Promises and Challenges of Virtual Universities: Korea's Experience

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1. Expansion in education

The 1960s and 1970s saw a substantial expansion in education in Korea, resulting in universal primary and secondary education which, in turn, gave rise to remarkable economic progress and changes in politics, society and culture.

This period also saw major reforms in student and teacher education and the Korea Education Development Institute (KEDI) was established to lead reform and new approaches in education.

1.1 Development of ICT-based Distance Teaching Institutions

During the 1970s and 1980s, the number of students in secondary education had increased sharply, which gave rise to overkeen competition for places in the higher education institutions. Solutions to this explosion at the middle and high school levels included an expansion of vocational educational programmes and the establishment of the Air and Correspondence High School (ACHS) and the Korea Air and Correspondence University (later renamed the Korea National Open University: KNOU) to give young people from underprivileged families and adults seeking further education access to secondary and higher education. Distance education was initially conceived in Korea as a new educational avenue for the growing population of secondary school graduates and also, in part, a way of introducing lifelong education to working adults. As seen in many other countries, distance education institutions in Korea, when they were first introduced into the formal education system, were largely considered second choice or lower grade institutions compared to campus-based institutions.

1.2 Educational Broadcasting System (EBS)

In the 1980s, the Korean government introduced national policies to improve the quality of education. The formation of a sound personality through education and the reform of civil education, with an emphasis on science and lifelong education, were articulated as the nation's top priorities. As such, the government launched the exclusive Educational Broadcasting System (EBS) to improve the quality of primary and secondary education, founded a national computer education centre, and initiated a new education tax policy to secure financial resources for school investment. Successes included reforms aimed at

developing high-level human resources in science and technology, a dramatic increase in investment in education, quality improvement in schools using broadcast programmes, and the pursuit of excellence in higher education.

1.3 Encouraging Effective Use of Advanced Technologies in Schools

In the 1990s, Korea focused on the fulfilment of the public need for higher education and lifelong learning, and the effective use of advanced technologies in schools. The government's plans and action strategies for open lifelong education and technology have been developed according to the suggestions made by the Presidential Commission on Education Reform since 1995 (Presidential Commission on Education Reform 1997). The Commission, established in February 1994 and effective until February 1998, defined the goal of the Korean Education System in the 21st century as an 'Edutopia', meaning 'an education welfare state — a society of open and lifelong education to allow each and every individual equal and easy access to education at any time and place'.

1.4 Establishment of ICT Supporting Organizations

The independent Bureau of Educational Information and Technology was established in 1996 to promote the active implementation of the national policy that focuses on the use of information and communication technologies in education and research. The Korea Research and Information Centre (KRIC) and the Korea Multimedia Education Centre (KMEC) were founded in 1997. Using government funds, KRIC provides information services for professionals in higher education with its own server and network system. Online journal articles, research papers, academic databases and other academic materials are provided to professors and researchers in Korea. Membership is required, but no individual payment is required for the use of KRIC's services.

KMEC supports the implementation of virtual education in primary and secondary schools and provides online teacher training. Using government funds, KMEC conducts various activities such as research into the current use of technology in schools, implementing technology initiatives in schools, developing online learning materials for teachers, students and parents, supporting schools in creating their homepages, and providing a comprehensive educational Internet service called EduNet.

In April 1999, KRIC and KMEC were united to become the Korea Education and Research Information Services.

2. Development of Single-Mode Virtual Universities

In 1997, the Commission recommended the establishment of a virtual university which offers information technology (IT) – based distance education programs as a possible means of realizing an Edutopia (Jung & Choi, 1998). In 1998, the government initiated the Virtual University Trial Project (VUTP) under which sixty-five higher education institutions[1] in Korea and several private companies have used advanced technologies to deliver distance education to university students and working adults.

2.1 Virtual University Trial Project: its objectives

Until recently, Korea had only one distance teaching university, the Korea National Open University. In 1998, the Korean government established two-year VUTP, which was designed to: 1) create a cost-effective virtual education system without the quality diminishing; 2) develop and implement Web-based or other types of distance education courses; 3) identify appropriate policies and standards for running a virtual university; and 4) share experiences during the trial period to February 2000 (Ministry of Education, 1998).

