

# **Distance education for sustainable development: Lessons learned from Indonesia**

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## **Introduction**

Distance education is one area of educational endeavour which has developed significantly to become a respected pedagogical method of education during the past quarter century. Contemporary distance education has involved the use of a variety of educational media, including print and non-print media, and it has expanded further along with advances in the use of information and communication technology. Distance education has been applied in all sectors of education and training, integrated into the national systems of education, and reached the desired level of recognition and esteem in relation to traditional educational alternatives (UNESCO, 2001).

This paper attempts to address the contribution of distance education as catalyst for sustainable development, with reference to lessons learned from Indonesia. The need for high-calibre human resources has put pressures in expansion in all sectors of education and training beyond the traditional provision of classroom-based education. Distance education has been seen as the appropriate response to this challenge due to its flexibility, its capability to accommodate learners unable to attend the traditional form of education, and its ability to provide high quality education for a large number of students. The goal of any distance education initiative is to serve the learner and the community. Good distance education system requires quality human resources, adequate infrastructure and facilities, strong legal system and policies, wise funding mechanisms and economics in order to operate well. When these pre-requisites are well met, it is hoped that the common goal of achieving sustainable development can be realised.

Distance education is based on the egalitarian philosophy, in which all citizens have equal access, equity, equality of opportunity and participation in education, irrespective of their work or family commitments, geographical locations, social and economic status, and other constraints. Distance education shares the common goal of improving and harnessing the quality of human resources in order to achieve sustainable development. Distance education endeavour shares common values and distance education institutions need to work together to enhance collaboration, share information, undertake quality benchmarking, and exchange innovative approaches to distance education methods, in order to achieve the common goal of sustainable development.

## **Development of distance education in Indonesia**

Distance education in Indonesia has a long history which dates back to the year 1945, when the newly founded Republic of Indonesia declared independence. The founding fathers of the new Republic realised that education is the key element in building an intelligent and competitive nation, free from intellectual impoverishment from the colonial power. The 1945 Constitution of the newly founded Republic clearly states that education is the basic right of every citizen. This is a forward-looking view and it has become an enormous task for Indonesia, an island nation with a very large number of populations, to develop the knowledge, skills and competencies of its human resources.

The historical origin of distance education in Indonesia has its root in the establishment of correspondence teacher training in 1950 in Bandung, West Java. In 1951, further distance education enterprise was also introduced through school broadcasting in West Java, designed for those ex-service men and women whose education had been disrupted during the War of independence. An extensive development in the use of distance education for teacher training was pioneered by the Department of Education and Culture in 1955 (Setijadi, 1987). This system was mostly based on correspondence instruction for upgrading school teachers.

Further intensive use of distance education started in the 1970s, when the Indonesian government was able economically to finance development in the education sector from the oil-boom revenue. This enabled the Government to fund initiatives involving distance education, such as a pilot project on educational broadcasting and the use of print-based non-traditional instruction for independent study at the primary level. The use of domestic satellite for communication in Indonesia since 1974 has had positive impact on educational development, particularly distance education. In 1978, the Centre for Educational Communication and Technology was established, and five open junior high schools were established in different areas to provide schooling opportunities for those students unable to attend classroom instruction.

The decade of the 1980s was first marked by the development of the rural satellite project for health and education. Then, in 1981, a program for upgrading junior university lecturers was launched using modular instruction for independent study. This was followed by the use of satellites for distance education in Eastern Indonesian universities for training junior university lecturers in 1983. The same year a government policy was set for establishing an open university to accommodate a huge number of high school graduates unable to have access to state conventional universities. The development of distance education, particularly in higher education, culminated shortly after that with the foundation of Universitas Terbuka (UT) in 1984. Distance education has also been used beyond the formal education sector, such as in agricultural extension, family planning education, vocational on-the-job training, and continuing professional education.

The 1990s was the decade of expansion of distance education in Indonesia. The introduction of the nine-year compulsory education beginning in 1994 has had a major impact on the preparation of primary school teachers, which requires at least two-year training at the university level. Consequently, in-service primary school teachers have to take at least two-year additional post-secondary education training by distance education

in order to upgrade qualifications, to keep up with current developments, and to meet the need for the establishment of a knowledge society. The task of upgrading these in-service teachers at a distance has been assigned to UT, as it would be impossible to train teachers on-campus, leaving a huge number of primary students without teachers. This in-service teacher training incorporates face-to-face tutorials and the use of print and non-print media and science kits as the major learning resource for the student teachers. In recent years, increased demand from stakeholders requires primary school teachers to have a first degree, meaning a further task for UT to upgrade in-service school teachers.

