in the Education system and in universities, and to understand on the use of e-Learning by any educational institutions in Cambodia.

These two surveys serve as baseline for planning of the Master Plan for ICT in Education that is being developed by the Ministry. The surveys study:

o Available infrastructure in for teaching ICT skills in educational institutions, i.e., the amount of computers used in Cambodia for education, as well as what is being taught.

o E-learning activities led by higher education institutions in Cambodia .

c. Current work

The Open Schools Program is at present drafting the first

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version of the Master Plan, while at the same time undertaking the baseline research to ensure that the contents of the plan is viable and sustainable.

As part of the Open Schools Program, the Open Learning Program has localized a key open source course management system (MOODLE) to Khmer language and culture. This consists of a content development application (Exe learning) and a complete set of courses needed to train human resources for any e-learning project. In November 2008, this program was started by training Ministry officials and higher education staff members on the management of e-learning system, instructional design, content development, tutoring, use of multimedia, and e-learning platform setup and management.

Plans for starting the creation of e-learning courses for 12th grade key subjects were in place, and took place along the academic year 2008-2009.

3. Goals and Objectives of using e-Learning in Cambodia

a. Priorities

The priorities for e-learning must match general priorities of the Ministry of Education. At this time a crucial one is improving the quality of Education by improving the training of the teachers on general knowledge.

It is also important to try to give access to higher education to collectives who do not have access now, such population that cannot move to locations where higher education institutions are located, or workers whose schedules do not allow them to attend these institutions.

Giving better materials to school students for self study is considered of high interest, but not a priority.

b. Goals

- **Teacher training**

    Teacher education is one of the key strategies to improving the quality of education. 50,000 of Cambodia's primary education teachers still do no have a high school degree. In order to correct this, the Ministry of Education is developing an equivalency degree, which will have to be delivered to the teacher by all possible means. A lot of hopes are put into e-learning as one of the most effective delivery methods for teachers who live in remote areas.

- **Support for Education**

    While no formal support for education using e-learning is planned for the coming years, all the equivalency materials developed for primary school teachers will be usable for others who lost their first opportunity to have a high school degree, or as support materials for students who are in the formal education system, and who prefer to make a stronger effort but lacking access.

- **Higher education**

    Most higher education institutions are in Phnom Penh and other large capital cities. Many high school graduates are able to continue their studies because of lack of mobility. Also, for other who would physically have access to universities, their work schedule do not allow them to do it.

    It is expected that private universities will be the first ones to use e-learning to experiencing in reaching these target populations, as they have an economic motivation and they have the required resources to start e-learning projects. Public universities – and specifically those who offer subjects that no private institutions offer (such as agriculture) will also have to start reaching out within the next three years.

    Preparation of e-learning materials in many public universities will lead to formalization and centralization of

training materials, something that is urgently needed at the time.

c. Objectives

o ·Ensuring the availability of all the necessary computer programs and training materials needed in Khmer language and in e-learning package to be used by any training institution starting using e-learning as delivery method.

o Ensuring that the Ministry (with the support of developing partners) has the necessary training structures for delivering the e-learning know-how to higher education institutions and to the other ministrial departments in charge of using e-learning for teacher training.

o Ensuring understanding of all higher education institutions and the teacher training department regarding the required resources to implement an e-learning program, including a designated team need to start e-learning projects.

4. Infrastructure for e-Learning

a. Computers

Availability of electricity is limited to 1/3 of Cambodian high schools, 3% of primary schools, and most teacher training centers. Outside of Phnom Penh, availability of electricity costs highly (in many cases it is privately generated).

Most teacher training centers: 26 distributed in Phnom Penh and 18 different provinces. have computers for teacher training. In most cases these computers are not very up-to-date but fully dedicated to pre-service teacher training.

In addition, a number of high schools around the country have computers for students'use.