2.2 Implementation

Sixty-five universities and five companies have participated in the VUTP; eight conventional universities participated independently without forming a consortium, and 57 universities and five companies have formed seven consortia. Each of the eight campus-based universities has established a virtual campus within its own university system, and each of the seven consortia has established a virtual institution outside of its member organizations. The government encouraged both partnerships among universities and the private sector, and the sharing of existing resources in providing distance education to university students and adults. The VUTP has inspired about 20% of formal higher education institutions and five private companies in Korea to collaborate in providing virtual courses using advanced technologies and to explore the possibility of incorporating distance education into the campus-based system and even to establish a distance teaching university using new modes of technology in the near future (Jung, 1999).

Three major implementation strategies hae been found to help reduce costs for institutions offering virtual education programs: maximizing the use of existing ICTs, sharing physical and human resources, and providing extensive faculty training.

Since the institutions participating in VUTP received no initial funding from the government, they all had to provide their own grants to establish the virtual programs. To minimize investment, these institutions used existing hardware and network systems, and

most formed a consortium to share costs and resources. In line with the national technology implementation policy for higher education, most colleges and universities have also established a solid server system and are linked to the high-speed educational network or the national information superhighway.

Some universities established videoconferencying systems and were using satellite channels to deliver courses. Collaborative development of virtual courses and team teaching among professors from member institutions is encouraged, although these types of collaboration have been limited so far because there is little or no systematic support for this type of collaboration or simply because professors prefer to work independently. Production facilities and computer network systems are shared extensively, however.

In most conventional universities, one of the biggest chanllenges to the introduction of virtual courses is quality assurance of their virtual courses. To help academics better design and develop virtual education programs, most of VUTP's participating institutions have provide faculty training that emphasizes effective design and management of virtual education programs. Some have gone a step further, providing faculty with on-demand technical assistance and continuous training.

2.3 Outcomes and Policy Changes

All the institutions involved in the VUTP have taken on the task to expand distance education throughout the country using interactive technologies. The VUTP has stimulated new experiments with various advanced technologies such as satellite broadcasting, videoconferencing, video-on-demand, the Internet and the intranet in delivering distance education. Issues of quality of distance education have been raised and explored. VTTP helped integrate distance education more firmly into the formal higher education system and upgrade the status of distance education.

The Virtual University Trial Project has increased collaboration among colleges, universities and companies (Jung, 2000). Despite their lack of prior experience in such collaboration, many of these institutions have developed highly successful virtual programs and have entered into formal relationships with foreign virtual universities. Partnerships reduce the burden to single providers by distributing costs across partners. By forming appropriate partnerships with business, universities which participated in VUTP were able to diminish their investment risks. The Korean government encouraged such partnerships by instituting policies that provided incentives for private participation and investment in virtual education programs.

In addition, several evaluation studies conducted by Project participants showed that overall, students were satisfied with the flexibility offered by virtual courses. According to the studies, between 70 – 85 % of the students enrolled in virtual courses of different institutions were satisfied, and said that they would like to see more virtual offerings in the future. Slow network speed and insufficient student support were two main complaints from the students.

During its two-year trial period, the Ministry of Education revised the Lifelong Education Law to accept private virtual universities as part of the formal higher education system. After this period ended in the year 2000 and detailed criteria for establishing a virtual univeristy were specified in the Law, nine "cyberuniversities" approved by the Korean government started operating March 2001. The institutions focus on lifelong learning and vocational education rather than replacing or competing with traditional colleges in the nation. Seven more virtual universities are expected to be open in 2003. Table 1 shows the list of those nine virtual universities.

Table 1. The List of Virtual Universities

University Name & U.R.L	Areas of Study	Projected enrollment
1.Korea Cyber University http://www.kcu.or.kr	digital-media design, venture management, law, languages, information communication	900
2. Korea Digital University http://www.koreadu.ac.kr	digital education, information, management, and media; culture and art, social welfare, languages	900
3. Kunghee Cyber University http://www.khcu.ac.kr	media literature, e-business, digital multimedia	800
4. Open Cyber University http://www.ocu.ac.kr	Internet management, computer design, Internet languages	800
5. Sejong Cyber University http://www.cybersejong.ac.kr	hotel and tourism management, e-business, the Internet, cartoon animation	500
6. SeMin Digital College http://www.kcc.ac.kr	English translation, digital media, hotel and tourism management	120
7. Seoul Cyber University http://www.iscu.ac.kr	cultural policies, event management, technical writing, e-commerce	900
8. Seoul Digital University http://www.sdu.ac.kr	law and police administration, e-business, animation and game design, China and Japan studies	800
9. World Cyber University http://www.world.ac.kr	social welfare, hotel foods, health foods, e-business, music	500
		Total 6,220

An average enrollment rate in the first semester, 2001 was 86.7%. It is shown that more students prefer certificate-related and computer-based curriculum to law, administration, and other social science. 64% of the students were males. 50.2% were in their 20's, 31.7% in their 30's and 1.6% in their 40's. Around 70% of the students came from Seoul and Kyunggi area. 72% used ASDL, 23% LAN and only 5% used Modem to access online courses (Cho, 2001).