The beginning of the 21<sup>st</sup> century shows continued progress in distance education with advances in information and communication technology (ICT). Distance education programs are starting to involve the use of ICT. Traditional educational institutions are also initiating new ventures in distance education. Innovations are introduced in the use of distance education in secondary education through the establishment of experimental open senior high schools in a number of areas (Ibrahim, 2003).

The development of distance education in Indonesia is an attempt to meet the national education needs, influenced by current trends worldwide in the use of distance education in various educational sectors. As an archipelago of more than 13,000 islands and limited communication and transportation infrastructure, Indonesia is challenged to improve the quality of its 220 million human resources. Various factors relating to the geography, demography, socio-economy, culture, the availability of technology have stimulated the development of distance education to improve educational access and equality of opportunity. Distance education has been used in formal as well as nonformal education, academic as well as professional education, employed at the primary, secondary as well as tertiary sectors. Distance education in Indonesia has evolved, starting from the use of print-based correspondence material, through multi-media material, to the use of ICT in recent times.

In line with the idea that education is the basic right of individual citizen, the national education system is designed to be capable of meeting the needs and provide equal educational opportunity for the citizens. Distance education is concrete effort to establish knowledge-based society as it is envisioned by the 1945 Constitution of the Republic of Indonesia. The application of distance education in various sectors of education indicates its flexibility and sustainability to meet various needs of the citizens. For the government, distance education is seen as an effective method to improve participation, expand access for citizens living in various parts of the country, and provide quality education efficiently for the citizens of the country. For the students, distance education provides flexible opportunity for those unable to attend face-to-face education.

Realising the significant contribution of distance education to improve the intellectual capacity of the nation, the government and legislators have worked together to produce the new Law Number 20/2003 on National Education System. Article 31 of the Law specifically addresses the roles of distance education in the national education system. In the past twenty years, distance education has indicated significant progress in terms of theory, practice, credibility and legal foundations. As the follow up of Article 31, the Government is currently working on the Government Regulation in Distance Education, so that it is expected that the status of distance education becomes more firmly grounded,

public confidence in distance education can be improved, and the interests of the stakeholders can be protected. The government regulation is expected to address the provision of quality distance education in order to meet stakeholders expectations.

Distance education in Indonesia has indicated encouraging continuous progress in terms of innovations, initiatives and practice which result in concrete results in relation to the the development of national human resources. Documentation and dissemination of innovation and research findings in distance education has been undertaken and developed recently. The *Indonesian Journal of Open and Distance Learning (Jurnal Pendidikan Terbuka dan Jarak Jauh)* <<http://202.159.18.43//ptjj/index.html>> has been published since the year 2000. UT has also regularly published books in order to disseminate research findings, innovations, current theories and best practices in distance education (Belawati, dkk, 1999; Andriani, 2003; Suparman & Zuhairi, 2004; Asandhimitra, dkk, 2004; UT, 2004). Publication of the proceedings of National Seminar on Instructional Technology also enriches the literature and publication in distance education (Padmo, dkk, 2003). These publications indicate positive signs that distance education continue to flourish, and provide the direction and theoretical basis for practitioners in the field.

### **The challenge of sustainable development**

Sustainable development is a fundamental issue for many countries. Sustainable development is maintaining development over time (Elliot, 1999). There has been growing concern of our society with sustainable development, the term introduced during the Earth Summit in Rio de Janeiro, Brazil in 1992. The Summit produced the Rio Declaration which recommends sustainable development as a strategy to be adopted by the United Nations member countries. An important agenda of sustainable development is poverty alleviation, improved access to quality life, sustained environment, and human development through improved provision of access to education. Sustainable development emphasises the importance of developing the knowledge, skills and competencies of the human resources, instead of the availability of natural resources, as catalyst for economic and social development.

An important statement, which has been adopted as the credo of sustainable development is “*We have not inherited the Earth from our parents, but we have borrowed it from our children*”. As a strategy, the core issues and necessary conditions for sustainable development includes population and development, food security, species and ecosystems, energy, industry and addressing the urban challenge (WCED, 1987). Sustainable development is the challenge of both the developing and the developed country. The goals of sustainable development focus on three major areas, i.e., economic progress, social progress, and ecological balance.