In 2009, with the support of ADB, resource centers with computers and Internet connections have been established in

all provinces. These centers are expected to initially become e-learning centers.

b. Software

MOODLE is free and open source Course Management system has been translated to Khmer language. Exelearning, - a free content development program for e-Learning – has also been translated, and used to produce content in SCORM format.

Documentation and training materials in Khmer for these programs are being developed.

c. Know how

A set of six highly tested courses on e-learning have been translated to Khmer and adapted to Khmer culture. These courses have been supplied by InWent (Capacity Building Germany), and they cover all the functions that are necessary in an e-learning program: management, instructional design, content development, tutoring, and platform setup and management.

The courses started in October 2008, to be used by the Ministry itself (for Education and teacher training) and by other higher education institutions. The teaching has been conducted by the Open Institute, a partnering NGO.

The Ministry has been engaged in a comprehensive assessment of e-learning activities in Cambodia.

d. Communications

• The Ministry needs a private network

Most countries tend to develop private networks for education which connects all training institutions–the intranet. This allows the use of centralized training materials at a low cost. Usually this network is connected to the Internet through

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a single point, offering Internet connections to all those in the network, while reducing the cost of this connection.

It is highly needed that Cambodia develop such network, among other things to deliver e-learning to as many locations as possible at the lowest possible cost.

At present, the technologies available for this network are ADSL which is connected directly to other Ministry sites, without going through an Internet ISP, and Wireless. Open fiber, although considerably much faster and more convenient, is still too expensive and difficult to deploy.

- **Cost of Internet and difficulty of Access in rural areas.**

The availability of Internet outside big cities is still a challenge. While it is possible to use ADSL and Wimax in a number of urban locations, in others only dial-up is available. In rural areas only satellites and cell phones (GPRS) are able to deliver Internet connection. Both solutions are expensive, and requires complicated maintenance in rural areas.

c. Ministry structures

The Ministry of Education Youth and Sport has recently created an ICT in Education Office, as part of the Department of Information and ASEAN. This Office has the responsibility for developing the technical know-how resources for e-learning, promoting its use and relaying the e-learning know how and technical support to the different departments of MoEYS and higher education institutions.

5. Content

Content can be developed by educational institutions who are interested on using e-learning to deliver their knowledge. While the e-learning project of the Ministry of Education will train the staff of the institution on e-learning management, instructional design and content development for e-learning, it must be the institution itself – accompanied and supported by the Ministry – who has to

develop the content that it considers adequate and necessary for its educational objectives.

The Ministry promotes the use of e-learning, offers the training and technology transfer, and supports the institutions during the development and implementation of the programs, though not involved in the direct development of content.

6. Conclusions

The present infrastructure for e-learning in Cambodia for e-Learning is relatively poor, but plan for upgrading is being put in place, The deployment of computers for education will take into account the needs for resources in the provinces for accessing distance education through computers. Internet access is still difficult (outside major urban centers) and expensive. An improvement is expected, but it will most probably not be radical enough to bring the price of Internet anywhere near the price in neighboring countries. The creation of a network that communicates educational centers is seriously seen as a partial solution to this problem.

The needs for software and know-how in Khmer are being covered by the Ministry and its partners, who have translated the necessary software and courses, and who have the resources to train the necessary staff. It is clear what type of e-learning contents need to be created by the Ministry, aimed at supporting the upcoming equivalency program. Each university wishes to do e-learning will have to consider its own target and develop the content, considering the demand.

The Ministry is drafting policy for the deployment of ICT in Education, with a mandate educational institution to develop and use e-learning. In short, the Ministry of Education, Youth and Sport is considering seriously to use e-Learning to reach out to the people needing to improve their education and cannot be reached by the present means of delivery. E-learning is prominently included in the Master Plan for ICT in Education that will be deployed during the next five years, and the Ministry is taking necessary steps to

eliminate all possible barriers to its use, taking active steps towards facilitating the application use inside the Ministry and in higher education institutions, in all cases expectedly this might improve the delivery of education of the nation.