

e-ASEM

WHITE PAPER

e-Learning for Lifelong Learning

Denmark | Japan | Malaysia

Slovakia | South Korea | Thailand



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e-ASEM White Paper: e-Learning for Lifelong Learning

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This white paper is a general view of the practices of e-Learning for lifelong learning in six ASEM countries: Denmark, Japan, Malaysia, Slovakia, South Korea and Thailand. All of them are key members of the research network 1 (e-ASEM) of the ASEM Education and Research Hub for Lifelong Learning, and I am delighted to see the first visible outcome of their cooperative research since its inception.

The idea of publishing this white paper was proposed in the network meeting held in Bangkok, July 2009. The network members unanimously affirmed the significance of this project and representatives from the above six countries promised to participate. The basic structure of the book was also agreed upon during the meeting: concepts of e-Learning, policies, regulations and funding of e-Learning in lifelong learning, and the status and characteristics of e-Learning for lifelong learning. The basic ideas and format were faithfully followed by the respective papers submitted by each country.

This white paper will play an important role in providing basic materials for further studies and comparative research. I hope this accomplishment will contribute to formulating policies concerning e-Learning and lifelong learning in all the ASEM countries. This could also serve as a stimulus to the second ongoing white paper series covering other ASEM countries.

I'd like to express my gratitude to all the authors of six countries, without whose dedication this white paper could not have been started. The Malaysian representatives deserve special thanks for their efforts regarding the cross-analysis paper, which en-

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Bowon Kim

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Part I

A Cross Analysis of e–Learning for Lifelong
Learning in Six Participating Countries
of the e–ASEM White Paper Project

– contributed by Open University Malaysia

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Introduction

This cross analysis reports the current status of six participating countries in planning, implementing and promoting e-Learning for lifelong learning, as described in each country's respective e-ASEM white paper. The six countries are Denmark, Japan, Malaysia, Slovakia, South Korea and Thailand. This analysis also describes policies, legal, conceptual and practical issues that affect e-Learning and lifelong learning in these six countries. The main purpose of this cross analysis is to highlight the similarities and differences of the salient features that have been captured in each of the white papers.

In the following sections, the broad education system of the six countries is first compared as background information. This is followed by a comparative description of policies and concepts relating to e-Learning for lifelong learning. Finally, the analysis highlights the status of e-Learning for lifelong learning. This comparison is illustrated with examples of relevant practices in these six countries.

1

Education Systems

1.1 Formal Education System

In all six countries, two parallel education systems exist. The first is the formal education system which stretches from primary to tertiary education. The second is the lifelong learning system which provides educational opportunities to those who may not have completed formal education, especially beyond the secondary and tertiary levels; and for those who want to upgrade their academic qualifications or pro-

fessional competencies and skills for the ultimate aim of improving their quality of life. Generally speaking, the lifelong learning systems of all six sample countries involve three types of education, i.e. formal, informal and non-formal education. These two complementary systems are discussed in more detail in the following sections.

All six participating countries demonstrate at least two similarities in their formal education systems. First, all six countries have similar structures; with six years of primary education, three years of lower secondary education, two years of upper secondary/high school education, one to two years of post-secondary education and three to four years of tertiary education. Another common feature is that this structure constitutes nine to 10 years of compulsory education. These two common features contribute to the larger goal of achieving universal literacy amongst the school-going age population and to prepare them with the necessary academic knowledge and skills to enter the labour market upon completing their studies.

1.2 Lifelong Learning System

Despite the fact that formal education can be considered universal in its reach, there are still many individuals who do not complete formal education and need to acquire valuable qualifications and skills after leaving the system. In addition, there is also a need for continuous professional improvement for working individuals already equipped with basic formal education. For others, there is also interest to acquire additional languages, ICT and other soft skills, in order for them to achieve better quality of life. For some countries like Japan, providing learning opportunities for an elderly population in an ageing society is of special concern as well. These are the rationales behind lifelong learning as an alternative education system. While each country may have different motives, all six sample countries have put in place, to varying degrees, a lifelong learning system to complement the existing formal educa-

tion system discussed above.

Depending on each respective cultural, social and economic backgrounds and requirements, the level and emphasis of lifelong learning vary for each of the six countries. In Denmark, a member of the European Union (EU), the lifelong learning system is well-organised and formalised. This is evident in that its national education system is characterised by two parallel formal systems – the mainstream formal education system discussed earlier, and the complementary adult education and/or continuing training system. The latter, which provides formal lifelong learning and training to adults, can be divided into vocationally oriented and general education, and liberal adult education. While Denmark does not have a separate open university to encourage e-Learning for lifelong learning (as in the case of Japan, Malaysia, South Korea and Thailand), e-Learning in general and distance learning in particular are available in all Danish traditional universities to cater to working adults and others to pursue lifelong learning.

Similarly in Slovakia, also a member of the EU, adult education is included as another level in its formal education system, and is considered a form of lifelong learning. Lifelong learning is acknowledged as crucial for developing a knowledge-based society. The government, therefore, adopts a mission to promote lifelong learning by providing easier access to education, recognition of new qualifications and promoting employment throughout the entire lives of citizens. Apart from improving the nation's labour productivity and competitiveness, another influencing factor for promoting lifelong learning in Slovakia is to equip its citizens with the appropriate qualifications, competencies and skills required for labour mobility within the EU in search of jobs and education. However, Slovakia does not yet have a national strategy for e-Learning, particularly as a specific feature in lifelong learning. Like Denmark, Slovakia does not have a separate open university. However, e-Learning and distance learning are available in their traditional universities as well.

In South Korea, lifelong learning is provided by Air and Correspondence High

Schools. These are affiliated with public high schools around the country to provide learning opportunities via broadcast and communication distance classes, offline classes and personal feedback from tutors. The vision of these Air and Correspondence High Schools is to develop a cyber lifelong learning system that can offer e-Learning to anyone, anywhere and at any time. Lifelong learning lessons are also provided by South Korea's only distance learning university, Korea National Open University (KNOU) through television and multimedia lectures, web-based lectures and interactive distance video lectures and there are also private cyber universities that conduct courses via the internet. Finally, South Korea also has a Credit Bank System (CBS) that allows conferment of Bachelor's degrees to those who have high school diplomas or who are recognised to have the same academic capacity as high school graduates. Lifelong learning is considered important for continuous improvement of productivity of the nation's labour force. To individuals, lifelong learning is seen as a means to improve employability and income.

In Japan, the education system differs slightly from other countries, whereby Japan has specialised training colleges and miscellaneous schools to cater to the lifelong learning society; in particular, the ageing society. These institutions offer practical education and training in various fields that are considered useful for performing a wide range of social, cultural, sports, recreational and volunteer work, and cultivating interests in hobbies and other related activities. Another unique aspect is the notion of libraries and museums as lifelong learning facilities where Japanese people can enhance their knowledge. As such, Japan has incorporated library and museum policies to encourage lifelong learning activities in an ageing society. Japan, like South Korea, has set up its Open University as an avenue for working adults to enhance their qualifications for better employability and income.

Malaysia too has a lifelong learning system that runs parallel to the national formal education system, albeit it is still at a stage that requires further enhancement and integration. Community colleges are considered important as lifelong learning hubs for the country, and 43 have been set up since 2000 as an alternative avenue for

secondary school leavers to further their education. Private distance learning institutions and public universities have also been established to provide higher education to working adults and many others who have missed their chance to pursue higher education. Informal activities organised by non-governmental organisations (NGOs) have also contributed to improving the people's quality of life. Despite all these initiatives and activities, lifelong learning has not been fully integrated and formalised in Malaysia.

Thailand's lifelong learning development is very similar to Malaysia. However, unlike Malaysia, Thailand has established a Cyber University which uses ICT for delivering courses to their students. Apart from the Cyber University, Thailand has also established two open universities that are open to both high school graduates and working individuals.

1.3 e-Learning for Lifelong Learning

e-Learning is generally seen as the use of ICT and the internet for learning. Most of the sample countries indicate that e-Learning is a tool for education. Whether or not it is used for lifelong learning has not been discussed to great detail. As part of the formal education system, reports by Japan, Malaysia, South Korea and Thailand all made references to their local open universities and ODL institutions as e-Learning practitioners; unlike Denmark and Slovakia. In the case of the former, e-Learning is seen in a broad sense as any type of teaching and learning that involves ICT, whilst e-Learning is still a new phenomenon for the latter. The South Korean report is the only one that comments on the relationship between e-Learning and lifelong learning in its country; whereby the concurrent development of both has been central to what it has been able to achieve at a national level. Whatever the case may be, each of the sample countries appears to have some form of e-Learning that is readily available for lifelong learning.

2

Concepts of e-Learning for Lifelong Learning

2.1 Concept of Lifelong Learning

Of the six participating countries, only Japan and South Korea provide definitions for lifelong learning. South Korea defines lifelong education (learning) as “*the omnipresent system supporting the learning activities of anyone serving his/her interests any-time, anywhere*”. In addition, South Korea’s revised Lifelong Education Act (2008) defines lifelong education as “*organized educational activities taking place outside school*”. This means that legally speaking, lifelong education (learning) does not occur within school premises. The South Korean concept of lifelong learning also calls for recognition of prior learning (RPL) and gives credit for learning experiences that are considered equivalent to the level of higher education. In this context, lifelong learning in South Korea has included the CBS which allows conferment of Bachelor’s degrees to those who have such equivalent knowledge.

In Japan, the Ministry of Education, Culture, Sports, Science and Technology (or MEXT) defines lifelong learning as “*any kind of learning which citizens involve in throughout their lifetime in order to pursue their realization of lifelong learning society*”. The term “lifelong learning society” is used to refer to a society where people can freely choose learning opportunities and learn at any time throughout their lives, and receive proper recognition for their learning achievements. Hence, the concept of lifelong learning as applied in Japan covers a wide range of activities which includes school, home or social education, cultural, sports, recreational and volunteer activities, corporate training, hobbies and learning opportunities in other areas.

The other four countries namely, Malaysia, Thailand, Denmark and Slovakia have no definition of lifelong learning. A good idea of lifelong learning in these four countries, however, can be inferred from each respective description of practices and activities, as well as from documents released by their governments and non-governmental agencies. In Malaysia, there are several Government documents that make references to the concept and practices of lifelong learning. One of these documents is the National Higher Education Strategic Plan (NHESP) which describes lifelong learning as “... a process for the democratization of education through the acquisition of knowledge, skills and competencies via formal, informal or non-formal means based on workplace, experiences or training”. The NHESP also notes that lifelong learning is integral to support Malaysia’s human capital development and the nation’s knowledge and innovation-based economy. In addition, various other lifelong learning activities are carried out by NGOs in the country. Based on these references and examples, lifelong learning in Malaysia is understood to be characterised as comprising formal, informal and non-formal learning in support of the following objectives: development of human capital, a knowledge and innovation-based economy, improvement of individuals’ employability and personal development and quality of life. Finally, the concept of RPL, similar to the South Korean model, and the Accreditation of Prior Experiential Learning (APEL) are considered vital elements that make up a successful system of formal lifelong learning in Malaysia. At the moment, Malaysia has six operational open and distance learning (ODL) institutions that are approved to implement the RPL system. The Malaysian Qualifications Agency (MQA) is awaiting endorsement of the APEL by the Ministry of Higher Education so as to allow for full implementation.

Like Malaysia, Thailand does not include a definition of lifelong learning. However, it reports that lifelong learning was introduced in the National Education Act of 1999 as a guiding principle for Thai education to ensure economic competitiveness and sustainable development. It also reports that the Government considers lifelong learning as the foundation for a knowledge-based society which will lead to sustainable development in the country. From these official reports, lifelong learning in

Thailand can be interpreted as a vehicle to achieve the objectives of developing human capital and a knowledge-based economy. Unlike Malaysia, there is no mention of improving individuals' quality of life and employability.

The European Commission defines lifelong learning as “*all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and employment perspective*”. It can be assumed that Denmark and Slovakia, both members of the EU, are agreeable to this definition. Lifelong learning in Denmark covers “*all phases and forms of learning from pre-school to post-retirement, in the support of the objectives of personal fulfilment, active citizenship, social inclusion and employability, improving knowledge, skills and competence*”. Hence, the idea of lifelong learning in Denmark appears very similar to that of Malaysia. However, the striking difference is that the Danish concept also stresses on the role of active citizenship which is conspicuously absent in the lifelong learning concepts of Malaysia and Thailand.

In Slovakia, the development of lifelong learning is influenced among others, by the “*establishment of conditions for equal and constant access of citizens to acquire new and renewed skills which are necessary for participation in a knowledge-based society*”. More importantly, the development of lifelong learning is influenced by the country's policy to encourage and assist mobility of its citizens within the EU in search of jobs and education.

2.2 Concept of e-Learning

Among the six nations, South Korea stands unique in its effort to formulate the concept of e-Learning. Thus, e-Learning in South Korea is mainly discussed in the context of educational technology instead of learning per se. Therefore, its concern is technology-oriented; for example, it is concerned with “*how to design e-Learning*

contents effectively or virtual learning interface efficiently". South Korea defines e-Learning as *"a purposeful learning process through the internet in which the latest innovations in education are utilized"*.

For the remaining five countries, e-Learning is seen as learning through the use of ICT and the internet. For example, e-Learning in Malaysia is clearly considered as one of the means of using ICT to foster lifelong learning. In addition, e-Learning is believed to be an effective alternative approach to traditional classroom teaching in schools and institutions of higher learning. Based on this concept, e-Learning initiatives have taken the form of projects such as MySchoolNet, Smart Schools, Computing Tablet, Computerisation programmes and EduWebTV at the school-level, and learning management systems, mainly in open universities and ODL institutions. In Thailand, e-Learning is defined as online learning via the internet. It is self-paced learning in which learners can study within their own capacities and interests. Learning content consists of text messages, pictures, audio, video and other media delivered via web browsers. Teachers and students can communicate via electronic tools such as e-mails, web-boards and chat rooms.

In Japan, e-Learning refers to *"electronic learning which utilises computers and networks"*. e-Learning was introduced as a substitute for all or part of classroom education. Within the formal system, using ICT in blended teaching and learning approaches is considered as e-Learning. Asynchronous forms of online learning and computer-assisted training programmes in informal education are also considered e-Learning. Japan sees both types of usage as a comprehensive concept of e-Learning.

In Denmark, e-Learning is used as a general term covering all forms of teaching and learning where ICT is involved. e-Learning covers teaching at a distance through the internet, and all kinds of ICT-supported educational activities such as those for self-study, face-to-face teaching, on-the-job training or net-based interaction in an online course.

Like Denmark, e-Learning in Slovakia refers to teaching and learning through the use of ICT and the internet. However, Slovakia does not have a national strategy for e-Learning and the range of e-Learning activities is generally not well developed.

3

Policies, Regulation and Funding of e-Learning in Lifelong Learning

3.1 Policies

It is evident that none of the six sample countries have developed individual policies on e-Learning *for* lifelong learning. Rather, it is common for policies that mention e-Learning and lifelong learning separately to be established under the broader themes of education, ICT and/or social advancement. The introduction of lifelong learning in policy documents is a recent development for most of these countries, occurring around 1999 to 2002. The availability of policies also varies – Malaysia, Slovakia and Thailand do not appear to have detailed policies yet; however, South Korea has laid extensive foundations since 2002 and is already carrying out its second promotional plan for lifelong learning in that country.

The different levels of implementation of the available policies are attributable to each respective country's national agenda/concepts, as well as its economic well-being. For example, Malaysia and Thailand are predominantly concerned with lifelong learning as a means for increasing national productivity and employability; hence, their policies have a tendency to address lifelong learning as a means to encourage human capital development and create a knowledge-based workforce. On

the other hand, the policies of Denmark and Japan reflect their individual interest in the holistic social development of their citizens. Japan includes library and museum policies in its lifelong learning initiative; as these represent important social education facilities in that country; while Danish strategies encompass every level of learning, from preschool to adult and continuing education as well as liberal (non-formal) education.

In the context of e-Learning policies, each country appears to focus on ICT development, its use in education and its role in fostering e-Learning. In general, these policies focus on the provision of ICT infrastructure and promoting the use of ICT in each country. South Korea approaches e-Learning as a section under higher education and vocational training and has established comprehensive strategies to address various aspects of e-Learning, e.g. establishing a development plan, promotion system, standardisation and cultivation of a professional workforce through e-Learning. At the end of its report, South Korea extends some recommendations for further policies to make e-Learning more effective in lifelong learning programmes, e.g. in the promotion of greater interactivity and multi-way communication, better electronic networks and co-operation within government agencies and with other countries. The policies of Japan, Malaysia and Thailand refer to e-Learning/ICT utilisation in education as a tool for lifelong learning. Slovakia has only recently given focus to e-Learning, although its interpretation appears similar to these three countries. Denmark provides the only distinctive notion of ICT usage – albeit it is considered important to boost the ICT capacity of its people; it is not expressly included in the Danish strategy for lifelong learning.

3.2 Legislation

Without definitive policies, most of the sample countries have not implemented any exclusive legislation on e-Learning for lifelong learning. Japan and South Korea are

the only countries to have successfully legislated lifelong learning (i.e. the Lifelong Learning Promotion Law and Lifelong Education Act, respectively) alongside various other acts that *affect* e-Learning and lifelong learning, i.e. those involving higher education, vocational training and financial sources for lifelong learning. In 2009, Slovakia approved its act and law on lifelong learning; this law replaces the legislation for further education.

Because there are no exclusive laws for e-Learning or lifelong learning in Denmark, Malaysia or Thailand, they are indirectly governed by legislation in education, higher education, social education and other related themes, e.g. legislation that controls the establishment of higher education institutions and the offering of their programmes (including those of lifelong learning nature) in Malaysia; and those that control activities in adult and non-formal education in Denmark. Frequently, these also outline the roles of relevant ministries and government agencies. Several unique acts are also present, e.g. Japan's library and museum laws and Slovakia's Trade Act that allows its citizens to obtain trade licences for craftwork (that can be used as professional qualifications).

3.3 Regulation

The information on regulation, particularly for e-Learning, is quite scarce. Again, only South Korea appears to have made progress in this particular regard. Its e-Learning Industry Development Act provides legal support for various aspects of e-Learning, even in areas such as standardisation and certification. In Malaysia, the single regulatory body that deals with quality assurance (QA) and accreditation for higher educational institutions is responsible for systematically linking different qualifications and properly accrediting prior experiential learning; thus indirectly involved in the regulation of formal lifelong learning activities. Japan's lifelong learning regulation is implied in its Support for Learning policy. This policy describes a credit

certification system for adult education programmes, a ‘job card’ system for individuals who need to leverage on their vocational skills and evaluation guidelines for various proficiency tests. Under its Law of School Education (2007), short programmes offered by universities and colleges are also given certification.

For the other countries, there is indication that specific regulation for lifelong learning will be considered in the future. For instance, the Thailand Cyber University has included accreditation and regulation as the third phase in its 12-year operational plan. Currently, Thailand has already implemented a broad credit transfer system even between different types of education. Otherwise, it is clear that most have yet to implement any explicit regulation for lifelong learning. Any accreditation or QA procedure is also still under the control of education, higher education and/or training sectors.

3.4 Funding

All six countries report multiple sources for financing lifelong learning and e-Learning programmes. Many also discuss financing that is derived through national education and training budgets, as well as through payroll taxes and employer contribution (especially for professional, on-the-job training). Countries that focus on lifelong learning to increase national productivity also allocate funds for vocational training and corporate e-Learning, e.g. Malaysia and South Korea. South Korea has also enacted legislation for obtaining finances for its Employment Insurance Fund, which is the major contributor for all lifelong learning programmes in the country. Slovakia (and possibly Denmark as well) receives assistance from one of the EU’s structural funds, i.e. the European Social Fund. It is not stated if there is any such regional fund for the remaining four Asian countries.

Informal lifelong learning is generally funded through foundations, donations and

other such personal means that are not derived from government allocation. An advanced country like Denmark has also provided funds for producing digital resources for teaching and learning in schools and for developing digital educational materials for use in museums and art galleries. Slovakia is particularly concerned with consolidating its funds and incorporating this system into its lifelong learning legislation.

Funding for e-Learning generally refers to provision for ICT infrastructure development in schools or other educational settings, e.g. supplying hardware and internet/broadband connection. This is a common thread across all six countries; the only difference being the level of ICT development in each country.

4

Status and Characteristics of e-Learning for Lifelong Learning

One of the key observations noticed from analysing the six countries is the varying states and levels of e-Learning readiness and penetration. e-Learning in the developed countries of South Korea, Japan and Denmark has progressed several stages ahead of the developing countries of Thailand and Malaysia. This is in a sense not surprising, considering that the former countries are, by virtue of their economic strength; better able to afford the high costs of setting up and maintaining the necessary infra- and info-structures that enable e-Learning to take place. However, the country reports also indicate that the status of a country's economic development does not necessarily determine the pace of its e-Learning development. e-Learning in contemporary Slovakia, for instance, has had limited development and impact on lifelong learning, despite the country's high-income advanced economy.

Collectively, the country reports indicate that, while funding for the development of e-Learning is crucial, what is just as important, if not more so, are such factors as the absence/presence of clear and growth-fostering government policies on e-Learning and lifelong-learning, the level of national support, coordination and funding provided by state agencies or governing bodies, the strength of cooperation between private and public sectors, the breadth and depth to which the culture of lifelong learning has become ingrained in society, and the proportion of popular mindshare that e-Learning has managed to stake a claim.

Of the six countries, South Korea, which has one of the highest internet penetration rates in the world, is by far the most successful in mobilising e-Learning for lifelong learning. Through national-level support, e-Learning has enjoyed significant growth since 2000 with the introduction of a comprehensive series of legislation, policies and plans to promote e-Learning and lifelong learning as a means of enhancing the country's competitive strength as a knowledge-based society.

Japan, too, has promulgated various legislation and national plans, as well as produced policy reports on the subject, albeit, as it would appear, without the same degree of comprehensiveness and popular acceptance as South Korea. Japan's country report notes that, largely as a result of the government's push, e-Learning has been adopted and widely used by universities. It notes also that there is clear recognition in the country of the potential benefits of e-Learning, as attested by the various government initiated measures that have been taken to expand the use of ICT in education. Japan has been described as being in "a large-scale transition period", where e-Learning is gradually overcoming various spatial and temporal obstacles that have traditionally prevented the masses from partaking in various educational opportunities.

While e-Learning in Japan is expected to grow and diversify beyond the mere use of ICT in learning to involve organisational, technical and pedagogical dimensions, South Korea has already actively applied e-Learning for the most part, if not on full scale, on all levels, including elementary, middle and high schools, traditional

and cyber universities, and continuing education (including vocational training, teacher training and public service training).

Against the foregoing background, Denmark, with its well developed digital infrastructure, makes an interesting case for comparison. Denmark does not have a separate open university that runs programmes in e-Learning or blended mode, like the rest of the sample countries, since e-Learning is “*a responsibility of all [Danish] universities to develop as part of their general educational offers.*” Notwithstanding, Denmark already has in place a national strategy for e-Learning which aims to increase the usage and quality of e-Learning in the country. In terms of e-readiness, it has been ranked as the country with the highest score in potentially transforming digital opportunities into social and economic development. Use of the internet for continuing education by adult learners is on the increase, as is e-Learning for staff training by enterprises. The same upward trend is evident also in the Danish schooling system, although, as the country report highlights, the knowledge sharing ICT systems are used primarily for administrative use and to supplement conventional teaching-learning, rather than for active sharing of knowledge among teachers and between teachers, learner and parents. Another interesting aspect of e-Learning highlighted in the Danish country report is that, in the area of non-formal adult education, particularly in personal development and general democratic education, distance learning or fully online learning are of no immediate interest to many schools and associations. This is due mainly to the mode in which such types of courses are typically run; that is, they require learners to physically attend meetings and to live with other learners for a certain period. As well, legal restrictions apply to some school types which prohibit some courses from running across municipalities.

Despite the relatively advanced penetration of e-Learning in lifelong learning in South Korea, Japan and Denmark, there remain formidable challenges to be addressed. Some of these challenges appear unique to some countries, while others are shared in varying degrees across all sample countries. Duplication of efforts by the government and the private sector in providing e-Learning to elementary, middle and high school

students represent an area identified as requiring optimisation in South Korea. Another area requiring redress concerns the proliferation of South Korean cyber (or private distance) universities at a time when there is reportedly decreasing national demand for tertiary-level education. The worry is that this phenomenon may cause an over-supply of higher education and threaten the very survival of existing universities in South Korea. Concerns have also been voiced about the quality of learning and other ethical issues related to the provision of e-Learning by cyber universities in general.

Aside from these, two other issues have been identified in the South Korean country report. The first relates to the yet to be realised objective of developing an international e-Learning network to leverage on the global applicability of the internet. At present, e-Learning in South Korea, although already well developed, remains constrained within national boundaries, in part due to language barrier. The second concerns the persistence of the “old tradition” of teaching and learning, namely rote learning, which is widely considered to be incompatible with e-Learning. (Within the dominant constructivist paradigm, e-Learning requires learners to go beyond passive memorisation to active co-construction of knowledge through two-way interaction with peers and/or instructors.) This too is an area of concern highlighted in the Danish country report, which notes that teachers’ expectations from young learners may be “rather traditional” and insufficiently flexible to capitalise on collaborative learning. The Danish report also highlights the need for Denmark to step up efforts to utilise e-Learning not simply as an ICT project but more importantly as a pedagogic and didactic experience.

Some of the aforementioned challenges confronting developed economies such as South Korea and Denmark are also shared by the other sample countries. Malaysia, for instance, too faces the problem of some duplication of efforts in part due to the lack of immediately tangible incentives to collaborate and the lack of comprehensive national-level coordination of e-Learning development. While Malaysia has adopted some initial policies to support the growth of e-Learning in the country,

state agencies and the few parties that have actively promoted e-Learning in the context of lifelong learning have yet to successfully coordinate their efforts in any significant degree to avoid duplication of each other's work and to maximise the limited resources at their disposal. Malaysia's report underscores that the country is currently in the 'embedding' stage and has a long way to go to ensure a holistic enculturation of e-Learning in lifelong learning. Its utilisation of e-Learning is limited to the formal level; as well, there is a clear need for more funding and strategies to encourage more players and practitioners to enter the field and to make e-Learning more cost effective. It has also yet to establish something akin to South Korea's CBS which allows learners to accumulate credits for the knowledge, skills and competencies gained previously through non-formal means.

Nonetheless, despite these gaps, Malaysia has progressed a considerable distance in making available more e-Learning opportunities for Malaysians to continually upgrade their knowledge and skills. Implementation of e-Learning has been more active at the higher education level, as compared to the school level, although, in the latter case, a series of initiatives have been launched to deepen and widen the utilisation of ICT in education. The Malaysian country report also highlights for-profit e-Learning in the corporate training sector which, although still a relatively new phenomenon, has the potential to help accelerate employee development.

Likewise, e-Learning in Thailand, while yet to reach its full potential or to approximate the gains already made in South Korea, is nonetheless recognised as a means of expanding educational opportunities for the people. The Thai country report states that Thailand already has in place "clear policy supporting the expansion" of lifelong learning supported by e-Learning. It places the country at what might be discerned as the embedding stage, where focus is placed primarily on establishing the networks and partnerships necessary for the provision of e-Learning that leverages on the sharing of learning resources and avoids wasteful duplication of efforts. Available literature outside the country report reveals also that an array of international partnerships has been forged to advance e-Learning penetration in Thailand. Among these partner-

ships are with Microsoft (Partners in Learning), Intel, Japan International Cooperation Agency, UNESCO, and UNICEF.

Of the six country reports, Slovakia's is arguably the most candidly revealing of the situation on the ground. First, though, it needs to be qualified that the many challenges facing Slovakia with respect to education in general, and lifelong learning and e-Learning in particular, are not all entirely unique to the country. Concerns over the quality and adequacy of national education to meet the demands of the labour market in a globalised world, for instance, are shared by many more countries than the six sampled here. What is unique about the Slovakian country report is the sobering admittance that the Slovakia's education system has in the last decades been insufficiently responsive to the changing world. As well, it would appear that Slovakia has the biggest gap to bridge in terms of e-Learning readiness and penetration. At present, according to the report, not only is there an absence of a national strategy for the development of e-Learning in the context of lifelong learning in Slovakia, there is also still no official recommendation by the Ministry of Education to include e-Learning as a standard tool in the education system. Among other things, this has had a discouraging effect on school directors and teachers who, perhaps due to the lack of incentive, are reluctant to include e-Learning in the teaching process. e-Learning in Slovakia is increasingly becoming accepted in specific subjects offered in some universities. Even then, its utilisation at the university level is patchy at best. It is limited mainly in urban areas where broadband internet is available and where most universities are situated. e-Learning in the corporate sector is employed primarily by big companies with foreign capital or major domestic IT companies. The majority of small and medium enterprises do not use e-Learning, while in the public sector, the situation differs between central and local state administrations. The Slovakian country report highlights several areas requiring urgent redress – areas which the other five sample countries too have identified, if not already addressed. Legislation and national coordination of e-Learning development are required, as are support, funding, and a policy advisory committee.

There is no doubt that all the six countries recognise the importance of lifelong learning in complementing existing formal education systems for greater national productivity, employability and improved quality of life. All six sample countries, too, recognise the importance of using ICT more broadly in education as well as for improving access to educational opportunities and for better utilisation of e-Learning in lifelong learning endeavours. In this respect, it is worthwhile to note that the development of e-Learning for lifelong learning varies between the sample countries; with South Korea, Denmark and Japan ahead of Malaysia, Slovakia and Thailand in terms of conceptualisation, implementation and progress.

While it is universal for lifelong learning objectives to include meeting national goals like productivity, employability as well as social needs for improved quality of life, there are clear contrasts in its emphasis as reflected in the given policies, funding and implementation. For example, Japan emphasises on meeting social needs for an ageing society and Denmark is concerned not only with filling in gaps in the labour force, but also with the broader social context of lifelong learning for self-fulfilment. The other sample countries stress more on the aspects of productivity, employability and competitiveness. These differences mark individual concerns and cultural features that are unique to each country, and they of course have had great bearing on educational priorities that directly address lifelong learning and e-Learning or at the very least, influence them on a national scale.

While the reports have highlighted the current stage of e-Learning for lifelong learning in the respective countries, they also point to many weak areas and missing gaps that need to be strengthened and closed. It is these areas that provide the basis for future direction of developing better systems and features that can be more specific to e-Learning for lifelong learning. Each country faces a different set of challenges

to overcome that are openly acknowledged or at least, intimated in these reports. The comprehensive list of recommendations that have closed each report can certainly serve as input for developing the roadmap to improve e-Learning for lifelong learning in the respective countries. The reports collectively are also a comprehensive snapshot of e-Learning and lifelong learning practices in each sample country; and can certainly serve as an introductory study for the avid reader.



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Part II

White Papers of Six Asia–Europe Countries

Denmark

- Lars Birch Andreasen, Mie Buhl

Japan

- Tsuneo Yamada

Malaysia

- Mansor Fadzil, Latifah Abdol Latif

Slovakia

- Alena Pistovcakova, Jaroslava Kovacova

South Korea

- Min Seung Jung, Kyung Ae Choi, Eun Soon Baik

Thailand

- Thapanee Thammetar, Supanee Sombuntham



e-Learning for Lifelong Learning in Denmark

01

October 2010
Danish School of Education
Aarhus University

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<http://www.mediengeschichte.uni-siegen.de>



Introduction

This white paper on e-Learning for lifelong learning in Denmark is one among a number of white papers dealing with e-Learning and lifelong learning in specific countries in Asia and Europe. The production of these white papers is an Asian-European initiative, with offspring in the e-ASEM network — the research network on Development of ICT skills, e-Learning and the culture of e-Learning in Lifelong Learning — under the ASEM Education and Research Hub for Lifelong Learning.

The objective of the white papers are to focus on the areas of e-Learning and lifelong learning, and create a shared knowledge across the different participating countries of the organisation, the characteristics, and the innovations in the use of ICT and e-Learning in relation to the development of lifelong learning. This may act as a foundation for further collaboration between Asia and Europe.

The white paper on Denmark has been produced by Associate Professor, PhD, Mie Buhl and Associate Professor, PhD, Lars Birch Andreasen, the Danish School of Education (DPU), Aarhus University. Both are members of the University's Research Programme on Media and ICT in a Learning Perspective, and employed at the Department of Curriculum Research.

Generally the white paper covers the period of 2005-2009, but also earlier resources have been used where relevant. In the work with the white paper we have employed a general understanding of as well the concept of e-Learning, which may cover broadly the various kinds of integration of ICT in teaching, learning, and education, as the concept of lifelong learning, which may cover all parts of the ordinary educational system as well as activities outside the established educational system. We will however make the reservation that even we have strived to include what was available as relevant sources of information and research in relation to the white paper's topic, there will most probably be other relevant sources that could or should have been included.
Mie Buhl and Lars Birch Andreasen, DPU, AU, Denmark, October 2010

Chapter 1 The Danish educational system

The Danish educational system is organised in two parallel systems, each covering the different levels of education: The mainline education system, and a parallel system covering adult education and continuing training. The educational levels of both systems are directly comparable.

The mainline education system consists of the basic school (primary and lower secondary school), youth education (upper secondary school and vocationally oriented education), and higher education. The educational offers in the mainline education system are generally free and do not require payment for the students. Figure 1-a shows the structure of the Danish mainline education system.

The adult education and continuing training system are aimed at people who wish to develop their qualifications further after having left the mainline education system. It consists of three types — general, vocationally oriented, and non-formal adult education — which are further described in 1.2. The educational offers in the adult education and continuing training system are typically financed through a combination of tuition fees from participants and subsidies from the state. Figure 1-b further below shows the relations between the mainline educational system and the adult education and continuing training system.

1.1 The mainline education system

Basic school

There is a ten-year compulsory education in Denmark, stretching from pre-school class (grade 0) to 9th grade. (There is no compulsory schooling, but only very few

children are home taught, so almost all children enter the basic school.) The basic school gives admission to youth education. There is an additional voluntary 10th grade of the basic school, which a little less than half of the pupils choose before continuing.

In 2008 82% of the pupils attended the public, municipal basic school, which is a free offer. Alternatively, pupils can attend private basic schools or continuation schools (private boarding schools from 8th to 10th form), which are financed in a combination of state subsidies and pupil contributions (UNI-C 2010:6).

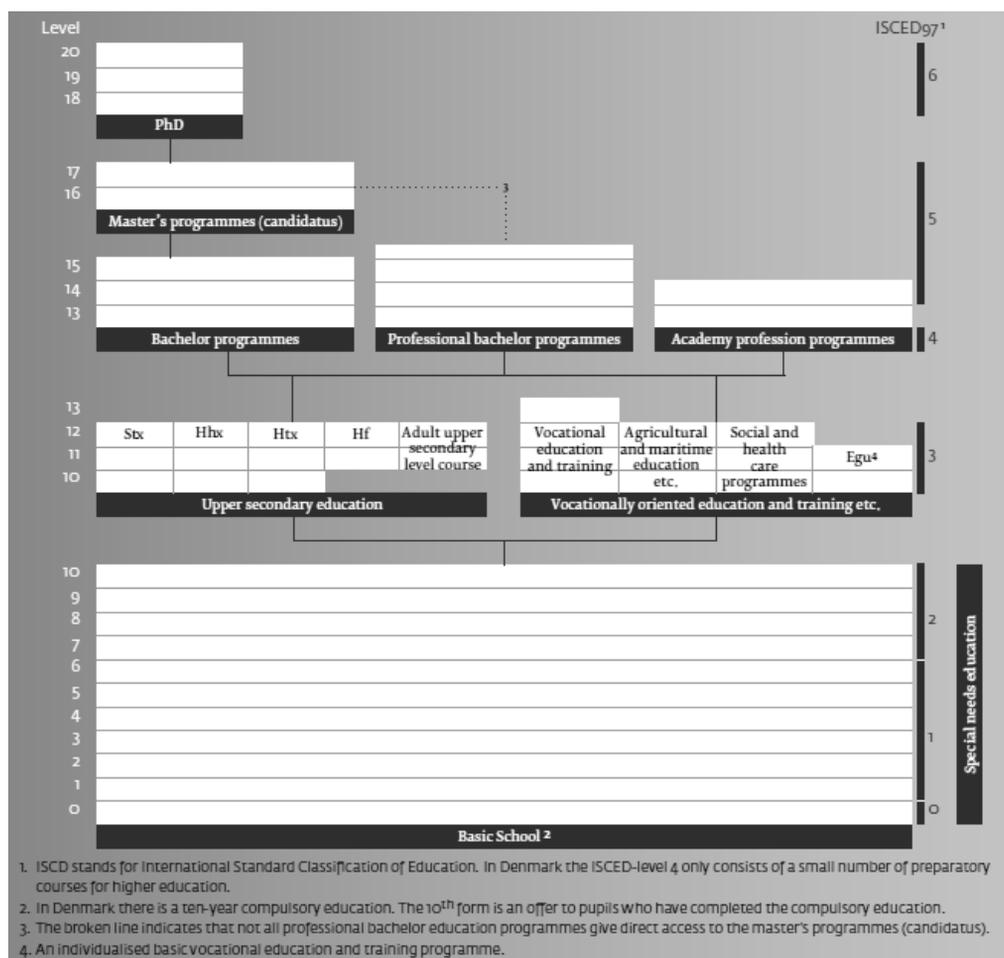


Figure 1-a The structure of the mainline education system (UNI-C 2010:8)

Youth education

The youth education system comprises of two areas: a) *upper secondary education*, preparing for higher education, and b) *vocational education and training programmes* that target the labour market, but which may also give admission to certain kinds of higher education. Approximately half of the students in youth education are enrolled in an upper secondary education programme, and half in a vocationally oriented education and training programme. Most youth education programmes have a duration of approximately three years, but depending on the type the duration may be from one and a half year to five years. All young people must be offered a youth education, and in 2008 a good 84 % of all youth are expected to complete a youth education. The government aims at reaching 95 % in 2015 (UNI-C 2010:11).

Upper secondary education prepares young people for higher education through in-depth studies, allowing them to acquire general knowledge and competence, develop academic insight and study competence. Three of these programmes — the general study preparatory examination, ‘studieforberedende eksamen’ (stx), the higher commercial examination, ‘højere handelseksamen’ (hbx), and the higher technical examination, ‘højere teknisk eksamen’ (htx) — are three-year education programmes with an introductory half year basic course and two and a half years in a study programme chosen by the students with three main subjects. Stx is usually offered at upper secondary schools, while hbx and htx are offered at vocational colleges.

In a lifelong learning perspective a fourth type of upper secondary education, is interesting, because it is intended for somewhat older students. This type is called the higher preparatory examination, ‘højere forberedelseksamen’ (hf). Hf comprises mandatory as well as optional subjects, and it is to a certain degree possible to put together an individual education programme. It is offered as a two year programme or as an adult programme composed of single subjects.

Vocational education and training programmes comprise commercial and technical vocational education programmes, social and health care programmes, and education

within the field of agriculture. These programmes are intended to give young people and adults professional, personal and general qualifications, which are in demand in the labour market. They qualify for employment in certain trades, and may also give study competence for higher education within the vocational academy programmes and certain bachelor programmes.

In the vocational education and training programmes there are 12 vocational basic access channels to a total of 109 programmes (UNI-C 2010:12). The students in the programmes alternate between practical training in an enterprise and education in a school during their programme. Therefore it is a challenge for the students to obtain a training contract (internship) with an enterprise in order to fulfil their education. For students not able to obtain a training contract the vocational college may organise school-based practical training.

Higher education

The higher education programmes are the educational continuation of youth education and provide the students with final vocational qualifications. They are categorized according to level and duration: The *short-cycle higher education*, including the two-year vocational academy education programmes, the *medium-cycle higher education*, including the three-year university bachelor programmes, professional bachelor programmes, and other medium duration higher programmes, and the *long-cycle higher education*, including master's programmes (candidates) and PhD programmes (UNI-C 2010:14).

Higher education comprises universities as well as minor institutions. Since 2007 several universities have been merged with other universities and with sector research institutions and in 2008 the total number of universities was eight. Furthermore, in 2008 the major part of medium-cycle higher education was consolidated in eight professional higher schools (university colleges) and two engineering colleges, while the greater part of the short-cycle higher education programmes are offered at ten vocational academies (or “academies of professional higher education”) (UNI-C

2010).

Short-cycle higher education

Most of the short-cycle higher education programmes are vocational academy educations, directed towards a specific trade or job function, and combining theory and practice. A vocational academy education takes as a rule two years, including a minimum of three months' practice. The requirements to enter a vocational academy education are an upper secondary education or a vocationally oriented education, sometimes with specific requirements of certain levels in mathematics or English.

In 1998 a reform of the short-cycle higher education made the access routes broader and more transparent, and gave better possibilities for the students of being awarded credits if they wanted to continue in a medium- or long-cycle higher education programme. In the autumn of 2009, there are 25 vocational academy education programmes; most of them are offered at academies of professional higher education (UNI-C 2010:15).

Medium-cycle higher education

A professional bachelor education is a profession-oriented. One type of medium-cycle higher education are the professional bachelor programmes, which are offered at eight university colleges, where education of e.g. teachers and nurses takes place, and at two engineering colleges. There are approximately 40 professional bachelor education programmes within pedagogy, health care, bio- and laboratory technology, media and communication, information technology, social sciences, and economics (UNI-C 2010:15). The entry requirements are in most cases an upper secondary education; however, certain vocational education programmes may also give admission, if supplemented by certain upper secondary courses. The programmes normally take three to four years, including a minimum of half a year of practice.

The universities' three-year bachelor education programmes are another type of me-

dium-cycle higher education. A structural change took place in 1993, when the five to six years university programmes leading to a master's degree (candidatus) were divided into two cycles: a three-year bachelor programme and a two-year master's programme (candidatus). Today, all long-cycle higher education programmes at universities consist of a bachelor level and a master level.

Long-cycle higher education

After a period of merging of universities, there are today eight universities in Denmark; five cross-disciplinary universities and three single-faculty universities, covering business, technical science, or information technology. The universities offer a range of programmes at various levels: bachelor, masters' (candidatus), and PhD programmes (research education), as well as vocational masters' programmes.

Admission requirements to the master's programmes are a relevant bachelor degree or another relevant Danish or foreign education at the same level. After the structural change of university education in 1993 mentioned above, it has become more common for students to combine their education of two different bachelor and master programmes eventually from different universities, instead of accomplishing their bachelor and master's education at the same programme.

Table 1-1 Number of pupils/students in the mainline education system 2008. Cohort, intake and graduated pupils and students in the educations

	Cohort		Intake	Graduated
	Number	%	Number	Number
Main figures	1,171,194	100.0
Basic school	719,161	61.4
Basic school, compulsory part	682,110	58.2	63,085	69,509
Basic school, 10th form	37,051	3.2	37,354	31,470
Non-qualifying education¹	3,039	0.3	7,657	8,721
Youth education, total	242,735	20.7	102,592	62,834
Upper secondary education	118,666	10.1	45,875	33,374

Vocationally oriented education and training	124,069	10.6	56,717	29,460
Higher education, total	206,259	17.6	59,977	45,935
<i>Short-cycle higher education</i>	18,950	1.6	9,404	5,908
<i>Medium-cycle higher education</i>	127,186	10.9	33,771	26,411
Professional bachelor education	62,460	5.3	16,555	13,706
Other medium-cycle higher education	2,138	0.2	1,146	552
University bachelor education	62,588	5.3	17,527	12,153
<i>Long-cycle higher education²</i>	60,123	5.1	16,802	13,616
Unity master's programmes (candidatus)	4,026	0.3	78	2,080
Two-step master's programmes (candidatus)	49,303	4.2	14,768	10,423
PhD etc	6,794	0.6	1,956	1,113

Note 1: Preliminary figures

Note 2: Unity 5-year master's programmes (candidatus) are being phased out and replaced by two-step programmes (3-year university bachelor program + 2-year master's programme)
(UNI-C 2010:20)

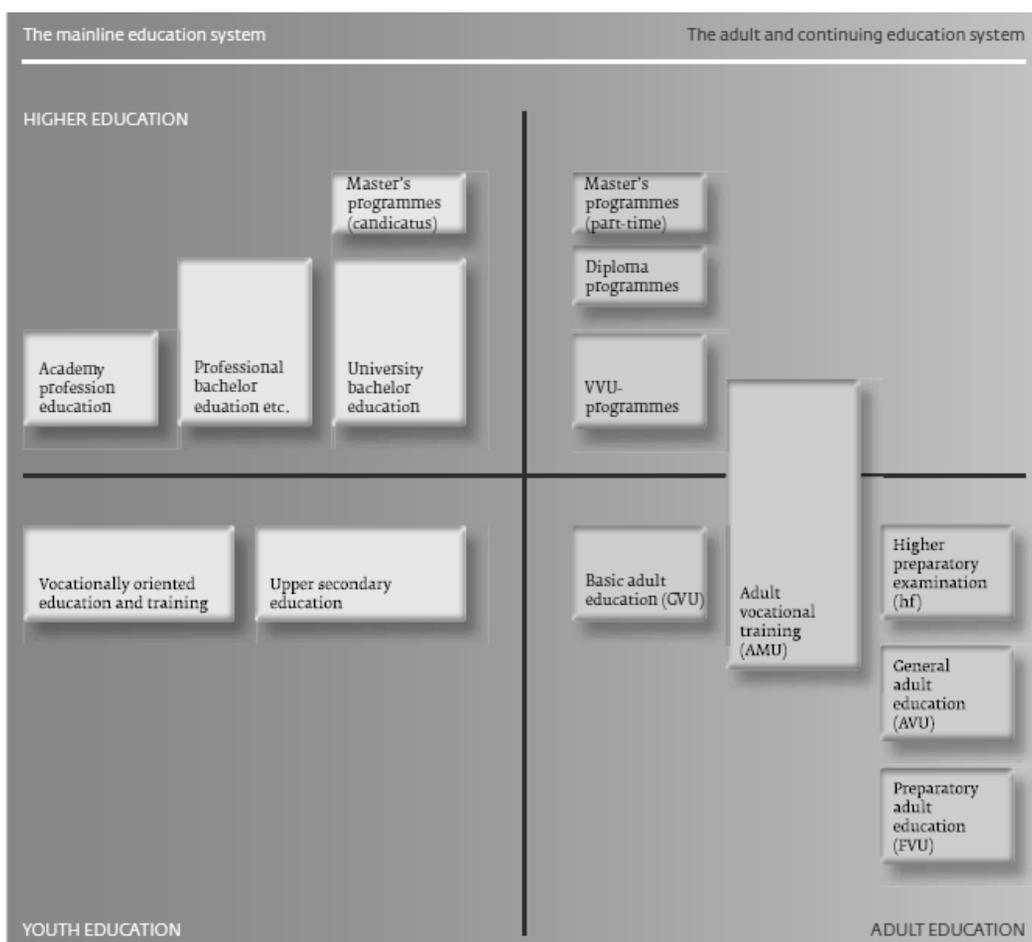
1.2 The adult education and continuing training system

Besides the ordinary, mainline education system described above in 1.1., there is a parallel system of adult education and continuing training. The adult education and continuing training in Denmark can be divided into three types: General adult education; Vocationally oriented adult education; and Non-formal (or liberal) adult education (UNI-C 2010:17). The general adult education and the vocationally oriented adult education are formally qualifying for further studies or for the labour market.

Non-formal adult education (especially in the tradition of liberal education) are usually without exams or grades, and are therefore not formally qualifying, but serves the purpose of each individual to develop what he or she needs or would like attain knowledge about. This kind of liberal education serves no other purposes than personal growth. People taking part in it are driven by curiosity to learn new things that

can add new perspectives on how to live a good life. The non-formal adult education takes place at folk high schools, in evening schools, adult education associations, and at private courses. Thus, the activities take place in people's leisure time and it is not unusual to spend one's summer holiday on a folk high school. As described below there is a long tradition in Denmark of non-formal (liberal) education, which is an important part of the understanding of lifelong learning in Denmark today.

Figure 1-b The connections between the mainline educational system and the adult education and continuing training system



(UNI-C 2010:9)

A comparison of the two parallel Danish educational systems are shown in figure 1-b. The figure shows the different levels of the ordinary, ‘mainline’ educational system, and the corresponding educational offers in the General and the Vocationally oriented parts of the adult education system. The figure does not show non-formal educational activities, as it can be difficult to indicate their educational level precisely.

General adult education

General adult education comprises a number of different possibilities, which are offered by regional and local adult education centres, ‘voksenundervisningscentre’ (VUC):

- One offer is the *preparatory adult education*, ‘forberedende voksenundervisning’ (FVU), which is a possibility for adults to obtain basic school level skills in reading, spelling, writing, and number skills, arithmetic and basic mathematical concepts.
- Another offer is the *general adult education*, ‘almen voksenuddannelse’ (AVU), which is aimed at adults (over 18 years) to more generally improve their knowledge in subjects as Danish, mathematics, social studies. The teaching is organised as single subject courses, and the courses may be concluded with a test that corresponds to the 9th and 10th grade of the basic school level.
- A third offer is the *higher preparatory examination*, ‘højere forberedelseksamen’ (hf), which was also mentioned in 1.1., which corresponds to the upper secondary school level. It is meant for adults to obtain general qualifications for further education or to increase their opportunities in the labour market. The hf can be studied as single subject courses, and can also be pieced together to a full hf examination, that prepares for higher education.

Vocationally oriented adult education

The system of *adult vocational training*, ‘arbejdsmarkedsuddannelser’ (AMU), covers a wide offer of approximately 3000 different programmes and single subject courses

that are aimed at unskilled or skilled workers in public or private employment, to qualify them for specific job functions.

Basic adult education, ‘grunduddannelse for voksne’ (GVU), is an individual education plan that builds on a competence evaluation of the previous qualifications and experiences of the individual participant, and supplements these with relevant elements from vocational education or training programmes. When fulfilled, the participant will have the same professional level and take the same tests as in a corresponding vocational youth education.

A growing number of vocationally oriented *adult education programmes in higher education* have been established, that correspond to different academic levels: higher adult education programmes, ‘videregående voksenuddannelser’ (VVU), (at level with the short-cycle vocational academy programmes), diploma programmes (at level with the medium-cycle professional bachelor or university bachelor), and master’s education programmes (at level of long-cycle higher education). The programmes are organised under the legislation of open education and demands payment of tuition fees. To enter these programmes, the participants are required to have several years of relevant professional experience. Hence, they are a chance of acquiring academic competence as an adult, outside the mainline education system.

Note regarding table 1-2: Table 1-2 above shows the number of *persons* that during a year have participated in adult education and continuing training courses. However, the participation in adult education and continuing training can be measured in different ways. On the one hand, as each person may have participated in more than one course, the number of *participants* in the courses would be slightly higher than in the table showing the number of *persons*. On the other hand, as adult education and continuing training courses are often shorter than other educational programmes, the number of equivalent *full-time students* would be slightly lower than in the table. Moreover, table 1-2 only shows the number of persons in *public* adult education and continuing training, and does not include persons attending non-formal adult

education at folk high schools, private evening schools, adult education associations etc.

Table 1-2 Persons in public adult education and continuing training

	2003	2004	2005	2006	2007
	Number				
Total	346,535	439,569	445,537	442,686	436,934
General level	83,893	83,586	80,309	74,889	75,489
Preparatory adult education (FVU)	9,203	11,364	11,423	11,513	11,628
General adult education (avu)	40,349	37,959	36,888	32,940	34,261
Higher preparatory single subject course (hf)	34,341	34,263	31,998	30,436	29,840
Vocationally oriented level	240,792	306,786	317,290	326,906	351,482
Adult vocational training (AMU)	206,252	278,126	296,505	305,226	331,166
Open education etc	34,540	28,660	20,785	21,680	20,316
Higher level	21,850	49,197	47,938	40,891	9,9631
Bachelor	3,473	11,311	13,800	13,258	455
Master	2,267	3,188	3,366	3,024	2,026
Open education etc	16,110	34,698	30,802	24,609	7,482

Remark: Exclusive of persons in another adult education and continuing training: Danish for adults, training of dyslexics, teaching in folk high schools etc. Includes education programmes under ministries other than the Danish Ministry of Education.

Note 1: The figures for the higher level in 2007 have only been updated in part.

(UNI-C 2010:100)

Non-formal (liberal) adult education

Non-formal (or liberal) education has a long tradition in Denmark. It can be traced back to the 1800s, where the Danish clergyman and philosopher N.F.S. Grundtvig started a movement based on the thoughts that everybody should have access to enlightenment and free educational opportunities. It might be said to be a particular kind of ‘forerunner’ of the lifelong learning perspective, which emerged when Denmark was primarily an agricultural country and many men and women served

as farmhands and servant girls. In those days, the folk high schools were an opportunity to get more education and thereby expand the access to knowledge and cultivation. A boarding for several months was also a possibility for those who could afford it. This movement has influenced the Danish educational system, as well in relation to informal adult education activities as in relation to the basic education system. Today many still insist on denoting the basic school “Folkeskole” (meaning “School of the people”) emphasising that the school is for everybody and is based on developing skills and competences as well as cultivation and formation of the future citizens of Denmark. This is one of the special features of the Danish Education system.

The *folk high schools*, ‘folkehøjskoler’, are the most famous example of non-formal or liberal adult education, because they have this special concept of personal development as the main goal for their activities. This implies a high degree of freedom to choose the subjects, content and methods of their teaching. The legislation specifies that the subjects must be of a broad, general nature for half of the time, while the rest of the time can be spent on going into depth with special subjects and skills. Some folk high schools, for instance, concentrate on music and theatre while other emphasize sports, art, politics or philosophy. General discussions about important topics are common to all the teaching. Because folk high schools are not aimed at providing formal qualifications, there are no diploma and no tests or exams.

Folk high schools are boarding schools, where the participants live at the school. About 45,000 people a year take part in one of the short courses (usually a week or two), while the longer courses (lasting several months) have approximately 8,000 participants a year. The minimum age is 17½. Three folk high schools are only for young people between the ages of 16½ and 19, and four folk high schools are for pensioners. There are a total of 78 folk high schools located all around the country.

Folk high schools are part of a multifarious system of non-formal education. On the Ministry of Education’s homepage, the description says that “Non-formal adult

education consists of forms of teaching and education that only to a limited degree are part of the formal, public educational system” and that “Non-formal learning activities are frequently based on private initiatives by non-governmental organisations (NGOs)”. No particular school or professional qualifications are required for participating in non-formal adult education.

All offers are financially supported by the state to keep the tuition fees on a low level, where everybody can participate. A list is given of what non-formal adult education comprises:

- Independent non-formal educational activities: evening schools and voluntary activity in associations
- University extramural courses
- Day folk high schools
- Private independent boarding schools (folk high schools, home economics schools, arts and crafts schools, and continuation schools)

Regarding *voluntary activities and adult learning in associations*, in 2005 there were approximately 19,000 associations in Denmark, of which approximately 2,100 were in the field of non-formal adult education and 17,000 were voluntary associations. The adult education can be organised in different ways: teaching, study circles, lectures, debate-creating activities, flexibly organised activities, and fees are charged for participation. By offering teaching in evening schools many should be able to attend. There are approximately 1 million participants each year (compared to 5 million citizens in Denmark totally!).

Another kind of activities is *association work*. Association work is offered by associations in such fields as sports, politics and religious activity, other philosophically related and socially engaged work with children and young people, and youth clubs, which, within the framework of the law, make decisions themselves regarding how they will make use of grants and organise their activity. In 2005 approximately 1.8 million people took part in association activity.

The Act on Non-formal Adult Education Activity also includes the University Extramural Department and the Day folk high schools. The *University Extramural Department* is nationwide. Locally, there are more than 100 university extramural committees working with this activity outside of the university cities. *Day folk high schools* offers adult educational courses (4-18 weeks) and many also offer Preparatory Adult Education courses. In 2006 there were 52 day folk high schools with a total of approximately 16,000 participants.

Private independent boarding schools include folk high schools, home economics and arts and crafts schools, and continuation schools. The main objectives of courses at private independent boarding schools are the interpretation and meaning of life, adult education and general democratic education. The teaching must be of a broad, general nature. The schools organise their activity on the basis of their chosen core values. The pupils live at the school and the courses include both teaching and social interaction. The teachers live close to the school and take part in social life outside of class hours, and pupils and teachers also eat several of the fixed meals together. Pupils at many of the schools take part in the practical work such as cleaning and cooking as part of the daily life at the schools.

Chapter 2

Concepts of lifelong learning and e-Learning

As mentioned in chapter 1, Denmark has had a long tradition of liberal or non-formal adult education. This chapter will draw on this historical tradition in the discussion of today's understanding of the concepts of 'lifelong learning' and 'e-Learning'.

The traditions of thought behind the development of liberal adult education, inspired by the Danish clergyman and philosopher Grundtvig, play an important part in the development of educational and pedagogical thinking in Denmark. These ideas can be summarised in the concept of “folkeoplysning”, literally meaning “people’s enlightenment”, but being difficult to translate in its full meaning. In the 1800’s Grundtvig advocated for “folkeoplysning” and the creation of folk high schools as a way to improve the education of the peasants particularly to give them the necessary qualifications to take part in the growing democratic society. Keywords for the understanding of “folkeoplysning” are liberty and active participation, self-management and responsibility. But education is only one part of “folkeoplysning”. Another part of the concept is activities carried out voluntarily in various kinds of organisations and associations. With an emphasis on fellowship and dialogue — in Grundtvig’s phrase “the living word” — there is not always a sharp line between educational activities and other forms of organised gatherings (Bacher et al 1993:5).

In the development of the Danish educational system the ideas of “folkeoplysning” have corresponded with two other lines of thought: The labour force’s wishes of enlightenment and education for all, and the employers’ demand for supplementary training for their employees (Bacher et al 1993:3). These three influences are the background for many initiatives of development in the area of lifelong learning and for the various kinds of institutions described in chapter 1.

Various traditions of thought have influenced the understanding on lifelong learning, also internationally, where e.g. UNESCO has had focus on the importance of ‘lifelong learning’. Lifelong learning has become central as a consequence of globalization and the transition from an industrial economy to a knowledge economy, where we are continually confronted with acquiring new knowledge and skills, in order to cope with changes in social life and in work life. It is not enough to learn; you have to learn how to learn. Therefore a broad understanding of lifelong learning is applied as all kinds of learning possibilities and activities, covering as well the ordinary educational system, the adult education and continuing training system, and liberal

adult education activities. All are parts of the concept of lifelong learning.

One of the common understandings of lifelong learning takes its departure in the challenges of the ‘knowledge economy’ and the global competition, and in the realization that the traditional education and training system face difficulties in coping with the demand for a flexible work force. In this context, ‘lifelong learning’ and the creation of a more open and flexible educational system is viewed as needed in order to facilitate a higher level of general education and to avoid skill gaps in the labour force (Aceto et al. 2004). In this understanding of lifelong learning, focus is on development of employability.

However, beyond the strictly economic perspective, lifelong learning is also to be seen in a broader social context, focusing on the value of social and personal development. From this perspective it is recognised that learning that takes place outside formal educational and training settings may contribute with added value to competence development as well as social and personal development. It is also recognised that educational systems reflect the attitudes and power relations of society, and that educational curricula embody particular pedagogic philosophies (Aceto et al. 2004). Therefore, to broaden the access to education and make the social benefits of learning available for all, lifelong learning must also encompass informal learning activities.

The European Commission defined in 2001 lifelong learning as “all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective” (Commission of the European Communities, 2001). Lifelong learning therefore comprises all phases and forms of learning from pre-school to post-retirement, in the support of four broad objectives of:

- Personal fulfilment
- Active citizenship
- Social inclusion

- Employability / adaptability

Lifelong learning is about providing second chances to update basic skills, as well as offering learning opportunities at more advanced levels. Each citizen have individual learning pathways; and therefore the content of learning, the way learning is accessed, and where it takes place may vary depending on the learner and their learning requirements. The Commission therefore stresses the importance of all forms of learning, “including: formal learning, such as a degree course followed at a university; non-formal learning, such as vocational skills acquired at the workplace; and informal learning, such as inter-generational learning, for example where parents learn to use ICT through their children, or learning how to play an instrument together with friends.” (Aceto et al. 2004).

For the individual to acquire new knowledge throughout his or her life, places new requirements to education (Qvortrup 2009:2): There must be coherence between different parts of the educational system. Businesses and society must create conditions and frameworks to support organisational learning along with individual learning. There must be an emphasis on inclusion, and the individual must be in the centre of the lifelong learning process.

The concept of e-Learning

A number of different terms have over time been used to describe what is today understood as included in the concept of e-Learning: ‘Online education’, ‘virtual learning’, ‘computer-assisted instruction’, ‘technology-enhanced learning’, ‘internet-based distance education’ and many others. Each of these terms has their special emphasis, and all of them describe certain aspects of the concept of e-Learning.

The concept of “e-Learning” can be criticised for being a contradictory term, because it is not the learning process in itself that becomes electronic; rather it is the learning environment framing the learning situation that becomes electronic/virtual/online/net-based. However, this is a criticism that can be said to apply to all expressions

denoting an adjective to “learning”, and despite this point, the concept of e-Learning has become widely used and is today seen as the general concept regarding the relation between ICT and education.

The concept of e-Learning is in Denmark today used as a general term covering all forms of teaching and learning, where information and communication technology is involved. E-learning is thus not only to be considered as a term covering teaching at a distance through the internet, but may cover all kinds of ICT-supported educational activities, e.g. ICT used for self study purposes, ICT as an integrated part of face-to-face teaching or on-the-job training with peers, or netbased interaction in an online course. A large part of the e-Learning activities in Denmark can not be categorised as distance learning, but rather as flexible learning or blended learning, i.e. learning situations that combine online activities with physically situated activities, e.g. at seminars.

In their national strategy for e-Learning The Danish Ministry of Science defines e-Learning in the same broad sense as a general term covering all kinds of competence development, where the content — or parts hereof — are mediated through information and communication technology. Also communication and collaboration between students, as well as between student and teacher, can be mediated fully or partly through ICT. E-learning thus covers all forms of learning that is supported through the use of ICT (Danish Ministry of Science 2007a:2).

The communicative and collaborative aspects are especially in focus in the dialogically inspired traditions of e.g. computer-supported collaborative learning (CSCL), where net-based discussions and student collaboration on shared projects are used as key elements in a student-centred learning approach. The focus on dialogue and collaboration has been central to many experiments with e-Learning in Denmark and Scandinavia, building on the traditions of enlightenment, active participation and dialogue.

The basis of the Danish ICT-policy, as laid out in the 1990'ies, is that the Information Society is a society for everybody, and that citizens should be considered equal and not be divided in 'A-teams' and 'B-teams' on the basis of their ICT-related knowledge and skills. The vision for ICT in education is to ensure ICT qualifications for everyone during their education, and that these qualifications accord with their expected future needs as citizens and as members of the workforce (Pelgrum & Anderson 1999).

The official intention is to integrate ICT as a fourth 'cultural technique', on a level with reading, writing, and arithmetic in basic schools. Realization of this aim throughout the school life requires policies that ensure a certain level of digital infrastructure accessible for students, teachers and other parties at schools as well as other educational institutions. Accordingly, a number of governmentally funded programs have been initiated in order to strengthen the access to hardware, software, and communication networks throughout the educational system, and in order to develop staff competences and ways of integrating ICT in the curriculum.

Danish strategy for lifelong learning

In 2007 The Danish Ministry of Education launched a report on the future strategy for lifelong learning (Danish Ministry of Education 2007). The report was based on the government's goal for future education that Denmark shall have world-class education and that everyone shall participate in lifelong learning.

The overall aims of the educational reforms are that

- All children shall have a good start in school.
- All children shall achieve good academic knowledge and personal skills.

- 95 per cent of all young people shall complete a general or vocational upper secondary education by 2015.
- 50 per cent of all young people shall complete a higher education by 2015.
- Everyone shall engage in lifelong learning.

The strategy represents a political agreement between a majority of the parties in the Folketing (Danish Parliament) and aims to ensure future prosperity and welfare and investment in the future. A further DKK 15 billion has been set aside over a six-year period for new long-term investments in education and lifelong skills upgrading until year 2012 as an increased contribution to achieving the set targets.

The government's goal is to enhance lifelong skills and should be promoted in all parts of society. The strategy of education covers all parts of education and learning, shall support and promote individual personal development, employment, active citizenship and participation in society.

To reach the goals the government has set up the following objectives for the strategy:

- A coherent education system from preschool to higher education must provide the opportunity for everyone to acquire excellent basic skills, a qualifying education and a solid foundation for lifelong learning. There must be equal opportunities and room for all.
- Education must be world-class. The education system shall foster talent and be more accommodating to weak learners. Quality is given pride of place, and education must match the needs of the labour market and the society.
- There must be relevant, high quality adult education and continuing training for everyone in the labour market which matches the needs and puts particular emphasis on the need for lifelong skills upgrading for those with the lowest level of education. There is a shared responsibility to ensure that everyone in the labour market is engaged in lifelong learning.
- Systematic competence development in the workplace should be strengthened

in both public and private enterprises. Increased public and private investment in continuing training and competence development for employees shall contribute to improving the skills of individuals and strengthen the development of the enterprises.

- Opportunities for guidance and counselling must be improved and help ensure the best possible conditions for pupils, students and adults to choose education programmes and to participate in lifelong learning.
- All forms of education and learning should be based on and build on the knowledge, skills and competences of individuals. In adult education and continuing training new and improved opportunities shall be created promoting visibility and recognition of an individual's prior learning.
- Coherent education paths and transparency in the education system are to contribute to targeted education and lifelong skills upgrading and facilitate the best possible use of public resources.
- A global perspective must be included in all education programmes contributing to strengthening internationalisation and cooperation with the world around us.
- stronger higher education environments are to be created in order to contribute to higher quality in education and knowledge development, and a better framework and better conditions shall be developed for interaction between educational institutions and enterprises and other relevant players. (Danish Ministry of Education 2007:8-10)

The lifelong learning perspective implies initiatives from pre-school to higher university level. In pre-school initiatives are taken on enhancing the cohesion between day care and compulsory school. In the compulsory school initiatives are taken on more systematic and focused assessments on the particular parts of the school programme. For instance, it is a major challenge that one in six children still leave school with insufficient reading skills. In secondary schools initiatives are taken to ensure that more young people acquire a general or vocational upper secondary

education. In higher education initiatives are taken to ensure that 50 % of all young people take a short or long term academic degree.

In combination with these initiatives lifelong learning plays an important role due to the need for achieving new skills and competences through out the whole working life. Thus, the national strategy (Danish Ministry of Education 2007) claims that public efforts in adult education and continuing training play an important role in the development of the qualifications and competences of the labour force and provide opportunities for all groups in the labour market and in the population — from the low-skilled to those with higher education, which is based on facts about adult education and continuing training as follows:

- “60 per cent of the labour force participated in a learning activity in 2004 either in public, private or company programmes.
- It is estimated that 600,000 persons participated in public general or vocational adult education and training in 2004, corresponding to over 20 per cent of the labour force.
- Grants are provided by the State and tuition fees are charged for most adult education and continuing training programmes. Educational grants are provided for a number of education programmes.
- In 2004 expenditure amounted to a total of DKK 5 billion, of which DKK 2.7 billion for educational activities, DKK 1.6 billion for special allowances, with employers contributing DKK 1 billion, and DKK 0.7 billion financed through tuition fees.
- Total public and private expenditure for adult education and continuing training is estimated at DKK 15 billion in 2004” (Danish Ministry of Education 2007:20).

The challenges are met to enhance the competences of the working force with the following goals:

- Everyone shall engage in lifelong learning.
- Adult education and continuing training efforts must be effective and flexible.

They shall support good job opportunities for individuals, good competitiveness in enterprises and high employment and prosperity in society.

- Adult education and continuing training must provide everyone with opportunities to improve competences — not least those with the lowest level of formal education.
- Adult education and continuing training must reflect changes in the qualification requirements and needs of the labour market. (op.cit.)

The goals should be fulfilled in close relation between the social partners and all players in the society, and the government has initiated a row of actions aiming at qualification. Guidance and counselling have a crucial role to play for young people as well as adults, to fulfil the goals of lifelong learning.

Finally the national strategy for lifelong learning addresses liberal or non-formal education and association life which has a long and strong historic tradition in Denmark and which the strategy sees as the key to Danish democracy and cohesion (Danish Ministry of Education 2007:30). The following facts give a quantitative picture of this:

- 50,000 participated in a residential folk high school in 2004 with Government grants totalling DKK 432 million. The first folk high schools were established through popular movements more than 150 years ago.
- 675,000 participated in evening school education programmes in 2004 with municipal grants totalling DKK 175 million.
- A third of the population performs voluntary work.
- The number of voluntary organisations is estimated at over 83,000 local associations, 6,200 foundations, almost 8,000 self-governing institutions and around 3,000 national organisations.
- A charter for interaction between the Danish voluntary/association sector and the public sector was drawn up in 2001 by a working group comprising politicians and representatives of the voluntary sector.

The government wishes to support this through creating a closer cohesion between liberal, non-formal education activities and the formal education system.

The national strategy addresses the concept of lifelong learning from a broad perspective which includes formal, non-formal and informal education and learning. However, it is worth noting that the strategy for lifelong learning does not address the perspective of ICT as an object for learning nor as an organisational tool.

Danish strategy for e-Learning

The Danish government's IT and Telecommunications Policy Action Plan for 2003, "Using IT Wisely", launched an initiative to promote the use and development of e-Learning. The initiative aimed at creating a focus on better use of e-Learning in Danish society, and funding was provided to e-Learning projects in small and medium-sized enterprises, and to mobile e-Learning projects.

Boosting the ICT skills of the general public is still a major focus area for the government. A study in 2009 showed that there is still a group of the population which has not yet embraced ICT, and it is therefore a focus to ensure that Danes can make the most of the opportunities offered by ICT, and are not marginalised on the job market or within the information society in general (Danish Government 2010:14).

There is no special legislation or Act only on e-Learning in Denmark. Instead, the development of e-Learning and use of ICT in education have been part of major initiatives and funding programmes agreed in the 'Folketing' (Parliament) through the years, as described on the following pages. In June 2007, the Minister for Science, Technology and Innovation launched a national strategy for e-Learning (Danish Ministry of Science 2007a). The strategy is an element in the Government's general efforts to strengthen the possibilities of competency development in Denmark throughout the whole life.

The aim of the strategy is to increase the usage and quality of e-Learning through an innovative use of information and communication technology (ICT), and to strengthen the role of Denmark within the development of e-Learning. The Danish government sees considerable potential for improved productivity in the sector of education and training by increasing the use of e-Learning, given that e-Learning can contribute to reduced costs, increased flexibility and improved quality in training.

In the understanding of the Ministry of Science, “e-Learning” is a general term covering all kinds of competence development and learning supported through the use of ICT (Danish Ministry of Science 2007a). As an element in the National strategy for e-Learning from 2007, a number of major coordinated e-Learning initiatives have been implemented for the purpose of strengthening the quality and effect of e-Learning within the following target groups:

- Children and youth
- Higher-level educational institutions
- Employees in the public sector
- Employees in private enterprises
- Citizens

In addition, a number of cross-sectoral initiatives have been implemented.

Programmes for the funding of e-Learning in lifelong learning

An early governmental goal regarding hardware in the schools, formulated in 1997, was to have a ratio of one computer of a recent date (less than five years old) for every 10 students by the year 2003, and to this end the government gave the local municipalities an extra grant of 15 million USD in 1996-97 (Pelgrum & Anderson 1999). The goals regarding adequate hardware have been increased during the following years, and in 2008 Denmark has reached a number of one teaching computer of a recent date for every 4 pupils in municipal basic schools (UNI-C 2010:47).

Regarding communication networks, the goal is to ensure cheap and quick internet

connections by having all educational institutions in Denmark connected to the national high-speed internet network of educational institutions, the Sektornet. In 1997 30 million USD was allocated over a four year period to connect basic schools to the Sektornet (Pelgrum & Anderson 1999). Since then the Sektornet has been increased with greater bandwidth etc.

The Ministry of Education has over the years launched a number of larger funding programmes supporting the development of ICT in the educational system. These programmes have been supplemented by funding programmes by the Ministry of Science, Technology and Innovation, and by the Ministry of Culture, e.g. regarding development of museum education.

One of the larger funding programmes from the Ministry of Education was a programme on 'ICT and Media in the Public School' (ITMF) from 2001-2004, where 340 million DKK (55 million USD) was supplied on four areas: Educational research and development projects in schools and municipalities; development of teachers' qualifications through a School-ICT course (a 'teacher's ICT license'); digitalization of TV broadcasts to produce a library of multimedia learning materials; and further development of the Sektornet, so all schools now were connected to the Sektornet. During the ITMF programme half of all municipalities and a third of all basic schools in Denmark were involved in educational development projects on innovative ways of integrating ICT in teaching and learning practices at schools (Rambøll 2005:3).

A summary of results from the research and development projects under the ITMF programme showed that especially two factors were crucial for the creation of a change of practice of the use of ICT and media and of school development. One factor was to have a clear emphasis on *pedagogy and didactics*, and another factor was the role of the *management* at schools to create an innovative environment. It was of great importance if everybody, and especially the teachers of the school, had a clear set of local educational values and objectives, which helped to have a clearer understanding of the aim of the use of ICT and media. Therefore, schools

that had clear common pedagogical goals and common values integrated ICT and media in education faster and easier. Other important factors in relation to developing the practice of ICT and media use in schools were *collaboration* and networks, initiatives of *competence development* and *personal commitment* of the involved teachers (Rambøll 2005:11).

The ITMF programme was followed by a funding programme from 2004-2008 on 'ICT in the Public School — Investment in knowledge and welfare' (ITIF), where a total of 750 million DKK (125 million USD) from the government and local municipalities supported investment in upgrade of hardware in schools (e.g. computers for third grade classes), production of new digital resources for teaching and learning, implementation of knowledge sharing systems (intranets) for schools, and spreading of examples of best practice (EVA 2009).

In the period 2006-2007 the Ministry of Education and the Ministry of Culture collaborated on an initiative called e-museum, which supported Danish cultural heritage museums and art galleries with 14 million DKK (2,5 million USD) to develop and produce digital educational materials based on the museums' collections, targeted at teaching in primary and secondary schools.

A number of other smaller funding programmes financed by the Ministry of Science, Technology and Innovation have facilitated the development of e-Learning in different areas of education. In 2007 the Ministry supported the development of e-Learning environments within natural sciences or language teaching targeted at children and young people with a total of 4,5 million DKK (0,8 million USD). In 2008 the Ministry supported a number of projects on developing e-Learning at universities with 7,5 million DKK (1,2 million USD). In 2009 the Ministry have co-financed the development of e-Learning objects for mobile phones with 3 million DKK (0,5 million USD).

In the period of 2010-2012 the Ministry of Science, Technology and Innovation supports the area of ICT and education financially with 245 million DKK (app. 32 million

Euro) that partly are allocated to research and innovation within ICT, partly to the development of ICT skills in the population. The granting of these funds, despite the difficult economic situation in 2009-2010, indicates that there is broad political agreement on prioritising ICT as one of the essential areas which will contribute to increased growth and productivity (Danish Government 2010:8).

A former key phrase for Danish government policy on ICT has been to support a development from “learning to use ICT” and heading towards “using ICT to learn”. In other words, ICT is a tool for learning, and not a goal in itself. As a further development of this perspective, government policy in 2010 is focusing not only on the general use of ICT, but on the integration of ICT within each specific school subject. Based on a report on ICT in the school (EVA 2009), this perspective is discussed further in the following, in part 4.1.

Chapter 4

Status and characteristics of e-Learning for lifelong learning in Denmark

In 2010 The Ministry of Science, Technology and Innovation launched the Danish government’s policy report on IT and Telecommunications (Danish Government 2010). The report’s analysis of the digital infrastructure states that Denmark is a highly networked society: Of households in Denmark, 81 per cent have internet access at home (IT- og Telestyrelsen 2009:17), and the digital infrastructure makes broadband internet access possible for 99 per cent of all households and companies in Denmark (Danish Government 2010:6). The number of mobile telephone subscribers per 100 people in 2007 are 114,7 (Dutta & Mia 2009:182). In 2009, in The Economist’s E-readiness Index as well as in the World Economic Forums Networked

Readiness Index, Denmark was ranked as the country with the highest score in order to transform digital opportunities into social and economic development.

Table 4-1 Share of households with computer and access to the internet 1997-2009

	1997	1999	2001	2003	2005	2007	2009
	Procent af husstande						
Computer	48	60	67	79	84	83	86
Internet	10	33	48	66	73	78	81

(IT- & Telestyrelsen 2009:17)

Table 4-1 shows that computer availability and internet access at home has been steadily increasing from 1997 to 2009.

One can say that Denmark is at least technically prepared to meet the challenges of e-Learning. However, other investigations say that Denmark at the same time is challenged by the development in other European countries, with which we normally compete on economic growth. Within the country borders challenges of ensuring welfare, democracy, culture and participation for all Danes are in focus. Also climate and environmental challenges are addressed. These challenges are to be met with ICT and broadband internet as a part of the solution, and have provided a governmental initiative: the so-called *High Speed Committee* (2010). The *High Speed Committee* recommend a double strategy that on the one hand supports the continued development of technological broadband infrastructure and on the other hand the promotion of a widespread use of ICT in the Danish society.

The Danish policy is formulated to be a part of the European digital agenda. A report from the World Bank shows the ICT-skills of citizens to be coherent with a country's gross national product, other reports show that a well-functioning digital infrastructure reduces the costs of public administration, and that citizens with ICT skills earn more and have a better chance of keeping their jobs (Danish Government 2010:9).

In 2009 the last elements of a strategy on enhancing the ICT skills of Danish citizens (Danish Ministry of Science 2007b) were brought into action:

- 17 e-Learning modules of basic training in use of email, internet and public web sites.
- A public campaign aiming to enhance the motivation among weak ICT-users.
- A national collaborative network on ICT-training — the ‘Learn more-network’ — was launched in the beginning of 2009, and by the end of the year the network had expanded to include 16 organisations. The network aims at providing citizens with an opportunity to learn more about ICT in the local area. This is further described in ch. 4.5 below.

Participation in lifelong learning

Besides the above mentioned strategy for enhancing the citizens’ ICT skills, it is also the aim of the Danish government to enhance generally the Danes’ participation in lifelong learning. According to Eurostat, the Statistical Office of the European Communities, the participation in lifelong learning in Denmark has in the period from 2000 to 2007 risen from 19,4 percent to 29,2 percent. Table 4-2 below compares the participation rate in lifelong learning in European countries in 2007.

Table 4-2 Participation in lifelong learning in European countries, 2007

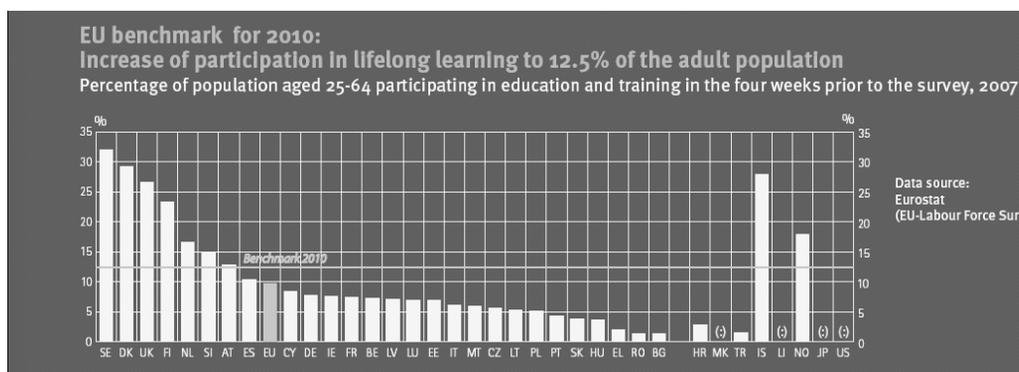


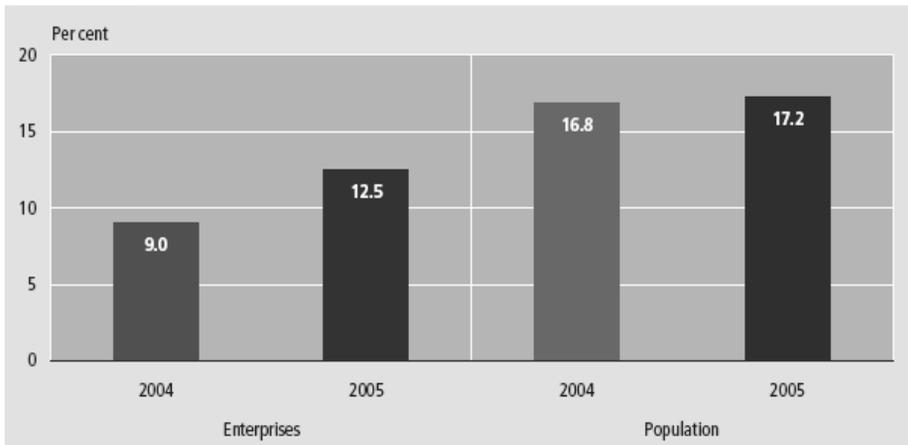
Table 4-2 shows that the European Union benchmark goal for 2010 at a European level is to increase the level of participation in lifelong learning to 12,5%. In 2007 the actual level for EU as a whole was just below 10%.

It should be noted that the figures in table 4-2 are measured at adults (aged 25-64), not at the whole population. The criteria have been whether these adults have participated in education or training during the four week period prior to the period of the survey in 2007. The table therefore focuses specifically on lifelong learning seen as further education or training of adults. Note furthermore that this measurement method has as a consequence that the higher number of people over the age of 25 still studying in the mainline educational system, the higher the participation rate in lifelong learning will show. Therefore the government's campaign of having students to complete their education faster than they do today in order to enter the labour market earlier, will eventually mean that the participation rate in lifelong learning will show a lower figure.

Using the internet for educational purposes

In 2005, 17 percent of the population had used the internet for purposes relating to education and training within the last month, as shown in Table 4-3 below. Among enterprises, the use of internet for educational purposes has increased particularly. From 2004 to 2005 the share of enterprises that used the internet for training of their staff rose from 9 to 13 per cent of the enterprises. In comparison, the share of the population using the internet for educational purposes has only risen slightly from 2004 to 2005. The population accounts for a higher figure for internet use for education and training than the enterprises do. One reason for this is that the population use internet to a wide extent that not necessarily have connection with the enterprises' training activities.

Table 4-3 Use of the internet for educational purposes



Note. Enterprises were asked whether they used the Internet for training of staff. Individuals were asked whether they had used the Internet for education and training within the last month.
Source: Statistics Denmark, ICT use by Danish enterprises and Internet use by the population.

Characteristics of the use of ICT

As described in chapter 1, the Danish formal education system is based on a basic school (the Folkeskole) with ten years of compulsory education, from pre-school to 9th grade. After basic school, education is structured in two parallel systems: 1. the mainline educational system which represents upper secondary school education, vocational education, and different levels of higher education and 2. adult education which represents vocationally oriented, general, and liberal education.

The next paragraphs describe some evaluations and initiatives taken on a national level aiming to enhance e-Learning in basic school education (4.1). After that follows paragraphs describing the youth education system (4.2). Examples are given from development activities conducted in the field. The description of the youth education system is followed by paragraphs describing initiatives in higher education (4.3), general and vocational adult education (4.4), and liberal and non-formal education (4.5).

4.1 The basic school education and ICT

E-learning in the basic school education takes form of a broad use of ICT. Due to the size of Denmark all children have access to school within a small distance. Distance learning is not and has never been implemented in compulsory education. However the infrastructural use of ICT in schools and use of internet are widespread. Almost all schools are connected to high-speed broadband internet, and a series of initiatives are taken regarding use of ICT during the basic school education. A report made by the The Danish Evaluation Institute (EVA 2009) gives a picture of recent developments. The preamble of the report tells how “the use of information communication technology (ICT) in Danish schools has been a long time coming; from its modest early beginnings, such as the elective ‘computer studies’ in 1984, to its present status. Today, the Education Act regarding the Folkeskole (Danish primary and lower-secondary education) requires ICT to be integrated in the teaching of all subjects, at all levels” (EVA 2009).

In brief, the integration of ICT in basic school education has had three different foci initiated successively:

- The first focus is the qualification of teachers and pupils from specialised courses, by completion of a so-called *IT-school license* (late 1990’ies)
- The second focus is digitalised teaching material and resources e.g. a shared portal (late 1990’ies) and the national purchase of computers for all third graders (2004-2008)
- The third and latest focus is heading at the integration of ICT on a subject specific didactic level based on the report by EVA (from 2009).

The Danish Evaluation Institute (EVA) and the Danish Ministry of Education have mapped the use and the experienced implementation of ICT in the Folkeskole together with stakeholders in the Danish Educational system. The project was carried out during the period of March 2008 to August 2009. Altogether, more than 550 teachers,

head teachers and municipal employees participated in the various activities included in the project. The participants represented more than 70 different schools, and the local municipal employees represented more than 50 different municipalities (EVA 2009:16). The study shows:

- that many teachers focus on the general pedagogic options and benefits provided by the use of ICT - e.g. that it motivates the pupils - and primarily use ICT to supplement their "standard teaching".
- that only a few teachers describe how they use ICT for subject-specific didactic purposes and in support of specific learning goals.
- that knowledge sharing systems are primarily used for administrative and organisational purposes, among teachers and between teachers and school management. Only infrequently are knowledge sharing systems used as a means of sharing knowledge/information among teachers, and between teachers, pupils and parents.
- that there is a need for new qualification development models that focus on integrating ICT into individual subjects and are more use-oriented, as well as being based on the teachers' specific needs (EVA 2009:8).