3. Virtual Education in Conventional University Context

ICT-based virtual education has been emerging as an increasingly important component of conventional universities. Besides independent virtual universities in Korea, more than one hundred conventional higher education institutions have introduced internet-based virtual courses into their curriculum. For example, as a conventional university in Korea, Ewha Womans University has provided virtual education programs to its students, other universities' students, working adults including teachers, and foreign students. (http://cyber.ewha.ac.kr)

In April 2001, the Korean University Alliance for Cyber Education (KUACE: http://www.kuace.org) was formed to share knowledge and experiences in developing and managing virtual education programs among those institutions which have or will have virtual education programs.

In this part of the paper, I will introduce a virtual education project at Ewha Womans University, which intends to contribute to building an international learning community in cyberspace.

3.1 International Cyber University: A virtual education program at Ewha

Ewha Womans University has, for almost 10 years, worked on expanding learning opportunities for students of Ewha, other college students, and the general public through cyber education. Furthermore, cyber education, at Ewha, has taken an important role in the development of in-depth studies in the fields of Women's and Korean studies. Building on such experience, Ewha is endeavoring to create virtual education courses in Korean and Women's studies to be provided to people all around the world.

International Cyber University (ICU: http://icu.ewha.ac.kr) was established to provide the global population with college-level virtual courses in Korean and Women's studies. Those interested in Korean studies and/or Women's studies can log onto ICU at their convenience, wherever they are and whenever they can, to participate in these virtual courses. Students

of schools that have exchange program arrangements with Ewha may use ICU without additional tuition fees and may have the credits earned at ICU transferred to their school. Other students have to pay $ 150 USD per each credit ($ 450 per course).

The Women's and Korean studies courses are ICU's first attempt at targeting the global population. To ensure efficiency, the courses have been designed with simple and clear structures. Renowned experts in each field participated in creating the course contents. All the courses of ICU are designed and developed by a team of instructional design experts, web design specialists, and other professionals committed to the development of high quality internet-based distance courses. Online tutors and technical assistants provide learning and technical support during the process.

While the 6 courses[2] currently offered are at the undergraduate level, in a few years more sophisticated courses corresponding with master's and doctoral level courses will also be offered. In particular, for Korean studies, students will actually be able to earn Master's or Doctoral degrees. World experts in Korean studies and Women's studies will participate in the development of these courses.

3.2 CyberMBA: an Ajou University' Business School program

Ajou University's Business School has operated a CyberMBA program in collaboration with several business partners such as Korea Telecom, Joongang Daily News, and Samsung SDS since March 2000. The program offers MBA general, e-business strategic MBA, and AICPA & MBA combination as major study fields and adopts a model of on-demand distance education on the Internet.(http://www.ajoumba.ac.kr/)

The CyberMBA was the first online MBA program in the country. All the courses in the program are delivered through the Internet. The quality of the courses is assured by using the same curriculum and faculty members from Ajou Univeristy, adopting instructional design strategies in developing online courses, and combining online interaction with offline tutoring sessions.

Students who want to be admitted to Ajou CyberMBA have to submit current resume or curriculum vitae, proof of a Bachelor's Degree from an accredited college or university, as well as official transcripts from all the colleges or universities previously attended. In addition, online interview is required. International students who would like to apply for admission to an Ajou program must have their transcripts evaluated as an equivalent to Korea's baccalaureate degree and show proficiency in Korean language.

Four hundred thirty students have been admitted to the program since March 2000. More than 92% are males and around 75% are 20's and 30's. Dropout rate is less than 10%. Several students are those who work abroad (Japan, USA, Germany, Moroco, Indonesia, etc.).

It is evaluated by several Newspapers that the CyberMBA program has shown a successful online education business model by creating high quality MBA program, providing individualized student supports, and attracting Korean workers working abroad. But we need more objective data to prove effectiveness and educational quality of the program. The CyberMBA is trying to expand its services to more students as online education demand increases. However, it is indicated that admission quarter set by the Korean Ministry of Education and Human Resources does not allow this expansion.