In terms of the development of human resources, the United Nations balance sheet of human development indicates the following progress. Between 1960 and 1991, net enrolment at the primary level increased by nearly two-thirds, from 48% to 77%. In 2002, primary school enrolments worldwide rose from 80% in 1990 to 84% in 1998. According to the 2002 Human Development Report, 51 countries, with 41% of the world's people, have achieved or are on track to achieve universal primary enrolment. In the mean time,

90 countries, with more than 60% of the world's people, have achieved or are on track to achieve gender equality in primary education by 2015, and more than 80 countries in secondary education (Elliot, 1999, UNDP, 2002).

However, the human development balance sheet still indicates deprivation. In 1996, millions of children were still out of school – 130 million at the primary level, and 275 million at the secondary level. In 2002, 113 million school-age children are not in school, 97% of them in developing countries. The 2002 Human Development Report indicates that 93 countries, with 39% of the world's people, do not have data on trends in primary enrolments. 60% of children not in primary school worldwide are girls. Of the world's estimated 854 million illiterate adults, 544 million are women (Elliot, 1999, UNDP, 2002).

The UNDP has set the Millennium Development Goals on the following criteria, i.e., (1) Eradication of extreme poverty and hunger, (2) Achievement of universal primary education, (3) Promotion of gender equality and empowerment of women, (4) Reduction of child mortality, and (5) Ensuring environmental sustainability. These UNDP goals and measures should be able to help us in locating the position of our respective countries, based on the above criteria. The Position of SEAMEO Member Countries in the UNDP Millennium Development Goals 2002 is shown in Table 1.

**Table 1**  
**Position of SEAMEO Member Countries**  
**in the UNDP Millennium Development Goals 2002**

No	Rank	Country
1	25	Singapore
2	32	Brunei Darussalam
3	59	Malaysia
4	70	Thailand
5	77	Philippines
6	109	Viet Nam
7	110	Indonesia
8	127	Myanmar
9	130	Cambodia
10	143	Lao PDR

Of the 191 countries worldwide surveyed by UNDP, the position of SEAMEO Member Countries in the UNDP Millennium Goals has been found in different ranks that represent the diversity of each of the individual member countries. It is shown that 5 of the 10 SEAMEO Member Countries are in the 'top' 100 of the world list, and the other 5 countries are in the 'bottom' 100. The 'bottom' 5 of the SEAMEO Member Countries represents the 'big league' in terms of the size of the population and the complexity of challenge for harnessing sustainable development. These numbers in the UNDP Human Development Report 2002 are alarming, and a lot more effort has to be done to provide improved access and participation in education, and enhance sustainable development.

Distance education should have the key role in responding to the challenge of establishing sustainable human development.

### **UT as a case study in the use of distance education for sustainable development**

Indonesia is challenged to provide quality higher education for a very large number of its citizens. However, public resources for the higher education sector have not increased at a comparable level with the increase of enrolments, because of the strong demands on public resources from other sectors of education as well as from other sectors of public services. Indonesia must look for distance education as alternative to provide accessible university education, and to increase participation rate in higher education. In 1970, a major landmark for Open University education was the establishment in the United Kingdom of the first Open University, which was intended solely for students learning at a distance. In 1984, Indonesia followed suit to establish Universitas Terbuka (UT), the Indonesia's Open University.

The development of human resources has been the major challenge for Indonesia. One means for meeting that challenge is through expanding access to and improving the quality of education. In the 1970s, secondary school teachers were trained through crash programs, which led to the production of under qualified teachers. So in the 1980s, there was a felt need to upgrade their skills and expertise. The Government saw no other means of effective retraining apart from distance education. Another urgent problem was the ever-increasing number of senior high school graduates who could not gain places in state higher education institutions, while the Government had been campaigning for equality of opportunity and access to development in various sectors, including education. Additionally, there were many working adults who missed the opportunity for tertiary training.

Founded under a Presidential Decree on the 4<sup>th</sup> of September 1984, the UT has four Faculties, i.e., Economics, Social and Political Science, Teacher Training and Educational Science, and Mathematics and Natural Science. The newly founded Open University accommodated only 60,000 students out of the 270,000 candidates in its first academic year. The Programs offered in the first academic year were Bachelor Programs in Public Administration, Business Administration, Economics and Development Studies, Applied Statistics, and gradually more bachelor programs have been offered, such as Mathematics, Management, Development Administration, and other diploma programs, such as Tax Administration. Since 1985, the UT started offering some programs on teacher training and educational science for improving and upgrading the qualification of in-service secondary school teachers. The programs offered include bachelor and diploma in Indonesian Language Education, English Language Education, Mathematics Education, Natural Science Education, Social Science Education, Civic Education, Physics Education, Chemistry Education and Biology Education.