To the study from the Danish Evaluation Institute project was attached an expert group, who emphasized that:

- the school management is the decisive factor in ensuring that ICT is implemented in each school.
- teachers primarily focus on the general pedagogic usage and benefits of ICT, as the beneficial uses of ICT vary greatly depending on the nature of the subject.
- much could be gained by employing knowledge sharing systems for the purposes of sharing knowledge beyond the administrative and organisational levels.
- it is unsatisfactory that teachers and pupils at many schools lack access to well-functioning ICT.

The expert group recommended that:

- school managements prioritise ICT, and assume responsibility for developing ICT usage. Moreover, the expert group concludes that beyond ensuring a framework for ICT implementation, it is necessary that the management also engages itself in and actively follows up on the quality of ICT usage in their school.
- schools, based on Fælles Mål II (Shared Goals II), focus on the subject-content related benefits of employing ICT in teaching, and on the development of ICT-based, subject-specific didactics.
- schools utilise more fully the possibilities offered by the systems, in terms of knowledge sharing among teachers, e.g. the exchange of information about course planning and learning resources, and to promote communication and cooperation, among pupils as well as between the school and the parents.
- The development of ICT qualifications should be closely linked with education-content goals and subject-specific didactics.
- The development of ICT qualifications should be subject to a more use-oriented approach, and a needs-based supply of qualification courses.
- that municipalities give greater priority to ensuring that ICT equipment be operational, and that the pedagogical potential of using ICT in schools is not curtailed by efforts of centralisation (EVA 2009:3).

Another recent Danish study focusing on teachers from compulsory school (1st-9th grade) and high school (10th-12th grade) and their evaluation of their use of ICT in teaching, were conducted in 2008 by Danish Research Centre on Education and Advanced Media Materials. The study's findings on the teachers' preferred use of different media were that in their latest teaching lessons:

- the teachers had a high score on paper prints and books for educational purposes (appr. 95%)
- homepages were important for planning and instruction activities (appr. 50 %)
- there was a low score on visions including web 2.0 and mobile devices (appr.

8%)

(DREAM 2009:8-9).

Regarding the use of the new generation of ICT services — the so-called web 2.0 or social media — it was reported that only 12% of the teachers in compulsory school and 10% of the teachers at high school level were using web 2.0-services as part of the teaching in the school subject of Danish (mother tongue language). Regarding the use of web 2.0-services in the school subject of mathematics, the figures are even smaller, with only one percent of the teachers reporting that they are using web 2.0-services, and only “to a lesser degree” (DREAM 2009:35).

Current initiatives

The portal of *EMU*, an “electronic meeting point on teaching resources”, at www.e-mu.dk serves teachers with updates and courses within ICT. The EMU portal contains a number of subject-specific sub-sites with collections of resources and communication of teaching experiences related to specific topics or school subjects. The portal has continually updates on new initiatives on ICT in school education. Recently, the focus is on the learning potentials from technologies such as interactive boards and on mobile devices.

Gentofte Municipality outside Copenhagen is an example of a local frontrunner project within ICT. The municipality conducted a development *Project ICT and Learning (PIL)* from 2005-2007 with the involvement of research. The project had a subject-related focus on the relations between digital media and the students’ learning. The research focused on the didactics in a broad sense and investigated the learning potentials of the web-based activities such as communication within classes and aimed to identify new approaches to subject didactics and pedagogy. The project concluded that the *ICT-based educational design* is crucial for digital media to be beneficial within teaching of a subject. In other words: Educational activities do not gain from ICT in itself. Goal-oriented pedagogical decisions are of significant importance (Levinsen & Sørensen 2008).

The latest governmental initiative is published in a set of guidelines on ICT and Media competences in basic school education (Danish Ministry of Education 2009). The guidelines take their point of departure in the pupils as users of ICT, and in light of web 2.0 technology the following four topics are in focus:

1. Information search and collection
2. Production and mediation
3. Analysis
4. Communication, knowledge sharing and collaboration

The four topics are integrated to facilitate the pupils' learning processes, create better results and with the aim of supporting that they achieve digital formation. Not only addresses the latter how to use ICT, but also to be aware of the implications of doing it.

4.2 Youth Education system

The youth education programmes comprise the vocational education and training programmes and the general upper secondary education programmes. The e-Learning perspective is of an increasing importance in these programmes. The national government launched a project called the *Virtual High School Programme* in 2001. The purpose was to enhance the implementation of ICT in upper secondary education.

The first evaluation report on the programme emerged views in four areas: 1) Flexible teaching and learning, 2) ICT as catalyst for pedagogical development, 3) technological frames and 4) guidelines for specific subjects. The results from the collected findings were summarized in the following conclusions (Danish Ministry of Education 2001:9-12):

- Enhancement of student centred activities are of increasing importance
- Lack of technological equipment and policies restrict the possibilities for

integrating ICT. This includes the nature of curriculum, ICT-competences, and the culture of the school as such

- Use of ICT depends on the interrelation between ICT and the specific subjects' core content and tradition
- Use of ICT enhance the students' motivation and support the subject content
- ICT is regarded as the teacher's tool to support her/his teaching methods

The second report on the Virtual High School programme (Mathiasen 2004) focused mainly on internet mediated communication. This report pointed out the organisational culture of management and teacher development as a central issue. Another issue, which is part of the organisational culture, are the mechanisms of inclusion and exclusion in relation to gender, intellectual capacity, ethnicity, self discipline, and collaboration. A third issue addressed are the roles and functions of teacher and students in an ICT-based context.

A third report from 2005 on the Virtual high school programme addressed the organisational level and the traditional culture of high school. The report recommended a reframing of high school culture as such.

The upper secondary school reform 2003

In May 2003 the Danish Parliament came to an agreement about a reform of all types of upper secondary academically orientated programs: Stx, hhx, htx and hf. The first students were enrolled in August 2005. E-learning did not take a privileged position in the reform. But the reform restructured the courses in a way that opened for a change of high school culture and thereby the integration of ICT. Regulations of ICT were implemented which placed Denmark in front of other youth education programmes in Europe. Use of ICT was implemented in all syllabuses and curricula in the high school:

- Basic ICT competences
- Virtual teaching and learning is possible up to 25 % of the total of the programme

- The definition of assignments is expanded from purely written exercises to include production of e.g. multimedia products and PowerPoints
- Permission to use ICT is implemented in examination regulations for written and oral performances except from a tool for communication
- Development of digital examination papers in subjects on hhx and htx. The assignments are accessible digitally and can only be answered by using ICT. Yet, the final answer must be submitted on paper, and access to the internet during the tests is not permitted

The effect in regard to ICT has so far not materialised and is debated among stakeholders. An example is a conference in 2010 as a collaboration between universities and libraries about information literacy among high school students. The conference debated the fact that there is a gap between ICT in education and the use of ICT in leisure activities. A mapping in the national research project DREAM (DREAM 2009) document that the integration of digital resources fall behind the demands from a modern knowledge based society and stand in contrast to the Danish strategy as it is formulated in the vision of the report: Denmark as a high speed society (High Speed Committee 2010) where digitalisation and netbased activities are crucial in all sectors of society.

4.3 Higher education

4.3.1. Short-cycle higher education

From a general perspective the institutions of short-cycle and medium-cycle higher education has taken up the challenge of integrating ICT in the study programmes in different ways. So far no overall evaluation has been conducted. The report *Kortlægning af it-integration i undervisningen på kvu og mvu [Mapping of ICT-integration in teaching on short-cycle and medium-cycle higher education]* was published

in 2007 with the results of a national mapping of ICT-integration. The report reported on best practice defined by criteria that were categorised as follows: 1) The institutions' ICT facilities, 2) Organisational framework, 3) Use of ICT, 4) Development of students' competences, 5) Development of teachers' competences, and 6) Quality control of ICT integration (Fjeldsted et al 2007).

The integration of ICT is in the report understood as divided into a three-staged process: distribution, communication and learning, in which the evaluators see an expression of a general progression of ICT integration in education:

- In the first stage, ICT is used for *distribution* of information often via intranet.
- In the second stage, *communication* of practical issues related to the courses take place — often via platforms for knowledge sharing.
- In the third stage, digital media are integrated in processes supporting *learning* through dialogues and in relation to subject specific content. The third stage — the e-Learning stage — entails that e-Learning is comprehended in line with other pedagogical methods. This stage is based on changes in the teachers' pedagogical and instructional practice and takes several issues of the profession into consideration like methods, learning goals, target group and so forth.

This third stage was pursued in the search for best practices, and the results showed high score on stage one and stage two. In regard to stage three, only 10-20 % of the teachers acted on this stage and these teachers were often regarded as frontrunners in the area. The development process is, however, often influenced by structural and technological changes in the institution which causes delay or put the process on stand by.

The report concludes that in 2007 no best practice institutions can be found on stage three. Explanations can be found within the culture and pedagogic of the profession and in the expectations from students. For instance, teachers who already execute their profession mainly as moderators and supervisors adapt easier the technology and integrate it in their courses on stage three. Though possessing some but diverse

ICT skills, students appear to act in ways that maintain the teacher in a traditional deductive role, possibly in order to reduce the complexity of their learning situation (ibid).

The report concludes that the need for change of the teacher's role can be categorised in five main points:

1. To strengthen the role of the supervisor
2. To combine the professional authority with communicative equality
3. To enhance the focus on learning through problem- and project based processes
4. To enhance team-based planning between teachers and thereby strengthen new teaching roles and interdisciplinarity
5. To strengthen differentiated learning processes (ibid.)

4.3.2. Medium-cycle higher education

The following will focus on e-Learning in the medium-cycle higher education which takes place in eight university colleges where education of e.g. teachers and nurses takes place and in two engineering colleges. This area is in many ways of great importance in the perspective of e-Learning in lifelong learning since future teachers in the basic school education, in adult education and in liberal education programmes like folk high schools and day folk high school are allocated from here.

Though Denmark is a small country of 5 million people, several university colleges offer distance e-Learning programmes for a profession bachelor degree. The distance programmes are often located at university colleges outside the two big cities of Copenhagen and Aarhus. The distance programmes enrol students who are located within the region, but prefer the flexibility of e-Learning for either personal or work-related reasons.

It is therefore possible to obtain a Bachelor of Education and become a teacher on a distance. An example of an e-Learning based study programme of four years teacher

training is University College Sjælland, where seminars in combination with face to face meetings goes hand in hand with virtual collaboration among other teacher students. The teachers are in contact virtually with the students during the programme. The organisation of the programme emphasises the collaborative aspect of learning processes where students are to regard each other as colleagues as well as resources for learning. Supervised instructional practice in schools is a part of the education in the Danish model of teacher education and can be executed in flexible schedules.

The flexibility of education must be seen in light of the increasing demands for achieving competences throughout life, and this type of teacher education does also address potential students, who have already been in the working force for years, but with another profession.

In 2007 the Danish Ministry of Education published guidelines based on the act for teacher education, aiming to enhance the process of ICT integration (Petersen 2007). The guidelines focus on the teacher competences in two ways: as integrated *general* competences as well as *subject-related* competences based on basic skills. In relation to this, development work has been initiated in order to develop the ICT aspect as well as the particular cultures of the involved institutions. The various institutions do this differently: Some institutions concentrate on distance learning programmes (cf. above), others on developing the ICT infrastructure within the physically based organisations, constructing centres of specialised knowledge on the topic, conducting development work, and reorganising the subjects within a specialised ICT area like *Ict and learning*, or focusing on ICT in relation to subject didactics, didactic issues in relations to technology, or didactic issues in the development of digital learning resources in cross cutting cooperation between colleges and universities.

4.3.3. Long-cycle higher education

In this paragraph e-Learning activities at universities in Denmark will be discussed. Unlike other countries like England, Korea or Portugal, there have not in Denmark been established a separate Open University with the purpose of offering distance

education or e-Learning possibilities in higher education. Instead, e-Learning and distance learning have been a responsibility of all universities to develop as part of their general educational offers.

Through different kinds of initiatives universities have been experimenting with integrating various kinds of e-Learning activities in their educational programmes. Often e-Learning elements are integrated in university teaching in the form of blended learning, where online activities are combined with face-to-face activities.

Like in many other countries, all universities in Denmark have established e-Learning platforms, or learning management systems (LMS), making it possible for the majority of courses to have specific resources as well as basic course information available online. The platforms may act as a kind of intranet to the students, and open up for other online activities as well. But the acquisition of an LMS does not in itself create new learning activities, and as OECD's Centre for Educational Research and Innovation (CERI) summarizes in a study from 2005: "ICT has penetrated tertiary education, but has had more impact on administrative services (e.g. admissions, registration, fee payment, purchasing) than on the pedagogic fundamentals of the classroom." (OECD/CERI 2005). Regarding the change of pedagogics, it is stated in a book on Global perspectives on e-Learning, that the rapid introduction of course management tools like Blackboard and WebCT are in risk of having the effect of actually reducing e-Learning's impact on the way most faculty at universities teach, because it is almost too easy to transfer the existing standard teaching materials to the web (Zemsky & Massy 2005:248).

In the following we will focus on initiatives aiming at utilising e-Learning to have an impact on the traditions of teaching and learning at universities.

Such initiatives may for instance be found at the Faculty of Life Sciences at the University of Copenhagen. In a report by the Faculty's IT Learning Center (ITLC 2010), two online course examples are described and analysed; a Participatory Forest

Management course, and a course on Climate Change.

Participatory Forest Management is an online course with a few and voluntary face-to-face sessions during the course. It is a core course in the specialisation on Tropical Forestry at the Master in Agricultural Development at the university, and has been offered through the latest five years.

Climate Change — Impacts, Adaptation and Mitigation is an interdisciplinary course offered in cooperation between Copenhagen University, Danish Meteorological Institute, UC Berkeley and Australian National University, and is offered fully online. The course was supported by the development pool of the Ministry of Science, Technology and Innovation for promoting e-Learning at the universities. It was offered for the first time in 2009, where 60 participants from 25 countries studied via the Internet to qualify as climate experts, focusing on how to prevent and reduce climate changes and how to adapt to future climate changes.

Both courses attracted a mix of Danish and international students. The courses are internet based and consist of weekly modules, each containing five activities during the week. These activities may be multiple choice tasks, essay assignments individually or in groups, and mediated online discussions with the aim of creating new knowledge on the basis of a relatively structured discussion input. Each module has a common structure, with deadlines for the different activities during the week, and each with a web page structure of Introduction, Overview, Study guide, E-lessons (exercises), and Learning resources. Each week a new module is opened for the enrolled students (ITLC 2010:5).

A team of teachers have developed the courses. During the course the students are divided in four groups of 12-15 students in each. Each group of students has a teaching assistant attached, e.g. a PhD student, who acts as their general contact person, and takes care of the daily moderation of the online discussions in the group.

From the beginning of the e-Learning initiative at the Faculty the goal was to develop online teaching that would reassure that students were engaged actively and did not lose their motivation for participation during the course of study, which is a challenge for online education generally. The Faculty and the IT Learning Center have developed a shared understanding of e-Learning pedagogy, through the British professor Gilly Salmon's teaching method based on student involvement in five stages. The applied pedagogical method has as its key points: Socialising and establishment of an online community; combining online discussions and tests; and focusing on the frames of the teaching environment (ITLC 2010:11).

The point of departure for the model is that online students have more challenges to cope with than campus-based students, because they have to learn to use a LMS, concentrate on the subject content, and overcome the challenge of written communication. The method is furthermore cheap and simple, and can be applied with only an internet connection and a discussion tool.

The analysis shows generally that online education can not be viewed as an ICT project, but as a complex structure and interplay of organisational, technical and pedagogical factors. To include this already in the planning of an e-Learning strategy is seen as having an impact on the success of the e-Learning activities (ITLC 2010:1). At the moment there are no further evaluations of the outcome of these initiatives, but it will be worth following the future development and impact of these kinds of e-Learning courses in higher education.

Another example of e-Learning in a long-cycle higher education with a specifically developed pedagogical method, is presented and discussed in chapter 5.1., on the vocational Master's programme, the Master of ICT and Learning (MIL). Among the vocationally oriented part-time Master's programmes in Denmark, there are generally higher shares of programmes organized as flexible learning, partly because these programmes are aimed at adult students that may have family obligations and a job in their profession while studying.

4.4 General and vocational adult education

In the parallel adult education and continuing training system (cf. chapter 1.2.), e-Learning initiatives have also been developed. In the regional and local adult education, a number of courses at different levels are possible to accomplish as self-study courses with resources available through the internet. These courses are generally organised as self-study courses. To support the participants in their self-studying activities, some adult education centres have established rooms with computer and internet facilities where the students can work, with a possibility of meeting other students or a counsellor at the centre. This gives the participants a flexible opportunity to practice and study at the time and place that suits them best, at home or at the education centre.

The learning of ICT skills is among the basic skills, a number of people need to obtain. This may take place in various contexts. By the end of 2009 the Ministry of Science, Technology and Innovation cooperated with other ministries in order to make a survey of the current opportunities for adults to achieve ICT skills in Denmark. The survey was published in the spring 2010 (Rattleff & Henriksen 2010) and shows a comprehensive and diversified programme of courses targeted adults at all levels and at all costs.

The survey also looked at other sides of how ICT skills are achieved, which are of interest to the e-Learning in a lifelong learning perspective. The report makes a distinction between *intentional* and *incidental* learning situations. The two different learning situations are compared to *workplace learning* and *leisure time learning*. The intentional learning situations are represented by the course programmes which may take place in workplaces as well as in leisure time. The incidental learning situations are of a more random nature. In work places, they typically take the forms of exchange of experience with a colleague or by apprenticeship. In leisure time activities, the learning situations emerge from the exchanges with friends and family. The two

learning situations and the two learning places indicate the complexity of the lifelong learning perspective when it comes to ICT-skills and competences.

The report addresses another aspect of learning: the participants' experience of a need for change as an inner motivation. When adults enter a learning programme they need to see the utility value of it as a motivational source. Furthermore, other barriers must be overcome. The report refers to both the costs of the course, the mental demands and the time invested in it. The report refers to research by Jarvis, Schein and Kotter, that accentuates the break with routines as a demanding and difficult change. Thus, the individual needs to be brought to realize the necessity of change in order to break the routine of a practice which appears to be sufficient to the demands (Rattleff & Henriksen 2010: 57).

Workplaces and mobile learning

As described in table 4-3 earlier, the number of enterprises using the internet for training of staff rose from 9 to 13 per cent from 2004 to 2005 (newest figures). As a way of further enhancing the use of e-Learning as part of workplace learning, the Ministry of Science has put forth some initiatives, e.g. a support programme targeted at development of mobile learning initiatives. Instead of understanding e-Learning as something that is fixed to a computer with a mouse and a keyboard, the new technological developments have made ICT-based activities much more flexibly available, even in ordinary situations of daily life, through mobile phones.

Among mobile learning projects supported by the Ministry of Science are a project aimed at truck and bus drivers, with a supplementary course on energy-saving driving techniques, which is build-up through mobile text messages, video clips and communication with a tutor.

Another project are aimed at people in the building industry with reading difficulties, where a mobile phone with camera is used to having texts from the student's daily life read aloud by an application on the phone. This is combined with mobile e-Learning

modules for training reading skills.

A third project is developed by Adult Education Centres and are aimed at social and health care assistants, who may put together their personal e-Learning course by downloading to their mobile phone or pda a number of small basic modules with a combination of picture, sound, video and text on subjects in which they have a need to enhance their skills.

4.5 Liberal and non-formal education

The non-formal programmes of lifelong learning are a wide range of activities and courses. They can be initiated and/or supported by the public authorities as well as private courses. An overview and some examples on the use of ICT in the area of liberal and non-formal education will be given here.

At a first glimpse, there may be far between e-Learning development and the traditions of non-formal adult education. The emphasis on personal development and general democratic education through personal meeting and living with other people physically present has so far made the distance learning or fully online learning of no immediate interest to many schools and associations in the non-formal education area. Also legal restrictions apply for some school types; for example adult education associations are only allowed to organize courses locally, not covering more municipalities; and at folk high schools participants are required to live at the school, thereby making e-Learning activities less relevant in these situations.

However, there are other initiatives in relation to the use of ICT in liberal and non-formal education: Folk high schools have made courses exploring ‘Social Media and Society’. The association of folk high schools have joined the digital age by being active on social media. Adult education associations are offering a high number of

courses that qualify people in the use of ICT, in relation to specific tasks as well as in relation to more generally being a citizen in a modern society. A number of institutions outside the formal educational sector — like museums, science centres, and libraries — have developed activities and offers involving the use of ICT for learning purposes, that may be used by classes and students, as well as by private citizens. Some of these will be further described below.

In a course on ‘Social Media and Society’ at Grundtvigs Højskole (a Danish folk high school) in 2010, the participants engage in exploring and debating the significance of the new social media in relation to democracy, politics, social movements, private life, and enterprises. Following the historic traditions of the folk high schools as an actor in creating a democratic society, the participants in the course investigate the use of social media for creating democratic discussions and public debates. This kind of debates may take place on the internet, or they may be organized in a combination of the physical and the virtual, where people gather in big ‘town hall meetings’ and where hundreds of simultaneous round table discussions through the use of ICT and social media can collaborate to produce a shared result.

Another way of using social media is through the homepage of the Danish folk high school association <http://www.folkehojskoler.dk/media>, which is linked to Facebook and has approximately 2.700 fans. In a recent campaign Danish celebrities act as ambassadors with small gimmicks on Youtube supporting the folk high school. The social media are also used so that people from outside can get an impression of the daily life on folk high schools by watching a small video <http://www.youtube.com/user/hojskolerne>. The House of the Folk High Schools planned a flash mob* on the music festival Roskilde festival 2010, where participants should freeze in front of the main stage (Orange Scene), thereby making a statement for the special offer of the folk high schools. (* A *flash mob* is a large group of people, often organized through the internet, who assemble suddenly in a public place to perform an unusual act for a brief time, and then disperse.)

Non-formal education are also facilitated by other than educational institutions, e.g. by cultural institutions as libraries and museums. They are not part of the formal educational system, but both kinds of institutions have as a part of their basic purpose to enhance people's possibilities of gaining knowledge. This may happen on a voluntary basis as citizens, or on an institutional basis as students in a class or programme that uses the educational offers from libraries or museums. Libraries are for instance part of the Learn More network described below, and in chapter 5.2 further below the role of museums and science centres are discussed.

'Learn More about ICT'

As a part of the national strategy of e-Learning, the Ministry of Science, Technology and Innovation has taken an initiative to start a network, 'Learn More about ICT', where various organisations collaborate to enhance the Danish citizens' ICT-skills and their competences to teach other citizens. The 'Learn More network' was launched in the beginning of 2009 and aims at providing citizens with an opportunity in their local area to learn more about ICT. The network members has developed and published 60 teaching materials on ICT; materials that function as an open resource (Danish Government 2010:15).

The background for the Learn More network initiative is that Denmark in many ways is technically ready to use ICT. A lot of public services becomes ICT- based: how we pay taxes, communication with public services in our municipalities, communication with our national health care system, e.g. if one want to make an appointment with one's doctor. If this should work for all citizens, they have to achieve the skills and competences of using ICT.

What the Ministry has done is to engage with various organisations that have an interest in non-formal education of their members. The idea is to build a network of users, draw on the ideas of non-formal education for everybody and at the same time draw on the experience from formal education. The organisations in the network are both contributors and users of online e-Learning resources, and the developed

educational materials are uploaded and shared at a public website.

The Learn More network initiative is an example of e-Learning for lifelong learning, and how the Danish tradition of folk high school is transferred to an initiative of the state, drawing on the tradition of free educational opportunities.

Self-directed learning

The use of free educational opportunities is in the centre of the possibilities that are available through the facilities of web 2.0 or social media that have evolved during the latest decade. Through social media ordinary citizens can produce and exchange all kinds of resources in various kinds of modalities — text, pictures, videos etc. — and share them on web sites like YouTube (for video sharing), Flickr or DeviantArt (for picture sharing), GoogleDocs (for text sharing and production) and others. A number of resources on these sites may be used in the pursuit of learning more about a specific subject of interest. Thereby citizens can use each other as resources for knowing more, without being dependent of an educational institution in order to have access to new knowledge.

Figure 4-a A YouTube Search for basic instructions



For instance a young person wanting to learn how to play an instrument may find some basic instructional videos on YouTube, uploaded by other people who want to share what they have learnt, as showed in figure 4-a. Afterwards a Google search may lead the ‘self-directed student’ to web sites with texts and chords to a number of songs that he or she wants to practice. This may be supplemented by free versions of software that explains interactively how to play certain chords in different ways. In the course of these steps a basic musical education is obtained through self-directed learning activities. These activities utilises the possibilities available through the new kinds of social media on the internet, and are examples of informal ways of developing e-Learning for lifelong learning. Though, most of the self-directed learning activities on e.g. YouTube aim at the development of particular skills rather than more complex learning processes.

Chapter 5

Typical cases of e-Learning for lifelong learning

In this chapter we will present two cases of ICT-use in different areas of lifelong learning. The first case is a vocational Master’s Programme — the Master in ICT and Learning — that is from the formal education area, which means that it provides the students with a Master’s degree, and the courses are credited in the ECTS system. The second case is from the informal education area, dealing with how museums and science centres may be used as digital learning environments, either by museum visitors or web site users, or by students from different areas of the ordinary education system. In this way the two cases describe different ways of unfolding e-Learning in lifelong learning.

5.1 The Master's Programme in ICT and Learning (MIL)

In Denmark, vocational master degrees were established in the late 1990's, partly as an attempt to provide better cooperation within further and continuing education between universities and working life, and at the same time due to a European coordination of the structure of university studies.

MIL — The Master Programme in ICT and Learning — is an example of a vocational Master's degree, established in the year 2000, and aimed not at young people directly out of the bachelor studies, but at people with a couple of years of working experience, who wants to qualify themselves further. In the following we will present and discuss MIL as an example of e-Learning and lifelong learning in the formalised adult educational system.

MIL is aimed at professionals in Information Communication Technology and Learning. It is based on the principles of problem and project based learning, and is organised as a two-year, part-time programme, equivalent to one year of full time study, that is 60 ECTS credit points.

Students

In order to enter the programme, students have to have at least two years of relevant practice and the formal requirements of a bachelor (or professional bachelor) degree. The students have a very diverse background. Approximately two thirds of the students come from work in the field of education (all levels), and one third comes from business (human resource and ICT). The distribution between men and women are fifty-fifty, and the students come from all around Denmark (Dirckinck-Holmfeld 2010:552).

Typically the students at MIL are not running for an academic career. They are very engaged in their workplace, and the motivation for studying are often to get

a better position in their organisation or to get a new job in another organisation.

The Master's programme

MIL was established in the year 2000, and each year 30-40 new students enter the MIL programme. As something unique within a Danish context five universities work together in offering MIL as a joint programme: Aalborg University (AAU), Aarhus University (AU), Copenhagen Business School (CBS), The Danish School of Education (DPU) (now a part of AU), and Roskilde University (RUC). That the five universities established a joint programme instead of five competing programmes provided volume and increased the quality of the learning environment by engaging students in different research environments throughout their education. This has also resulted in collaborative research activities between the researchers that teach on the programme.

MIL is organised as a flexible and blended learning environment with periods of different kinds of online course activities supported by seminars and workshops: three two-and-a-half day residential seminars a year, a one-day project seminar, and a day for the final examinations. The seminars take place alternating between the involved universities, and are organised as joint seminars for both year groups of students in the programme. During the two years of study, the programme is made up of four course modules, one project module, and the thesis — all in all 60 ECTS-points.

For people with a normal job besides their study it is urgent to create a clear structure with well-defined goals for every part of the curriculum. Therefore MIL is structured as a modular system, with half of the modules as courses and half of the modules organized as project work. The experience has been that it shall be possible to finish a course in a relatively limited time span to secure the combination of knowledge acquisition, reflections and integration into practice (Fibiger et al 2004).

The pedagogy

MIL is based on a pragmatic concept of problem and project based learning adapted

to the virtual conditions of the study programme. The pedagogical model of MIL incorporates a series of integrated didactical principles: problem formulation, enquiry of exemplary problems, participant control, joint projects, dialogues, net-based discussions and collaboration, interdisciplinary approaches, and action learning.

The problem and project based learning pedagogy is a dynamic pedagogy in the sense that students bring in new research problems from their own practice to study, while using theories, concepts and methods from academia. The students work not only with input and inspiration from teachers, but also from each other, so the studying context makes them a group of experienced practitioners (Fibiger et al 2004).

The MIL programme works with a combination of strong and weak ties between students. Students are organised in “big groups” of 30-40 students in each year group, and within these big groups students are connected by weak ties, where they connect more occasionally. At the same time students work in “project groups” of 3-6 students, where the students intentionally are connected by strong ties around a shared research project and a shared problem formulation (Dirckinck-Holmfeld 2010:554).

The type of e-Learning brought into practice at MIL emphasises the importance of collaborative aspects of learning and the cooperative possibilities available in online learning. Organising the students in project groups invite the students to work together in a horizontal and dialogical manner and to create knowledge that transcend the knowledge of themselves as individuals. The point of view is that collaboration strengthen the individual learning process of the students, and at the same time make the study life more motivating and also more easy to maintain, when the students are responsible to others and not only themselves. Most of the students in the programme want to work in groups; however, for some students it is difficult to organize, because they at the same time want to work with research questions from their own practice.

During the courses and projects at MIL the students engage in online collaboration

and production through different kinds of software tools, some of which are made available by the MIL programme, and others of which the students choose to implement themselves.

Figure 5-a A group of MIL students' use of an online workspace

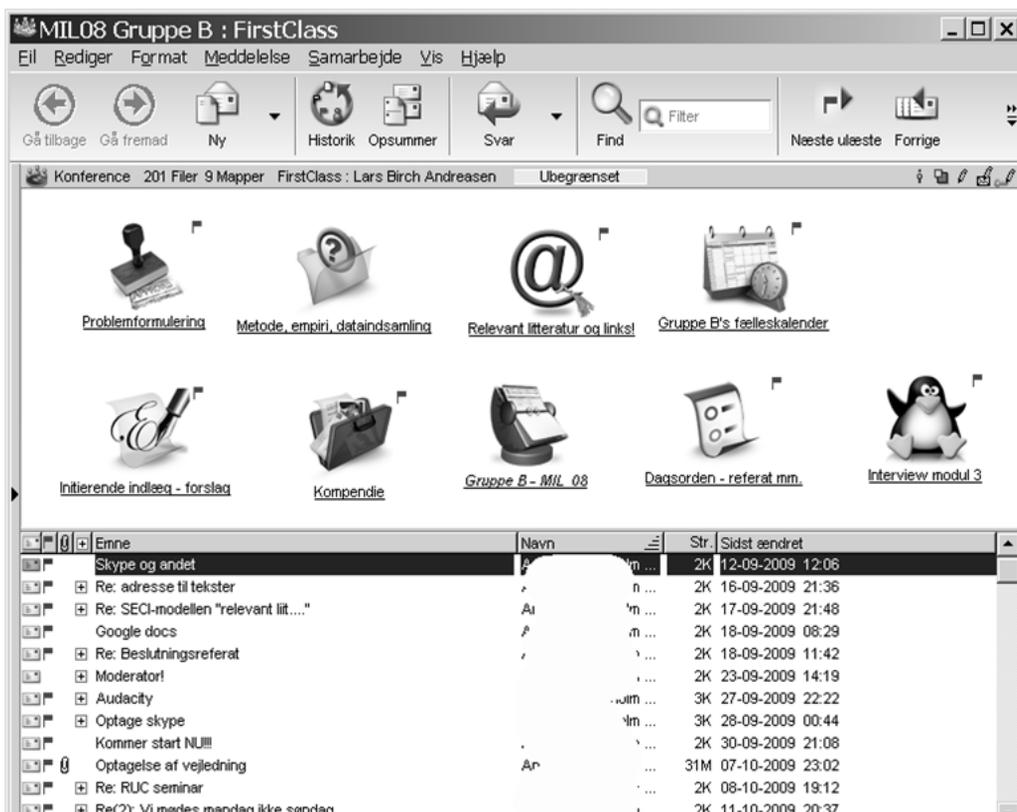


Figure 5-a shows the front page of a group space in the FirstClass system used at MIL. It illustrates how a group of students organises a group space with different folders for different purposes.

Some of the course modules at MIL emphasize the use of computer conferences or other asynchronous communication tools for online discussions, involving the students as initiators or moderators of certain areas of the discussions. In other course

modules the students work in groups on shared online productions. During the students' project work each group administer their own group spaces in the FirstClass system used at MIL, supplemented by online meeting environments with video and shared screen facilities (Adobe Connect). The students often expand their communication possibilities with other tools, e.g. a wiki for easy shared production, or Skype for easy online meetings.

Online network and physical seminars

The networked environment at MIL gives flexibility, which is most needed for the students, many of which are busy professionals that have demanding schedules and family life to take care of along with the study. The MIL programme strives to combine ways of bringing the students together in a virtual environment supported by a few residential seminars, and this combination seems to fit the students in the programme. The physical environment is not meant to be superior to the virtual, or vice versa, but is meant as different modes of communication, which supplement each other.

5.2

Museums and Science Centres as digital learning environments

This paragraph describes an area of lifelong learning which is exemplified by the sector of *museums and science centres* and where e-Learning is interpreted in various ways. Firstly, initiatives are described where museum contribute to the formal education system by offering educational activities; secondly the initiatives are described which aims to enhance learning in the perspective of liberal education.

5.2.1 Museums' contribution to formal education

Over the past years, the Ministries of Culture and Education have taken initiatives that operate in the borderland between cultural enlightenment and education. The initiatives are based on an increasing interest in ideas of user involvement, user driven

innovation and in the user perspective in regard to digital dissemination of cultural heritage.

Denmark has hundreds of museums, which comprise large national collections as well as small private collections. There are approximately 120 museums in Denmark funded by state subsidies, while approximately 10 are owned by the state.

Several museums have developed a department for educational activities. The activities can be commissioned by schools from pre-school to the upper secondary level. They invite schools to come and experience the facilities of the museum. The goal of these activities is a mixture of dissemination of cultural heritage and formal education. This new zone of collaboration comprises a big challenge to the stakeholders and gives rise to discussions and evaluations. Digital resources add new perspectives to the questions of the different areas of expertise and their different goals for activities. The homepage of the managing institution The Heritage Agency (www.kulturarv.dk/english/home/), a body under the Ministry of Culture, operates a number of databases (www.kulturarv.dk/english/databases/), where a national overview of various aspects of Denmark's cultural heritage is accessible. The agency does also give financial support to museums wishing to digitalise their analogue collections and registers, primarily by scanning them, and to cultural institutions that develop new digital dissemination methods.

A publication from Kulturarvsstyrelsen (Løssing 2009) presents some trends within the field. The trends are driven by inspirations from social media where user sharing, commenting and producing are central activities. The users' preferences for participation give rise to reframing the museum practice of dissemination and communication of collections. The cultural heritage is also seen as database for educational activities and a part of the agency's financial support are aimed for development of digital learning resources.

In 2009 a nationwide project of developing digital learning resources — e-museum

— was established. 36 museums and science centres were conducting projects focusing on how to make new museum practices and to disseminate cultural heritage. The outcome was analysed in an evaluation report (Oerngreen & Levinsen 2009), the design and functionality of the resources were examined for their learning potentials. Furthermore, the examination was made in regard to cost benefit as well as the quality of navigation design.

The analysis placed the product types in groups which refer to mixed products of leisure and school activities. One category is *interactive games*. The report describes that these games refer to different game genres: explorative adventures, strategy games and combinations, and that they focus on a so to speak win/lose situation driven by game rules. Another category is *simulation* which aims to give an experience of exploring an environment as if it was real. A third category comprise of *narratives* constructed as homepages where the user gets a role and follows a character's story. A fourth category is denoted '*flat and open hypertext*'. This category represents homepages with images and texts and interconnected links. A fifth category is denoted *the elaborated hypertext resource* and comprise combinations of complex objects like games, movies, animations, simulation etc. This category is the largest. Finally, a sixth category is denoted the *map applications*. This category represents resources based on interactive maps with hot spots.

The authors' findings show that the narrative is a generally construction for design in the categories games, simulations and narrative. In contrast to these categories, the possible approaches to the hypertext resources are open and diverse. The game and narrative category become a closed design which influences the learning possibilities and the teachers' educational designs for planning and practice a class involving the material.

Another finding is based on how the digital learning recourses are met in an educational perspective. Here, the authors introduce two positions: one is to regard the digital as an improvement of the established; another is to regard the digital as a

radical change of practice. Neither appears to be sufficient and the issue of the teachers' competences and diverse starting points are crucial. Based on the findings, the report emphasise the importance of user cooperation in the design processes in regard to design of navigation structure as well as content.

In the final recommendations, the authors suggest that designers must include educational, didactic and instructional reflections to a much larger extent. This means that the designer must considerate the users — here teachers — and how the resource can become relevant to their educational design and learning goals.

Thus, the ICT-based educational design and the user involvement are pointed out as crucial key points to achieve a successful integration of the digital applications as tools for learning.

The digital annex

The focus on user involvement in educational activities is the pivotal point in another study from 2008 (Andreasen 2010). The author describes a study of the Danish art gallery Thorvaldsens Museum which in 2006 constructed a digital annex. The museum opened in Denmark in 1848 as the country's first museum of contemporary art with public admittance. It houses almost every work of art by Bertel Thorvaldsen (1770-1844), a famous Danish sculptor who lived and worked in Rome for almost forty years, producing sculptures often inspired by classical Greek art and made in marble. The museum is located centrally in Copenhagen and contains both large halls with collections of big sculptures and rows of smaller connected rooms in different colours with a single sculpture in each. Educational activities take place throughout the museum as well as in a room called The Digital Workshop, where student workshops take place that also integrates use the facilities of The Annex ("Tilbygningen") at the museum home page.

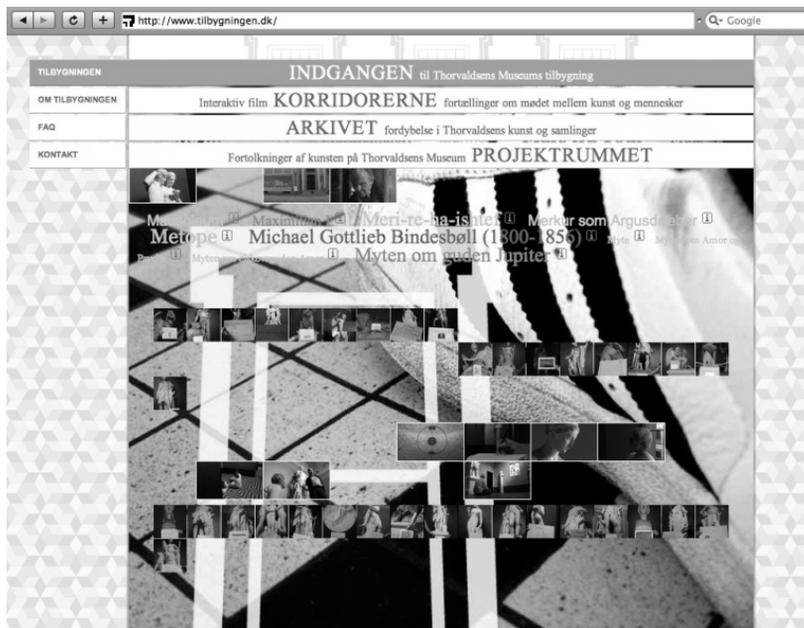


Fig. 5-b The website of the Annex

The Annex (fig. 5-b) which opened in 2006 is a digital extension of the museum directed at secondary school and high school students, but designed with the aim that also older visitors may find the site relevant. The Annex consists of three areas, which each in its own way treat the sculptures of Thorvaldsen: “The Corridors” with a number of short fictive films loosely inspired by the myths behind the sculptures, shot with professional actors in the buildings of the museum; “The Archive” with facts, pictures and information regarding the art works at the museum; and “The Project Room” where students upload and comment their own productions made at workshops held at the museum. The three areas of the Annex are connected through links between the student productions, the films, and the factual information that deals with related themes or art works. These links are made by the students as they upload their productions. In the Project Room of the Annex user involvement is a central part of the educational strategy. In the process of the workshops student productions are published on the internet, thus recognizing personal as well as professional voices on the official home page of the museum. In May 2008 *Thorvaldsens*

Museum received the Danish Museum Award, partly motivated by the Annex and its innovative use of the net (Andreasen 2010). The study shows that students are highly motivated when they experience that their contributions are valued and when the learning environments draw on their digital competences from social media (Andreasen 2010, Esbjørn 2009).

The tendency among museums to establish dialogue with users and let them contribute actively can be seen as a recognition that after all, the museum will not be able to fully plan what people learn at a museum, irrespective of how ‘correct’ the material is presented. In this we see a change in the view of learning. Traditionally, museum exhibitions built on a view of learning as the acquisition of fact-based knowledge; that is, learning as a product that may be obtained. But recognizing that visitors will actively use the possibilities of the museum in creating their own personal outcome, opens up for a view of learning also as a process in which learners construct new ideas by reflecting on their experiences (Andreasen 2010).

The examples given here show a tendency to mix dissemination activities at museums with educational activities in the formal educational system. They also point out some pedagogical challenges of how the digital resources serve the purpose of facilitating learning processes: how to make an ICT design that serves the purposes of the formal education goals, meet the teachers’ professional competences, and draw on students’ experiences.

However, the museums also tend to attract the young generation in a broader sense and create the e-museum as an environment for explorative processes.

5.2.2. The liberal education perspective on museums and e-Learning

E-learning and museums in a liberal educational perspective comprise various ways of using digital technology.

In 2005-07 a project was launched on basis of the idea of connecting e-Learning and museums in adult education. Denmark participated in the project in cooperation with seven other European countries in a “Grundtvig Learning Partnership” project. Based on an analysis showing that museums working in association with adult education institutions have a significant contribution in creating knowledge society, the project conducted a mutual exchange of information and experiences with historical/cultural heritage and availability of modern information technologies in adult education.

The Danish part of the project reported on experiences with virtual museums. Some virtual museums exist only on the web, while others are made as presentations on the web of museums that already exist in the physical world. The latter present selected works from the museum’s exhibitions, but also give access to works from their collection that are not currently on display at the museum. On the web the visitor may dive deeper into resources and further explanations of the works presented.

An example of a web presentation of a physically existing museum is the Danish museum of art, Ordrupgaard, at www.ordrupgaard.dk.



Fig. 5-c Ordrupgaard website

At the museum frontpage the visitor may find links to the actual exhibition, to works from the two main collections of Danish and French painters and to a tool of further exploration of selected pictures.



Fig. 5-d “French painters” and “Zoom” sections of the Ordrupgaard website

In the presentation of French painters the visitor finds further information of the works, and may jump directly to other works through the overview at the top of the page. In the Zoom section of the Ordrupgaard web page visitors can explore details of selected works and learn about different ways of analysing pictures.

The Youth Art Lab at the National Gallery

The National Gallery of Denmark is conducting a developmental programme to bring the museum to the very forefront of digital arts communication. The art gallery’s vision is to develop a digital museum practice that stimulates user interest in art. The digital museum of the National Gallery was launched in 2008. The digital museum’s status describes recent results from 2010: A new website for the museum, *The collections online*, gives the user online access to the museum’s collections and shows how museum professionals work with the collections, Stories of art - will bring the art to life (<http://www.smk.dk/en/explore-the-art/film-games/behind-the-scenes/update-2010-smk-digital/>). Future projects comprise the art database, *Corpus*, which is a further development of the museum’s current knowledge database, that will make information on the museum’s collections, research and exhibition activities available online. Corpus is developed in cooperation with the international consortium CollectionSpace and will be launched in 2011.

Another example of integration of digital media is *ulk, the youth art lab*, which was developed in close cooperation with the target group according to the idea of arts education and promotion for the young by the young. The *ulk* was launched in 2007

as an independent homepage at www.ulk.dk hosted by the Young people's art laboratories at the Danish National Gallery.



Fig. 5-e Homepage of ulk, the Youth Art Lab

The *ulk* web page is directed at young people who would like to participate in a creation and exchange of knowledge about art together with other youngsters. The page has three entries: 'go create', 'go explore' and 'go participate'. Under 'go create' users can create a profile and then place pictures, statements, comments, links to other profiles etc. on the page.

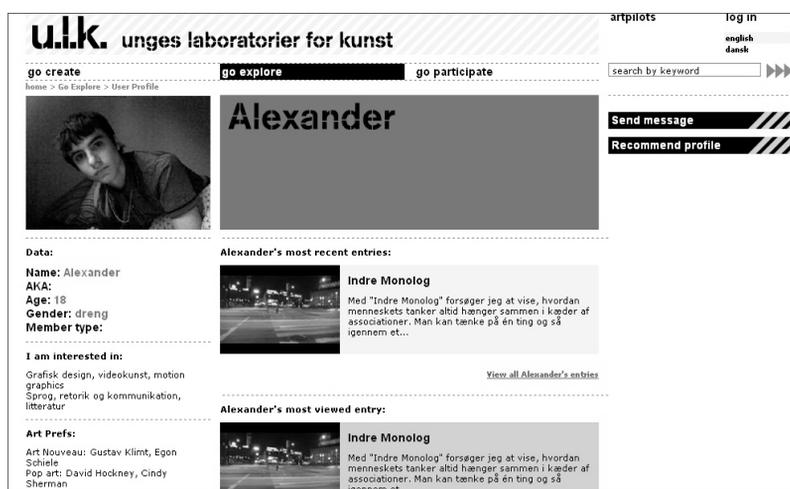


Fig. 5-f Profile page of a user at *ulk*

The *ulk* is a part of the Egmont Knowledge Centre which is located at the national gallery as a resource offered to the visitors. The Knowledge Centre makes it possible to get close to art from many, different angles — it is for people of all ages and widely varying interests. The Museum guests can visit creative workshops, digital laboratories, a reading room in the library, teaching and reflection rooms, special exhibitions with original art from the collections of the Museum, and participation in an art community. Furthermore the centre consists of Children's Museum of Art, The Danish National Art Library, and The Study Room for the Royal Collection of Graphic Art.

The *ulk* exemplifies an initiative for a young generation that will continue to use digital technology in a lifelong learning perspective.

From a learning perspective, the national gallery work with ideas on user involvement and is devising methods to allow users to generate their own content. The goal is to create the right conditions for an ongoing dialogue with the users in the developing process of new content. At the same time to explore when and how users may become active co-creators.

Chapter 6 Recommendations and prospects

The study shows that the digital infrastructure in Denmark is well developed, and that at the same time there is a need to make efforts in the pedagogical and didactical area. The implementation of e-Learning in lifelong learning is a complex of accessibility and learning cultures as well as ICT cultures. E-learning is not solely to be seen as an ICT project, but rather as a combination of organisational, technical and pedagogical issues, that must be reflected together, in the planning phases as well

as in the delivery processes (cf. p. 45). The various examples described in this report show a complex of teaching and learning cultures that have developed over time, e.g. the tradition of the folk high school, and which intertwine not only with the formal educational practices, but also appear to be useful in new mix of social media and user involvement (e.g. the museum). These teaching and learning cultures are met with governmental initiatives and strategies on ICT and e-Learning and form the current picture of education. Thus, the development processes of e-Learning in education and lifelong learning are to be seen as an ongoing interplay between bottom-up-initiatives and central strategies.

The formal educational system in Denmark has for the past 20 years focused on the learners' processes. New paradigms for ICT-based education have emerged and new theoretical concepts of collaborative learning processes and problem based learning have contributed to reframe the roles and the functions of teachers and learners. The digital technology forms the basis for developing learning resources where the learners are contributors in interactive processes. The learner centred approach has replaced the traditional notion of the teacher as the deductive instructor.

Learners learn from other learners. The social media support activities of knowledge sharing and production. However, it appears that the expectations to the teachers from young learners may be rather traditional. The formal system performs a culture where the construction of 'school' is based on a specific way of doing things. The young learners may connect 'schooling' to a particular way of behaving. More flexible approaches to learning may be easier to implement outside the formal system. This gives rise to a reformulation of the roles and the functions of the teacher, which are to be developed in the years to come.

The design of learning processes with ICT is crucial for the success of integrating ICT in lifelong learning. The teacher as educational designer is responsible for developing learning processes where learners can collaborate, share knowledge, produce knowledge and learn in multiple modes. The educational designer is responsible for

planning practices which involve relevant stakeholders, for instance technicians as important partners to ensure that the digital infrastructure works. An important focus is therefore the education of teachers to achieve skills and competences to integrate ICT to support students' learning in the various areas of lifelong learning.



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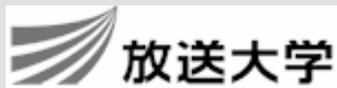
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e-Learning for Lifelong Learning in Japan

02



The Open University of Japan

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Executive Summary

- 1) In Japan, “lifelong learning” was specified as a basic idea in the governmental educational policy (e.g. the Amended Fundamental Law of Education) and the Lifelong Learning Policy Bureau was set up as a responsible section in the Ministry of Education, Culture, Sports, Science and Technology (MEXT).
- 2) “Lifelong learning” is generally defined as any kinds of learning which citizens involve in throughout their lifetime. Hence the term includes school education, home education, ‘social education’, cultural, sports, recreational and volunteer activities, corporate training, hobbies and other learning opportunities in various areas. “e-Learning” is an electronic learning in which utilizes computers and networks. Recently, as “blended approaches” are more popular, the broader definition, that is, “learning in which utilizes ICT in onsite and distance education”, is more preferable. From the viewpoints of learner-centered approaches, it is regarded as an effective way to realize the optimized learning space and content.
- 3) In Japan, the government has promoted various measures for lifelong learning for almost thirty years. The ICT utilization in various social activities is one of the basic policies and, in January 2001, the Strategic Headquarter for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters) was established within the Cabinet. Recently, the IT Strategic Headquarters published “New national strategies of information and communication technology” in May 2010 and “The roadmap for new national strategies of information and communication technology” in June 2010 and education is one of the main fields. Currently, career education and vocational education in schools and corporate are urgent issues.
- 4) With the little increase of the population under 18 years old, many Japanese universities have shifted to accept recurrent and/or older students and to contribute to lifelong learning society. The social infrastructure and systems which support the challenges by universities and colleges are also promoted by the government

and private sectors, such as university consortia. We can see several good practices in the Open University of Japan (OUJ), the Japan Opencourseware Consortium (JOCW), CCC-TIES, the Accreditation Council for Practical Abilities (ACPA) and so on.

- 5) Because of the higher jobless rate and mobility of labor, the paradigm of lifelong learning was also to be changed. Career / vocational education and capacity rebuilding are needed more after the graduation. In the midst of the administrative reform, the government sections concerned are expected to implement inter-ministry measures on lifelong learning from the holistic viewpoint.

Chapter 1 Educational Systems in Japan

1.1 Japanese school system (「学制」)

The current school system began with the Fundamental Law of Education and the School Education Law, which were enacted in 1947. In the framework, the 6-3-3-4-year system of school education was established aiming at realizing the principle of equal opportunity for education. It has some variation and some exceptions from the rule. The following descriptions on Japanese schools were based on the some white papers published by MEXT (e.g. “Japan's Education at a Glance 2006”, MEXT, 2006). The elementary and lower secondary education are compulsory in Japan.

1) Kindergartens (“Yôchien”, 「幼稚園」)

Kindergartens aim at helping pre-school children develop their mind and body by providing a sound educative environment for them. Kindergartens cater for children aged 3, 4 and 5, and provide them with one- to three-year courses.

2) Elementary Schools (“Shôgakkô”, 「小學校」)

All the children who have attained the age of 6 are required to attend elementary school for six years. Elementary schools aim at giving children between the ages of 6 and 12 primary general education suited to the stage of their mental and physical development.

3) Lower Secondary Schools (“Chûgakkô”, 「中學校」)

All the children who have completed elementary school are required to study in lower secondary school for three years until the end of the school year in which

they reach the age of 15. Lower secondary schools give children between the ages of 12 and 15 general secondary education suited to the stage of their mental and physical development, on the basis of the education given in elementary school.

4) Upper Secondary Schools (“Kôtô-gakkô”, 「高等學校」)

Those who have completed nine-year compulsory education in elementary and lower secondary school may go on to upper secondary school. Students must normally take entrance examinations to enter upper secondary school. In addition to full-day courses, there are also part-time and correspondence courses. Full-day courses last three years, while both part-time and correspondence courses last three years or more. The last two courses are mainly intended for young workers who wish to pursue their upper secondary studies in a flexible manner in accordance with their own needs. All these courses lead to a certificate of the upper secondary education. In terms of the content of teaching provided, the upper secondary school courses may also be classified into three categories: general, specialized and integrated courses. General courses provide mainly general education suited to the needs of both those who wish to advance to higher education and those who are going to get a job but have chosen no specific vocational area. Specialized courses are mainly intended to provide vocational or other specialized education for those students who have chosen a particular vocational area as their future career. These courses may be further classified into: agriculture, industry, commerce, fishery, home economics, nursing, science-mathematics, physical education, music, art, English language and other courses. Integrated courses were introduced in 1994. These courses offer a wide variety of subject areas and subjects from both the general and specialized courses, in order to adequately satisfy students’ diverse interests, abilities and aptitudes, future career plans, etc.

5) Secondary Schools (“Chûtô-kyôiku-gakkô”, 「中等教育學校」)

In April 1999, a new type of six-year secondary education school, called “Secondary School” was introduced into Japanese school system. Secondary schools combine lower and upper secondary school education in order to provide lower secondary

education and upper secondary general and specialized education through 6 years. The lower division in the first three years provides lower secondary school education and the upper division in the latter three years gives upper secondary school education.

6) Schools for Special Needs Education etc. (“Tokubetsu-Shien-gakkô”, 「特別支援學校」)

Special Needs Educations are schools for children with comparatively severe disabilities and aim at giving education suited to their individual educational needs. Those schools comprise four levels of departments, namely, kindergarten, elementary, lower secondary and upper secondary departments. (The elementary and lower secondary are compulsory education.) After school system was turned into the current system that permits school to accept several types of disabilities in 2007, this new implementation is gradually spreading. Special Needs Education is provided also in regular schools. Special classes are small classes for children with comparatively mild disabilities that may be established in regular elementary and lower secondary schools. It may also be established as a branch class in a hospital for sick children. There is another program of resource rooms (in regular elementary and secondary schools) where children with disabilities who are enrolled in and studying most of the time in regular classes may visit resource rooms few times a week to receive special instruction.

7) Institutions of Higher Education

Institutions of higher education in Japan include universities, junior colleges and colleges of technology. In addition, specialized training colleges offering postsecondary courses (see 8 below) may be regarded as one type of higher education institution.

- a. Universities (“Daigaku”, 「大學」) are intended to conduct teaching and research in depth in specialized academic disciplines and provide students with advanced knowledge. Universities require for admission the completion of upper secondary schooling or its equivalent, and offer courses of at least four years leading to a bachelor’s degree (“Gakushi”, 「學士」). Universities may set up a graduate

school offering advanced studies in a variety of fields leading to master's ("Shushi", 「修士」) and doctor's ("Hakushi", 「博士」) degrees. Graduate schools normally last five years, consisting of the first two-year courses leading to a master's degree and the following three year courses leading to a doctor's degree. However, there is a possibility for those who are especially successful in their studies to get a master's degree in one year, and a doctor's degree in two years.

- b. Junior Colleges ("Tanki-daigaku", 「短期大學」) aim at conducting teaching and research in specialized subjects and at developing in students such abilities as are required for vocational or practical life. Junior colleges require for admission the completion of upper secondary schooling or its equivalent, and offer two- or three- year programs in different fields of study, which lead to the title of associate ("Jun-gakushi", 「準學士」). Most courses offered in these colleges are in such fields as humanities, social sciences, teacher training and home economics. The great majority of the students in these colleges are women. Those who have completed junior college may go on to university and their credits acquired at junior college may be transferred as part of the credits leading to a bachelor's degree. Junior colleges are also allowed to offer advanced courses which may lead to a bachelor's degree.
- c. Colleges of Technology ("Kôtô-senmon-gakkô", 「高等專門學校」), unlike universities or junior colleges, accept those who have completed lower secondary schooling, and offer five-year (five and a half years at colleges of maritime technology) consistent programs. They were established in 1962, intended to conduct teaching in specialized subjects in depth and to develop in students such abilities as are required for vocational life. Students who have completed colleges of technology are granted the title of associate ("Jun-gakushi", 「準學士」) and may apply for admission to the upper division of university. Colleges of Technology are also allowed to offer a two-years advanced courses, which follow the five-year program in order to provide a higher level of technical education.

8) Specialized Training Colleges (“Senshû-gakkô”, 「専修學校」) and Miscellaneous Schools (“Kakushu-gakkô”, 「各種學校」)

In addition to the above mentioned institutions of primary, secondary and higher education, there are educational institutions known as “specialized training colleges” and “miscellaneous schools”, which offer a variety of practical vocational and technical education programs in response to diverse demands of citizens in a changing society. The great majority of these schools are privately controlled.

a. Courses provided in Specialized Training Colleges may be classified into three categories: upper secondary, postsecondary and general courses. Each course gives at least 40 students systematic instruction, lasting not less than one year, for 800 class hours or more per year. Specialized training colleges offering upper secondary courses are called “upper secondary specialized training schools (“Koto-senshu-gakko”, 「高等専修學校」)” and those offering postsecondary courses are called “professional training colleges (“Senmon-gakko”, 「專門學校」).” The former require for admission the completion of compulsory education, while the latter accept those who have graduated from the upper secondary schools or upper secondary courses of specialized training colleges and award the title, “technical associate (“Senmonshi”, 「専門士」),” to those who complete post-secondary courses that fulfill certain criteria, including a study period of at least two years. Students who have completed an upper secondary course lasting three years or more of specialized training colleges designated by the Minister are entitled to apply for a university place.

b. Miscellaneous Schools provide people with vocational and practical training such as dressmaking, cooking, bookkeeping, typing, automobile driving and repairing, computer techniques, etc. Most courses in miscellaneous schools require for admission the completion of lower secondary schooling. These courses normally last one year or more with at least 680 class hours per year, but there are also shorter courses of three months or more.

Organization of the School System in Japan

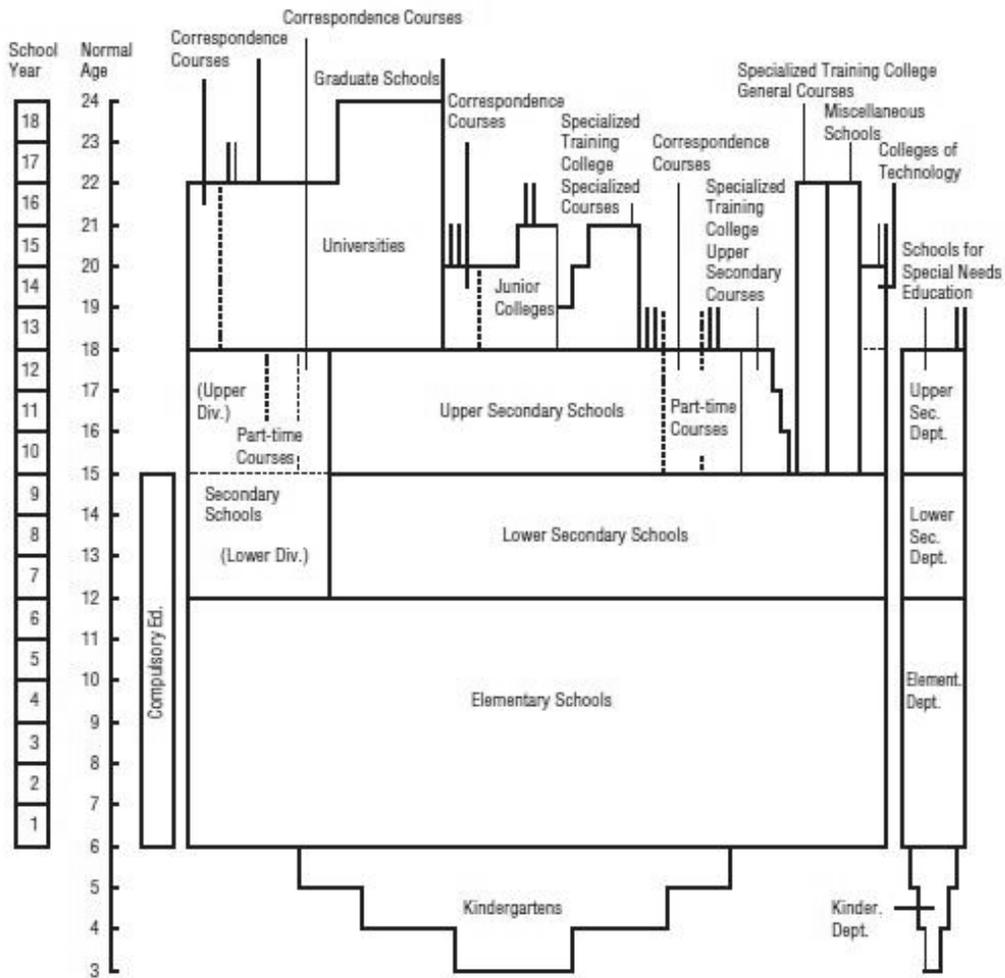


Figure 1-1 Japanese School System (from “Japan’s Education at a Glance 2006”, MEXT, 2006)

The Brief notes on each type of educational institutions were shown in the texts.

1.2

Japanese Education Characteristics: Some statistic indicators

- 1) The transition of the numbers of schools, that of the numbers of registered (enrolled) students, that of the percentage of registered (enrolled) students and that of the percentage of students who go on to a higher stage of education

Because of the declining birthrate, both the numbers of schools and the numbers of registered (enrolled) students are decreasing in Japanese elementary and secondary education; both indicators are showing a tendency to rise in higher education, that is, at universities, colleges and graduate schools,.

The percentage of registered (enrolled) students at the compulsory education level (that is, in elementary and lower secondary education) have remained close to 100 percent following World War II. The percentage of students who go on to a higher stage of education, that is, senior high school and so on, has exceeded 95 percent

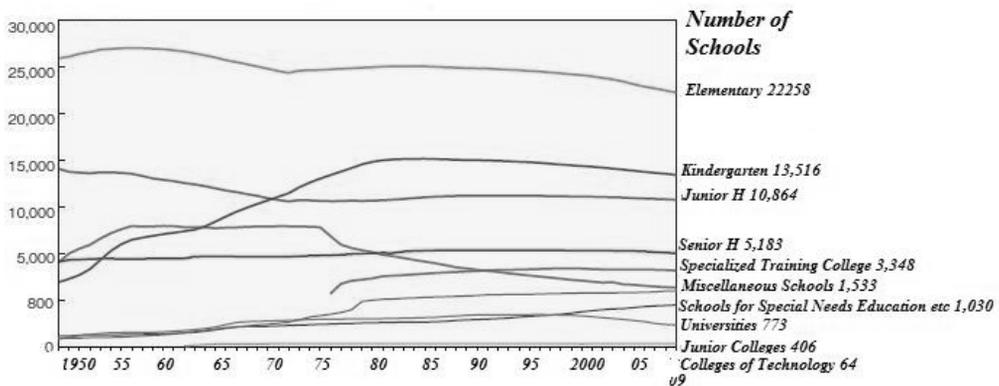


Figure 1-2 The numbers of schools (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Appendix 3, p. 377*)

since 1990 and 97.9 percent in FY 2009 (both values include students in correspondence courses). The percentage of students who continue into higher education, that is, universities and junior colleges, is still a little more than 50 percent.

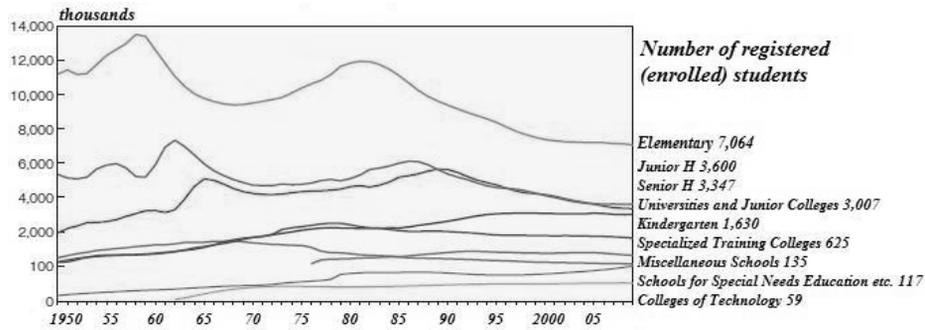


Figure 1-3 The numbers of registered (enrolled) students (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Appendix 4, p. 377)

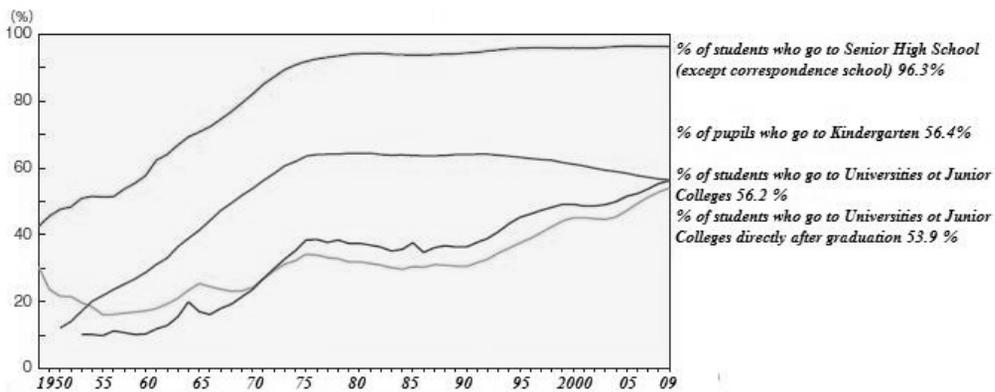


Figure 1-4 The transition of the percentage of school new entrants and that of the percentage of students continuing into a higher stage of education (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Appendix 8, p.379)

The percentage of students who go on to universities or junior colleges was calculated as the ratio of the numbers of new entrants to the 18 year-old population.

In Japan, while the birthrate is declining, university and junior college capacities are increasing and the total ratio of registered (enrolled) students to applicants has reached 92.5 percent (Figure 1-5).

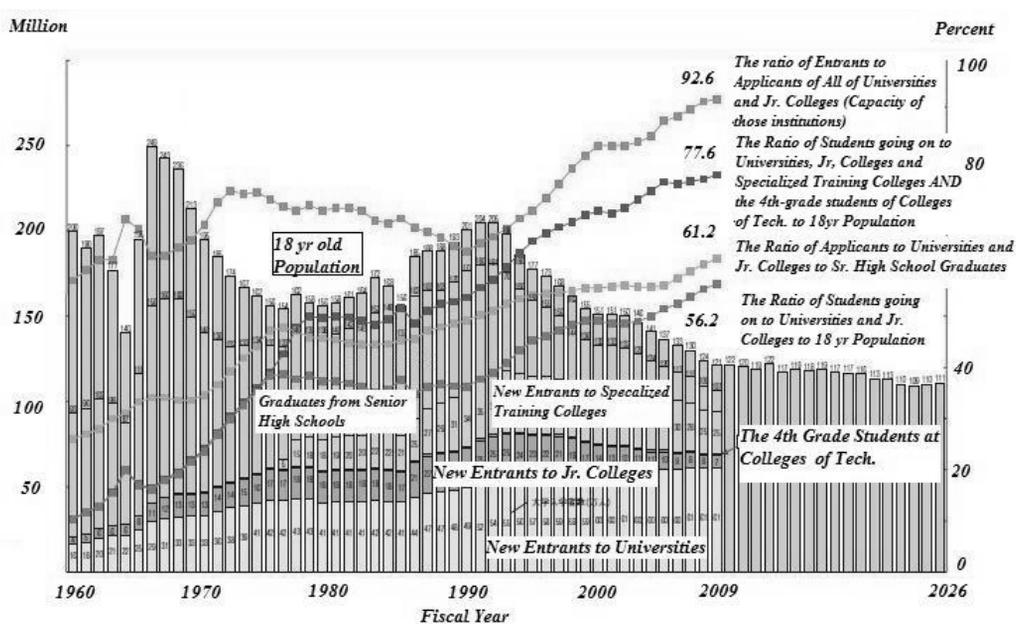


Figure 1-5 The transition of the 18 year-old population and several enrollment indicators (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Figure 2-3-1, p176*)

“Compared with overseas, the percent of students who go on to universities or junior colleges is not high in Japan. One reason is that Japanese ‘adult citizens’ (‘Shakai-jin’ in Japanese) do not enter universities or junior colleges. While on average the ratio

of students 25 years old and older to total registered (enrolled) students in OECD countries was 21.3 percent, it was only 1.8 percent in Japan (Figure 1-6). On the other hand, about 80 percent of college freshmen were under 19 years old in Japan. The average age of freshmen was the lowest among OECD countries and most of the students going on to universities or junior colleges were from the 18 year-old population.” (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Part 1, Topic 1, Chapter 2, p.51*)

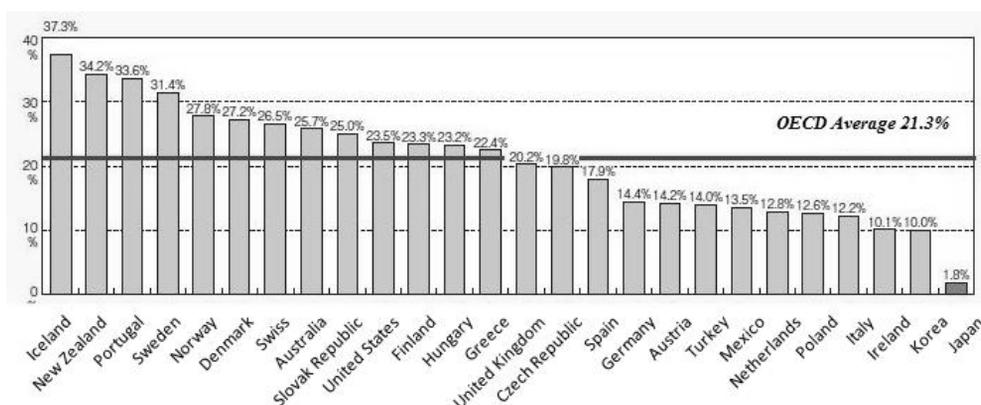


Figure 1-6 The ratio of students 25 years old and older to total new entrants at the university-level (‘tertiary-type A’ in OECD classification) (From *The OECD database on education, 2007*). The value for Japan was the number of ‘Shakai-jin’ students MEXT surveyed.

The number of graduate students has increased by about 2.9 times in the last twenty years. However, the number of degree holders per unit population is no higher than that of other countries (Figures 1-7, 1-8, 1-9).

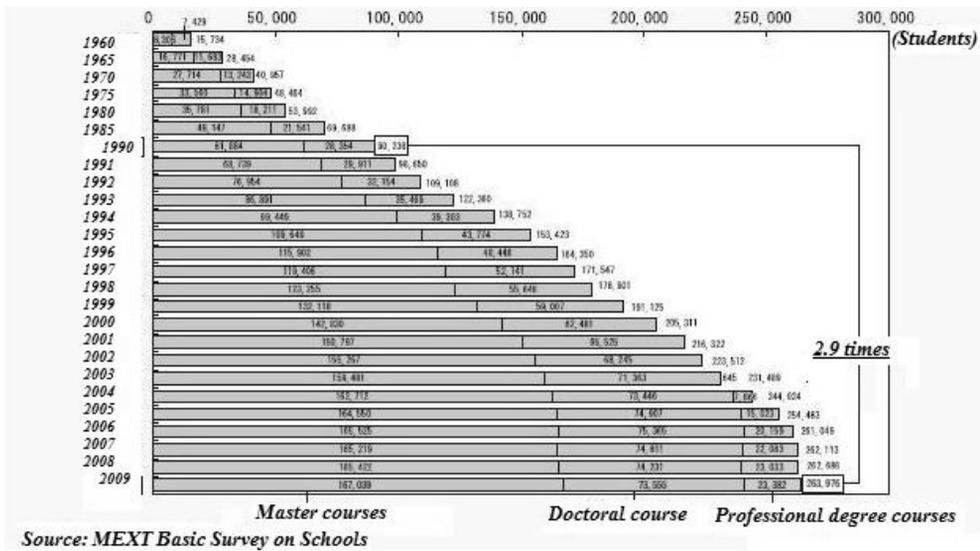


Figure 1-7 The transition of the number of registered (enrolled) graduate school students (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-55, p.55)

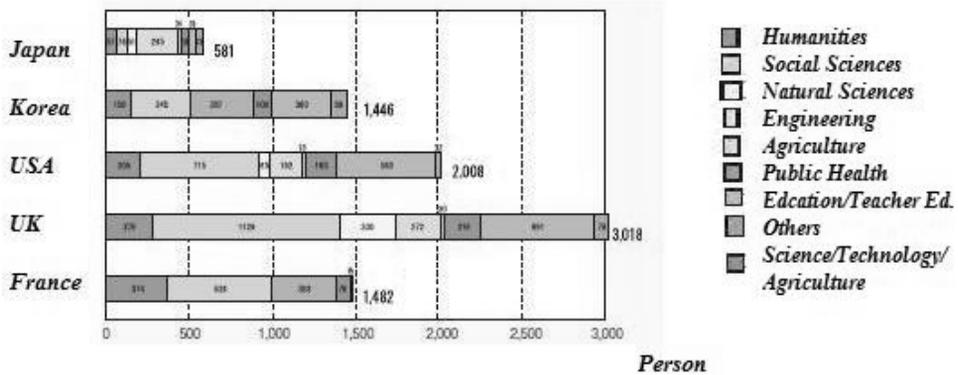


Figure 1-8 The number of Master's degree holders per one million population by major fields in 2005 (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-57, p.56, Source: *The number of degree holders was based on "International Comparison in Educational Indicators", MEXT, FY2008 and FY2009 versions. Population was based on "OECD Main Science and Technology Indicators" Vol.2009/2*)

In Korea and France, no statistical distinctions were made between Science, Engineering and Agriculture.

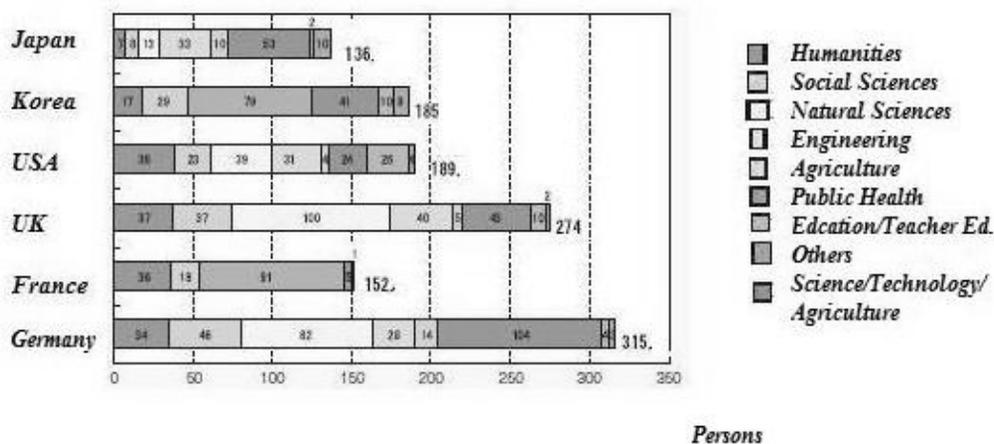


Figure 1-9 The number of Doctorate degree holders per one million population by major fields in 2005 (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-58, p.56, Source: The number of degree holders was based on “*International Comparison in Educational Indicators*”, MEXT, FY2008 and FY2009 versions. Population was based on “*OECD Main Science and Technology Indicators*” Vol.2009/2)

In Korea and France, no statistical distinctions were made between Science, Engineering and Agriculture.

2) Budget on education

(1) The education budgets of Japanese central and local governments

The education budgets of Japanese central and local governments, especially the national budget were restricted over the past ten years (Figure 1-10). As a result, the Japanese public expenditure on education is the lowest among OECD countries (Figures 1-11, 1-12).

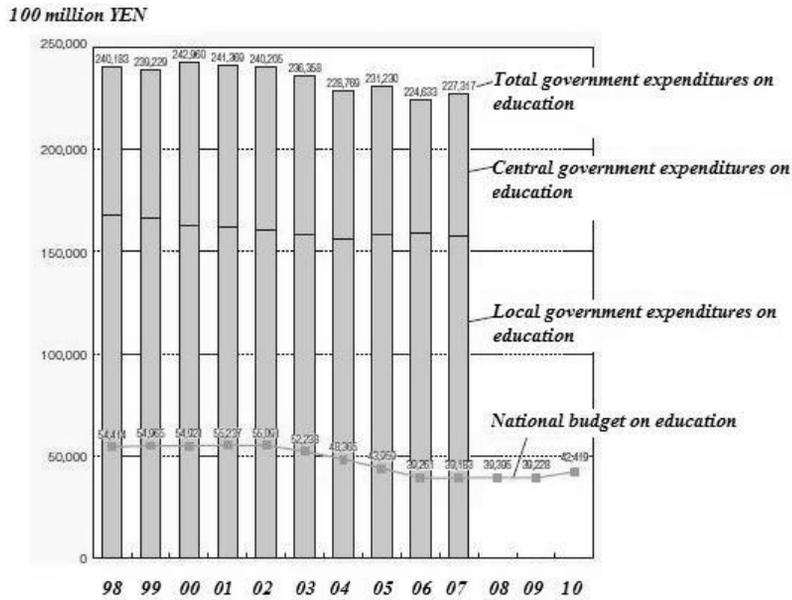


Figure 1-10 The transition of educational expenditures of Japanese central and local governments (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-1-30, p.23)

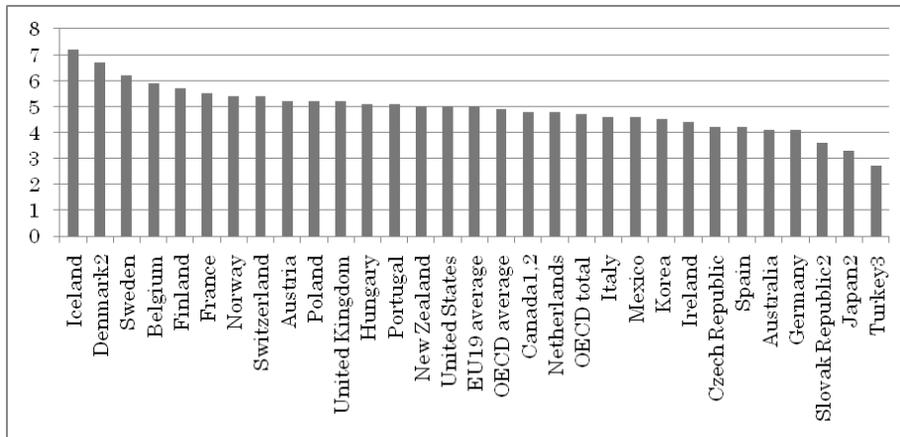
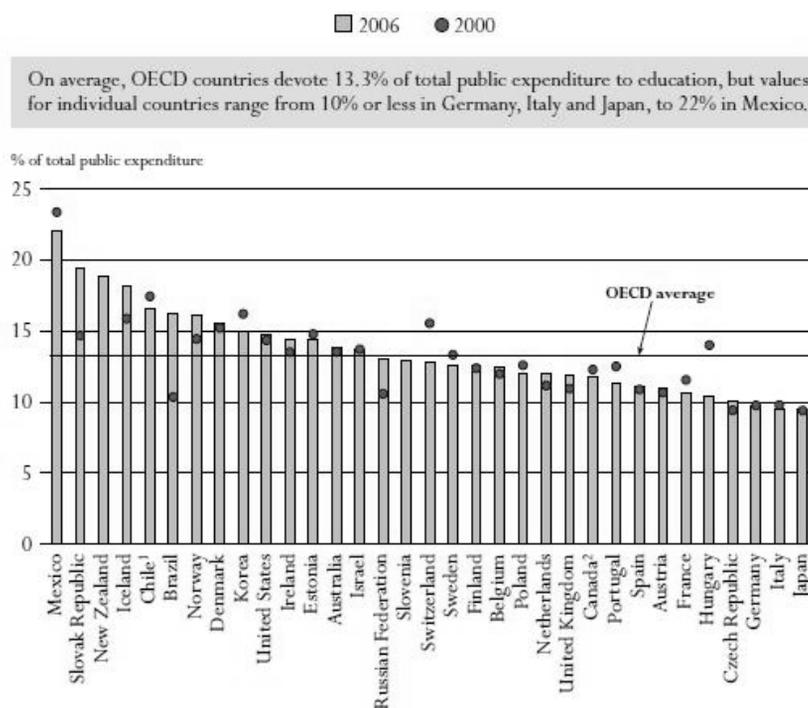


Figure 1-11 Total public expenditure on all levels of educational institutions as a percentage of GDP (2006)

The chart is based on Table B2.4. “Expenditure on educational institutions as a percentage of GDP, by source of fund and level of education (2006)”, in OECD, “Education at a Glance 2009: OECD Indicators”, 2009, p.221). According to the original description, ‘Public’ includes ‘public subsidies to households attributable for educational institutions, as well as including direct expenditure on educational institutions from international sources.’

1. Year of reference 2005.
2. Some levels of education are included with others.
3. Year of reference 2007.

Source: OECD. See Annex 3 for notes (www.oecd.org/edu/eag2009).



1. Year of reference 2007 instead of 2006.
 2. Year of reference 2005 instead of 2006.
 Countries are ranked in descending order of total public expenditure on education at all levels of education as a percentage of total public expenditure in 2006.
 Source: OECD, Table B4.1. See Annex 3 for notes (www.oecd.org/edu/eag2009).
 StatLink <http://dx.doi.org/10.1787/664366200117>

Figure 1-12 Total public expenditure on education as a percentage of total public expenditure (2000, 2006)

The chart (Chart B4.1, In OECD, “Education at a Glance 2009: OECD Indicators”, 2009, p.236) shows direct public expenditure on educational institutions plus public subsidies to households (including subsidies for living costs) and other private entities, as a percentage of total public expenditure, by year. It must be recalled that public sectors differ in terms of their size and breadth of responsibility from country to country.

In higher education also, governmental subsidies to both national and private universities are decreasing (Figure. 1-13, Figure 1-14). As a result, the ratio of public expenditure on Japanese institutions of higher education to GDP was 0.5 percent (Figure. 1-15).

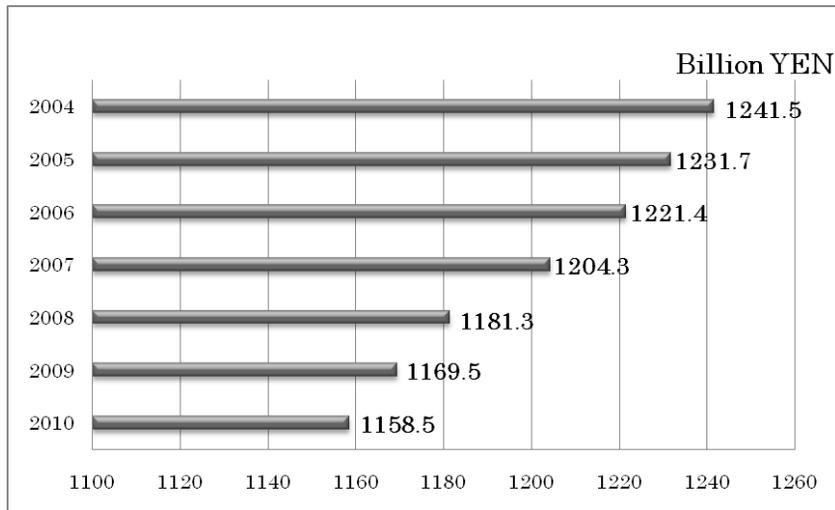


Figure 1-13 “Uneihi-Kohukin” (national subsidy for administration at national universities), (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-41, p.47)

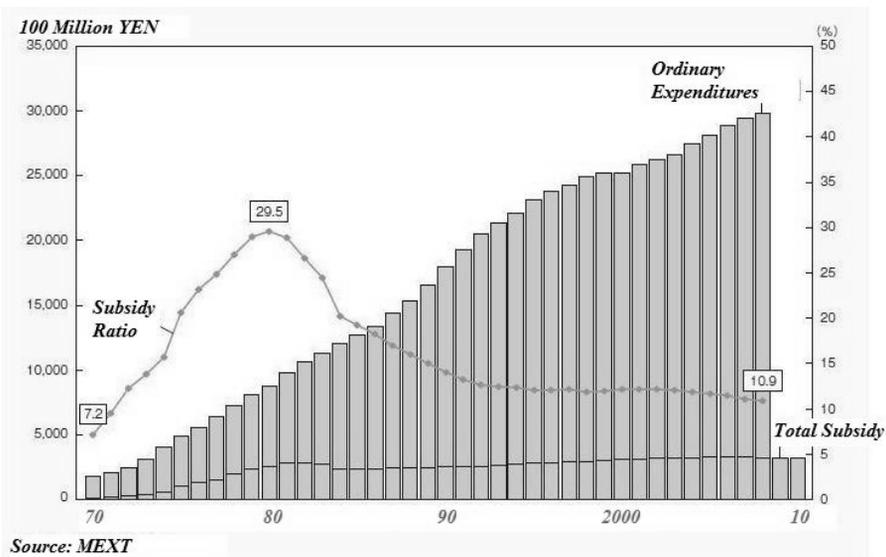


Figure 1-14 Ordinary expenditures at private universities and “Keijo-Keihi-Hojo (national subsidy for ordinary expenditures at private universities)” (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-45, p.49)

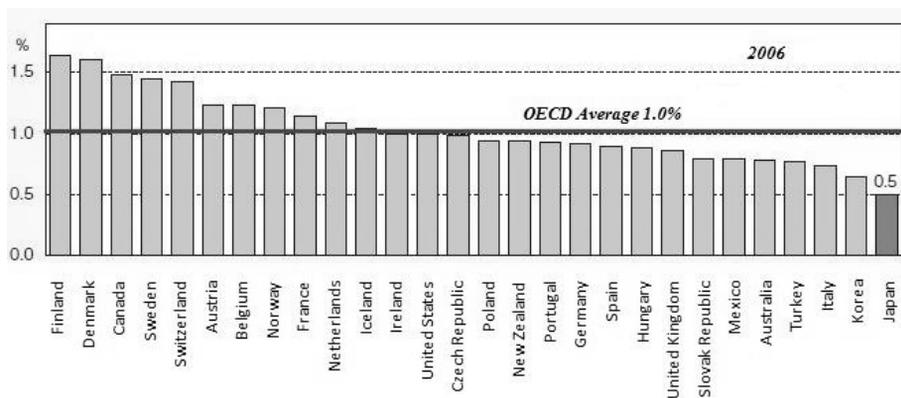


Figure 1-15 Public expenditure on tertiary educational institutions as a percentage of GDP in OECD countries (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-46, p.49; Original data: Table B2.4, In OECD, “Education at a Glance 2009: OECD Indicators”, 2009, p.221)

(2) The Lifelong Learning Policy Bureau budget

MEXT's General Budget for FY2010 is 5,592.6 billion yen a 310.9 billion yen increase from that for FY2009. The Lifelong Learning Policy Bureau budget is 339.22 billion yen. The budgets for lifelong learning in a broader sense are found in those of other bureaus.