4. Implications for Policy and Future Directions

Recent developments in virtual education in Korea show that more and more higher education institutions, including colleges, universities and professional training centers, will adopt IT and communication technology in education and training to implement virtual education programs. With the expansion of virtual education programs nation-wide, issues of quality have been seriously discussed and pedagogical models for distance education have been sought. In addition, ways of reducing cost of distance education using advanced technologies without a decline in quality have been explored. Allowing more flexibility and openness in distance education will be key issues for distance educators and policy-makers. The Korean experience suggests several major implications for policy and future directions in the successful implementation of virtual education for higher education and training.

4.1 Adopting Systems Approach in Instructional Design

The experience of Korea confirms that introducing advanced technologies or hiring famous content experts to deliver virtual courses does not necessarily guarantee the quality of educational services. Rather, the need and the means must be analyzed, an optimal solution must be sought, the solution must be implemented, and the results must be evaluated and fed back into the design.

Adoption of an Instructional Systems Design (ISD) model helps distance educators to take a step-by-step approach in developing and implementing effective open and distance courses. In applying the ISD model, pedagogical features of advanced technologies are identified, and teaching strategies are carefully selected based on these features. Content

experts or famous scholars in certain subjects may provide professional support to instructional designers to develop and implement high-quality courses that satisfy learner needs and employ optimal open and distance teaching strategies.

4.2 Establishing a Regular Quality Management System

A regular system to monitor and evaluate the development and implementation of distance education will be required to ensure the quality of the educational services. This requires major investments in building research capacity in distance education institutions. Quality management systems through continuous monitoring and evaluation will help identify problems in academic programs and support services and suggest possible solutions. In particular, feedback from students must be sought and used to revise programs and improve services. Also, regular examination by external experts needs to be conducted to identify problems in organization, policies and operations. This external evaluation will help distance education institutions compare their performance with campus-based institutions.

4.3 Requiring Organized Training Programs

Korea's experience tells us that the successful completion of a distance education program requires each learner to have good self-directing learning skills and well-organized learning support from the institution. Organized sessions to facilitate self-directed learning are necessary to help learners develop and strengthen competencies in managing the independent learning process at the very beginning of their study.

Staff development is very important to successfully implement distance education. Continuous staff development programs that emphasize educational effectiveness, design and interaction strategies of courses, and technical skills need to be integrated into the distance education system in order to improve the educational quality. Online technologies have important promise in providing staff development programs.

4.4 Implementing Cost Reduction Policies

Institutional partnerships are important for distance education providers in that they reduce the cost of introducing new technologies and also improve the quality of developing programs. By forming appropriate partnerships with campus-based universities, open and distance teaching universities can secure external content experts and teaching support. Partnerships with business sectors may help reduce investment costs in hardware systems such as a computer network, recruit students and obtain advanced technical skills. Open and distance teaching universities that wish to commercialize their educational programs and research must from the outset consider forming partnerships with business. Finding

creative ways to share resources will be the key issue in forming partnerships with other organizations.

Open and distance teaching universities also need to find ways of reducing the cost per graduate by improving the graduation rate. Several cases show that per student costs in distance teaching universities were lower than in campus-based universities (Perraton 1994). Yet per graduate costs were not necessarily lower because of the lower graduation rate in distance teaching universities. The experience of the UK Open University shows that individualized tutoring services help increase graduation or completion rates. Unfortunately, tutoring costs are too high for many distance teaching universities with large numbers of students. Therefore, other ways of helping students complete their study need to be sought. Combining tutor support with computer-mediated support, encouraging voluntary study activities among students by providing incentives, and using outside volunteers as tutors can be considered as alternatives to current fully human-based tutoring services.

4.5 Implementing Open Policies

A distance teaching organization is not necessarily an open system. KNOU shows that even if KNOU accepts working adults as students once they have high school graduation certificates regardless of their age, KNOU has not been open in its curriculum. To be distance education institutions, open policies towards access, curriculum, methods and learning processes have to be institutionalized.

In addition, providing the appropriate legal foundation is necessary for promoting virtual education in various fields such as professional development degree program including MBA, in-service teacher training and corporate training. Learning from its prior experiences in in-service virtual teacher training, the government should provide legal incentives and policies for teacher training institutions to restructure their programs to include open and distance teaching as future initiatives. Other educational policies such as admission quarter need to be reviewed.

Notes

1 There are 350 conventional higher education institutions in Korea. (2000)
2 Cultural and Social History of Korea, Themes and Forms in Korean Art, Geography of Korea, Introduction to Korean Society & Literature, Introduction to Women's Studies in Korea, and Sex/Gender/Sexuality in Korean Culture

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