Since its inception, UT has been involved in in-service teacher education, and the scale of this kind of training has significantly escalated since the early 1990s, in which the UT has been responsible for in running the two-year Diploma II program for in-service elementary school teachers. This program is intended to improve the qualification of in-

service primary school teachers. UT is also responsible for in-service training at a distance for secondary school teachers.

During its first 20 years, UT has accommodated 1,095.440 students, and graduated 528,934 alumni working in various fields of the profession. Currently, UT currently enrolls 205,281 students studying various subjects in 35 different programs its four faculties. UT distance students learn self-instructional materials independently from their homes in various locations in Indonesia, and their learning process is supported by a network of 35 regional centres, 1,753 tutorial locations, and 671 examination locations throughout the country.

UT's instructional system necessitates students to learn independently from the course materials delivered by the institution. UT has developed multimedia learning packages for its students, including printed materials supported with audio cassettes, video programs, web-based programs, computer-assisted instruction and online tutorials. Learner support is provided to facilitate student learning, such as tutorials, counselling, study groups and administrative services. Students' needs for tutorials are provided by regional centres. A number of tutorial methods have been implemented, namely face-to-face, correspondence, broadcast, and fax-internet tutorials. Online tutorials have been developed as a means of communication between tutors and students to assist students' learning and to provide counselling services. Online services provide such information as academic administration, learning materials and supplementary materials.

The UT continuously responds to the needs of its clients so that its programs and services adapt to the dynamically changing needs of the society. For instance, UT has launched graduate programs by combining multimedia teaching-learning packages and applying online technology for distance learning, besides the regular tutorial program and individual learning activities. Now, the UT has 156 courses with multi-media materials, and provides online tutorials for 171 courses. However, there are handicaps in using the online system related to cost, accessibility, and the students' ability in using the technology. The use of ICT for management and instruction continuously increases in line with improved access by the student. Access and students' initiations in electronic tutorials at UT remains a major obstacle, even though such online services are at no cost for students, except for the cost of internet connection to be paid by students using the service. Access to the internet is a major problem for many UT students who reside in remote and rural areas and for those who come from the lower economic level. Print remains the major learning resource for UT students, and other media, such as audio-visual media and television, should be able to provide the needed intellectual enrichment for students learning at a distance on their own.

The UT distance education system provides benefit to existing higher education institutions in Indonesia through mutual collaboration between the UT and other state universities. The UT collaborates with other universities in developing the curriculum, writing the teaching-learning materials, developing the test items, and providing tutorials to the students. Lecturers of other universities involved with the UT get new perspectives and experiences in designing and developing the curriculum, writing modules and test items systematically. Experiences are easily to be transferred for teaching learning process in their institutions, and can help improve the lecturers' skills in designing instruction in their own institutions. In addition, the UT becomes the biggest publisher of

the teaching learning materials for university level in Indonesia by providing more than 900 titles in each subject offered, and this cannot be done by other universities in Indonesia.

UT is intended to provide wider opportunity for recent high school graduates, working adults, and in-service teachers to have access to university education. UT is part of the government effort to improve the quality of national human resources to support sustainable development. The existence of UT has been intended as an alternative route to university education and as complementary to the existing higher education system. UT students opt for distance learning because they have work commitment, reside in locations where there is no access to conventional universities, and they need to have flexibility and freedom from the strict schedules required in classroom-based learning of conventional universities.

UT employs management and operations system which involve networking with participating institutions, comprising the central office and its 35 regional centres for academic as well administrative services for students in their respective regions; with the state universities for curriculum, course material and test item development; with the Post Office for the distribution of course materials; with *Bank Rakyat Indonesia*, a major government-owned Bank, for the payment of fees; with the television, radio broadcasting and media network for communication and interaction with a very large number of students throughout the country; with regional and state university libraries for access to additional learning resources. This diverse network requires effective coordination and good communication between the central office, regional centres, and the participating institutions. Effective management is needed through accurate planning, effective networking and partnership, efficient development of quality programs, and timely distribution of course materials.

The challenge for UT is to provide quality university education accessible by students with different levels of economic capacity, access to information and communication facilities, and inadequate ICT literacy. To respond to this challenge, the UT has published important documents, outlining its strategic plans and operational plans, both of which delineating institutional vision, mission, policies and strategies. UT has developed a vision to become “one of the centres of excellence in distance higher education” (UT, 2001; 2004). To achieve its institutional missions and goals, UT focuses on three areas of development, i.e., academic quality, student participation and accessibility, and internal management. Improving academic quality at UT concentrates on curriculum and course materials, instructional process, evaluation, and research and community service. Increasing student participation and widening accessibility is targeted on maintaining existing students and implementing proactive recruitment of potential students. Quality and accessibility are to be achieved through effective internal management involving effective utilization of human resources, system, facilities, finance, and the development of positive corporate culture. Management practice has to be strengthened with the application of total quality management and corporate and good governance principles.