Table 2-1 The FY2010 Lifelong Learning Policy Bureau Budget, MEXT

	billion yen
Projects for the promotion of collaboration among schools, families and communities	170.83
Promotion of educational reform (Management of national councils, Basic statistics survey)	4.5
Related institution management (the National Institute for Educational Policy Research, the Open University of Japan, the National Museum of Nature and Science, National Women's Education Center)	163,89
Total	339,22

3) Indicators on ICT implementation in education

(1) Indicators on ICT implementation in school education (*from The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Part 1, Topic 1, Chapter 2, p.41-42*)

Realizing 'easy-to-understand' classroom teaching, decreasing the teacher burden of school administration, improving student information literacy, and providing high quality education are expected through the promotion of ICT implementation in school education. In the pilot projects managed by MEXT, the cases utilizing ICT showed tendencies to have better objective test scores in comparison with the case that did not use it (Figure 1-16).

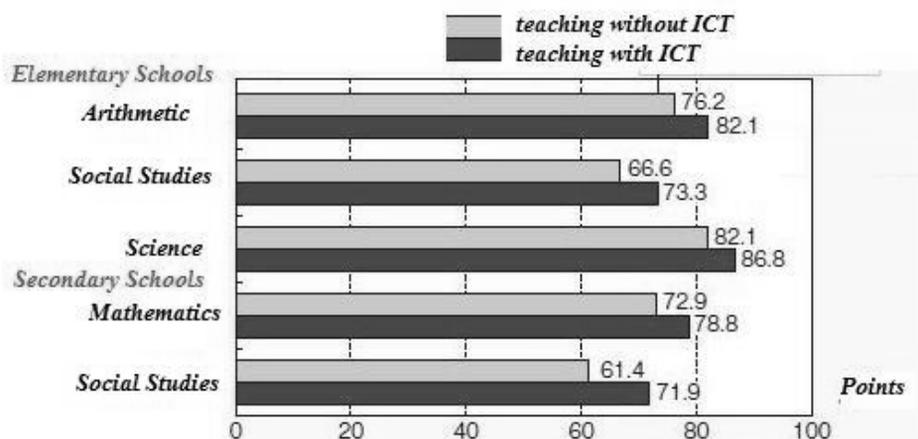


Figure 1-16 Evidence of the positive effect of ICT utilization in teaching (*from The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Figure 1-2-30, p.41, Source: The FY2006 MEXT-funded project “Research on the Promotion of ICT Use in Education”*)

After the experimental operation (Experimental condition: experimental teaching with ICT use, Control condition: experimental teaching without ICT use), an objective test was given in each academic subject area and the scores were compared between the conditions. The total number of the subjects (students) was 2915 in arithmetic, social studies or science in elementary schools or in mathematics or social studies in secondary schools. Results in all academic subject areas showed the scores in the experimental group (that is, experimental teaching with ICT use) were significantly higher.

In ICT implementation in school education, Japan is behind other developed countries. For example, as of March 2010, the number of students per computer was 6.4 in Japan while it was 3.8 in the United States, 3.6 in the United Kingdom (middle schools) and 6.2 (elementary schools) and 6.0 (junior high schools) in Korea. In addition, the ratio of the teachers who answered they were competent in using

ICT in the classroom was 58.5%; that of the teachers who answered they were competent in using ICT for school administration was 69.4%.

(2) Indicators on the ICT saturation level in Japanese homes

As of the end of 2009, of the 94.08 million population 6 years and over, 78.0% were Internet users (Table 2-2). As of the end of 2008, 73.4% of the users connecting with the Internet at home utilized some sort of broadband connection (Table 2-3). According to a sample survey by the Cabinet Office, the computer diffusion rate at standard households was 74.6 % as of March 2010 (Figure1-17).

Table 2-2 The number of Internet users and the percentage of users in the population 6 years and over (*from the Communications Usage Trend Survey, Ministry of Internal Affairs and Communications, <http://www.soumu.go.jp/johotsusintokei/field/tsuushin01.html>*)

At the end of	The number of Internet users (10 thousands)	The percentage of users in the population 6 years and over
1997	1,155	9.2
1998	1,694	13.4
1999	2,706	21.4
2000	4,708	37.1
2001	5,593	46.3
2002	6,942	57.8
2003	7,730	64.3
2004	7,948	66.0
2005	8,529	70.8
2006	8,754	72.6
2007	8,811	73.0
2008	9,091	75.3
2009	9,408	78.0

Table 2-3 Internet connections from home computers (from *Communications Usage Trend Survey, Ministry of Internal Affairs and Communications, <http://www.soumu.go.jp/johotsusintokei/field/tsuushin01.html>*) (Percent)

<i>At the end of</i>	2000	2001	2002	2003	2004	2005	2006	2007	2008
Broadband connections	6.8	14.9	29.6	47.8	62.0	65.0	67.9	67.6	73.4
DSL	0.3	7.9	18.7	27.2	39.2	34.2	27.7	18.9	17.3
CATV	6.5	6.5	9.2	15.1	15.5	16.1	12.5	16.6	17.1
Optical fiber(FTTH)	—	0.5	1.4	5.4	6.1	14.8	27.2	31.3	39.0
G3(Third Generation Mobile)	—	—	—	—	1.2	1.3	1.8	2.4	4.6
FWA	—	—	0.7	1.0	1.3	0.5	1.7	0.7	0.8
Dial-up	55.4	47.2	44.9	30.2	20.4	16.4	17.5	11.4	9.4
ISDN(continuous connection)			16.8	13.9	13.3	14.8	14.9	13.7	10.0
ISDN(on-demand connection)	34.0	24.6	11.2	8.2	5.1	4.6	3.9	3.6	2.5
Other Mobile telephone		20.9	7.4	6.6	5.8	2.7	1.5	2.0	4.5
PHS	11.5	3.2	2.6	3.7	2.0	2.5	1.9	0.8	0.7

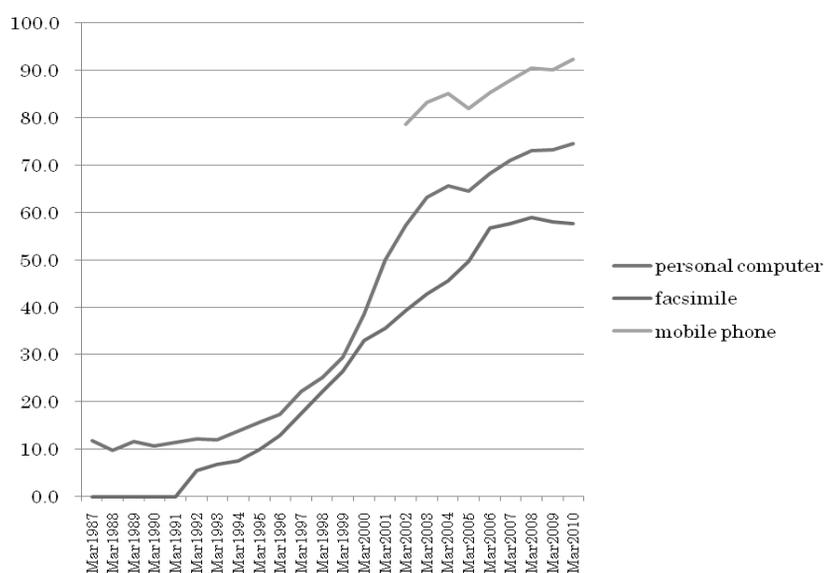


Figure 1-17 ICT equipment ownership rates in standard households (from the Cabinet Office, Source: *Communications Usage Trend Survey in 2009*; cf. *Communications Usage Trend Survey in 2008, http://www.soumu.go.jp/johotsusintokei/tsusin_riyou/data/eng_tsusin_riyou2008.pdf*)

4) Lifelong Learning Indicators

(1) Education expenses from the viewpoint of family budget

In Japan, personal expenses for the compulsory education level (i.e. elementary school and junior high school level, 6-15 year-old period) have been low. In addition, from FY2010, personal expenses at the senior high school level will be reduced drastically under the new educational policy package, ‘toward free senior high school tuition’ of the new administration.

“On the other hand, both in the pre-school (for example, kindergarten) and in the higher education levels, the ratios of personal expenses were higher when compared with those in other countries (the pre-school level ratio was at the top and the higher education level ratio is second among OECD member countries). One of the Japanese characteristics was that the ratio of expenses from the family budget was very high in the private expenses (Figure 1-18). That is, Japanese households paid more for educational expenses in comparison with overseas households.” (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010*, Part 1, Chapter 1, p.19-20).

In Japan, lifelong learning has been promoted under the principle that autonomous learners should be responsible and those who are to benefit have to bear the cost. To ensure further progress, it is indispensable to prepare various quality higher/tertiary education programs in a more accessible fashion as well as to develop some market-place or common place (including a social infrastructure and system) that allows citizens and corporations to easily participate in a variety of roles (for example, content developer, course provider, evaluator and user).

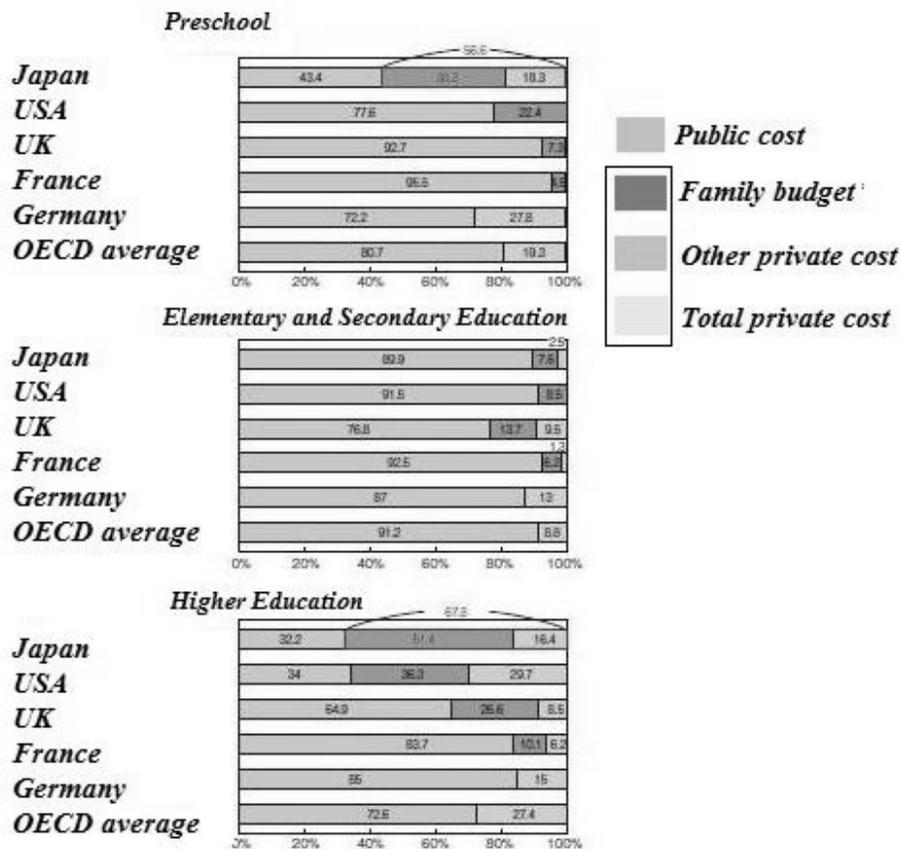


Figure 1-18 Ratio of public-private sharing in education costs in each school level (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-1-25, Source: *OECD Education at a Glance 2009*)

(2) Motivation for lifelong learning

Because of the higher jobless rate and mobility of labor, workers especially in younger and middle-aged generations have stronger interests in personal career development and on the resultant increase of lifetime income. As a result, they have stronger motivation to pursue lifelong learning even while industry costs to train non-expert workers have decreased.

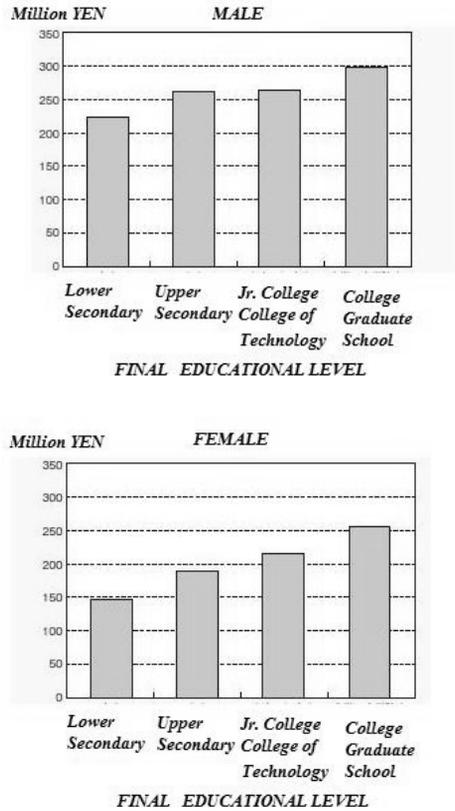


Figure 1-19 Comparison of lifetime total wage on the basis of educational backgrounds (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 1-2-22 p.41, Source: “Useful Labor Statistics 2010”, the Japan Institute for Labour Policy and Training)

1.3 Organization of the Ministry of Education, Culture, Sports, Science and Technology (MEXT)

The location and sections of the Lifelong Learning Policy Bureau are shown in Figure1-20.

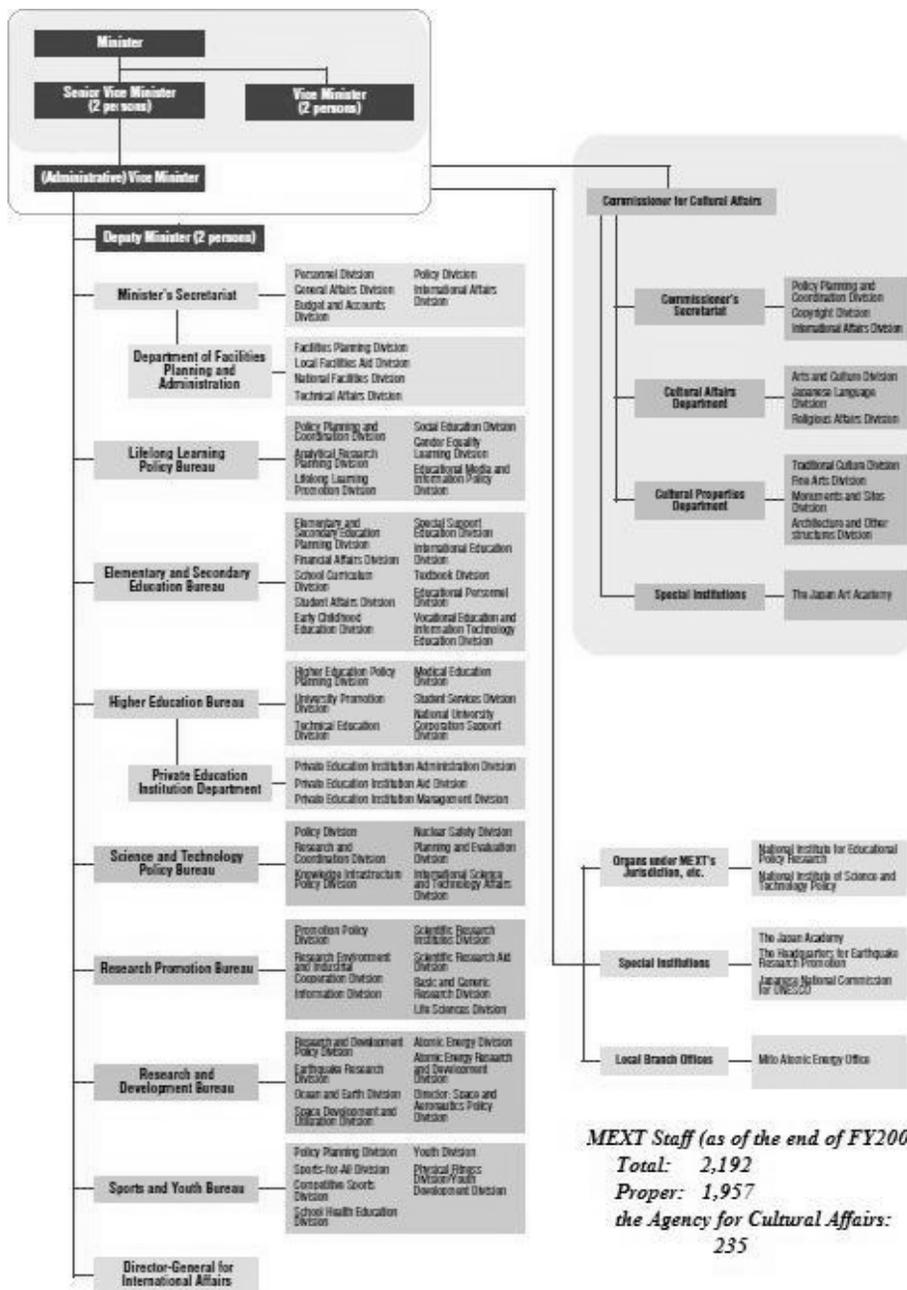


Figure 1-20 Organization of the Ministry of Education, Culture, Sports, Science and Technology (MEXT, as of 1st April 2010)

2.1 Definitions of lifelong learning in Japan

1) Definition by MEXT shown in *The FY2009 White Paper on Education, Culture, Sports, Science and Technology* (Ministry of Education, Culture, Sports, Science and Technology (MEXT), 2010, Part 2, Chapter 1, Section 3, p.91)

‘Lifelong learning’ is generally used as any kind of learning that citizens undertake throughout their lifetime. Hence the term includes school education, home education, ‘social education’, cultural, sports, recreational and volunteer activities, corporate training, hobbies and other learning opportunities in various areas. Furthermore, the term ‘lifelong learning society’ is used to refer to a society in which citizens can freely choose learning opportunities and learn at any time throughout their lives, and receive proper recognition for their learning achievements. In order to pursue the realization of ‘lifelong learning society’, basic lifelong learning concepts have been specified in Article 3 of the Amended Fundamental Law of Education (established on December 15, 2006; promulgated and put into effect on December 22 as Law No. 120 of 2006).

2) Definition by the Central Council for Education (1981)

The Central Council for Education is an organization that carries out investigations and deliberations on important matters related to the promotion of education, lifelong learning, sports and other matters in response to requests from the Minister of Education, Culture, Sports, Science and Technology and provides its report to the Minister. The Central Council for Education has, under the general committee, of five subdivisions on Education Systems, Lifelong Learning, Elementary and Lower

Secondary Education, Universities, and Sports and Youth (from <http://www.mext.go.jp/english/org/struct/048.htm>).

In 1981, the Council drew up a report on the policies on lifelong learning in Japan. The definitions in the report were as follows:

Lifelong learning: Learning through a lifetime that citizens do for personal self-fulfillment and personal lifestyle improvement, through their free will and by selecting the suitable means and manner to accomplish their objectives.

Lifelong education: An objective comprehensively implementing and maintaining various educational functions, while taking into account relevant interactions to realize lifelong learning

3) Professor Masaya Iwanaga's view on the acceptance of the 'lifelong learning' model in Japanese society

Professor Masaya Iwanaga of the Open University of Japan is a leader in lifelong learning research and practices in this country. In his recent paper (Iwanaga, M., "The Possibility of the Practical Use of ICT to the Lifelong Learning in Japan", *Journal of Multimedia Education Research*, Vol.6, No.1, S32–S43), he discussed our understanding of the definitions within Japanese contexts and the processes that Japanese government has promoted and that Japanese society has accepted.

(1) Viewpoint 1: the relationship between the related traditional education

"The origin of 'lifelong learning' is the idea of 'lifelong education', that was originally advocated at UNESCO by Paul Lengrand. The essence of 'lifelong learning' was 'to do learning activities at various opportunities in one's lifetime, continuously and systematically throughout one's lifetime based on learner independence. However, in Japanese society the 'lifelong learning' concept has not always been understood in this sense. In Japan, 'lifelong learning' has often been regarded as having learning content that differs from school (formal) education, and it is thought to be pursued by middle-aged and older citizens in their spare time. This is because educational opportunities in Japan existed separately over a long period after World

War II. For example, there was school education for school aged children, corporate education in the workforce, or ‘social education’ as an administrative service. From the viewpoint of both provider and user, there was little overlap or commonality; content was incompatible and heterogeneous. Given these circumstances, autonomous adult learning in which learners should utilize various opportunities to cope with personal needs has not matured, and as a result, ‘lifelong learning society’ has not flourished in Japan despite its continued advocacy since the 1981 Central Council for Education report (in the previous paper, S34).”

Professor Iwanaga discussed that in former Japanese society ‘lifelong learning’ was regarded as some kind of special area that is distinct from both formal education, such as school education, and ‘social education’ as an administrative service. While ‘lifelong learning’ was recognized in a holistic way as a philosophy or an idea, the actual implementation was still partial and fragmental. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) has the Lifelong Learning Policy Bureau established at the same level as other bureaus, such as those for Elementary and Secondary Education and Higher Education. However, he analyzed that the introduction of ICT has not induced drastic changes to such fragmental situations yet. Japanese society has a similar informal education concept, called ‘social education’. ‘Social education’ is defined as “systematic educational activities focusing mainly on the younger generation and adults and that are held outside schools” (Shigeo Hori and Kenji Miwa, “Lifelong learning and self-realization”, 2006).

(2) Viewpoint 2: Political meaning of lifelong learning: A ‘safety-net’ policy

Professor Iwanaga suggested Japanese lifelong learning had another important political meaning at the time the government adopted it.

“With the proposed structural adjustment of education in the National Council for Educational Reform (NCER) report for the Nakasone Cabinet, Japanese educational policy moved into the so-called era of ‘neoliberalism’, ‘deschooling’ or ‘liberalization of education’. Needless to say, ‘neoliberalism’ is a political ideal eliminating possible governmental controls and entrusting

various issues to adjustable market (or private) functions based on free competition”. “NCER intended to apply the administrative reform concept to the educational field.” “At the same time, NCER proposed the transition to a lifelong learning society and measures, including the establishment of OUI, as one of the main reforms.” “Lifelong learning society was proposed as a safety net, that is, as a complementary measure for citizens who had greater difficulty obtaining public education services due to liberalized and privatized education.” “The implementation was promoted under governmental leadership advocacy of ‘neoliberalism’. That context consequently deeply influenced the Japanese lifelong learning system. The most distinctive element was the construction of the market-driven system guided by the government.”

This viewpoint is also helpful in comprehending the characteristics of the past lifelong learning measures in Japan. In 2009, changes to policy and measures were expected with the seating of the Democrat Party administration (shown in Chapter 3).

2.2 Definition of e-Learning

1) The definition in *The 2007/2008 e-Learning White Paper* edited by the Commerce and Information Policy Bureau, Ministry of Economy, Trade and Industry (METI, 2007)

The 2007/2008 e-Learning White Paper was the last Commerce and Information Policy Bureau, Ministry of Economy, Trade and Industry (METI) edition. The e-Learning Consortium Japan took its editing over for the 2008/09 version. *The 2007/2008 e-Learning White Paper* definition is as follows;

“ ‘e-Learning’ is electronic learning utilizing computers and networks. In the broad sense, it is learning in which ICT is utilized. In a narrower

sense, it is asynchronous and online-based learning, like WBT. Recently, as ‘blended approaches’ have become more popular, the broader definition is more preferable. The main features of ‘e-Learning’ are digitalization and interactivity.

‘e-Learning’ has a self-directed (or independent/autonomous) learning aspect utilizing information technologies (IT). ‘e-Learning’ is introduced either as a substitute for all or partial classroom education or in combination with it. ‘e-Learning’ content is written and edited under the goals and objectives of the course and assures sufficient interaction not only between the content provider and the learners but also among learners. Interactivity is realized by providing adequate instruction by computers or by 2-way communication between the participants.”

In Japanese formal education, the dominant use of ICT is in ‘blended’ approaches and terms such as ‘ICT-utilized’ education and/or ‘ICT-enhanced’ education are preferable. Asynchronous online learning and computer assisted training are popular in informal education, especially in corporate learning. At the present, ‘e-Learning’ is used as a comprehensive concept covering both synchronous and asynchronous learning modes.

As ICT utilization in various social activities is one of the basic policies in Japan, the Strategic Headquarters for the Promotion of an Advanced Information and Telecommunications Network Society (IT Strategic Headquarters) was established within the Cabinet in January 2001. The IT Strategic Headquarters published The New National Strategies of Information and Communication Technology (May 2010) and The Roadmap for New National Strategies of Information and Communication Technology (June 2010) (<http://www.kantei.go.jp/jp/singi/it2/100622.pdf>).

In this chapter, in order to clarify the Japanese government's official views, several translated parts of MEXT White Papers are introduced. The original documents are The White Paper on Education, Culture, Sports, Science and Technology FY2008 and FY2009 versions (Ministry of Education, Culture, Sports, Science and Technology (MEXT), 2009 and 2010). As an English version of the full texts was not available, the OUI-CODE team directed and is responsible for the translation from the original Japanese.

Recent Japanese governmental policy amendments are overviewed before introducing the White Paper translation.

3.1 Recent Japanese government policies (from *The FY2008 MEXT White Paper, Part 2 Chapter 1 Topic 1* revised from http://www.mext.go.jp/b_menu/hakusho/html/hpab200801/detail/1292599.htm)

The Ministry of Education, Culture, Sports, Science and Technology (MEXT) has promoted various measures such as expanding the acceptance of adult students in

universities, promoting the Open University of Japan and by enhancing diverse learning opportunities through the promotion of ‘social education’.

The Fundamental Law of Education, amended in December 2006, clarified the philosophy of lifelong learning. The Basic Plan for the Promotion of Education drawn up in July 2008 outlined the realization within 5 years of an environment in which anyone could learn anywhere at any point in their lives.

Following the revision of the Fundamental Law of Education, the Act for Partial Amendment of the Social Education Law and other acts were passed and enacted in the 169th Diet, on June 11th, 2008. This law established the duties of national and local governmental ‘social education’, the administrative work of the Boards of Education, the management of community centers (kominkan), libraries and museums, and the regulations concerning the certificates for librarians and others. In addition to this law, the laws on training librarians and curators in the ministries will be revised.

Establishing new after-school classroom regulations and regional school support headquarters; assessing community centers, libraries and museums to improve social education facility management as well as regulating information provided to citizens; and reviewing librarian and curator requirements including the precise university credits required for certification, were specified in the Act for Partial Amendment of the Social Education Law. A subsequent February 2009 research survey report on new directions for libraries defined university Library Studies credits to be fulfilled in acquiring a librarian certificate. The proposed university credit reorganization and expansion to revise the current 14-course/20-credit system into a 13-course/24-credit system will come into effect in April 2012 following the enactment of the Ordinance for Enforcement of the Library Act in April 2009.

Similarly, a February 2009 research survey report on new directions for museums defined university credits to be fulfilled in acquiring a curator certificate.

The proposed university credit reorganization and expansion to revise the current 8-course/12-credit system into an enhanced 9-course/19-credit system will come into effect in April 2012 following the enactment of the Ordinance for Enforcement of the Museum Act in April 2009. Reference material entitled Practical Guidelines for

Museums will be compiled and distributed to universities and museums.

3.2 Lifelong learning society and systematic promotion

1) Background (from *The FY2009 MEXT White Paper, Part 2 Chapter 1 General Discussion, p.79-80*)

In the midst of drastic socio-economic changes, there is an increasing necessity for measures to realize a ‘lifelong learning society’. The term ‘Lifelong learning society’ refers to a society in which each citizen can independently choose among learning opportunities, learn anywhere at any time during one’s lifetime and receive proper recognition for personal learning achievements that polish up each personality and increase the quality of life.

In order to promote a lifelong learning society, the government enacted the Law on the Preparation of the Promotion System of the Measures to Promote the Lifelong Learning Society in 1990. In the Fundamental Law of Education, amended in 2006, the basic concept of lifelong learning has been specified (Article 3). However, the realization of the lifelong learning society is still midway.

In the following current social situations, the significance of ‘lifelong learning society’ is increasing.

- (1) With the declining birthrate, aging, and a decreasing population, in Japanese economic society, cultivating each citizen’s ability and individuality to the maximum is indispensable in utilizing variable human resources.
- (2) Under the drastic industrial and employment structure changes, in the context of globalization it is essential for citizens to have lifetime opportunities to relearn knowledge and skills in maintaining personal vocational and job abilities and social lives.
- (3) With the increases in irregular employment and the risk of corporate bankruptcy,

- it is necessary to fulfill the educational and capacity building opportunities to support citizens who try to acquire knowledge and skills and try to support themselves in order to overcome social stratification and poverty.
- (4) From the viewpoint of autonomy and symbiosis or from that of reproduction of social bonds in the community, the participation of various agents such as public administration, residents, corporate and NPOs is an important task nowadays to realize public interests. Active community and lifelong learning construction practices are necessary for that purpose.
 - (5) With the advent of an aging society, it is necessary to prepare learning opportunities that satisfy the aged population desire for knowledge in order to have an affluent life.

As for item (4) above, community building and empowerment is regarded to be the process of learning and practices on various issues. For example, ‘Regional Headquarter to Support Schools’ and ‘After-school Children’s Classrooms’ and other measures offering community support for schools not only enrich children’s learning and empower school functions but also provide the community lifelong learning opportunities, strengthen social bonds, shape an active community, and stimulate society as a whole. That is, in the midst of drastic socio-economic changes, it is very important to re-examine education and educational policies from the viewpoint of lifelong learning.

At present, financial circles, labor organizations, nation and local administration are collaborating toward ‘the balance between working and life’. In addition to ‘the balance between working and life’, the fulfillment of ‘learning’ and ‘community activity’ will bring increased richness to ‘working’ and ‘life’. MEXT is promoting various measures that stimulate society through lifelong learning from the viewpoint of ‘the balance between working and learning’.

2) Systematic promotion of the educational policies: the new educational policy framework (from *The FY2009 MEXT White Paper, Part 2 Chapter 1 Section 1, p.81*)

(1) The Fundamental Law of Education and the Basic Plan for the Promotion of Education

In December 2006 the Fundamental Law of Education was amended and in July 2008, according to Article 17 (1) of the law, the Basic Plan for the Promotion of Education was formulated by the Cabinet as the first comprehensive governmental plan on education. Toward realizing the concepts in the law, the plan showed the goals of the next 10 years to be (i) to cultivate the basic abilities of all of children to support themselves by the end of compulsory education (ii) to bring up talented people to support and develop society and to lead the international society.

To realize those goals, the plan outlined four basic principles of the measures and 77 actual plans for FY2008-2012, and clarified the PDCA cycle that would be introduced to assure step-by-step implementation.

Furthermore, the nation and local public administration should play each part while collaborate each other towards the goals. It was also specified that each local public administration should make a regional plan in reference to the national basic plan. As of March 31, 2010, the basic local plan had been determined in 36 prefectures and ordinance-designated cities.

Toward realizing ‘the nation based on education’, MEXT will promote various step-by-step measures for continuously checking the progress. MEXT deploys various measures in the following targets.

- i) Decreasing educational cost at households
- ii) Improving educational potentials at schools
- iii) Realizing universities that lead and contribute to the world
- iv) Supporting the employment of new graduates and cultivating independent learners in the workforce (members of society)
- v) Realizing new public community

1) The significance of lifelong learning

‘Lifelong learning’ generally refers to any kind of learning in which citizens undertake throughout their lifetimes. Hence the term includes school education, home education, ‘social education’, cultural, sports, recreational and volunteer activities, corporate training, hobbies and other learning opportunities in various areas. Furthermore, the term ‘lifelong learning society’ is used to refer to a society in which citizens can independently choose learning opportunities and learn at any time during their lifetimes and receive proper recognition for their learning achievements. The basic concept of lifelong learning was specified in the amended Fundamental Law of Education in order to pursue the realization of a ‘lifelong learning society’ (Article 3).

On Policy to Promote Lifelong Learning to Lead the New Era: Aiming to build a ‘knowledge circulation society’, a policy report submitted by the Central Council for Education in February 2008, included descriptions of the necessity and importance of promoting lifelong learning as follows:

Firstly, economic development, the progress of science and technology, the propagation of information technology, and the aging of society have induced strong citizen demands for various learning opportunities for self-fulfillment/cultivation, and for an improved quality of life. In other words, there is a need for the realization of a lifelong learning society in which citizens can independently choose their own learning opportunities at any time during their lifetimes, and receive proper recognition for their learning achievements.

Secondly, the 21st Century is referred to as a ‘knowledge-based society’, in which knowledge will be the basis for politics, economy, and culture, that is, in all social activities; and hence the importance of knowledge is ever on the rise. In a knowledge-based society, investments in human resources that can create new knowledge will be the important key. Especially given the current issue of increasing irregular employment, building an environment in which individuals can continue to learn

as required — in order to maintain vocational and employment abilities amidst changes in society, and to be able to learn and upgrade knowledge and skills as required to continue making a living in society — is an urgent task.

Thirdly, administrative services tend to decrease with administrative reform and deregulation, and as citizens are expected to be more self-accountable for their own decisions, demands for educational activities that enrich individual learning opportunities increase. At the same time, there is a need to build independent local societies in which the community itself can integrate its power to solve pressing issues. Furthermore, amidst various aggravated global-scale issues, there is a demand for building a ‘sustainable society’ in the world at large. The necessity and importance of education in building such a society at large, is internationally recognized and advocated. The building of a ‘knowledge circulation society’—in which individuals return the outcome of their learning activities to the community and it contributes to the improvement of educational force of overall society—will become the basis of a sustainable society.

2) On Policy to Promote Lifelong Learning to Lead the New Era: Aiming to build a ‘knowledge circulation society’ (Policy report)

Upon consultation in June, 2005, The Central Council for Education deliberations centered around the Lifelong Learning Subcommittee, and a two-part policy report entitled On Policy to Promote Lifelong Learning to Lead the New Era: Aiming to build a ‘knowledge circulation society’ was created in February, 2008.

(1) Policy to promote future lifelong learning

Part 1 describes the rising need and importance of promoting lifelong learning; a ‘zest for living’ needed for children in the next generation; and the strength required as adults to live through the dramatically changing times. It then continues to recommend concrete policies aimed at building a ‘knowledge circulation society’ with the following two pillars: ‘support for learning throughout the lifetimes of individual citizens’ and ‘enhancement of educational ability in overall society’.

i) Support for learning throughout the lifetimes of individual citizens

First in terms of support for learning throughout the lifetimes of individual citizens, the policy report recommended the following enhancements in a policy entitled Support for Learning throughout the Lifetimes of Individual Citizens:

- (i) Deliberating the role of extra-curricular learning for children from the view of supporting extra-curricular activities that foster a ‘zest for living’;
- (ii) Enhancing opportunities to utilize social education facilities, etc. as various learning grounds and to leverage the learning results to secure comprehensive problem solving functionality in the community;
- (iii) Improving credit certification for universities to issue proof after finishing adult programs, using a ‘job card’ system to leverage vocational career building such as job hunting, and creating evaluation guidelines for proficiency tests provided by third party evaluators to add to social credentials.

ii) Enhancing educational ability in overall society

Further, a policy entitled Enhancement of Educational Ability in Overall Society, recommends the following:

- (i) Forming a home education support platform to proactively promote comprehensive support to various parents including those who are apathetic or those who have a high interest but lack the means for learning;
- (ii) Promoting involvement of overall society with schools on a regional bases, such as the ‘After-school Child Plan’ in which local residents actively engage themselves to support the schools;
- (iii) Using social education facilities such as community centers, libraries and museums as regional learning bases.

Additionally, the report recommends considering the following reference viewpoints when promoting policy:

- (i) balancing ‘individual desire’ and ‘social demand’
- (ii) aiming to create a sustainable society through ‘inheritance’ and ‘creation’
- (iii) promoting policy by building tying up and networking.

(2) The role of public administration in terms of policy promotion

Part 2 in particular, describes the role of national and local public administrations. First, lifelong learning policies are summarized, then the basic concepts such as the philosophy of lifelong learning is delineated. Further, the report made recommendations including the revision in statutes as follows:

- (i) Specifying the new Board of Education role in the area of school and family education support;
- (ii) Activating community centers, libraries and museums through evaluation and improvement of operational status, and through providing information; and
- (iii) Reviewing librarian and curator qualification criteria, as well as enhancing their training.

Furthermore, it recommends the following:

- (i) Actively affiliating public administration with private organizations such as NPO and middle support organizations and the private sectors that play major roles in providing various learning opportunities and implementation in the public administration of lifelong learning promotion and social education;
- (ii) The Board of Education and chief magistrates taking a role and relationship in the local public entity.

3) Setting up a system for promoting lifelong learning

Aside from MEXT and the Board of Education, various agencies are involved in assorted ways to actualize a lifelong learning society. Hence it is important to build a system to coordinate and cooperate with these lifelong learning institutions and organizations.

(1) MEXT involvement

The Lifelong Learning Policy Bureau has been set up at MEXT; and the Subcommittee for Lifelong Learning at the Central Council for Education, investigates and deliberates important issues related to promoting lifelong learning. Additionally, the Private Sector Education Project Promotion Department has been set up in the Lifelong Learning Policy Bureau as a contact point for supporting private sectors

that promote lifelong learning. Furthermore, an administrative structure has been put into place to support cities, towns and villages with their endeavors to develop their region through promoting education, culture and sports.

Aside from all these efforts, a monthly magazine on lifelong learning to provide comprehensive information on promotion of lifelong learning entitled Monthly Lifelong Learning is being published. It gathers and introduces good lifelong learning promotion practices in cities, towns and villages, as well as implementing and reporting on research. The magazine is also involved in providing regular discussions and opinion exchange among prefectural Boards of Education, private social education organizations, NPO and economic organizations.

(2) Local authority involvement

i) The state of public administrative organizations

There is a department/section in charge of lifelong learning in every prefecture. At the same time, as of June, 2008 the Lifelong Learning Council deliberates important items related to the comprehensive promotion of lifelong learning in the 37 prefectures. Furthermore, almost every city, town and village has a section in charge of lifelong learning.

ii) Lifelong learning promotion plans

As of June, 2008, 43 prefectures have formulated a mid- to long-term basic plan or basic concept for promoting lifelong learning. Further, 1,027 cities, towns and villages have formulated a basic plan or basic concept. Furthermore, the number of cities, towns and villages declaring themselves to be a ‘Place of Lifelong Learning’ in order to actively promote lifelong learning has increased to 87 as of June, 2008.

iii) Nation-wide Council for Lifelong Learning in Cities, Towns and Villages

In November, 1999 the Nation-wide Council for Lifelong Learning in Cities, Towns and Villages was founded to strengthen the nationwide affiliation of cities, towns and villages that are actively involved in facilitating lifelong learning. It aims to promote networking through the exchange of lifelong learning and people. As of July, 2008, 123 cities, towns and villages are participating.

Enhancement and activation of ‘social education’ (from *the FY2008 FY2009 MEXT White Paper, Part 2 Chapter 1 Section 3-3, p.94*)

1) New era ‘Social education’

As the citizen demand for learning and the demand for more and more diversified and sophisticated content increase, the importance of projects hosted by the Board of Education and social education facilities is ever on the rise. The Social Education Law was revised in June 2008 based on a Fundamental Law of Education amendment. MEXT is intent on promoting ‘social education’ in order to continue actualizing a lifelong learning society.

2) Enhancing experts to support learning activities for citizens

(1) Current status of experts on ‘social education’

The list of experts for ‘social education’ may include social education directors at the Board of Education, community center directors at respective social education facilities, librarians (library), curators (museum), social education committees and social education instructors. The social education directors in particular will play a support role in proactive learning activities for citizens by planning and implementing the local social education administration that serves as the social education administrative core at the prefecture and sub-prefecture levels, advising and instructing on technical areas. Recently, coordination and adjustment among the human resources and the social education leaders is also expected.

(2) Fostering and training experts

MEXT is providing practical training programs for current social education directors, librarians, and curators to enhance their expert qualifications in response to social needs and the local social education tasks at hand. Furthermore, MEXT commissions universities and implements programs to provide further qualifications for social education directors and librarians to foster social education directors and librarians who

are capable of meeting the ever sophisticated and diversifying learning needs of the local residents in response to social changes.

A revision in the June 2008 amendment of Social Education Law, covers the lack of a social education board member presence in organizations involved in the opinion listening pre-process of local public entities to grant a subsidy to social education related organizations; deliberation councils that review and discuss the granting of social education related subsidy may become the substituting agent. Nonetheless the importance of the role of a social education board member still stands even after the revision. MEXT endeavors to provide necessary information so that a social education board member can continue to proactively expand activities in forming ‘social education’ related plans and in advising and mentoring the youth education in the local public entities.

3) Setting up, forming and operating bases for local learning activities

(1) Community centers

Not only is the community center the closest base of learning for the local residents, but it plays an important role as a place of community interaction. As of October, 2008, 15,943 centers around the nation provide classes and courses—various learning opportunities corresponding to the learning needs of the residents and the local community (Figures 3-1, 3-2, 3-3).

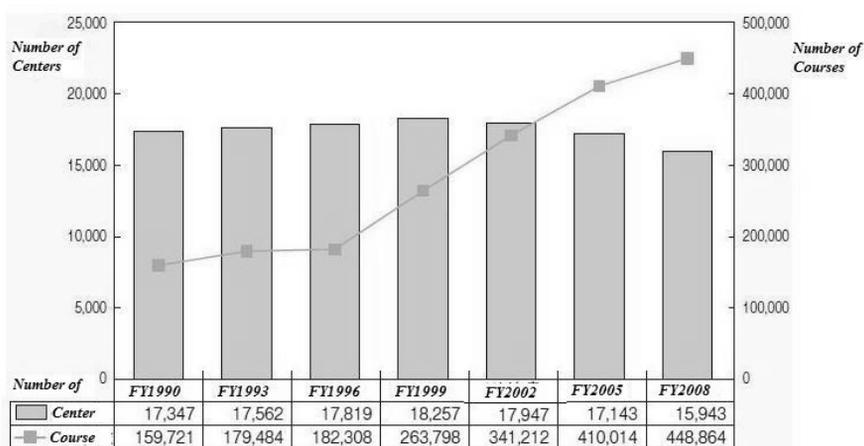


Figure 3-1 Transition in number of community centers (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Figure 2-1-10, p.95, Source: MEXT Survey on Social Education*)

Each number of the courses was based on the survey held in the previous year

However, it has been pointed out that current community center classes and courses tend to cater to hobbies and prestige achievement purpose learning for participants over 60 years old (Figure 3-3).

In the Basic Plan for the Promotion of Education formulated in July, 2008, social education facilities such as community centers are to promote their function as a learning base to respond to various educational issues of the community and areas of high social needs; and to become the base for capacity building and community development. In building a network with related institutions and organizations, community centers are expected to play a further role as the base for the local community by expanding activities responding to new needs and issues.

MEXT endeavors to enhance community center activities by promoting its involvement in sending instructors by affiliation with related ministries and agencies and providing learning opportunities that are of high social demand, as well as through its involvement in community center staff training to enhance their qualifications.

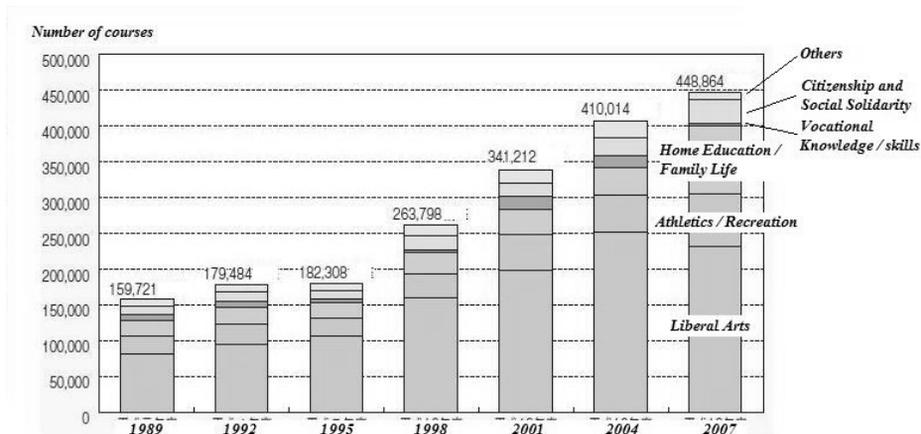


Figure 3-2 Progress on number of courses provided (from *The FY2009*

White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Figure 2-1-11, p.96)

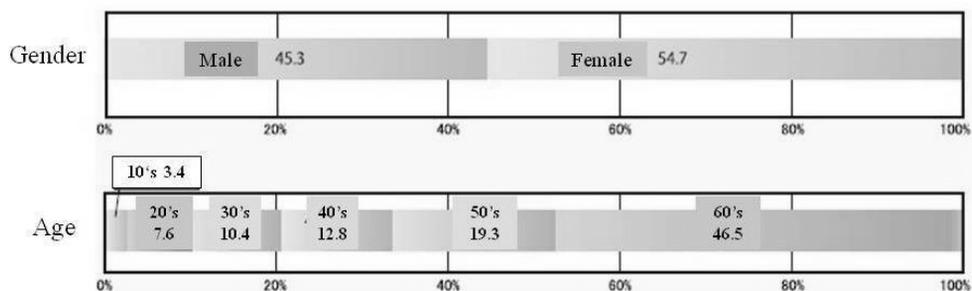


Fig. 3-3 Gender and age group of the course students (from *The FY2008 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2009, Figure 2-1-8, p.64*)

(2) Libraries

Library is a social education facility close to the residents that collects, organizes and provides books and various information required for personal learning activities. As of October, 2008, there are 3140 public libraries and 25 private libraries. The number of libraries, the number of books lent, and the number of library users have steadily increased over the recent years (Figure 3-4).

With the amendment of Library Law in June 2008, the Examination Council on the Future Role of the Library has compiled two reports viz., Policy on Enhancement of Library Staff Training (June 2008) and On University-level Subject Requirements to Acquire Librarian Qualification (February 2009). These reports recommend enhancement in qualification of library staff via enhancements in staff training and librarian qualification curriculum in the universities. MEXT in consideration of these recommendations has involves itself to enhance the training for new head librarians and middle standing librarians whilst enhancing the library promotion policy by revising ministerial ordinances such as the Library Law.

The number of libraries

1000 books/1000 people

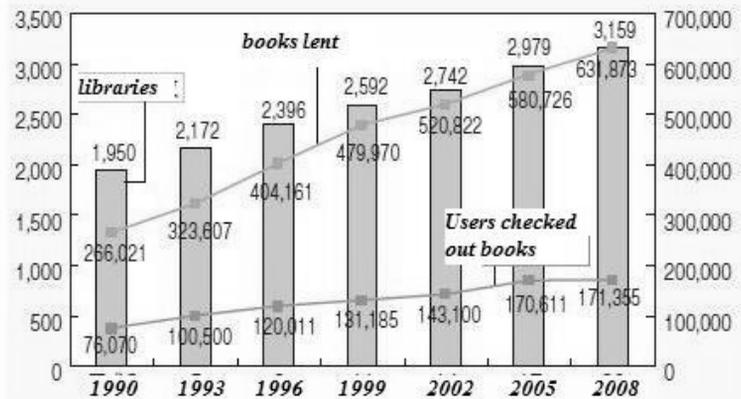


Fig. 3-4 Number of libraries, that of books lent and that of users checked out books (from *The FY2009 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2010, Figure 2-1-12, p.96, Sources: MEXT Survey on Social Education)

Both the number of books lent and that of users checked out books were based on the survey held in the previous year.

(3) Museums

Museums are facilities which collect, preserve, research, display and disseminate knowledge in an integrated way. As of October, 2008, the number of registered museums are 907, facilities equivalent to museums 341; and facilities with similar function as museums number 4527 (Figure 3-5).

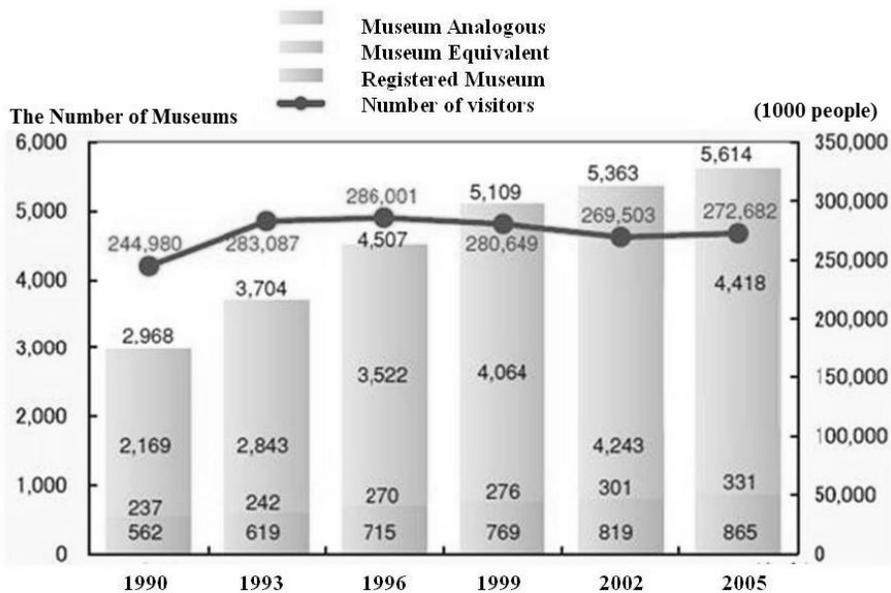


Fig. 3-5 Numbers of Museums (from *The FY2008 White Paper on Education, Culture, Sports, Science and Technology*, MEXT, 2009, Figure 2-1-10, p.65)

The numbers of visitors are based on the survey held in the previous year. The numbers of museums are the total of registered, equivalent and analogous categories. Among the museums and art museums established by independent administrative institutions which fulfill establishment criteria, MEXT appoints them as ‘facilities equivalent to a museum’ based on the Museum Law.

In order to advance museum functionality and to facilitate active participation in museum activities, MEXT not only supports various research on museum evaluation and risk management, but also supports model projects that construct a network among various types of museums under the Project to Promote Regional Knowledge Bases at Libraries and Museums.

Further, MEXT dispatches local curators to various museums abroad for training to investigate on progressive display and knowledge dissemination; and have the curators reflect the training results in the national museum administration.

In June 2008, the first amendment to the Museum Law was adopted almost half a century after its establishment. The Expert Meeting on the Future Role of the Museum continued to investigate into the area of curator training and compiled a secondary report entitled Policy on Enhancement of Curator Training (February 2009). In consideration of these recommendations, MEXT has amended the necessary ministerial ordinances (effective April 1, 2012).

The National Science Museum engages in research on natural history and the history of science and technology, and collects and preserves specimen material. In addition, the museum makes full use of research results and specimens in displays and study support activities. In the area of study support activities, various courses and observatory meetings will be implemented, while affiliation with universities to further promote student science literacy and communication skills are strengthened.

4) Promoting 'social education'-related organization activities

Amid current drastic social changes, learning in school education settings may not be sufficient in terms of an education related to important subjects of high social imperative (e.g., environmental education, consumer education, law education), hence they would require continued learning after graduating from schools. The social education-related organizations play a major role in this area, provide nationwide research, study groups and symposiums and publish public relations magazines. MEXT provides support so they may promote their activities by various means, such as information provision.

5) Towards an aging society

In the process of rapid transition towards an aging society, in order that a smooth transition into a vibrant and affluent aging society may be realized, it is vital to provide appropriate learning opportunities to senior citizens while at the same time to promote their social participation in volunteer activities, etc.

Community centers and other social education facilities function as bases for implementing classes, course and cross generation exchanges and various learning proj-

ects that correspond with the senior citizen learning needs.

3.5

Support of lifelong learning in each lifetime (from the FY2008 FY2009 White Paper, Part 2 Chapter 1 Section 3, p.91-93)

‘Lifelong learning’ is generally used as any kind of learning that citizens undertake throughout their lifetimes. Hence the term includes school education, home education, ‘social education’, cultural, sports, recreational and volunteer activities, corporate training, hobbies and other learning opportunities in various areas. Furthermore, the term ‘lifelong learning society’ is used to refer to a society in which citizens can freely choose learning opportunities and learn at any time during their lifetimes, and receive proper recognition for their learning achievements.

Recently, individual needs for learning are increasing and content is diversified and advanced. With the trends, the role of lifelong learning has become more important. MEXT promotes various measures for ‘lifelong learning society’ realization, such as the preparation of learning environments in which citizens can learn throughout their lifetimes, a supply of diversified learning opportunities and a career framework in which learning outcomes are evaluated.

1) Dissemination and cultivation of lifelong learning (All Japan Lifelong Learning Festival ‘Manabi-Pia’)

In order to promote lifelong learning, it is essential both to disseminate and cultivate the understanding of the significance of learning throughout one’s lifetime and to stimulate motivation for autonomous learning. As a part of the dissemination and cultivation efforts since FY1989, MEXT jointly holds the annual All Japan Lifelong Learning Festival with local public entities. The festival provides various events and lectures on lifelong learning. The 21st All Japan Lifelong Learning Festival “Manabi-Pia Saitama 2009” was held in Saitama Prefecture for five days from October 30 through November 3, 2009, and since its 1989 launch in Chiba prefecture

the festival has attracted approximately 224 million visitors. The festival has highly stimulated participant motivation to learn (79% of the questionnaire respondents replied they would “start some lifelong learning as a result of her/his participation into the event”). With individual prefectures creating their own unique events every year, the festival is a leading major success in the dissemination and cultivation of lifelong learning.

2) Provision of diversified learning opportunities

(1) Enhancement and development of the Open University of Japan (OUJ):

i) Core institution for lifelong learning (The description on OUJ is also shown in Chapter 5, Section 1 on page 52. As this section is a part of a MEXT white paper that was authorized by the ministry, the editor decided to retain both parts.) The Open University of Japan (OUJ) was established in 1983 with the objective of providing higher education opportunities nationwide via the effective use of broadcasting media such as television and radio, and began accepting students in April 1985.

In the second semester of FY2009, OUJ had approximately 84,000 students throughout the country, and approximately 60,000 graduates who completed the entire curriculum. Centered on the adult population the expansive age range of the students is from 15 to 90 years old. The total cumulative number of students has reached approximately 1.2 million. OUJ has played a significant role as a core institution for lifelong learning in Japan (Figure 3-6).

In order to meet growing and diversifying individual educational needs, OUJ has set up the Faculty of Liberal Arts that offers five programs (Living and Welfare, Psychology and Education, Society and Industry, Humanities and Culture, and Nature and Environment) with about 300 subjects that are not limited to the conventional academic framework so that the students can enrich their academic knowledge as well as deepen expertise to meet their real life needs.

Further aimed to foster occupational specialists, OUJ has established a graduate school in Arts and Sciences (as of 2010, six programs; Human Life and Health Science, Human Development Science, Clinical Psychology, Social and Management

Science, Cultural and Information Science, and Natural and Environmental Science) in April 2001; and it began enrolling students for graduate programs as of April 2002.

Furthermore, as of 2006 the Open University of Japan Expert (Certification System for Grouped Subjects) grants certificates to those obtaining subject groups credits in a specific field. OUI is also actively engaged in enhancing teacher qualification by providing various education-related subjects targeting specialized certificate and special education certificate acquisition.

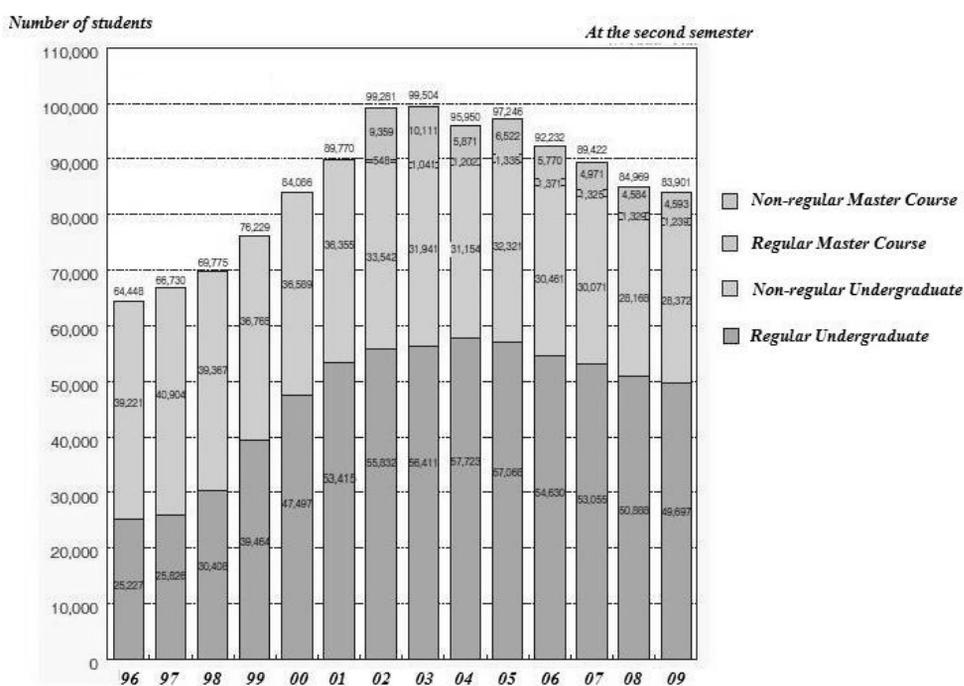


Fig. 3-6 Transition of Enrollment at the Open University of Japan (OUJ)

Distance education in higher/tertiary education is provided by broadcasting and the Internet in many countries and international collaborations and exchanges among institutions are also expanding. In October 2009, MEXT, Saitama City and OUI co-hosted the World Conference of Open University Presidents in Saitama, and the

representatives of distance universities in ten countries gathered and exchanged ideas on the role of open/distance universities for constructing a future lifelong learning society.

ii) Enhancement and development of learning environments

Lectures at the Open University of Japan are broadcasted via satellite and can be audited nationwide. Further, OIJ supports learning for students who have difficulties allocating sufficient time because of personal office/house work by providing supplementary re-audit facilities and libraries, and also by establishing at least one Study Center and/or Satellite Spaces in each prefecture to provide face-to-face classes. For the efficient utilization of radio waves, terrestrial TV broadcasting will transit from the current analog mode to the digital mode by July 24, 2011. As of December 2006, digital terrestrial broadcasting service has started covering the Kanto region including the Tokyo metropolitan area and six prefectures. This enables enhanced services utilizing the advantage of digitalization — such as Hi-definition broadcasting, multi-channel broadcasting (multi-compilation), data broadcasting, subtitle broadcasting, EPG (Electronic Program), and efficient utilization of available programs.

Following the abolishment of the National Institute of Multimedia Education (NIME) in April 2009, OIJ took over media education resources and has supported educational improvements by utilizing ICT-enhanced education in universities and colleges. To enhance student learning environments, BS digital broadcasting is scheduled to be available as of October 2011. OIJ aims to further enhance its universal access as the core institution of lifelong learning in Japan.

3) Promotion of Education at Specialized Training Colleges

As stipulated by the School Education Law, the objective of Specialized Training Colleges is to “foster the ability required in vocational or daily life, or to enrich the cultured mind”. They play a major role as educational institutions to implement

practical vocational training and specialized technical training (3,348 schools, 624,875 students, as of May 2009). The Specialized Training College is divided into three categories depending on entrance qualifications: ‘Postsecondary Course (professional training colleges)’ with a prerequisite academic equivalent of a high school graduate; ‘Upper Secondary Course (upper secondary specialized training schools)’ with a prerequisite academic equivalent of a junior high school graduate; and the ‘General Course’ that has no prerequisites.

As promotion measures for Specialized Training College education, MEXT consigned Specialized Training Colleges to conduct research and development of new educational methods to respond to issues of high social imperative, initiated a program to support students from overseas in their employment and living, promoted the provision of opportunities for various occupational experiences to recharge vocational awareness for high school students, and provided learning opportunities for job applicants (especially young people and women) to improve their employment abilities by utilizing the Specialized Training College vocational education function.

4) MEXT-certified adult correspondence course education

Among the correspondence courses held by schools and public sectors, MEXT certifies some commendable courses from the viewpoint of ‘social education’, and promotes its recommendation and dissemination. As of the end of February 2010, there are 119 MEXT certified adult correspondence courses offered by 29 organizations. The annual cumulative enrollment number for 2008 was approximately 83,000.

5) Cooperation with corporate and non-profit educational organizations

Considering that educational corporations and NPOs, as bearers of a ‘new public’, play significant roles in supporting diversified personal learning activities, their roles will be more important in the future.

MEXT launched the Lifelong Learning Revitalization Project with NPOs as Core Organizations starting in FY2008 to promote lifelong learning activities in close collaboration with such organizations. By preparing measures to shape a network among

NPOs and to support capacity-building programs for them, MEXT copes with growing and diversifying personal learning needs.

6) Preparation to accept workforce learners (working members of society) at universities and colleges (from *The FY2009 MEXT White Paper, Part 2 Chapter 3 Section 1-4, p.181-182*)

In the Basic Plan for the Promotion of Education, to realize a lifelong learning society in which everybody can learn necessary content throughout their lifetimes and continually challenge themselves, universities and colleges are requested to cope with the broad-spectrum of needs from various learners including those in the workforce (working members of society). MEXT has prepared the following measures to facilitate the acceptance of workforce learners at institutions of higher education and expand personal learning opportunities for those who want to learn at the universities and colleges while working (Table 3-1).

In FY2007, the Law of School Education was amended and a new certification system was established in order to provide citizens the opportunities to systematically learn advanced and professional content at universities and colleges and to facilitate positive social contributions by higher education institutions. Under the new system, universities and colleges can prepare certification programs (learning programs for a unit of subjects for non-regular students) and grant certificates to the participants who complete the program. As of FY2008, 48 programs were introduced at 39 universities and 8 programs at 7 junior colleges. The Junior College of Shizuoka Prefecture launched the Project for training HPS Japan that supports nursery school teachers in acquiring new skills and returning to the workforce; The Kyushu Institute of Technology opened the Program for Training Adviser Experts for ICT Implementation for Elementary and Lower Secondary Education and Lifelong Learning.

Table 3-1 The main systems for the promotion for accepting workforce learners (working members of society) at universities and colleges (*from The FY2009 White Paper on Education, Culture, Sports, Science and Technology, MEXT, 2010, Figure 2-3-3, p.181*). Survey by MEXT.

Name	Outlines	Implementation in FY2008
Long-term Registered Student	According to the student situation (such as jobholders), students can be enrolled beyond the ordinary limit of years or semesters	256 universities
Non-regular Students Enrolled to Subjects	Even non-regular students can be enrolled in a limited number of subjects in universities and earn credits.	718 universities
Evening Graduate School	Graduate school that has evening services	28 schools
Correspondence University	University that is engaged in correspondence education	24 universities
Satellite Campus	University that has remote branch campus(es) for students who have find it difficult to go to the main campus	173 universities and 25 junior colleges

Furthermore, from FY2007 MEXT started the Program to Promote Education Coping with Recurrent Needs of Workforce Learners (working members of society) and supported the development and propagation of short-term practical educational programs utilizing research and educational resources at universities, junior colleges, and colleges of technology and contributed to the re-employment and career training of workforce learners (working members of society). For example, the re-employment of nurses who had left their jobs on maternity leave was supported, and farmers were assisted in acquiring agricultural management and advanced agricultural technology know-how.

Making use of these adaptive measures, systematic education and learning opportunities will result in the diversified needs of workforce learners (working members of society) being realized.

4.1 Influences of e-Learning on lifelong learning system

1) A catalytic effect of transforming the educational system and promoting a lifelong learning model

Introduction of e-Learning has lowered the borders between educational classifications and promoted the realization of a lifelong learning model. Professor Iwanaga suggested such catalyst effects of e-Learning on Japanese educational system.

“We are now in a large-scale transition period. With the remarkable progress of information and communication technologies (ICT), the borders between various educational opportunities have begun to disappear rapidly. Especially, the barriers at the new sectors’ participation into college education, that was exclusive at the entirely different level from other educational opportunities, have lowered. Innovation in ICT is overcoming various spatial and temporal obstacles in distance learning” (Iwanaga, 2009; in previous paper, p. S34).

“In Japan, adult correspondence education started in the early period just after World War II and adult education using broadcasting was established in the mid-1980’s. However, the current change induced by ICT’s rapid progress is entirely different in the following points;

First, we have finally broken away from too much dependency on character-based media, which was accompanied with traditional correspondence universities by mail and printed materials. Now we utilize more easily visual presentation, that is effective in displaying more precise information and in motivating; second, we are now in

transition phase to two-way learning from one-way teaching that was the evitable constraint of broadcasting education; third, on-demand education is more realizable, in which learner can learn what they want at preferable time and place. In this meaning, to adult learners, media-enhanced learning can be more effective and convenient than face-to-face classroom learning.

With these changes, the borders between formal education and informal education, (that is, lifelong learning), has been less clear and the self-directed learning by adult learners has become easier. Both the development of ICT and the networking of universities will induce borderless among various educational opportunities in lifelong learning in infrastructure, human aspects and legislation” (Iwanaga, 2009; in previous paper, p. S34).

Recently, in the United States, ICT implementation into both on-site and distance education brought about active discussions on the quality assurance and accreditation. In Japan, several full-online correspondence universities, such as Cyber University, passed MEXT’s approval process for the establishment while many traditional correspondence universities that had longer histories and used ordinary mail system mainly have also begun Internet technologies. On the other hand, in the new legislation, even ‘on-site’ universities can credit full online courses up to 50% of total credits that need for the graduation and ‘blended approach’ is recognized as an effective method to harmonize with the younger generation. In the near future, many on-site universities will adopt asynchronous e-Learning in order to enclose more lifelong learners.

4.2 Governmental implementation of ICT for lifelong learning

1) Increasing opportunities for diversified learning activities for each citizen (lifelong learning, from the *FY2008 FY2009 MEXT White Paper*, Part 2 Chapter 9 Section 3, p.339)

With the change of social structures and the innovations of technologies, MEXT

promotes the implementation of ICT in learning so citizens may realize the personal capacity building of both their professional and general knowledge and to expand more adaptive learning opportunities which adapts to each learner's characteristics. Through the advocacy and dissemination of e-Learning and other ICT-enhanced education in higher education institutions, MEXT plans to provide the opportunities of continuing education to students including learners in the workforce.

(1) Establishing an enriched lifelong learning society

MEXT aims to create an environment in which Japanese citizens have a ubiquitous opportunity to learn and accordingly receive recognition of their achievements in a proper way, and promotes to provide various educational opportunities that incorporate ICT.

i) Expanding learning and education opportunities through el-Net

Coping with the expanding use of computer and the Internet, MEXT upgraded the el-Net (educational information communications network) in April 2008 by switching the platform from the previous satellite communications system to the Internet-based system (<http://www.elnet.co.jp>).

Contrasting with the former system in which the access was limited to public facilities such as community centers, lifelong education centers, libraries or schools, the new system enables users to learn beyond spatial restrictions as long as the Internet connection is available. Furthermore, by transforming the delivery from the previous schedule-based to the new on-demand services over channels 1 through 10, users can choose from a variety of the Internet-delivered content to study at any time and review repeatedly as they want. The new system also has succeeded live distribution functions for real-time content such lectures, seminars, or meetings.

Spurred by the Internet use, and taking it as an opportunity to embody its lifelong learning principle, MEXT plans to realize learning opportunities through which citizens can learn beyond the limitation of location and time.

ii) Supporting the establishment of an ICT-based lifelong learning platform

The lifelong learning platform means an administrative infrastructure which, under the collaborations with regional universities, private companies, NPOs, local authorities and citizens, offers individual learner with an environment for ubiquitous learning, consultation about learning, and/or group learning.

In order to promote the establishment of a lifelong learning platform that incorporates ICT such as the Internet, MEXT provided learning content that enables ‘relearning’ or up-skilling, and develops a learning support system (basic management application software) which has functions of content delivery, consulting and discussions essential to learning as well as an open community space for the interaction among learners. With the sustained collaborative efforts of universities, companies, and private organizations around the nation to use this learning support system, a wide variety of citizens can be expected to benefit from a more advanced lifelong learning environment.

One pilot case illustrating this initiative by a local community is the Toyama Internet Community School (<http://toyama.shiminjuku.com/>).

(2) Introducing ICT into higher education and improving its environments

The utilization of new technologies such as the Internet is expected to diversify and improve the quality of the classroom teaching in universities and colleges, as well as reinforce learning supports beyond the classroom. Various challenges are now underway in many higher education/tertiary education institutions.

Parallel with ICT developments, the number of universities endeavoring to incorporate advanced media such as the Internet into education has multiplied. For examples, collaborative teaching and online symposia were held among multiple universities or among distributed campuses in a university, and e-Learning systems supported students to take classes without temporal and geographical constraints. Moreover, a growing number of universities are providing online study-related information and using e-mail or mobile phones for questions and responses.

While private universities and colleges launched the Internet-based ‘cyber campus implementation’ project by ‘Governmental Subsidy to Private Universities and Colleges’, MEXT has supported their various operations to build up their advanced

IT environment such as multimedia facilities and campus network (intra-school LAN).

2) Educating children who will be the leaders in the future information society (elementary and secondary education, from the *FY2008 FY2009 MEXT White Papers, Part 2 Chapter 9 Section 2, p.330*)

With the rapid change toward an information society, it is more and more important that each student acquires the basic capacity (that is, information literacy) to take the initiative in selecting and using information and information tools to prepare for independent participation in the information society. Schools are also required to cope with IT movements, and students have utilized ICT such as the Internet, computers and digital cameras for the daily learning activities in the classrooms. It is also more important that teachers efficiently make use of ICT as a method for teaching to realize ‘easy-to-understand classes’ and to assure ‘steadfast academic abilities’ of students.

Furthermore, it has been pointed out that the progressively heavier administrative workloads have resulted in the decrease of teachers’ fact-to-face contact time with her/his students. The efficient use of ICT will reduce the teachers’ burden of such administrative work.

This section describes various MEXT initiatives to respond to the need for using ICT in education for the benefit of children who will be the leaders in the future information society

(1) Strengthening education for the children who should survive in the information society

Information education to foster ‘information literacy’ is important to cultivate a ‘zest for living’ in children. Therefore it is critical that it should be applied throughout various educational activities cross-disciplinarily.

Guidelines for the Courses of Study required that information education should be systematically implemented through each level of elementary, lower secondary, and upper secondary schools; instruction is included in the ‘Period for Integrated Study’,

the technology field of ‘Technology and Home Economics’, and ‘Information’ as a common subject in each school level.

The New Guidelines for Courses of Study in Elementary and Lower Secondary School were enforced partially from FY2009 and those in Upper Secondary School were from FY2010 in order to fulfill information education. The new guidelines for elementary school stipulated that schools must help children acquire basic computer operating skills, appropriately use ICT tools in learning various subjects, and help children develop information morals by focusing on relevant issues in Morals classes. The new guidelines for lower secondary schools specified that schools emphasize information-oriented educational activities to cultivate student initiative to use computers based on what they have previously learned in elementary school, and that schools attach more significance to teaching information morals during the subject for the technology field of ‘Technology and Home Economics’.

New guidelines for upper secondary schools stressed that in the common subject ‘Information’, systematized cyclic IT-oriented educational activities across elementary, lower secondary and upper secondary schools were adopted to fulfill the guidance in order to assure students developed information literacy, and a focus on ‘information morals’ learning activities was embraced to foster student information morals acquisition.

So that computer-enhanced education might advance smoothly and soundly under the new guidelines for the Courses of Study, MEXT also issued the Guideline on Using Computers in Education, in the hope that it would serve as a useful reference as schools and boards of education for teacher training as well as for work on productive measures (http://www.mext.go.jp/a_menu/shotou/zyouhou/1259413.htm).

(2) Ensuring ‘easy-to-understand classes’ and stimulating children’s curiosity and interest

i) Improving the environment for promoting ICT-enhanced education

On various measures on improving ICT environments at school, MEXT has undertaken include providing computers for education and establishing intra-school LANs (intra-school networks) for using computers in ordinary classrooms. As of March

2010, computers were provided at the rate of about 6.4 students per computer; about 65.5 percent of all of public schools had been switched to ultra-high-speed connection (30Mbps and higher); and about 81.2 percent of intra-school LANs had been completed for ordinary classroom use. Although these figures have grown on average nationwide, the rate of achieving intra-school LANs, for example, varies among prefectures between 99.7% and 43.1%.

As, in FY2009 supplementary budget, school ICT environments were improved under the ‘School New Deal’ initiative, the situations will take a turn for the better. In response to these situations, MEXT will support and endorse the commitments of local governments that are responsible for the IT environment. (For the state of school ICT environment preparations, http://www.mext.go.jp/a_menu/shotou/zyouhou/1286417.htm)

ii) Improving teachers’ competencies in implementing ICT in their teaching

In order to grasp the current state of how well teachers actually employ ICT in their teaching, MEXT conducted a survey targeting public schools based on the ‘Standards for Teachers’ Skills of ICT Usage in Teaching (Checklist)’ (http://www.mext.go.jp/b_menu/houdou/19/02/07021604), which consisted of 5 main items and 18 sub-items on teachers’ competencies. In this survey, teachers evaluated themselves with 4-point scale (‘able to do well’, ‘able to do to a certain degree’, ‘unable to do well’, or ‘barely able to do’) for each item on the Checklist. The survey findings as of March 2010 showed some items evaluated at higher levels while others were assessed at somewhat lower levels, and indicated that further endeavors were necessary (Figure 4-1). As a measure to improve teachers’ competencies in implementing ICT in their teaching, MEXT developed an e-Learning training system (TRAIN, <https://train.code.u-air.ac.jp/about.php?1265801076>) and a self-checklist system (cf. <http://training.t-ict.jp/>) based on the ‘Standards for Teachers’ Skills of ICT Usage in Teaching’ in the Program for the Promotion of Leading ICT-enhanced Education. These products are expected to utilize in seminars, courses and self-study in teacher training. Through various survey and research projects, MEXT promotes local governmental measures and school efforts. (The current state of teachers’ skills in using ICT in teaching is shown at [168](http://www.mext.go.jp/a_menu/shotou/zyou-</p></div><div data-bbox=)

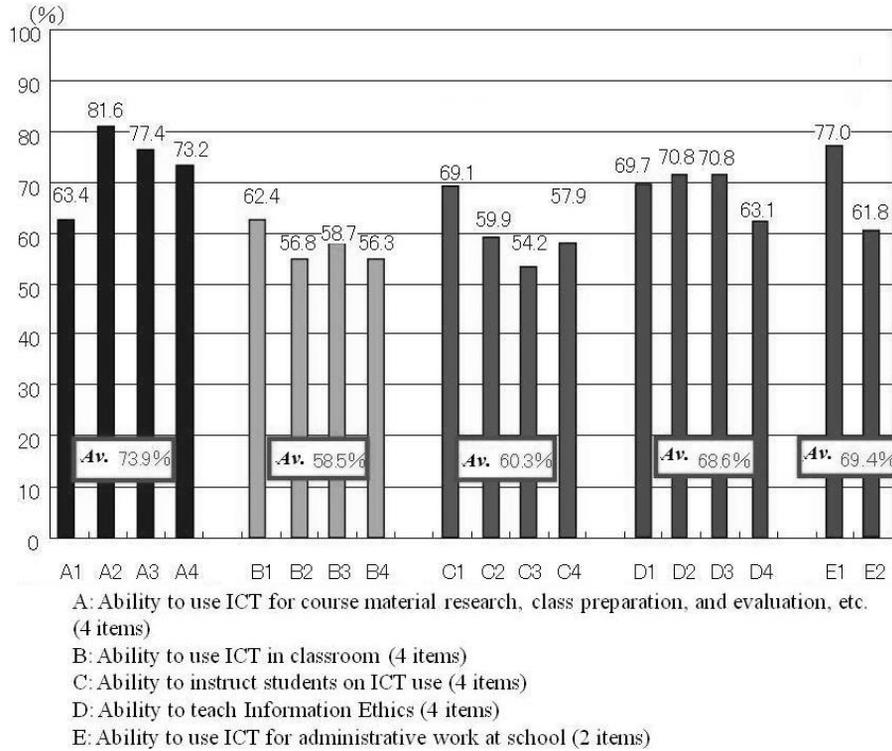


Fig. 4-1 Teachers' Skills in Using ICT in Teaching (Source: Results of a 2009 MEXT Survey on the status quo of Computer Use in Education at Schools)

Percentages of teachers assessing themselves as 'able to do well' or 'able to do to a certain degree' (that is, as a better half) of the 4-point scales in each of the 18 sub-items (A1 to E2). 'Averages' are of sub-item percentages that correspond with each main item (A to E). For A1 to E2 sub-item categorization see the Standards for Teacher ICT Usage in Teaching (Checklist)

(http://www.mext.go.jp/b_menu/houdou/19/02/07021604.htm).

iii) Ensuring 'steadfast academic abilities' of students by incorporating ICT
 A two-year research study conducted from 2005 on the effect of teaching with ICT

found that using ICT in teaching effectively stimulated the interest, curiosity and satisfaction levels of children and boosted their academic performance, while it is effective in the improving the quality of teaching in the aspect of teacher training. In order to disseminate the good practices showing the effects of ICT utilization, while holding forums to teachers and parents all over Japan in FY2007, MEXT distributed the Handbook on ICT-enhanced Teaching for Better Academic Performance (http://www.mext.go.jp/b_menu/houdou/20/07/08070107.htm) in July 2008 which summarized tips on ICT use in the classroom and advices for various teaching scenarios.

iv) A practical survey and research on pioneering and effective cases

In order to advance further ICT implementation in education, it is critical to validate the pioneering and effective possibilities in line with the rapid development of computer, information and telecommunication networks.

Based on the findings of various research studies in which it has been involved, MEXT initiated a new program to promote innovative ICT implementation in education in FY2007-2009. The 12 organizations were selected for this program and conducted three-year practical research studies. The wrap-up seminar was held in Tokyo in March 2010 to publicly announce these achievements attracted more than 200 participants including board of education members and school officials.

v) Enriching and disseminating educational content

(a) Natural Science Network

The Japan Science and Technology Agency provides digital teaching materials free-of-charge to teachers on its Rika Network website (<http://www.rikanet.jst.go.jp/>) to enrich education in ‘natural science’ and ‘science and technology’. As of March 2010, 129 teaching materials have been provided to around 48,000 teachers registered at the website. From January 2005, the version which was made open to public and accessible from households has provided for children’s study at home (<http://rikanet2.jst.go.jp/>).

(b) The Contest on Good Practices in Internet Implementation to Educational Activities

The goal of the Contest on Good Practices in Internet Implementation to Educational Activities, which has been held since FY2000, is to promote Internet-enhanced education by acquainting citizens across the nation with award-winning practices in schools and local communities which implemented the Internet in various activities (<http://www.netcon.gr.jp/>).

(c) Digital Library on Culture (Digital Archives on Japanese Culture, <http://www2.ntj.jac.co.jp/dglib/>)

The Archives provides digital educational content, which introduces the appeal of a wide variety of theatrical arts, to the public through the Internet. Information on national theatres' performance records, as well as on colored woodblock print and show bill collections, is available in the database. This project has been primarily promoted by the Japan Arts Council since FY2000.

vi) Maintenance of the National Information Center for Education Resources (NICER)

Although a significant amount of information useful in education can be found over the Internet, it is not easy to identify which information is precisely what is needed; children also face various problems in using the Internet such as the risk of accessing hazardous websites.

The National Institute for Educational Policy Research is working to maintain the National Information Center for Education Resources (NICER: cf. <http://www.nicer.go.jp/>), a core website on Japanese education. The website allows users to easily search for target information among teaching and learning sources found on the Internet through its systematically sorted 'elementary school', 'lower secondary school', 'upper secondary school', 'teacher', 'university' and 'lifelong learning' user categories. This website also offers instructional materials and good practices in the classrooms.

NICER website operation began in August 2001, and approximately 300,000 pieces of information had been provided as of March 2010. In September 2009, the search system was renewed and improved in search speed and usability. The updating of information is also continued based on the new Guidelines for Courses of Study.

vii) Supporting children with disabilities

It is imperative that the education of children with disabilities focus on fostering information literacy, and at the same time it is crucial to utilize ICT as an auxiliary means that compensates for disabilities and assists learning.

In FY2009-2010, to contribute to fostering disabled children's capacity to utilize information, the National Institute of Special Needs Education (NISE) carries out "research on utilization and evaluation of assistive technologies to cope with serious and diversified disabilities". NISE provides in-service teacher training opportunities at 'Special Needs Education Seminars' designed for prominent teachers actively engaged in schools in each prefecture across the nation. As well as distributing various information and a wide range of training video materials for the seminars organized by boards of education and the like; NISE also provides information on educational support for children with development disorders, delivers seminar lectures for teachers via the website of Information Center of Education for the Persons with Developmental Disabilities; and provides comprehensive information on its Education Plaza for Children with Disabilities portal site (<http://www.nise.go.jp/portal/index.html>).

(3) Promoting the use of computers for administration at school

There is now a call for streamlining administrative work at school to ensure better teaching. To this end, integrating computers for administrative work is justified. The computer dissemination rate for teacher use in doing administrative work as of March 2010 was 98.3 percent. Incorporating computers for administrative work at school is an important issue because it enables easier information exchange for the better coordination with parents and the local community. In this regard, MEXT will support local governments in achieving the measures. To realize an environment in which computers are used for administrative work at school, it is important that boards of education and principals take a leadership as described in 'Guidance on ICT Implementation in Education'.

(4) Preparation of the support framework for ICT implementation at schools

Developing a well-planned and systematic support system that includes ICT envi-

ronment plans and teacher support is important in both enhancing the information-oriented educational environment and inspiring teacher ICT skills. However, many school and board of education support systems were not prepared.

Given the situations, MEXT set up a new comprehensive model project for assisting ICT-enhanced education in FY2008. Under the project, the five municipalities, which had high awareness in establishing the support environment for ICT-enhanced education in each local area, were selected and supported; CIOs were assigned to schools and boards of education; ICT support team the CIO led was utilized effectively; ICT environment, such as computers, was planned systematically; and teacher training seminars on enhancing ICT teaching skills were organized.

5) Promotion of information morals education (from *The FY2009 MEXT White Paper, Part 2, Chapter 9, p.337-338*)

With the spread of the Internet and mobile phones, the hazards in which expose children to illegal or harmful information or to troubles are increasing. As children themselves were sometimes the ones who caused some problems, it was pointed out that information morals education, which cultivates children's abilities to process information properly, is indispensable. Given the situations, MEXT revised Guidelines for Courses of Study in Elementary, Lower Secondary and Upper Secondary School and decided to fulfill information morals education at all levels. Information morals education was implemented prior to FY2009 in Elementary and Lower Secondary Schools and from FY2010 in Upper Secondary Schools.

MEXT specified that students should acquire information morals in the 'General Rules' of the new Guidelines for Courses of Study in Elementary, Lower Secondary and Upper Secondary School. The common course 'Information' in Upper Secondary School consists of two subjects, 'Society and Information' and 'Information Science' (compulsory to choose either) from the viewpoint to cultivate abilities and attitudes to cope with the progress of ICT implementation into society individually. 'Society and Information' focused on the understanding of characteristics of information, that of influence of ICT implementation on society and learning activities to acquire in-

formation morals; ‘Information Science’ focused on understanding of the roles and influences of information technology to support information society and learning activities to acquire information morals.

In July 2008, the Guidebook for teaching information morals: Let’s Try Information Morals Education (<http://kayoo.info/moralguidebook-2007/>), in which good practices of teaching information morals and related links were introduced, was published on the Internet; in FY2009, the Project to Promote Information Morals Education in Schools realized sending experts to local districts, holding professional seminars on information morals and so on. Furthermore, collaborating with the association of telecommunication industries and the Ministry of Public Management, Home Affairs, Posts and Telecommunications, the seminars on the safe use of the Internet were held for parents and teachers (<http://www.e-netcaravan.jp/>).

6) Measures to protect children from harmful information on the Internet

In order to protect children from various trouble on the Internet, such as illegal or harmful information and net-bullying, the Law on the Preparation of Environments in which the Young Generation can use the Internet Safely and Securely was enforced on April 1, 2009. The law prescribed that private communication sectors should provide filtering functions and that the parents should manage children’s Internet use properly and promote the acquisition of their abilities to manage their own usage properly.

On June 30, 2009, based on that law, the Basic Plan on the Measures to Realize the Environments in which the Young Generation can use the Internet Safely and Securely was established, and it advocates education and enlightenment. On November 2007, MEXT launched The All-Japan Council for the Promotion of the Safe and Secure Network and facilitated the nation-wide collaboration of the associations of schools, PTA, the association of communication industries and so on. On March 2010, the Forum for the Promotion of the Safe and Secure Network was held as an event of the council. The advanced practices such as ‘Internet patrol in each region’ were introduced and the representatives of the experts, parents and junior

high school students exchanged ideas on the children's use of mobile phone. In addition, MEXT supports the preparation of regional organizations to protect children from harmful environments such as an 'Internet patrol in each region' and activities utilizing filtering functions.

Furthermore, as in the previous fiscal year, MEXT developed an awareness enlightenment DVD entitled Just a Moment Keitai 2 which collected crime cases, damage caused by and trouble with the use of mobile phones and distributed them to the prefecture boards of education. MEXT also published an enlightenment leaflet on the chips at the mobile phone use and delivered to all of 6-grade students (about 1.2 millions). In addition, MEXT developed another leaflet entitled Just a Moment the First Mobile Phone which introduced household mobile phone use rule-making and distributed it to the board of schools and PTA. On the use of mobile phones at school, MEXT sent a notice (On the Use of Mobile Phones and Similar Devices at School, Notice from the executive director of the Bureau of Elementary and Secondary Education, as of January 30, 2009) which specified decisions on school and school board guidance policies in line with the basic principles (one of them is to prohibit bringing them into schools) and guiding students properly.

5.1**The Open University of Japan:
Budding e-Learning for lifelong learning****1) Overview**

The Open University of Japan (OUJ, formerly known as the University of the Air in English) was established as an independent 4-year institution of higher education in 1981 and its television and radio broadcast instruction started in April 1985. Though its instruction began in April 1985, the concept of establishing a university through the use of television and radio broadcasting was initiated in November 1967. The original objectives of the University were:

- [1] to provide working people and housewives with a chance for lifelong university-level education;
- [2] to provide an innovative and flexible university-level education system open to high school graduates; and
- [3] to co-operate with existing universities and make full use of the latest scientific knowledge and new educational technology in order to offer a higher education system which matches contemporary needs (Abe, 1989).

OUJ currently has 79,056 undergraduate and 5,913 graduate students with 50 study centers located all over Japan. In April 2009 the National Institute of Multimedia Education (NIME), originally established as the research arm of the University of the Air but became an independent research institute promoting the use of information and communication technologies (ICT) in higher education in Japan, merged with OUJ and now The Center of ICT and Distance Education (CODE) serves as the

OIJ research and support division.

OIJ has a single undergraduate department, known as the Faculty of Liberal Arts. Throughout its history, OIJ has focused on a liberal arts education rather than specialized professional education. A major restructuring of the curriculum at the beginning of FY2009 resulted in its current five programs: Living and Welfare, Psychology and Education, Society and Industry, Humanities and Culture, and Nature and Environment.

The six graduate programs established in April 2001 are: Human Life and Health Science, Sciences of Human Development and Education, Clinical Psychology, Social Governance, Arts and Information Science, and Natural and Environmental Science. Students admitted to the graduate program by passing an exam consisting of an essay and interview, study in the same way as undergraduate students. However, they must author a thesis under the consultation of their advisors after they have completed all the required academic credits. The advising is usually conducted face-to-face, but at times information and communication technologies such as e-mail, discussion boards, and web conferencing are also used.

2) Technologies for teaching and learning at the Open University of Japan

In order to graduate from an undergraduate program, a student must complete 124 credits, of which at least 20 credits and at most 30 credits have to be taken by face-to-face instruction conducted at one of the study centers in Japan. Recommended weekly study activities in order to complete an undergraduate program with four years are: viewing a 45-minute TV lecture program or listening to a radio lecture program 7 times a week, reading 45-60 pages of the textbook, and attending an 85-minute face-to-face instruction at a study center. In other words, the Open University of Japan provides three types of instruction: radio or television broadcast, printed materials, and face-to-face instruction at a study center.

(1) Instructional delivery

Since its inception, OIJ has relied on broadcasting mediums as the main mode of instructional delivery. Though it has the mission ‘anytime, anywhere, anybody’, the

television broadcast of the lecturers was limited to the Tokyo metropolitan area until the broadcast through the CS (communication satellite) digital service was started in January 1998. What is also unique about OIJ among all open universities in the world is that OIJ has its own UHF television and FM radio stations.

As there was a big demand to study through OIJ programs by people who lived in those areas where the OIJ's television signals could not be received, in 1990 video study centers were built initially in Hokkaido, Hiroshima, Fukuoka, and Okinawa where registered students could watch video tapes of the OIJ television lectures and listen to audio tapes of its radio lectures. In the following few years, 14 other video study centers were built in different parts of Japan. In 1994, those video study centers were renamed as regional study centers and another 18 centers were added. When OIJ started broadcasting via digital CS in 1997, regional study centers were renamed as study centers and four other centers were added. In addition, since 1998, all study centers have accepted students in the undergraduate programs. In December 2006, OIJ also started terrestrial digital broadcasting. Again, this is limited to the Tokyo metropolitan area. Though OIJ's original application for obtaining a BS analog license did not materialize, OIJ succeeded in obtaining a BS digital license in 2009. The actual broadcasting via BS (broadcasting satellite) digital will start in 2011 when all of the analog transmissions will be terminated nationwide. OIJ will also terminate its broadcasting via CS digital when it starts BS digital broadcasting. The advantage of broadcasting via BS digital rather than CS digital is that BS digital has been much more widely implemented than CS digital in regular households. As of 2007, only about 6% of the total households in Japan are equipped with the antenna and receiver to receive CS digital satellite signals while about 26% of them are equipped to receive BS digital signals.

(2) Learning materials

In addition to the broadcast of lectures via television and radio, OIJ provides students with printed materials for each course. All the printed materials are made at OIJ by the faculty members who are in charge of each course. The number of the students who rely solely on printed materials and do not watch television programs or listen

to radio programs to graduate is increasing. Production of all the printed materials is done through the Society for the Promotion of the University of the Air (SPUA), which is a subsidiary of the Open University of Japan.

(3) Production

OUI started producing all the television programs in digital format in 2006 when it started digital terrestrial broadcasting. It also started production in HDTV format and since then it has been expanding the number of programs produced in HDTV format. Some OUI programs take advantage of the HDTV format and offer high quality visuals. In addition, digital broadcasting allows providing additional data information and OUI is planning to provide supplemental information to facilitate the understanding of the television lecture program via such data channels.

Making an OUI television program course usually takes three years. Usually a proposal is submitted in the fall and the decision is made in the following summer. Then in the summer, course team members meet for the first time to discuss the general outline of the program. A course team usually consists of a chief lecturer who is usually a full-time faculty member of OUI, a faculty member who is responsible for overseeing the entire process, and a producer who is responsible for the actual production process of the program. Producers are usually those experienced in directing educational programs in NHK. They spend the next eight to nine months developing a detailed course outline and then spend one year to actually produce the program.

A course usually consists of 15 45-minute video programs or radio lecture programs which are usually broadcast one 45-minute program per week. Once the programs are made, they are expected to be broadcast for four or six years. In 2008, a total of 350 programs (179 television programs and 171 radio programs) were broadcast during the first semester (from April to July) and 357 programs (182 television programs and 175 radio programs) were broadcast during the second semester (from October to January). Most of the programs are broadcast twice a year.

In the early days of OUI, television programs were made by filming the actual classroom teaching scenes, but the style has changed to focus on a teacher talking to

the camera. It has been considered that in this way a learner who watches those programs may feel more like being directly addressed by the teacher instead of observing a classroom interaction as a third party. In addition to the speaking teacher figure, photographs, video clips, computer graphics, and tables and charts which are printed on a board are often used to supplement the lecture.

(4) Teacher-student interaction

At OIJ, direct teacher-student interaction usually happens only at study centers. If students have any questions regarding the broadcast programs, they have to send an inquiry to the head office via postal mail or e-mail. Then, the head office forwards the inquiry to an appropriate professor for a response. With the use of Internet tools such as the Campus Networks described below, more direct communication between teachers and students online will be expected in the near future.

For the broadcast lecture programs, there is a mid-term report assignment for which students have to answer questions posed by the teacher. The whole process is still print-based; A student turns in the report by postal mail and the teacher grades and comments on the report and returns it to the student by postal mail. A student has to pass the mid-term assignment in order to be eligible for taking the final credit authorizing exam. The final credit authorizing exams are conducted at study centers around the country.

3) Current technological usage issues

Due to the prevalence of the Internet, student demands to deliver the broadcasting programs online has been increasing. OIJ started video-streaming some programs in 2008 and currently in 2009 19 video courses are available online to students as streaming video. Efforts have been made to increase the number of video lectures available online; however, there still is a strong opposition to doing it among faculty members and it has been quite difficult to obtain the permission from lecturers who appear in the video programs to make it possible.

Besides the use of the Internet for making television programs available anytime, anywhere, the Internet has been used mainly in the following two functions: to facili-

tate communication between teachers and students and among students; and to make the university administration effective and efficient. The former is the Campus Network where teachers can post announcement about their classes and the corrections of printed materials, students can have access to the streaming audio and video programs and the archive of theses written in the past, and students can also download all the forms necessary for administrative processes. It has also been used for advising graduate students in their thesis writing processes offering such Internet tools as e-mail and discussion boards.

In addition to the asynchronous communication tools, video conferencing has been also utilized for advising graduate students in the past several years. At the beginning, the system only connected teacher offices and a study center. But, the system has evolved over the years and now the web conferencing system can connect multiple points simultaneously and students can access it from their own home through the Internet.

‘System Wakaba’ is an Internet-based computer system which manages student services, such as course registration and grade reports. But, the system preceding System Wakaba was only accessible by the OIJ administrative staff and even teachers did not have access to the system. As the critical personal information of all students is stored in the system database, great care has been taken in making the system accessible to teachers and students. Implemented in April 2009, System Wakaba enables existing students to access their grade records through a web browser and to register for courses online. Through this system, teachers can access student information or enter the course grade information directly anywhere through a web browser.

With the increasing use of Internet tools, training students to use such tools effectively is an issue. Regular universities, where a majority of students are young people who have just graduated from high schools, may have fewer problems in training students to use such information and communication technology tools as they have grown up in the digital age. However, a majority of OIJ students are over 40 and are not very familiar with such ICT tools and providing them with training opportunities so that they obtain the skills to utilize ICT tools effectively for learning at OIJ

is imperative. Information literacy courses at most of study centers are currently prepared to raise the ICT literacy level of OIJ students.

4) Future directions

As described above, OIJ has a unique history and characteristics which distinguish it from other open universities around the world. However, the instructional system relying primarily on one-way broadcast media has its limitations in today's digital world where education is also expected to be interactive between teachers and students and among students. Broadcasting, especially television instruction, has a given perception of authenticity and credibility in instruction among students and potential students. Therefore, the production of such television programs has given a priority to the appearance of authenticity and credibility rather than to educational outcomes. However, in order to attract an increasing number of younger students, OIJ has to reexamine its educational system. With the start of broadcasting over BS digital channels in 2011, the fundamental structure of teaching and learning at OIJ needs to be reexamined. OIJ should serve as a role model as the most innovative education provider in the Japanese higher education system.

(Authored by Kumiko Aoki, Professor, the Open University of Japan)

5.2 Japan Opencourseware Consortium (JOCW): A Japanese OER movement

This part is based on the following paper by courtesy of Professor Yoshimi Fukuhara, the author and the executive director of the Japan Opencourseware Consortium. Fukuhara, Y., "OpenCourseWare in Japan: History, current status and perspective", Paper presented at OCW Global Conference, May 5-7, 2010, Hanoi, Vietnam, 4 pages.

1) Introduction

OCW is a free and an open publication of course-material on the Internet, which was originally planned and promoted by Massachusetts Institute of Technology (MIT) and has been having a huge impact on higher education all over the world. MIT completed publishing of all existing courses on November 2007. Since 2005 MIT has invited many other universities in Japan to launch OCW as well as those in other countries, and six major universities, Keio University, Kyoto University, Osaka University, Tokyo Institute of Technology, the University of Tokyo and Waseda University, decided to launch OCW and had a joint press conference on May 13, 2005 to announce the launching of each university's OCW web-site and the establishment of the Japan OCW Alliance which aimed to exchange information, experiences and issues in order to cooperatively move OCW activity in Japan forward. One year later, in 2006 we changed the role and position of JOCW from a closed forum to an open organization. We also changed the formal name of JOCW from Alliance to Consortium. At the beginning members were restricted to universities (regular members) and related non-profit organizations (associate members) but at the end of 2007 we enlarged the membership to private sectors (affiliate members). Nowadays (February 2010), forty-two organizations (twenty-four universities, three NPOs and fifteen companies) are official members of JOCW. Since 2006 we have also conducted four annual public opinion polls concerning OCW in the form of Internet research. Through these surveys many favorable findings were clarified. For instance more than 90% of people supported OCW and more than 80% of people would like to use OCW materials for their own learning. This paper addresses JOCW history, its current situation and perspectives including detailed public opinion poll results.

In terms of OCW activity currently many universities have been opening up their lecture notes not only in the form of text but also in the form of movies.

2) Significance of OCW

The significance of OCW can be classified in roughly two aspects, one is the pro-

vider's point of view and the other one is the end user's point of view. First from the provider's point of view, it is said that universities should play an important role in the 21st century to provide accumulated knowledge as one of their social responsibilities. In order to realize that mission, the central university unit recognizes the importance of driving information disclosure and they must lead society based on their knowledge accumulation and its dissemination as a core knowledge society member. However since the subjective consciousness of each faculty towards information disclosure is not necessarily high, the introduction of OCW, which has been achieving broad recognition and acceptance, can accelerate faculty awareness-raising on information disclosure. Information provided through OCW possesses high reliability and represents each university's education and research characteristics, and because it is a part of the formal course actually provided in the university, the value of OCW site as an advertisement media is not low. This effect has been approved through a survey by MIT. (1) The qualitative improvement of the lecture itself could also be expected due to the progress of information disclosure. In Japan lectures have been closed in the classroom for many years and although evaluation by the student has been partially introduced, improvements have been dependent upon the self-help efforts of each lecturer. Nonetheless, information disclosure can lead to the objective evaluation about lecture quality and it might cause essential improvement on the quality of the lectures. It is also expected that correct understanding of faculty about intellectual property rights will grow and the portion of original lecture content will increase.

Regarding the significance from the users' point of view, there are several sorts of users and the significance might be different depending on their purpose and position. Particularly since the role of the university has gradually changed from providing a higher education opportunity to high school graduates to providing a lifelong learning opportunity to full members of society, an enriched virtual environment is strongly required for the university to provide effective and efficient learning methods. When we plan for providing an education opportunity to a member of society, the number of persons wanting to acquire specific skills or knowledge relying on current needs or career developing plan will be higher than that of new high school graduates.

For such a case a university must be selected not by the reputation of the public but by the content actually provided. OCW activity can meet such needs. Since OCW can provide new high school graduates with a real university education aspect, they can select a university by the content. For foreign people planning to come to Japan to apply to a university, OCW can provide the correct information for selecting the university and it could be an advantageous system for matching foreign students and universities. Moreover for educators, OCW can provide high quality educational resources and they can create and improve their lectures by using and modifying those resources with materials provided through OCW.

3) Current status of OCW in Japan

JOCW started with six universities in 2005 as a closed forum and by 2006 JOCW had evolved to an open organization, primarily for universities wanting to launch OCW, with nine universities and one national organization. In 2007 JOCW has enlarged its membership to private sectors and introduced annual fee system in order

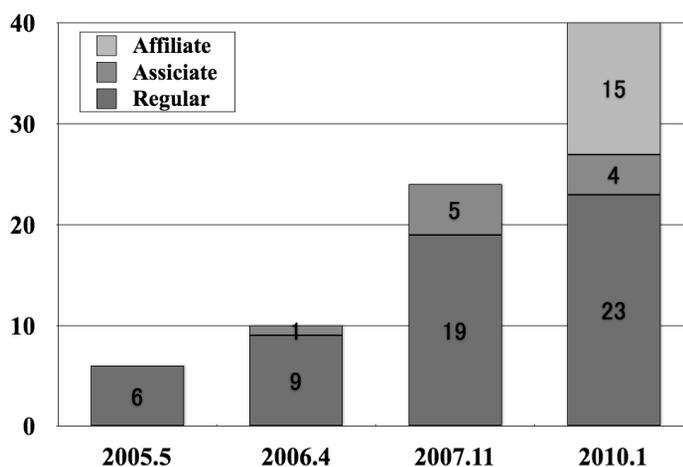


Fig. 5-2-1 JOCW membership

to ensure operation. As of April 2008, JOCW membership included forty organizations, made up of twenty-two universities, five NPOs and thirteen companies

(Figure 5-2-1).

Initially, the total number of OCW courses distributed from Japan was 153, 96 courses in Japanese and 57 courses in English. As of April 2008 the total had grown to 878 courses, 806 courses in Japanese and 172 courses in English (Figure 5-2-2).

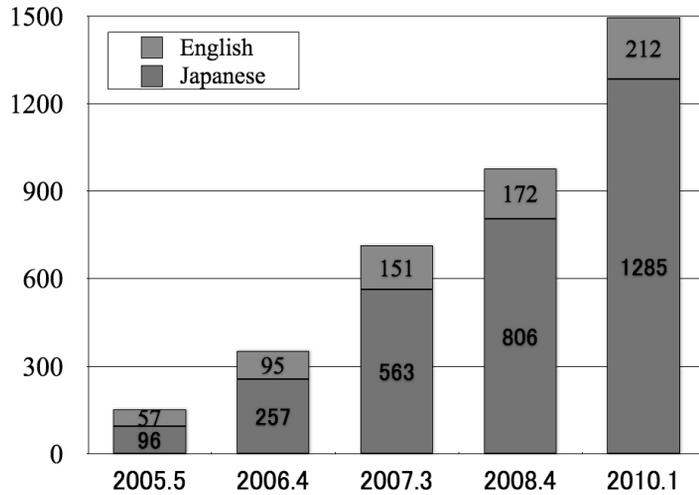


Fig. 5-2-2 OCW courses from JOCW

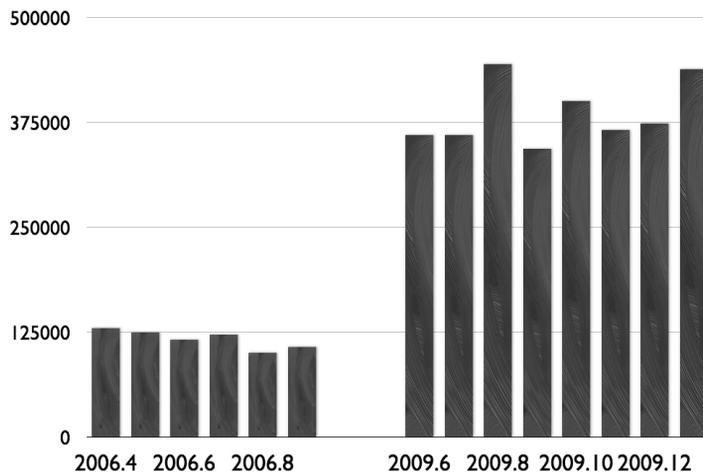


Fig. 5-2-3 Monthly visitors to all JOCW sites

According to the increase in total OCW courses, it is expected that more courses

can be matched with user needs. Actually the number of visits to the respective university OCW sites was about sixty thousand per month at the beginning excepting the abnormally large number caused by the media exposure, but by April 2008 the monthly total had increased to three hundred thousand. Figure 5-2-3 shows the collective number of visits to all JOCW member sites.

4) Public Opinions Poll

We have carried out public opinion polls annually since the first one in 2006. The surveys were conducted as a form of Internet research, which was distributed a thirty-seven question questionnaire to twelve hundred examinees on the Internet. A summary of the survey results is as below.

- (1) More than 90% gave positive evaluation to opening up university lectures.
- (2) Awareness of OCW is gradually increasing.
- (3) Persons who would like to use OCW contents for personal learning amount to more than 80%.
- (4) Two-thirds of respondents answered that as many universities as possible, regardless of whether they are national, public or private, should launch OCW.
- (5) Ranking of discipline for OCW is Economics (30%), Letters (27-28%), Business administration (23-27%), Information science (22-25%).

Q1. How do you think about this activity?

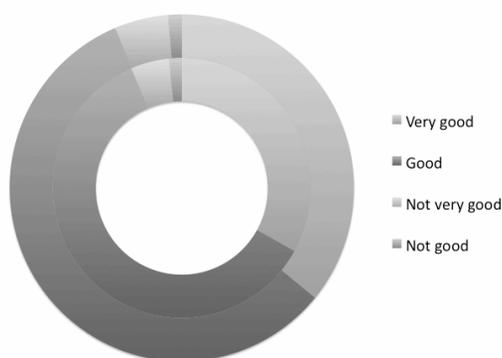


Figure 5-2-4-a A sample opinion poll: inside circle shows 2009 and outside 2010

Q35. Do you want to watch lecture movies of extension lecture close to your home if it will be provided on the Internet?

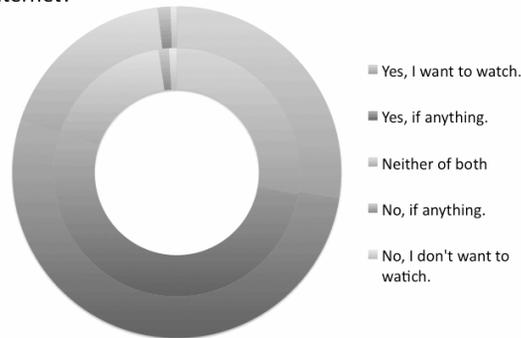


Figure 5-2-4-b A sample opinion poll: inside circle shows 2009 and outside 2010

5) Issues and perspectives

There are some issues to be solved in order to move forward OCW activity and these issues can be categorized as follows: 1) Intellectual property rights-related issues, 2) Project sustainability, 3) Improved visibility, 4) User evaluation and feedback, 5) Language barrier

In detail for each issue, firstly regarding intellectual property-related issues, since the citation of copyrighted material is allowed by law for educational purpose only in a limited environment like a classroom, but not allowed for the general public like on the Internet even for educational purpose, many cases require the from publisher and/or original author permission for use. Many faculty members still have no deep exact IPR understanding because closed classroom lectures have been conducted for so many years. Concerning IPR for content like OCW, although Creative Commons is becoming popular in the western countries, it does not fit with the conditions of our country and a more suitable scheme has to be considered.

Secondly, the sustainability issue regards the total OCW project operation cost. If OCW is considered as a replacement of an existing program, it could be evaluated by whether or not the total cost can be reduced. However, if it is positioned as a new program, the appropriateness of additional cost must be explained as an eco-

nomical measure for evaluation. Currently no definite measure for evaluation has been established for OCW projects.

Thirdly elevating OCW awareness is necessary both internally and externally. An internal penetration of correct OCW understanding is essentially needed to drive it forward as a continuous program and as such, evaluation should be carried out from various points of view. A compulsory university scheme is not enough to obtain faculty support. External recognition is also necessary to make OCW into a social infrastructure leading to the continuity of this program.

Fourth, user evaluation and feedback is essentially required for every service in order to continue stably. Particularly because OCW is an open and free formal university course publication, it has not involved an internal user opinion-gathering scheme and has thus been denied faculty follow-up. Even if it is free and open, the down-to-earth gathering of user opinion should not be ignored in order to make the program stable and continuous.

Finally, the language barrier issue is very important and difficult for every global information dissemination project in Japan, and in particular because most university lectures are provided in Japanese for Japanese students, few lectures are provided in English. So when considering discriminative information dissemination through OCW, a translation process is inevitable. It nonetheless requires professional skill and knowledge both for language and specific domain. It might be too tough for each organization to handle and some collaborative work might be a good solution in solving this issue.

Far from being independent, the issues from 1) to 5) mentioned above are closely related to each other and as such a comprehensive approach is required in clarifying them and moving them forward. From this point of view the role of the Japan OCW Consortium will be more and more important.

6) Conclusion

A decade has been passed since the start of the 21st century, the so-called knowledge century, and OCW activity has just stepped into a second stage, from MIT's stand-alone activity to a global common scheme. In Japan the number of involved

universities scaled up from six to twenty-four, and the Japan OCW consortium has just started as a large-scale consortium under academic-industrial cooperation. The huge possibility of OCW has been clarified through opinion surveys. After a two-year trial some issues has been clarified and the accumulation of know-how has started. We would like to share these issues and know-how through the consortium and work to promote OCW as a continuous and worthwhile project.



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(Yoshimi Fukuhara, Professor, Keio University & JOCW)

5.3 NPO CCC-TIES consortium: A collaboration among private universities to share the quality learning resources

TIES was originally launched as a collaborative inter-university framework to improve teaching and learning. In reorganizing into a Non-Profit Organization (NPO), CCC-TIES groped for new lifelong learning missions. In 2008, TIES had an interim project with SANKEI Newspaper called Sankei e-college: Minna de Daigaku. According to its prospectus, the individuals it targeted ranged from high school students to middle-aged and senior citizens and its development was expected to be a main lifelong learning platform in the Japanese e-Learning market (Figure 5-3-1).



Figure 5-3-1 The Sankei e-college: Minna de Daigaku site top page

This part was based on the following papers by courtesy of Professor Koichi Nakajima, the author and the founder of the TIES consortium.
 Nakajima, K., and M. Hori, “How to Integrate Mobile Technologies with an eLearning System”, the 2nd IEEE ICCSIT 2009, August 8 - 11, 2009, Beijing, China, Proceedings pp.319-322.

1) TIES Community

TIES is a homegrown teacher-centric ‘eTeaching-cum-eLearning’ system developed since 1996 at Tezukayama University. It currently has been hosting more than 1,000 teachers and 50,000 students at 74 universities in Japan as shown in Table 5-3-1 (<http://www.tiesnet.jp/>).

Table 5-3-1 TIES Community Growth

Years	2005	2006	2007	2008	2009	Feb 2010
Institutional users	20	33	51	66	73	74
Instructors	82	130	320	801	907	1,016
Students	2,981	7,321	15,099	32,935	46,667	50,409
Lectures	103	205	548	817	1,053	1,305
Video lectures	0	0	660	1,879	3,212	5,988
Sharable content	3,313	7,226	9,861	15,429	20,801	26,714
Lectures open to the public	29	78	134	186	228	265

1) TIES System

The TIES system has a unique design like one seen in Figure 5-3-2.

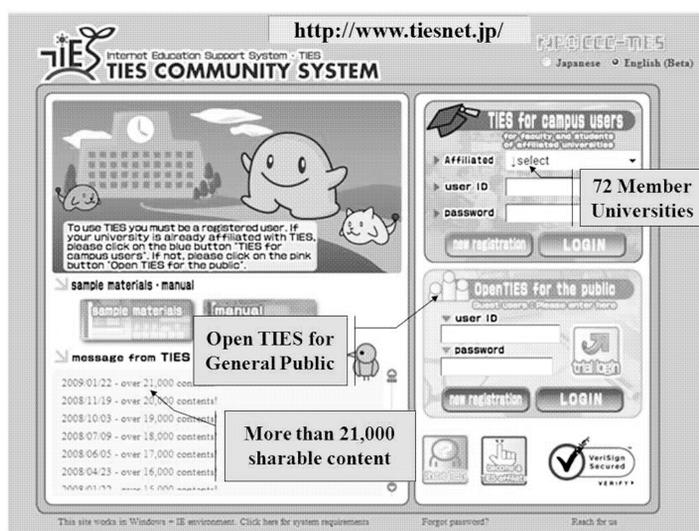


Figure 5-3-2 TIES Login Page

TIES has all the basic e-Learning functionalities as well as totally integrated sub-systems such as live video recording, e-Portfolio and e-Assessment, among others. TIES offers a user friendly interface and many unique features as seen in Figures 5-3-2 and 5-3-3. They are: (1) one-click calendar-based access to all the necessary tasks for students, (2) a totally integrated live system enabling a teacher to place its icon anywhere in a TIES class and which then automatically records and uploads the lecture as a video for students to review, (3) a feature that automatically generates a URL tag for any content created in TIES to be used anywhere in the Web such as for a blog, e-mail, homepage, or other eLearning system, and (4) an integrated task management system enabling students to build their ePortfolios, among other tasks.

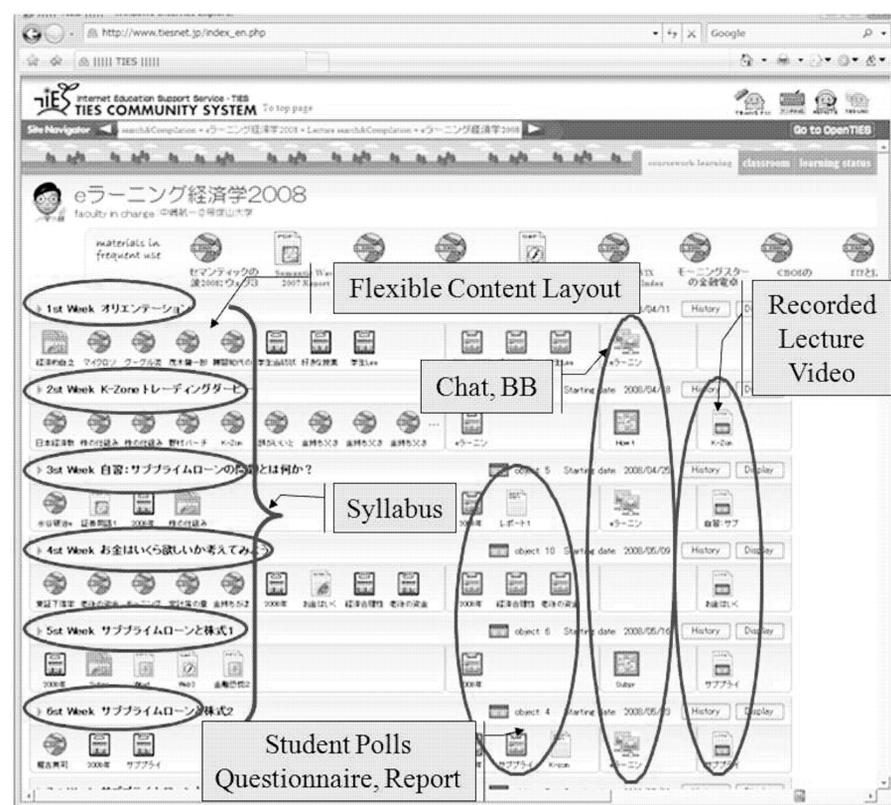


Figure 5-3-3 Flexible and Visual Course Management

A Web educational system like TIES must be evaluated from a Web 2.0 perspective by following O'Reilly's article, where he uses the evaluation lists of Web 2.0 Meme Map and Christopher Alexander's 'A Pattern Language' [1]. We have conducted an assessment of our TIES system according to these, and realized that one of its weaknesses lies in the lack of 'software above the level of a single device' [2]. That is, we need to make TIES available in mobile devices for today's ubiquitous mobile learning. This is another factor to motivate us to initiate our mobile learning project.

2) TIES system features

In order to accommodate the new ICT style of students, we have developed a project to effectively motivate students to use mobile devices for learning and educational purposes. We were also interested in this project to see if it was possible to use mobile technologies to change the fragmented day-to-day learning habit of students to achieve more efficient and accumulative learning.

Furthermore, while many activities outside of school are all a relevant part of the curriculum to enhance student learning experiences, it used to be extremely difficult to keep track of what students were doing. Thus, we also focused on how to use the new mobile technologies to assist faculty and staff to organize and supervise off-campus programs without actually accompanying the students.

First, we used our TIES system live feature to enable students to use their cell phones as a TV conference device for live communication among students as illustrated in Figure 5-3-5. A student appearing in the top window of the TIES Live system was walking on campus with a cell phone, and communicating with other participants through voice and sending his surroundings via his cell phone camera. We also used the phone GPS feature to further ease the practice of monitoring off-campus student activities.

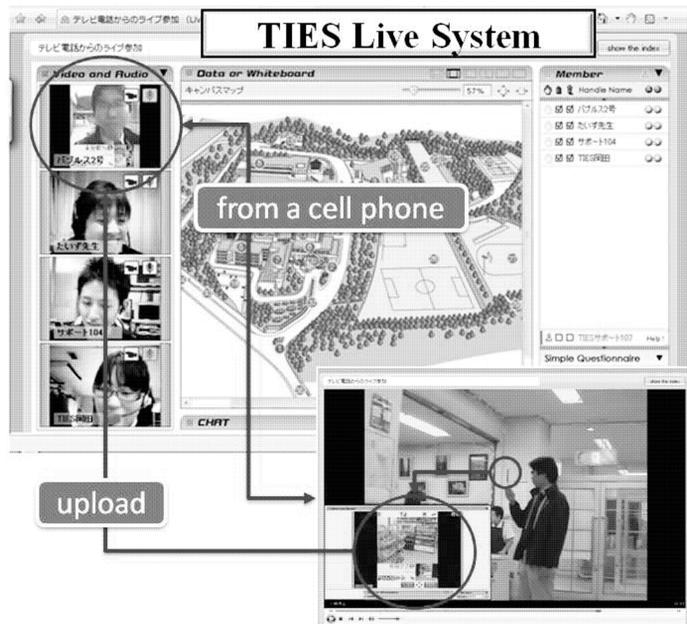


Figure 5-3-5 A cell phone used with the TIES Live System

Students were certainly more receptive to the use of cell phones and smart phones than laptops or net PCs, when they combined synchronous classroom lectures, online live lectures and asynchronous VOD learning with mobile devices.

Next, free streaming servers like Air Cam and Orb were used to broadcast TIES live lectures on iPod Touch and iPhone, so that students could access to live classes without carrying a heavy laptop PC in the off-campus environment. Furthermore, since many TIES teachers today use the TIES Live system, currently more than 3,000 video lectures have been accumulated in the video archive. Hoping that these video lectures, when used appropriately, may become useful review content to improve student learning retention, we were also interested in finding out how to motivate students to view video lectures more willingly.

One way to stimulate students to join an extra curriculum lecture and/or study archived videos for review is to enable them to access to the content through their mobile devices.

Figure 5-3-6 is an example of delivering a lecture video to an iPod Touch using

Air Cam (<http://www.sensitic.com/>). A student with an iPod Touch in a Wi-Fi environment can download video lectures from TIES just like Apple ‘podcasting’.



Figure 5-3-6 TIES content download to an iPod Touch via Air Cam

Having done this experiment, we have realized that although the iPod Touch screen size is generally bigger than a typical cell phone, the PowerPoint font size, for example, needs to be reframed for a mobile device to be more legible.

Figure 5-3-7 is another example of how to send a TIES live lecture to a cell phone via Orb (<http://www.orb.com/>). Orb provides a free streaming service that enables a PC as a streaming server to push almost any digital content as well as TV programs in the hosting PC to many mobile devices. Since we used the most recent cell phone with a high resolution screen monitor in the case of Figure 6, the live video looked sharp and relatively large size fonts were legible. Thus, it may be possible for the existing TIES content to be recycled for mobile content without too much reframing.



Figure 5-3-7 TIES Live to a cell phone via Orb

The next example in Figure 5-3-8 is how to use a micro projector with a mobile device in an off-campus environment.

It is often the case that students do not like to carry a heavy laptop PC during their off-campus activities. Then, suppose we keep an on-demand Orb system at a university office to run the TIES live system to a group of students attending, for example, an off-campus internship. If there is access to a wireless communication network at their location, and if a student needs to contact his supervisor for advice, he calls his supervisor to request TIES live broadcasting via Orb. Then, he connects his iPod Touch or iPhone with a micro projector and displays its TIES live screen on the wall so the rest of the team can watch their supervisor's advice online and share it like an Internet TV conference.



Figure 5-3-8 Micro projector for a TV conference

As our last example, we illustrate how we asked a student to use a digital pen and a cell phone to get an assessment by his off-campus activity evaluator as in Figure 5-3-9.

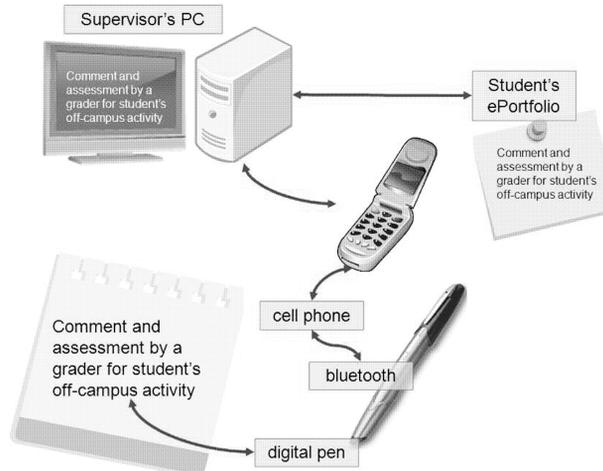


Figure 5-3-9 A digital pen for assessing off-campus activity

A digital pen with a built-in camera at its writing tip to record user hand-written text can synchronize the data via Bluetooth to a cell phone. We use these features of the digital pen to transmit the data from a student's cell phone to the TIES server. TIES server then enables the student's supervisor to view the note sent from the student's off-campus location, while automatically uploading it to the student's ePortfolio for storage and review.

(Koichi Nakajima, Professor, Tezukayama University and the TIES consortium)

5.4 The Accreditation Council for Practical Abilities (ACPA)

The Accreditation Council for Practical Abilities (ACPA) is a non-profit organization established in 2003. Its main functions are to facilitate the distribution and exchange of quality learning content among universities and corporations through common standard certification and accreditation. ACPA is a member of The International Network for Quality Assurance Agencies in Higher Education (INQAAHE, <http://www.inqaahe.org/>).

This part is based on the following paper by courtesy of Dr. Akira Kurematsu, the principal author and the former executive director of ACPA.

Kurematsu, A., Sakamoto, T., & Shubiki, Y., "Towards a Framework for the Quality Assurance of Practical Skill Ability", Presented paper at INQAAHE 2009 Conference, 13 pages.

1) Introduction

(1) Importance of practical capability in higher education

The Importance of Practical Capabilities in Higher Education

In the present-day knowledge-based world, the enhancement of competencies, which

involves the combination of knowledge, skills and human behavior, is essential for the accomplishment of a wide range of occupational abilities now required both by companies and in broader society. These include basic academic skills, such as literacy, foreign language, math, and science skills, as well as the ability to use information and communication technology.

In Japan, companies have implemented enterprise-level training targeted at developing specific skills, but only after an individual has already been formally employed. The recent difficult circumstances in business, however, has made the implementation of adequate training problematic, leading to the need for the investment of a capable person able to immediately redress this situation. In addition, skill mismatches continue to arise between university graduates, who will have already received a general education at school, and the skill demanded by the companies.

The demand for practical ability competence in higher education is increasing as a consequence of this mismatch in skills, especially in industries where information systems or embedded systems in electronic products are well developed. At universities, courses in practical abilities in collaboration with industry and in some cases, topical advanced contents and instructors are provided by the company. In the advanced technology area, companies already provide training and are increasingly involved in developing both occupational standards and curricula.

The competency of an individual can thus be improved in relation to the associated demand for a skill that can be readily matched to the new technologies and existing trends in globalization. As the learning of practical skills includes the ability to use information and communication technology, literacy, foreign language, business management and human communication, ICT can help facilitate such competence in various ways through computer simulations. Skills analysis of the real data based on real world situations are therefore important for the realization of new ideas.

(2) Sustainable tertiary education

In higher education, tertiary education should necessarily be improved, because it plays a vital role in the functioning of knowledge-based economies and democratic societies. In this respect, tertiary education is crucial for the effective creation, dissem-

ination, and application of knowledge as well as the improvement of technical and professional capacity. Tertiary education systems are to be adequately prepared to capitalize on the creation and use of knowledge.

As to improving general human capabilities when an individual is already employed by a company, courses on literacy and communication skills can be provided that will help promote personal skills to those seeking employment; this, however, would require a consistent approach to improving an employee's ability. Workers will need to advance competencies required for longer careers. A higher level of competence is required in order to take advantage of the new technologies and adapt to the challenge-based economy accordingly requires mastering new kinds of knowledge and different types of skill.

In a rapidly changing knowledge-based age, workers also constantly need to acquire new skills. Moreover, with the recent global proliferation of computer and communication technologies, the importance of the production and management of knowledge has become increasingly important to the extent that it now influences working practices on a worldwide scale. Corporations are spending much more on training in an attempt to increase and remain competitive in response to the growing knowledge economy. The latest innovative techniques that foster progress need to be learned at the right time in order to keep up with, and not fall behind, leading trends. Professionals expecting promotion are therefore now obliged to learn new skills and become lifelong learners that involves keeping up to date with new knowledge and technology. Tertiary education in the area of practical education contributes to building up an individual's capacity to participate in an increasingly knowledge-based business environment. Workers must be able to use these skills effectively, act autonomously and reflectively, and join and function in globally distributed heterogeneous groups. In this regard, companies prefer to hire workers willing to constantly update their skills on a lifetime basis. Tertiary education takes the lead increasing the intellectual capacities on which knowledge production and utilization depend on and also helps promote the lifelong-learning practices necessary for upgrading knowledge and skills. It is therefore essential that high-level business capability in relation to technical progress and lifelong learning is taught through tertiary education.

The principles of lifelong learning are listed as follows.

- Educators are guides to sources of knowledge.
- People learn by doing.
- People learn in groups and from one another.
- Assessment is used to guide learning strategies and identify pathways for further learning.
- Educators develop individualized learning plans.
- Educators are lifelong learners. Initial training and ongoing professional development are linked.
- People have access to learning opportunities over a lifetime.

Education providers need to respond to these needs by creating education and training systems that equip people with new and appropriate skills. An increasing number of tertiary institutions are offering part-time, evening, weekend, and summer courses to meet the needs of working adults. New providers—private sector trainers, virtual universities, international providers, corporate universities, educational publishers, content brokers, and media companies—have arisen to complement and challenge traditional institutions.

Quality assurance in tertiary education is important since the outcome of learning must be effectively demonstrated. Quality assurance systems need to recognize the range of formal and informal settings in which learning takes place. Quality assurance systems need to provide opportunities for learners to demonstrate their newly acquired skills and knowledge. For learners, information about the offerings and performance of providers will be required. Quality assurance systems are needed to assess learners and inform providers accordingly. Quality assurance systems can make it easier for learners to move among different types and levels of learning environments.

In order to assure the quality of practical business education, the structure of a quality assurance is important. A framework is needed so that tertiary education institutions can become more innovative and more responsible to the needs of a globally competitive knowledge society and to the changing labor market requirements in relation to a more advanced human resource base.

2) Framework of quality assurance in practical education

Practical education for the training of young and adult employees alike is required so as to ensure that the education is adequate, coverage is sufficient, and access is equitable. In order to assure the quality of practical business education, a quality assurance structure is important because practical education is extremely diverse. This is because most of the initiatives and measures are undertaken by private enterprises or private institutions.

Private education providers, including learning institutions and industries that are developing content, are playing a growing role in practical education. Distance education is one method by which institutions or suppliers can offer more flexible learning opportunities. In such situations, mechanisms for certifying the courses, assessing the achievements of learners, investigation of institutional and system performance, as well as promoting of learning pathways, are important.

In this chapter, the framework by which quality assurance in the practical education undertaken by ACPA will now be described.

(1) ACPA

The Accreditation Council for Practical Abilities (ACPA) is a non-profit organization established in 2003 in Japan with the support of the government, corporations and higher education institutions such as universities. Its objective is to establish a new educational system and a practical ability certification system through cooperation between the government, industry and academia, and to conduct activities aimed at nurturing human resources needed by industries. [1]

(2) ACPA Operations

The ACPA functions as an intermediary to promote collaboration between three parties—companies (human resources and training departments), educational institutions (e.g. universities, companies), and individuals.

The activities of the ACPA are listed as follows:

- in relation to companies—listening to and receiving presentations about a

company's human resource requirements:

- in relation to educational institutions—approving the institutions, and assessing and assuring the quality of their courses offered:
- in relation to individuals—certifying the skills acquired by those taking high-quality courses.

Toward this objective, the ACPA performs certification and accreditation of courses, course providers, educational institutions, lecturers, and trainees based on the criteria established by the ACPA.

(3) Certification and Accreditation

The ACPA certifies personnel training courses, educational institutions, and qualification tests based on its evaluation criteria with the aim of nurturing human resources capable of executing tasks professionally (practical abilities). The ACPA also issues certificates to individuals who complete a certified course or pass a certified test which signifies that they have acquired the knowledge and skills required for their occupation or assignment.

The human resource development model in relation to certification and accreditation services provided by the ACPA is shown as in Figure 5-4-1.

Qualification tests are awarded with certification when they are recognized as effective in determining the practical ability level of each individual. ACPA promotes certification and accreditation services for institutions providing a high-quality educational environment (course materials, curricula, etc.).

The following certification and accreditation services were launched in April 2006, and are currently available.

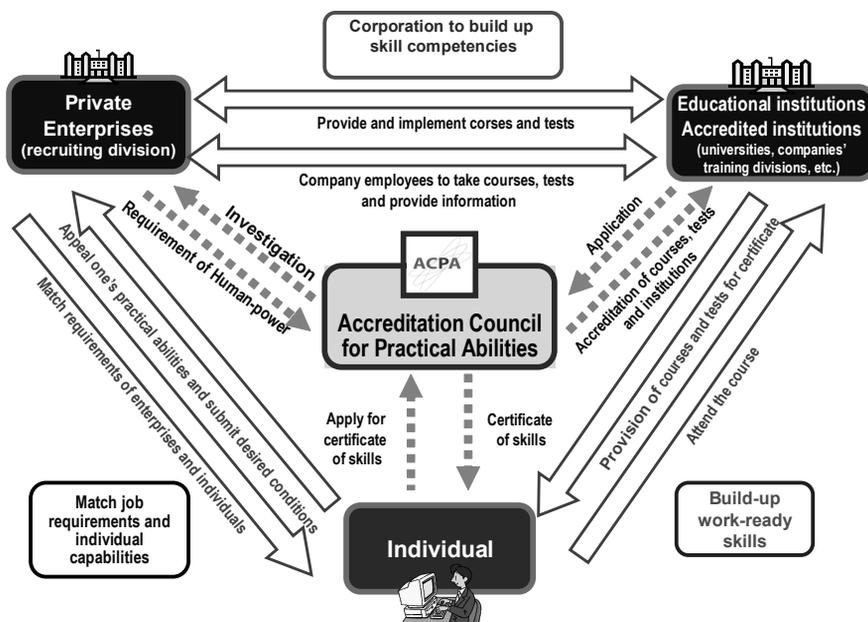


Figure 5-4-1 ACPA Personnel Skills Training Model

- Course certification (in the domains of ICT, business and management, and language [English])
- Test certification
- Institution certification (course-providing institutions and course-executing institutions)
- Certification of individuals

Quality assurance by certification is based on a standard skill description currently offered by ACPA and the measure of individual authorization to a certification is effective. ACPA carefully inspects each course provided by educational institutions, corporations, etc., and clarifies the positioning of each course for the benefit of the public, so that trainees can utilize this information as a guideline for acquiring practical abilities.

By employing this certification and accreditation procedure, the process of imparting practical abilities that match the needs of industry requirements will hopefully lead

to industries and universities being more able to work together towards continuously improving the quality of their courses for students and workers.

(4) ACPA Standard Skills Guide

ACPA sets out the knowledge and skills which are required in practical business in the form of the Standard Skills Description and certifies the courses and tests as well as issues certifications of practical abilities for each individual.

The ACPA Standard Skills Guide consists of a skill standard matrix which depicts the relationship between the skill item required by work and the skill items description which describes skill contents in detail.

- The skill standard matrix describes the relationship between job categories and skills in the form of a table showing which skills are required for each occupational category. The table therefore sets out clearly the required skill for each level.
- The skill items description depicts details of each skill.
- A series of documents describe the outline of the ACPA Standard Skill Description in the field of Information Communication Technology, Business Management, and Language field, especially English.
- The ICT Standard Skill Description has been used for the certification service since 2006.
- The Business Management Standard Skill Description has been used for the certification service since 2007.
- The Language Standard Skill Description reference has recently begun to be used for the certification service in 2009.

ACPA describes the skill inventory and skill items in the three domains of ICT, Business, and Language that have been developed. Overview of skill categories is shown in Figure 5-4-2. The ACPA skill inventory is itemized so as to describe the detailed components appertaining to knowledge and practical skills. The numbers of skill items and components are shown in Table 1.

Table 5-4-1 Numbers of Skill Items and Components

Domain	Skill Items	Skill Components
ICT	343	1137
Business and Management	220	1141
Language	108	234
Total	671	2512

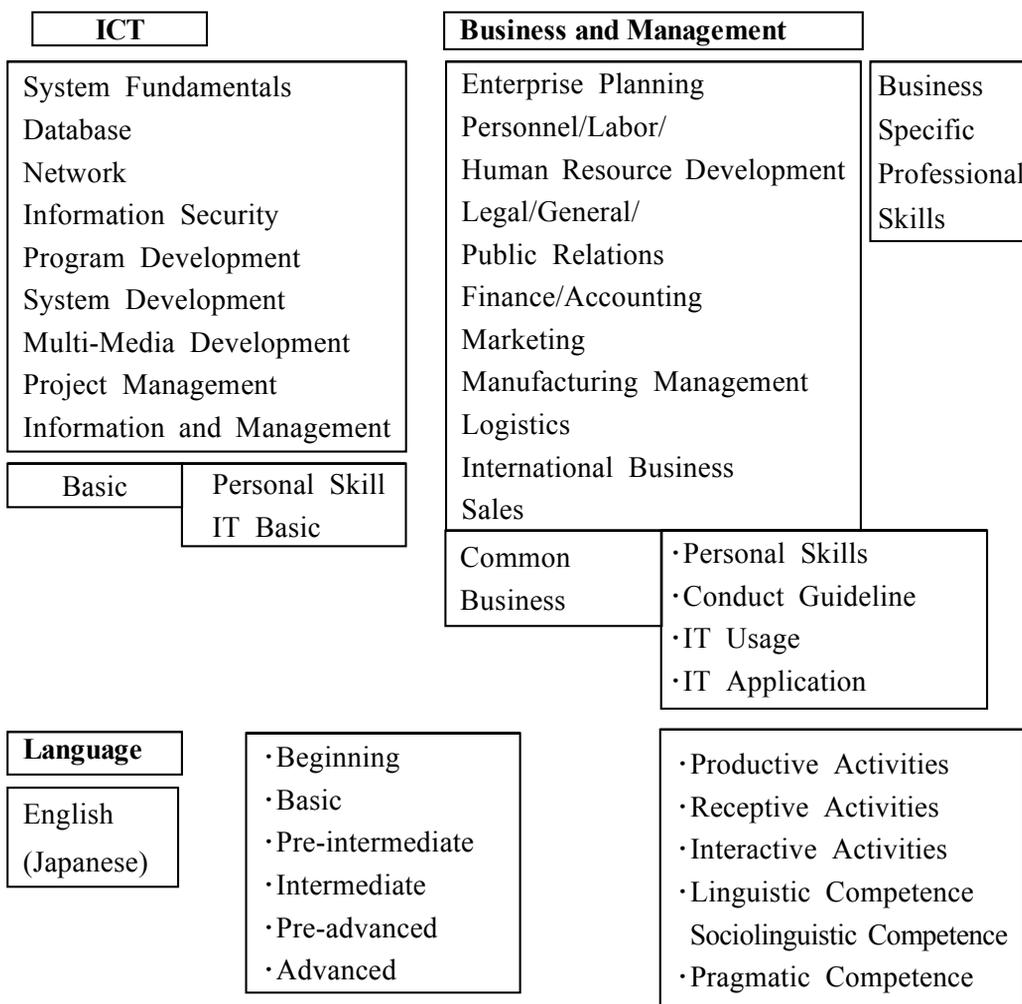


Figure 5-4-2 Skill Categories Overview

(5) ACPA Standard Skill Matrix

The ACPA standard skill matrix has been developed in the fields of information technology and business management. It describes the required skill items that link occupational category to skills. An example of the ICT domain skill matrix is shown in Figure 5-4-3.

Example of Standard Skills Matrix

[Requirement achievement]

★...Having basic knowledge. ★★...Having comprehensive knowledge. ★★★...Able to utilize obtained skills effectively.

Skill Matrix (Extract)		Level 0		Level 1				
Category	Skill Item	General	System Development	IT Administration (SE)	Operation	Customer Service	Sales	Administration Staff
IT Basic	Internet	★★	★★★	★★★	★★★	★★	★★	★★
	Business Tool	★★	★★★	★★★	★★★	★★★	★★★	★★★
	Computer Fundamentals	★	★★★	★★★	★★★	★★	★★	★★
Personal Skill	Communication	★	★★	★★	★★	★★	★★	★★
	Leadership	★	★	★	★	★	★	★
	Negotiation	★	★	★	★	★	★★	★
	Management		★	★	★	★	★	★
System	OS	★	★★	★★	★★	★★	★★	★
Fundamentals	System Basic Technology			★				
	System Configuration			★				
	Requirement Definition			★				
	Platform Design			★				
	Introduction Planning			★				
	Evaluation Method			★				
	Server Application			★				
	Server Implementation			★				

Figure 5-4-3 Example of the ACPA Standard Skills Matrix in the ICT Domain.

(6) Level of Skill Competency

Practical business abilities are considered a combination of technical knowledge, skills, and experience, and required abilities that vary depending on the level determined by the length of engagement of each worker.

The definition of each level of skill competency is shown in Table 5-4-2(a). These definitions have been compiled based on the IT Skill Standard (ITSS) established by the Ministry of Economy, Trade and Industry. The entry level is further divided into the following three levels of occupational specialty as indicated in Table 5-4-2(b).

Table 5-4-2(a) Level Description of Skill Competency

Entry Level	<p>Capable of performing the given duties under the guidance of a person(s) at a higher level of the same occupational category, or by utilizing one's own skills, and is able to identify and solve problems.</p> <p>University juniors or seniors, postgraduates, new employees in the first few years of working, etc.</p>
Intermediate Level	<p>Capable of performing the given duties of the occupational category without assistance from others. In addition, capable of giving guidance to personnel at the entry level, and playing a leading role in technological, methodological and business operational aspects within the company and for a particular project.</p> <p>Employees in mid-career.</p>
Advanced Level	<p>Capable of leading technological development and commercialization and playing an important role in formulating a strategy as the manager of an occupational category.</p> <p>High-achievers who possess advanced expertise and fully use this to lead the business.</p>

Table 5-4-2(b) Entry Level Description

Entry level	
Level 0	<p>– Preparation stage prior to employment. Those who prepare for work.</p>
Level 1	<p>– Applicable to employees in their first year of work. Professional skills are not established, and technical knowledge is limited. Have to build up expertise through practice.</p> <p>– Capable of performing certain assignments relating to simple routine jobs of the occupational category under the close guidance of a superior(s).</p> <p>– Have experience of being involved in at least one project and have been engaged in some operations relating to a project under the guidance of a superior(s).</p>
Level 2	<p>– Applicable to employees in their first few years of working. Have to build up practical experience based on technical knowledge, and acquire higher expertise in their fields.</p> <p>– Capable of performing simple routine jobs by themselves under the general guidance of a superior(s).</p> <p>– Have experience of being involved in at least two projects and have been engaged in overall operations of a small-scale project under the guidance of a superior(s).</p>

(7) Advantages of ACPA Standard Skill Guide

The ACPA standard skill matrix is useful to companies (employers) for preventing mismatch between employers and employees.

- It clearly defines the kind of personnel that is required;
- It ensures that personnel acquire clearly defined practical abilities through high-quality courses;
- It enables companies to quickly utilize those that have already acquired such abilities in their workforce and to flexibly assign them to new projects.

In addition, the matrix is useful in human resource evaluation and development. More specifically, the standard skill matrix serves as a basis for defining the practical abilities that each employee should possess, and enables the evaluation of abilities using universal criteria, through an objective assessment of skills acquisition. It also enables the proposal and implementation of education and training plans for human resource development based on such evaluations, as well as the implementation of effective human resource development based on a long-term perspective by means of high-quality ACPA-certified courses.

For educational institutions (course-executing institutions and course-providing institutions), the ACPA standard skill matrix is useful in improving the recognition of courses by means of ACPA course certification because

- The course-executing and course-providing institutions can both earn greater trust from customers and they can expect to increase the recognition of their courses;
- In ACPA-certified courses, acquired skills are defined based on the ACPA standard skill matrix, so mismatches concerning the aspiration of those taking the course can be avoided.

ACPA is also useful in developing educational materials suited to current needs.

- The ACPA standard skill matrix makes it possible to understand current skill requirements and projected future scenarios, and to create educational materials

that aim at realize these;

- Since the ACPA standard skill matrix is updated each year, it is possible to develop human resource development tools suited to current changes and needs.

For individuals, the ACPA standard skill matrix is useful for understanding the work description of occupations.

- It enables individuals to gain a deeper understanding of the details of the work and occupations they are interested in, and to seek courses for acquiring the necessary skills applicable to a particular type of work;
- Acquiring a strong foundation of work knowledge before joining a company results in strong performance assessments by the employer and more rapid career advancement.

The standard skill matrix is also useful for up-skilling for personal development.

- The ACPA standard skill matrix can be used as an indicator for systematic up-skilling;
- Having acquired skills recognized with ACPA skills certificates help to maintain motivation for systematic up-skilling;
- Skill certificates enable people to better market their acquired skills and helps individuals to improve and become more respected professionals;
- In executing a career plan, it is possible to become competent in practical work skills and avoid a possible mismatch.

3) Conclusion

A framework of quality assurance in the practical education was described in introducing the ACPA standard skill guide. The certification and accreditation of courses, course providers, and educational institutions based on specific criteria were also described. It has been demonstrated how the standard skill guide, which sets out the types of jobs needed by industries in relation to required skills, can be improved to achieve the quality assurance associated for the achievement of practical abilities.

Advantages of the ACPA standard skill guide and important examples of its use have also been outlined. The lessons obtained from the ACPA approach so far can be described as follows;

- The standard skill guide has been useful for identifying the skill items required in the individual courses and tests.
- The need for the high quality of courses and tests linked to the skill items of the standard skill description has been identified.
- The institutions supplying courses and tests have made efforts to develop high-quality materials and resources.
- Learners who obtained a certificate of skills have used it in job-recruitment. The enhancement of competencies which concerns the combination of knowledge, skills and human behavior is essential to meeting the needs of firms and wider society for a greater range of work skills.

A global framework will be needed in order to encourage institutions and suppliers offering practical education to be more innovative and responsible to the needs of a globally competitive knowledge society and to the changing labor market in relation to advanced human resources. The creation of a quality assessment guideline for practical education that deals with lifelong learning practices will also contribute to the provision of high-quality education. Furthermore, tertiary education, which covers practical skills and abilities, has been shown to contribute to the development of an individual's capacity for participation in a business.

The continuous execution of tertiary education can additionally help to enhance the skill competence necessary for a higher professional qualification and in this respect increases self-empowerment. In a globalized age, it is also useful that learners acquire advanced skills effectively by way of overseas involvement and cooperation. In this regard it will be necessary to learn proficiency in business according to the rate of technological progress, by way of distance education through e-Learning. Tertiary education can thus contribute to the enhancement of personal creativity leading to both personal satisfaction and innovative company development, as well as a higher

living standard.

In this way, we believe that INQAAHE will play an important role in tertiary education in the future. As a new member working specifically in this field, we therefore expect to make a significant contribution to the establishment of the global framework for tertiary education in the 21st century.

[1] <http://www.acpa.jp/>

Accreditation Council for Practical Abilities.

5.4

Web Learning Plaza: An e-Learning Service for Engineering Education

1) Overview

The Japan Society and Technology Agency (JST) provide 819 e-Learning materials free of charge at the Web Learning Plaza (WLP), an e-Learning site for engineers' continuing education. In this section, objectives, planning, system, contents, and usage of WLP, as well as the results of a recent evaluation study will be presented.

Objectives

The WLP site opened on October 1, 2002 in order to advance Japanese competitiveness in science and technology, in response to the statement of the 2001 report of the Council for Science and Technology Policy (CSTP) which declared the importance of Japanese Continuing Engineering Education. Thus, the main WLP objective is continuing and remedial education for engineers (Kato and Koyama, 2004).

Planning

In the WLP planning stage, JST conducted a survey of Japanese engineers to assess the needs for a service to offer e-Learning materials, in addition to individual interviews. The findings are summarized as follows:



Figure 5-5-1 Web-Learning Plaza top page

- [1] E-learning materials should cover fundamental and practical topics of engineering relevant to each engineer's own specialties, and
 - [2] The time required to use each e-Learning material should be relatively short.
- JST also developed and evaluated a WLP prototype. Based on the survey and the evaluation of the prototype, JST designed a system and developed e-Learning materials in collaboration with relevant academic and professional societies. The text-based materials are developed to satisfy the need of fundamental topics, while video-based materials are to fulfill the need of practical topics.

2) The e-Learning system

Originally developed by JST, the WLP e-Learning system has the following main functions:

Registration

Everyone who wants to have access to WLP e-Learning materials can use it free of charge. Once users register with an e-mail address, they can use the My-Page in addition to receiving notes and the course completion certificate.

My-Page

My-Page is the initial page where registered users log into WLP. In this page, registered users can review a personal learning history, completed courses/lessons (a display of all the courses and the lessons completed by the user), a bookmark (a display of all the incomplete lessons of the user), and a 'sticky' (a marker the user can arbitrarily stick on the screen to help a user readily return to the marked page).

Search

Any user who accesses WLP can search by category (a browsing interface to 14 engineering fields with annotations), map (list of titles of all the e-Learning materials categorized into 14 engineering fields), and keyword (full-text search for all texts including narrations except for video-based materials).

3) Learning content

There are 819 e-Learning materials currently available on WLP. They are organized into 125 courses in 14 engineering fields as presented in Table 5-5-1.

Text-based materials

The text-based materials have a Field ⇒ Course ⇒ Lesson ⇒ Screen tree structure. Each lesson includes check tests, glossaries, and FAQs. A brief description of each of these elements follows:

[1] Fields

Fifteen fields were initially defined based on examination of the CSTP report. They have been synthesized into fourteen as presented in the Table 1.

Table 5-5-1 Web Learning Plaza Materials (as of December, 2009)

Engineering Field	Number of Courses	Number of e-Learning Materials
Life Science	9	36
Information Technology	10	92
Environment	5	33
Nanotechnology and Material Engineering	11	59
Electric and electronics engineering	7	65
Mechanical engineering	12	131
Chemistry	8	73
Social Infrastructures	9	76
Safety engineering	15	50
History of Science and Technology	1	3
Comprehensive technology management	20	117
Engineering Ethics	2	16
Intellectual property right	2	12
Video-Based Materials	14	56
Total	125	819

[2] Courses

Each field contains multiple courses and each course represents a technical topic. For example, the field of mechanical engineering is composed of courses including Strength of Materials, Dynamics in Engineering, Thermodynamics, Plasticity and Laser fabrication as well as several case studies on relevant topics. Currently, 111 text courses are available.

[3] Lessons

Each course contains approximately ten lessons. A lesson is a unit of learning which is designed to be completed in 15 minutes. Currently, 763 text lessons are available.

[4] Screens

Each lesson is consists of multiple screens composed of animations and narrations. The animation and narration are synchronized and move simultaneously.

[5] Check tests

A check test is located at the end of each course to assess the learner's comprehension.

Approximately five questions are included in a lesson. When registered users give correct answers to all of these questions, they will receive a course completion certificate by e-mail.

[6] Glossaries and FAQs

Links to glossaries and FAQs included for every lesson are embedded in each screen so that learners can readily refer to them during their learning process.

Video-based materials

Video-based materials include engineering facility case studies such as plants and R&D institutions. Each of the fourteen available video-based materials consists of four main stories. Each main story has about five supplemental stories. It takes approximately fifteen minutes to watch a video-based story.

4) Usage

Potential WLP users are engineers, researchers, and students. Table 5-5-2 shows the number of accesses to and number of course completion certificates issued by WLP between FY2005 and FY2008.

Table 5-5-2 Total Number of Accesses

	2002	2003	2004	2005	2006	2007	2008
Number of Accesses	134,287	282,621	377,771	408,878	710,852	735,516	998,313
Number of Course Completion Certificates	--	--	--	55,632	113,050	105,387	126,429

Note: Japanese fiscal year begins on April 1, and ends on March 31.

The total number of WLP accesses is increasing gradually, as presented in Figure 5-5-2.

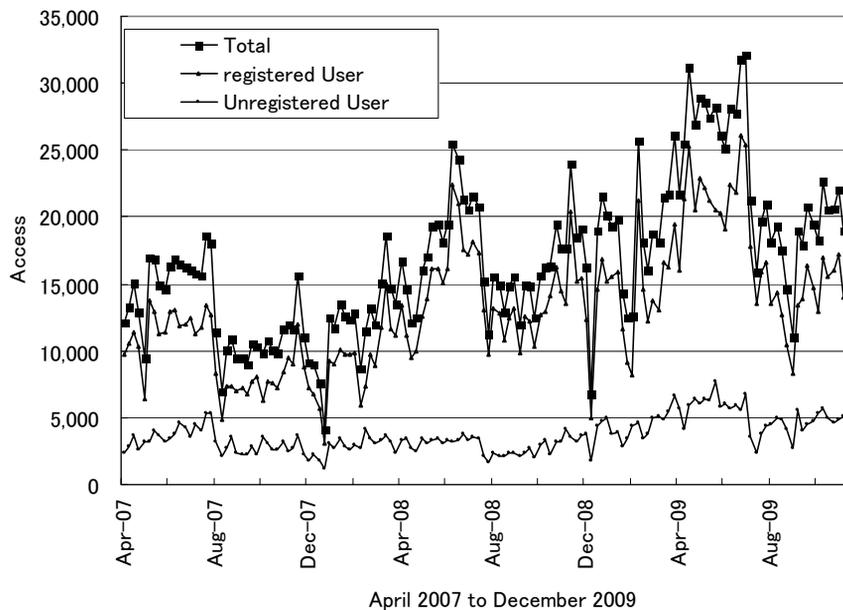


Figure 5-5-2 Number of Accesses by Registered and Unregistered Users

5) Evaluation

An evaluation study was conducted by JST in 2009 in order to estimate the WLP impact in the Japanese engineering community by conducting a series of questionnaire survey. One questionnaire investigated the levels of WLP recognition and usage. Another questionnaire investigated time-saving and cost-saving effects. They were conducted using web-survey technique aiming at researchers, engineers, and students in colleges and universities, public research institutes, and manufacturing companies. The results of the evaluation study reveal that the recognition level (the ratio of the number of respondents who know WLP) was less than 10%. In addition, only 36.1% of those who know WLP had actually used it before. On the other hand, 97% of those who have experience in using WLP rated it as useful, and approximately 10% of current users use it more than twice a week. The main merits of WLP use are ‘free of charge,’ and ‘convenient to use.’ The average cost-saving per lesson was 327 yen.

The overall assessments given by the evaluation committee of field experts were:

- WLP is a successful project in terms of cost-effectiveness and cost-benefit.
- More efforts in publicity are needed to increase the level of recognition.
- As a public service supported by tax money, WLP materials are open to the Internet external to the current system.
- Reasons for providing WLP in the public sector should be argued since many commercial e-Learning services are available on the Internet.



References

Kato, T, Koyama, K. (2004) E-learning for continuing engineering education: Web Learning Plaza. Presented at the 9th IACEE World Conference on Continuing Engineering Education, Tokyo, May 15-20, 2004

(Makiko Miwa, Professor, the Open University of Japan)

OCW Search Services for Lifelong Learners by the Open University of Japan

In the midst of the global trends towards ‘open’ education, various Open Educational Resources (OERs) have been accumulated at numerous repositories all over the world. In order to find and retrieve quality content efficiently from the scattered and distributed sources, some common platforms and strategies for collecting the information and content are indispensable.

The Open University of Japan (OUJ) provides a global search system for OERs from the viewpoint of lifelong learning (LLL). OUJ has two cross-institutional search systems, called GLOSS (Global Learning Object Search System) and JOCW Search, and new collaborations at the international consortium, GLOBE (Global Learning Object Brokered Exchange), have been started.

In order to facilitate the international sharing and exchange of quality learning content, the national hub organization in each country and region, which manages the functions for federated repositories and meta-repositories, established the Global Learning Objects Brokered Exchange (GLOBE) consortium in September 2004. The original members were ARIADNE (EU), education.au limited (Australia), eduSource Canada (Canada; McGreal, R. et. al, 2004), MERLOT (North America), and the National Institute of Multimedia Education (NIME, Japan). Now, the number of GLOBE members is 14; eduSource Canada was replaced with LORNET in February 2006, NIME was merged into the Open University of Japan as the Center of ICT and Distance Education (OUJ-CODE) in April 2009 and education.au limited was merged into Education Services Australia in March 2010. Korea Educational Research and Information Services (KERIS, Korea), European Schoolnet (EU), the Center for Open Sustainable Learning, Utah State University (COSL, USA), and the Latin-American Community of Learning Objects (LACLO, Latin America) joined GLOBE in 2007, the Institute for Information Industry (III, Taiwan) and the Institute for the Study of Knowledge Management in Education (ISKME, USA) in 2008, Thailand Cyber University Project (TCU, Thailand) in 2009, and the Inter-University Center for e-Learning (MEITAL, Israel) and Al-Quds University (Palestine) in 2010.

OIJ manages a common metadata database based on IEEE-LOM (Learning Object Metadata) version 1.0 (IEEE, 2002), registering the original metadata and exchanging them with international partners through federated search and harvesting. By using different subsets of the metadata collection, we provide plural search interfaces, that is, GLOSS and JOCW Search. GLOSS is a general search system for learners and GLOSS users can search not only domestic but overseas information through the GLOBE network. JOCW Search is a context-specific search system, which covers the category of Open Courseware provided by Japan OpenCourseware Consortium (JOCW) member universities. Users can search JOCW content cross-institutionally.

1) Metadata elements

The metadata elements used for the OIJ-CODE common metadata database are shown in Table 5-6-1. While most of the elements are based on IEEE LOM (IEEE 1484.12.1 - 2002 Standard for Learning Object Metadata), we have some exceptions, such as Copyright and Quality. The Copyright and Quality elements have a referred taxonomy system field and that of its value. In addition, it has some management elements, such as Permission for Harvesting and Permission for Federated Search.

Table 5-6-1 Metadata elements used for the OIJ-CODE common metadata database

No.	Name	Corresponding element to IEEE 1484.12.1-2002
1.	ID of the metadata	3.1 Meta-Metadata - Identifier
2.	ID of the LO [2]	1.1 General - Identifier
3.	Title	1.2 General - Title
4.	Language(s) used within the LO	1.3 General - Language
5.	Description	1.4 General - Description
6.	Keyword(s)	1.5 General - Keyword
7.	Aggregation level	1.8 General - Aggregation Level
8.	Contributor to the LO	2.3 Life Cycle - Contribute
9.	Language of the metadata	3.4 Meta-Metadata - Language
10.	MIME media types of the LO	4.1 Technical - Format

11.	URL	4.3 Technical - Location
12.	Technical requirements to use the LO	4.4 Technical - Requirement
13.	Educational stages [3]	5.6 Educational - Context
14.	Intended learning time	5.9 Educational - Typical Learning Time
15.	Intended user of the LO	5.10 Educational - Description
16.	Paid-for or free	6.1 Rights - Cost
17.	Restriction of usage	6.3 Rights - Description
18.	Classification [4]	9. Classification
19.	Copyright [5]	N/A-
20.	Quality [6]	N/A

[2] *ID of the LO* is generated automatically as *Catalog* is “URL”. *Entry* is the actual *URL*.

[3] *Educational stages* have unique value space matched to Japanese educational system.

[4] *Classification* shows the taxonomy system and its value(s).

[5] *Copyright* shows the right management system and its value(s).

[6] *Quality* shows the quality assurance system and its value(s).

2) Architecture

Both GLOSS and JOCW Search use a common metadata database (OUJ-CODE metadata database, OMD). OMD metadata is based on IEEE LOM. While OUJ-CODE

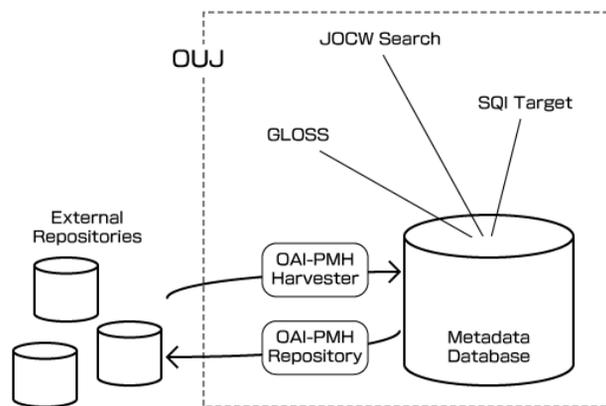


Figure 5-6-1 OUJ search system architecture

registers the original metadata, it exchanges them with international partners through federated search and harvesting. By using different subsets of the metadata collection, we can provide plural search interfaces, that is, GLOSS and JOCW Search.

i) GLOSS

The Global Learning Object Search System (GLOSS) is a search engine to find learning objects worldwide. GLOSS adopted both ‘Harvesting’ and ‘Federated Search’. As communication protocols, the Open Archives Initiative Protocol (OAI-PMH) is used for metadata ‘Harvesting’ and Simple Query Interface (SQI) is used for ‘Federated Search’. As of April 2010, while GLOSS provided 1,834 metadata to GLOBE partner harvesters, it stored 50,804 GLOBE partner metadata.

In Advanced Search, the user utilizes the following metadata elements;

- (1) Keywords
- (2) Content source (domestic/overseas)
- (3) Fields of Study (Philosophy, Religion, Ethnics, Literature, History, Archaeology, Law, Politics, Economics, Psychology, Language, Mathematics, Information Science, Computer Science, Science in general, Engineering in general, Medicine, Dentistry, Pharmacy, Physiology, Agriculture, Forestry, Science of fisheries, Fine Arts, Music, Gymnastics, Interdisciplinary field, Multidisciplinary field, Others)
- (4) School levels (Preschool, Elementary education, Secondary education, Higher education, Special needs education, Vocational education, Lifelong learning, Others)
- (5) Types of Media
- (6) URL
- (7) Cost (Proprietary, Open or Both)
- (8) Language



Figure 5-6-2 GLOSS top page

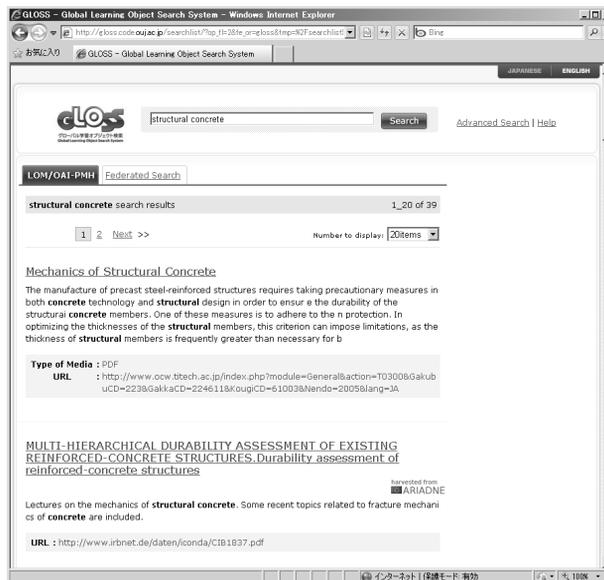


Figure 5-6-3 GLOSS search results (1)

The first result showed domestic content for which metadata was stored in the OUI common metadata database. The second metadata came from ARIADNE

in EU, a GLOBE partner, by harvesting.

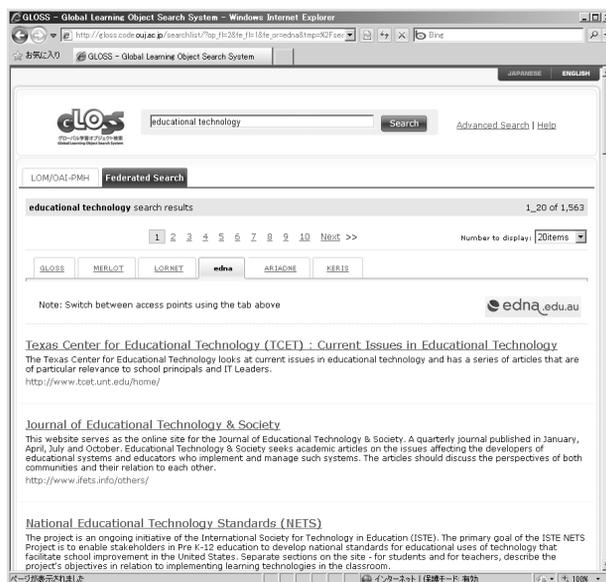


Figure 5-6-4 GLOSS search results (2)

The results came from edna online in Australia, another GLOBE partner, by a federated search process.

ii) JOCW Search

JOCW Search is a customized search engine for the Japan OpenCourseware Consortium (JOCW). OCW content provided by JOCW member universities is searchable cross-institutionally. As of April 2010, 1393 OCW content from nine universities were registered. Each university tags metadata and sends them to OUI-CODE. In the near future, the collection process should be operating automatically.

Some member universities control rights under Creative Commons. JOCW Search has an element in which the CC license is described in their vocabularies (Table 5-6-2).

Table 5-6-2 Rights description under Creative Commons (Element 19)

License System	Value
Creative Commons Version 3.0	Attribution
	Attribution-No Derivative Works
	Attribution-NonCommercial - No Derivative Works
	Attribution-NonCommercial
	Attribution-NonCommercial - ShareAlike
	Attribution-ShareAlike



Figure 5-6-5 JOCW Search search results

License description by Creative Commons system is available.

3) GLOBE metadata search infrastructure

OUI-CODE is a member of the GLOBE initiative. One of the GLOBE objectives is to provide a global infrastructure to share data for cross-institutional searches worldwide. GLOBE orients open architecture and harmonizes with international standardization organization activities.

i) Metadata

GLOBE members adopt IEEE-LOM (Learning Object Metadata) version 1.0 (IEEE, 2002) for the metadata standards. However, since the number of sharable elements is still limited, some agreements to increase them are expected in order to realize new value-added search functions. As a result, most of the metadata are Dublin Core compatible.

ii) Federated search and harvesting

GLOBE uses Simple Query Interface (SQI; Simon, Massart, Van Assche, Ternier & Duval, 2005) for the query language, and Open Archive Initiative Protocol for Metadata Harvesting (OAI-PMH; Logoze, Van de Sompel, Nelson & Warner, 2002) for harvesting.

iii) Prospects

Lifelong Learners (LLers) have several characteristics. One of those is the broad spectra in their personal characteristics, such as age, interests, the objectives and goals of learning, learning environments, learning styles and strategies and so on. A search system for LLers should be adaptive to the broad range of user characteristics. At the same time, in order to find and retrieve the most adequate and preferable content for each LLer, the search system should have a huge metadata pool. Financial and human resource limitations make this a very difficult task and some common and collaborative infrastructure and supportive community are indispensable.



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- (Tsuneeo Yamada, Professor, OIJ and Yosuke Morimoto, Associate Professor, OIJ)

Chapter 6 Recommendations and Prospects

This section discusses several issues occurring with the implementation of ICT and e-Learning into Japanese lifelong society.

1) The digital divide and the older generation

A characteristic of the current Japanese lifelong learning society is the aging society and the ratio of the older generation is higher than that of other countries. According to Professor Hiromitsu Ishi, the President of the Open University of Japan, the aging factor has influenced the framework of lifelong learning in Japan.

“This aging of Japanese society has created a growing demand for lifelong learning, thereby pressing Japanese institutions of higher education to find ways to provide diverse and substantial learning opportunities to a great variety of citizens, of all ages, with different interests, capabilities, and learning objectives. For example, Japanese universities have begun to provide the so-called re-education for working people and refresher education for retirees” (Ishi, 2010, page 36).

In addition, compared with the younger generation, older people have more serious problems in accessing, operating and using computers and the Internet. On the other hand, ICT-enhanced learning environments have the potentiality to reduce various physical constraints especially in older distance learners. So that older people may easily access computer and network systems, both research on physical and psychological characteristics and the development of a support system and up-skilling programs should prove to be indispensable.

2) Information portal on lifelong learning

In the midst of global trends towards knowledge-based society and/or lifelong learning society, various digital learning resources, such as learning content and educational information, have been accumulated at numerous web servers all over the world.

In order to efficiently find and retrieve quality content and information from scattered and distributed sources, some information portals (such as the e-ASEM project homepage managed by KNOU, <http://asem.knou.ac.kr/>) are indispensable. Since lifelong learners are particularly independent, autonomous, self-directed and have often few advisors and cohorts in their own learning environments, it is desirable to have intelligent recommendation functions based on scientific grounds and objective data. While distance learners also need social contexts, they are often isolated. Various SNS (Social Networking Service) technologies realize virtual learning communities; such communities foster new learning activities and the continuation of the learning processes. Infrastructure and platforms to sustain virtual learning communities are essential to information portals.

3) Various delivery channels: personalization and customization

“Last year [2008], OUI surveyed 1,110 students enrolled in forty-one specific distance learning courses about the methods of course delivery. A survey question was: ‘Which means did you choose to take courses: (1) Internet, (2) TV, (3) VTR and DVD at Study Centers, or (4) course textbooks.’ There is a sharp distinction between students aged fifty and older and those under forty. The older the students are, the more likely they are to use TV, DVD and VTR, while younger students tend to prefer the Internet and textbooks. This finding suggests that although expanding broadcast-delivered courses may be an important strategy at present, in order to promote distance education among older students, in the future we can expect a substantial shift toward more use of the Internet. At the moment, there are a variety of learning methods available to students at OUI” (Ishi, 2010, page 43).

From the viewpoints of learner-centered approaches, it is effective to realize optimal learning space and content. In the not-so-far future, ICT can easily realize such personalized and customized learning processes which are optimized to the conditions of each learner.

4) Towards the further advancement of lifelong learning

Professor Hiromitsu Ishi contended that “In spite of the sharp increase in public

recognition of the concept of lifelong learning, in practice it poses a problem [in Japan]. For instance, the main reasons why citizens have taken part in lifelong learning have been to pursue their hobbies and interests and to pursue health and recreation. On the other hand, lifelong learning is rarely undertaken for the purpose of advancing professional knowledge in regular courses at schools. Greater emphasis should be placed on the importance of academic studies in lifelong learning” (Ishi, 2010, page 38).

In addition, the higher jobless rate and mobility of labor would also lead to a change in the concept of lifelong learning. Career/vocational education and capacity rebuilding are still urgent issues. In the midst of administrative reform, the government offices concerned are expected to implement inter-ministry measures on lifelong learning from a holistic viewpoint.



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e-Learning For Lifelong Learning in Malaysia

03

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Prof Dr. Mansor formerly worked as a full-time lecturer at the Faculty of Engineering, University of Malaya (UM). During his tenure at UM, he held various administrative posts and was responsible for introducing online learning to the UM lecturers in 1998. Prof Dr. Mansor was also instrumental in the establishment of OUM, Malaysia's first open and distance learning (ODL) institution in 2000. Some of his most recent projects include the introduction of mobile learning, a new assessment instrument, an institutional question bank and a Mathematics resource centre at OUM.



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Executive Summary

Lifelong learning initiatives, whether utilising e-Learning or otherwise, are a relatively new phenomenon in Malaysia. Education for many people is still characterised by formal schooling; and for a certain disadvantaged section of the population, post-secondary education may not even be a possibility or an option. Out of the projected number of 881, 247 individuals enrolled at upper secondary school level in 2010, only 277, 904 (or 31.54 per cent) actually go on to participate in post-secondary education (Government of Malaysia, 2006). The remainder 68.46 per cent may gain employment without furthering their education, or may not be employed at all. This points to an even greater role that lifelong learning programmes has to play; as a formal, non-formal or informal means for many more individuals to attain some form of education to improve both their professional and personal lives. The foremost individual who made the earliest proposal for the enculturation of lifelong learning in Malaysia is the then incumbent Prime Minister, Tun Mahathir Mohamad. During and following his tenure, the Government began strategising to implement lifelong learning, particularly in the 8MP, OPP3, KEMP, 9MP, NHEAP and NHESP.