In terms of instructional process and learning services, priorities are given to the development of multimedia learning packages, the application of information and communication technology in teaching and learning as well as management, and the

development of networked regional offices. Development of course materials involves the use of a course-team approach, utilizing existing resources internally and externally and incorporating the application of the newest and applicable information and communication technology. UT is challenged to incorporate the newest ICT elements, such as Internet, computer, CD-ROM, in its courses in order to facilitate student learning. Equipped with adequate infrastructure and facilities, regional centres are the frontline offices to provide services needed by the students and other clients.

### **Recent trends**

Distance education involves substantial use of media, because of the separation or distance between the students and the teachers or institution. The geographic and demographic conditions of Indonesia have encouraged the use of technology intensively, even though such use is still limited due to access and literacy level of the users. During the 1990s, the development and application of new technology has been pioneered with the development of academic information infrastructure (Purbo, Soegijoko, Ahmad & Merati, 1998). Then, during the beginning of this decade, innovations in the use of technology have involved the use of web-based instruction to facilitate learning, the development of computer-aided learning environment, and the use of television programs and live broadcast television and the satellite for distance education (Belawati, 2000; Padmo, Huda & Belawati, 2000; Suradijono, Nazief, Subagdja & Moningka, 2000). The use of technology in distance education has further flourished with further exploration and application of internet-based instruction and management system (Anggoro, Hardhono, Belawati & Damayanti, 2001; Andriani, et al., 2003; Anggoro, 2004).

For an island nation as large as Indonesia, with a large scale application of distance education, it is natural that Indonesia has a formal network of organisation, i.e., Indonesian Distance Learning Network (IDLN). This network organises both public and privates sectors with stakes in distance education that have interests and concerns with the development of distance education in Indonesia. Furthermore, a number of educational institutions have made serious attempt to develop distance education programs. Such organisation can assist in the exchange of research findings and best practices among institutions and practitioners.

Human resources have the leading roles in innovations and ensuring the sustainability of a distance education endeavour. Distance education institutions have to put high priorities on the development of the human resources in terms of knowledge, skills, competencies, and qualifications. For Indonesia, one of the most recent developments in the distance education profession has been the establishment of Professional Association of Indonesian Distance Education in March 2004. This association is expected to play roles in the development of professional human resources in distance education in Indonesia.

### **Conclusions**

There is no doubt that distance education makes contribution to sustainable development through improved access, equality of opportunity and participation in

education. Distance education in Indonesia has developed in line with the needs to provide quality education for the citizens. Distance education has been used in formal as well as nonformal education and training sectors. In line with changes which require the creating of a knowledge-society, the need for lifelong learning, and the demand for universal to education, distance education has strategic roles in responding the dynamically changing educational needs of the society. The government and stakeholders have to take advantage optimally the potential of distance education to establish a knowledge-base society. Distance education is a growing area of education and training enterprise, and the number of institutions and students has increased significantly. It has a firm legal status as stated in the new Education Law Number 20/2003 on National Education System. Distance education has strong theoretical, empirical and legal foundations and its best practices have been empirically tested.

Focus on learners and quality is an important strategy for the sustainability of a distance education institution. In the distance education context, focusing on learners means understanding issues such as what they need to learn, how they learn, what sort of learning support they need, how much time they spend for learning, what media they use, and what learning styles they have. Educational clients in general are today better educated because of the sheer of information available and the relatively easy access to different kinds of information. Clients have become increasingly more critical of services provided by distance education institutions, and they also have greater flexibility in selecting the best services available to suit their needs and circumstances.

Distance education institutions need to address issues related to the dynamically changing needs of the clients, assurance of quality standards, and the use of technology to enrich learning. Distance education institutions are challenged to develop high quality programs efficiently using suitable delivery methods and technology, and to meet the growing demand for lifelong learning accordingly. Distance education institutions need to deliver quality products and services, improve institutional image and positive perception of the society towards distance education, and establish networking and partnership with other institutions and organisations. Distance education is an important solution for accelerating development of education sector, and it should be able to play a key role to assist in improving the quality of human resources needed for sustainable development.

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