The country is at a stage whereby the awareness and provision for lifelong learning still needs to be enhanced. The problem of digital divide remains at large, significantly marked between urban and rural communities, contributing to low levels of ICT adoption, knowledge and lacklustre response to e-Learning, principally within the latter. Having been an independent nation for only fifty-odd years, Malaysia has focused most of its efforts in providing basic education to its people. Today, the scenario has changed, and the Government recognises how rapidly evolving technologies, the erasure of political and geographical boundaries as well as competitive forces are impacting the global economic landscape. The need to create, develop and sustain a knowledgeable workforce with strong employability and productivity traits is one that is not exclusive to Malaysia, and like many other nations, the country has put in place various schemes to fulfil this requirement.

e-Learning in lifelong learning, while having been adopted in segregated forms throughout the country, from community-based efforts to bridge the digital divide to formal academic programmes designed for working professionals, is also still in its infancy. The key point in this regard is enculturation, where many of the infrastructures, policies and frameworks are actually already in place and the most important step to be taken is to ‘connect the dots’ and maintain efforts in all forthcoming action plans.

The prospects for Malaysia are indeed quite positive, as the Malaysian public is receptive to new developments and very concerned with the importance of education. In this sense, the Government is seen to have a very significant responsibility in connecting the said dots and provide the push necessary to bring the cogwheels into motion.

Within this publication, based on the context of lifelong learning in Malaysia, the education system will be described from the post-secondary level onwards. In terms of e-Learning, emphasis will be given to ODL institutions and practitioners that have been the most prominent advocates of e-Learning in the country. Categorisation of education will be made according to formal, non-formal and informal levels. All of the policies, plans, programmes, examples and other points documented in this publication are currently in implementation, or have been carried out within the years 2005-2009.

Chapter 1 The Malaysian Education System

1.1 Background

Malaysia has undergone three phases of educational system over the last 50 years. The first phase focused on a system that emphasised national unity. The second phase shifted the emphasis towards improving adult literacy in the country. Currently, due to global economic pressures, the education system has been broadened to include lifelong learning in the context of enhancing employability and productivity of the working age population. The lifelong learning agenda is also aimed at improving the quality of life of the general population.

The first phase of the education system was based on the concept of national unity. This system was founded more than 50 years ago on the basis of the 1956 Report of the Education Committee (better known as the Razak Report 1956). Headed by the Minister of Education at the time, Dato' Abdul Razak Hussain, the Committee was given the task of reforming post-colonial education and developing a structure that could satisfy the needs of all Malaysians and promote their cultural, social, economic and political development as a nation (Ministry of Education, 1956); a structure that is generally still in place today.

The second phase emphasised on mainstream education in which the country aggressively implemented action plans to achieve universal primary enrolment. This is evinced by the high adult literacy rate which stands above 92 per cent (Prime Minister's Department, 2010). There has also been considerable growth in the number of post-secondary education institutions, public and private universities, signifying the increasing supply and demand for various levels of educational opportunities in the country. While this has certainly been positive, changes in the Malaysian demog-

raphy and socio-economy; particularly in terms of population size, levels of education attainment as well as employment and unemployment rates (illustrated in the following table), leads to the third phase in which it is widely accepted that *education is and should be a lifelong process*. With increases in the number of people in the work

Table I: The Malaysian Demography and Socio-economy from 2000 to 2010
(Figures from the Ninth Malaysia Plan (9MP), 2006-2010)

	2000	2005	2010
Total Population (million)	23.49	26.75	28.96
Age Structure (million):			
0-14	8.00	8.72	9.18
15-64	14.56	16.88	18.42
65 and above	0.93	1.15	1.36
Median Age (years)	22.4	23.3	24.2
Enrolment in Public Education Institutions (by Level; until Post-Secondary):	5,505,743	6,014,357	6,564,559
Pre-schools	539,469	702,897	784,200
Primary	2,907,123	3,044,977	3,195,977
Lower Secondary	1,256,772	1,330,229	1,425,231
Upper Secondary	707,835	736,618	881,247
Post-Secondary	94,544	199,636	277,904
Enrolment in Tertiary Education Institutions (by Level):	574,421	731,698	1,326,340
Certificate	105,570	132,880	284,770
Diploma	208,454	230,381	474,370
First Degree	230,726	322,917	428,200
Master's	26,181	38,638	117,320
Ph.D.	3,490	6,881	21,680
Employment:			
Total Labour Force ('000 persons)	9,571.6	11,290.5	12,406.8
Unemployment ('000 persons)	297.0 (3.1%)	395.7 (3.5%)	430.8 (3.5%)
Labour Force Participation Rate (%):	65.7	66.7	67.3
Male	85.7	86.6	87.4
Female	44.7	45.7	46.3

ing age group of 15 to 64 years (representing almost two-thirds of the entire population), as well as school leavers, graduates, female workers and the jobless, there is a similarly escalating need for educational channels that can impart *equitable and continuous personal, moral and professional development*. Malaysia's challenge is to provide responses and solutions to the abovementioned concerns, e.g. to encourage *greater participation* and create *substantial capacity* at all stages, as well as to create more opportunities to educate, train, employ and absorb eligible persons (not excluding the unemployed) in fulfilling the lifelong learning agenda of the country.

1.2 Overview of the Education System

Within the last 50-odd years since its independence, Malaysia has shown great commitment in developing an education system that is able to achieve the goals first stated in the Razak Report of 1956. This commitment is evident in every economic plan with substantial allocation for education and training, and it is also prominent in many of the policies and plans that will be discussed in this publication. In the most recent economic plan, i.e. the 9MP, MYR 45.1 billion was allocated for education and training and this represents about one fifth of the total budget allocation for the five-year plan period. This commitment is also mirrored in the national education philosophy (NEP):

“Education in Malaysia is an on-going effort to further develop the potential of individuals in a holistic and integrated manner, so as to produce individuals who are intellectually, spiritually, emotionally and physically balanced and harmonious, based on a firm belief in and devotion to God. Such an effort is designed to produce Malaysian citizens of high moral standards, knowledgeable and competent, and who are responsible and capable of achieving a high level of personal well-being as well as being able to contribute to the harmony and betterment of the family, the society and the nation at large.” (Ministry of

Education (MOE), n.d.)

Malaysia provides free and compulsory basic education to all its citizens. As illustrated in Figure I, the Malaysian national school system is made up of pre-tertiary and the optional tertiary education. At the pre-tertiary level, the national system is standardised until the upper secondary level. Outside this system, there are also many private schools that cater to specific groups (e.g. private Chinese schools, religious schools) and expatriates (e.g. international schools). Ordinarily, these schools do not teach according to the national curriculum and also do not subject their students to standard national examinations. However, they need to register with the MOE and are bound by regulations stated under the Education Act 1996. It is only at the upper secondary level that some form of streaming is apparent and will determine prospective pathways later on. At the post-secondary level onwards, there are several different options available, leading to employment, tertiary and/or postgraduate education.

Post-secondary and higher education, while neither free nor compulsory, receive strong Government support and ample funding under the jurisdiction of both ministries. Although higher education is offered through both public and private means, much of it is carried out by public institutions. At this level, study opportunities are present at all levels, i.e. for certificate, diploma, undergraduate and postgraduate studies (Study in Malaysia Handbook, 2009). There are also designated Government agencies that promote and manage professional programmes for career advancement, upskilling and upgrading for a large section of the labour force. Undergraduate education constitutes studies for Bachelor's degrees and professional certification. Postgraduate studies involve learning at Master's and Ph.D. levels. Diploma programmes are made available for Malaysian Certificate of Education (*Sijil Pelajaran Malaysia*, SPM) holders from the age of 17, while Bachelor's degree programmes are open to those with post-secondary certification, including diplomas and the Malaysian Certificate of Higher Education (*Sijil Tinggi Persekolahan Malaysia*, STPM; equivalent to GCE 'A' Level) (Study in Malaysia Handbook, 2009). The table and diagram provided in the following pages are a general representation of

the entire Malaysian education system.

Table II The Malaysian Education System

Level	Description	Qualification(s)
Pre-School Education	<ul style="list-style-type: none"> Children from ages four to six Public and private kindergartens 	—
Primary Education	<ul style="list-style-type: none"> Children from ages seven to 12 Standards one to six for six years Public or private schools 	Primary School Achievement Test (<i>Ujian Penilaian Sekolah Rendah</i> , UPSR)
Secondary Education	<ul style="list-style-type: none"> Lower Secondary From ages 13 to 15 Forms one to three for three years Public or private schools 	Lower Secondary Assessment (<i>Penilaian Menengah Rendah</i> , PMR)
	<ul style="list-style-type: none"> Upper Secondary From ages 16 to 17 Forms four to five for two years Public or private schools Option of academic, technical/vocational or religious education 	Malaysian Certificate of Education (<i>Sijil Pelajaran Malaysia</i> , SPM)
Post-secondary Education	<ul style="list-style-type: none"> Form Six From ages 18 to 19 1.5 years of additional schooling Public schools Option of Science or Humanities 	Malaysian Certificate of Higher Education (<i>Sijil Tinggi Persekolahan Malaysia</i> , STPM)
	<ul style="list-style-type: none"> Matriculation From age 18 One-year programme Public matriculation centres Science-based pre-university courses 	Matriculation Certificate
	<ul style="list-style-type: none"> Private/Foreign Pre-University Courses Usually one-year programmes Private colleges 	(External qualification for entry into foreign universities or foreign branch campuses)
	<ul style="list-style-type: none"> Polytechnics and Community Colleges From age 18 	Certificate and Diploma
Tertiary/Higher Education	<ul style="list-style-type: none"> Teacher Training Institutes From age 18 Three-year programme 	Diploma in Teaching
	<ul style="list-style-type: none"> Undergraduate Studies From age 19 or 20 	Bachelor's Degree

	<ul style="list-style-type: none"> • For three to five years • Public or private institutions 	
	<ul style="list-style-type: none"> • Postgraduate Studies • After obtaining Bachelor's degree • For one to five years • Public or private institutions 	Master's Degree and Ph.D.

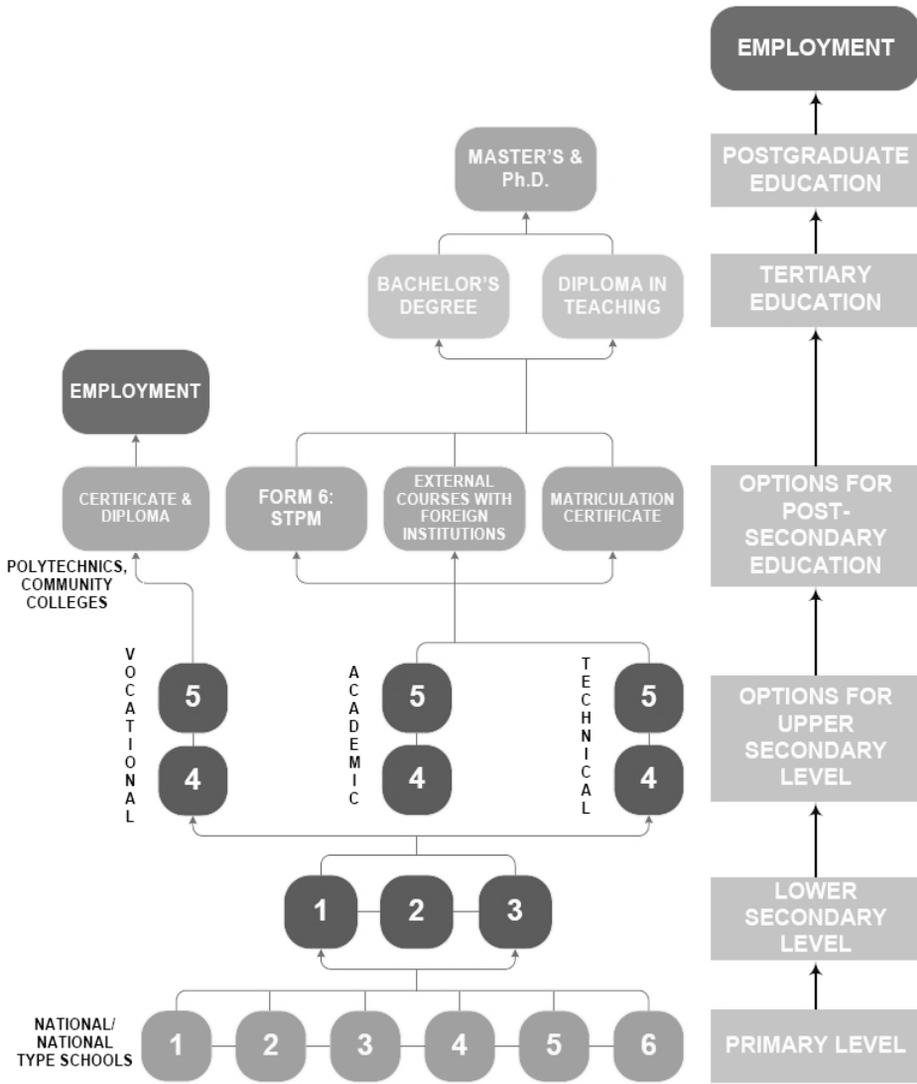


Figure 1 Pathways in the Malaysian education system

Lifelong learning as a policy agendum continues to receive significant emphasis by developed nations, spearheaded by various organisations, such as the Organization for Economic Co-operation and Development (OECD), United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Council of Europe over the last three decades. The OECD policy brief on lifelong learning cites the following key reasons for lifelong learning (Ministry of Higher Education (MOHE), 2007):

- The rapid pace of globalisation and technological change;
- The changing nature of work and the employment market; and
- The gaping disparities in access to learning opportunities between the knowledge-haves and knowledge have-nots.

In the context of Malaysia, the Government has recognised the need for an “educational revolution” especially with respect to its aspiration to become a developed nation by 2020. Thus, *Enculturation of Lifelong Learning* was incorporated as one of the seven strategic thrusts of the National Higher Education Strategic Plan (NHESP) in 2007. The objectives of the above thrust are as follows:

- To ensure that lifelong learning becomes a way of life for Malaysians in order to equip our citizens with lifelong knowledge and skills; and
- To make lifelong learning the catalyst for establishing a learning community in every organisation.

To achieve the above objectives, the following four strategies have been formulated by the MOHE in NHESP:

- Upgrade mechanisms and infrastructure to facilitate lifelong learning as a means of developing diverse kinds of knowledge and skills in line with individual interests and needs to enrich the quality of life;

- Enhance public awareness and involvement in lifelong learning so that individuals can develop their self potential and reap the benefits of lifelong learning in terms of productivity, competitiveness and marketability;
- Ensure the continuity and appreciation of lifelong learning; and
- Provide adequate financial support to inculcate lifelong learning as a way of life.

Within the frame of this publication, the definition of lifelong learning in Malaysia, as well as all its relevant points, will thus be taken to include post-secondary and higher education levels. Further illustration regarding the concept of lifelong learning in Malaysia will be expounded in Chapter 2.

e-Learning has also been a prominent feature in Malaysia's policy statements; with one of its earliest mentions under the national information technology (IT) agenda (NITA) that was introduced in the 8MP. For that particular plan period, the National IT Council (NITC) was launched with five strategic thrusts (Government of Malaysia, 2001). One of these thrusts was e-Learning; seen as a means to cultivate a lifelong learning culture in Malaysia. As a whole, e-Learning encompasses systems to enable information gathering, management, access and communication in various forms; as well as the integration of information and communication technologies (ICTs) in teaching and learning (Raja Maznah Raja Hussain, 2004), particularly in higher education. Thus, within the frame of this paper, e-Learning will also be described as a representation of its role in higher education. Further details of e-Learning in Malaysia will be given in Chapter 2. Correspondingly, the following sections will provide detailed descriptions of post-secondary and higher education in Malaysia.

1.4 Post-secondary Education

Post-secondary or pre-university education in Malaysia can take place in several different ways:

- By undergoing additional schooling for 1.5 years (Form Six) and sitting for the STPM examination;
- By obtaining a Matriculation certificate through a one-year programme;
- By undergoing pre-university programmes (internally- or externally-based) at private institutions; or
- By undergoing certificate- and diploma-level programmes in public or private institutions.

The STPM and matriculation certificates represent two of the major routes available for admission into higher education, particularly for public institutions. Students who are enrolled into pre-university programmes in private colleges will continue their Bachelor's degree education overseas or in branch campuses in Malaysia. On the other hand, those who opt to undergo certificate- and diploma-level programmes may not necessarily continue to a higher level of education in universities.

1) STPM

Students who opt to take the STPM examination need to undergo 1.5 years of additional schooling in what is known as lower- and upper sixth form classes. Since the Malaysian school system is generally modelled after the British system, STPM is considered the equivalent of the GCE 'A' Level. There are two main fields of study, i.e. the Sciences and Humanities, whereby students typically take five subjects of any combination, depending on preference and location of study. The only compulsory subject is General Studies; it must be taken for students who wish to be considered for admission into public universities.

2) Matriculation Programmes

Matriculation programmes are a relatively new phenomenon in Malaysia, having started only in 1999/2000 (MOE, n.d.). It is currently managed by the Matriculation Division of the MOE as a preparatory programme for higher education. Unlike STPM, matriculation programmes focus on Science and Technology. The programmes are held at various matriculation centres throughout the country, including two that are housed independently at University of Malaya (UM) and the International Islamic University Malaysia (IIUM). At the end of two semesters, students undergo standardised final examinations before applying for enrolment into public universities. Both STPM and matriculation programmes use a cumulative grade point average (CGPA) system as a scoring method.

3) Certificate and Diploma Programmes

Diploma and certificate programmes are mainly broad-based programmes targeted at school-leavers who are looking into professional upgrading in technical and vocational fields. Under the jurisdiction of the Ministry of Higher Education (MOHE), there are five types of institutions that conduct these programmes, i.e.:

- a. Polytechnics;
- b. Community colleges;
- c. Public universities;
- d. Private institutions; and
- e. Other relevant institutions.

(1) Polytechnics

There are currently 27 polytechnics that conduct certificate and diploma programmes in several technical fields such as engineering, commerce, hospitality and food technology. Entrants into these programmes are typically school leavers with SPM certification. Certificate programmes take about four semesters (two years) to complete, whilst diploma programmes can be completed within six semesters (three years).

(2) Community Colleges

Malaysian community colleges were first established in 2000 as a means of providing an alternative avenue for secondary school leavers to further their education. Similar to polytechnics, community colleges offer certificate- and diploma-level programmes in technical and vocational fields targeted at those with SPM certification. There are currently 43 community colleges throughout the country (Study Malaysia Online, n.d.). While a diploma programme can be completed within two semesters (provided one has completed the four-semester certificate course), community colleges also offer short courses in 12 areas, i.e. computer, electrical, vehicles, industry, apparel, beauty therapy, nutrition, languages, decoration, building, motivation and generic skills. Both polytechnics and community colleges are managed by a designated department within MOHE.

(3) Public Universities

There are currently 20 public universities in Malaysia, inclusive of five technical university colleges that were recently upgraded to university status. These five universities were established circa 1999-2002 to focus on higher technical education programmes, mostly at diploma and first degree levels. Albeit they no longer hold the status of technical university colleges, they continue to offer programmes in fields related to engineering and technology. Entrants into diploma programmes need either an SPM/equivalent or polytechnic certificate.

(4) Private Institutions

Many private colleges in Malaysia have been offering and awarding diploma-level qualifications, particularly through internally-developed programmes that are recognised and granted with 'advance standing' entry status by foreign universities in Australia, Canada, New Zealand, the United Kingdom, Germany and the United States of America (Study Malaysia Online, n.d.). This arrangement is designed to help those who wish to continue with a Bachelor's degree education at second- or final-year level at these foreign universities.

(5) Other Relevant Institutions

Through the involvement of the relevant ministries and agencies, there are also several Government-linked institutions that provide training and professional courses similar to certificate programmes offered by the abovementioned institutions; representing the central Government's effort to promote lifelong learning and skill enhancement of the Malaysian citizens as a means to bolster the nation's human capital. The ministries and bodies involved include the following and a description of the associated institutions is provided in the ensuing table below:

- The Ministry of Human Resources (MHR);
- The Ministry of Youth and Sports (MYS);
- The Ministry of Entrepreneur and Cooperative Development (MECD);
- The Ministry of Agriculture and Agro-based Industry (MAAI);
- The Ministry of Health (MOH); and
- *Majlis Amanah Rakyat* (MARA).

Table III Other Relevant Institutions and Post-Secondary Education Programmes Offered (Summarised from Study Malaysia Online, n.d.)

Ministry/ Agency	Name/Type of Institution	Type/Field of Programme(s)	Remarks
MHR	Industrial Training Institutes	Formal skill training for school-leavers and industrial workers	<ul style="list-style-type: none"> · Certificate level · Sponsored by the Government · Duration between six and 36 months · For SPM holders
	Japan-Malaysia Technical Institute	Courses in engineering technology (manufacturing, electronics, et cetera)	<ul style="list-style-type: none"> · Diploma level · Annual total fee of MYR5,000 (€1,020) · Duration of 36 months · For SPM/certificate holders
	Advanced Technological Training Centres	Vocational training in engineering and manufacturing technology	<ul style="list-style-type: none"> · Diploma level and advanced vocational training · Annual total fee of MYR5,000 (€1,020) · Duration between two and three years · For SPM/certificate holders
	Centre for Instructor and Advanced Skill Training	Training for instructors needed in vocational training institutes	<ul style="list-style-type: none"> · Diploma level · Sponsored by the Government · Duration between two and three years · For SPM holders

MYS	National Youth Training Institutes	Institutionalised skills training in industrial-related fields	<ul style="list-style-type: none"> · Certificate level · Sponsored by the Government · For SPM holders
		Non-institutionalised training (National Youth Apprenticeship Scheme)	<ul style="list-style-type: none"> · Short-term modular skills training courses · Sponsored by the Government · For Lower Secondary Assessment (PMR) and SPM holders; the unskilled and unemployed
MECD	Directly under the Ministry	Basic courses/workshops in business, commerce and motivation	<ul style="list-style-type: none"> · For all interested parties · Also as a support for Government servants and non-graduate teachers
MAAI	Agricultural institutes	Skills training in agriculture-related fields	<ul style="list-style-type: none"> · Certificate level · Annual fee of MYR4,040(€824); sponsored by the Government · Duration of two years · For SPM holders

Table III Other Relevant Institutions and Post-Secondary Education Programmes Offered (*Continued*)

Ministry/ Agency	Name/Type of Institution	Type/Field of Programme(s)	Remarks
MOH	Specialised training colleges	Skills training for paramedics and auxiliaries required in medical disciplines	<ul style="list-style-type: none"> · Sponsored by the Government · For PMR/SPM holders
MARA*	MARA Skills Training Institutes	Skills training in technical fields	<ul style="list-style-type: none"> · Certificate and diploma levels · For SPM holders
	MARA Business Institutes	Business-based courses	<ul style="list-style-type: none"> · Certificate, diploma and higher diploma levels · For SPM holders
	MARA Advanced Skills Training Institutes	Joint ventures with specific international training agencies for technology-based courses	<ul style="list-style-type: none"> · Diploma level · For graduates of MARA Skills Training Institutes and SPM holders
	GiatMARA Centres	Training courses in the fields of building technology, furniture craftsmanship, et cetera	<ul style="list-style-type: none"> · Short term single-skill specialist training courses · Targeted at school-leavers and the unemployed

* MARA is an agency under the jurisdiction of the Ministry of Rural and Regional Development (MRRD). It was established as an autonomous body to encourage and assist *Bumiputeras* to obtain education and participate in business, entrepreneurship, trade and industry as a means to enhance the overall Bumiputera standing in Malaysia.

1.5 Tertiary Education

Tertiary or higher education is delivered through both public and private means under the jurisdiction of MOHE as the governing authority for all higher education institutions in Malaysia. The Government regulates the administration and funding for public universities, polytechnics and community colleges. Private institutions conduct their own academic programmes and receive no financial support from the Government; albeit they need to adhere to Malaysian education laws, and they are also under close monitoring by MOHE. The following table indicates the numbers and types of tertiary education institutions currently available in Malaysia.

Table IV Higher Education Institutions in Malaysia (Figures from Government of Malaysia, 2008; MOHE, 2009)

	Type	Number
Public	Public Universities	20
	Polytechnics	27
	Community Colleges	43
	TOTAL	90
Private	Private Universities	15
	Private Colleges	18
	Branch Campuses	15
	Colleges	490
	TOTAL	538
GRAND TOTAL		628

All 20 of the public universities receive financial aid from the Government, including lump-sum funds for research, development and capital expenditure (Government of Malaysia, 2008). Through the National Higher Education Fund Corporation (*Perbadanan Tabung Pendidikan Tinggi Negara*, PTPTN), the Government also offers scholarships and loans to students from low-income backgrounds. In the 1990s, three Government-linked corporations (GLCs) were authorised to run their own private

universities, i.e. Multimedia University (MMU), *Universiti Tenaga Nasional* (UNITEN) and *Universiti Teknologi Petronas* (UTP); paving the way for further establishment of private institutions. Today there are over 500 private colleges and universities, a majority having been set up after the introduction of the Private Higher Education Act 1996. Six universities also operate in the open and distance learning (ODL) mode, i.e. Universiti Tun Abdul Razak (UNITAR), Open University Malaysia (OUM), Wawasan Open University (WOU), Asia e-University (AeU), Al-Madinah International University (MEDIU) and International Centre for Education in Islamic Finance (INCEIF).

In the present system, enrolment into diploma and Bachelor's degree programmes in public institutions is centrally controlled by the Division of Student Admission, MOHE (Study Malaysia Online, n.d.). Although admission requirements and selection criteria are the prerogative of the public universities, they still need to conform to the MOHE's minimum entry requirements (UNESCO, 2006/2007). While those with STPM or matriculation certification commonly apply for admission into public universities, applicants for private institutions usually undergo pre-university programmes at private colleges before sitting for the corresponding examinations (e.g. GCE 'A' Level, Australian pre-university or Canadian pre-university examinations). Another entry pathway for private students is to undertake a university's internal pre-university programme before enrolling into degree programmes in the corresponding foreign branch campus in Malaysia.

Another form of higher education in Malaysia is teacher training (Study in Malaysia Handbook, 2009), whereby school-leavers can enrol into Diploma in Teaching programmes at teacher training colleges. In-service teachers who have obtained basic certification for teaching also have the opportunity to upgrade their qualifications by enrolling into Bachelor's degree programmes in universities. The following table illustrates the current intake, enrolment and output of all higher education institutions in Malaysia.

Table V Intake, Enrolment and Output in Malaysian Higher Education Institutions in 2008 (MOHE, 2009)

Type of Institution	Intake	Enrolment	Output
Public Universities	133,100	419,334	94,622
Polytechnics	40,574	85,280	32,783
Community Colleges	9,649	17,082	5,566
Private Institutions	185,846	399,852	78,561
GRAND TOTAL	369,169	921,548	211,532

In the 9MP, the Government expects to enrol over 1.3 million new students into all higher education institutions and at all levels by the end of the plan period. Evinced in the table above, Malaysia is doing relatively well in its drive towards this target.

Chapter 2

Concepts of Lifelong Learning and e-Learning in Malaysia

2.1 Lifelong Learning in Malaysia

At the time of writing, there is no concrete definition of lifelong learning in Malaysia. The most recent and germane national description of lifelong learning can perhaps be taken from the NHESP (MOHE, 2007):

“... a process for the democratisation of education through the acquisition of knowledge, skills and competencies via formal, informal or non-formal means based on workplace experiences or training”.

The Plan also notes that lifelong learning — through distance learning, e-Learning, workplace and part-time learning — will be integral to support Malaysia’s human capital development and the nation’s knowledge- and innovation-based economy (MOHE, 2007). Apart from the abovementioned Plan, there are several other Government documents that make references to lifelong learning and the need to establish a national definition. These will be explained in Chapter 3 of this publication.

Despite the current lack of a national definition, we can concur that lifelong learning practices in Malaysia universally encompasses a phase of both education and training that takes place after the completion of formal education. Lifelong learning is also generally associated with adult education; and thus refers to learning beyond the formal setting and involving those who have reached adulthood or who are no longer in school (Khairuddin Idris, 2004). Thus, its notion clearly concerns employability and economic strength, and has also come to contain a broader definition that includes all phases and forms of learning, including formal, non-formal and informal education (Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan, 2003).

Beyond formal schooling, there are opportunities for furthering education at different levels; either leading to some form of qualification via workplace training or purely for self-development. The greater core of lifelong learning programmes is formal in nature, and to a lesser extent it may also include non-formal education (Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan, *ibid.*).

For the purpose of this paper, the concept of lifelong learning in Malaysia will be addressed according to the following levels:

- Formal lifelong learning;
- Non-formal lifelong learning; and
- Informal lifelong learning.

1) Formal Lifelong Learning

Formal learning includes activities that take place in formal learning institutions that lead to some form of accreditation or qualification (Khairuddin Idris, 2004). It is

very organised and structured, with clear learning objectives and for learners, the explicit aim is to gain knowledge, skills and/or competencies (OECD, n.d.). In the context of lifelong learning, formal activities take place in educational institutions and lead to different levels of formal recognition. These include:

- Certificates and diplomas at polytechnics and community colleges (e.g. as managed by MARA and several ministries); and
- Executive and postgraduate diplomas and degrees (e.g. at universities).

Community colleges are considered the lifelong learning hubs of the country (MOHE, 2007). Their role has been further reinforced through a rebranding process in 2007, whereby they were encouraged to collaborate with Government-linked companies to offer more industry-relevant formal programmes at certificate and diploma levels. Public universities are also involved in the cultivation of lifelong learning through the offering of development, executive-Level, part-time and distance learning-based programmes. Several of these universities have established designated centres to manage these programmes:

Table 1 Public Universities and Designated Centres for Lifelong Learning

University	Centre
University of Malaya (UM)	Centre for Continuing Education
Science University of Malaysia (USM)	School of Distance Education
National University of Malaysia (UKM)	Centre of Educational Extension
Putra University of Malaysia (UPM)	Centre for External Education
Technology University of Malaysia (UTM)	School of Professional and Continuing Education
Northern University of Malaysia (UUM)	Centre for Professional and Continuing Education
MARA Technology University (UiTM)	Institute of Education Development

The concept of recognition of prior learning (RPL) is also significant in formal lifelong learning. It is a relatively new practice; with OUM as the first private institution

in Malaysia to implement RPL policies beginning in 2006. OUM's Flexible Entry (FE) System is a system that provides leeway for those without extensive or complete formal schooling, but with the relevant work experience to gain entry into university programmes. At the moment, the MOHE has given the green light to six private ODL institutions (i.e. OUM, WOU, AeU, UNITAR, MEDIU and INCEIF) to implement the RPL system, particularly in the area of Open Entry. Another equally important and significant mechanism is the Accreditation of Prior Experiential Learning (APEL); which allows the lifelong provider to award credits for subjects in a certain course by converting learning experiences into the subject's learning outcomes. Both Open Entry and APEL are new in Malaysia; and in fact, the Malaysian Qualifications Agency (MQA) is awaiting the MOHE's endorsement for both systems so as to allow for full implementation. Both OUM and WOU have put the Open Entry system into practice. OUM is presently drafting out the detailed administrative and academic procedures for the implementation of APEL.

2) Non-formal Lifelong Learning

Non-formal education generally includes learning that is outside the formal educational context; with targets that may not necessarily result in a particular qualification (Khairuddin Idris, 2004). While non-formal lifelong learning programmes are usually planned and well-structured, many do not lead to the conferment of qualifications. In general, they are intended towards professional skill development and enhancement, and cover a significant part of the adult learning sector (OECD, n.d.). In Malaysia, opportunities for non-formal learning generally take the form of workplace and on-the-job programmes at various levels that also comprise vocational and executive training. Examples of non-formal lifelong learning in Malaysia include:

- Training and apprenticeship schemes for employees; and
- Training courses for professional development.

One important factor in encouraging non-formal lifelong learning is the role of the Human Resource Development Council (*Perbadanan Sumber Manusia Berhad*, PSMB) that manages the Human Resource Development Fund (HRDF, described

in Chapter 3). In general, PSMB focuses on assisting small and medium enterprises (SMEs) in various industries to provide continuous skills training for their employees. These industries include electronics, manufacturers of food and beverages, industrial chemicals, various household products, as well as those involved in printing, petroleum refineries, basic iron and steel, and et cetera. PSMB has full control of the HRDF; its roles include monitoring collection of levies, disbursing training grants, as well as approving financial assistance and training places. In 2008, PSMB achieved the following:

Table II PSMB Achievements in Promoting Non-formal Lifelong Learning in Malaysia in 2008 (PSMB, 2008)

Indicator	Amount
Approved Training Places	736,410 places
Approved Financial Assistance	MYR 371.87 million
Collection of Levies for the HRDF	MYR 323.39 million
Disbursement of Training Grant	MYR 288.04 million

Provided that employers are registered with PSMB, individuals at various levels of employment are given the opportunity to further their professional skills. The council also manages training schemes for retrenched workers and industrial needs, as well as one unique training scheme for information technology (IT) and software development specialists (PSMB, *ibid.*).

3) Informal Lifelong Learning

Informal education is not well-documented in Malaysia, although many acknowledge it as an important part of learning (Khairuddin Idris, 2004). Acquired through work and social interactions, it does not have a given structure and no set objectives in terms of learning outcomes (OECD, n.d.). As iterated earlier, informal learning is not a focal point in the Malaysian lifelong learning context (Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan, 2003).

Informal activities take place for the typical reason of improving one's quality of

life, takes place at all ages and across all levels of the society without leading to formal recognition and usually occurring at the initiative of the individual according to personal interests. Such opportunities are characterised by interaction between people, the media and material resources (Gan, 2005). By and large, tangible informal lifelong learning appears as community-based programmes that address diverse social problems and meet universal needs of the community, e.g. career training, skills upgrading, environmental concerns, basic education and literacy, public policies or community interests (Gan, *ibid.*).

One example of a consolidated community-based initiative has been initiated by the Malaysian Chinese Association (MCA). Under its Community Education Development Bureau, MCA started a lifelong learning campaign in 2004, through which it has actively organised activities, short courses, talks, exhibitions and workshops throughout the country. These activities cover a wide range of interests and concerns, e.g. communication skills, information technology, personal development, martial arts, family and home care (MCA, n.d.).

Because it is also known as experiential learning, a certain degree of informal lifelong learning can also be properly accredited for individuals who seek recognition for the experiences they have obtained throughout their work and from within the community. This concept ties in with RPL, allowing for many individuals to leverage on informal experiences when they seek entry into the formal education system. Although RPL is still relatively new in Malaysia, it is acknowledged as an important instrument in providing a pathway for any individual to continue learning at higher educational levels to attain a better quality of life.

2.2 e-Learning in Malaysia

In Malaysia, as is common with many other countries, e-Learning is seen as one

of the means to foster lifelong learning. Having received mention in Malaysian policy initiatives since the introduction of the NITA in 1996, e-Learning is also frequently referred to alongside open and distance learning (ODL) as well as professional training and development (MOHE, 2007). Many educational institutions believe e-Learning to be an effective alternative approach to traditional classroom teaching. The deployment of ICTs through e-Learning is recognised as an important support system for lifelong learning, particularly through intensive use of the internet, mobile learning and other applications. Cost-effectiveness and flexibility that allows students to undergo academic programmes without attending full-time classes (MOHE, *ibid.*) are two of the main reasons that Malaysia has embraced e-Learning in its education system.

The idea of e-Learning in Malaysia points to the utilisation of ICTs at various education levels, particularly with the Government's attention in ensuring a respectable national ICT infrastructure in the drive towards globalisation and greater competitive force. This is evident in the inclusion of e-Learning as one of the five strategic thrusts under the NITC (NITC, n.d.), as excerpted below:

“e-Learning is the first step towards capitalising on knowledge. This strategic thrust area envisions the creation of formal and informal network, providing the opportunity and cultivating an ethos of lifelong learning for individual organisational, institutional and societal advancement. It is expected that e-Learning will be the vehicle to accelerate the pace of growth of Malaysia's intellectual capital.”

What is apparent is that e-Learning is considered vital for Malaysia to build a world-class human capital and has been adopted in various ways in schools and universities. Greater implementation has been noted at the higher education level, whilst still in its infancy at the school level (Rohana Abd Rahman, 2004). For the purpose of this paper, we will look into e-Learning at both levels.

1) e-Learning in Schools

e-Learning initiatives in schools are under the ambit of the Government, and is concerned with the provision and use of ICTs, the roll-out of ICT curriculum and assessment and its integration in teaching and learning (Rohana Abd Rahman, *ibid.*). School-level e-Learning initiatives have taken the form of projects as described in the following table.

Table III e-Learning Initiatives in Schools

Initiative	Description
MySchoolNet	A website set up by the MOE to provide links to educational resources worldwide; and to allow interaction between Malaysian school children with those globally.
Smart Schools	Schools with up-to-date ICT infrastructure, using the most current technologies in its curriculum, pedagogy, assessment and materials.
Computing Tablet Project	Encouraging the use of and providing laptops to enhance classroom teaching and learning experiences in a wireless environment.
Computerisation Programme	A development project to equip schools with the necessary ICT hardware and software.
EduWebTV	A website that hosts educational videos under the MOE. Launched in 2008, EduWebTV streams seven types of programmes, i.e. News, Academic, Articles, Interactive, Curriculum, Live and Guides.

2) e-Learning in Universities

The most obvious utilisation of e-Learning is in institutions that have adopted the ODL mode. In Malaysia, these include UNITAR, OUM, WOU, AeU and other universities.

(1) UNITAR

UNITAR was the first of any Malaysian university to attempt full-scale distance education, and is considered Malaysia's first virtual university (Syed Othman Alhabshi & Hasnan Hakim, 2006). As the first provider of virtual learning, UNITAR retained its full-time mode while it continued to experiment in the provision of educa-

tion through the use of ICTs, beginning with producing CD ROM-based course materials to web-based and online content. Currently, UNITAR is a dual mode university that operates mostly on a full-time basis.

(2) OUM

OUM was established in 2000, just two years after UNITAR, and operates completely via ODL. As Malaysia's first open university, the majority of OUM's students are working adults who study on a part-time basis. OUM has developed a blended pedagogy that combines self-managed learning and face-to-face tutorials with online learning. OUM is one of the leading e-Learning practitioners in the country; and has now enrolled more than 90,000 learners in over 70 programmes.

(3) WOU

WOU was established in 2007, making it the second private university in Malaysia to practise ODL. Like OUM, WOU employs a flexible mode that incorporates e-Learning as a means to help part-time students study at their own pace without leaving their jobs or compromising their other commitments. WOU considers itself the country's first private, not-for-profit open learning institution that is funded by charitable trusts, corporations and the public.

(4) AeU

AeU, formed in 2008, is the latest university to employ e-Learning in Malaysia. It is an international university established under the Asia Co-operation Dialogue (ACD). AeU collaborates with institutions of higher learning in 31 Asian countries through ODL; benefiting from the collective expertise and experiences of the universities in each ACD member country.

(5) Other Universities

Several other universities also deserve mention as e-Learning practitioners. UM, MMU and International Medical University (IMU) were among the first to launch learning management systems (LMS). Since then, many other universities have also

introduced their own LMS, even if they do not employ the ODL mode. This is an indication of overall ICT and e-Learning acceptance in Malaysia, including for institutions that offer various full-time programmes in physical campuses throughout the country. Two other institutions also employ the ODL mode, i.e. MEDIU and INCEIF. Both are relative newcomers, having been established in 2007 and 2006, respectively. Additional explanation of e-Learning in Malaysian education will be provided in subsequent chapters of this publication.

Chapter 3

Policies, Funding and Regulation of E-learning in Lifelong Learning in Malaysia

Caveat

At the time of writing, there are no definitive national policies on e-Learning for lifelong learning in Malaysia. For the purpose of this publication, this chapter will provide a description of e-Learning *and* lifelong learning separately as they appear in each of the specified documents. Matters concerning funding and regulation will be explained in the context of education and training.

3.1 Government Policy Statements and Plans

As introduced in Chapter 1, e-Learning and lifelong learning have received separate and linked statements in several policy documents, i.e.: 8MP, 9MP and OPP3. Substantial statements were also made in the Knowledge-based Economy Master Plan (KEMP), introduced in 2002 by the Economic Planning Unit (EPU), under the jurisdiction of the Prime Minister's Department; and the NHEAP and NHESP, released

by MOHE in 2007.

1) Eighth Malaysia Plan (2001-2005)

The 8MP provides one of the earliest mentions of e-Learning and lifelong learning policies in Malaysia. This Plan introduced the NITC's role in achieving the NITA through the Strategic Thrusts Agenda, of which e-Learning was one and was meant "to focus on cultivating a lifelong learning culture" (Government of Malaysia, 2001). Having access to lifelong learning opportunities was also seen as important aspect in addressing the dangers of the digital divide in marginalising a substantial number of Malaysians. The Plan states that:

"A system of lifelong learning will be introduced and skills upgrading strengthened to support the development of a learning society..."

As such, lifelong learning was also listed as a human resource policy thrust that could encourage and further enhance the employability and productivity of the labour force (Government of Malaysia, 2008). The promotion of lifelong learning was needed in order to develop a knowledge-seeking culture amongst Malaysians. The Government anticipated lifelong learning, through the use of ICTs, distance learning and web-based learning, could help steer the nation towards becoming a knowledge-based economy. The Government's attention to education in this respect was evident in better support services in the form of public and mobile libraries. Educational institutions were also encouraged to offer more diversified courses through distance learning programmes and part-time courses (in community colleges). In essence, the 8MP asserts lifelong learning as the strong foundation needed for the creation of a knowledge-seeking society in the nation's drive towards Vision 2020.

2) Third Outline Perspective Plan (2001-2010)

Having been launched during the same period as the 8MP, the OPP3 also outlines e-Learning as a strategic thrust under NITA and lifelong learning as a means to develop Malaysia's human capital. In line with Vision 2020 and the Government's

concern for the creation of a knowledge-based economy, the OPP3 recognises lifelong learning as vital in allowing Malaysians to continuously learn and upgrade their skill base after leaving the formal education and training system. In this respect, OPP3 outlines quite clearly the role of lifelong learning in training programmes. The setting up of information technology (IT) kiosks and cyber centres were planned, particularly in rural areas. This is in line with the use of ICT-related media to offer access to training programmes and education across the Malaysian society. Similar to the 8MP, the OPP3 also outlined the following action plans related to formal education and training:

- The establishment of community colleges, open universities and distance education as alternative avenues for tertiary education;
- Community colleges to provide opportunities for school-leavers to further their education;
- Encouraging financial institutions to provide soft loans to working adults to continue their education;
- Encouraging employers to promote lifelong learning through training and retraining programmes; and
- Strengthening the delivery of public training institutions by using ICTs and web-based learning systems.

3) Knowledge-Based Economy Master Plan (2002)

The KEMP, launched by EPU in 2002, is based on the development thrusts provided in the OPP3, and contains 136 recommendations encompassing human resource development, information structure, incentives, science and technology development, reorientation of the private and public sectors as well as addressing the digital divide (EPU, n.d.). The KEMP views education as crucial to develop a knowledge-based economy; of which one of the most important steps is to enhance Malaysia's human resource capacity. The KEMP provides a comprehensive collection of action plans spread over three phases from 2001 to 2010, along with the relevant implementing agencies. Under education alone, there are 64 recommendations that either directly

or indirectly involves the implementation of e-Learning and lifelong learning in Malaysia. Several prominent recommendations related to lifelong learning in the KEMP (Government of Malaysia, 2002) are:

- Formulate and adopt a National Policy on Lifelong Learning and Education within the context of Vision 2020 and the knowledge-based economy;
- Embed lifelong learning education and philosophy in all major Government policies;
- Promote research and development in the areas of adult education and lifelong learning by strengthening existing research and development centres of lifelong learning;
- Foster the development of scientific and technological literacy through lifelong learning and education; and
- Promote trade union involvement in lifelong learning.

4) Ninth Malaysia Plan (2006-2010)

The 9MP clearly describes e-Learning and lifelong learning as important features in the nation's efforts to mainstream ICTs as well as to enhance human capital development (Government of Malaysia, 2006). The following are excerpts of the 9MP with regards to e-Learning and lifelong learning (Government of Malaysia, *ibid.*):

- E-learning initiatives will be expanded in the formal education process, vocational training programmes, in the private sector and also in public offices (through the formulation of the Public Sector e-Learning Blueprint by the National Institute Of Public Administration (INTAN));
- Encouraging the use of the internet is integral in the growth of e-Learning as a potential source of online education and training.
- Provision of infra- and infostructure through initiatives such as the Malaysian Grid for Learning (MyGfL) and Smart School community projects;

The establishment of the National e-Learning Consultative Committee (NeLCC) to direct and monitor all e-Learning strategies and programmes. The NeLCC is also

responsible for overseeing the preparation of INTAN's Blueprint;

- Offering of lifelong learning programmes with flexible entry requirements (by community colleges and ODL providers);
- Accelerating lifelong learning through upgrading and expansion of infrastructure, increasing accessibility (through e-Learning and distance education) and inculcating a learning culture;
- Public universities to establish centres for continuing education with flexible entry requirements;
- Institutions such as OUM and UNITAR will be encouraged to offer postgraduate programmes to cater to working professionals; and
- Private institutions, training providers, non-governmental organisations (NGOs) will also be encouraged to provide lifelong learning programmes, including amongst the workforce.

5) The National Higher Education Action Plan (2007-2010) and National Higher Education Strategic Plan (2007)

(1) The National Higher Education Action Plan (2007-2010)

The NHEAP lists lifelong learning as one of the critical agenda to be achieved during the 9MP plan period. The Plan calls for measures to put in place a comprehensive policy on lifelong learning that will involve both the Government and the private sector. Some of the desired outcomes listed in this Plan are to increase the number of adult learners in order to bolster the knowledge value of the work force; to inculcate a pervasive lifelong learning culture; and to provide alternative and equitable access to tertiary education for the rural and urban poor, *Bumiputera* communities in East Malaysia, indigenous (*Orang Asli*) communities as well as the physically disadvantaged.

(2) The National Higher Education Strategic Plan (2007)

The NHESP focuses on the enculturation of lifelong learning to democratise education across all levels of the Malaysian society. Similar to the above Plans, this Plan lists

extensive lifelong learning mechanisms to support the nation’s knowledge- and innovation-driven human capital development. Drawing on ODL, e-Learning, workplace and part-time learning, these mechanisms include:

- The establishment of a Lifelong Learning National Committee under the MOHE and MHR;
- The expansion of lifelong learning programmes at all higher education institutions;
- The proper accreditation of prior learning through the Malaysian Qualifications Framework (MQF);
- The reinforcement of community colleges as a lifelong learning hub; and
- Increasing enrolment in lifelong learning programmes by up to ten per cent at diploma and first degree levels through flexible entry requirements.

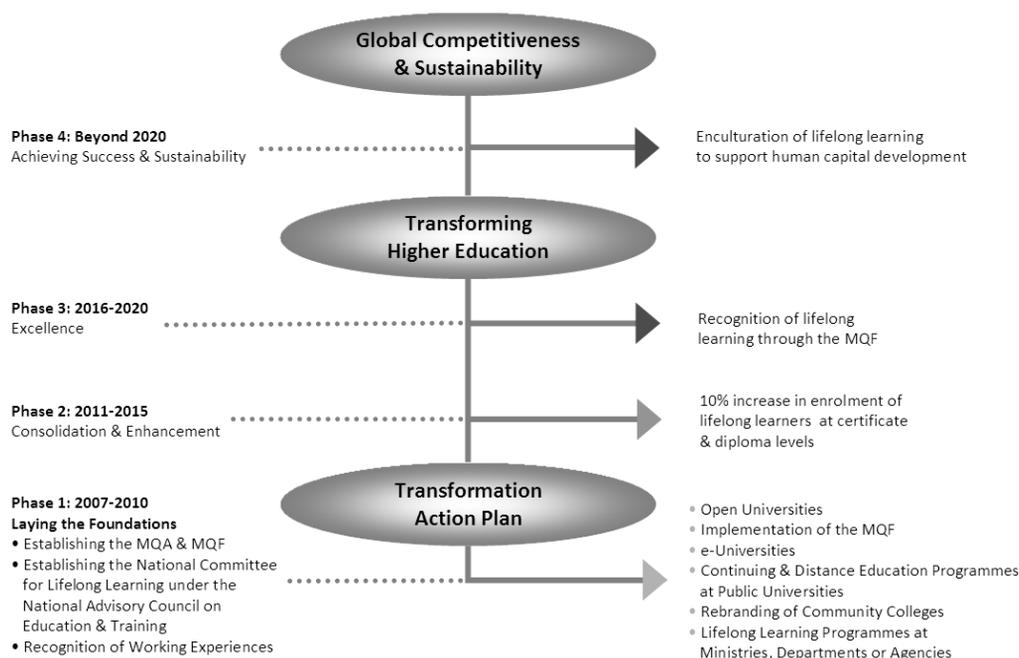


Figure 1 The NHESP’s transformation process for Malaysian lifelong learning (Translated from the NHESP, MOHE (2007))

The following is the diagram of the NHESP's transformation process for lifelong learning in Malaysia. It is evident from this diagram that the various parties described in this publication have important roles to play in this regard.

3.2 Funding: Education and Training

With the focus of lifelong learning and e-Learning in Malaysia resting on enhancing the employability and productivity of its citizens, the main point of reference is the Government's attention towards education and training at the higher education level. The most recent economic plan allocated MYR 45.1 billion between 2006 and 2010 (Government of Malaysia, 2006). What is important to note is that this allocation represents financial aid awarded to public institutions; disbursed through the pertinent Government agencies and ministries. The following table details the allocation for tertiary education and training, as stipulated in the 9MP (Government of Malaysia, 2006).

Table I Development Expenditure and Allocation for Tertiary Education and Training, 2006-2010

Programme	9MP Allocation (MYR in million)
Tertiary Education	16,069.0
Training:	
Industrial Training	4,103.6
Commercial Training	179.5
Management Training	509.5
Total	20,861.6
Grand Total (Education and Training)	45,149.1

Similar to other countries, central provision of funds for lifelong learning and professional development in Malaysia involves resource generation through payroll taxes, incentives for employers to invest in lifelong learning programmes and other such

approaches. The funds described below represent the main components in financing lifelong learning and e-Learning in Malaysia.

1) Funding for Public Institutions

Within the context of lifelong learning and human capital development, Government funding for training and retraining opportunities are present in the form of specific funds, e.g. the HRDF, Skills Development Fund (SDF) and National Higher Education Fund (NHEF). In general, funding for education and training represents about a fifth of total Government expenditure (EPU & World Bank, 2007).

(1) HRDF

The HRDF is managed by the Ministry of Human Resources and operates through levy contributions from private institutions and companies (Anuwar Ali, 2005). Established in 1993 to replace the training tax incentive scheme, it provides funding for training and retraining programmes for private sector employees. Employers are liable to pay an average of one per cent of each employee's monthly remuneration to the fund. The fund's objective is to provide financial assistance to defray part of the costs for employee upgrading programmes through a cost-sharing scheme between private companies and the Human Resource Development Council (Haslinda Abdullah, Raduan Che Rose & Kumar, 2007). In the 9MP, almost MYR 4.8 billion was set aside for financing all training programmes (Government of Malaysia, 2006).

(2) SDF

The SDF was established in 2001 as a means to provide loans for technical and vocational training courses in both public and private training institutions (Anuwar Ali, 2005). Students who have obtained a basic skills certificate can apply for a loan programme that will provide them with MYR 5,000 for every level of study. In the 9MP, a total of MYR 644.5 million was disbursed to about 135,000 trainees nationwide (Government of Malaysia, 2006).

(3) NHEF

The PTPTN is a semi-autonomous agency under MOHE and has been operating since 1997. The NHEF offers subsidised loans to meet tuition fees in both public and private institutions of higher education throughout Malaysia; intended to promote further enrolment and access to tertiary education nationwide. From 1997 to 2006, a total of MYR 17.27 billion was disbursed to benefit over 890,000 students at various study levels across the country. For the 9MP, the Government increased the allocation to MYR 19.83 billion to be distributed from 2006 to 2011 (Ministry of Higher Education, 2007).

The national Employees Provident Fund (EPF) is the largest contributor to the NHEF, and for the next two economic plans, i.e. the Tenth and Eleventh Malaysia Plans, MYR 38.85 billion and MYR 71.40 billion, respectively, will be allocated for the fund. Out of those figures, MYR 9.68 billion and MYR 16.12 billion for each of the aforesaid Plans will be subsidised by the Government (Ministry of Higher Education, *ibid.*).

2) Other Sources of Funding and Scholarships

Within the context of financing lifelong learning and e-Learning programmes, it is necessary to mention the role of MARA as one of the main providers of not merely education programmes at various levels, but also as a provider of financial aid to needy individuals, many of whom are school-leavers, those without complete basic education and come from rural areas. MARA is a Government agency that focuses on providing business, educational and financial support to *Bumiputeras*. Under the ambit of the MRRD, MARA has financially aided *Bumiputera* students and budding entrepreneurs for over 40 years with scholarships, loans and various training and development programmes (as described in Chapter 1).

The Public Services Department (PSD), under the MHR, also provides a source of scholarships and financial aid for ‘critical’ academic programmes, e.g. Medicine, Dentistry, Pharmacy and Engineering. In general PSD scholarships are offered to

students enrolled in public universities, or to those who are placed in selected universities in the United Kingdom, the United States of America and Australia (Study Malaysia Online, n.d.).

MOHE's designated Scholarship Division provides study loans and scholarships for students in various stages of education, i.e. matriculation students and students at polytechnics and community colleges. The Federal Training Award Scheme, also under the MOHE, is offered to academic personnel and postgraduate students bound to polytechnics and community colleges as well (Study Malaysia Online, n.d.).

3) Funding for Private Institutions

As iterated earlier, private education institutions in Malaysia are self-sustaining bodies outside the state funding mechanism. Private providers that directly or indirectly operate within the sphere of lifelong learning and e-Learning, for instance OUM and WOU, rely almost entirely on independent revenue-generating activities (in particular, student enrolment and tuition fees) to remain viable. From a national viewpoint, the private sector provides additional places at the tertiary level; and it also helps to reduce the total public subsidy to higher education (Wilkinson & Ishak Yussof, 2009). That said, private students can also apply for study loans under the NHEF or obtain other means of scholarship.

3.3 Regulation and Quality Assurance

1) Legislative Acts

At present, Malaysia has yet to introduce legislative acts that are exclusive to e-Learning for/and lifelong learning. In spite of this, the increasing use of ICTs in education has had an enormous impact on the quality of education throughout the country. Many of the e-Learning and lifelong learning initiatives described earlier, particularly at the school and post-secondary levels (e.g. MySchoolNet, MyGfL, Smart

Schools, upgrading of ICT infrastructure, et cetera) during the 8MP and 9MP plan periods, have been implemented by the Malaysian Government with support from private entities. This suggests the Government's keen involvement in the management and regulation of these initiatives. Educational reforms, especially in the 1990s, have had great bearing on the provision of e-Learning and lifelong learning programmes. The following are details on legislative acts and how they have affected e-Learning and lifelong learning in Malaysia, particularly at the post-secondary and higher education levels.

Table II Legislative Acts and Their Impact on e-Learning and Lifelong Learning
(Adapted from UNESCO, 2006/2007; Study Malaysia Online, n.d.)

Act	Content/Impact
Education Act 1996	<ul style="list-style-type: none"> · Provisions that apply to MOHE in the establishment of polytechnics and community colleges.
Private Higher Educational Institutions Act 1996	<ul style="list-style-type: none"> · Establishment and operations of private higher educational institutions. · Provision for the establishment of private universities, university colleges, branch campuses of foreign universities, as well as the upgrading of existing private colleges to universities. · Liberalisation of higher education to meet increasing demand for tertiary education and a highly skilled workforce.
National Council of Higher Education Act 1996	<ul style="list-style-type: none"> · Establishment of a national body to determine policies and co-ordinate the development and rapid expansion of tertiary education in Malaysia.
The National Accreditation Board Act 1996 (Replaced by the Malaysian Qualifications Agency Act, 2007)	<ul style="list-style-type: none"> · Establishment of the National Accreditation Board (now MQA) to ensure that high academic standards, quality and control are maintained in private higher educational institutions. · The MQF as a platform for QA in Malaysian higher education.
Universities and University Colleges (Amendment) Act 1996	<ul style="list-style-type: none"> · Corporatisation of public universities.
National Higher Education Fund Corporation Act 1997	<ul style="list-style-type: none"> · Establishment of the PTPTN as a fund that provides financial assistance through study loans to students.

2) Quality Assurance (QA)

(1) Public Institutions

QA in public higher education, whether constituting conventional studies, e-Learning or mixed models, comes under the purview of MOHE. Public education is regulated by the Quality Assurance Division under the ambit of MOHE. This division concerns itself with the quality of academic programmes in the public system and also manages ISO-related certification for every institution. Professional accreditation bodies, such as the Malaysian Medical Council, PSD and Engineering Accreditation Council provide standards for licensure and professional practice as well as deal with QA in the academic sense (EPU & World Bank, 2007). Because all public institutions are centrally managed by the Government, all matters with regards to QA are also a central concern. However, it is common for each institution to have a Quality Management Unit that deals with institutional QA according to guidelines provided by MOHE.

(2) Private Education Providers

Based on the Private Higher Educational Institutions Act 1996, all private colleges, universities and non-degree granting institutions are answerable to QA measures outlined by the Government. Operational activities are not explicitly supervised by the Government, thus allowing for a certain degree of autonomy for these institutions. However, with the establishment of the MQA, each of these institutions must abide by the classifications given in the MQF. In this sense, qualifications awarded by all institutions must conform to criteria that clarify academic levels, learning outcomes and credit systems (MQA, 2007) set by the MQF. MQA, as the authoritative agency for implementing the framework, is responsible for monitoring and overseeing QA practices and accreditation in all private institutions. MQF stands as the basis for QA in higher education as well as the reference point for criteria and standards for national qualifications (MQA, n.d.). It covers eight levels of qualification, i.e. Certificate Levels One to Three, Diploma, Advanced Diploma, Bachelor's Degree, Master's and Doctoral Degrees (MQA, 2007). The functions of MQA (MQA, n.d.) are to:

- Implement MQF as a reference point for qualifications;
- Develop standards, credits and all other relevant instruments as national

- Quality assure higher education institutions and programmes;
- Accredit courses that fulfil the set criteria and standards;
- Facilitate the recognition and articulation of qualifications; and
- Maintain the Malaysian Qualifications Register (MQR).

In the context of lifelong learning, the MQF also provides education pathways to systematically link qualifications and allow proper recognition of prior learning, whether obtained through formal, non-formal or informal means (MQA, 2007). This is evident in the document's clear inclusion of lifelong learning in its qualifications and levels (Figure I). Listed in the MQF, these pathways are represented by three qualifications (Table III).

Particularly where formal private education is concerned, this is a significant development that demonstrates the value of lifelong learning initiatives in Malaysia. One example of which is the implementation of FE at OUM; a system that promotes lifelong learning by providing access to university education to individuals who generally have little beyond basic education (i.e. just PMR or SPM certification). This is done by evaluating and recognising their working and other learning experiences against the learning outcomes for a particular course or programme. OUM began implementing FE and RPL policies in February 2006; the first of its kind in the country.

Table III Qualifications for Lifelong Learning Pathways in the MQF

Qualification	MQF Description/Definition
Advanced Diploma	· A specific qualification that identifies an individual who has knowledge, practical skills, managerial abilities and more complex and higher responsibilities than those expected at a diploma level.
Graduate Certificate and Graduate Diploma	· Qualifications that comprise competencies at the Bachelor's level. · Graduate Certificate and Graduate Diploma differ by credit value. · Used for purposes such as continuing professional development (CPD), changing a field of training or expertise and as entry qual-

	ification to a higher level with permissible credit transfer.
Postgraduate Certificate and Postgraduate Diploma	<ul style="list-style-type: none"> · Qualifications that contain competencies at least at the Master's level and acquired after obtaining a qualification equivalent to that of Bachelor's. · Postgraduate Certificate and Postgraduate Diploma differ by credit value. · Conferred when the practitioner completes CPD or advanced training which is more professional than academic in nature.

MQF Levels	Sectors			Lifelong Learning
	Skills	Vocational and Technical	Higher Education	
8			Doctoral Degree	Accreditation of Prior Experiential Learning (APEL)
7			Masters Degree	
			Postgraduate Certificate & Diploma	
6			Bachelors Degree	
			Graduate Certificate & Diploma	
5			Advanced Diploma	
4	Diploma	Diploma	Diploma	
3	Skills Certificate 3	Vocational and Technical Certificate	Certificate	
2	Skills Certificate 2			
1	Skills Certificate 1			

Figure II Qualifications and levels in the MQF

4.1 Status: A General Overview

Lifelong learning is widely practised across many different levels in Malaysia. As described earlier, many different parties are involved in the provision of lifelong learning programmes at formal and non-formal levels, from public universities, ODL institutions, post-secondary institutions, MARA as well as through the relevant ministries. In 2008 alone, the enrolment at certificate and diploma levels amounted to almost 430,000 (MOHE, 2009); representing students in public and private institutions, community colleges and polytechnics. Despite the rising participation in lifelong learning programmes, there is a clear lack of co-ordination and management at a national level. Through a more resolute effort by the relevant bodies, it is hoped that all these programmes, from education to skills and training, will be represented by a more concerted co-ordination by the Government and its ministries.

The rising interest in lifelong learning can be attributed to the pressures of globalisation and technologies as well as Malaysia's changing demography (Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan, *ibid.*); as the nation gears itself towards greater employability and productivity of its citizens (Ruslan Abdul Shukor, 2005). Globalisation brings with it social and economic changes that compels Malaysia to look into upgrading skills and technology intensity and knowledge capabilities in its labour force. With a population that is expected to reach 28.9 and a working age group (ages 15 through 64) of about 19 million individuals in 2010, the new Malaysian demography implies the need for more employment and training opportunities (Mohamed Rashid Navi Bax & Mohd Nasir Abu Hassan, *ibid.*) that could be created through lifelong learning. The need to nurture a learning society, mentioned

in the OPP3 (Government of Malaysia, 2001) involves encouraging more women, senior citizens, retirees and marginal groups to take part in informal or non-formal learning as well.

Despite the increasing number of institutions adopting e-Learning throughout the country, its utilisation in lifelong learning programmes in Malaysia is not well-established as yet; and mainly limited at the formal level through private higher education institutions. In connection to this, there is also growing interest from many working adults who are beginning to see lifelong learning as a way of furthering their education or obtaining formal recognition for their professional experiences. Of particular interest are programmes offered through e-Learning as this will allow them to enrol on a part-time basis. While various parties are involved in the provision of continuing professional education, skills upgrading and training programmes (as has been described in the earlier chapters), the adoption of e-Learning in these institutions and programmes has not been as widespread as with those practising ODL (e.g. OUM and WOU).

e-Learning initiatives at the school level have mainly focused on the provision and use of ICTs, while more and more organisations, both public and private, are beginning to look into e-Learning as a viable means for training their employees. At the informal level, this is slightly less distinct, but literature suggests that many lifelong learning projects involving e-Learning are usually performed at the community level and are aimed towards creating awareness of ICTs and bridging the digital divide between urban and rural populations (see Chapter 5).

At this point in time and regardless of its level of use, there is a need for:

- Greater awareness amongst the citizens;
- More extensive adoption of technological infra- and infostructures (including internet accessibility); and
- Greater Government attention in:
 - Carrying out the various policies and action plans described in Chapter 3;

- Providing better management, guidance and funding to allow more players and practitioners to enter the field; and
- Introducing new schemes that would make e-Learning more cost-effective.

4.2 Characteristics

1) Introduction

The use of e-Learning in lifelong learning in Malaysia aims to achieve the following objectives:

- As a smart and cost-effective way for employee training and upgrading;
- To complement the traditional mode of learning through blended learning;
- To facilitate greater educational access to geographically distant individuals;
- To broaden access to disadvantaged and marginalised individuals (e.g. the disabled, those in remote areas);
- To improve cost-effectiveness in offering formal educational programmes;
- To develop information-retrieval skills and digital literacy in its target audience;
- To improve the quality of teaching and learning; and
- To promote continuous personal and professional development.

Many of these objectives are embodied in the practices of ODL institutions, particularly as they are the pioneers and continuous practitioners of e-Learning in Malaysia. Because ODL is generally targeted towards working adults in search of higher qualifications, the lifelong learning connotation is evident as well. For the purpose of this publication, the characteristics of e-Learning in lifelong learning will be provided from the viewpoint of ODL.

2) The ODL Viewpoint

Four of Malaysia's ODL institutions (as listed in Chapter 2), i.e. UNITAR, OUM,

WOU and AeU, can be considered the key proponents of e-Learning in the country. With the exception of UNITAR, which currently operates as a dual-mode university, OUM, WOU and AeU operate fully through ODL and focus on providing tertiary education to working adults. Other higher education institutions also supplement traditional modes with ODL, e.g. MMU and IMU. However, as providers of formal higher education to full-time, first-degree university entrants, these institutions are not considered to be involved in the lifelong learning context of Malaysia, and thus will not be described in this publication. Public universities that dabble in e-Learning (mostly through distance education programmes) have been described in Chapter 2 and will not recur in this chapter. The following is an illustration of the characteristics of e-Learning provided by UNITAR, OUM, WOU and AeU.

Table I Characteristics of e-Learning in Lifelong Learning in Malaysian ODL Institutions

		Criteria			
		ICT Infrastructure	Type and Availability of Learning Resources	Delivery of Programmes	Other Details
UNITAR	Course Management System (CMS) known as Virtual Online Instructional Support System (VOISS).	This consists of e-mails, forums, bulletin board, virtual library and announcements.	CD- and web-based courseware and virtual library (online databases, electronic texts, e-books, examination papers, etc).	Hybrid e-Learning model that incorporates classroom teaching, online tutorial meetings, the virtual library and an online/offline Call Centre and Customer Relations Management.	Malaysia's first virtual university, but currently operates as a dual-mode university, mostly targeting full-time first-degree university entrants.
	LMS known as myLMS. myLMS consists of e-mails, forums, bulletin board, announcements, academic calendar, links to all learning resources, digital library, university publications, handbooks, online assessment, iRadio, etc. It also allows learners to track financial transactions with the university.				

	iRadio is OUM's internet radio, the first for any university in Malaysia.	Electronic Gateway to English Resources) and multiple choice question (MCQ)-based assessment.		
W O U	LMS known as WawasanLearn. It contains course-by-course announcements, online forums, tutorials, supplementary course materials, assignments, self-tests and online quizzes, etc.	Digital Library, CD-ROM based material, supplemented by PowerPoint slides for selected topics, PDF files, website links, articles, quizzes and online interactive programmes.	ODL model that includes self-learning course materials, face-to-face tutorials, telephone and online tutoring, video conferencing and support from regional offices (library and internet access).	Operates as a not-for-profit ODL university. Like OUM, also targets working adults in pursuit of higher education.
A e U	LMS known as AeU LMS. The system contains courseware, course announcements and information, forum, chat room, messaging, assignments, timetable, question bank, web links and quizzes. It is accessible through the student portal that allows students to do online transactions, add/drop subjects, change programmes, etc.	Virtual library, books, journals, theses and print modules.	Distance learning mode that involves independent study, online discussions and face-to-face interaction/tutorial.	Operates as a multinational university under the ACD. It is an international university and is in the process of gaining international recognition.

The four universities above share several similar grounds, i.e. they have all constructed each respective CMS or LMS either based on an open source platform or developed it independently from the ground up. All four institutions also employ an open entry system to provide leeway for individuals without extensive educational backgrounds to enrol in their academic programmes and each has also developed its own courseware and/or modules. While there are slight distinctions in the modes of delivery, in essence the utilisation of e-Learning in these institutions are quite clearly represented as not only a technological feature, but an important component in the teaching and learning process. What is also important to note is that because the main clientele for these ODL institutions are working adults (a majority of whom are within the 25-45 age range), many of them are either not well-versed or may

have never even had any experience with e-Learning technologies. As such, these institutions spend a great deal of time and effort in guiding new students to adapt to their new ways of teaching and learning.

3) Corporate Involvement: A New Form of e-Learning in Lifelong Learning

For-profit, on-demand and corporate e-Learning are relatively new phenomena in Malaysia. This form of e-Learning warrants a mention in this publication as it is considered to be a part of continuous training for working professionals; a complement of the traditional face-to-face trainer-trainee programme (Rozana Sani, 2004). Having been given allocations under the HRDF, corporate e-Learning is a response to the World Trade Organization’s General Agreement on Trade in Services (GATS) that first came into force in 1995 (Jung, 2009). The influence of GATS on the e-Learning practices of many countries, including in Asia and Malaysia, is clear in that many have come to realise this new, under-exploited market for e-Learning and there have been, in recent years, evidence of local, national and regional for-profit providers that have entered this market (Jung, *ibid.*).

In Malaysia, for-profit e-Learning has grown quite rapidly in the corporate training sector; seen as an effective strategy for employee development. Several examples of such providers include the following (cited in Jung, *ibid.*):

Table II Several Corporate e-Learning Providers in Malaysia

	Description
training.my	<ul style="list-style-type: none"> · Malaysia’s one-stop portal for training events across various areas. · Includes a list of e-Learning courses. · Major clients include National Bank of Malaysia, MMU and the EPF
HP Education Services(HPES) Malaysia	<ul style="list-style-type: none"> · A training house under Hewlett Packard Malaysia. · Lists a comprehensive selection of training and e-Learning solutions across a wide variety of IT course subjects.

There are also several major vendors that provide school curriculum-based educational

courseware, online or e-Learning teaching courses for primary schools in Malaysia (Jung, *ibid.*). Two such examples include KDEB Anzagain, a private company that develops and supplies courseware to the MOE; and e-Learn Dot Com, that provides software for primary web-based learning system, multimedia teaching solutions, as well as thematic learning software for children and materials for schools and kindergartens in various subjects.

While there has been significant growth in this area, corporate e-Learning has yet to truly take off in Malaysia, with many parties still preferring the traditional approach of face-to-face sessions (Rozana Sani, 2004). However, as the country searches for flexible, cost-effective access to lifelong learning, primarily for working adults, corporate e-Learning could provide the solution needed to close the gaps in terms of skills and demographics of Malaysia's society.

Chapter 5

Typical E-learning in Lifelong Learning: Malaysian Initiatives

5.1 Introduction

The first part of this chapter will deal with formal and non-formal examples of e-Learning in lifelong learning initiatives in Malaysia. In line with the concepts introduced in Chapter 2, formal examples will be taken to include programmes and courses conducted by designated educational institutions that utilise e-Learning and are aimed at award of official qualification and certification. Frequently, these instances have specific target groups and in the case of higher education institutions, represent the learning pathways for working adults. Non-formal examples will focus

on programmes that are sponsored by large organisations for the purpose of employee professional development or skills upgrading of the labour force.

The second part of this chapter will deal with informal examples of programmes that have been conducted in Malaysia. There are extensive instances of both forms of lifelong learning activities; and their impact range from large-scale, national implementation to small, community-based efforts. Both types will be mentioned in this publication to provide a comprehensive view for the whole country. Many of the informal initiatives have taken the route of rural development as an effort to bridge the digital divide and ensure that rural folk and the underprivileged have equal lifelong learning opportunities and are not left behind in the race towards greater technological awareness in the country. These programmes do not confer certifications per se and are generally conducted on a not-for-profit basis.

5.2 Formal and Non-formal Lifelong Learning Examples

1) Public Universities: A General Observation

As iterated in Chapter 2, several established public universities are involved in the offering of lifelong learning programmes through each respective designated centres or schools that focus on continuing, professional and adult education. In general, many of such programmes are conducted on a part-time basis, leading to certificates, executive and professional diplomas and may include short courses as well. The use of e-Learning in such instances may not be as prominent as in institutions that fully employ the ODL) mode. Rather, the “e” component is, more often than not, represented by IT infrastructure, internet accessibility and encouraging students to leverage on technologies to complement their learning. That said, some of the courses and programmes offered can include an e-Learning component, particularly for public universities that also dabble in ODL as well. The table in the following page describes the efforts of public universities in offering e-Learning in lifelong learning.

The USM, is a prime example of a traditional public university that has opened up to e-Learning; being the first university to implement distance education in Malaysia in 1971 (USM, 2008; Lee & Rozinah Jamaludin, 2009). Today, USM's e-Learning model includes an LMS, virtual library, blended pedagogy and an ICT helpdesk (Lee & Rozinah Jamaludin, *ibid.*) and the School of Distance Education has also produced more than 14,000 graduates since the School began operating in full distance education mode in 1993 (USM, *ibid.*).

Table I Involvement of Public Universities for e-Learning in Lifelong Learning in Malaysia

	Centre	Type of Programmes	e-Learning Component
U M	Centre for Continuing Education	Short courses, certificates, executive and professional diplomas and coaching programmes	<ul style="list-style-type: none"> • Not extensive. • Programmes are conducted on a part-time basis, complemented by adequate IT infrastructure.
U S M	School of Distance Education	Short courses, undergraduate and post-graduate programmes	<ul style="list-style-type: none"> • Available. • USM employs full distance learning mode, supplemented by well-established infrastructure.
U K M	Centre of Educational Extension	Bachelor's degrees, post-graduate diplomas and Master's programmes	<ul style="list-style-type: none"> • None (UKM discontinued their distance learning programmes in 2002). • Programmes rely on face-to-face lectures conducted on weekends or after office hours.
U P M	Centre for External Education	Undergraduate and post-graduate programmes	<ul style="list-style-type: none"> • Available. • UPM uses the distance learning model, using e-Learning complemented by face-to-face sessions.
U T M	School of Professional and Continuing Education	Short courses, executive, English and undergraduate programmes and diplomas	<ul style="list-style-type: none"> • Available. • UTM has developed its own learning management system to complement the e-learning mode for these programmes.
U U M	Centre for Professional and Continuing Education	Diplomas and undergraduate programmes	<ul style="list-style-type: none"> • Available. • UUM also employs distance learning as the main delivery mode.
U i T M	Institute of Education Development	Short and professional courses and undergraduate programmes	<ul style="list-style-type: none"> • Available. • UiTM also employs distance learning as the main delivery mode.

2) OUM: A Private Example

In deliberating both e-learning and lifelong learning in Malaysia, it is essential to describe the role of OUM. While UNITAR was the first virtual university in Malaysia, OUM is the country's premier ODL institution. Having been established in response to the call for the democratisation of education in 2000, OUM's very foundation, much like other open universities worldwide, underlies the need to provide working adults with a viable alternative to lifelong learning opportunities.

As an ODL institution, OUM employs a blended pedagogy that combines e-learning complemented by face-to-face tutorials and self-managed learning. The e-learning component is backed by the university's myLMS, that is used by all tutors and learners to communicate, share information, access course materials, assignments, practice tests, learning objects and other e-content as well as important announcements from the university. It also includes an online interactive forum, learning content management and online assessment management; and e-learning is complemented by various electronic elements, e.g. a digital library, internet radio, educational text messages via mobile learning and web-based technologies (Figure I).

As much as 95 per cent of the OUM learner population is made up of working adults, many of whom did not have the chance to pursue tertiary education earlier in their lives, or are now looking to continuing education as a means for career advancement. This is the heart of OUM's lifelong learning philosophy — i.e. anyone, regardless of time, place, creed, age or socio-economic background has the right to education.

One of the mechanisms that can create a lifelong learning pathway is RPL; an increasingly significant avenue for formal recognition and for a more meaningful lifelong learning experience. As mentioned in Chapter 2, OUM is the first in Malaysia to implement RPL through a system now known as FE. FE allows for entry into OUM academic programmes through less stringent requirements by taking into consideration every applicant's prior learning and work experiences for admission into an

appropriate field of study at the university. Thus far, almost 2,000 individuals have enrolled as FE learners, representing 18 per cent of the open market intake for OUM (Latifah Abdol Latif, Mansor Fadzil & Kek, 2009). While many may be sceptical about the FE system and question the quality of such learners, the study above has shown that their academic performance can be far better than normal entry students in the same courses taken. The re-registration rate (persistence level) among the FE students is also higher and this indirectly implies that the motivation and perseverance among the FE students are relatively high (Latifah Abdol Latif, Mansor Fadzil & Kek, *ibid.*). Such a result serves as strong evidence of the effectiveness of RPL and its implementation. This success is indeed a significant milestone for OUM; representing the effort to uphold the philosophy of a democratised education and dispelling the myth that FE system will lead to inferior output.

Under RPL, OUM is also exploring the possibility of implementing APEL, another mechanism to create a clear pathway for lifelong learning. Once implemented, APEL will be applicable to all undergraduate learners, allowing them to obtain credits for certain courses where they are able to provide proof of adequate and relevant experiential learning. Learners will be assessed through a system that involves either sitting for a challenge test (comprising multiple-choice questions) or writing an e-portfolio. In this context, Malaysia should emulate Korea in the establishment of a Credit Bank System (CBS), i.e. an open education system that recognises diverse learning experiences gained not only through formal learning, but also through non-formal and informal means as a way to provide a better opportunity for the people to enhance their individual capabilities. Assessing the candidates' applications via the e-portfolio system is an innovation in itself; giving flexibility to candidates to fill up the required forms for their credit applications. Both APEL and the CBS will serve every individual who aspire to continue learning to obtain recognition in terms of all the knowledge and skills acquired.

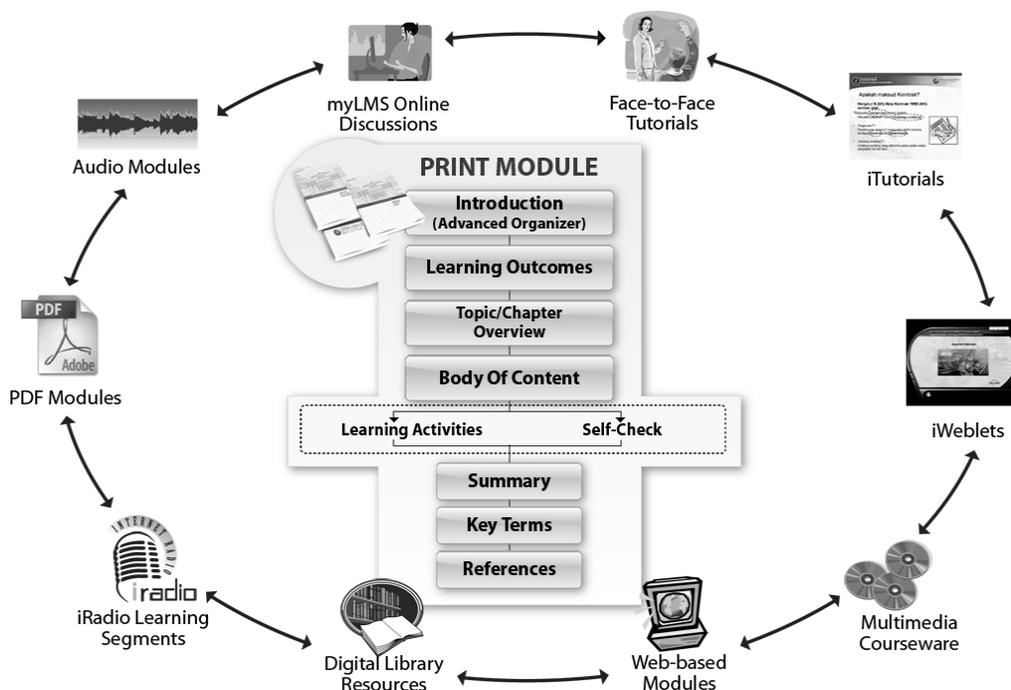


Figure I Various print and electronic media used at OUM

3) Community Colleges

Community colleges, proposed to be the lifelong learning hubs of Malaysia (MOHE, 2007), conducts various programmes at certificate and diploma levels; targeted at school-leavers who have entered the job market and are looking towards furthering their basic education for professional upgrading. There are currently 39 community colleges and 21 branches that conduct, in total, 11 diploma and 23 certificate programmes, along with 15 clusters of short courses that registered over 106,000 participants as at March 2009 (Ani Asmah Tajul Ariffin, 2009). All these programmes are considered to be work-based learning (WBL) programmes whose curricula includes industry-based theoretical and practical education, generic soft skills and other academic content. They are generally conducted via classroom teaching and learning, supported by workplace learning and mentoring (Ani Asmah Tajul Ariffin, *ibid.*). Present evidence for e-Learning usage at community colleges is obscure, but it is certain that this is currently in implementation. The Mid-Term Review of the 9MP

(Government of Malaysia, 2008) confirms that WBL programmes at community colleges will be enhanced through:

- Installing better info- and infrastructure at community colleges;
- Encouraging greater use of ICTs by lecturers, facilitators and students; and
- Developing an e-Learning platform and various learning objects to complement teaching and learning.

4) e-Learning for the Public Sector

A new training policy introduced in 2007 required every civil servant to attend at least seven days of training in a year and that one per cent of the total emolument in all yearly budgets to be allocated for training purposes (Azizah Abd Manan & Malek Shah Mohd Yusoff, 2007). This policy aligns well with the context of lifelong learning in Malaysia, its close association with employability, productivity and professional upgrading, as well as the missions of the KEMP (described in Chapter 3). For the civil service, an important aspect of professional training is enhancing the use of technologies in Government agencies (Azizah Abd Manan & Malek Shah Mohd Yusoff, *ibid.*). With close to 850,000 Malaysians working under the public administration (representing 7.6 per cent of the total labour force in the third quarter of 2009) (Department of Statistics, 2009) and a total public sector emolument budget of MYR 38.05 billion in 2009 (equivalent to €7.95 billion; Economic Planning Unit, 2009), the need and allocation for training and human capital development are indeed quite staggering.

As the main training arm for the Malaysian civil service, INTAN initiated a pilot project to promote lifelong learning for public sector personnel. The Public Sector e-Learning Project was meant to provide learning opportunities that gave particular focus to improving on-the-job skills and capabilities. The e-Learning for the Public Sector (*e-Pembelajaran Sektor Awam* (EPSA)) Project was launched in July 2007, offers 54 different courses in management, leadership, ICT, agricultural management, financial management and languages (Syahidi Bakar, 2009). Until October 2009, almost 7,000 civil servants had registered with EPSA. The system has been found

to successfully reduced training duration and cost as participants can undergo courses via an online platform without compromising their day-to-day responsibilities.

5.3 Informal Lifelong Learning Examples

1) Bridging the Digital Divide: MyGfL, Rural Internet Programme and e-Community Centres

The MyGfL project was initiated by the MOE in 1999 to promote and support Malaysia's lifelong learning agenda (Zailan Arabee Abdul Salam & Azmi Mansur, 2006) by connecting all Malaysians, education institutions, industries, communities and online learning resources into one integrated platform (United Nations Development Programme (UNDP), 2006).

The MyGfL portal was made available in 2004, and a pilot programme was initiated in 2005, focusing on deaf children and their parents, the rural community and youths (Zailan Arabee Abdul Salam & Azmi Mansur, 2006). It is clear that the project was oriented towards creating better technological awareness amongst underprivileged groups, and it found that e-Learning holds great potential in promoting continuous learning in Malaysia, although at that time there was need for more and better content, and there were disparities in terms of computer ownership, internet and broadband penetration (Zailan Arabee Abdul Salam & Azmi Mansur, *ibid.*). While it paved the way to the use of e-Learning platforms and proposed the need for e-Learning standards, it is unfortunate to note that MyGfL has not been successfully utilised.

The rural internet programme (*Program Internet Desa*, PID) and e-Community Centres were also initiated to address the digital divide between urban and rural Malaysia. The PID was initiated by the Ministry of Energy, Water and Communication (MEWC) with support from Pos Malaysia Berhad (PMB) to build computer centres in rural areas (Julia Ismail, 2007). With a sponsorship of MYR 2.8 million from PMB, the Ministry managed to build over 40 of such centres in

post offices around the country; targeting housewives, school leavers, senior citizens and small-scale entrepreneurs to help build awareness and encourage the community to leverage on ICTs in their daily lives. The PID is, in fact, one of the large-scale projects known collectively as e-Community Centres (Norizan Abdul Razak, 2005). Together with *Medan Info Desa* and *Kedai.Kom*, they represent a lifelong learning opportunity for many rural folk and acts as an access point for information, e-Learning, socialisation and as an advertising platform for their businesses (Norizan Abdul Razak, *ibid.*).

2) The eBario Project of Sarawak

Similar to the establishment of e-Community Centres, Sarawak University of Malaysia (UNIMAS) also initiated a project that focused on deploying ICT to a remote rural community in Bario, Sarawak (about three days' journey from Sarawak's capital of Kuching). The researchers from UNIMAS aimed to empower the people to apply technologies to improve their lives (Yeo, Songan & Khairuddin Ab Hamid, 2007). The project was implemented in 2001 with the setting up of a computer laboratory and a telecentre equipped with desktop computers and internet access. Interestingly, this project also attempted to design a sustainable model by acquiring volunteers and powering the computers using solar energy. Since then, UNIMAS had reported increased computer literacy amongst the Bario community, along with various other socio-economic benefits evident in, among others, its tourism industry.

3) Other Initiatives

There are various other instances of projects that utilise e-Learning in lifelong learning in Malaysia. Many, like the above, aim to increase computer literacy and awareness, bridge disparities between different socio-economic circles and provide educational opportunities to marginalised communities. One example is the collaboration between OUM and the Asia Pacific Economic Cooperation (APEC) in 2008 to conduct workshops in ICT training to women in rural communities. The workshops were conducted in the rural areas of Malaysia, a south-western state of Malaysia. In the December

2008 workshop, about 20 women, many who are homemakers, factory workers, farmers and teachers, were introduced to computer parts and taught to use e-mails, perform web searches and familiarise themselves with the internet.

The MCA, through its nationwide lifelong learning campaign, has also included e-Learning as a component in several of its programmes, e.g. English for Speakers of Other Languages, Computerised Accounting and Information Technology (The Star, 2005). The Aminuddin Baki Institute (IAB), an institute under the ambit of the Ministry of Education that provides training programmes that are related to teacher development and upgrading as well as educational management, has introduced e-Learning in several of its courses as well. In 2006, IAB initiated a pilot programme that involved the development of an LMS, a web portal, object repositories and modular authoring tools that can be reused for various types of courses at the institute (Ahmad Rafee Che Kassim, Lew & Hafizi Shafiin, 2009). IAB will be expanding the e-Learning programme to cover all of its courses nationwide.

With support from the Ministry of Entrepreneur and Co-operative Development, another Government-linked institution, i.e. the Co-operative College of Malaysia (*Maktab Kerjasama Malaysia*, MKM), which offers programmes and conducts training for various co-operatives under specific agencies in Malaysia, e.g. Federal Land Consolidation and Rehabilitation Authority (FELCRA) and the Fisheries Development Board of Malaysia (LKIM). MKM conducts about 400 different programmes at certificate, diploma and Bachelor's degree levels; with about 30 using e-Learning as a main mode of delivery (MKM, n.d.).

At the formal and non-formal levels, e-Learning adoption has taken place as a new method for teaching and learning, particularly to benefit part-time studies. Informal educational programmes have also benefited from e-Learning, especially in addressing the digital divide and other socio-economic gaps between urban and rural societies. While there are various examples of its utilisation in lifelong learning programmes by different types of institutions that include formal educational institutions,

Government-linked agencies, private entities and not-for-profit organisations, as a whole this is still in its infancy in Malaysia. The country is at the stage where e-Learning is progressively being embedded, and there is a need for better awareness of both e-Learning and lifelong learning, as well as more concrete policies, legislation and regulation. With better management and funding, this will allow for greater adoption across all levels of education.

Chapter 6 Recommendations and Prospects for Malaysia

6.1 Introduction

Based on the current status of e-Learning in lifelong learning in Malaysia, it is clear that the country still has some ways to go to ensure a holistic enculturation of lifelong learning throughout every cross-section of the Malaysian society. While the various Government plans and policies prepared within the last two decades have outlined numerous recommendations and strategies towards this end, Malaysia has yet to be able to fully realise the potential of both lifelong learning and e-Learning in Malaysian education. In terms of readiness for e-Learning, Malaysia is still at an ‘embedding’ stage, featured by a general acceptance of ICTs by citizens, businesses and the Government at large; with the incorporation of e-business requirements in policies, legislation and regulation. Efforts have also been taken to enhance the international standing of Malaysian e-Learning.

The research that has gone into this publication has brought into view an assortment of lifelong learning initiatives that may or may not utilise e-Learning, and have met

with varying degrees of success. That said, the youthful, open and receptive nature of Malaysia points to a healthy outlook for a more comprehensive implementation of e-Learning in lifelong learning initiatives in the country. Higher education institutions have been and are likely to continue spearheading e-Learning development. Community colleges, labelled as the lifelong learning hubs for the country, have also utilised e-Learning, but its use could be widened further by incorporating best practices for e-Learning. In view of better funding obtained from either public or private means, e-Learning based CPD and WBL, as well as for-profit, by-demand and corporate e-Learning are likely to have a better foothold amongst Malaysian professionals. Informal lifelong learning activities, especially those that aim towards bridging the digital divide between urban and rural communities could also increase the use of e-Learning in lifelong learning with improved ICT infrastructure throughout the country.

For all the reasons stated above and in view of current progresses being made by the Government, the list of recommendations provided in this chapter is intended as suggestions to further enhance the e-Learning in lifelong learning initiative in Malaysia. This chapter will also provide a brief description of what the future scenario might be like for the nation.

6.2 Recommendations

A large number of education and training organisations, particularly universities, are now realising that there is a market outside of their standard sphere of operations. This market is present through courses conducted, either wholly or in part, via e-Learning. Private providers of non-formal training offer courses online to anyone with access to the internet, regardless of their individual ability or level of understanding. Community colleges and polytechnics, government and state agencies, GLCs, corporate agencies and SMEs have, to a certain extent, used e-Learning in

delivering short courses and training programmes. However, there has been no proper monitoring in terms of the impact of e-Learning in lifelong learning. Thus, in using e-Learning for lifelong learning to boost the employability of individuals and the productivity and competitiveness of organisations, the following recommendations are put forth.

1) To establish a National e-Learning and Lifelong Learning Council

Promoting and sustaining the culture of e-Learning in lifelong learning will require a designated body to act as the national advocate or champion. This body could function under the jurisdiction of the MOHE. The objectives and aims if this body will include:

1. To develop policies and strategies relating to e-Learning and lifelong learning and coordinate their implementation at a national level;
2. To monitor the implementation of e-Learning in lifelong learning as stipulated in the lifelong learning policies endorsed by the MOHE and the Malaysian Government;
3. To improve coordination amongst Government agencies, statutory bodies, education and training institutions as well as the private sector;
4. To ascertain that sufficient funding for e-Learning and lifelong learning initiatives are appropriately distributed to identified agencies as well as to manage the disbursement of the funds;
5. To provide adequate financial support to acculturate use of e-Learning in lifelong learning as a way of life;
6. To create a workable mechanism to increase participation and awareness and at the same time promote the use of e-Learning amongst all Malaysians in lifelong learning activities and programmes;
7. To upgrade the mechanisms, physical infrastructures and expertise in the area of ICT integration to facilitate the use of e-Learning in lifelong learning;
8. To maintain continuity and recognition of lifelong learning by creating clear pathways to connect, integrate and consolidate formal, non-formal and informal

lifelong learning;

9. To ensure the quality and effectiveness of education and training by instilling elements of creativity, innovation and entrepreneurship in all lifelong learning programmes, by incorporating the use of ICTs;
10. To put in place a QA system for all lifelong learning institutions/providers and their respective courses and programmes;
11. To accredit institutions on the basis of output or performance measures such as graduation rates rather than on the basis of input measures;
12. To set-up a national e-content development centre in order to:
 - i) Coordinate content development in the country;
 - ii) Act as a repository for quality e-contents;
 - iii) Train and develop e-content experts;
 - iv) Develop and monitor e-content standards; and
 - v) Promote knowledge sharing among e-Learning and lifelong learning providers;
13. To initiate research in the applications of ICTs or use of e-Learning in teaching and learning and also in the area of lifelong learning itself; while at the same time to promote international collaborations in both areas; and
14. To ensure that e-Learning is fully integrated in the lifelong learning agendum and its potential is fully explored, as well as to accompany innovation processes that take place in education and training systems, including in the non-formal and informal contexts.

2) To establish a definition for lifelong learning in Malaysia

With a designated body to steer all national lifelong learning initiatives, Malaysia needs a national definition for lifelong learning. This definition has to be both operational and measurable and must take into account Malaysia's concept of the working age population in the context of lifelong learning. It is also necessary to note that lifelong learning that utilises e-Learning as a tool should also fall under the purview of this definition. As such, the recommended definition for lifelong learning in

Malaysia is:

“Learning engaged by (a) employed persons, (b) unemployed persons, (c) retirees and (d) homemakers to acquire additional academic or skill-based qualifications for improving their knowledge or/and skills.”

The concept of the working age population in Malaysia and its characteristics will be provided in the Appendix of this publication.

6.3 Prospects

The demand for a lifelong learning system is enormous in Malaysia. Like any other country, Malaysia will not be able to implement all elements of the system at once. Malaysia needs to develop a strategy for moving forward in a systematic and sequenced manner. This publication serves as an important step to identify Malaysia’s current stand, and from here, develop the future planning for the use of e-Learning in lifelong learning. Based on the present status, in order for Malaysia to fully utilise ICTs and e-Learning in lifelong learning in contributing towards achieving the goals of Vision 2020, the following aspects will need to be reflected upon. Malaysia will need to take a closer look at the approach towards ICTs for education and training. Among the important features in this regard include:

- ICTs as a basic education and training tool:

The infrastructure investment in ICTs needs to be fully exploited. One of the ways is to do so is to ensure that ICTs are fully embedded in pedagogical practices and educational systems. Greater efforts are called for in terms of pedagogy, especially for developing innovative teaching and learning tools that are made possible through ICTs. ICTs are also an enabler of teaching and learning processes as they can empower learners in various new ways, whether they are engaged in formal, non-formal

or informal learning.

- ICTs as an enabler of lifelong learning:

ICTs can extend the scope of education and training at all stages of life by providing unprecedented accessibility for anyone with the desire to learn. While existing developments need to be sustained, effort is needed to help the most disadvantaged groups, e.g. people in remote and rural areas, retrenched workers, the unemployed, the physically disadvantaged, homemakers, and et cetera. The appropriate use of ICTs or e-Learning can contribute towards employability, personal development and social participation. ICTs can also help to build and support a learning continuum, including formal, informal and non-formal learning, thus helping to achieve the lifelong learning agendum of the country. More should be done to increase confidence levels, to upgrade digital competencies and to shift from access to quality in the use of ICTs for learning.

- ICTs as a key driver for creativity and innovation:

Innovation is today seen as one of the main engines for long-term economic growth and social development; with ICTs as a key driver for change in many fields, including education and training. Intelligent use of ICTs can improve the core functions of education and build active learning communities in a networked society. In today's world, an increasing share of learning occurs at the workplace, in non-formal contexts and often through new ICT-based learning tools and methods. This shift towards informal and non-formal learning modes clearly shows that interactive learning, content creation, personalised and self-directed learning all play an increasing role in the ways people learn. The role of ICTs in enhancing collaboration has a clear relevance for lifelong learning.

- Benchmarking national systems of lifelong learning:

One way in which Malaysia could move forward would be by establishing national benchmarks for measuring lifelong learning outcomes. In the present environment, such measures are underdeveloped. Traditional measures of educational progress, such

as gross enrolment ratios and public spending as a proportion of the country's gross domestic product, are not able to capture important dimensions of lifelong learning. Traditional indicators also fail to capture learning in the non-formal and informal sectors, which are becoming increasingly important elements throughout the entire educational landscape.

APPENDIX

The proposed definition takes into account Malaysia's concept of the working age population, which can be characterised according to the following:

- For the purpose of defining the labour force, the age range of the working population is between 15 and 64 years old. In general, this implies that Malaysians can enter the working population at 15 years old and exit at 64 years old;
- However, for lifelong learning, the age range of the working population should include individuals at 15 years old and above, i.e. there should not be any upper cut-off age at 64 years or older. This is because at 64 years old and above, these adults may still engage in learning for various personal or professional reasons. Those below 15 years of age are excluded because ordinarily, they attend full-time formal schooling and are assumed not to be engaged in lifelong learning yet; and
- In terms of lifelong learning, the population is segregated into those within and outside the labour force. Those within the labour force include employed and unemployed persons, whilst those outside the labour force are subdivided into three categories, i.e. retirees, homemakers and full-time students (Figure D).

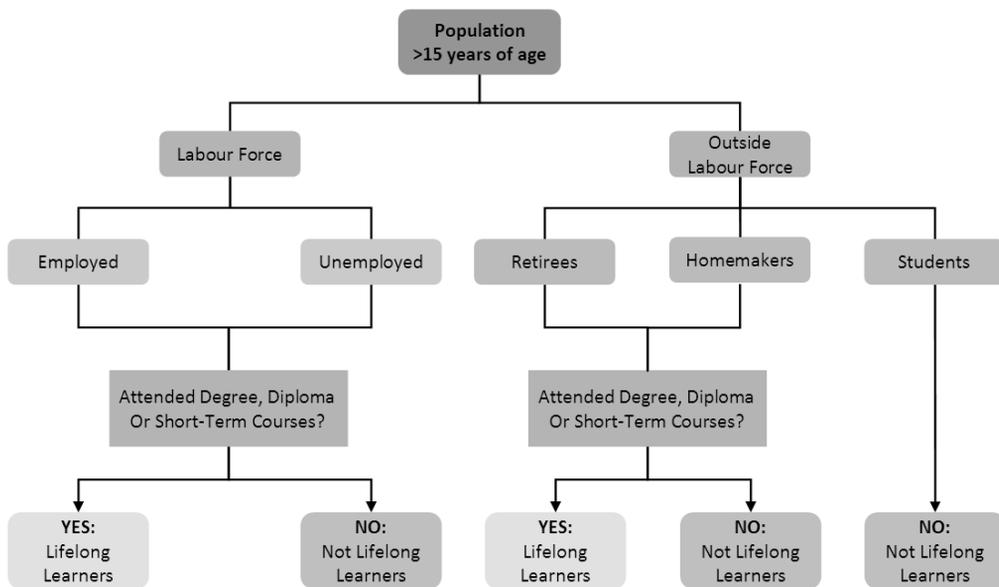


Figure I Distribution of lifelong learners in Malaysia



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Appendix : Figure I : Distribution of lifelong learners in Malaysia

LIST OF ABBREVIATIONS

9MP	: Ninth Malaysia Plan (2006-2010)
8MP	: Eighth Malaysia Plan (2001-2005)
ACD	: Asia Co-operation Dialogue
AeU	: Asia e-University
APEC	: Asia Pacific Economic Cooperation
APEL	: Accreditation of prior experiential learning
CBS	: Credit Bank System
CGPA	: Cumulative grade point average
CMS	: Course management system
COL	: Course On-Line
CPD	: Continuing professional development
EPF	: Employees Provident Fund
EPSA	: e-Learning for the Public Sector
EPU	: Economic Planning Unit
FE	: Flexible Entry
FELCRA	: Federal Land Consolidation and Rehabilitation Authority
GATS	: General Agreement on Trade in Services
GLC	: Government-linked company
HPES	: Hewlett Packard Education Services
HRDF	: Human Resource Development Fund
IAB	: Aminuddin Baki Institute
ICT	: Information and communication technology
IIUM	: International Islamic University Malaysia
IMU	: International Medical University
INCEIF	: International Centre for Education in Islamic Finance
INTAN	: National Institute Of Public Administration
IT	: Information technology
KEMP	: Knowledge-Based Economy Master Plan
LKIM	: Fisheries Development Board of Malaysia
LMS	: Learning management system
MAAI	: Ministry of Agriculture and Agro-based Industry

MARA	: <i>Majlis Amanah Rakyat</i>
MCA	: Malaysian Chinese Association
MCMC	: Malaysian Communication and Multimedia Commission
MCQ	: Multiple choice question
MECD	: Ministry of Entrepreneur and Co-operative Development
MEDIU	: Al-Madinah International University
MHR	: Ministry of Human Resource
MIDT	: Master of Instructional Design and Technology
MKM	: Co-operative College of Malaysia
MMU	: Multimedia University
MOE	: Ministry of Education
MOH	: Ministry of Health
MOHE	: Ministry of Higher Education
MQA	: Malaysian Qualifications Agency
MQF	: Malaysian Qualifications Framework
MQR	: Malaysian Qualifications Registry
MRRD	: Ministry of Rural and Regional Development
MyGfL	: Malaysian Grid for Learning
MYS	: Ministry of Youth and Sports
NeLCC	: National e-Learning Consultative Committee
NEP	: National Education Philosophy
NGO	: Non-governmental organisation
NHEAP	: National Higher Education Action Plan (2007-2010)
NHEF	: National Higher Education Fund
NHESP	: National Higher Education Strategic Plan
NITA	: National Information Technology Agenda
NITC	: National Information Technology Council
ODL	: Open and distance learning
OECD	: Organization for Economic Co-operation and Development
OPP3	: Third Outline Perspective Plan (2001-2010)
OUM	: Open University Malaysia
PID	: Rural internet programme
PLAR	: Prior learning assessment and recognition
PMB	: Pos Malaysia Berhad
PMR	: Lower Secondary Assessment
PSD	: Public Services Department
PSMB	: Human Resource Development Council
PTPTN	: National Higher Education Fund Corporation

QA	: Quality assurance
RPL	: Recognition of prior learning
SDF	: Skills Development Fund
SME	: Small and medium enterprise
SPM	: Malaysian Certificate of Education
STPM	: Malaysian Certificate of Higher Education
UiTM	: MARA Technology University
UKM	: National University of Malaysia
UM	: University of Malaya
UNESCO	: United Nations Educational, Scientific and Cultural Organization
UNIMAS	: Sarawak University of Malaysia
UNITAR	: University Tun Abdul Razak
UNITEN	: Universiti Tenaga Nasional
UPM	: Putra University of Malaysia
UPSR	: Primary School Achievement Test
USM	: Science University of Malaysia
UTM	: Technology University of Malaysia
UTP	: Universiti Teknologi Petronas
UUM	: Northern University of Malaysia
VOISS	: Virtual Online Instructional Support System
WBL	: Work-based learning
WOU	: Wawasan Open University



e-Learning for Lifelong Learning in Slovakia

04

Alena Pistovčáková

Alena Pistovčáková – Ilavská have been teaching at Technical University in Zvolen since 1989. She got her degree at Comenius University in Bratislava in Philosophy and Physics. She received her doctor degree in Sociology in 2000 at Comenius University. Before maternity leave (2008) she was working two years for Greek Ministry of Development as a researcher - sociologist in the frame of ENTER Project. The title of reserch topic: Maturity with ICT and e-maturity level of people aged between 40~60 years.

She was working ten years as a director of Local center for Distance Education at Technical University in Zvolen (1995~2005) and she continuously dealwith distance learning and e-Learning technologies.



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Executive Summary

e-Learning offers many opportunities for individuals and institutions in Slovakia. Individuals can access to education they need almost anytime and anywhere they are ready to. Institutions are able to provide more cost effective training to their employees. It is common to find educators who perceive e-Learning as internet-only education that encourages a static and content-focused series of text pages on screen. Others envisage the shallow and random online messages that are typical of a social real-time chat session, and wonder how that type of communication could add any value to academic discourse. Some may have experienced e-Learning done poorly, and extrapolate their experience into a negative impression of all e-Learning.

The current situation in Slovakia indisputably shows the widespread adoption of e-Learning, in the last few years it has become an irrevocable part of all forms, types, modes and levels of education. Even though the e-Learning in Slovakia has made up to now a big quantitative and qualitative advance, it could be concluded that still a lot is to be done. In order to meet the new requirements and challenges, special efforts related to e-Learning have to be made. E-learning is gradually included in strategic governmental documents (such as National Lisbon Strategy, education-related documents, etc.) as a significant and promising tool for the further development of education systems in Slovakia for all target groups.

This paper introduces the main features about Slovak educational system and its priorities, concepts of e-Learning and lifelong learning in the country, government policy, regulation and financing issues. The general characteristics of e-Learning for lifelong learning together with illustration of typical cases and the major drivers, barriers and challenges in Slovakia are presented. The purpose of this paper is to provide a view of the e-Learning's and lifelong learning's state in the Slovak republic and possible implications for policy and practice.

Education has very long tradition in the territory of the contemporary Slovak Republic. Its development can be traced to the ninth century when Christian missionaries St. Constantine and St. Method established here the first schools. The first university, Academia Istropolitana, was established in Bratislava, today's capital of the Slovak Republic, in 1465. The educational system continued to develop within the framework of the Habsburg Empire. After 1918, secondary and higher education developed considerably and compulsory schooling was extended up to 8 years. After World War II the school system became identified with the principles of Marxism-Leninism, and eventually turned into a uniform, conforming and particularly ideological institution. Though younger Slovaks have grown up under a Communist educational system, the system was based on historical roots of German and Dutch educational systems and the Slovaks are still among the best-educated people in the world, with 63% having completed secondary school (Fullbright Commission, 2009).

Education is compulsory from ages 6 to 16 and is fully funded by the state at all levels. Church and private schools have augmented a spectrum of state schools and they receive subsidies from the state. The literacy rate is almost 99%. As education is one of the most important areas in today's fast moving world, it must follow the needs of society. This is the main reason why the Slovak Government pays long-term attention to reforms in education. The main goal of the reforms was to transform the traditional schools into a modern school system for the 21st century, which works with other components of the lifelong learning system to prepare and continue preparing people for life and work in new conditions.

The preparation of implementation of this reform is based on the National Program of Training and Education in the Slovak Republic - Millennium, approved by the

Government in 2001. After the public administration reform in the country the administration and financing of all type of education is decentralized. But essential reform of education is the reform of its contents.

Description of the educational and training system in the Slovak Republic

The educational system as defined by the current Slovak legislation includes the following levels of education:

1. Pre-primary education;
2. Primary and lower secondary education;
3. Secondary general and vocational/technical education;
4. Higher (tertiary) education;
5. Education of adults.

e-Learning as a concept is relevant to all the above levels with the possible except of the pre-primary education.

Regional Institutions of Education

Local and municipal governments are authorized to:

1. Establishing and abolishing pre-school educational establishments, primary schools, primary art schools, school clubs of all types, leisure activity centers, school kitchens and cantinas, primary school language centers;
2. Appointing and removing directors of schools and educational establishments;
3. Supervising compulsory attendance at primary schools;
4. Supervising economic management of schools and their handling of financial and material assets;
5. Allocating funds for private and church schools and establishments and supervising the use of money;
6. Approving contracts on school buildings and space.

The system includes the following components:

Pre-school Education is composed of nurseries and kindergartens assigned for children from 3 to 6 years of age. The Ministry of Health manages them and their main function in addition to caring for children is preparation for primary school.

Elementary schools provide general, ethical, esthetic polytechnic, health, and environmental education, physical training and religious education. Elementary education lasts for 9 years and the curricula vary mainly in the higher grades.

Secondary education is comprised of three types of secondary schools: gymnasium, secondary specialized school and secondary vocational school. The applicants must pass selective exams for all types of secondary schools.

Institutions of Higher Education The Act on Higher Education (the Act of the National Council of the Slovak Republic No. 131/2002 of Law Code on Higher Education and on Change and Supplement to Some Acts) defines the institutions of higher education as legal entities, providing education and research in the Slovak Republic. According to the character and amount of activities they can be divided into **university type** institutions, providing education up to the PhD. study, and **non-university type** institutions, providing education up to the Bachelor's level.

There are three types of institutions of higher education in the Slovak Republic: **Public Institution** of higher education legally established according to the Act on Higher Education. The bodies of the academic autonomy of the institutions are the Academic Senate, the Rector, The Scientific Council and the Disciplinary Commission. They decide on the organization, activities and administration of the institution.

State Institution of higher education, established through the Ministries of the Slovak government. The respective Ministry sets the rules for the types of study, administering the financial means, regulating the number of students, the employees etc. supervised by respective Ministry as:

1. Police institutions of higher education (established and supervised by the Ministry of Interior);
2. Military institutions for higher education (established and supervised by the Ministry of Defense);

3. Health care institutions of higher education (established and supervised by the Ministry of Health).

Private Institutions of Higher Education, established by non-government institutions or founders, but the providing of education and research must be approved by the Ministry of Education. The approval is based on the approval of the Accreditation Commission.

The quality and outcomes of the educational process in the Slovak Republic have become important topics only in recent discussions concerning changes in the education system. Signals of declining quality at all levels of education from anecdotal accounts and international measurements have increased calls for a systematic identification of quality including the development of adequate instruments and technologies for measuring and monitoring the results of education and training in primary and secondary schools. The Ministry of Education has recognized the need to obtain impartial information necessary for the efficient management of educational work at schools as well as for the decision-making of pupils and parents.

The declining quality of performance in education and training at Slovak schools has been influenced mainly by these factors:

1. Partial absence of qualification and professionalism in teaching;
2. Insufficient equipment of schools with educational technology/IT;
3. Insufficient equipment of schools with textbooks or the absence of quality textbooks.

The natural social and economic development of the recent time generated a whole society need of adopting of **lifelong learning and lifelong guidance strategy** (LLL and LLG Strategy) being the tool for forming a knowledge society, forming of which is undoubtedly a priority of the government, declared in the Program declaration of the Government of the Slovak Republic (Ministry of Education, 2007).

The main goal of the Strategy of Lifelong Learning and Lifelong Guidance in the Slovak Republic, passed by the Government of the Slovak republic in April 2007,

is the completion of the system of lifelong learning and the system of lifelong guidance. The aim is a flexible obtaining of new qualifications for the citizens apart from formal also in non-formal system of education and in the system of informal learning with the assistance of complex counselling and guidance services during the entire life.

Approach of the state policy and value of lifelong learning was underlined by **Act on further education** adopted in 1997, which was replaced by **Act on lifelong learning** adopted by government in December 2009. Importance of education including lifelong learning in the knowledge-based society is crucial, with respect to employment, social status, career building, creativity etc. There is a long tradition of adult education in the Slovak Republic. The current mission for lifelong learning is to make the access towards education easier as well as to make access to the new qualification and employment easier during the entire active life of citizens. Initiative how to involve more people in learning processes is visible in the numbers of institutions which are associated in the Association of Institution for lifelong learning. The largest from the non-state training institutions and the only one with a regional network is the Academy of Education with centres in 38 cities spread over the whole country. Adult education is managed by the ministries within the framework of their competencies. In the Slovak Republic there are the Ministry of Education, the Ministry of Labour, Social Affairs and Family responsible for financing retraining, the Ministry of Health Care responsible for the further education of physicians and health personnel and the Ministry of the Interior responsible for the further education of staff in public administration. Higher education institutions expand under the umbrella of lifelong learning deriving from the study programmes of their faculties. Institutionalized centres of lifelong learning or continuing education have been established at several universities, popular are also Universities of the third age.

Table 1 SWOT analysis of the education system

Strengths	Weaknesses
<ul style="list-style-type: none"> · well organised formal system of education · wide supply and relatively high demand for education in the non-formal system of education · informal learning is a natural way of obtaining knowledge and skills 	<ul style="list-style-type: none"> · low flexibility of the formal system of education · unresolved system components in non-formal education: <i>1. guarantee of quality; 2. financing; 3. recognition of education achievements</i> · high level of non-organisation in informal learning
Opportunities	Threats
<ul style="list-style-type: none"> · equality of results of non-formal system of education with the formal system · utilisation of outcomes of the national project of Academia Istropolitana also to support of non-formal education: <i>1. certification of education institutions, certification of lecturers, accreditation of education programs; 2. national qualifications authority;</i> · change of paradigm of evaluation of achievements of education based on measurement of inputs (length of education) to measurement of outcomes (result of education, the so-called „<i>learning outcome principle</i>“), which is also suitable for recognition of outcomes of informal learning 	<ul style="list-style-type: none"> · resistance from the side of employers and the formal system to recognise education obtained in the non-formal system · no interest of the decision making sphere to create conditions for implementation of innovative components into the non-formal system and the resistance of the formal system to accept these innovative components · possible devaluation of both formal and non-formal education

Source: Ministry of Education of the Slovak Republic, 2007.

The education system in Slovakia within the last decades insufficiently responds to the needs of the labour market in the Slovak Republic, which mainly shows in the following:

1. Absence of an open system of lifelong learning for the labour market;
2. Insufficient ability of the formal system of education to flexibly respond to arisen needs of new qualifications through creating and implementation of new

- learning and study programs;
3. Mutual closeness between formal and non-formal system of education;
 4. Absence of recognition of learning outcomes of non-formal education for the purpose of obtaining of qualification;
 5. Insufficiently guaranteed high quality of non-formal education by the state;
 6. Absence of ongoing monitoring and survey of education needs on the national level;
 7. Absence of the system of lifelong guidance for all phases of education and active life of a man;
 8. Insufficiently transparent and effective way of investing in both formal and non-formal education and informal learning;
 9. Insufficient development of key competencies for lifelong learning;
 10. Lasting gender stereotypes.

Chapter 2

Concepts of lifelong learning and e-Learning

Lifelong learning

The promotion of the knowledge society constitutes a priority of the Government of the Slovak Republic. The Policy Statement of the Government of the Slovak Republic, reads: “The Government of the Slovak Republic considers the forming of the knowledge society as its priority because only such society constitutes the prequalification for democratic development, scientific technical progress, economic growth and social security, employment and growth.” (Governmental Statement, July 2006).

The priority objective of the development of lifelong learning in the Slovak Republic is based on the adopted conceptual and strategic materials on the national level, which are targeted on:

1. *The establishment of conditions for general equal and constant access of citizens to acquiring new and renewed skills*, which are necessary for participation in society based on knowledge (digital literacy, foreign language competence, social, business skills and developed ability to learn).
2. *Increasing the level of investments in education* as an emphasis of the priority of the most important wealth of Europe — its people. It is related to direct investments, tax regimes, accounting standards, bookkeeping and information duties. It is important to make the investments more structured.
3. *The introduction and promotion of innovations in education* regarding the content. Form and methods, in education technologies based on the use of information-communication technologies.
4. *The design of procedures and rules in the evaluation of the participation in education and education results* especially in the case of informal and non-formal education. An integrated Europe with an open labour market, free movement of citizens in search of jobs and education requires an effectively designed system for the evaluation of education.
5. *Ensuring the access to quality information and advice regarding the possibilities of lifelong education for all*. Career counseling is understood as permanent and locally accessible service for all, containing not only precise and relevant information regarding education possibilities but also highly professional advice enabling decision-making and motivating individuals to further efforts for better jobs in the region based on acquired education.
6. *Providing education opportunities as close as possible to learners* in their own communities while making the maximum possible use of their support through the means of information communication technologies. That is why establishing conditions for local education in commonly accessible education centers, achiev-

ing the approximation of education through communication technologies to less accessible locations or for disabled citizens constitutes a priority.

The intention to create and implement an open system of lifelong learning in the Slovak Republic was an outcome of development of the ongoing communication between the Ministry of Education of the Slovak Republic and Academia Istropolitana — an educational institution, ministerial agency in the area for lifelong learning in 2003, when in connection with the preparation of the Slovak Republic for being a part of the European Union, this governmental institution was addressed to create a working draft of a national project for the area of lifelong learning. Upon the analysis of situation in this area the authors decided to principally resolve the area of lifelong learning in the Slovak Republic by creation and implementation of the open system of lifelong learning in the Slovak Republic for the needs of the labour market (Ministry of Education, 2007).

The description of the open system of lifelong learning in the Slovak Republic for the needs of the labour market is elaborated in the concepts for particular subsystems of lifelong learning, covering all components of the system of education — formal education, non-formal education and informal learning. These mutually interlinked concepts were elaborated by Academia Istropolitana, in the framework of the national project “*Creation, development and implementation of the open system of lifelong learning in the Slovak Republic for the needs of the labour market*“. Activities of experts on the project began in 2004 and were concluded in March 2007. Results showed among others, necessity of well functioning system of lifelong learning evaluation and feedback for absolvent. It could be assumed that foreign language and ICT related trainings dominate in courses offered in lifelong learning in Slovakia, courses which offer a good opportunity for self-employment were popular. (The abstract on Lifelong Learning - Slovak Republic, 2008).

The current mission for lifelong learning is to make the access towards education easier as well as to make access to the new qualification and employment easier during the entire active life of citizens. The most important reason of establishment of the lifelong learning and lifelong learning guidance strategy was the need to sys-

tematically roof the existing subsystems of education, in such a way that they would respond to the real needs of citizens, employers, public administration and involved educational institutions.

Components of the open system of lifelong learning include:

1. System of monitoring and survey of the education needs with the aim of elaboration of their prognoses and information system on lifelong learning.
2. System of quality of lifelong learning with an emphasis on the quality on non-formal education and informal learning.
3. System of recognition of learning outcomes of non-formal education and informal learning for obtaining qualification-permeability.
4. Supporting tools of financing of lifelong learning.

E-learning

Slovakia does not yet have a national strategy for e-Learning and the supply of e-Learning activities is generally not well developed. The existing legislation does not deal directly with e-Learning, it only defines a general legal framework and principles concerning how an education program can be accredited. In the field of public administration some progressive initiatives were recorded during the period 2003-2006 (e.g. a general training strategy for civil servants or obligatory European Computer Driving Licence trainings).

From the available statistical data it is clear that the ICT infrastructure for e-Learning developed significantly during 2004-2005 and it was not until the end of 2006 that all teachers were trained in ICT. Mainly for this reason e-Learning is used at primary schools generally for the training of teachers (e.g. INFOVEK training courses) and only a few pilot activities are focused on the teaching process for children in specific areas, e.g. arts, informatics or economics. Since 2004, a few specific projects have been implemented for teaching subjects, such as the Slovak language (reading and understanding of text, selection of information, forms, discussion on the Internet, creative homework to be done primarily using MS Word, MS PowerPoint, e-mail

and letter games), arts (creative tasks and problems), informatics, and web-based-learning using the methodology of student centred learning. The majority of the above mentioned e-Learning courses were prepared by the INFOVEK Project (at the Institute of Information and Prognoses on Education). At present, the real involvement of schools in e-Learning prepared by INFOVEK depends on the initiative of school directors and its IT teachers and their practical ICT skills. While e-Learning is accepted as a specific learning method, it is still not officially recommended by the Ministry of Education as one of the standard tools in the primary education system. For this reason school directors and teachers are rather reluctant to use e-Learning in their own teaching process. The mentioned e-Learning projects are available for all teachers, although the real use is small.

In secondary education ICT infrastructure was better developed than in primary education. The values are approximately two times higher in all relevant indicators in comparison with primary schools. As far as different school types are concerned, the best ICT deployment was observed in high schools and secondary technical schools. Many schools developed their own ICT infrastructure thank to local private initiatives and the parents of students, or through projects supported by the EU Structural Funds or foreign grants.

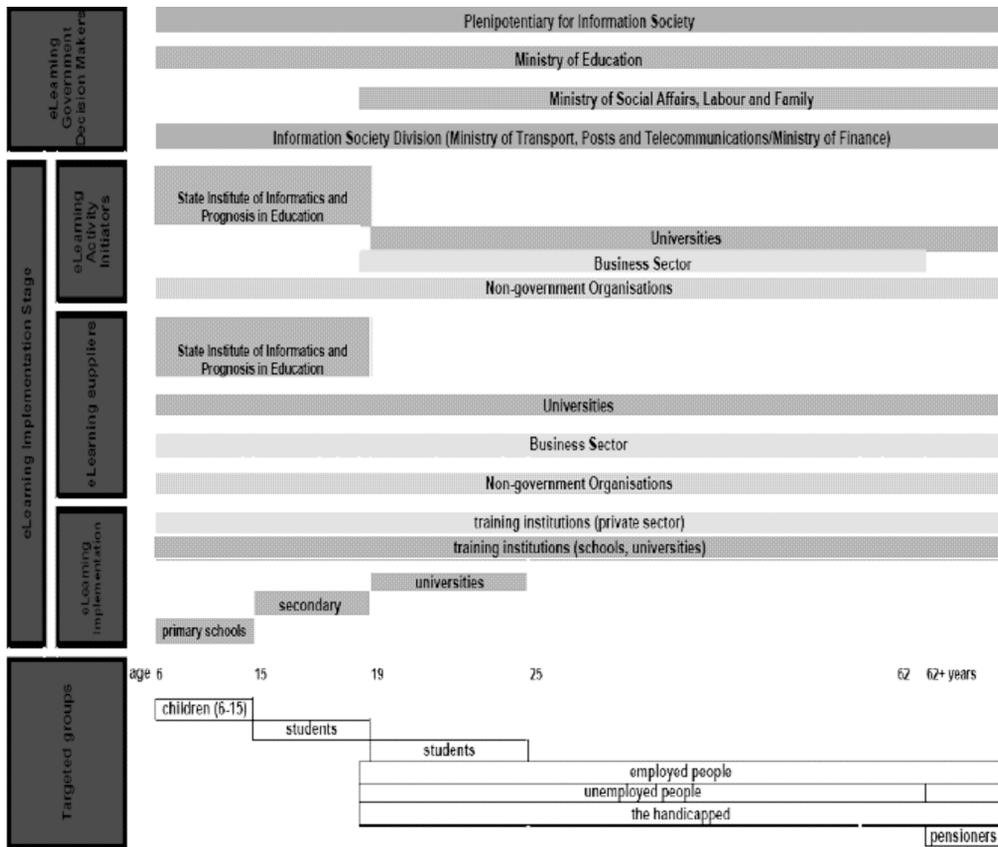
In secondary education e-Learning is not often used in the teaching process. e-Learning is not formally included in curricula by the Ministry of Education. If employed, it is usually a pilot activity, carried out mainly by teachers who have sufficient personal ICT skills or personal experience in e-Learning stemming from international cooperation or foreign courses. e-Learning implementation depends on the activity of each school director and local teachers. In higher education the ICT infrastructure is better developed than in other parts of the Slovak educational system. A few years ago all public and state universities became connected to the high quality broadband backbone network SANET. Thank to its wide and long-term international cooperation and partnerships with foreign academic institutions (mainly from Austria, the Czech Republic and Germany). SANET is a broadband infrastructure leader in the Slovak Republic and regularly uses standard international experience in the implementation and practical usage of ICT for academic purposes. Decreasing pene-

tration rates per student reflect the increasing trend in the total number of new university students.

During the 1990s several local centres of distance education were established at five Slovak universities within a project co-financed by the European Union, 26 all of them as so called "special purpose units". They were coordinated by the Slovak National Distance Education Centre, which belongs to specialized departments at the Slovak University of Technology in Bratislava with university-wide activities. Since 1999 these centres have attempted to jointly establish a solid base for the provision of distance education in the country. From 2002 e-Learning has become an important teaching method in specific subjects at some universities. The majority of universities have been very active in e-Learning implementation for their own students since 2004. Because of the limited broadband penetration, e-Learning activities are used mainly in urban areas - seats of universities, where broadband access is available in their student dormitories as an integral part of the university network, or where broadband access is much better developed by public telecom operators than in rural areas. At present the majority of universities have already developed and implemented their own e-Learning processes and products. The level of e-Learning implementation depends on the activity and professional experience of individual departments at universities. Universities focused on technology have the most experience but some non-technical universities have already achieved excellent results as well (e.g. Faculty of Drama Studies of the Academy of Music and Dramatic Arts in Bratislava).

In the business sector the required ICT infrastructure with broadband access (directly supporting e-Learning usage) is available mainly in cities and in rural areas very close to the cities. Broadband services have been launched in a few big cities only since mid-2003. At present, in the business sector, broadband is regularly used by large enterprises and by the majority of SMEs located in cities. In the business sector e-Learning is used regularly only by big companies with foreign capital or by major domestic IT companies (using their own ICT infrastructure).

The majority of SMEs does not use e-Learning at present. In the public sector the situation differs between central state administration, local state administration and local and regional self-Government.



Source: Eurydice, 2005

Figure 1 General Institutional Framework for e-Learning in Slovakia

The general institutional framework for e-Learning in Slovakia described in Figure 1 presents the institutional and competence structure at all stages of the e-Learning process valid under the current Slovak legislation. All existing relationships between the main actors are also linked to all relevant target groups of end-users (children, students, the employed/unemployed, the disadvantaged and the elderly).

Government policy and regulation

Until present all most visible e-Learning activities have been developed in Slovakia mainly by individual initiatives of public universities, foreign IT companies, training institutions and NGOs initiatives. The process was, generally speaking very chaotic and lacking support from some central e-Learning agency. Strategic Governmental documents relating to the implementation of e-Learning in Slovakia are still missing. There is a lack of specific legislation supporting the e-Learning process, too. The area of e-Learning belongs to the responsibility of the following institutions:

1. The Ministry of Transport, Posts and Telecommunications (as an integral part of its responsibility for the Information society until January 2007);
2. The Ministry of Finance (as an integral part of its responsibility for the Information society since February 2007);
3. The Government Office (position of Plenipotentiary for the Information Society, who should report directly to the Vice-Prime Minister for Knowledge Society, European Affairs, Human and Minority Rights, from February 2007);
4. The Ministry of Education (general responsibility for education including life-long education and training).

Legislative, Political and Strategic Instruments

The intentions and objectives of lifelong learning are based on the valid conceptual and strategic nation-wide and supra-ministerial documents, which in the monitored period incorporated especially:

1. **The National Program of Upbringing and Education in the Slovak Republic for the Next 15 to 20 Years (Millennium Project)** approved by the Slovak Republic

Government Resolution No.1193/ 2001, it submits the target status of upbringing and education, and the basic pillars and strategy of reform changes in the field of education.

2. **The National Report of the Slovak Republic regarding the Memorandum on Lifelong Education** (June 2001) indicated the problem areas of lifelong education and proposed possibilities for their solution.
3. **The National Strategy of Sustainable Development** adopted by the Government in October 2001 through the Resolution No. 978/2001, which submits the intentions and objectives leading towards increasing the competitiveness of regions and towards sustainable development. Education constitutes one of the conditions for sustainable development.
4. **Concept of Continuing Education in the Slovak Republic** (Bratislava 2002) established the main objectives of continuing education, one of which it is to pay necessary special attention to the status of continuing education, the quality of education, its financing and its legislative background in the system of education.
5. **National Action Plan of Employment for 2004-2006**, which besides others assigns plans to modernize and broaden the module system of continuing education of citizens as an instrument for developing the economy based on knowledge continuing in the school system and on knowledge from the field of information technologies with the goal to increase the flexibility of the labour force to the changing labour market. Furthermore this document proposes measures targeted on the solution of the cofinancing of lifelong education, the establishment of information system regarding education possibilities and deepening cooperation between individual subjects responsible for education.
6. **The National Plan of Development**, which included the Sector Operation Program Human Resources which defined the global goal — the growth of employment based on a qualified and flexible labour force. The intention of the whole operation program was targeted on the development of an effective and functioning

system of continuing education as a warranty for the adaptability of human resources, the solution of financing and the development of conditions to facilitate access to continuing education, the development of the system of continuing education and its connection to the system of certification.

7. **The Strategy of the Informatization of Society in Terms of the Slovak Republic** approved by the Government on January 21, 2004 through the Slovak Republic Government Resolution No. 43/2004, declares the task of ensuring the acquisition of competencies for the use of ICT, or computer literacy for students, teachers and citizens.
8. **The Concept of Lifelong Education in the Slovak Republic** approved through the Government Resolution No. 157 of February 25, 2004 — the first document of a conceptual character in the Slovak Republic which defines the priorities and objectives for lifelong education in the Slovak Republic, indicates the direction and management of processes for their implementing in actual areas.
9. **The Strategy of Competitiveness of the Slovak Republic until 2010** (The National Lisbon Strategy approved through Slovak Government Resolution No. 140 of February 16, 2005 — Action Plans, The First Education and Employment Action Plan) constitute the most significant document in which the effort to increase the competitiveness of the Slovak Republic and the human resource potential for the needs of the knowledge economy was declared.
10. **The National Strategic Referential Framework for 2007-2013** was approved by the Government of the Slovak Republic on December 6, 2006 through its Resolution No. 1005/2006, its Operation program Education within the framework of Objective Convergence and Objective Regional Competitiveness and Employment. This document establishes the national priorities and ensures that the assistance from European Union funds will be used in compliance with the strategic instructions of the Communities. The strategic part of the document is based on the vision of the economic and social development of the Slovak Republic which is formulated as “The Overall Convergence

of the Economy of the Slovak Republic to the European Union Average through Sustainable Development”.

11. **The Strategy of Lifelong Education and Lifelong Counseling** approved by the Government of the Slovak Republic on April 25, 2007 through its Resolution No. 382/2007. The main goal of the strategy is to complete the building of lifelong education and the system of lifelong counseling to facilitate the access of citizens to the repeated and flexible acquisition of new qualifications through quality education acquired in addition to formal education in the informal subsystem of education and in the subsystem of informal learning with the assistance of lifelong comprehensive services of counseling and thus maintaining the highest employment and increasing the participation of the population in lifelong education while adhering to the equality of opportunities.
12. **The National Program Learning Region** elaborated and approved by the Ministry of Education of the Slovak Republic in May 2007. The goal of the national program is to ensure the effective connection of lifelong education to the needs of the local and regional labour markets through the active participation of all levels of schools, institutions for continuing education, employers, self-government, professional associations and chambers in the implementation of the strategy of lifelong education and counseling.
13. The Government of the Slovak Republic discussed and with comments on its 172nd session of 30 September 2009 approved the draft **law on lifelong learning** and on the amendments of certain laws, which was approved by the National Council of the Slovak Republic on 1 December 2009.

The following legal regulations pertain lifelong learning in the formal subsystem of education:

1. Act No. 29/1984 (Digest) on the system of elementary and secondary schools (the School Act) as amended, which establishes the status and role of elementary schools, secondary schools, special schools, schools for education within amateur clubs, private and church schools, school employees and compulsory school

attendance. The School Act was amended several times and is supplemented by a set of execution regulations for actual areas of its implementation. The School Act also regulates the possibility of acquiring elementary education for persons who prematurely left school. It is possible to acquire basic education by attending a course. The School Act also regulates the terms and possibilities of adult secondary education in the form of part-time study at technical apprentice schools, secondary technical apprentice schools, secondary technical schools and gymnasia.

2. Act No. 131/2002 Coll. of colleges/universities and on changes and supplements to some Acts as amended (until March 31, 2002 Act No. 172/1990 (Digest) on colleges/universities), which regulates the status of public, state and private colleges and universities and their related institutions, establishes the rules for study at college/university, the status of students and employees of colleges/universities, the composition, activities and competencies of the accreditation commission, the rules for financing colleges/universities and the system of social support of students, the status and roles of the state administration and representatives of colleges/universities.

The Ministry of Education issued a set of executive legal regulations to this Act. The colleges/universities organize college/university study at all three levels in full time and part time programs. Thus they also facilitate access to education to that group of the adult population who wants to acquire a higher level of education in their leisure time.

Lifelong learning in the informal subsystem of education is regulated by the following legal regulations:

- 1) Act No. 386/1997 Coll. on continuing education in the wording of Act No. 567/2001 Coll. The wording of this Act defines continuing education as a part of lifelong education; it characterizes its types, establishes the institutions

for continuing education, the terms for accreditation of continuing education and the status and activities of the Accreditation Commission of the Ministry of Education of the Slovak Republic for continuing education. It also regulates the issuing of education certificates and defines the resources for financing continuing education. This Act is generally targeted on continuing education; it does not pertain to preparation and education for the performance of special technical activities which require a special aptitude. This field of adult education is regulated in the legal regulation issued by the central state administration bodies (ministries).

- 2) Act No. 311/2001 Coll. Labour Code as amended (until March 31, 2002 Act No. 65/1965 (Digest) Labour Code), which establishes the obligation of the employer to take care about the deepening or enhancing of the qualifications of its employees. The employer is obliged to provide to employees who enter jobs without qualifications the opportunity to acquire qualifications through initial training; furthermore it is obliged to re-qualify employees transferred to a new assignment or workplace. The employer is authorized to assign the employee to participate in continuing education with the goal of deepening his qualifications. On the other hand, the Act also establishes the obligation of the employee to constantly deepen his qualifications for the performance of the job agreed upon in the employment contract. It also regulates the possibility of provide time off to participate in continuing education.
- 3) Act No. 312/2001 Coll. on civil service and on changes and supplements to some Act as amended, which regulates the deepening and enhancement of qualifications of civil servants (at ministries, upper-tier territorial units). The deepening of qualifications is provided for by the service office at each ministry in the scope of at least five service days per calendar year.
- 4) Act No. 5/2004 Coll. on employment services and on changes and supplements to some Acts as amended (until January 31, 2004 Act No. 387/1996 Coll. on employment), pursuant to which, education and preparation for the labour

market is constituted by theoretical or practical preparation which leads to the acquisition of new knowledge and technical skills for the purpose of finding a job for job seekers or those interested in job in a suitable job or for the purpose of keeping an employee in the job, especially through education activities targeted on the completion of elementary school education or secondary school study in the last grade of the pertinent school, based on projects and programs for education and preparation for actual jobs based on the promise of an employer to hire him for job and for education and preparation for the performance or execution of independent gainful employment. The designation of the content and scope of labour market education and preparation is based on the present level of knowledge and professional skills of the job seeker, person interested in the job or employee so those would be purposefully used in acquiring new knowledge and professional skills. For the purposes of this Act, labour market education and preparation does not constitute the enhancement of the level of education.

- 5) Act No. 279/1993 Coll. on school facilities as amended regulates some types of informal education, for example education in foreign languages at language schools and state language schools.
- 6) Act No. 455/1991 (Digest) on trades (the Trades Act) as amended, enables individuals to acquire trade licenses for craft activities to demonstrate their professional qualification through a certificate on acquired education in an accredited education institution and a certificate on the successful completion of the qualification test. The qualification test examines the professional theoretical and practical knowledge of technical and technological procedures required in performing a trade. This Act also establishes the prequalification for establishing private education institutions implementing adult education.
- 7) Act No. 124/2006 Coll. on occupational safety and health protection and on changes and supplements to some Acts in the wording of Act No. 309/2007 Coll. on occupational safety and health protection as amended). This Act regu-

lates the upbringing and education of employees provided by each employer for the proposes of acquiring the technical capacity to operate a designated means of production and for performing designated activities established by legal and other regulations.

Financing and funding

According to law on further education, financing for lifelong learning is provided from a variety of sources. There are subsidies from State budget, other sources of finance are fees from participants, employers' funds, the budget of the National Labour Office, funds from municipal budgets, funds from foundations and other natural persons and legal entities. Informally is lifelong learning financed by foundations and donations. For personal relationship in processes of lifelong learning are easy to use key competences set in the Reference Framework, maybe in next different order: Communication in the mother tongue and in foreign languages, Learning to learn, Social and civic competences; Cultural awareness and expression, Digital competence, Sense of initiative and entrepreneurship and at least Mathematical competence and basic competences in science and technology.

The system of financing of almost all forms of education was significantly and dynamically changed recently and the process of change is not complete. The subjects participating in financing have changed; new connections and financial flows, new competencies and responsibility were established.

The resources flowing into the formal and informal subsystems of education can be divided into two main groups:

- 1) public resources (derived from the public budget);
- 2) other resources (resources spent by the business subjects, the third sector, the European Union, private resources of lifelong education participants) The resources and rules for financing are designated by the following legal regulations:
 1. Act No. 597/2003 Coll. on financing elementary and secondary schools and school facilities as amended, which introduces the normative financing per student and the subsidies from the public finances which are equally provided

- to all schools (state and non-state);
2. Act No. 564/2004 Coll. on the budgetary determination of the income tax yield to the territorial self-government and on changes and amendments to some Acts, which regulates the method for the determination, allocation and transferring of the physical persons' income tax yield to municipalities and upper-tier territorial units. The criteria based on which the tax offices allocate the collected tax yield to individual municipalities and upper-tier territorial units are determined by Slovak Republic Government Order No. 668/2004 Coll.;
 3. Act No. 131/2002 Coll. on colleges/universities and on changes and supplements to some Acts as amended, which regulates the resources and rules for financing state colleges/universities, public colleges/universities and private colleges/ universities. The main resource for financing is comprised of subsidies from the state budget, school fees and fees connected with the study;
 4. Act No.386/1997 Coll. on continuing education, which regulates the resources for financing continuing education from the payments of participants of continuing education, the means of employers, subsidies designated for certain purposes from the state budget, the National Labour Office budget if it applies to the re-qualification of the registered unemployed and employees pursuant to a special regulation and means of the municipal budgets, foundations and other legal entities and physical entities and other resources.

The aim is to evaluate the possibilities of financing lifelong learning in the Slovak Republic with emphasis on multi-source financing and to put them into a legal norm. This means that apart from individuals the state should also participate in financing of lifelong learning in a form of national grants. Other participants should be the regional self-government, employers from both public and private sector and the bank sector.

The resources from the EU structural funds, primarily the European Social Fund,

could also be used for financing of lifelong learning in the framework of the following activities:

1. Improvement of quality of lifelong learning;
2. Development of human resources in further education;
3. Support of learning regions and creation of networks in lifelong learning;
4. Support of lifelong learning in particular sectors;
5. Making the access to lifelong learning easier;
6. Development of key competencies through lifelong learning;
7. Improvement of permeability between sectors and levels of formal and non-formal education and informal learning.

In order to provide for supporting tools for motivation of participation of the involved stakeholders in lifelong learning, it will also be necessary to look for possibilities of its effective financing in the framework of the legislative changes proposed in the future.

Table 2 Significant programs used for e-Learning Project preparation in Slovakia

Specific Program	Priority	Period	Expected Budget for e-Learning (M EUR)	Implementation
Leonardo da Vinci Program	e-Learning and teaching supporting activities	1995-2005	5.0	Specific e-Learning projects implemented at universities
INFOVEK (National Program)	Support for primary and secondary schools	2002-2006	2.0	e-Learning Courses for students and teachers
VEGA (National grants)	Support for universities	2002-2006	0.3	Few projects only
KEGA (National grants)	Support for universities	2002-2007	0.1	Two projects only
Sectoral Operational Program	3.2 - Improved Qualifications and Adaptability of People	2004-2006	48.8	Target for 2006: To be trained: 5 000 teachers, 100 education institutions, 8

HR	in Employment and of Those Entering the Labour Market			000 civil servants, 6 000 employees and 2 000 specific trained employees
e-Government Roadmap	ICT skills for civil servants	2005-2008	6.3	2006~7 thousand certificates already awarded Target: ECDL certificates for 40 thousand civil servants in state administration
MINERVA (National Lisbon Strategy)	Education and Employment	2005-2007	5.0	
National Strategic Reference Framework	Education	2007-2013	50.0	Including e-Learning implementation Note: after the general election (June 2006) document was updated by Government on 6 Dec 2006)

Source: Ministry of Labour, Social Affairs and Family, Ministry of Education, 2008.

Table 2 presents the most significant programs which create possibilities for the preparation and implementation of e-Learning projects and activities in Slovakia. The majority of e-Learning projects were or still are supported by Slovak academic grant schemes or by EU structural funds. With regard to this table, it is important to note that even though future investments in e-Learning seem substantially higher than before, one cannot be sure that these investments will materialize. The reasons are twofold. Firstly, in Slovakia so far, the real investments in e-Learning have been always smaller than originally planned. Secondly, the new Government elected in June 2010 may change the plans prepared by the previous Government.

Since November 2004, the Government has appointed the Plenipotentiary for the Information Society as an advisory body to coordinate tasks in the area of the Information Society. In the area of e-Learning the Plenipotentiary plays an important role in necessary supporting activities and can influence the intersectoral coordination or discussion of relevant problems.

There has been no specific Government policy document directly dealing with the e-Learning area adopted yet. However, there are two main policy documents: Government Program Declaration and National Information Society Policy that describe Government's policy on e-Learning.

After the general election in June 2006, the new Government and Parliament adopted the Government priorities for the period 2006-2010, which are:

Millennium - National Policy for Education and Training (2000) - strategy for the implementation of the Bologna Declaration principles was established by the Program document Concept of the Further Development of Higher Education in the Slovak Republic for the 21st Century, which was approved by the Government of the Slovak Republic in August 2000. In November 2003 and December 2004 the amendments to this Act were adopted to regulate some areas significant from the point of view of European Union law, particularly the adaptation of the content of education in higher education institutions according to the respective directives of the European Commission;

1. *National Information Society Policy (2001)* - the former Government has adopted the National Information Society Policy document, which indicated, in one priority (education), the necessity to give attention to modern teaching methods including e-Learning in the future. The document did not specifically deal with e-Learning activities;

2. *Government Program Declaration (August 2006)* - after the general election in June 2006, the new Government and Parliament adopted the Government priorities for the period 2006-2010. The Document presents the new Government's vision in eight specific areas (e.g. information society, employment policy, education).

Current strategies dealing with e-Learning are:

1. Training Strategy in Civil Service (2003);
2. Sectoral Operational Program - Human Resources (2003);
3. National Information Society Strategy (2004);
4. The Strategy of Competitiveness until 2010 (National Lisbon Strategy) adopted by the former Government in February 2005;
5. National Concept for Further Education (2002);
6. National Strategy for Lifelong Learning (April 2007);
7. The National Strategic Reference Framework (adopted in December 2006) for Structural Funds programming 2007-2013.

At present, in the Slovak Republic the main positive impact of e-Learning on the education system can be seen in tertiary education, which is characterised by the highest level of e-Learning projects already implemented. A gradual positive impact can be observed also in training at workplace by big companies and in the lifelong learning system provided by universities. Currently, most interest seems to be in courses that are internationally certified. Universities, some private education institutions and large enterprises (mainly with foreign investments) are the most active in the development of e-Learning services in the Slovak Republic. Public administration, primary and secondary schools and SMEs are still lagging behind. However, universities fall behind in e-Learning content management, since human resources in this area require heavy funding, which cannot be covered by grants and state subsidies in many cases (Massy, 2001).

Table 3 Achievements and Shortcomings in e-Learning in the Slovak Republic

e-Learning	Main achievements	Main shortcomings
Areas covered	<ul style="list-style-type: none"> · Availability of CDs, DVDs, Video cassettes and Multimedia for e-Learning in the market · LMS systems are frequently used · SES (Smart Enterprise Suites) are available 	<ul style="list-style-type: none"> · Level of multimedia technology used at primary and secondary schools · Digital literacy is low · Low LCMS systems usage
Content	<ul style="list-style-type: none"> · Availability of following services in Slovak market: · foreign language courses in e-Learning form (some free of charge) · natural science (physics, chemistry, etc.) · health-care trainings and fire protection at workplace trainings · IT topics (ECDL, CNAP) · specific topics taught by universities or training institutions in e-Learning from 	<ul style="list-style-type: none"> · Insufficient offer of topics for education and training of adults, unemployed and specific target groups · free e-Learning courses usually prove only basic skills and knowledge
Interactivity	<ul style="list-style-type: none"> · Availability of following services in Slovak market: · products for self-education · distance learning 	<ul style="list-style-type: none"> · uniform access with same standard and quality for all participants without special features for gifted students
Usage in different target groups	<ul style="list-style-type: none"> · Availability of services for · employed people (large companies) · students (higher education and lifelong training) · business sector 	<ul style="list-style-type: none"> · Unsatisfactory usage of e-Learning by · the unemployed · inactive population · SMEs · majority of primary and secondary schools
ICT infrastructure	<ul style="list-style-type: none"> · multimedia technology is regularly used at universities and training centres · computer access rates for enterprises are high · computer penetration in training institutions is very high · increasing purchases of new PCs and especially branded PCs · SANET infrastructure for universities is at place · solid broadband penetration for training institutions 	<ul style="list-style-type: none"> · percentage of primary school teachers using PCs for education still low · computer penetration rates for primary and secondary schools still low · multimedia technology not used by 70% of primary and secondary schools · computer access rates for households still low · broadband penetration at primary and secondary schools still low · household broadband penetration still very low (compared to EU25 average)

Source: Sabol T., e-Learning country report for the Slovak Republic; 2006

Main e-Learning actors in the Slovak Republic

The most significant e-Learning projects in non-commercial sector were initiated and provided mainly by these institutions:

1. Universities;
2. State Institute of Information and Prognoses on Education;
3. Non-Government organizations;
4. Private sector.

In private sector there can be found the following companies being significant in providing trainings through e-Learning:

1. CISCO Slovakia s.r.o. – e-Learning on ICT topics (certified courses) only,;
2. EL&T, s.r.o., Bratislava – different kind of e-Learning topics;
3. ELFA s.r.o. – different kinds of e-Learning topics;
4. Novitech Partner a.s. – project TeleDom – different kinds of e-Learning topics (management, marketing, finance, project management).

The most active actors in training institutions using e-Learning in the training of relevant target groups are as follows:

1. CNAP (CISCO Networking Academy Program);
2. Institute of Lifelong Learning (ICV) of Slovak Technical University in Bratislava;
3. Academy of Education (Akademia vzdelavania);
4. Slovak Society for Computer Science (civic association) – ECDL trainings coordinator and methodology centre in the Slovak Republic.

The most active business companies using e-Learning in the training of their own employees based on reports in the media are as follows:

1. Slovnaft (oil company – MOL subsidiary company);
2. Slovak Telekom and T-Mobile (Deutsche Telekom group);
3. Orange Slovakia (Orange group – mobile operator);
4. Matador Puchov (tyre manufacturer);
5. ESET (Slovak private SW company – antivirus software producer well known worldwide);
6. Banks (mainly with foreign capital) – e.g. Slovenska sporitelna (Erste Bank group);
7. A few alternative telecom operators;
8. National and regional energy distribution companies (e.g. SPP – monopoly gas distributor).

Government plans to use e-Learning as an important training method in trainings of unemployed people and physically disadvantaged people (by calls for Specific Structural Fund Operational Programs – in the areas of Human Resources, Training, and Education). Usage of e-Learning is limited by low digital literacy currently reachable by the mentioned target groups. e-Learning courses for the unemployed and disadvantaged are managed by local Labour Offices located in each district.

Slovak projects including e-Learning

1. *CNAP (CISCO Networking Academy Program, 2001)* – it can be regarded as one of the Ministry of Education's most important activities in the field of e-Learning. The project is very popular among students, secondary schools, universities and the private sector (ICT companies mainly). The project offers excellent possibilities for secondary and tertiary education students as well as employed people to be trained in high-tech IT by e-Learning methods.
2. *INFOVEK Project (within the State Institute of Information and Prognoses on Education)* – the INFOVEK project is one of the most effective projects managed

by public administration in the area of e-Learning. The aim was to provide all primary and secondary schools within four to five years with computer classrooms of about ten computers and an Internet connection in each. There are training programs being organised for INFOVEK teachers and a centralised purchasing of hardware for the selected schools. One of the four pillars of this project was to equip every primary and secondary school (public, church or private) in the Slovak Republic with a multimedia classroom with high quality Internet access.

3. *DIGISTUR Project* – the project is a successor of the INFOVEK project idea. It is trying to involve the majority of schools participating in the INFOVEK project in wider ICT training activities for citizens in the whole territory of the Slovak Republic.
4. *e-Learning projects implemented by universities* – during 2005-2006, the majority of universities have actively worked on the implementation of e-Learning for their own students and successfully developed e-Learning portals.
5. *ECDL* - the initial objective of the former Slovak Government was to make all civil servants pass the tests until the end of 2008. From January 2007, there will no longer be compulsory ECDL (European Computer Driving Licence) tests for civil servants in the Slovak Republic. The arguments in favour of the current decision say that most of the civil servants are already computer literate and that there would be preselected companies to make a profit from those courses.
6. *DILBAC project (2004-2006)* – the project was financed by the European Union under the Leonardo da Vinci Program. The aim of the project was preparation of e-Learning modules in the area of banking and accounting in the four participating countries. Cooperation between the academic institutions and institutions from practice laid a realistic basis for meeting project objectives. The beneficiaries of offered courses were students and interested people from practice. The outputs included survey of e-Learning needs in banks and enterprises, elaboration

of curricula that take into account working needs and the creation of education modules, command of e-Learning methodology, the establishment of a virtual library under the DILBAC project.

7. *Tomorrow is Today* – the Slovak Telekom e-Learning project “e-Learning – Tomorrow is Today” won the 6th annual competition Slovak HR Oscar in 2006. The aim of the project was to create a learning system to enable coherent learning management, focused on supporting strategic tasks and corporate objectives in the times of transformation.
8. *VUDU e-Learning Project (Virtual University of Drama Art)* – since September 2006, the Theatre Science Department at the Drama Faculty of the Academy of Music and Dramatic Arts in Bratislava has implemented its initial e-Learning project in collaboration with the European Cultural Society, drawing a grant from the European Social Fund. For theatre science and drama students, five courses dealing with the world and Slovak theatre of the 20th century were organised. The e-Learning Courses in the form of learning texts, assignments, tests and visual materials were distributed via the Internet.
9. *School for Young Rescuers* – since September 2005, the Rescue Team Slovakia civic association, focusing mainly on voluntary rescue services, has been carrying out the learning project “School for Young Rescuers”. This preemptive e-Learning project was designed to enable all pupils, students and even teachers, parents and ordinary citizens to acquire and renew their knowledge in the area of prevention, health – and lifesaving, first aid and emergency aid. Several e-Learning courses were realized to date, all of them being systematically divided into units covering child injury prevention, traffic education, first aid, health – and lifesaving in dangerous situations and the survival in such instances.
10. *DIVES Program* – the civic association The House of Europe, prepared for the period of March 2005 – March 2007 the DIVES Program (Distance Learning Via Internet), which should have contributed to eliminating discrimination and inequality in the labour market. It was designed for secondary school

and university graduates, mothers on maternity leave, the long-term unemployed, people over the age of 50, employees of non-profit organisations as well as for disabled people. The courses were free of charge and their purpose was to find a job. Project participants had a choice of nine courses. The most favourite course was the English language course, since many consider it as the best start to get a better job. Other favourite courses were project management, regional policy and EU structural funds. Participants could also choose to attend entrepreneurial, self-government and public administration, civil society, community development courses as well as volunteering or international political development courses. All nine courses received the accreditation from the Ministry of Education and successful course graduates received a certificate.

11. *Internet for Education* – the project has started in June 2006, based on the MINERVA Action Plan for Information Society aiming to support the wider usage of broadband by the young generation in the Slovak Republic. The project offered the possibility to receive a 2-year limited financial subsidy from the state (approx. 8 EUR per month) for the establishment of a new broadband connection at home. Up to 40 thousand young people (aged 15-25, in October 2006 the age limit was cancelled) can participate, 5 thousand people in each of 8 Slovak regions. Broadband access should be faster than 512 kbps/256 kbps. The integral part of this project also rests on e-Learning in that it supports education of project beneficiaries in foreign languages and ICT skills.

The list of above-mentioned projects is not exhaustive, however these projects are worth mentioning in this report because of the speed of their implementation, innovative character or their originality. Every successful e-Learning activity has a positive impact on society as it brings the possibility to test new ways of teaching and training. The following **positive features and trends** were observed in the Slovak Republic in the area of e-Learning:

In the Field of Education

1. Blended learning is regularly used for many years;
2. INFOVEK activities (coordination, trainings for teachers and students) were developed;
3. Implementation of specific e-Learning pilot projects;
4. Private initiatives like a Slovak Telekom project supported higher computer penetration at school facilities;
5. Specific e-Learning products (e-Economy) are available, several secondary school projects were implemented;
6. Multimedia technology and e-Learning courses are regularly used in universities;
7. SANET activities created technological infrastructure support for e-Learning services,;
8. Since 1997 there has been CNAP (Cisco Networking Academy Program) implemented;
9. Several specific university e-Learning projects were implemented (e.g. VUDU project);
10. Financing from EU funds was available also for e-Learning;
11. Newer multimedia technology available at the majority of schools.

In training at the Workplace

1. Multimedia technology is regularly used;
2. e-Learning for trainings at the workplace are regularly implemented by big companies (Slovak Telekom, banks, etc.);
3. Few domestic e-Learning products on CDs, DVDs and Internet designed for training and education can be used in the training of specific target groups;
4. CNAP (Cisco Networking Academy Program) trainings are available,;
5. e-Learning started to be an important training method for civil servants, several e-Learning projects were implemented by central state administration institutions (e-Justice, ECDL);

6. Several e-Learning projects organised by regional self-Government administrations were already implemented (e.g. a regional self-Government e-Learning project for the region of Zilina, a specialised Virtual Academy project prepared by the regional self-Government for the region of Bratislava);
7. Specific international cooperative e-Learning projects (e.g. DILBAC – the banking sector in cooperation with universities);
8. Multimedia technology is regularly used for teaching.

In Life Long Learning

1. The National Centre of Distance Education was established in 1996;
2. The national life-long learning strategy and life-long learning guidance were adopted by the Ministry of Education (in 2006 and 2007);
3. Several universities have established lifelong training centres;
4. Multimedia technology is regularly used at training centres;
5. Government initiatives, such as the DIGISTUR Project, support development of ICT literacy by citizens;
6. The structure of e-Learning products on CDs and DVDs for education and training is well developed (mainly foreign products, e.g. Czech e-Learning products on CDs and DVDs can be also used by at least 42% of Slovak citizens aged 15+);
7. Few domestic e-Learning products on CDs, DVDs and Internet designed for training and education can be used in the training of specific target groups (lifelong learning, at home);
8. Several educational institutions started to provide e-Learning courses, e.g.: City University Bratislava (business programs), Transfer Slovakia (management, marketing, engineering);
9. Academia Istropolitana Nova (postgraduate studies in economics, architecture, environmental policy, European studies, English language), Academy of Education (language, professional and spare time courses), Verlag Dashofer

- (IT skills, practical economy courses);
10. few free of charge English training e-Learning courses are available;
 11. The Government supports e-Learning as an important method for the training of unemployed people and specifically disabled groups of people;
 12. Several NGO e-Learning projects (e.g. School for Young Rescuers, DIVES project) were already implemented;
 13. Rapid foreign language skills development by youth creates a great potential for use of foreign e-Learning products.

In the Slovak Republic in the area of e-Learning the following **negative features** were observed:

In the Field of Education

1. The information society framework is lagging behind the EU level (institutional, legal, financing matters);
2. There is absence of the National e-Learning Strategy, e-Learning coordination at the national level, and database of existing e-Learning products designed for education and training;
3. Multimedia technology is not properly used in a large scale of schools;
4. Inadequate financing of schools and HEIs causes the absence of modern/expensive latest e-Learning systems at the majority of universities;
5. Generally poor skills in e-Learning content development at universities;
6. Existing e-Learning activities are very fragmented;
7. ICT literacy at the general level is less developed than the EU25 average.

In training at the Workplace

1. Poor implementation of e-Learning by SMEs.

In Lifelong Learning

1. Insufficient legislation for life-long learning;
2. An inadequate portfolio of domestic e-Learning products designed for training and education on CDs; DVDs and Internet are available.

Chapter 6 Recommendations and Prospects

Analysis of policy options

The information society is not a goal but an instrument to develop knowledge-based society. Flexible learning represents a new philosophy of education with the focus on students. Electronic forms of education provide quick access to the information required. Thus the point of departure should be a new system of education and possibilities to attend trainings and courses via Internet services (e-Learning).

Although e-Learning sets higher demands on computer skills and knowledge of students, it also offers alternative solutions in education. The importance of e-Learning should not be overestimated, one should rather search for efficient forms of its use. It is necessary to implement e-Learning very sensitively, so that it turns out to be a useful tool.

Availability of teaching resources is another principal question. It would be therefore essential to concentrate on creating the valuable teaching resources with multimedia elements and elaborating generally accessible archives of these resources. Under the teaching resources one understands the materials with multimedia elements, but also copies of video presentations, conferences, etc., which would subsequently be accessible via streaming technologies. Even, for example, live online broadcasts of video-conferences, virtual teaching infrastructures with interactive elements, distant access to laboratory equipment via Internet, various simulation environments should be considered as the teaching resources. Internet availability is a pre-condition to develop e-Learning services.

In Slovakia there have been only recently some considerably positive developments in this area. However, the significance of a massive need for educating wider population in order to gain basic Internet skills is often being overvalued, because people already acquire those skills naturally. One “Internet literate“ member of the family (e.g. a university student, or older pupil) is enough to naturally share the skills with other family members (i.e. it’s highly probable the whole family learns how to use the Internet).

Inadequate domestic e-Learning services offered in Slovakia can be overcome by products in foreign languages – here the most limiting factor is generally insufficient language skills required for foreign e-Learning. As already mentioned due to the history of Slovakia there is quite a substantial group of people able to speak Czech or Hungarian while the knowledge of English is improving especially in the group of younger generation. This helps people in Slovakia to utilize not only Slovak but also foreign e-Learning products.

In Slovakia, the most important **policy objectives** in e-Learning are as follows:

1. Modern educational systems also for primary and secondary educational levels;
2. Flexible and effective training activities for all strata of population;
3. Practical lifelong learning implementation.

The Government should also ensure and use **its legislative and financial instruments** more efficiently in order to:

1. Ensure broadband Internet availability to all levels of society as well as to all country regions;
2. Motivate more efficient use of e-Learning by educational institutions;
3. Foster lifelong learning of employees as a constant part of the important strategic decision making process in the business sector (mainly by SMEs).

The key mechanisms which are clearly related to necessary Government actions aiming at supporting further development of e-Learning in Slovakia are as follows:

- a) Implement the new adopted legislation (mainly by new Lifelong Learning Act

- and new Schooling Act);
- b) Prepare and implement National e-Learning Strategy, National/Regional/Local e-Learning action plans;
 - c) Improve broadband and multimedia infrastructure for primary and secondary school;
 - d) Improve computer literacy of citizens – especially that of disadvantaged target groups.

The new legislation needs to be adjusted to define e-Learning as an integral form of education. The Government should foster the development of e-Learning services mainly through consistent implementation of concepts already existing in this area (Information Strategy, National Broadband Strategy). The deficiency in the coordination of projects to support e-Learning and the absence of the common use of former e-Learning projects results have negative effects on the e-Learning development in Slovakia.

The Government provides funding, but the financial resources are distributed to many projects, each with fairly low funding, and the outcomes of such projects are used only by the project managers themselves without any real impact on wider society (Druga, 2008).

Projects aimed at creating the content of multimedia should be carried out by teams of specialists in the relevant area and should be disseminated to be used for teaching countrywide, or their English translations could even be offered abroad. The coordination of e-Learning activities must be guaranteed by the Government. The Government should also provide sufficient promotion, so that e-Learning would not be perceived only as a trendy word to be included in all educational strategies, but it should rather support the implementation of e-Learning in the process of efficient transformation of the Slovak educational system.

The current status of e-Learning usage and expected quick and effective action by the Government should lead to the establishment of a permanent national e-Learning committee as a sector policy advisory committee to the Minister of Education. This

committee should consist of national experts representing all levels of the existing educational system who already have long-term personal experience with e-Learning. The committee should be established under clear and transparent principles defined in the legislation. Clear and effective network of guarantors of the e-Learning implementation in primary, secondary, tertiary education and lifelong learning should be defined by the legislation.

There is a necessity for the creation of a central database of e-Learning projects and products already existing in the Slovak educational system, which have been up to now supported by means of public funds (state budget or EU funds). The central database of e-Learning products should be publicly available, and it should serve as a tool for further acceleration of utilization of existing e-Learning experience and products in the educational system. It can also serve as an e-Learning knowledge database. The e-Learning products included in such a database should be easily accessible by all educational institutions in Slovakia. Principles of creation, responsibility, rights and obligations of all relevant institutions related to such database should be defined by law.

For wider involvement of e-Learning in the distance form of education at universities, lifelong learning institutions or at other levels of the educational system for physically disadvantaged people, it is necessary to prepare and adopt an e-Authentication regime. Such legislation and its implementation could solve the problem with certification procedure during exams. It is very important to solve this problem on legal bases as it will allow preparing more possibilities for education based on ICT solutions for specific target groups. Wider use of distance education via ICT would be welcome also by other groups of users (e.g. inactive women/men with small children at home), because it creates a more comfortable possibility of studying. The e-Authentication regime should employ the latest technology solutions applying principles of current testing/certification procedures in the educational process in a new e-environment.

Major challenges

In Slovakia, different sectors have seen differing levels of implementation of e-Learning services. A serious problem needs to be resolved in terms of legal, techno-

logical and educational issues for children aged less than 15 years. At present, young people spend more time on the Internet than watching television. They are exposed to a variety of content, including pornography and according to statistics in some EU member states as many as one in three children participating in discussion forums have been the subject of sexual advances. (Druga, 2008). In a number of aspects of e-Learning, the challenges for Slovakia are shared with other EU member states. One of the advantages in areas where Slovakia is a laggard is the opportunity for policy learning from countries, which have advanced further and addressed similar challenges over recent years.

Technological developments and challenges

Off-line e-Learning is already generally implemented in all types of education or trainings. However, more extensive implementation should be a key priority in primary and secondary education and in trainings for civil servants (mainly at the local level) and specific target groups (unemployed, handicapped people). Research work is required to identify the needs and prepare both basic training in this area for teachers and trainers as well as advanced training tailored to their specific needs. In Slovakia, more attention should be paid to the development of basic ICT skills (digital literacy) for citizens in general as well as for specific groups including civil servants and groups at risk of finding themselves on the wrong side of the digital divide (the unemployed, people with disabilities, employed people not working with IT, older people).

With changing technologies and modes of their use, it is important to pay attention in research to both identifying needs and appropriate means of improving ICT skills. With increasing digital literacy of citizens it will be easier to prepare flexible trainings or re-education of specific target groups by relevant public administration organisations (Labour Offices, public administration on all levels) or employers in the private sector. The following areas need to be tackled in the near future to respond to technological challenges in the field of e-Learning:

- **Metadata concept** should be developed for creation of :

- (a) Central e-Learning database for wide usage by primary and secondary schools and with direct open access by primary and secondary schools with specific methodology support for teachers should be involved; and
- (b) Digital libraries for different levels of education systems;
- **Interoperability of e-Learning systems** must be introduced (it should increase effectiveness and balanced e-Learning usage by primary and secondary schools in all regions aiming to provide unified educational quality everywhere);
- **User-friendly technology accessibility for physically disabled people** should be introduced aiming to ensure better and more flexible individual education or trainings.

Non-technological challenges

It would be essential to concentrate on creating valuable teaching resources with multimedia elements and on elaborating generally accessible archives of these resources. The teaching resources should embrace materials with multimedia elements, but also copies of video presentations, conferences, etc., which are subsequently accessible via streaming technologies. Furthermore, the teaching resources should include inter alia live on-line broadcasts of videoconferences, virtual teaching infrastructures with interactive elements and distant access to laboratory equipment via Internet or various simulation environments.

Here are also other topics, which need to be addressed in order to facilitate e-Learning development in Slovakia:

- Improvement in digital rights management (ensuring practical implementation for primary and secondary schools and methodology support for tertiary education or lifelong learning);
- e-Learning content creation and management (ensuring practical implementation for primary and secondary schools and methodology support for tertiary education or lifelong learning), study of optimal teaching methods for pupils of different ages in primary education, for different kind of secondary education regimes (gymnasias, vocational schools), for different kinds of study topics aiming at

increasing effective use of the existing SANET infrastructure potential in tertiary education and optimal training methods for different kinds of specific target groups (the unemployed, the disabled, the elderly) within state social and employment policy;

- Development of e-Learning documentations (curricula) and didactic and methodology focusing on effective e-Learning incorporation into teaching methods in primary and secondary schools (e-Didactic and e-Methodology problems);
- e-Learning management for Municipality level should be put in place (it should increase effectiveness and balanced e-Learning usage by local, regional and central public administration institutions in all regions aiming to ensure high-trained civil servants);
- Improvement of higher education of new teachers implementing new e-Learning approaches;
- Preparation of an e-Learning awareness campaign for all relevant targeted groups in society.

Financing issues and challenges

Relatively high primary investment into the implementation of e-Learning (e.g. learning management systems) remains an important challenge for schools, universities and many small and medium size enterprises. In offline e-Learning in primary and secondary education necessary improvement in computer, multimedia and broadband penetration is still essential for the next few years. New systematic approach trying to prepare quality broadband infrastructure for primary and secondary schools also needs further substantial investments.

At the same time financial resources should be allocated for further ICT training of teachers. On the public administration level new approach in lifelong training should result in financing ICT courses at least for civil servants. Improvement of digital literacy in specific target groups within the state social and employment policy framework should be backed by adequate budgetary support. In e-Learning online it is necessary to prepare financial resources equal to what has been already invested

in ICT development. Besides more finances allocated from the state budget or from active and effective drawing of EU Structural Funds, there are also other solutions such as public-private partnership frameworks and wide use of e-Learning based on Open Standard platform (GNL). The mix of all the above mentioned alternatives seems to be the best solution to deal with an immense need for investments into ICT.

Identity aspects and challenges

For wider involvement of e-Learning in distance education at universities, lifelong learning institutions or in other levels of education system working with disabled people it is necessary to prepare and adopt a comprehensive e-Authentication regime. Such legislation and its implementation could solve the problem with certification procedures during exams. It is very important to solve this problem on a legal basis as it will enable to arrange more opportunities for education based on ICT solutions for specific target groups.

Security aspects and challenges

In Slovakia, the security regime in e-Learning based on the Internet is regulated mainly by the Electronic Communications Act, by the Personal Data Protection Act and by the Antispam Act. For the time being, the present legal framework seems to provide enough security for e-Learning applications, according to the experts (Druga, 2008). However, with the new requirements for further e-Learning application in primary and secondary schools, the problems of security of central. e-Learning meta databases and local e-Learning databases including personal identity of pupils and students can be identified as a challenge for further research and development.



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e-Learning for Lifelong Learning in South Korea

05

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She has written many articles and research papers related with the lifelong education policy such as “the Characteristics of adult learners in the Academic Credit Bank System”, “Cross-Cultural Comparison on Open Learning System in APEC Member Economies” and etc. She is also teaching doctoral students.



I

Introduction to Education System in South Korea

The founding principle of education in South Korea is humanitarianism named Hongik, which leads the provision of education for all the people in the country regardless of age, class and gender. According to the principle, free education should be available for children under the age of 15. The Constitutional Law allows everyone to learn throughout their lifetime depending on his/her capacity and aptitude. Educational opportunity is defined by laws such as the Early Childhood Education Act, the Elementary and Secondary Education Act, the Higher Education Act, and the Lifelong Education Act. This chapter presents an overview of education system in South Korea as the basis of understanding of e-Learning in the context of lifelong education.

I-1 Formal Education System

South Korea's current education system has established since the liberation from Japanese colonial rule. For the purpose of constructing new democratic country, South Korea adopted American education system characterized as "6-3-3-4 school year system" just after the establishment of the Education Law in 1949. Schooling in South Korea expanded so rapidly during the 20-year period from 1960 to 1980 that it was referred to as "School Inflation." South Korean government propelled literacy project, whose purpose was achieving all the people literate. Through compulsory and free schooling policy, the main beneficiaries are school-age children who could have failed to participate equally in South Korea's social development. Nowadays, the 9 years of compulsory education from elementary to middle school is provided tuition-free, including provision of supplement education for middle school.

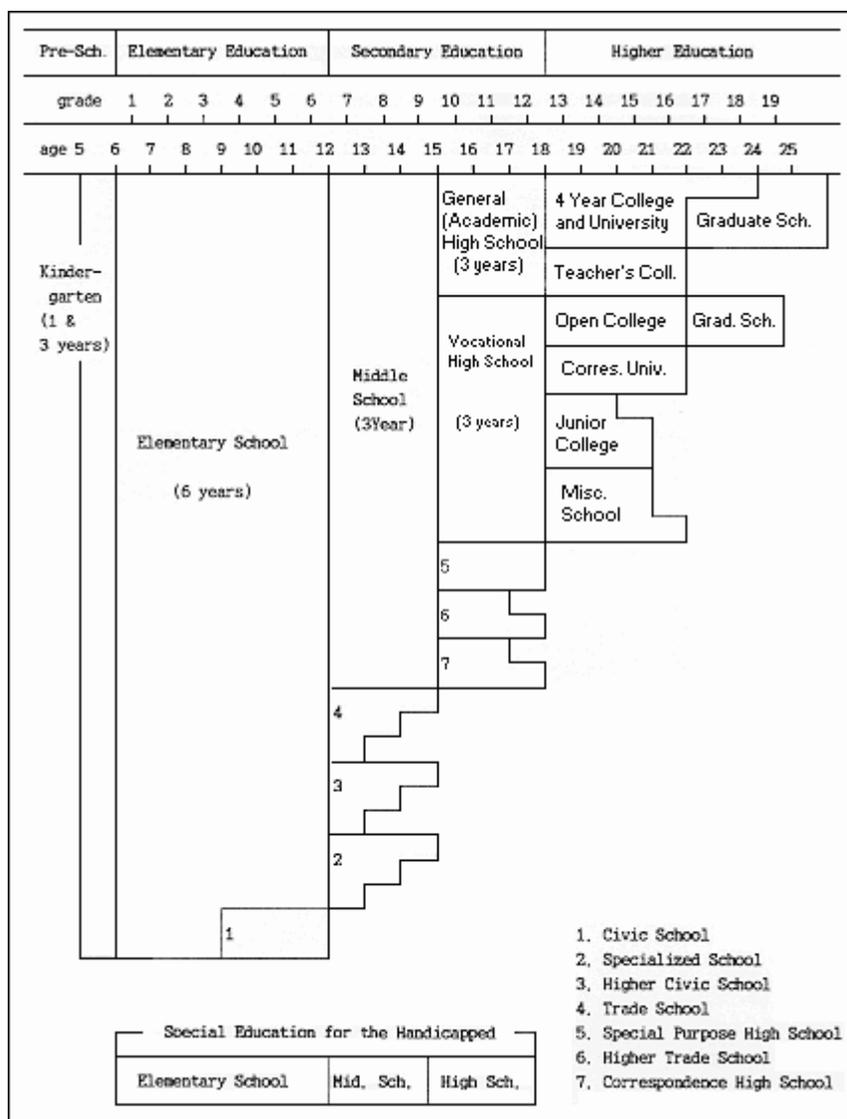


Fig. I-1 Education System in South Korea

High school programs are provided at a small cost(\$200 per semester) and divided into general high schools, commercial high schools, science high schools, and special-purpose high schools depending on educational contents and purposes. These schools are described as follows:

- General high schools provide students with a liberal education. In the first year,

students learn basic knowledge that all the people must acquire as citizens, and they choose subjects depending on their aptitude, capacity, and career plans in the second and third year.

- Commercial high schools, typical vocational institutes in Korea, provide both professional education and secondary general education. First-year students learn the knowledge that every citizen must acquire, and second and third-year students study professional subjects. Professional subjects include agriculture, industry, commerce, fisheries and marine transportation, household affairs and business. Since 2000, subject fields are becoming specialized into information technology, robotics, animation, film, cooking, beauty culture, and tourism reflecting the specific division in the industry and vocational world.
- Science high schools are designed for the talented students in fulfilling their potential without meaningless competitions. Students who complete 2 year program in their schools may enter the bachelor's course (same as a university program) at the Korea Advanced Institute of Science and Technology as well as those universities where they have been admitted.
- Special-purpose high schools are established to provide students with specialized education in foreign languages, music, the arts, dance, and sports.

Universities are the most representative institutes at the level of higher education. Because of the enthusiasm of Bachelor's degrees, there are over 170 universities (408 including colleges, in 2007) whose percentage of the population is very high. Most of the people get a degree of well-regarded university which is a kind of symbol of high status. Therefore, whereas most of the high school graduates attend universities, only a few people go to the institutions for vocational higher education in spite of the promotion of government. These institutions are divided into two parts: industrial universities that train industrial human resources and colleges that train professional workers generally offer 2 to 3-year courses such as vocational colleges, technical colleges, technical schools (3 years), advanced technical schools (3 years), civil education centers (2-3 years), and advanced civil education centers (2-3 years). The avoidance of vocational higher education reflects the privilege of liberal

arts in Korea, however, this bias is noticeably decreased after the crisis is spreading with the world-wide change of knowledge-based society.

Although rapid growth of schooling, according to South Korea's 2005 census, more than 2 million people 20 years old or older in the adult population did not have elementary school diplomas; 5.98 million people did not have middle school diplomas. Even after narrowing the population range to people 20 - 50 years old and who are expected to be fully engaged in social activities, there are still about 100,000 people without elementary school diplomas and 690,000 people without middle school diplomas. This situation forces government to secure the educational and learning rights for undereducated people and non-formal learning activities centering on the complementation of academic ability, basic adult and literacy education, and enhancement of vocational competencies for those who were deprived of a regular school education with post-secondary lifelong learning in general.

I-2 Non-formal Education

The non-formal education at the national level is represented by Air and Correspondence High Schools and alternative schools. Air and Correspondence High Schools provide advanced learning opportunities for those who were unable to enter high school due to financial and other personal reasons. Chapter 5 will discuss Air and Correspondence High Schools further. Alternative schools are the result of the school reform movement in South Korea that was naturally born in the course of the social and structural transformation to knowledge based society. Nevertheless, only about 5,000 students are enrolled in alternative schools, which account for only 0.2% of the total student population.

As of higher education in the context of lifelong learning, South Korea has well-established institutions and systems for the disadvantaged such as Korea National Open

University, the Credit Bank System and Bachelor's Degree Exam System for Self-educated man.

As South Korea's only national distance university, Korea National Open University (KNOU) has contributed to the educational equality in the context of higher education since its establishment in 1972. The teaching and production staff provides higher education contents through cassette tape, radio, TV and web, applying media development to course design. Annually, around 180,000 students enroll the course for the Bachelor's degree in KNOU every year. .

Cyber universities are private distance universities established since 2001. It confers degrees based on entire courses provided through the Internet. Cyber University was originally established to meet the criteria established in the Lifelong Education Act and 17 universities established as of 2009. Some universities applied the Higher Education Act to their institutions in order to deliver a quality education.

The Credit Bank System recognizes various forms of learning experiences and qualifications occurring within and outside the school such as academic credits on the basis of laws and regulations regarding credit recognition, and grants a bachelor's degree or an associate bachelor's degree when the student accumulates sufficient credits and satisfies certain criteria.

The Bachelor's Degree Exam evaluates self-access people and officially approves the results of an individual's learning through examinations, granting a bachelor's degree when the applicant passes the examination. This System for self-access people ensures an opportunity to receive an alternative higher education for those in socially and economically difficult circumstances and officially affirms the result of self-study through a qualification examination that embodies educational welfare.

II

Definition of lifelong learning and e-Learning

II-1 Lifelong Education and Lifelong Learning

Lifelong education literally means “education that covers from the cradle to the grave,” and includes formal/non-formal/informal education. This definition seems to be a denotative description of education for a whole life of the people. Because of the traditional school-oriented approach which confines education as a narrow and closed pedagogy, lifelong education which stresses adult learners’ everyday life was accepted as an innovative viewpoint. It declares that the education is belonged to school but to our all life from the beginning. Korean government and scholars have accepted the concept of lifelong education extensively since middle of 1990s, regarding it as an alternative to traditional education.

However, the scholars and government have different approaches to lifelong learning: theoretical and practical respectively. In a theoretical context, lifelong education is regarded as a holistic approach to disclose the phenomenon of learning and teaching in ordinary life instead of school practice. The term ‘lifelong learning’ has been preferred to lifelong education by scholars with the analysis of oppositional characteristics. While the school is managed by the ideological mechanism of the state that absolutely represents “education-ism”, lifelong learning is trying to promote learning activities on the standpoint of the learner’s rights. Therefore, lifelong learning is also considered as an ideal toward which all kinds of education are oriented.

On the other side, practitioners and government officers regard lifelong education as the engine of national competency. Discussions on lifelong education for human

resources development or vocational competency development expanded rapidly since being introduced in 2002. This expanded lifelong education throughout Korean society in connection with state policies. The representative case of the state policies is the Lifelong Education Act(LEA). According to the Lifelong Education Act, which was promulgated in 1999 and fully revised in 2008, “Lifelong Education” refers to complementary education regarding academic ability, basic adult education, elimination of illiteracy, vocational competence enhancement, humanities and cultural education, and education involving citizen participation excluding regular school curriculum. In other words, lifelong education is defined as “organized educational activities taking place outside school.” In addition, the legal formalities exclude school premises from discussions on lifelong education, which is a uniquely Asian characteristic.

Because the term ‘lifelong education’ has so many connotations that it could not easy to find out a single definition to which all the concerned agree. The spectrum is too wide to designate one sigle term such as teaching style or educational system. It is used as an ideal, an ideological orientation, learner-centered perspectives, and extra school activities, etc. However, there is an exclusive consent that lifelong education is a new paradigm which could be the basic requirements of next generation, and facilitate our society to be integrated.

Nowadays, the term lifelong learning is commonly used instead of lifelong education, changing the connotation of ‘learning’. From the experiences of formal school discipline, most of adult in South Korea regard learning as the passive accommodation to the absolute knowledge. Therefore, lifelong learning as an active meaning creation in ordinary life faced many hardships before it is accepted. Although it takes almost 10 years until the term ‘learning’ is generally used, ‘lifelong learning’ is still accepted as taking courses in various kinds of institutes.

For comparing the politics of other countries, this white paper confines the concept of lifelong education to “the omnipresent system supporting the learning activities of anyone serving his/her interests anytime, anywhere” However, the term of lifelong

learning is already used as the general interaction of teaching and learning, we use lifelong learning instead of lifelong education, while an exclusive supporting system which has deliberate designs for instructions is called ‘lifelong education’. Regarding LEA of Korea, the education within K-12 schools are excluded from this study. But learning institutes of granting degrees are included.

II-2 e-Learning

○ In general, e-Learning is defined as the delivery of a learning, training or education program by electronic means (Stockley, 2003). It involves the use of computer, internet or mobile devices which facilitate independent and interactive learning. e-Learning consists of all forms of electronically supported learning and teaching (<http://en.wikipedia.org/wiki/E-learning>). At any definition, e-Learning is related to the ‘electronic’.

In Korea, e-Learning was accepted as a new device of education. In the beginning, it represented new teaching methods through advanced technologies, especially, online learning in the internet. Interestingly, e-Learning in Korea has been mainly discussed not in the context of lifelong learning but at the level of technology, despite most of the e-Learning was operated in the adult education. For example, the most frequent question on e-Learning was about efficiency: “How to design e-Learning contents or virtual learning interface efficiently?” In keeping with this trend, significant pedagogical support system such as Learning Management System (LMS) was reduced to an issue of technological devices such as a computer game. These technology-oriented perspectives locates e-Learning not as a new educational paradigm but a new device.

Although the exclusive concern on technology, there are various trials to find out the nature of e-Learning: a typical learning style, a kind of knowledge management

system, marketing, learning methods, and some times learning itself(Rha, 2002, Cho, 2002, White paper, 2003). As time goes by, more and more emphasis is on learning itself referring to the limitation of the technology-centered approach. Even in the e-Learning Industrial Act, e-Learning is defined as a learning for which electrical devices, information-communication technology and broadcasting system are actively used(2004, article7417). The following figure stands at various perspectives of definitions.



Fig. II-1 Different Layers of e-Learning

○ Current discussions point out e-Learning’s ability to bring an innovation to education. Some interpret the “e” in “e-Learning” to represent the “*engagement*” of learners in independent learning activities and the opportunity to “*express*” what they have learned while “*encouraging*” learners and pursuing interesting and useful “*edutainment*” to provide a unique “*experience*” as distinguished from offline education that is merely “*electronic.*”

Besides, e-Learning derives its strength from the interactivity of internet. It compensates regular face-to-face teaching for providing pre-designed course for learners. Therefore, for example, learners could access to a learning site anytime, anywhere which has consistent contents quality providing with materials for independent learners in personal.

This study defines e-Learning as a supportive electronic system which facilitates learners to enhance their ability to acquire, share, and transform knowledge and experience. In Korea, because of the high access and usage of internet, e-Learning seems to be equal to the internet-based learning whose contents are ready made.

II-3 Relationship between Lifelong Education and e-Learning

- Lifelong education and e-Learning have made rapid progress in South Korea since late 1990s through support at the national level. As a new member of OECD, the government of South Korea declared lifelong learning and e-Learning as the basis of national competitiveness, and has promoted these practices at the national level. Through greater availability of broadband access to the Internet and Lifelong Education Act, have been believed as a driving force which could propel its citizens into an “knowledge-based society.” In other words, lifelong learning and e-Learning have generally been considered to be a major factor in the enhancement of South Korea’s competitive strength as a knowledge-based society.
- The South Korean government established the Lifelong Education Act as well as information and communication-related laws and regulations in addition to e-Learning-related bills to solidify the foundation for lifelong education and e-Learning. It has also supported inspiring social events such as the Lifelong Learning City and Lifelong Learning Festival, and fully implemented projects to eliminate the information divide. As a result, the ratio of lifelong education for adults — which had been a mere 17.6% in 2001 — increased to as much as 33% in 2009. PC ownership for each household increased to 81.4% as of May 2009, representing a 10.4% increase in the nine years since 2000 (71.0%). Lifelong education in South Korea transformed passive learning taking place within schools into an interactive, e-Learning-based acquisition of high-quality contents that was accessible by everyone online. In particular, e-Learning homogenized the quality of education.

○ As of 2009, the information and communication technology environment embodies the idea of lifelong education and e-Learning. This system also supports learners by eliminating distance barriers between instructors and learners as well as between learners. Together, these two concepts form the concrete strategy for implementing lifelong education. e-Learning efficiently equalizes the educational contents and access to first-rate teachers, which is so vital in leveling the playing field of knowledge acquisition. e-Learning and lifelong education have the same direction in terms of their roots.

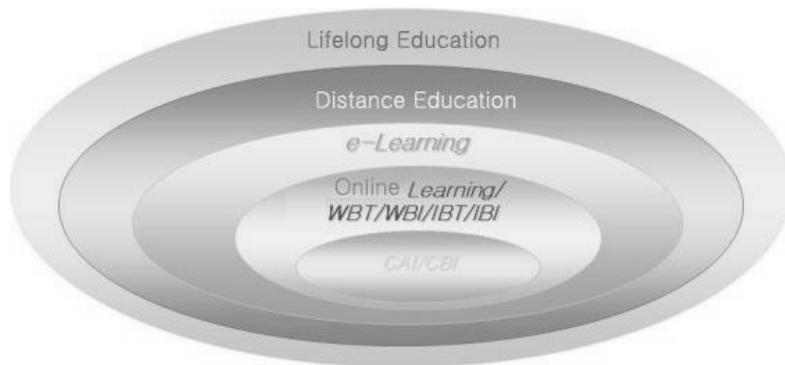


Fig. II-2 Nested Relations in Lifelong Education and e-Learning

III

Status and Characteristics of e-Learning for Lifelong Learning in Korea

III-1 Status

A. General Overview

According to the survey in Korea Internet & Security Agency, the rate of computer possession and that of internet of family are 81.4%, 81.2% in 2009(〈Table III-1〉). In addition, according to the survey of e-Learning industry status in 2009, 48% of population (3 years old and older) experienced e-Learning. Individual demand for e-Learning has been steadily increased from 13.6% in 2005 to 48.3% in 2009(〈Table III-2〉). The status of e-Learning use analyzed by gender, age, background, occupation are as 〈Table III-3〉.

Table III-1 The rate of internet use and computer possession of family

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
the rate of internet use of family	49.8	63.2	70.2	68.8	72.2	74.8	78.4	79.8	80.6	81.2
the rate of computer possession of family	71.0	76.9	78.6	-	77.8	78.9	79.6	80.4	80.9	81.4

Source: 2009 Survey on the status of internet use, Korea Communication Commission, Korea Internet & Security Agency.

Table III-2 The rate of e-Learning use of individuals

Year	2005	2006	2007	2008	2009
e-Learning Use Rate (%)	13.6	27.8	39.4	45.0	48.3

Source: 2009 Survey on the Status of the e-Learning Industry, Ministry of Knowledge Economy, Korea Institute for Electronic Commerce, March 2009.

According to the status of e-Learning Use in 2008, the use rate of male learners is 47.6%, and that of female learners is 41.9%. And the highest e-Learning use group by age is teenagers, by academic backgrounds, it is high school students group, and by occupation, it is students group. As access tools to e-Learning as of 2007, 35% of learners use educational broadcasts, 34.1% educational websites, 19.3% online lectures of regular schools, 16.7% online lectures of public institutions, and 16.1% online lectures of private institutes. In addition, 51.1% of e-Learning learners use for supplement their school learning and 33.5% use it for studying foreign languages.

Table III-3 Status of e-Learning Use categorized by gender, age, background, occupation(%)

Year		2005	2006	2007	2008
Total (%)		13.6	27.8	39.4	45.0
Gender	Male	15.2	29.1	45.8	47.6
	Female	11.8	26.4	31.5	41.9
Age Group	3~5	-	-	28.7	32.3
	6~19	17.1	66.9	67.0	70.9
	20	14.6	31.8	50.7	61.3
	30	12.4	20.3	27.2	30.5
	40	12.1	11.4	23.4	29.6
	50 or Above	4.7	10.7	11.2	13.5
Academic Background	Preschool	-	-	26.4	34.4
	Elementary School Student	17.0	55.9	61.3	70.3
	Middle School Student	14.8	61.0	65.6	64.5
	High School Student	19.5	75.6	77.4	81.2
	University(Graduate School) Student	22.8	63.6	69.5	69.3
	High School or Below	4.3	13.9	10.2	15.0
	University Graduate or Higher	14.1	22.5	34.9	41.5
Occupation	Student	18.8	64.2	66.8	70.5
	Expert Profession / Office Work	17.0	25.3	43.5	48.8
	Service / Sales / Production	-	-	16.1	22.4
	Home manager	6.4	9.9	10.0	10.5
	Unemployed / Others	9.8	32.9	21.5	26.5

B. Areas of e-Learning Use

e-Learning has been widely used in every aspects of lifelong learning in S. Korea. As well as in formal education including K-12 school and university, in nonformal and informal education including vocational education, recurrent education, outside school programs for K-12 students, public servant training, teacher training, e-Learning is becoming an important tool for education and environment for learning. For this, Ministry of Education, Science and Technology, have made EDUNET from 1996, revised several times depending on the development of technology. 6 ministries of Korea have made collaborative efforts through the establishment of the e-Learning Industry Development Act to spread out e-Learning in 2004. The use of employment insurance fund for vocational training is one of representative examples of e-Learning projects pursued by the government. But we didn't review here e-Learning inside

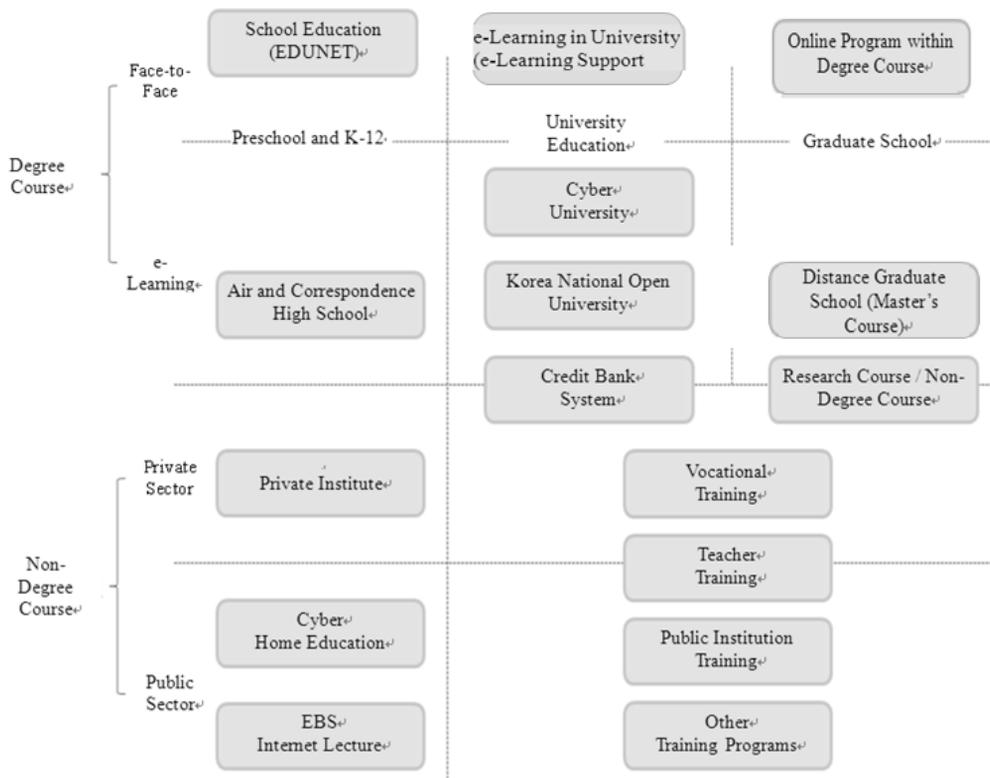


Fig. III-1 Areas of e-Learning Use in S. Korea

K-12 school, because e-Learning inside K-12 school, that is called School Informatization, was driven by Ministry of Education, Science, Technology(MEST) separately from lifelong learning. Instead of it, e-Learning outside school for K-12 Schools. The concept map of all areas of e-Learning use in S. Korea is as <Figure III-1>.

III-2 Status and Characteristics of each part of e-Learning

A. e-Learning in K-12 Schools

e-Learning has been extensively used for outside and inside school for K-12 students. In e-Learning for schools, the initiatives are under the ambit of Government in Korea. The governments steadily carried out various projects for educational informatization since 1990s. There are 4 stages as follows. In addition, e-Learning system for inside school education, that is EDUNET, started to service students, teachers and parents, etc., since 1996 and contributed to sharing all kinds of educational materials and ideas between them.

Table III-4 4 stages of e-Learning for K-12 school in Korea

Stage	I	II	III	IV
Year	1996-2000	2001-2003	2004-2005	2006~
characteristics	infrastructure	Using ICT	e-Learning	U-Learning

B. e-Learning Outside Schools for K-12 students

In the aspect of lifelong education, however, we focused on outside school e-Learning program. e-Learning outside school is generally divided into the government level and private level. The most typical e-Learning program at the government level is the Air and Correspondence High School, Cyber Home Learning, and the Internet Lecture for National Scholastic Achievement Examination Preparation. At the private level, e-Learning for elementary, middle, and high school curricula are provided

through LMS by private institutions. The use of e-Learning by K-12 students is also increasing each year, thanks to the spread of the internet and computer use.

1) Cyber Home Learning

The Cyber Home Learning System was launched as part of the “Ways for reducing private education expenses through the normalization of public education” announced by the Ministry of Education, Science, and Technology in July 2004. This program provides e-Learning contents at home to supplement public school education and some teachers of K-12 school provide counseling and consultations through this system; it targets 4th graders up to high school students. A budget of at least KRW 20 billion has been earmarked for this program since 2005 (2008: KRW 29 billion; 2009: KRW 21.1 billion).

Approximately 3.12 million students have subscribed to the Cyber Home Learning Service as of August 2009, with an average of 1.34 students per teacher under their learning management. There are 46,882 assigned-type cyber classes, 64,535 cyber teachers, 3,600 tutors consisting of parents and university students, and 1.78 million students studying under self-direction. The number of cyber classes decreased compared to 2008, but the number of students increased. As of 2009, a total of 16 education offices provide Cyber Home Learning Service; the contents and services vary depending on the circumstances of each office.

The quality of contents had been independently managed by municipal and provincial education offices; however, since 2006, the contents must be approved by the Korea Education and Research Information Service (KERIS), with the Quality Management Corps supervising the contents quality in the entire development process from planning and design to production.

2) EBS Internet Lecture for National Scholastic Achievement Examination Preparation (NSAEP)

The EBS Internet Lecture for National Scholastic Achievement Examination

Preparation was launched on 2004 to reduce private education expenses through the normalization of public education. Since then, examination candidates have accessed the EBS Internet Lecture for NSAEP through the Internet (www.ebsi.co.kr), broadcast, and Cyber Home Learning Service of municipal and provincial education offices. During 2007-2009, a total of 6,619 EBS lectures for 4th to 9th graders were provided to municipal and provincial education offices and serviced through the Cyber Home Learning System.

The accumulated number of members of the EBS lecture system reached 2.63 million as of August 2007 and approximately 3.09 million as of 2009. According to the 2007 statistics, 1.32 million out of the total number of members were middle and high school students to account for 50.2 of the total members and 75.2 of all high school students (1.76 million). Accordingly, the share of middle and high school contents in the lecture increased consistently from 19% in 2005 to 26% in 2009.

The EBS lecture service made enormous progress as the educational programs and services it provides increased from a total of 5,169 lectures in 51 subjects in 2004 (2,239 lectures provided through EBS Plus 1, 2,930 through the Internet service) to 12,806 in 51 subjects in 2007. Since 2007, a series of essay curriculum by stage, instructor, and theme for 1st~3rd year high school students are available in this system. For middle and high school students, 804 lectures were produced in 2009: 653 lectures for the National Scholastic Achievement Examination (14,395 sessions), 111 lectures for academic records (5,780 sessions), and 40 essay-related lectures (577 sessions). Some exemplary instructors who have participated in producing the contents of live lectures have incentives

3) e-Learning at the Private Level

e-Learning at the private level has mostly targeted NSAEP market, its growth has slowed recently. Therefore, e-Learning for elementary and middle school students did not grow as big as the high school e-Learning market; recently, however, it has been drawing attention in preparing for the high school entrance examination.

In addition, e-Learning market for first and second year high school students is gradually increasing too. Mostly students outside the Seoul where there are relatively few examination preparation private institutions use this service.

The e-Learning market for K-12 students began as an alternative to the offline market for NSAEP. However, these days, the way of using e-Learning in the market, is combining online and offline activities.

The growth of e-Learning for the private education of elementary, middle, and high school students runs counter to the reduction of private education demanded by most citizens and the government's private education expenses reduction policy. Thus, it surfaces as a social issue from time to time. For such reasons, the e-Learning market for private education will need to fulfill the task of developing a differentiated, profit-yielding business model while dynamically coping with the government's education policies and changes in curricula.

C. e-Learning in University Education

1) e-Learning in Traditional Universities

The government and universities have made extensive investments in e-Learning since 1996. The universities made consortia in 1998, provided e-Learning courses, and recognized it as regular credit courses since 2000. At the end of 2002, the government announced implementation of the e-Campus Vision 2007 (2003-2007) for campus digitalization. As a result, e-Learning support systems were completely developed in 10 nationwide regions at the end of 2008, and they have been operating since then.

Universities have been adjusting teaching-learning support systems and the administrative organization to support e-Learning more effectively. The results of their efforts are the "e-Learning Support Center," "The Center for Teaching and Learning," "The Virtual Education Center," and "The Cyber Education Center." National organizations include the Korean University Alliance for Cyber Education and the Korean Association of Centers for Teaching and Learning.

According to a survey taken in 2002, only 40 % of universities in South Korea were using e-Learning. However, a 2006 survey showed that 56.7%, or 114 out of the 201 4-year universities, are now using e-Learning.

2) e-Learning in Cyber University

Following the Lifelong Education Act revised in 2000, which concerns the foundation of cyber universities, distance universities conferring bachelor's degrees or associate bachelor's degrees through e-Learning began to open in 2001. 9 distance universities opened with only about 6,000 students in 2001; however, 80,600 students enrolled in 19 distance and cyber universities 2009. There have been 57,946 graduates so far and the entrance quota for 2010 is 28,440.

3) e-Learning for master's degrees

There are two types of e-Learning for master's degree. The one is e-Learning in distance graduate school. The other is online program in traditional face-to-face graduate school. Distance graduate school opened at first in 2001 at Korea National Open University. Now in 2010, 7 Distance graduate schools are providing their educational services, fiveschools in existing face-to-face universities, one school in cyber universities, and one school in Korea National Open University. The total entrance quota of all 7 distance graduate schools for 2010 is about 1,450. The accumulated total of graduates is estimated at over 5,000. On the other hand, there are online master's courses in traditional graduate school, and online research courses by e-Learning.

D. e-Learning in Continuing Education

e-Learning is widely used for continuing, in-service education and training like corporate training, teacher training, servants training, etc..

1) Corporate e-Learning

e-Learning in the vocational competency development includes public vocational training, in-plant training (in other words, corporate e-Learning), and designated training by the Ministry of Labor. In public vocational training, e-Learning was used

since 1999 and it was called Internet correspondence training. In-plant training, e-Learning is most actively and systematically applied into. The domestic e-Learning market in this area was valued at KRW 1,870.4 billion in 2008, with corporate e-Learning accounting for 44% (KRW 759.6 billion) of the market compared with 42.6% (KRW 735.1 billion) for individual demand and public institutions.

2) e-Learning in Teacher Training

e-Learning is widely used in Teacher Training Area. e-Learning in Teacher Training has been provided by Distance Teacher Training Center recognized by MEST since 2000. There were 69 Centers in 2008. These Centers are divided into municipal and provincial training centers, certified distance teacher training centers, and training centers for special education. And the number of teachers using distance training increased each year, reaching approximately 50% of the entire teacher training, in 2007.

3) e-Learning in Public servants training

The expansion of e-Learning market in servants training is also becoming apparent. The ratio of e-Learning in government and public institutions servants training increased from 43% in 2005 to 56.9% in 2007. e-Learning expenditures in the public servants training in 2007 reached KRW 163.3 billion, an 18.7% increase from KRW 137.5 billion in 2006. The ratio of e-Learning courses to the total training courses of servants training in 2007 was 21.6%. However, the ratio of e-Learning to the total training budget was 10%.

E. Status of the e-Learning Industry

According to the 2008 Survey on the Status of the e-Learning Industry, the total number of e-Learning enterprise stood at 1,145 in 2008. The distribution of e-Learning providers in major business areas in 2008 shows that there were 727 service providers(63.5%), 283 contents providers(24.7%), and 135 solution providers (11.8%).

Table III-5 Number of e-Learning Providers by Business Area

(Unit: Businesses Enterprise)

Business Area	Year				
	2004	2005	2006	2007	2008
Total	258	381	621	756	1,145
Solution	68	74	92	201	283
Contents	101	126	167	94	135
Service (Ordinary Company, Private School, Regular Education)	89	181	362	461	727

※ Source: 2008 Survey on the Status of e-Learning, Ministry of Knowledge Economy, Korea Institute for Electronic Commerce, March 2009

Total sales of e-Learning businesses in 2008 showed an 8.3% increase compared to 2007, and has been increasing consistently since 2003. Sales records in major areas in 2008 show increases compared to the previous year in all businesses including solution, contents, and service, but the increase in sales of service providers was greater than that of other businesses.

Table III-6 Total Sales of e-Learning Businesses (unit: KRW 100 Million)

Business Area	Year					
	2003	2004	2005	2006	2007	2008
Total	1,077,041	1,298,484	1,470,817	1,617,797	1,727,057	1,870,475
Solution	215,002	222,954	244,814	239,091	406,022	432,763
Contents	243,521	287,498	336,320	389,452	218,389	221,696
Service (Ordinary Company, Private School, Regular Education)	618,518	788,032	889,683	989,254	1,102,645	1,216,016

※ Source: 2008 Survey on the Status of e-Learning, Ministry of Knowledge Economy, Korea Institute for Electronic Commerce, March 2009

The domestic e-Learning market in 2008, as estimated based on the result of the survey of expenses incurred by consumers on e-Learning in South Korea in 2008, was aggregately valued at KRW 1,866.8 billion. Individual users were estimated to have spent KRW 816.7 billion or 43.7% of the total market share, and companies KRW 812 billion or 43.6%, for a combined 87.3% share of the market. The government/public institutions spent KRW 162.7 billion (8.9%); educational institutes spent the least with KRW 70.8 billion (3.8%).

Table III-7 Scale of the e-Learning Market

(Division: KRW 100 Million, %)

Division \ Year	2004	2005	2006	2007	2008
Total	1,292,635	1,452,520	1,613,307	1,727,632	1,866,828
Individuals	668,996	671,509	697,227	735,108	816,765
Educational Institute	13,243	18,424	26,220	69,555	70,804
Government/Public Institution	83,105	94,418	137,574	163,366	167,207
Businesses (Companies)	527,291	668,169	752,286	759,603	812,052

※ Source: 2008 Survey on the Status of the e-Learning Industry, Ministry of Knowledge Economy, Korea Institute for Electronic Commerce, 2009

IV-1 Korea National Open University

A. Overview

- As South Korea's one and only distance university, Korea National Open University ("KNOU") has been contributing to the nation's expansion of higher education since its establishment in 1972. KNOU has continuously adopted new teaching media, progressing from mail to radio, TV, videotape, and to today's Internet lecture system. Currently, the teaching staff and production team are producing and supplying advanced learning contents through TV, multimedia, and web-based and interactive video lectures.
- KNOU was established to serve the following purposes: First, to provide people who are unable to receive a university education for economic, geographic, age, and/or other reasons the opportunity to obtain higher education through the distance education system; second, to enhance the level of national education by providing the professional training required by corresponding industries along with a liberal education; third, to expand and enhance social education for individual development and advancement by providing people the learning opportunity through which they can contribute to the advancement of the country and society and the development of industrial technology; fourth, to produce competent people who can cope in an age of rapid changes through continuous education and who are required for the betterment of the nation.
- KNOU has produced 450,000 graduates since its establishment and is currently delivering courses to 180,000 registered students through 13 regional campuses and 33 study centers around South Korea. The tuition fee for a single term is

around KRW 350,000 or about 1/12 that of most universities, thus making more learning opportunities available for those in low-income brackets.

- e-Learning became main stream in 2001, but KNOU did not fully introduce Internet courses until 2006 since most students were underprivileged. With the launch of Internet courses, KNOU became capable of providing “Broadcast Lectures” through KNOU TV (OUN), “The Broadcast Lecture LOD System,” which provides broadcast lectures via the Internet, “Interactive Video Lecture System,” which simultaneously connects the main campus and regional campuses as if students around the country were studying in the same lecture room, and “Web Lecture,” which maximizes the Internet’s interactivity for each subject and for the teacher’s in-class lectures. In 2007, KNOU introduced the Tutor System as a learning aid and the Mentor System in full scale to improve the unilateral learning system. KNOU is rapidly pushing through multidimensional efforts to enhance the quality of education by improving counseling, education for multicultural groups, education for a new neglected population segment, and a plagiarism prevention system.

B. Organization

- Generally, development of a distance university’s campus support system is based on supporting the methods of distance education for available subjects. However, the distance university in South Korea developed a system similar to that of ordinary universities, thus reflecting the characteristics of education in South Korea. It has the same Office of Academic Affairs, Office of Student Affairs, and Office of Planning Affairs as other universities, with computer-related systems such as online contents and homepage management being operated by an independent department.

1) Undergraduate Program (22 departments)

- College of Liberal Arts: Department of Korean Language & Literature, Department of English Language & Literature, Department of Chinese Language & Literature, Department of French Language & Literature, Department of Japanese Studies
- College of Social Science: Department of Law, Department of Public Administration,

- Department of Economics, Department of Management, Department of International Trade, Department of Media Arts & Sciences, and Department of Tourism
- College of Natural Science: Department of Agricultural Sciences, Department of Home Economics, Department of Computer Science, Department of Information Statistics, Department of Environmental Health, and Department of Nursing
- College of Education: Department of Education, Major in Youth Education, Department of Early Childhood Education, Department of Culture & Liberal Arts

**2) Graduate School: Korea National Open University Graduate School
(9 Departments)**

- Korea National Open University opened a cyber university for lifelong education that offered a master's degree through the cyber education system in September 2001 for the first time in South Korea. Students can now obtain master's degrees solely based on distance education through the Internet.
 - Departments: Department of Public Administration, Department of Management, Department of Computer Science, Department of Lifelong Education, Department of Home Economics, Department of Early Childhood Education, Department of Practical English, Department of e-Learning, Department of Nursing.

3) Non-Degree Course at the Center for Lifelong Education

- Unlike other universities, the Center for Lifelong Education of the KNOU has been contributing to the spread of the lifelong education program online. In 2009, the community program was introduced to reestablish the status of the Center for Lifelong Education in pursuing full-scale on-off blended learning. The Center for Lifelong Education is simultaneously enhancing the diversity and integration of student support by confirming programs that can be operated in core institutes such as 54 regional campuses/study centers and operating programs that can make the most use of the characteristics and specialization of the corresponding programs individually or in connection with the Center. As of 2009, 21 online programs are serving approximately 6,000 students each year.

- The Lifelong Education Center also operates the Center for Integrated Teacher Training as the second lifelong education institute established with the Enforcement Decree of the Minister of Education (No. 764) following the establishment of Korea National University of Education and offers training programs designed to enhance the expertise and competency of teachers. As of 2009, 3 courses are offered, which train approximately 600 people per year.

4) Affiliated Facilities

- KNOU has attached facilities to support the production and distribution of distance education contents; these facilities are directly concerned with the improvement of education quality. The Digital Media Center evolved from OUN, the cable channel, and contributes to the production of digital educational contents for distribution over the Internet. It also directly participates in the lifelong education programs to be broadcast through cable TV.
- As the largest institute specializing in distance education in South Korea, the Institute of Distance Education leads studies on lifelong distance education and on ways to improve the policies of KNOU; it is also in charge of a network for international cooperation and international academic exchange programs. Moreover, it is engaged in the publication of an academic journal titled *Journal of Lifelong Learning Society*, a survey of KNOU statistics and the publication of a collection of statistical data, the holding of academic seminars, and the operation of a psychological counseling center.
- The Information & Computer Center manages information for all members of the university and for research data, develops the education interface, and manages the homepage. The center established the Comprehensive Computerization Advancement Plan in addition to programs specifically related to the enhancement of education quality such as the development of a plagiarism prevention system and an e-Library module; it is also introducing u-Learning as a long-term goal. The center successfully carried out a pilot program for lectures delivered through mobile devices in 2009.

5) Administrative Organizations

- As with traditional universities, KNOU has an administrative support system with an Office of Academic Affairs, an Office of Student Affairs, and an Office of Planning Affairs.

C. Teaching-Learning Method

1) Teaching Methods of KNOU

- The teaching-learning method of KNOU has reflected changes in the system over the years. Modifications in educational methods at KNOU have been summarized into the following 4 phases:

Table IV-1 Changes in the Education Methods of KNOU

Phases	System	Major Media
Phase 1 (1972~1980)	2-Year College	Mail and Radio
Phase 2 (1981~1991)	5-Year University with Regular Bachelor's Program	Cassette Tape, Radio, TV
Phase 3 (1992~2000)	4-Year University with Regular Bachelor Program	TV, Distance Video Lecture
Phase 4 (2001~Present)	Expansion of Distance University (Establishment of Cyber University)	Internet

- In phase 1, overall teaching-learning activities at KNOU consisted of print media, radio-based media lectures, offline classes, and student achievement evaluations; there were also subjects for experiment/practice.
- In phase 2, teaching-learning activities were similar to phase 1. Advances in education media included the introduction of cassette tapes and TV. Some subjects provided study contents in print media without requiring students to attend face-to-face classes, and corrective evaluation was introduced.
- The teaching-learning activities of phase 2 continued in phase 3, along with the following changes: supplementary learning materials were provided through the

Internet; subjects that offered distance video lectures in lieu of offline class were introduced; the system of replacing offline classes with examinations was introduced for students who were unable to attend the face-to-face lecture; and the local tutor system was introduced at KNOU.

- Major teaching-learning activities were generally maintained in phase 4 with some new activities introduced and others cancelled: the workbook was included as part of the composite learning materials and type of supplementary learning materials; stoppage of production of radio lectures/recorded lectures (cassette tapes) and introduction and emergence of multimedia lectures/web lectures as a major educational media; introduction of the department tutor and cyber tutor system, which diversified and expanded KNOU's tutor system.
- The teaching-learning system at KNOU has continuously undergone changes through activities that were introduced and eliminated in each phase while maintaining key structures such as print media, media lectures, offline lectures, student achievement evaluations, and subjects that involved experiment/practice.

2) Type of Class

- Classes at KNOU are mainly made up of non-real-time, remote media that presents the major learning contents of the course and real-time learning experiences such as the instructor's in-class lectures and distance video lectures. For students having difficulties attending offline classes, supplementation is possible with online lectures and substitute examinations.

A) Media Lectures

Before the Internet became a popular medium, "media lecture" referred to the act of instructors transferring the contents of learning through a variety of educational media by imitating the format of a traditional lecture taking place in the lecture hall at ordinary universities. The media lecture was virtually a conversion of a unilateral lecture into remote contents. However, as the Internet became popular in the 2000s, the student-oriented lecture involving instructor-student as well as student-student interactions became a new paradigm. Although it has limitations, i.e., difficulty

of operating large-scale lectures, this new paradigm is spreading to a few subjects in graduate schools. Generally, students watch and listen to media lectures and read printed materials to participate in distance learning.

B) Offline Class

The offline class distinguishes a cyber university from KNOU. KNOU incorporated offline classes as an important teaching-learning activity to complement the weakness of distance education from the beginning. In the distance system, students lack interaction with the instructor and peers, a sense of belonging, and a motivation for study. However, this problem is addressed by the face-to-face lectures provided for a certain period. Three subjects in the 1st, 2nd, and 3rd year courses involve offline classes and two subjects in the 4th year. Each subject requires 8 hours of offline classes. Students can go to nearby regional campuses for the offline class.

C) Distance Video Lecture

The distance video lecture system was introduced in 1995 and has been applied to offline classes and classes at the Center for Lifelong Education. In 2009, it was fully digitized to enable real-time, distance, and interactive classes. Students around the country can exchange ideas with students of other regions and the instructor through the interactive lecture room of each regional campus.

3) Educational Media of the KNOU

A) Print Media

- As the media systematically provides the bare minimum required learning contents to distance learners, print media consists of a basic textbook, supplementary textbook, workbook, and supplementary learning materials. Since 80% or more of the final examination — which determines whether the student can advance to the next level or stay in the same level — is based on textbooks, the print media is hugely important to the learning process. KNOU provides them at 50% less than the market cost through its own press.
- Supplementary learning materials provided to students by KNOU other than text-

books include special lectures in the KNOU Weekly, a collection of sample questions, online class lectures, supplementary studies on the Internet, and materials related to substitute examinations for offline classes.

- ① **Special Lectures in the KNOU Weekly:** This is a supplementary learning material provided through the KNOU Weekly. Currently, special lectures are given for each department and on liberal arts subjects. The special lecture for each department is provided in the format of an appendix attached to the KNOU Weekly; all departments provide two special lectures for each term, with the contents varying by department. It includes supplementary learning material for the lecture, intensive learning materials, guidelines, and department news and learning information. The special lectures on liberal arts subjects are provided for each subject offered each term; three lectures (1 page per lecture) are offered through the KNOU Weekly.
- ② **Collection of Sample Questions:** KNOU provides sample questions for the final examination to help students prepare. Students are making great use of the sample questions.
- ③ **Online Class Lecture (Lecture on Paper):** The online class lecture is the learning material provided through the homepage for subjects that do not have offline classes; it is used to prepare for the midterm and for assigned examinations.
- ④ **Supplementary Studies on the Internet:** This provides remedial help for students having difficulty understanding contents delivered via print media and media lectures. The text-based material covers broadcast lecture summaries, supplements to broadcast lectures, and problem-solving questions delivered via the Internet. Subjects in each department are selected each term for inclusion.
- ⑤ **Materials Related to Substitute Examination for Offline Class:** Materials related to the substitute examination for offline class have been provided since the second term of 2005 to students applying for substitute examinations for offline classes (introduced in 1993) as materials to supplement the hours of offline classes they missed; the materials are provided through the Internet in the

form of texts, recordings of offline classes or video lectures, and e-Learning contents.

B) TV

- TV lectures began with broadcasts on a public TV channel in 1984 and evolved into an independent nationwide cable channel in 1999 that enables students to watch needed lectures on TV. The age of interactive TV began with the introduction of IPTV in 2008. Beginning in 2007, all TV lectures became available for download from the Internet through the LOD service.

C) Internet

- The Internet enhanced learners' options in terms of time and space. KNOU is producing and providing a simple lecture production tool for large-scale lectures through multimedia lectures. At least 90% of students attend lectures through the Internet and repeat important parts once or twice while studying online. There are few project-type studies or team-based studies since most lectures are produced with the production tool.

F) Mobile Devices

- Mobile learning — which uses a cellular phone or PDA — is not a new type of lecture or contents; rather, the existing contents has simply been converted into a mobile format. Since 96% of the population in South Korea uses the Internet and cellular phones, mobile learning has spread widely and is receiving favorable responses.

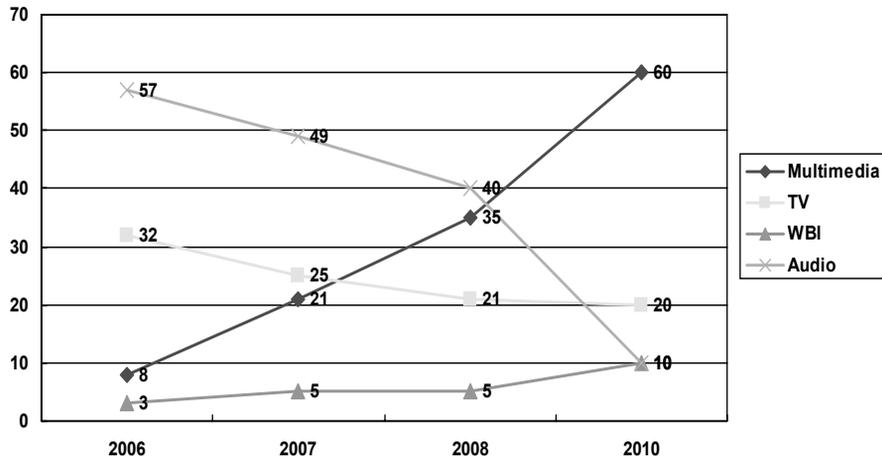


Fig. IV-1 Changes in the Educational Media of KNOU

D. Evaluation System of KNOU

- KNOU is a four-year university providing higher education that confers regular bachelor's degrees equivalent to those given by traditional universities. The number of new students reaches 70,000 each year, and students are not required to take the national qualification test such as the National Scholastic Achievement Examination as required by traditional universities. KNOU is relatively open with regard to entrance requirements compared to traditional universities. This serves the purpose of providing a neglected segment of the population the opportunity to receive higher education, yet it can also cause deterioration in the quality of higher education. KNOU is maintaining a graduation rate of around 27% through its comprehensive academic affairs management. This is the opposite situation of Korean university culture where admission is difficult but graduation is virtually assured for most students. This unique feature of KNOU has been recognized by society as a means of managing higher education quality.
- The evaluation system of KNOU was developed through the two-year college phase (1972-1983) and the four-year university phase (1992-present). The student achievement evaluation system for each subject is divided into an evaluation conducted during the middle of the term (offline examination, substitute examination for off-

line classes, midterm examination, assignment examination), final examination, and practical examination. Most subjects evaluate student achievements through midterm and final examinations except those subjects that use the results of experiment and practical evaluation.

○ Subjects other than experiment- and practice-oriented subjects are divided into offline and online subjects depending on whether or not the subject has an offline examination. The full mark for each subject is 100, with 30 points allocated to the midterm examination and 70 points to the final examination except for experiment- and practice-oriented subjects. The midterm examination is divided into an offline examination, substitute examination for offline classes, and assignment examination, all of which are counted as 30 points.

○ Status of each examination is:

– Offline Examination

- The instructor for the offline face-to-face lecture provides the examination; it covers more subjects than the online examinations, which consist of a midterm examination and assignments. Average marks garnered by KNOU students at the offline examination are in the high 27s and low 28s. Compared to other intermediate evaluations, the rate of students taking the offline examination is slightly lower; this is related to the rate of students attending offline classes. This is probably due to students applying for the offline class — which requires 8 hours of attendance in each term — who could not attend the class for the examination.
- “Substitute examination” is available for students who cannot attend offline classes. The rate of students who take the substitute examination for offline class was relatively lower than that for taking the offline examination, with the average mark 7-8 points lower than the offline examination. Presumably, students attending offline classes are likely to spend more time on exam preparation and get higher marks in the more difficult substitute examination — which is a paper-based examination consisting of 15 multiple-choice questions, each of which is worth 2 points. There is also a clearer distinction of correct/wrong answers than in the offline examination where students take the examination directly under

the supervision of the instructor, yet instructors can also be assumed to be more lenient in the offline examination.

- Online Examination (Midterm Examination, Assignment Examination)
 - At least 81% of students participate in the midterm examination consisting of subjective questions, with students getting an average of 26 points out of 30. Relatively more students took the midterm examination for the second term than the first term between 2005 and 2007. The average mark for the midterm examinations — which is an essay examination — was higher than that for the substitute examination for offline classes, which is an objective examination, but lower than that for offline classes.
 - For the assignment examination, students are asked to submit their assignment related to the subjects they studied in the course for the instructor's evaluation. More students are participating in the assignment examination than the midterm examination; the average mark of 27 is also very high.
- Final Examination: The final examination consists of multiple-choice questions divided into a 35-question examination and a 25-question examination; subjects that use practical evaluation are excluded in the final examination. Since the examination is carried out in a strict offline examination — in fact, there has been no suspicion about evaluation scandals, etc., despite the fact that it is part of distance education — it serves an important role in the management of KNOU's education quality. A total of 70 points are allocated to the final examination excluding 30 points for the midterm examination. The average graduation rate is 27%, which is the lowest in South Korea.
- Practical Evaluation: In practical subjects, the mark is given based on the results of practical evaluation instead of midterm and final examinations; 100 points are allocated as full marks in the practical evaluation.
- Summer/Winter-Term Evaluation: This is an irregular term offered for students who received an F for a certain subject in the term or who wish to improve their marks from C or below. KNOU offers subjects recommended by each department in the summer/winter term, usually about 12 subjects in both summer and winter. The examination is normally made up of 40 or 50 multiple-choice questions

that add up to 100 points.

E. Student Support System

- KNOU supports students throughout the entire learning cycle from entrance admission to graduation. The support systems available to students are: support for students with disabilities and programs guiding students through the essential learning methods required for studies in higher education. Such student support systems are great examples of the unique characteristics of KNOU.
- According to a survey conducted in 2004, however, more students were dissatisfied (22%) than satisfied (18.5%) with the student counseling service provided by the department. In particular, 23% of the students were dissatisfied with the orientation, whereas 26% were satisfied. Thus, the support programs appeared to have failed in fulfilling all the students' expectations. This stems from the difficulty in suitably providing services to 180,000 students through a small staff of instructors, tutors, and employees.

Table IV-2 Student Support in KNOU

Learning Cycle	Support Index	Support Status
Entry Stage	Before Entrance: Guide for Applicants	Comprehensive plan for applicant marketing is not available. Website for admission guide for applicants is available.
	Entrance-Registration Information	Issue of ID and provision of basic information No management system for unregistered applicants
	Orientation	Distribution of orientation materials at the level of Student Affairs Office/Student Union Guide to curriculum and academic affairs management
	Financial Support	Scholarship Benefits for Students with Disabilities The tuition fee itself is affordable. Tuition fee waiver or reduction is given to 50,000 students per year.

	Service for Students with Disabilities	Partial development of a service system for supporting students with disabilities Textbook for students with visual impairment
Adaptation (Socialization) Stage	Introduction to Higher Education	Learning to Learn (LTL) Program Student support service of tutors and senior student mentors (introduction to student life)
	Academic Affairs Information	Introduction to each facility through website and booklet
	Support for Media Utilization	Guidelines for each lecture media; manual on how to use media
	Introduction to Curriculum	Individually carried out through professor/teaching assistant/Student Union
	Provision of Learning Materials	Internet learning materials, special lecture in the KNOU Weekly, online materials replacing offline classes, etc., supported by instructor
	Advice on Study Design	Individually carried out by the Student Service Center and Student Union
Learning Stage	Student Counseling	Individually carried out by the Institute of Distance Education/Student Service Center
	Introduction to Assignments-Examinations	Support through professor/teaching assistant
	Textbook Purchase Service	Can be ordered through the Korea National Open University Press website
	Tutoring	Deliver contents of lecture through tutor for each department. Tutoring at regional campuses and online tutoring for graduate school
	Diagnosis of Learning Status	N/A
	Administrative-Learning-Technical Support of Regional Campuses	Provision of library, reading room, and seminar room
	Support for Study Group	Prizes and achievement award for excellent study groups

	Library Service	Development of e-Library system including e-Book
Graduation/ Post- Graduate Stage	Diploma and License Service	Provided upon graduation
	Provision of Career and Graduate School Information/Counseling	Development of career guide program, individually carried out
	Introduction to Intensive Learning	None
	Alumni Association	Independently operated by each department

F. Evaluation and Tasks

- It is no exaggeration to say that KNOU is South Korea's center for lifelong higher/distance education. The tradition was started in 1972, when learning opportunities were provided to a neglected segment of the population. The large number of graduates (450,000), and the low tuition fee prove that KNOU is an unparalleled institution. For KNOU, introduction of the Internet and e-Learning was a huge challenge that involved changing the established structure. From 2004 to 2009, KNOU converted itself into a Mega-University through ICT; as a result, e-Learning became its primary media. Implementation of the quality management system in 2007 that uses instructor-evaluation and self-evaluation is expected to accelerate this conversion.
- Lifelong education in South Korea is used as a supplementary measure for existing education. This is also applicable to higher learning, i.e., e-Learning is used as a supplementary tool rather than as a complete alternative option. It stays at the level of simply converting unilateral offline lectures into online lectures to extend educational opportunities instead of highlighting the characteristics of e-Learning such as the development of critical thinking skills based on interactivity. Given such conditions, KNOU will have to diversify its educational methods—for example, high-quality interactive lectures for a small number of students seeking a higher level of learning such as the honor program — beyond inexpensive public education.

IV-2 Cyber University

A. Definition

Cyber University refers to a type of the higher education institutes specified in Item 5, Article 2 of the Higher Education Act (2007). Students can learn by educational service through the Internet without the limitations of time or space; the institution confers bachelor's degrees or associate's degrees to students who earn the required credits. But the term of Cyber University has been used from the beginning of e-Learning.

B. Related Laws and Regulations and its Change

1) Distance University in Lifelong Education Act

The basis for the establishment of Cyber University was the Lifelong Education Act, at the beginning in 2000. But it was called Lifelong Education Institutes in the Form of Distance University (Abbreviation: Distance University)" according to Clause 3, Article 33 of the revised Lifelong Education Act. Based on this Act, 9 universities opened in 2001, 6 universities in 2002, 1 university in 2003, and 1 university in 2004, in total 17 distance universities opened until 2008.

2) Cyber University in the Higher Education Act

As the Article related "Cyber University" added into to the Higher Education Act in 2007, the legal base for establishment of Cyber University was changed from Lifelong Education Act to Higher Education Act. After this settlement, only school foundations are able to establish a cyber university, which could meet the requirements for teaching facilities required by the establishment of a cyber university as specified in the Higher Education Act. And existing Distance University can be converted to Cyber University in the Higher Education Act by their request, if they meet the requirements

With this change, 11 out of 17 existing distance universities were converted into

cyber universities in 2009 in the Higher Education Act, and 4 more distance universities were changed also in 2010. On the other hand, 2 new cyber universities were established according to the revised Higher Education Act in 2008-2009.

C. Status of Cyber University: Foundation, Entrance, Enrollment, Graduates

There are 17 cyber universities based on the Higher Education Act and 2 distance universities based on Lifelong Education Act in 2010. But we have information about 16 cyber universities and 2 distance universities, because one university has started advertising for students in 2010. As of April 1, 2009, 18 universities admitted 27,960 new students; 80,606 students enrolled. There are also 7,290 part-time students enrolled through the Credit Bank System. The number of graduates increased by 16,000 compared to last year, and the cumulative number of graduates is 57,946.

In aspects of student's educational background, the portion of student with degree of High School by all new students decreased from 84% in 2002 to 57% in 2009, whereas the portion of college graduates increased sharply from 5.2% to 30.5%. However, the portion of new student with bachelor's or master's degree is less than 10% over last 8 years. However, overall the data show the portion of students without bachelor's degrees is 90%.

Table IV-2-1 Status of Cyber Universities in 2009

(Including the Converted Ones Approved until Oct. 30, 2009)

Division	Founding Organization		Name of University	Foundation/Conversion (initial)	2010 Entrance Quota	Students Enrolled	Total Student (part-time student included.)
Bachelor's Course	Educa-tional Founda-tion	Kyunghee University System	Kyunghee Cyber University	2009(2001)	3,000	9,138	9,201
		Kwangdong School	Gukje Digital University	2009(2003)	750	2,009	2,211
		Young Gwang School	Daegu Cyber University	2009(2002)	1,500	3,233	3,469

		Dongseo Academic Institute	Busan Digital University	2009(2002)	1,000	2,253	3,099
		Dongwon Scholarship Society	Cyber Hankuk University of Foreign Studies	2009(2004)	1,600	4,699	4,728
		Shinil School	Seoul Cyber University	2009(2001)	2,900	8,344	8,412
		Daeyang School	Sejong Cyber University	2009(2001)	1,460	4,357	4,407
		Wongwang School	Wongwang Digital University	2009(2002)	1,500	3,371	3,386
		Digital University of Korea	Digital University of Korea	2009(2001)	2,500	7,057	7,156
		Bongam School of Education	Korea Cyber University	2009(2001)	1,650	4,892	4,968
		Hanyang School	Hanyang Cyber University	2009(2002)	3,000	10,174	10,228
		Hwashin School	Hwashin Cyber University	2009	360	76	82
		Seoul School of Performing Arts	Digital Seoul Culture Arts University	2010(2002)	990	2,961	4,227
		Open Cyber University	Open Cyber University	2010(2001)	1,000	2,242	12,267
		Seoul Digital University	Seoul Digital University	2010(2001)	3,000	10,330	3,230
		Hanmunhwa School	Global Cyber University	2010	490	-	1,295
		Total: 16			26,700	75,136	2,917
Associate Degree Course	Educational Foundation	Yeungjin Educational Foundation	Yeungjin Cyber College	2010(2002)	800	2,213	2,613
16 Bachelor's Degree Courses, 1 Associate Degree Course					27,500	77,349	87,896

Table IV-2-2 Status of Lifelong Education Facilities in the Form of Distance University in 2009-2010

Division	Founding Organization		Name of University	Foundation	2010 Entrance	2009 N of Students
Bachelor's Degree Course	School Foundation	Kyungbuk School	Youngnam Cyber University	2001	600	964
Associate's Degree Course	School Foundation	Hanminjok School	World Cyber College	2001	1,300	2,293
1 Bachelor's Degree Course and 1 Associate Degree Course					1,900	3,257

Table IV-2-3 Number of Graduates of Cyber University over the Last 3Years

Division		April 1, 2007	April 1, 2008	April 1, 2009
Number of Degrees Issued (Cumulative Total)	Bachelor's Degree Program	20,538	34,963	49,251
	Associate's Degree Program	5,081	6,674	8,695
	Subtotal	25,617	41,637	57,946

Table IV-2-4 Educational Background of Students (April 1, 2009)

Year	Enrollment	Educational Background of New Students (%)				
		High School Graduate	Qualification Examination	College Graduate	University Graduate	Graduate School Graduate
2002	9,920	84.0	3.4	5.2	6.9	0.5
2003	10,987	86.7	3.8	4.4	4.0	1.1
2004	10,459	74.2	11.3	6.9	6.6	1.2
2005	14,620	64.1	2.9	19.3	12.1	1.6
2006	18,138	66.6	11.3	14.7	6.4	1
2007	16,789	61.4	7.7	18.5	9.1	3.3
2008	21,001	59.9	4.7	23.8	9.9	1.6
2009	22,814	57.2	4.0	30.5	7.0	1.3
Average		69.3	6.1	15.4	7.8	1.5
90.8%						

D. Teaching and Learning Methods

Most of the e-Learning contents have been produced in video files or flash-typed multimedia files and then delivered with streaming service. e-Learning contents are uploaded in the e-class on LMS/LCMS. Students are asked to study that contents and carry out the tasks assigned to them such as discussion and other learning activities. One credit consists of 50 minutes of class time for 15 weeks; 50 minutes of e-class time is recommended to involve the at least 25 minutes long in the case of teacher's lecture video files. The remaining 25 minutes are for student's online learning activities. For this online activity, A course includes tutorial, problem-based learning activity, discussion, project which students should do.

Most cyber universities have their own LMS/LCMS (Learning Management System); LMS is usually integrated with their school affairs management system. To support the interaction, recent LMS/LCMS starts to provide applications for synchronous interaction in addition to the bulletin boards, which could support asynchronous interaction. Achievement evaluation must be done strictly and accurately with online and off-line midterm/final test, assignments, participation into online discussion, etc. For the equity and security of evaluation, the system requires students to use a digital certificate to log on to the system; But some cyber universities, however, prefer face-to-face examinations at the end of semester, like face-to-face educational contexts.

E. Summary and Prospects

Since the foundation in 2001, cyber universities have been making progress in all aspects of e-Learning and organization management like contents development, managing the learning process, strict evaluation etc. They now have 22,814 new students, 80,606 students enrolled in degree programs (a total of 87,896, including part-time students), and 57,946 graduates a year. However, a few issues need to be discussed. First of all, the complexity and confusion in the national laws and regulations that have drawn criticism since the establishment of the Cyber University were eliminated to a certain degree. Nonetheless, the opinion, which the quality of e-Learning is still dubious and the ethical foundation are still weak, exist. Therefore, to overcome these

issues, we need to cultivate ethical consciousness of students and to change our learning culture in addition to improving quality. And the evaluation of cyber university needs to be through an evolutionary process for quality improvement, also.

IV-3 Distance Graduate School

A. Definition

Distance Graduate School refers to graduate school that confers master's degrees through e-Learning. According to Higher Education Act, Distance Graduate School is classified as a type of special graduate school (Articles 29 and 29-2 of the Higher Education Act), which is aimed for satisfying the needs of adult's lifelong education at the post-college education level. In addition, Distance Graduate School is the most popular ways to get the master's degree through e-Learning. The Ministry of Education, Science, and Technology (MEST) should be authorize its foundation. It needs as same facilities as Cyber University does. All the learning activity and most of them are carried out in cyber space and most of contents delivery is through internet. Distance Graduate School can provide research courses additionally, also.

B. Related Laws and Regulation

Distance graduate schools have been established since 2000. The legal basis for its foundation was the Higher Education Act, but the criteria for facility and operation was defined to follow the regulations about "lifelong education facility in the form of distance university" in the Lifelong Education Act. So only the university based Higher Education Act could establish distance graduate schools at the beginning. Therefore, according to these regulations, five distance graduate schools were established in traditional universities (Sookmyung Women's University, Joongbu University, Sejong University, Sungkyunkwan University, and Hanyang University) and one distance graduate school was established in Korea National Open University in 2001-2007. But now, because of the legal changes in 2007, distance graduate schools

can be established in Cyber University in Higher Education Act, too. Hanyang Cyber University had a permission to found a distance graduate school in 2009; it opened in 2010.

On the other hand, the existing graduate schools belonged to traditional university can run their educational programs by e-Learning. Because, according to Article 22 of Higher Education Act, any existing graduate schools at traditional university are allowed to run their courses in every type of class, for example, night classes, summer/winter classes, broadcast and communication-oriented classes, and field classes according to their school's regulations. And Article 29 of the Higher Education Act defines that the graduate schools can run non-degree research courses in addition to degree courses.

So, As of 2010, distance master's courses using e-Learning categorized into 4 types by its belongings; 1) one distance graduate schools at Korea National Open University, 2) 5 distance graduate schools at traditional universities, 3) 1 distance graduate school at a cyber university, and 2 online programs at existing graduate schools

C. Status of Cyber Graduate School; Establishment, Entrance, Enrollments, Graduates

Distance graduate school is classified as a special graduate school under the Higher Education Act. As of 2009, there were 7 distance graduate schools including 5 at face-to-face universities, 1 at Korea National Open University, and 1 at Cyber University. Graduate School at Korea National Open University is a national; the other 6 schools are privately owned (refer to <Table IV-10>). Following Table shows the Titles, Entrance quota (2010), available Majors, Foundation Year, and Number of Graduates. The entrance quota was 1,260 students in 2009; it increased to 1,550 ones in 2010. Most of e-Learning courses or curricula at distance graduate schools are in the field of business administration, education, and social welfare (refer to <Table IV-3-1 >).

On the other hand, Online master's programs are established at Ajou University Graduate School of Business Administration and Hankuk University of Foreign

Studies College of Business Administration; the institutions running research courses are Sogang University, offering a short-term online MBA course, and Ajou University Graduate School of Business Administration, offering the AICPA online research course (refer to <Table IV-3-2>)

Table IV-3-1 Courses Offered at Distance Graduate School

(Estimated in February, 2010)

Name of University	Title of Graduate School and Website	Entrance Quota	Majors	Open	N of Graduate
Korea National Open University	Graduate School http://grad.knou.ac.kr/	400	Public Administration, Management, Computer Science, Lifelong Education, Early Childhood Education, Home Economics	Sep. 2001	926 (Feb. 2009)
Sookmyong Women's University	Distance Graduate School http://egrad.sookmyung.ac.kr	200	Business Administration for Elderly Distance Education and Technology Children's Culture Contents, Early Childhood Education, Cosmetic and Beauty	Mar. 2002	—
Joongbu University	Cyber Graduate School http://cyber.joongbu.ac.kr/	280	Education Admin. and Management. Educational Technology, Science and Technology Education, Education Counseling and Psychology Social Welfare	Mar. 2002	—
Sejong University	Graduate School of Industry eMBA http://www.emba.ac.kr	120	Real Estate Management, Hotel and Tourism Management e-Business, Marketing,	Sep. 2002	—
Sungkyunkwan University	Business school(iMBA) http://www.imba.ac.kr	200	Business Administration	Mar. 2003	—
Hanyang University	Graduate School of Clinical Nursing http://hydng.hanyang.ac.kr	60	Science of Clinical Nursing for Hospice Science of Clinical Nursing for Senior Science of Senior Welfare	Mar. 2005	80 (Aug. 2009)
Hanyang Cyber University	Distance Graduate School http://gs.hanyangcyber.ac.kr	290	Graduate School of Business Administration (MBA, Green-Tech MBA, Hotel and Tourism MBA, ITMBA, Media MBA) Graduate School of Human Services (Child and Family Studies, Counseling Psychology) Graduate School of Real Estate (Real Estate Industry and Law)	Mar. 2010	
Total	7	1,550			

Table IV-3-2 Status of Online Master's Courses and Research Courses at Existing Graduate Schools

	Name of School	Type and Name of Graduate School	Available Subject	Operation Period
Online Master's Course	Ajou University	Graduate School of Business Administration	Online MBA (General Business Administration Major), e-Business Strategy MBA, Insurance MBA	March 2000~2006
	Hankuk University of Foreign Studies	College of Business Administration	International Finance MBA Online Program	March 2005 ~ Present
Online Research Course	Ajou University	Graduate School of Business Administration	AICPA Online Research Course	2000 ~ Present
	Sogang University	Graduate School of Business	Short-Term Online MBA (SHAPE)	2006~ Present

D. Summary and Prospects

Distance Graduate School is established in 2001 in KNOU for the first time. Now we have seven Distance Graduate Schools in Korea and a total admission quota is over 1,500. In addition, we have online program for master's degree and research students in the existing graduate schools, as existing traditional graduate schools can open e-Learning course according to Higher Education Act.

But we have still some issues to be discussed and solved. First, there are some opinions that the quality of master's degree by e-Learning is doubtful or uncertain. For that reason, there is some discrimination, e.g., some national licenses or certificates are not conferred to the graduates of Distance Graduate School. Moreover, the curriculum of Distance Graduate School has to be composed of 5-term. These regulations mean that e-Learning is inferior to face-to-face education. If we put ourselves in another's place, however, this is a double restriction based on uncertain fact. Therefore, we need to retouch those regulations for growth of adult education. And Schools may have to try their best to improve the Quality of teaching and learning and consider the ethical issues more seriously, too.

IV-4 e-Learning for Enhancing Vocational Competency

A. e-Learning in Public servants training

1) Related Laws and Regulations

“Public servants training” refers to the recurrent education for public servants working in national and provincial government, organizations affiliated with government, and state-invested entities. Public servants training schedule is provided at the beginning of every year in accordance with the Public Servants Cyber Training Guide as specified in Article 1 of the Public Servant Education and Training Act, i.e., “Public servants should be educated and trained to develop their attitude, skills and competencies for doing their jobs and tasks effectively.” e-Learning was applied to all the public servant training from the second half of 2001 in accordance with the “Public Servant Cyber Training Guide” established by the Ministry of Government Administration and Home Affairs. In addition, most public organizations introduced e-Learning to their system according to the e-Learning Industry Development Act and its Enforcement Decree from 2004.

2) Status of e-Learning in Public servants training

e-Learning in Public servants training is actively used in the Central Personnel Committee, Seoul Metropolitan Government, and Gyeonggi-Do Provincial Government etc. In addition, public enterprise likes Korea Electric Power Corp. is using e-Learning in their training. Because the e-Learning Industry Development Act and its Enforcement Decree recommended that the public institutions use 20% of their training program in the way of e-Learning. Therefore, the scale of e-Learning use is continuously increasing

The e-Learning expenditure in the public sector was KRW 137.5 million in 2006, KRW 163.3 million in 2007. Even though there is no much data about the budget of 2010, the budget is being estimated quite big than 2007. Therefore, a ratio of e-Learning in the training program of public institutions increased each year from

43% in 2005 to 56.9% in 2007. The ratio of e-Learning courses to total courses of public institutions training in 2007 was 21.6%.

Table IV-4-1 Ratio of e-Learning in the Training Program of Public Institution (2006~2007)

Division	2006	2007	Increase and Decrease (%)
Central Government Agency	43.8	71.4	27.6
Provincial Government Agency	38.3	41.4	3.1
Government Enterprise	9.5	55.6	46.1%
Government Corporation	38.7	55.6	16.9
Office of Education District	100	100	—
State-Funded Body	65.6	69.6	4.0
State-Invested Body	78.6	87	8.4
Metropolitan Government Agency	63.6	100	36.4
Total	47.9	56.9	19.0

3) Status of e-Learning Use in COTI

The Central Officials Training Institute (COTI) offers e-Learning courses for national government officials in accordance with the Public Official Training Act and Cyber Training Guide of the government. COTI opened the Cyber Training Center and developed 8 coursewares in 2000; it started to operate courses in 2001. COTI is in charge of developing, managing, and sharing courseware each year. COTI developed 8 courseware in 2001, 8 in 2002, 12 in 2003, 8 in 2004, 5 in 2005, and 8 in 2006. And they ran 50 blended courses in 2007. The number of shared courses between institutions increased from 9 courses in 2002 to 92 courses in 2006. The total number of e-Learning grew from 16,982 in 2005 to as many as 36,593 in 2006.

Table IV-4-2 Status of Central Officials Training Institute

(*unit: KRW 100 million)

Division		2005	2006	2007	2008	2009
e-Learning Budget(*)		654	1,637	1,359	1,222	1,197
N of Organizations	e-Training	35	56	91	99	93
	Blended e-Training	No Data				
Number of e-Learning Course Newly developed		4	9	7	8	10
Number of Courses	e-Training	170	195	742	727	817
	Blended e-Training	17	11	10	10	16

As provincial government, Seoul (Seoul Human Resource Development Center, SHRDC) and Gyeonggi-do (Gyeonggi Women’s e-Learning Center) are known for the most active local government for using e-Learning. SHRDC offers over 200 online courses, and approximately 40,000 people completed the courses. The provinces ran 146 courses and 30 courses among them were approved of by the Korea Educational Contents Certification Council (KECCC)

B. e-Learning in Teacher Training

There are two kinds in teacher training; qualification training and elective job training. e-Learning is usually used for elective job training. For enhancing the effectiveness and efficiency of training, blended training is being recommended. Blended training means the combination of face-to-face and distance training like e-Learning. Therefore, e-Learning in teacher training is called “Distance Educational Training (DET) for Teachers.” DET involves e-Learning and blended training, if more than a half of it is carried out through e-Learning.

1) Types of Distance Educational Training Providers

The legal basis for the accreditation of the distance educational training center is

Clause 2, Article 2 of the Regulation on the Training of Teacher, etc. (President Decree). There are two types of Distance Educational Training Providers; 1) Private type: Distance Education Training Center (private institute, public institution, affiliated institute with university), 2) Public type: Provincial Education Center (organizations affiliated with municipal/provincial education office, Korea National Institute for Special Education). If a private training center wants to provide DET, it has to be authorized by the Minister of Education, Science, and Technology (MEST) as Distance Education Training Centers (DETC). On the other hand, public provincial Educational Training Centers do not have to be authorized by MEST. However, every course and curriculum, in both types of training center, has to be evaluated and approved by MEST. The evaluation criteria of distance training contents are as follows.

Table IV-4-3 Evaluation Criteria for Distance Training Contents

Evaluation Area	Criteria	Points
Needs Analysis	Analysis of Learning Environment	4
Instructional Design	Suggestion of Learning Goal, Learning Course for Different Level, Selection of Learning Element/Data Composition and Organization of Screen, Interface and Progress	33
Contents Design	Selection of Contents, Organization of Contents, Difficulty, Workload	40
Teaching-Learning Strategy	Teaching-Learning Strategy, Motivation Strategy	8
Interactivity	Between Learners and Contents	4
Student Evaluation	Appropriateness of Evaluated Contents, Evaluation Method, Application of Evaluation Tools	7
Feedback	Provision of Evaluation Results	2
Sharing/Distribution	Metadata	2
Ethics	Issue of Ethical Value	Pass or fail
Copyright	Application of copyright	Pass or fail
Total		100

2) Status of Distance Education Institutes and Users

In December 2000, 21 institutes was authorized by the MEST at first, this figure has increased to 39 institutes in 2001, 56 institutes in 2005, and 69 institutes in 2008. But the number of institute is not on big increase. But the number of users of distance educational training has been increasing annually on a large scale. The number of users was 1,830 in 2000, increased to 160,000 in 2006 and 217,000 in 2007. By the way, the observable thing is that the number of DETC of each sector (private, affiliated with university, municipal) is changed to be similar, but discrepancy in the number of user gets bigger. For example, 79.3% of the user used certified distance training institutes, and the other 20.7% used provincial education centers in 2007. According to the internal survey of the Korea Education & Research Information Service (KERIS), the cumulative number of people who took distance-training course until 2007 was 530,000.

Table IV-4-4 Number of Distance Education Institutes

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Private(Certified)	5	10	18	19	21	20	22	24	24
Affiliated with University(Certified)	14	17	18	16	18	17	19	21	23
Municipal	2	12	15	17	18	19	20	20	22
Total	21	39	51	52	57	56	61	65	69

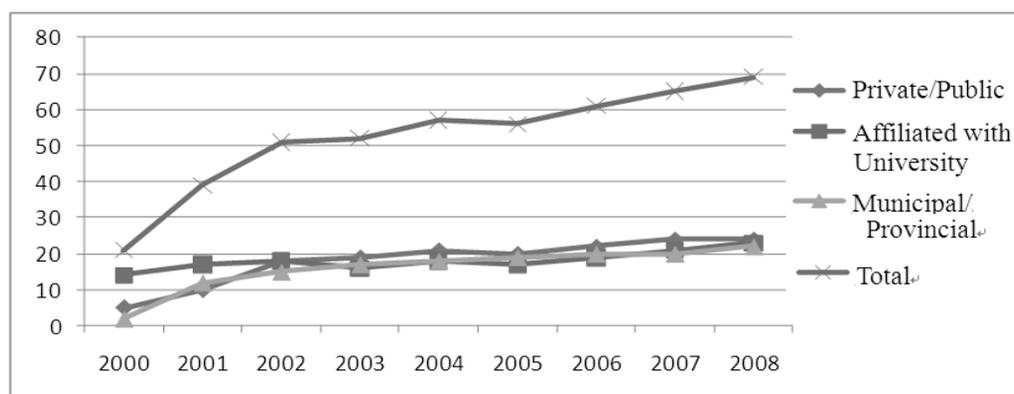


Fig. IV-4-1 Status of Distance Education Institutes in graph

Table IV-4-5 N of Users of Distance Educational Training

	2000	2001	2002	2003	2004	2005	2006	2007
Certified	1,830	18,820	24,786	50,367	68,273	83,475	116,255	172,597
Municipal/ Provincial	0	26,633	18,397	19,306	23,723	29,630	46,692	45,030
Total	1,830	45,453	43,183	69,673	91,996	113,105	162,947	217,627

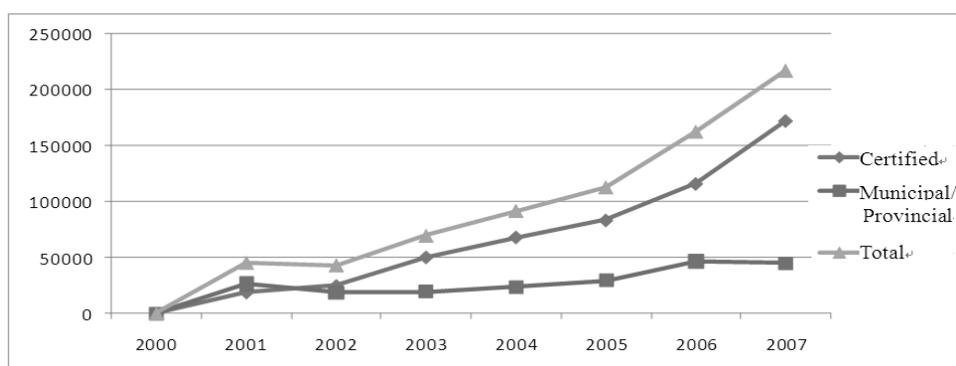


Fig. IV-4-2 Status of Distance Teacher Training in graph

3) Status of Contents Development and Curriculum

According to the 2008 survey, 431 Courses (contents) were applied for evaluation, 72% of which were authorized until 2007; the authorization rate for recent 4 years (2003~2007) was 80%. The most popular courses were foreign language courses (23.5%) and humanities (counseling) courses (19.9%). The e-Learning use rates of schoolteachers (elementary, middle, high) were 95.2%, 92.9%, 90.5%, and 54.8% of kindergarten teachers has used, too. The percentage of each subject courses per all courses was as Fig. [IV-5]; English (35%), Video/Multimedia (16.7%), Pedagogy (14.2%), and Counseling Psychology (8.9%), etc.

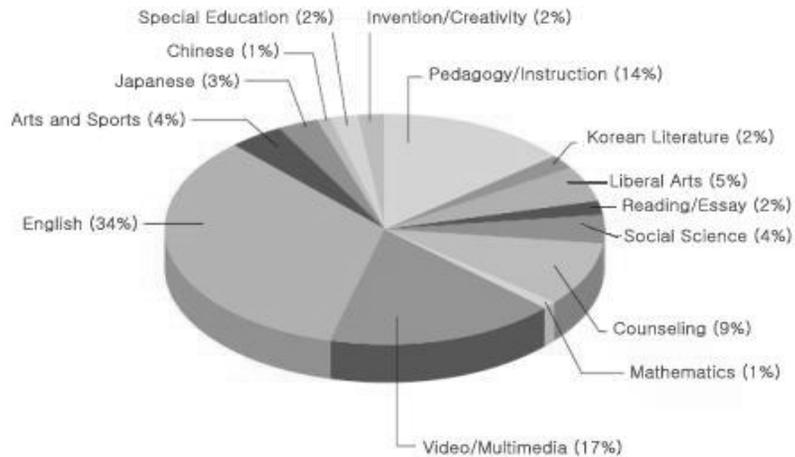


Fig. IV-4-3 The percentage of each subject courses offered (Oct., 2008)

C. Internet-based Distance Education and Training (IDET) project

1) Related Laws and Regulations and Projects

Internet-based Distance Education and Training (IDET) is the name designated to e-Learning in the Vocational Competency Development by the Ministry of Labor. e-Learning was introduced to the vocational training program of the Ministry of Labor in 1999; it was revised into the Internet-based Distance Training System (January, 2002). “The Internet-based Distance Training Course Review Project” and “The Distance Training Institute Evaluation Project” were implemented since 2003. Evaluation results have been used for subsidizing training expenses. This is for promoting the quality of e-Learning program.

2) Changes of e-Learning Use in Corporate

As knowledge management in organizations is getting more important, the role of e-Learning is becoming a part of the knowledge management system instead of simply delivering the knowledge. As a result, corporate e-Learning became a vital cog in the knowledge management system, which connects performance and training such as the sharing and distribution of knowledge, enhancement of work efficiency, creation of new knowledge, and cultivation and evaluation of competent people. Recently,

e-Learning is becoming the axis of a development of knowledge network at the national level.

3) Status of Internet-based Distance Training Support

The scale and status of corporate e-Learning is difficult to measure. However, we could know the number of Internet-based Distance Education and Training Institutes and Number of Courses. Vocational training facilities, training corporations/organizations, schools under the Higher Education Act, lifelong education facilities, all kinds of educational organizations like private institutes could be Internet-based Distance Education and Training Institutes. There were 144 institutes as of 2009. The number of institutes fluctuates with demand and market conditions.

Table IV-4-6 Number of IDET Institutes and Number of Courses Divided by Institute Type

Division of Institutes	2006		2007		2008		2009	
	Institutes	Courses	Institutes	Courses	Institutes	Courses	Institutes	Courses
Total	122	41,470	145	62,206	147	79,144	141	87,957
VCDT Facilities	25	13,491	28	17,951	25	20,430	23	18,682
VCDT Corporation	0	0	1	8	1	15	0	0
VCDT Organization	0	0	0	0	0	0	0	0
School Under the Higher Education Act	1	1	1	5	1	6	1	5
Lifelong Education Facilities	58	23,313	77	37,055	85	51,032	86	61,866
Institute	0	0	0	0	1	4	1	14
Business Owner/Business Organization, Other Facilities	33	3,164	32	4,050	25	3,752	23	3,026
Others	5	1,501	6	3,137	9	3,905	7	4,364

(VCDT: Vocational Competency Development and Training)

The support scale to the IDET program has tendency to concentrate on manufacturing, finance and insurance, information and communications, wholesale and retail, con-

struction, electricity/gas/steam and waterworks, health/social welfare services, transportation, specialized occupations, science, and technological services, in that order. The number and amount of support provided to Internet distance training programs are increasing each year. In 2009, approximately 1.85 million cases and KRW 95 billion were supported. The business category that received the largest amount of support was manufacturing (approximately KRW 28 billion for 572,767 cases), finance and insurance (approximately KRW 20.6 billion for 393,372 cases) and various information service businesses (KRW 18.2 billion for 335,488 cases).

**Table IV-4-7 Status of Internet-based Distance education and Training;
N of Trainees, Expenses**

Business Category	2007		2008		2009	
	Cases	Expenses (won)	Cases	Expenses	Cases	Expenses
Agriculture/Forestry/ Fisheries	246	12,842,700	149	8,625,900	311	16,608,900
Mining	598	30,921,980	531	23,681,018	217	12,087,500
Manufacture	543,324	25,116,577,132	415,800	21,908,069,055	572,767	27,990,524,438
Electric/Gas/Steam, and Waterworks	72,830	2,481,624,604	76,113	3,273,968,624	74,737	3,390,648,704
Sewer, Waste Disposal/ Raw Material Regeneration/Environment	1,107	50,578,840	839	39,511,780	967	52,313,420
Construction	43,021	2,443,194,203	57,403	3,046,292,900	78,384	4,085,478,849
Wholesale and Retail	57,822	3,291,229,498	73,859	4,078,786,192	97,002	5,337,388,891
Transportation	22,931	1,142,653,275	24,588	1,303,396,358	53,859	2,705,924,944
Lodging and Restaurants	7,102	401,903,457	9,529	473,238,813	14,073	712,448,376
Publication/Video/ Broadcast and Communication/ Information Services	190,918	12,081,949,459	219,174	13,117,876,230	335,488	18,222,734,606
Finance and Insurance	239,456	12,828,009,631	364,919	20,233,117,710	393,372	20,632,470,566
Real Estate/Lease	7,321	487,655,846	6,767	462,784,180	14,467	919,008,808

Specialized, Science and Technology Services	28,473	1,556,566,335	34,931	1,952,410,459	43,773	2,312,805,272
Business Facilities Management and Business Support Services	15,103	850,986,603	19,750	1,057,725,340	20,394	981,825,040
Public Administration, National Defense and Social Welfare Administration	58,390	2,932,932,774	20,744	1,331,323,072	22,527	1,164,076,630
Education Service	20,793	950,068,502	48,124	2,227,808,632	48,918	2,305,562,354
Health, Social Welfare Services	27,127	1,629,407,453	26,605	1,637,484,620	49,897	2,758,214,152
Arts, Sports, and Leisure Services	4,896	259,596,510	16,272	868,101,672	16,206	827,525,760
Association, Organization, Repair, and Personal Services	5,773	307,241,448	13,749	644,532,656	13,820	610,597,612
Domestic Employment/ Unclassifiable Production	6	405,500	3	230,600	13	817,500
International and Foreign Institutes	0	0	0	0	0	0
Total	1,347,237	68,856,345,750	1,429,849	77,688,965,811	1,851,192	95,039,062,322

The number of people using IDET increased to 2.05 million in 2008, only to decrease to 1.73 million in 2009. Nonetheless, the figure is approximately 3 times larger than 2005(620,000 cases) (<Table IV-4-7>). The rate of students completing IDET program was at around 70% in 2003, 86% in 2004, 87% in 2009. The number of overall users per session in commissioned training was smaller than that in self-training, but the completion rate was higher.

5) A Center for Evaluation and Support to IDET Institutes and Contents

Evaluation of IDET institutes and their contents using the e-Learning system have been started since 2003. To carry out this task exclusively, e-Learning Center was established under the Korea Research Institute for Vocational Education & Training (KRIVET). This center established e-Learning Plan (November 2003) for improving

the system and infrastructure, cooperating with the Federation of Korea e-Learning Companies, Human Resources Development Service of Korea, and Korea Research Institute for Vocational Education & Training.

D. Issues and Suggestions

First, the use of e-Learning in Public Servants Training relies heavily on the institutional and financial support of the government according to the e-Learning Industry Development Act. Now we have some tasks related to enhancing the quality of it. For this, the government has to elaborate the quality control indicators and system. And the related company have to develop excellent contents as well as efficient learning management system, which has important tools for quality learning. Moreover, the providers have to develop excellent curricula and and manage the learning process effectively.

Second, e-Learning for teacher training is expected to grow, as the teacher training turned to be mandatory since 2007. However, e-Learning for teacher training have to focus on enhancing teachers' teaching skills. For this teachers need more opportunity to contemplate their teaching activities and discuss actively with their colleagues. Therefore, we have to design training program more creatively, which uses freely all type of teaching methods like seminar, forum, etc. However, the e-Learning guide of MEST is limited to deliverable ready -made contents.

Third, e-Learning in business has made great progress thanks to the financial support and educational expenses refund by Internet-based Distance Education and Training Act. This tendency will be continued for a few years. And e-Learning in continuing education is expected to grow for some time along with the increase of demand for lifelong education, too.

In conclusion, we are at the turning point of new e-Learning concept for cooperation and diversity. Therefore to ensure the expecting groth of e-Learning, we have to plan for higher level of e-Learing for experts, which involves more participations,

more iterations, and more cooperation and collaboration, and implement in due sequence. This could not be achieved under the concept of e-Learning by principle of economy of scale.



References

Korea Communication Commission, Korea Internet & Security Agency (2009). 2009 Survey on the status of internet use

Ministry of Knowledge Economy, Korea Institute for Electronic Commerce (2009). 2009 Survey on the Status of the e-Learning Industry

IV-5 e-Learning for All

A. Air and Correspondence High School

1) Overview

- Air and Correspondence High School was established in accordance with Article 51 of the Elementary and Secondary Education Act, Article 94 of its Enforcement Decree, and Presidential Decree on the Standards for the Establishment of Air and Correspondence High Schools and its Enforcement Regulation. Correspondence High Schools were established in affiliation with 11 public high schools in Seoul and Busan in 1974; currently, 40 Correspondence High Schools have been established in affiliation with public high schools around the country.
- The Correspondence High School was established to provide those who could not enter high school or who had to give up their studies in the middle of the program for financial and other personal reasons the opportunity to receive secondary educa-

tion through courses provided via broadcast and communication (distance classes), offline classes, and personal feedback from tutor to complete high school.



Fig. IV-7 Vision of Air and Correspondence High School

Source: Korea Education Development Institute Air and Correspondence High School (www.cyber.hs.kr)

- As shown in [Fig. IV-7], Air and Correspondence High School’s vision is to develop a cyber lifelong learning system for implementing e-Learning that is available to anyone, anywhere, anytime. With ease and convenience, it seeks to expand opportunities to receive secondary education for the 8.2 million people who have been deprived of an education as well as to embody an educational welfare policy at the national level.
- The primary goal of the Correspondence High School is to produce a competent workforce. The school is determined to produce able workers by coping with the rapid changes in economic, social, and cultural conditions as well as the advancement of science and technology. The second goal is to provide an opportunity to receive a secondary education. The school is committed to providing this opportunity to those who could not enter high school due to financial conditions, etc.

The third goal is to enhance the level of national education. Finally, the school is determined to spread and establish the concept of lifelong education, thereby further enhancing the national level of education.

- 82% of all students are adults 20 years old or older, with 18% of school age. The Correspondence High School is established only as an affiliate of a general high school offering a regular curriculum, and teachers are accessed from the high school to which the Correspondence High School is affiliated.
- The number of school days in a year is used in 240 broadcast and information and communication-oriented distance classes and 24 offline classes. Broadcast and information and communication-oriented distance classes are provided through radio and Internet, but radio classes will not be available after 2009; distance classes will be provided exclusively through the Internet beginning in 2010. The e-Learning phase of the Correspondence High School's curriculum began development in 2004 and is provided to students through the Internet cyber education system.
- Like regular high schools, the Correspondence High School offers a three-year program; after completing the three-year program, students of the Correspondence High School will receive the same diploma as regular high school students. The academic schedule of the Correspondence High School is the same as regular high school except 80% of the curriculum of regular high school takes place online. The class consists of broadcast and information and communication-oriented distance classes, offline classes, and correction instruction.

2) Status of School and Students

- As of 2009, the Correspondence High School was established in 40 high schools, with Gangwon-do having the largest number of Correspondence High Schools (7), and Daegu, Ulsan and Jeju Island having the smallest number (1). Forty Correspondence High Schools nationwide are operating 404 classes: 137 classes in the 1st year, 135 in the 2nd year, and 132 in the 3rd year. Schools in Seoul operated the largest number of classes with 90 in 5 schools; Jeollabuk-do offered the smallest number of classes with 12 classes in 2 schools.

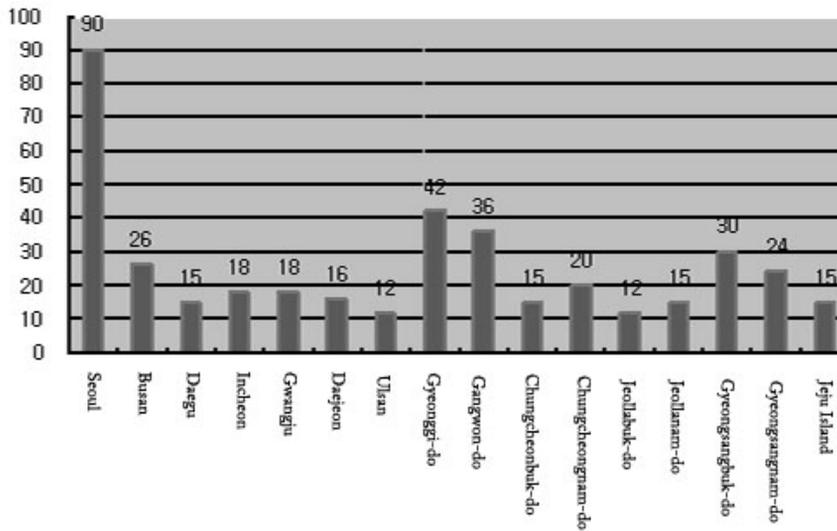


Fig. IV-8 Status of Classes in Correspondence High School in Each Region (First Term, 2009)

Source: Korean Educational Development Institute Air and Correspondence High School Management Center (2009)

- Among the 4,454 graduates of Correspondence High School in 2009, 1,724 (38.7%) entered a university or college. <Table IV-25> shows graduates who entered university/college by type of school. Most of the graduates (934 out of 1,724, 54.2%), entered a 2-year college.

Table IV-25 Students Entering University/College After Graduation

Division	2-Year College	Distance University	4-Year University
Number of Students (%)	934 (54.2%)	552 (32.0%)	238 (13.8%)

Source: Korean Educational Development Institute Air and Correspondence High School Management Center Website (www.cyber.hs.kr)

- Air and Correspondence High School provides information on entrance to 4-year universities, 2-year colleges, occupation/major tests, learning style tests, and guidelines to each subject to support students wishing to enter a university or college

after graduation.

- Dividing the 15,040 students into 5-year increments, students 16-19 years old formed the largest group (2,639 students, 17.5%), followed by those students 45-49 years old (15.7%) > students 50-54 years old (13.0%) > and students 40-44 years old (12.4%). The distribution of ages showed that students 40--50 years old formed the largest group (48%); 28.2% of students were in their 40s, and 19.8% were in their 50s.

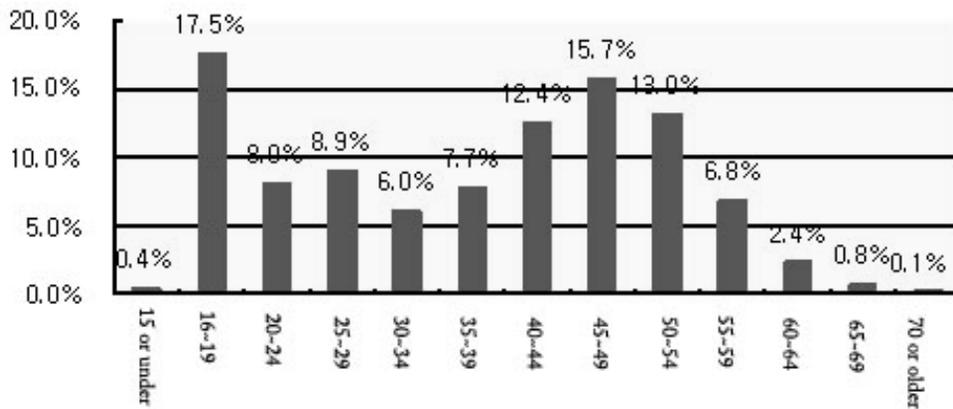


Fig. IV-9 Ratio of Enrolled Students by Age (First Term, 2009)

Source: Korean Educational Development Institute Air and Correspondence High School Management Center (2009)

3) Status of Air and Correspondence High School Cyber Education System (2005~2009)

- Revision of Guidelines Related to e-Learning and Research Efforts
 - The Air and Correspondence High School (“Correspondence High School”) was established in affiliation with 11 public high schools in Seoul and Busan in March 1974 to provide those who could not enter high school or who had to give up their studies in the middle of the program for financial and other personal reasons the opportunity to receive secondary education and to produce competent people capable of contributing to enhancing the level of national education and national development. The number of schools increased to 50 in 1987, only to drop to 38

in 2007 due to the social tendency of favoring higher educational background and economic recession. The number increased slightly to 40 as another Correspondence High School was established in Howon High School in Euijeongbu-si, Gyeonggi-do in 2008; currently, 40 schools are in operation.

- The Korean Educational Development Institute Air and Correspondence High School Management Center pursued the “Correspondence High School Cyber Education System Development Project” with support from the Ministry of Education, Science, and Technology and municipal/provincial education offices in 2004 to realize a school for open lifelong education providing quality e-Learning-based educational opportunity to the people neglected in terms of education. The center also reorganized laws and systems to provide the basis for conversion into an e-Learning-oriented school. They enabled students to complete a high school program through e-Learning by converting the radio-oriented unidirectional education using public broadcasting system into a cyber education system capable of interactive education and from the teaching methods specified in the “Presidential Decree on the Standards for the Establishment of the Air and Correspondence High School and its Enforcement Regulation” enacted in March 2006 to the “class based on broadcast and information and communication facilities.”
- The center also revised or newly established Correspondence High School-related regulations and policies of all municipal/provincial education offices concerned from 2006 to 2007 to provide the legal basis for transforming the Correspondence High School into a cyber education system with regard to the organization of curriculum, school management, and assignment of teachers.
- A number of research studies were done to enhance the appropriateness, efficiency, and suitability of innovations in the operating system and teaching-learning system to successfully transform and institutionalize the cyber education system of the Correspondence High School. Studies conducted in 2005 focused on the development of the online/offline school operation model and its application in the field since the cyber school management system was introduced in 2005; studies carried out in 2006 focused on the development of the Correspondence High School in

connection with the national e-Learning policy and enhancement of sustainability of cyber schools. Studies conducted in 2007 focused on the connection between the Correspondence High School and lifelong education institutes through conversion from the affiliated form of school into an independent form as well as measures for operating professional subjects to satisfy the learning desires and needs of adult students. Studies underway since 2008 are focusing on developing ways of operating the Correspondence High School based on the cyber education system. These studies also examine ways of providing support for those who are deprived of educational opportunities through the current Correspondence High School system such as persons with disabilities, North Korean defectors, children of multicultural families, as well as students who dropped out of the Correspondence High School course.

Table IV-26 Correspondence High School e-Learning-Related Studies

No.	Year	Title of Study	Research Director
1	2005	Study on the Method of Air and Correspondence High School Cyber Academic Affairs Management	Kim Jeong-gyeom
2	2005	Study on the Restructuring of Air and Correspondence High School Curricula	Kim Jae-chun
3	2005	Study on the Cause of Dropouts in Air and Correspondence High Schools	Lee Jong-tae
4	2006	Study on the Method of Certifying the Quality of Middle School Academic Ability Recognition Program Through e-Learning	Jeon In-sik
5	2006	Study on the Establishment and Operation of Air and Correspondence Middle Schools for the Legislation of Laws Related to the Establishment of Air and Correspondence Middle Schools	Jo Seok-hun
6	2006	Study on the Method of Ethnic Education for Koreans Based Overseas through Cyber Education of the Air and Correspondence High School System	Kim Gyeong-geun
7	2006	Study on the Development of Air and Correspondence High Schools in Connection with the National e-Learning Policy	Yang Heui-in
8	2006	Study on the Measures for Enhancing the Substantiality of Academic Affairs Management for Air and Correspondence High Schools	Kim Jeong-gyeom
9	2007	Study on the Operation of Professional Curriculum for Air and Correspondence High Schools	Yang Heui-in

10	2007	Study on the Establishment of Independent Air and Correspondence High Schools	Jeong Yeong-sik
11	2008	Study on the Development of Curriculum for Domestic Science and Commercial Subjects	Sim Ung-gi
12	2008	Study on the Development of Curriculum for Industrial Subjects	Yang Heui-in
13	2008	Study on the 2-Phase Development of the Cyber Education System for Air and Correspondence High Schools	Jeong Yeong-sik
14	2009	Development of Specialized School Curriculum for Air and Correspondence High Schools	Yang Heui-in
15	2009	Measures for Diversifying Air and Correspondence High School Management for the Bracket Deprived of Education	An Seong-hun
16	2009	Study on Remodeling the e-Learning Contents of Air and Correspondence High Schools	Sim Ung-gi
17	2009	Search of Measures for Integrating the Air and Correspondence High Schools and Credit Transfer System	Jeon In-sik
18	2009	Measures for Operating the Basic Learning Programs for the Air and Correspondence High School System	An Seong-hun
19	2009	Measures for Supporting Students Who Gave up Their Studies Using the Air and Correspondence High School System	Jeon In-sik

○ Status of e-Learning Lecture Contents Development

– The Korean Educational Development Institute Air and Correspondence High School Management Center has been promoting the Correspondence High School Cyber Education System Development Project to develop the educational contents required for operating the high school curricula since 2004; the center has developed 2,159 lectures for 50 subjects for the high school curriculum in the last 5 years (refer to <Table IV-26>). The center also selected 16 optional subjects that the school cannot offer due to the difficulty in finding teachers even when there is demand from students (e.g., Spanish I, Russian I, Arabic I, German I, French I, Japanese II, Career and Occupation, International Geography, Economic Geography, Discrete Mathematics, English Writing, Traditional Ethics, Political Science, Economics, Earth Science II, and Chemistry II) and developed 765 lectures to provide access to the Correspondence High School contents to regular high school students as well.

- The center also provided online educational opportunities to learn specialized and discretionary activities in 2008 by developing 68 new lectures under the four subjects of “Health and Disease Control,” “Challenge! Microsoft Office Applications,” “Telling World Story through Pictures and Videos,” and “Jive to Enjoy Life!” In addition, the center developed 136 new lectures for English I and Mathematics I in 2008 and 136 new lectures for English II and Mathematics II in 2009 as per the revised curriculum.

Table IV-27 Status of Educational Contents for the Correspondence High School

Division		2005		2006		2007		2008		2009		Total	
		Sub- ject	Lect- ures										
Curriculum	Before the Revision	7	238	10	442	9	374					33	1,571
	After the Revision							2	136	2	136	4	272
Rare and Optional Subjects		9	459	4	204	3	102					16	765
Basic Subjects												2	136
Specialized/ Discretionary Activities								4	68			4	68
Total		16	697	14	646	12	476	2	204	2	136	59	2,812

○ Status of e-Learning Lecture Operation

- For students who are not furnished with the equipment required for e-Learning, the center decided to phase out radio lectures by withdrawing the 3rd year program in 2008, 2nd program in 2009, and 1st year program in 2010, instead of withdrawing the lecture immediately in 2008, when the full-scale cyber education system was launched. This was to give students the option of radio or Internet lectures. Accordingly, students in the 1st and 2nd year were able to choose either radio or Internet lectures in 2008. The status of Internet lecture users is presented in <Table IV-28>, showing that 90.8 percent used Internet lectures in 2006; however,

the ratio increased to 96% in 2007, 98.7 percent in 2008, and finally 100% in 2009.

Table IV-28 Status of Internet Lecture Users Among Correspondence High School Students

City/ Province	2006		2007		2008		2009	
	Number of Users	Rate (%)						
Seoul	1,205	94.1	2,378	96.1	2,325	98.7	3,321	100.0
Busan	256	90.1	559	98.1	593	99.8	903	100.0
Daegu	199	99.5	420	99.8	424	99.8	552	100.0
Incheon	240	100.0	472	100.0	450	100.0	658	100.0
Gwangju	196	97.0	396	98.8	380	100.0	524	100.0
Daejeon	110	90.2	334	100.0	344	100.0	569	100.0
Ulsan	51	33.6	252	78.0	334	100.0	456	100.0
Gyeonggi-do	338	98.5	789	100.0	821	81.9	1,533	100.0
Gangwon	253	81.1	642	98.8	551	98.7	942	100.0
Chungcheongbuk-do	161	97.0	373	99.5	364	98.9	542	100.0
Chungcheongnam-do	190	84.4	367	86.2	431	100.0	680	100.0
Jeollabuk-do	144	100.0	255	93.1	260	100.0	406	100.0
Jeollanam-do	122	95.3	299	99.3	281	99.6	472	100.0
Gyeongsangbuk-do	320	83.3	766	97.0	775	100.0	1,046	100.0
Gyeongsangnam-do	295	100.0	586	95.6	460	76.0	891	100.0
Jeju Island	101	80.8	256	82.3	334	100.0	519	100.0
Total	4,181	90.8	9,143	96.0	9,127	96.1	14,014	100

- The contents of the Correspondence High School is also provided to ordinary students in the form of open lectures through the school’s cyber education system, specifically through the Center for Teaching and Learning operated by the Korea Educational Development Institute; all contents is available to all high school students in South Korea. All lectures were prepared with subtitles, thereby enabling persons with hearing impairment to use the contents. The Korea National Institute for Special Education added sign language to the Correspondence High School contents and serviced them through “Eduable.”

- In 2007, the center developed a contents-sharing system to allow institutes other than the Correspondence High School to use the contents freely. The Education Office of the Jeju Special Self-Governing Province opened a special course designed for students who could not complete the common curriculum for citizens due to transfer or return from overseas in the contents-sharing system in 2007 and offered the Internet course to 79 people (by subject). In 2008, 68 students applied for the course through the Education Office of Jeollanam-do; they are studying the common curriculum for citizens via the Internet. In 2009, 52 more students were given access to the common curriculum for citizens using the contents-sharing system through the Education Office of Jeollanam-do, Education Office of Jeju Special Self-Governing Province, and Seoul Jeongmin School. The details on schools using the contents-sharing system and the number of students who applied for the courses offered are presented below <Table IV-29>.

Table IV-29 Status of Applicants for the Common Curriculum Completion Program

Year	Institute Concerned	Subjects Offered	Number of Students
2007	Education Office of the Jeju Special Self-Governing Province	11	79
2008	Education Office of the Jeju Special Self-Governing Province	11	99
	Education Office of Jeollanam-do	11	68
2009	Education Office of Jeollanam-do	11	21
	Education Office of the Jeju Special Self-Governing Province	7	26
	Seoul Jeongmin School	29	5

○ Status of Student Management and Utilization

- The use of the cyber education system of the Correspondence High School is increasing annually as shown in [Fig. IV-10]. The average number of monthly users by year was 18,120 in 2005 and 28,618 in 2006, only to increase rapidly in 2007, 2008, and 2009 to 105,876, 100,427, and 98,112, respectively. The aver-

age number of accesses each month was 26,697 in 2005, 71,565 in 2006, and 174,521 in 2007, rapidly increasing by 2.5 times to 442,442 in 2008. Access was concentrated on March and April.

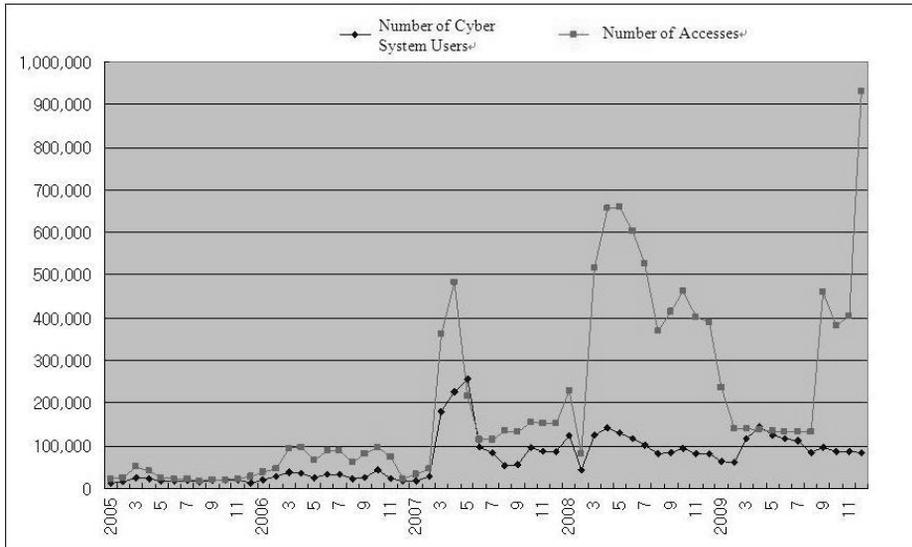


Fig. IV-10 Status of Correspondence High School Cyber Education System Utilization

B. Credit Bank System

1) Overview

- The Credit Bank System confers bachelor's degrees according to Article 9 of the Act on accreditation, etc., to those who have high school diplomas or who are recognized to have the same academic ability as a high school graduate after having certain credits recognized in accordance to related laws and the satisfaction of requirements. The requirements for obtaining the degree are presented in <Table IV-30>. Applicants must have at least 140 credits (60 credits in their major, 30 liberal arts credits) to obtain bachelor's degrees, 120 credits (54 credits from their major, 21 liberal arts credits or more) for 3-year associate degrees, and 80 (45 credits from major, 15 liberal arts credits or more) credits for 2-year associate

degrees.

Table IV-30 Required Credits for Getting Degrees

		Bachelor's Degree	Associate's Degree	
			Two-Year	Three-Year
Required Credits for Completing one Degree	Liberal Arts	30 Credits or More	15 Credits or More	21 Credits or More
	Major	60 Credits or More	45 Credits or More	54 Credits or More
	Total Number of Required Credits	140 Credits or More	80 Credits or More	120 Credits or More

Source: National Institute for Lifelong Education (2009).

2) Obtaining Credits

○ As shown in [Table IV-30], the Credit Bank System recognizes learning experiences equivalent to the level of higher education as credits, such as the completion of subjects recognized as credits, completion of school courses recognized as credits, completion of part-time courses, passing the Bachelor's Degree Exam for self-educated man, completion of exemption courses, acquisition of national technical qualification, retention of important intangible cultural assets, or initiation for such assets.

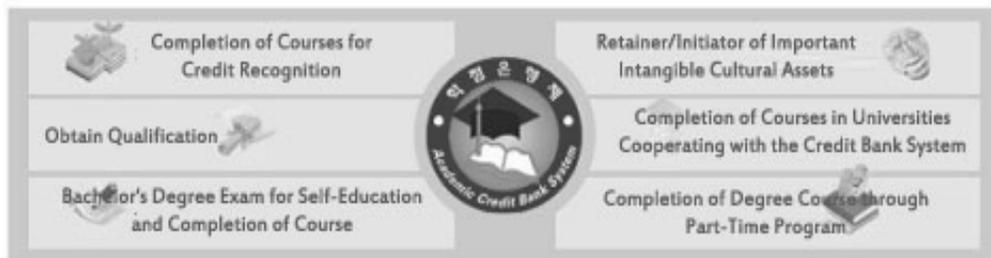


Fig. IV-11 Sources of Credits in the Credit Bank System

○ Subjects recognized as credits are the courses offered at lifelong vocational education institutes such as lifelong education centers affiliated with universities, ex-

clusive vocational schools, and private institutes evaluated and recognized as credits. Courses are offered by 503 educational and training institutes around the country as of January 2010; 23 distance education institutes offer courses that can be fully completed online and recognized as credits (4.6%).

- Completion of School Course Recognized as Credit refers to courses provided by a traditional university or college; those who had to stop their studies in the middle of the term for various reasons can have their learning experiences recognized as credits through the credit bank, with courses for acquiring credits of traditional universities mostly provided offline excluding cyber universities.
- Part-Time Course allows students to participate in higher education through the part-time system of regular universities or colleges instead of undergoing the regular entrance procedure; anyone with a high school diploma can take courses for a maximum of 12 credits for each term at a university offering a part-time program. The part-time program operated in cyber universities consists of online distance courses, but part-time programs offered at traditional universities are blended courses combining online and offline classes.
- The Credit Bank System recognizes success in examinations granting bachelor's degrees for self-educated man and successful completion of exemption courses as credits; along with a certain level of credit for national technical qualifications and national qualifications, such as the license for industrial engineers. The system also recognizes the learning experiences of retainers, learners, and initiators of important intangible cultural assets as credits to promote important intangible cultural assets and cultivate competent people for the succession and development of traditional culture.
- Accreditation of credits through the Bachelor's Degree Exam for self-educated man and license acquisition allows the learner to engage in self-directed study and pass certain examinations to earn credits. The exemption course for the system of granting bachelor's degrees for self-education through the certification examination grants credits by completing the course offered at an institute instead of applying for and passing the test for the corresponding subjects. It is offered as an offline course. The program that recognizes the experience of initiation in important in-

tangible cultural assets as credits is provided through offline courses.

3) Status of Online Education of the Credit Bank System

○ Currently, 503 institutes are cooperating with the Credit Bank System, 28 of which offer distance education and 23 operate the educational program entirely in distance education format; five other institutes offer both online and offline classes. Students can study without the limitation of time and space purely through the distance learning program in 23 distance education institutes (refer to <Table IV-32>).

Table IV-31 Status of Educational Training Institutes by Type of Education Method of the Credit Bank System (as of January 2010)

Type of Education Method	Number of Institutes	Rate
Offline Educational Training Institutes	475	94.4%
Combined Educational Training Institutes (offers both online and offline classes)	5	1.0%
Online Educational Training Institutes	23	4.6%
Total	503	100.0%

Data: National Institute for Lifelong Education (2010).

○ The number of institutes providing distance education and number of subjects operating with the Credit Bank System is continuously increasing. <Table IV-32> shows the distance education institutes and subjects they operate in 2009 and 2010. Eleven distance education institutes operated 149 subjects in the Credit Bank System in 2009; currently, 23 institutes operate 306 subjects in 2010. The number of participating institutes and subjects has doubled since 2009.

Table IV-32 Status of Distance Education Institutes Participating in the Credit Bank System in 2009 ~ 2010

2009		2010	
Distance Educational Institutes	Courses Offered	Distance Educational Institutes	Courses Offered
11	149	23	306

Data: National Institute for Lifelong Education (2010).

○〈Table IV-33〉 shows the number of students and number of subjects offered at the institutes in the Credit Bank System during the first term of 2009. A total of 352 institutes in the Credit Bank System offered courses during this period with 10,351 subjects covered; the total number of students was 129,817. Eleven institutes or 3.1% of the 352 institutes provided distance courses covering 123 subjects or 1.2% of 10,351 subjects; the number of students in the online course was 24,641 or 19% of 129,817. This shows that about 20% of students using the Credit Bank System chose distance training to complete credit courses.

Table IV-33 Status of Educational Institutes Participating in the Credit Bank System in 2009 (as of April 2009)

Institutes Actually Operated	Number of Institutes	Subjects Operated	Number of Users
Distance Educational Training Institutes	11 (3.1%)	123 (1.2%)	24,641 (19.0%)
Offline/Blended Educational Training Institutes	341 (96.9%)	10,228 (98.8%)	105,176 (81.0%)
Total	352 (100.0%)	10,351 (100.0%)	129,817 (100.0%)

Source: National Institute for Lifelong Education (2009).

C. Military e-Learning Credit Recognition Program for Soldiers on Duty

1) Overview

A) Organizer and Contents of the Project

- Based on the Master Plan for Military Human Resources Development, the learning infrastructure development project was carried out in 2006; the cyber knowledge and information network (Internet PC room) was installed inside the unit, becoming the starting point for promoting the military credit recognition program. The Military e-Learning Portal System was developed in September 2006 to provide a learning environment within the military.
- The military authority extended the time given to soldiers for self-improvement on Saturdays while they off duty 10-20 hours a week to provide an environment for soldiers to access the information they need at any time or to study with educational contents as a way of self-improvement.
- Against this background, the Military e-Learning Credit Recognition Program is developing learning contents for soldiers to complete courses at universities or other institutes they attended through the distance learning system and to complete courses even while they are on duty along with portal site management evaluations.
 - The full-scale program was launched with the policy presentation held at the National Defense Hall with officials from the Ministry of National Defense, Military Mutual Aid Association C&C, and officials from universities in August 2006; the military and universities improved technical aspects and school systems through a number of workshops and seminars along with the reorganization of regulations and laws, and Gangwon University, Konyang University, Kyungsang University, Yeungnam University, Chonbuk National University, and Jeju National University participated in the pilot program in September 2007.
 - In November 2007, the Ministry of Defense, the Ministry of Education, Science, and Technology, and a number of Korean universities signed the agreement for the recognition of credits obtained during military service; Wonkwang University, Inha University, and Chonnam National University joined the project in March 2008, bringing the total to nine universities.
- The Military e-Learning Credit Recognition program is becoming more popular through the regional university e-Learning support center development projects based on the Ministry of Education, Science, and Technology's "e-Campus Vision 2007."

- The Regional University e-Learning Support Center Development Project was established to correct the imbalance in education between universities and regions through e-Learning and cultivating the workforce required for regional strategic projects. One center was constructed in each region, with 10 centers constructed between 2003-2007 as presented in <Table IV-34> (Ministry of Education, Science, and Technology, 2007).

Table IV-34 Status of University e-Learning Support Center Development

	Region	Area	Year of Designation and University
1	Seoul Region	Entire Seoul Metropolitan Area	2007, Hanyang University
2	Incheon/Gyeonggi Region	Incheon, Gyeonggi-do	2007, Inha University
3	Gangwon Region	Gangwon-do	2005, Gangwon University
4	Chungcheongbuk-do Region	Chungcheongbuk-do	2006, Cheongju University
5	Daejeon/Chungcheongnam-do Region	Daejeon-si, Chungcheongnam-do	2007, Chungnam National University
6	Daegu/Gyeongsangbuk-do Region	Daegu-si, Gyeongsangbuk-do	2005, Yeungnam University
7	Busan/Ulsan/Gyeongsangnam-do Region	Busan-si, Ulsan-si, Gyeongsangnam-do	2004, Kyungsang University
8	Jeollabuk-do Region	Jeollabuk-do	2006, Chonbuk National University
9	Gwangju/Jeollanam-do Region	Gwangju-si, Jeollanam-do	2005, Chonnam National University
10	Jeju Island Region	Jeju Island	2003, Jeju National University

- This project was primarily promoted through the Regional University e-Learning Support Centers; these centers are making great contributions to the spread of the military e-Learning credit recognition program through the sharing of e-Learning contents and the exchange of credits between local universities and key universities in each province.

B) Status of the Military e-Learning Credit Recognition Program

○ The Military e-Learning Credit Recognition Program started with a pilot program in the 2nd term of 2007 by opening 55 courses at five universities including Gangwon University. One hundred thirty four soldiers participated in 32 courses, with 94 soldiers earning credits (40 students enrolled at Yeungnam University participated in a free course without credit).

Table IV-35 Status of Pilot Program in the 2nd Term of 2007

University of Education	Participating Universities						Total
	Kangwon National University	Konyang University	Kyungsang University	Yeungnam University	Chonbuk National University	Jeju National University	
Number of Users	41	2	25	40	22	4	134
Courses Offered	16	1	5	5	4	1	32
Number of Students Who Completed the Course (%)	34 (83%)	2 (100%)	16 (64%)		15 (68%)	3 (75%)	70 (74%)

- The pilot program held in the 2nd term of 2007 suggested issues such as insufficient PR, insufficient number of subjects and participating universities, and security issues concerning the cyber knowledge and information network (announced by the Army Headquarters).
- Moreover, amendment of school rules, expansion of the number of courses, and improvement of learning environment were requested.
- Starting with the pilot program in 2007, 9 universities joined the program in the first term of 2008 and offered 114 courses; 207 soldiers participated in 70 courses through e-Learning.

Table IV-36 Status of Military e-Learning Course in the 1st Term of 2008

		Number of Courses Applied	Number of Applicants (Person)	Number of Incompletes (Person)	Completion Rate (%)
1	Kangwon National University	22	48	8	83
2	Konyang University	2	11	1	91
3	Gyeongsang National University	6	28	2	93
4	Yeungnam University	5	17	1	94
5	Chonbuk National University	4	12	3	75
6	Cheju National University	1	5	1	80
7	Wonkwang University	12	12	1	92
8	Inha University	17	60	3	95
9	Chonnam National University	1	14	0	100
Total		70	207	20	90

○ In the second term of 2008, public relations activities were actively carried out among all the armed forces and universities; 25 universities joined the military e-Learning credit transfer program, 825 courses were opened, and 814 soldiers attended 125 courses.

- The number of soldiers who acquired the credit in 1 year after the pilot program increased six times. However, these figures are small considering the number of universities offering e-Learning courses.
- As shown in <Table IV-37>, the number of universities participating in e-Learning and the number of applicable courses are increasing alongside growing participation by soldiers.

Table IV-37 Status of e-Learning Lectures Offered in the 2nd Term of 2008

		Courses Applied	Courses Offered	Number of Applicants	Number of Completes	Completion Rate
1	Kangwon National University	18	26	70	55	79%
2	Konyang University	4	4	26	23	88%
3	Gyeongsang National University	7	7	58	48	83%
4	Yeongnam University	10	16	38	36	95%
5	Chonbuk University	5	5	43	41	95%
6	Cheju National University	5	17	31	24	77%
7	Wonkwang University	14	24	38	34	89%
8	Inha University	19	19	101	86	85%
9	Kyungsung University	6	6	30	21	70%
10	Kyungwon University	—	1	—	—	—
11	Kongju National University	3	3	45	35	78%
12	Daegu Arts University	1	1	1	0	0%
13	Daejeon University	1	1	46	—	—
14	Tongmyong University	6	6	30	23	77%
15	Masan University	1	1	4	1	25%
16	Busan Digital University	—	98	—	—	—
17	Busan Info-Tech College	1	1	7	3	43%
18	Seoul Digital University	2	382	2	2	100%
19	Woosuk University	9	16	18	11	61%
20	Wonkwang Digital University	—	177	—	—	—
21	Chung-Ang University	2	2	36	36	100%
22	Changwon National University	5	6	23	18	78%
23	Cheongju University	1	1	17	16	94%
24	Chungnam National University	2	2	36	35	97%
25	Hanyang University	3	3	114	—	—
Total		125	825	814	548	84%

C) Status of Contents Development and Management for the Military e-Learning Credit Recognition Program

- The e-Learning service offered by universities to recognize the credits obtained during military service consists of contents developed for enrolled students or exclusively for students on leave of absence from military service and serviced through the school's e-Learning Management System (LMS).
- Status of Subjects Offered and Applied in Each University
 - 〈Table IV-38〉 shows the lectures offered through the military e-Learning program and lectures actually operated; 337 lectures were offered by universities through the military e-Learning program and 225 lectures, 67% of which were actually operated through student applications.

Table IV-38 Ratio of Lectures Operated in the Military e-Learning Program (excluding Digital University)

Term	Subjects Offered	Subjects Operated	Ratio	Remarks
February 2007	55	32	58%	
January 2008	114	70	61%	
February 2008	168	123	73%	
Total	337	225	67%	

- Tuition Fees
 - 〈Table IV-39〉 shows the tuition fees for one credit. A total of 12 out of 23 universities offered one credit course for KRW 20,000-30,000, with 10 other universities offering the course for KRW 50,000-90,000.

Table IV-39 Tuition Fees of Each University

No.	Tuition	Number of Universities (Excluding Hanyang University, Daejeon University)
1	20,000~30,000	12
2	30,000~50,000	0
3	50,000~70,000	5
4	70,000~90,000	5
5	90,000 or More	1
		23

E) Status of Military e-Learning Credit Recognition

- The types of military service are classified into army, navy, and air force under the Ministry of National Defense, alternative services including riot police and conscripted policemen under the National Policy Agency, and public interest service personnel under the Military Manpower Administration. Among the soldiers who used the military e-Learning program in the second term of 2008, 751 belonged to the Ministry of National Defense; 16 were riot or conscripted policemen, and 47 were public service personnel.
- Since the program started with soldiers under the Ministry of National Defense, over 92% of the participants in this program were soldiers of the army, navy, and air force under the Ministry of National Defense. The service later expanded and covered a greater variety of military services. Currently, there are discussions among the authorities concerned as to whether the service shall be expanded to cover government-issued firefighters under the National Emergency Management Agency and correctional institution guards under the Ministry of Justice.

Table IV-40 Status of Soldiers registered for Courses by Organization

Organizations	Divisions	Registrants
Ministry of National Defense	Soldier	749
Military Manpower Administration	Public Service Personnel	47
National Police Agency	Riot Police/Conscripted Policemen	16
Ministry of National Defense	Lieutenant Junior	2
	Total	814

- As shown in <Table IV-41>, 84% of the students who applied for credit courses through the military e-Learning program in the second term of 2008 successfully completed their courses (excluding 106 students who participated in the non-credit, pilot course).

Table IV-41 Status of Credits Obtained by Soldiers in Each Organization

Divisions	Total Registrants	Registrants for Accredited Courses (Except Pilot Program)	Registrants Completing the Courses	Completion Rate
Soldier	749	593	490	83%
Public Service Personnel	47	45	45	100%
Riot Police/ Conscripted Policemen	16	15	12	80%
Lieutenant Junior	2	1	1	100%
	814	654	548	84%

○ Credits Obtained through the Program

- The number of soldiers applying for the military e-Learning program has increased annually. The table below shows a 200% increase in each term (refer to <Table IV-41>).
- The course completion rate for the second term of 2007 was low (around 75%), but improved to 90% by the first term of 2008; an 80% or higher rate was recorded in the second term (this excludes those who participated in the free, non-credit course at the pilot school held in the second term of 2007 and the second term of 2008 since they were non-credit courses.)

Table IV-42 Courses Completed in Each Term

	Registrants for Accredited Courses (Pilot Program)	Students Completing the Course	Completion Rate	Increase in Registration Compared to the Previous Term
2 nd Term, 2007	94 (40)	70	74%	
1 st Term, 2008	207	187	90%	154%
2 nd Term, 2008	654 (160)	548	84%	393%
Total	955	805	84%	

D. e-Learning for Expanding Educational Opportunities for Educationally Alienated Classes

- According to the “2007 Korea Informatization White Paper,” the national informatization level of Korea is ranked 3rd in the world; it recorded the highest-speed Internet subscription rate in the world and landed the 5th spot in terms of rate of Internet users per population. However, there is a serious information divide between age groups and classes despite this world-class advancement in the prevalence of information technology.
- Information alienation brings with it social discrimination and exclusion since the alienated have fewer opportunities to participate in necessary economic, political, cultural, and social activities and to receive IT training to cultivate the basic ability to use the computer and the Internet to utilize e-Learning.
- According to the Korea Internet and Security Agency’s data (2008), 1 out of 4 (25.2%) people in the entire population of South Korea (primarily socially alienated classes such as senior citizens and persons with disabilities) does not benefit by e-Learning, e.g., are incapable of using the Internet, as of the end of 2006.
- To resolve this issue, a number of departments of the South Korean government collaborated and established the Master Plan for the Elimination of the Information Divide. According to the 2nd Master Plan for the Elimination of Information Divide, they vowed to enhance the informatization level of the alienated class compared with the entire population to up to 80% by 2010.
- For the sake of providing e-Learning for the class of people deprived of educational opportunities such as senior citizens, the illiterate, farmers, and fishermen, the government is promoting the improvement of basic computer skills under the title “IT Training.”
- According to this IT training plan for the neglected class, IT training will be provided to 5 million people including persons with disabilities, those who are in low-income brackets, middle-aged and senior citizens, farmers, and fishermen by 2010.

**Table IV-43 Annual IT Training Plan for the Neglected Class by Year
(Lifelong Education-related IT Training)**

	2006	2007	2008	2009	2010	Total
Persons with Disabilities	77,000	82,000	82,000	82,000	77,000	400,000
Low Income Bracket	150,000	150,000	150,000	150,000	150,000	750,000
Middle-Aged/ Senior Citizen	500,000	610,000	630,000	630,000	630,000	3,000,000
Farmer/Fishermen	165,000	175,000	170,000	170,000	170,000	850,000
Total	892,000	1,017,000	1,032,000	1,032,000	1,027,000	5,000,000

1) IT Training for Senior Citizens

- Due to the considerably low birth rate and unusually rapid aging of society, the size of the senior population is expanding each year. To cope with the growing senior population, South Korean society is preparing conditions under which the senior population can be independent and productive members of society.
- One of the important roles of the senior population living in a knowledge and information-based society is the ability to utilize information. Accordingly, the South Korean government has been offering courses on computer and Internet applications to citizens aged 55 years or older since 2000.
- The IT for seniors program is divided into a basic course and application course; each course is 20-30 hours long. The basic course trains senior citizens to use the computer and Internet using textbook prepared exclusively for senior citizens, titled “From PC to Internet for the S-Generation.”
- The application course teaches senior citizens to use common computer applications such as word processors including Excel and PowerPoint, homepage building applications, digital camera applications, and picture editing programs.
- The IT training courses for senior citizens are mainly offered through post office, social welfare halls, senior citizen welfare halls, universities, and the Welfare Council for Information and Communication; the number of senior citizens taking the course has steadily increased from 23,535 in 2000 to 420,000 in 2007.

Table IV-44 Record of IT Training for Senior Citizens

	Group Training		In-Home Training	Total
	Private Institute	Exclusive Training Center	IT Volunteer Corps for Senior Citizens	
2005	38,099	21,274	754	60,127
2006	57,556	14,066	4,065	75,687
2007	71,187	4,350	3,825	79,362

2) IT Training for Illiterate

- South Korea is gradually turning into a multicultural community. According to the Ministry of Justice data from the “Immigration Office/Foreigner Policy Statistics 2007,” the number of married female immigrants (foreign women marrying Korean men) was estimated to be 97,000, and the number is continuously increasing.
- The 2005 census by the National Statistics Office shows that the ratio of under-educated adults or adults without middle school diplomas (2.08 million without elementary school diplomas, 3.91 million without middle school diplomas) to the population of adults aged 15 years or older was approximately 15.7% or 5.99 million.

Table IV-45 Number of Institutes Participating in the IT Training for the Illiterate and Training Records

(unit: institute, persons)

		2003	2004	2005	2006	2007	Total
Number of Institutes	Illiterate	16	93	148	166	160	160
	Married Female Immigrants	—	—	—	15	25	25
	Subtotal	16	93	148	181	185	185
Number of Trainees	Illiterate	—	5,527	11,366	13,787	14,565	45,245
	Married Female Immigrants	—	—	—	913	1,852	2,765
	Subtotal	-	5,527	11,366	14,700	16,417	48,010

- The IT training for illiterate people started in October 2003; there were 185 institutes and 48,000 trainees as of December 2007. Since 2006, the training has been expanded to cover new information-alienated classes such as married female immigrants.
- The IT training for illiterate people has training centers developed in organizations where there is great demand such as educational institutes providing Korean language courses to illiterate people and married female immigrants, civic organizations, night schools, and religious facilities; fees for the instructor, Internet connection, and textbooks are supported.

Table IV-46 Institutes Participating in IT-Training for the Illiterate by Institute Type (unit: institutes)

Types	Welfare Facilities	Public Institutes	Night Schools	Religious Organizations	Civic Organizations	Social Educational Facilities	Others	Total
Number of Institutes	29	10	78	20	30	10	8	185

- The training institute is selected by considering the number of illiterate people and married female immigrants in each region, with training institutes consisting mostly of night schools, civic organizations, and religious organizations since this type of support for illiterate people and married female immigrants had been led by private organizations without government support.

Table IV-47 Regional Training Centers for IT-Training for the Illiterate (unit: places)

	Seoul	Gyeonggi-do	Incheon	Busan	Ulsan	Gyeongsangnam-do	Gyeongsangbuk-do	Daejeon	Chungcheongbuk-do	Chungcheongnam-do	Daejeon	Jeollabuk-do	Jeollanam-do	Gwangju	Gangwon-do	Jeju Island	Total
2003	1	6	—	—	2	1	—	1	4	—	—	—	—	1	—	—	16
2004	18	17	2	6	4	5	6	2	8	5	—	9	1	6	2	2	93
2005	21	20	4	10	5	7	13	7	10	8	3	14	7	10	5	4	148
2006	24	24	5	12	5	9	16	8	13	10	3	17	10	11	8	6	181
2007	22	25	4	14	5	9	15	9	14	10	3	18	11	11	9	6	185

3) IT Training for Persons with Disabilities

- The advancement of an information society is broadening the opportunities for persons with disabilities to participate in social and economic activities. Information technology helps persons with disabilities to increase their social activities and frees them from physical limitations to eliminate the sense of social isolation or alienation. Moreover, IT enables the creation of jobs that do not require physical strength, thereby providing suitable jobs to improve their financial circumstances.
- The South Korean government has been providing IT training program to persons with disabilities from 1999 to improve their capacity to utilize information — which is currently weaker than that of average citizens — to help them adapt to a knowledge and information-based society without fear and participate in social and economic activities as human resources that become the source of national competitiveness. The goal of the IT training for persons with disabilities is to embody the “Digital Welfare Community” where they can enjoy the benefits of information technology such as increased income and enhanced quality of life by enhancing their awareness of information technology, upgrading their skills in using information technology through IT training, and having the same access to information as non-disabled persons through technology.
- IT training for persons with disabilities is provided according to the type and degree of disability. It is generally classified into three formats: group training taking place in the exclusive IT training center for each type of disability, in-home training for persons with serious disabilities and difficulties in moving, and IT professional training for those who have talent in information technology.
- When the program began in 1999, the training was given mostly in the form of group training and in welfare facilities and organizations for the disabled; since persons with serious disabilities have difficulty joining group training and can consequently be alienated from IT training, the in-home training was launched in 2003. Since 2004, professional IT training has been provided to persons showing talent in information technology to provide them with income opportunities.

Table IV-48 Institutes Participating in IT-Training for Persons with Disabilities Divided by Region/Disability Type

(unit: institutes)

Division	Seoul	Gyeonggi-do	Incheon	Busan	Ulsan	Gyeongsangnam-do	Gyeongsangbuk-do	Daejeon	Chungcheongbuk-do	Chungcheongnam-do	Daejeon	Jeollabuk-do	Jeollanam-do	Gwangju	Gangwon-do	Jeju Island	Total
Physical	21	7	4	5	4	4	2	20	6	4	7	5	6	7	4	3	109
Visual	6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	21
Hearing	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	17
Total	29	9	6	7	6	6	4	22	8	6	9	7	8	9	6	5	147

○ In 1999, only 3,099 people were trained through the program. However, the number has increased steadily, reaching 313,749 as of the end of 2007. Records of telephone and in-home training, which started in 2004, have also reached a cumulative total of 36,874. In 2007, 55,592 were trained through group training, 3,716 through in-home training, and 184 through professional training; consultation records reached a cumulative total of 18,248 consisting of 12,079 telephone consultations and 6,169 in-home consultations.

Table IV-49 IT-Training for Persons with Disabilities by Year

(unit: persons, cases)

Division		1999	2000	2001	2002	2003	2004	2005	2006	2007	Total
Training Records	Group Training	3,099	10,660	14,397	21,224	20,712	62,722	54,551	56,273	55,592	299,230
	In-Home	—	—	—	—	1,447	2,244	3,142	3,408	3,716	13,957
	IT-Professional	—	—	—	—	—	80	128	170	184	562
	Total	3,099	10,660	14,397	21,224	22,159	65,046	57,821	59,851	59,492	313,749
Consultation Records	Telephone	—	—	—	—	—	608	3,269	7,486	12,079	23,442
	In-Home	—	—	—	—	—	268	2,310	4,685	6,169	13,432
	Total	—	—	—	—	—	876	5,579	12,171	18,248	36,874

4) Information Education for Farmers and Fishermen

- The Ministry for Food, Agriculture, Forestry, and Fisheries provided IT training to a total of 580,000 agricultural people through municipal/county agricultural technology centers, local agricultural cooperative association offices, and agricultural universities from 1998 to 2007 to eliminate the information divide and cultivate the IT-enabled workforce required for incorporating information technology with agriculture and agricultural skills development.
- The IT training for agricultural people in 2007 consisted of 5 courses designed by considering the actual circumstances of farming villages and farmers; it was implemented through group training, in-field training, and online training.

Table IV-50 Curriculum for IT-Training for Agricultural People

Subject	Training Method and Contents	Institute in Charge
Computer and Internet	18 Hours/3 Days/No Camp Training, 30 Hours/5 Days/No Camp Training, Computer, Internet-Related Basic and Advanced Courses	Regional Agricultural Cooperative Association, Agricultural Technology Center
Agricultural Information	18 Hours/3 Days/No Camp Training, 30 Hours/5 Days/No Camp Training-Agricultural Information-Related Basic and Advanced Courses	
Agricultural Management Information Professional Training	30 Hours/5 Days/No Camp Training (Mid-term Course), 60 Hours/3~6 Months/Camp Training, No Camp Training (Long-Term Course)-Public Subscription for Training Institute	22 Agricultural Info-119s, Agricultural Training Center, Etc.
In-Home Training of Agricultural Info 119	Farm Village In-Home Training, Intensive Training on Subjects Requiring Intensive Management	22 Agricultural Info-119s, Universities
Informatization Leader In-Home Training	Farm Village In-Home Training, Computer Utilization, Utilization of Agricultural Information	Local Government (City/County)
Mobile School IT Training	18 Hours/3 Days/No Camp Training, Farm Village In-Home Training, Customized Training	Agriculture, Forestry, Fisheries Information Service
Online Training	Internet Training (Distance Training)-edu.affis.net	Agriculture, Forestry, Fisheries Information Service

○ Three hundred and ninety thousand (390,000) farmers received information education between 1998-2004, 67,000 in 2005, 63,000 in 2006, and 66,000 in 2007. Detailed records of training are presented as follows:

Table IV-51 Information Education for Farmers

(unit: people)

Division	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Basic Level	7,759	7,331	8,157	38,437	35,912	20,126	20,445	7,144	7,047	5,289
Intermediate Level	-	-	-	14,351	14,161	12,843	13,182	6,607	4,008	4,019
Mid-Term Course	-	-	-	-	-	-	-	1,766	2,139	2,591
Mid-Term Public Subscription Course	-	-	-	-	-	-	-	-	-	312
Professional Level	3,544	3,931	1,479	1,093	1,646	2,379	2,039	1,056	359	292
Agricultural Information 119 Service	600	2,188	10,109	15,077	15,126	13,098	13,190	12,074	10,044	10,044
Informatization Leader	-	-	-	-	1,374	9,897	16,292	23,943	29,858	32,608
Public Interest Service Project for Informatization	-	23,640	9,120	-	-	-	-	-	-	-
Mobile School for IT Training	-	-	998	2,102	2,288	2,090	1,230	570	512	542
Self-Training	1,171	2,041	3,298	4,678	9,750	10,838	6,821	8,069	2,915	2,741
Online Training	-	-	-	-	-	463	4,153	5,882	6,842	7,814
Total	13,074	39,131	33,161	75,738	80,257	71,734	77,352	67,111	63,724	66,252

○ Information education for fishermen is being conducted through the distance video training service of the Maritime Affairs & Fisheries HRD Institute and 29 Fisheries Offices, with the goal of training 100,000 fishermen by 2010. The ultimate goal is to eliminate the information divide in fishing villages, which are relatively less developed than cities, and to enhance information technology awareness to improve the quality of life for the fishermen. Information education for fishermen was im-

plemented in the form of group training by initially gathering trainees at the Maritime Affairs & Fisheries HRD Institute located far away since the training environment was not available. However, the Fishermen Information Training Center having distance video training system were established in 29 Fisheries Offices between 2000-2003, thus enabling them to now receive training at nearby fishery offices.

Table IV-52 Information Education for Fishermen

(unit: people)

Subject of Training		Courses	~2002	2003	2004	2005	2006	2007	Total
Group/ In-Field Training	Fishing People	Basic Training	18,083	3,611	3,802	3,886	2,959	2,985	35,326
		Management Training	4,846	2,562	2,604	2,420	1,740	1,671	16,843
	Fishing Village Instructor	Instructor Training	181	-	-	-	-	-	181
	Total		23,110	6,173	6,406	6,306	4,699	4,656	51,350
		Information Training	1,304	615	495	571	679	650	4,314
	Fishing People, Public Official	Video Meeting	1,652	3,366	2,921	2,139	490	450	11,018
	Total		6,778	6,900	7,484	7,849	5,267	5,667	39,945
Total			29,88	13,073	13,890	14,155	9,966	10,323	91,295

E. Issues and Development Strategies

- The Correspondence High School ended the radio-oriented teaching method and completed the conversion to an e-Learning system. Thus, e-Learning-based classes are expected to increase rapidly. Accessibility to contents will increase since all contents is open to general high school students in addition to the students of the Correspondence High School.
- Greater accessibility does not necessarily secure the use of contents by people; hence the need to produce higher-quality contents and promote PR activities in

addition to accessibility improvement.

- The preference for and the forecast of the e-Learning method of the Credit Bank System are quite high and positive. However, the intemperate behavior of some users who use e-Learning contents as a way of acquiring credits with ease rather than as a substantial way of learning are restricting e-Learning contents-based learning in the Credit Bank System. Currently, the Credit Bank System is institutionally restricting the ratio of e-Learning in the curriculum of regular educational institutes. Such restrictive measures are hampering the sharp increase of e-Learning use in the Credit Bank System.
- Considering the fact that a number of educational institutes and learners prefer distance education and that they also have a high preference for the e-Learning method, securing the quality of e-Learning and learner convenience will continuously be an issue for the Credit Bank System. Once quality is secured, the number of e-Learning courses offered by the Credit Bank will see a tremendous increase.
- The Military e-Learning system has made great progress; in fact, soldiers can use the portal system to develop competencies by learning foreign languages, acquiring licenses and even earning credits and accessing external contents since the military has the infrastructure for the development of e-Learning projects. More military e-Learning classes will be activated when the military is able to find more solutions for openness regarding certain security issues.
- Information education for the aged, illiterate people, persons with disabilities, and farmers and fishermen entails a huge effort and budget according to their distinctive needs. The success or failure of information education for neglected segments of the population depends heavily on government support given the difficulty of training many people in a short period, thus incurring considerable time and expense. Unless the government extensively increases the corresponding budget, information education for the neglected class will not improve to any considerable degree.

The rapid growth of e-Learning in South Korea is mainly attributed to the establishment of the lifelong education system. Because the first prerequisite of knowledge-based society is regarded as the paradigm shift from school-based knowledge to the lifelong learning, South Korean government has given time and effort to the renovation of educational system.

Since Koreans have a great desire for the elevation of their social status through formal education, lifelong education was developed as a supplement to formal education. For example, the Credit Bank System, Correspondence High Schools, Korea National Open University, and cyber universities whose function is granting degrees are the backbone of lifelong education. E-learning in these field records a remarkable development with great interest in the information technology.

This new form of education involves the transformation of pedagogy itself. Because face-to-face lectures are reformatted electronically before delivering to the students, course designers should assess the characteristics or traits of students as many as possible. The deliberate process of design renders e-Learning to learner-centered or individualized. Also, due to the impersonal nature of e-Learning, courses' contents must be enriched to both attract the attention and earn the trust of the public. It promotes educational methods and upgrades courses' contents.

On the other hand, demands for vocational training for national competency expanded along with the incorporation of advanced information technology. e-Learning was extended as an advanced educational method for promoting vocational competency and educational competitiveness in the context of human capital.

However, e-Learning often failed to enable learners to sharing and creating knowledge by themselves instead of accumulating or adapting knowledge. Although it has great potentiality as an educational method, the usage of e-Learning is not passed over a face-to-face learning within lecturing courses. Under these circumstances, e-Learning

in South Korea should address the following issues:

- 1.** Accessibility to the internet in South Korea is quite high with lesser information gap, but teaching and learning style follows old tradition of schooling in spite of the cultural campaign of lifelong learning centers. E-learning whose potentiality lies in the interactivity should be induced to facilitate multi-way communication especially for the alienated segment of people who only use the Internet as consumers.
- 2.** E-learning in South Korea is regarded as a form of education delivering lectures through LMS(Learning Management System). The precondition of LMS based e-Learning is the developed technology with high speed communication network. It promotes the amount and speed of information and knowledge. However, e-Learning in South Korea is mostly confined to the one-way communication without group discussion, so it also needed to reconsider the basis of educational philosophy. The ideal of e-Learning is a new paradigm of education such as comprehensive learning networks characterized by active participation of learners. This will become the foundation for u-Learning (ubiquitous learning) as a substantial basis for lifelong learning.
- 3.** E-learning requires Pan-governmental cooperative system for the effective and efficient initiatives. Although South Korea has many legal supporting systems comparing to other countries, there is a waste of time and resources to propel e-Learning strategies. Therefore, Korea set an example for other countries, building a cooperative system between the National Institute for Lifelong Education which is in charge of lifelong education and the Korea Education & Research Information Service which is in charge of internet-based learning.
- 4.** An e-Learning network at the international level is necessary for the activation for global characteristic of e-Learning. E-learning in South Korea has the limitation of being developed only within the country, not making full use of the global applicability of internet. The embodiment of e-Learning as a new paradigm beyond the existing education system could be the global cooperation through active exchange with other cultural areas with different education traditions.



e-Learning for Lifelong Learning in Thailand

06

Thapanee Thammetar

Thapanee Thammetar is the Director of Thailand Cyber University Project (TCU), Office of the Higher Education Commission. TCU is an ongoing project being carried out according to the National Education Act B.E, 1999 which put emphasis on expanding educational opportunities for people. The TCU acts as a learning resource sharing center and aims to assist all the higher education institutes to deliver distance learning via the Internet. It also works to ensure that all online courses are of a high quality and meet government standards.

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Prior to working at TCU, Assistant Professor Supanee was a lecturer in Physiology at Department of Physiology, Faculty of Pharmaceutical Science, Chulalongkorn University during 1974-2005. She was also the Deputy Director at the Continuing Education Center, Chulalongkorn University during 1998-2004.



Chapter 1 Educational systems

According to Thailand's National Education Act of B.E.2542 (1999), Chapter 3 "Educational System", Section 15, there shall be three types of education: formal, non-formal, and informal.

- 1) Formal education shall specify the aims, methods, curricula, duration, assessment, and evaluation conditional to its completion.
- 2) Non-formal education shall have flexibility in determining the aims, modalities, management procedures, duration, assessment and evaluation conditional to its completion. The contents and curricula for non-formal education shall be appropriate, respond to the requirements, and meet the needs of individual groups of learners.
- 3) Informal education shall enable learners to learn by themselves according to their interests, potentialities, readiness and opportunities available from persons, society, environment, media, or other sources of knowledge.

Educational institutions are authorized to provide any one or all of the three types of education.

Credits accumulated by learners shall be transferable within the same type or between different types of education, regardless whether the credits have been accumulated from the same or from different educational institutions, including learning from non-formal or informal education, vocational training, or from work experience.

Formal education is divided into two levels: basic education and higher education.

- Basic education is that provided for the 12 years before higher education.
- Differentiation of the levels and types of basic education shall be as prescribed in the ministerial regulations.
- Higher education is divided into two levels: lower-than-degree level and degree

level.

Differentiation or equivalence of the various levels of non-formal or informal education shall be as stipulated in the ministerial regulations.

Compulsory education shall be for nine years, requiring children aged seven to enroll in basic education institutions until the age of 16 with the exception of those who have already completed grade 9. Criteria and methods of calculating children's age shall be as stipulated in the ministerial regulations.

Early childhood and basic education shall be provided in the following institutions:

- 1) Early childhood development institutions, namely: child care centres; child development centres; pre-school child development centres of religious institutions; initial care centres for disabled children or those with special needs, or early childhood development centres under other names.
- 2) Schools, namely: state schools, private schools, and those under jurisdiction of Buddhist, or other religious institutions.
- 3) Learning centres, namely: those organized by non-formal education agencies, individuals, families, communities, community organizations, local administration organizations, private organizations, professional bodies, religious institutions, enterprises, hospitals, medical institutions, welfare institutes, and other social institutions.

Higher education shall be provided in universities, institutes, colleges or those under other names in accord with the laws on higher education institutions, those on the establishment of such institutions and other relevant laws.

Vocational education and occupational training shall be provided in educational institutions belonging to the State or the private sector, enterprises, or those organized through co-operation of educational institutions and enterprises, in accord with the Vocational Education Act and relevant laws.

Ministries, bureaus, departments, state enterprises, and other state agencies shall be

authorized to provide specialized education in accord with their needs and expertise, bearing in mind the national education policy and standard. The criteria, methods, and conditions as stipulated in the ministerial regulations shall be observed.

In addition Thailand's education in a school-related system, can be explained more specifically that education is provided by educational institutions, characterised by a class system, and the use of a curriculum specified for the level and type of education, so as to develop learners in accordance with curriculum objectives. On the other hand, education from the way-of-life learning process is self-learning from various sources of knowledge and the environment, which is related to ways of life naturally existing or modified to enhance it, coupled to service learning.

Education in a school-related system is divided into four levels: pre-school education, primary education, secondary education and higher education.

- 1) Pre-School Education is in the form of childcare and the readiness development of children in physical, psychological, mental, emotional, personality, and social aspects so as to prepare them for higher levels of education. The provision of education at this level can be organised in the form of day-care centres, kindergarten, or child development centres, depending upon local conditions and target groups.
- 2) Primary Education aims to provide a basis for learners to retain literacy and arithmetic ability, to form a desirable character and encompass morality, ethics, basic knowledge and ability.
- 3) Secondary Education is divided into two parts, i.e., lower secondary and upper secondary education.
 - a) Lower Secondary Education aims to promote learners' morality, knowledge, ability and skills beyond the primary level. To enable them to identify their needs and interests, to be aware of their aptitude both in general and vocational education; and to develop their ability for work and occupational practices relevant to their age.

- b) Upper Secondary Education aims to enable learners to progress according to their aptitude and interests, and acquire the basis either for furthering to higher education or for working and pursuing a career suitable for their aptitude both as entrepreneurs and paid workers. To promote their morality, ethics, and social skills necessary for working pursuing, a career and leading peaceful social lives.
- 4) Higher Education is divided into 3 levels, i.e., lower than Bachelor's Degree level, Bachelor's Degree level, and Graduate level.
- a) Lower than Bachelor's Degree Level aims to promote learners' knowledge and vocational skills at middle level, including their ability to initiate jobs and develop entrepreneurship.
 - b) Bachelor's Degree Level aims to promote learners' higher level of knowledge and vocational skills in various disciplines, especially the ability to apply theories to practices for both academic and professional development. To create and disseminate knowledge, to participate in national development with relation to economic, social, political, cultural and environmental aspects, and to promote the role of the nation in the world community.
 - c) Graduate Level aims to promote learners' specialised knowledge and skills. To strive for academic progress and excellence, especially in studies, research and development of knowledge and technology in science, humanities and social sciences. To facilitate the adoption of modern technology and local Thai wisdom for economic and social development, instrumental to Thai society.

In addition, education in a school-related system is provided for specific needs and target groups, some of which are:

- a. Teacher Education aims to train and develop prospective, as well as practicing teachers, who have acquired morality, knowledge, ability and skills in teaching and motivating learners to learn; to be mindful of professionalism, spirit

and responsibility of teachers. To serve as a role model for learners regarding social behaviour, life style and preservation of the national language and culture; to develop an inquiring mind and engage in the continuous improvement of themselves and their teaching capability. To engage in community development, as well as in rehabilitation, conservation and enrichment of the local and national environment and culture.

- b. Vocational Education aims to enable learners to develop vocational knowledge and skills useful for working both as entrepreneurs and as paid workers; and to make a decent living.

Vocational education can be organized in both formal and non-formal systems. Vocational education in the formal school system is a development of occupational knowledge and skills relevant to each level of education from primary to higher levels. It also includes the development of vocational education in the non-formal system is short-course training in specific occupations, for those needing to upgrade their knowledge and skills of specific vocational skills and expertise which require a long period of training from childhood, such as dancing, music and sports. Such education can be provided in special institutes created for the purpose, or incorporated in the general curricula.

Special Education aims to enable learners who are physically, mentally, psychologically and emotionally handicapped to undertake learning suitable for their conditions and capability. On the other hand, it enables geniuses or talented learners to develop their aptitude to the fullest potential and maximize their ingenuity. Special education can be provided in special institutes or in general educational institutions, from pre-school to higher educational levels.

The concept of “lifelong education” began to gain global attention in 1970s. Recent developments of the lifelong learning concept have been shaped by the divergent principles on education of the two leading international organization in the field: the United Nations Educational Scientific and Cultural Organization (UNESCO), and the Organization of Economic Corporation and Development (OECD).

According to UNESCO, lifelong learning is meant to enhance human development and the fulfillment of man. (UNESCO 1972):

- Educational from now on can no longer be defined in relation to a fixed content which has to be assimilated, but must be conceived of as a process in the human being, who thereby learns to express himself, to communicate and to question the world, through his various experiences, and increasingly – all the time – to fulfill himself. (UNESCO 1972)

The OECD develops lifelong learning from a human capital perspective. This builds on the OECD’s recurrent education policy. Lifelong learning is seen as the means to upgrade individual’s skill to be compatible with technological development and the changing world of work. (OECD 1996)

As for e-Learning, it will be defined as an online learning via the internet. It is a self-paced learning which learners can study at their own capacity and interest. Learning contents which consist of text message, pictures, audio, video, and other media are delivered via web browser. Students and teachers can communicate via tools such as e-mail, web-board, and chat. e-Learning, therefore, enables anyone to study anywhere and anytime (Thailand Cyber University Project [TCU] 2006).

Lifelong learning is now a current concern for most countries including Thailand. The whole spectrum of lifelong learning confirms the important of education and training that can ensure sustainable country development. In Thailand, the 1997 Thai Constitution and the Thai National Economic and Social Development Plan guide the government's education and training policies. The Constitution specifies that all citizens have both the right and the duty to receive education and training, guarantees academic freedom and emphasizes the role of the private sector for the provision of education at all levels.

The Ninth National Economic and Social Development Plan confirms that Thai society should be grounded in learning and wisdom, providing opportunities for all to develop their capacities for thought, rationality, creativity and continuous learning in order that citizens can cope with a changing environment.

The Tenth National Economic and Social Development Plan for the period 2007~2011 states that the government should provide all persons with physical and mental development, knowledge, ability, career skills, and life security, and enable all target groups to develop their own potential and strengthen family, community, and society.

In educational sphere, lifelong learning was introduced in the National Education Act of 1999 as a new guiding principle for Thai education that would ensure economic competitiveness and ascertain sustainable development. The lifelong learning concept became central to the Act. In Section 8, it states:

- Educational provision shall be based on... (1) lifelong education for all, (2) all segment of society participating in the provision of education: and (3) continuous development of the bodies of knowledge edge and learning processes...

The Office of Higher Education Commission Thailand introduces the Second Long-

Term Plan for Higher Education (2007-2021). The 15-year plan embraces an aggressive plan based on a clear understanding of the future trends and responding to the dynamism of the world and the surrounding environment.

The plan aims to upgrade Thailand's Higher Education sector and increase the quality of human resources in order to be equipped with lifelong job opportunities. Also, the plan suggests that Higher Education should develop and implement ICT to expand lifelong learning opportunity.

There are 3 dimensions to lifelong learning in Thailand's higher education policy.

- 1) It encourages individuals to continue to learn after their graduation in order to keep up with the changing global environment.
- 2) Lifelong learning offers a “*second chance*” to those who “*missed out*” to return to formal education.
- 3) Lifelong learning is discussed in relation to adult education, especially for the elderly.

It can be seen that the government has issues several lifelong learning policies. The policies appear on the national level policies such as the Constitution as well as in the ministry-level plan. This shows that the government concerns about lifelong learning which is an important foundation of knowledge-based society that will lead to the sustainable development of the country.

Chapter 4

Status and Characteristics of e-Learning for lifelong learning

e-Learning has long been introduced in Thailand. It was implemented as a means of expanding educational opportunity for people anywhere and anytime and thus pro-

moted lifelong learning society.

The research on e-Learning Implementation of Thai Higher Education conducted by Assoc. Prof. Thanomporn Laohajratsang at Chiangmai University, has surveyed the readiness of e-Learning of Thai higher education institutes during 2008-2009. The survey findings were gathered from 91 higher education institutes under the Office of the Higher Education Commission out of 112 higher education institutes in Thailand, or 81.25 percent. The research found the result in the following areas;

4.1 Computer network connection in educational institutes

Most higher educational institutes utilize Leased Line network connection, offering service in their organization, and have a network connection with a bandwidth speed of 2 Mbps or higher. This finding demonstrates computer network technology that is applied in educational institutes responding the survey. The technology is qualified and ready to serve personnel and students in the organization.

Table 1 Internet connection in educational institutes

Detail	Percentage (N=91)
Internet connection in educational institutes	
Dial Up	11.63
ISDN	18.6
Lease Line	69.57
Others	0
Band Width	
256 Kbps or lower	0.99
256 Kbps – 1 Mbps	1.98
1 Mbps – 2 Mbps	13.86
2 Mbps or higher	82.18
No connection	0.99

4.2 e-Learning usages in educational institutes

According to the survey, 94.51 percent of educational institutes provide e-Learning service in their institute. Among these institutes, 38.37 percent has implemented the system for three to five years.

Table 2 e-Learning usages in educational institutes

Detail	N=91	Percentage
Using e-Learning in institutes		
Yes	86	94.51
No	5	5.49
Period of using e-Learning		
Less than 1 year	12	11.63
1-3 year	24.42	24.42
3-5 year	34	38.37
More than 5 year	19	22.09

4.3 e-Learning services in educational institutes

Most of the institutes have a central e-Learning system and sub-systems for each office and department in the institutes. The widely used systems are the Learning Management System in freeware form, course homepage or webpage that are devel

Table 3 Central e-Learning in educational institutes

Detail	Percentage
Having central e-Learning system	
Yes	80.22
No	19.78

oped by personnel in the institutes as well as the TCU (Thailand Cyber University) system and the Commercial Learning Management System.

Table 4 e-Learning system or Learning Management System in educational institutes

Detail	Percentage
e-Learning system or Learning Management System used	
Open source (i.e. Moodle, Atutor)	48.57
System that was developed by personnel in the institutes	20
Commercial Learning Management System (i.e. Blackboard, Education Sphere)	16.19
Thailand Cyber University Learning Management System (TCU-LMS)	11.43
Others	3.81

4.4 Information about e-Learning courseware usage

Instructors use e-Learning as supplementary, complementary and comprehensive replacement in the percentage of 52.24, 39.55, and 8.21 respectively.

Table 5 e-Learning courseware usage

Detail	Percentage
Supplementary	52.24
Complementary	39.55
Comprehensive replacement	8.21

Above is an overview about e-Learning in higher education institutes. As for e-Learning for lifelong learning in Thailand, it can be explained as follows. In Thailand, there are two public open universities. The two universities are open for

all, both high school graduates and people in labour market. They enable workers who did not have a formal education degree to take an equivalent educational route, returning to formal education and get the degree. They also provide the short courses for people who need to develop their skills for career.

Sukhothai Thammathirat Open University is the first distance education university in Thailand. It uses several media for providing distance education. The university has developed e-Learning courses and provides them online. The courses consist of Bachelor's Degree Programme and Master Degree Programme. Also, it provides on-line certificate degree programme or e-Training for general people who need to develop their skills.



Figure 1 Sukhothai Thammathirat Open University's e-Learning website

The second open university is Ramkhamhaeng University. Ramkhamhaeng University is the first knowledge supermarket for the high school graduates who need the first or second degree. It has developed e-Learning courses and provided them online.



Figure 2 Ramkhamhaeng University's e-Learning website

Thai Ministry of Education established the Office of the Non-Formal and Informal Education (ONIE) in 1979 as to be the main organization responsible for non-formal education and informal education. It has the vision in building up the extensive intellectual society by promoting an access of quality lifelong learning among the people across the country.

The Office of the Non-Formal and Informal Education has established regional offices which developed their e-Learning in various courses. There are 5 regional offices: North, Northeastern, Central, East, and South. They provide e-Training courses for developing skills of teachers free of charge.

The Office of Higher Education Commission established the Inter university ICT Network or UniNet and Thailand Cyber University project to provide informal education with the use of ICT.

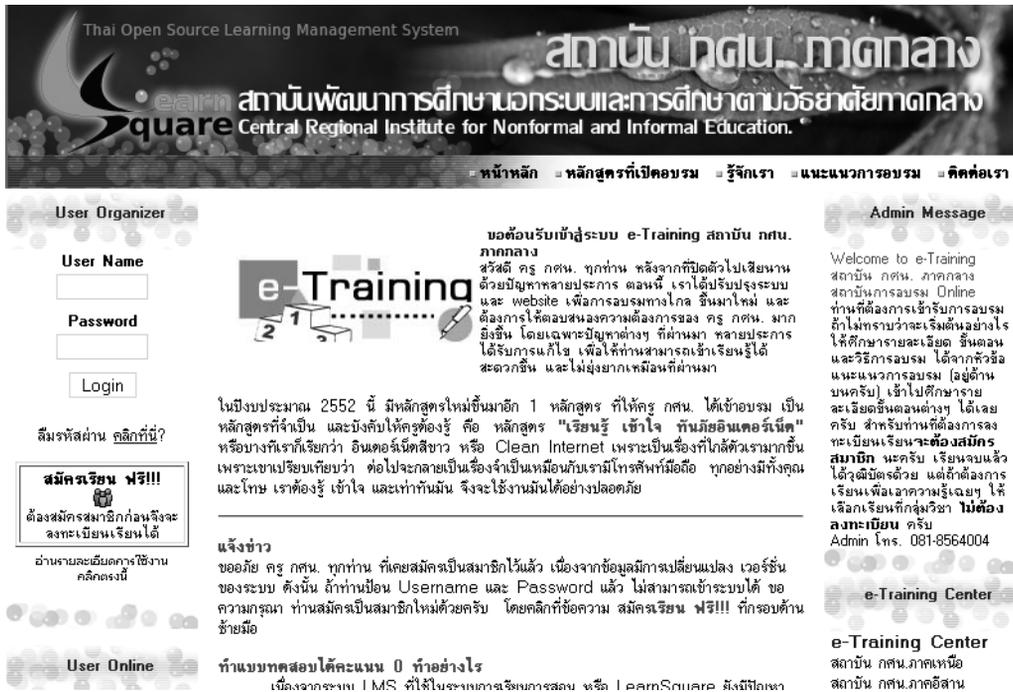


Figure 3 ONIE's e-Learning website

Chapter 5 Typical e-Learning for lifelong learning

This chapter will give detail about a specific example of an organization that provides e-Learning for lifelong learning.

Higher education in Thailand has faced many challenges since 1999. The new National Educational Act, which was launched in 1999 (modified in 2002), caused many paradigm shifts in educational context, the equal opportunity to learn for all students, the learner-centered approach, the establishment of “The Office for

National Education Standards and Quality Assessment” as quality assurance body for all educational levels, and the using of educational technology to enhance the effectiveness and efficiency of teaching and learning. On the other hand, the number of higher educational institutes has grown dramatically from 24 to 149 universities. Thailand Cyber University Project (TCU) is one of the Office of Higher Education Commission’s strategies for responding to the educational reform and addresses the situation.

TCU’s missions are to extend the educational opportunity for Thais and other nationalities and encourage lifelong learning. By cooperating with all existing universities, TCU is providing online distance education in quality ways. It encourages sharing of resources to raise the level of quality of online distance education in Thailand. Thailand Cyber University Project has set 3 operating strategies and achieved the results as follows:

Strategy 1 Creating the cooperation in learning management among domestic and international universities to produce an efficiency and cost-effectiveness of education management by sharing personnel, educational resources and courseware. The Thailand Cyber University Project has created academic and research cooperation in distance education via network system with 39 domestic and international universities and institutes and jointly conducted 45 projects. The TCU also expanded its cooperation to basic education.

TCU joined with universities in consortium to establish the Networks for Lifelong Learning Project to promote and support the sharing of learning resources and create the community of learning. The project includes:

- 1) Repository Network System
- 2) Wiki
- 3) TCUTube
- 4) ePortfolio
- 5) OpenSource Initiatives
- 6) National Knowledge Management

Strategy 2 Providing distance education via Thailand's information network system.

The Thailand Cyber University Project has developed a central e-Learning system for Thai higher education that supports the sharing of learning resources effectively. The TCU provides “Learning on Demand” service, including 498 courseware (over 8,500 learning hours), via <http://www.thaicyperu.go.th>. More than 147,000 users have registered and more than 2,000,000 people have studied the courseware. It has produced 20 classes of graduates in certificate programmes, with more than 7,000 people participating. As for formal education, the TCU has cooperated with universities to operate one Bachelor's Degree programme and one Master's Degree programme (these programmes are available in the first semester of academic year 2006). Also, it has held workshops on producing e-Learning content and setting up Learning Management System (TCU-LMS) to educational personnel. There are more than 14,000 people attending the workshops.



Figure 4 TCU's website

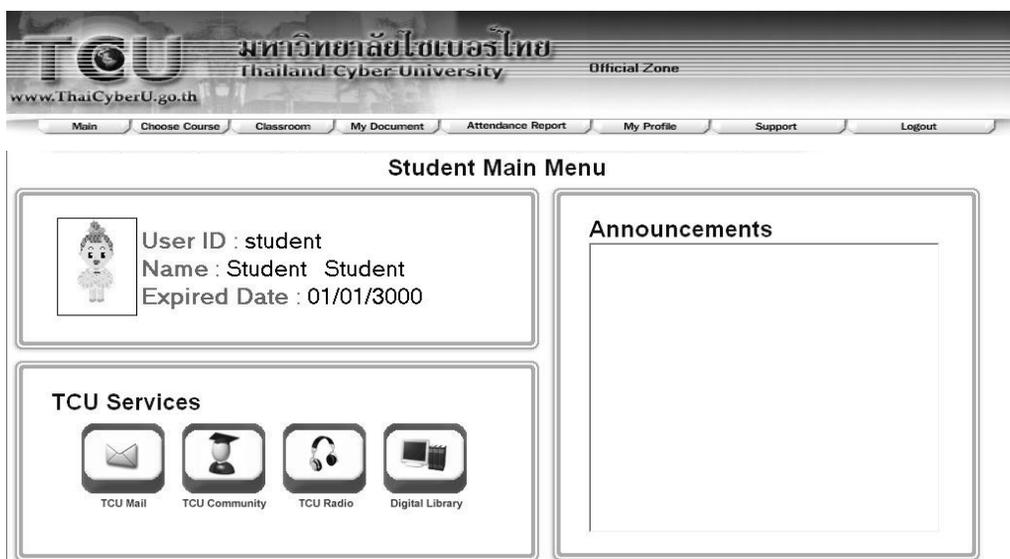


Figure 5 TCU Learning Management System (TCU-LMS)

Total of self-paced learning courses classified by ISCED

Table 6 Number of self-paced learning courses classified by ISCED

ISCED	Number of Courses	Percentage
Education Science and Teacher Training	9	1.81
Humanities, Religion and Theology	30	6.02
Fine and Applied Arts	2	0.40
Law	11	2.21
Social and Behavioural Science	40	8.03
Commercial and Business	59	11.85
Mass Communication and Documentation	22	4.42
Service Trades	15	3.1
Natural Science	24	4.82
Mathematics and Computer Science	92	18.47
Medical Science and Health-Related	14	2.81
Engineering	133	26.71
Architecture and Town Planning	6	1.20
Agriculture, Forestry and Fishery	33	6.63
Other Programs	8	1.61
Total	498	

The majority age group of students who study in self-paced learning courses is between 27-39 years old, 39.40 percent.

Table 7 Number of self-paced course registrations classified by student's age group

Age group	Total	Percentage
0 ~ 19	11,627	7.90%
20 ~ 26	44,688	30.36%
27 ~ 39	57,993	39.40%
40 ~ 46	14,284	9.70%
47 ~ 57	13,424	9.12%
>= 58	5,167	3.40%
Grand Total	147,183	100%

The majorities of students are studying in Bachelor's Degree or graduated Bachelor's Degree.

Table 8 Number of self-paced course registrations classified by student's education level

Education level	Total	Percentage
Primary level	4,100	2.79%
Secondary level	15,370	10.44%
Vocational	3,752	2.55%
Diploma	4,950	3.36%
Bachelor's Degree	49,293	33.49%
Graduate Diploma	995	0.68%
Graduate Diploma	16,025	10.89%
Higher Graduate Diploma	1,017	0.69%
Doctoral Degree	1,048	0.71%
N/A	50,633	34.40%
Grand Total	147,183	100%

Strategy 3 Conducting research and development of standards and quality assurance of distance education via Thailand's information network system. The Thailand Cyber University Project has worked with the joint universities to conduct 10 research projects for developing quality system in distance education via network system. Example of the research projects are;

- Research on developing Game Based-Learning
- Research on National Learning Management System
- Research on the Survey of e-Learning in Thai Higher Education

The Direction to the Future: Toward Sustainable Development

During the first phase of its operation, TCU has conducted the researches on the operation function of the organization. The research methodology includes SWOT Analysis of TCU, gathering opinions from university staff, and collecting opinions of experts.

After collecting and analyzing information, TCU has reviewed and revised its functions. Then, it has created and developed a sustainable model of the operation. The main principles of the model are “sustainability and optimal development.” The main procedures are “Prototype and Expanding to regional communities.” The model consists of four key components which are innovation, continue innovation, improve innovation and systematic change. Each component and approaches are presented in three phases during the 12 years plan (2005~2017). The first phase has been implemented in year 2005~2008. The second phase will be implemented in year 2009~2012. The third phase will be implemented in year 2013~2017.

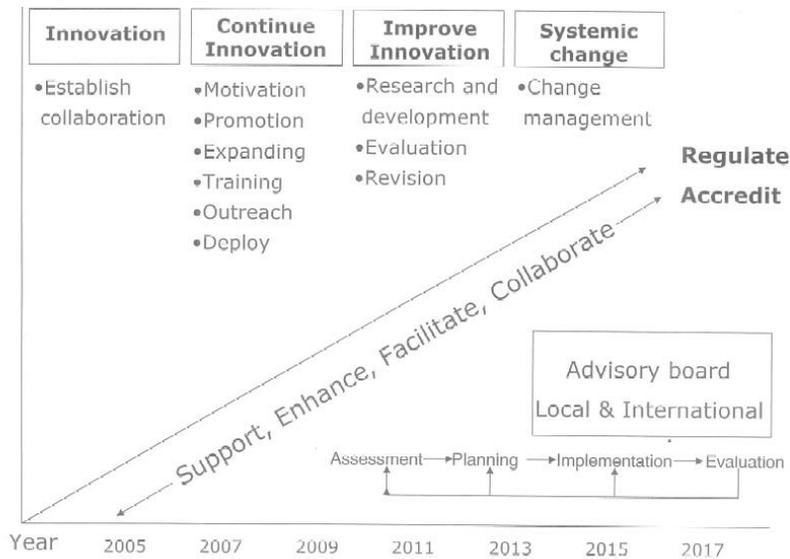


Figure 6 Model of TCU's function

TCU's main functions during the first and second phases are supporting, enhancing, facilitating and collaborating. In order to shift TCU's main function to be regulator and accreditor in the third phase, TCU will set up 9 regional e-Learning supporting centers according to the regional network centers of CHE. This strategy will lead to more cooperation, more sharing and more responsibilities from the university in each region. Also, TCU will have a chance to deploy the action plan for increasing teacher's capability to use ICT in education and improving the quality of education. The strategy emphasizes on the cooperation between community and private organisations to create quality e-Learning programmes for all education levels which include lifelong learning. This will lead to sustainable development.

Business Model for Regional e-Learning Supporting Center

Appendix 3

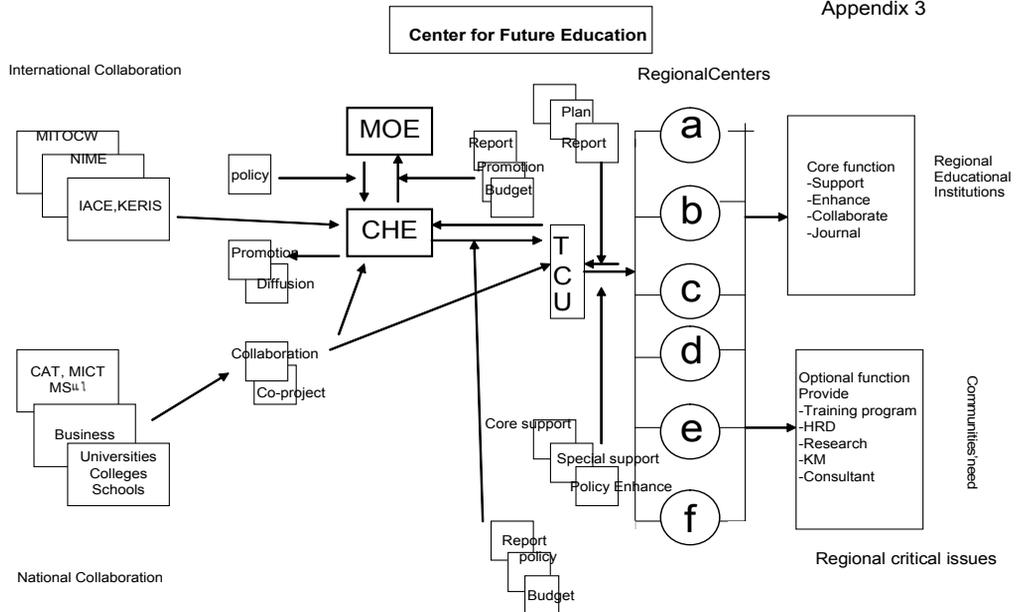


Figure 7 Business Model of Regional e-Learning Supporting Center

The regional e-Learning supporting center will conduct 2 missions.

- 1) Main Mission – Receiving policy from the central government and acting as a tri-parties to support and promote network cooperation among educational institutes at all levels, private organizations, and regional administrative organizations in order to support, assist, cooperate and manage knowledge to develop the potential and quality of people at all walks of life by utilizing information technology to offer quality education that respond to the community’s needs, using materials and human resource that are primarily invested by the central government.
- 2) Regional Mission – Conducting special researching project, offering advice, developing and managing knowledge for the region by gathering comments and demand from the region to develop people in that region. Submitting an annual report to the center. TCU will cooperate between the regional center and the Commission on Higher Education.

TCU has been operating for four years. Its mission has been revised and modified to respond to the need of more open education to create equal opportunity of education of people at all levels. One of the strategies to achieve the goal is to establish regional support centers. This is in accordance with the policy of the Commission on Higher Education. Universities suggest that TCU should still remain the functions in supporting budget, being the center for sharing knowledge for the research and development, providing the training for educational personnel, and being the center to evaluate the quality of online learning according to international standard.

Chapter 6 Recommendations and Prospects

In conclusion, Thai government has clear policy supporting the expansion of education opportunity and lifelong learning.

Lifelong Learning has been operating in Thailand with the cooperation from many sectors. In the past few years ICT has been implemented in education. E-learning has been used to support lifelong learning. Two open universities in Thailand have provided e-Learning programmes for people. The Office on the Higher Education Commission established Thailand Cyber University Project as a center to support e-Learning in higher institutes. For the past few years, TCU has expanded its service to other sectors such as private organizations and general people.

Finally, to operate lifelong learning successfully, it is necessary to have the cooperation from stakeholders in the society, including government, private sector, as well as general public.



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