

Suggestions for E-Learning Based on Four Years of Cyber University Experience

Okhwa LEE*

(Chungbuk National University)

Abstract

E-Learning is widely introduced with cyber universities in Korea from 2001 when cyber universities were first authorized by the Ministry of Education and Human Resource Development. E-learning amplified by cyber university gave a big impact in the campus based university which became the cause for the educational paradigm shift. The changes of status of cyber university shows important trend in college education which was analyzed by enrollment rate, types of cyber university, demography, and study areas. The enrollment rate of cyber universities is ever since 2001 and variety of study areas gives popularity to students. The demography of students is as expected older than traditional students. Female students at the cyber university outnumbered that at campus based university in Korea. For analyzing the trend of e-learning in Korea, there were studies twice in 2001 May-June from 213 faculty members and staff, 630 students and in 2004 May-June with 401 students. Most of e-learning students tend to spend less time yet, students feel more burden with e-learning. Professors

* Department of Computer Education, College of Education, Chungbuk University
ohlee@jchungbuk.ac.kr

tend to load more materials for the e-learning in 2001 but in 2004 study, the difference no longer exists. Professors and students feel the academic achievement through e-learning is not as good as from the traditional classes. Difficulties for e-learning in 2001 were the lack of administrative information but in 2004, boring contents and lack of instructional strategies for e-learning. Technical problems still do exist but less serious. Suggestions for e-learning are blended learning, online students prefer video streaming with their own lecturer, new definition of instructor is needed, professional development for content development and online instruction is needed, success story of online learning should be encouraged, guidance for online students needed. The cyber university experience gave a positive impact on the traditional universities such as rethinking the roles of universities, the quality control of classes, professional development, student oriented educational service of e-learning pedagogy.

Keywords : e-learning, cyber university, perception of e-learning, online learning

I . e-Learning in the Campus

The majority of learning in higher education these days might use Information Communication Technology (ICT) in one way or another. According to the white paper published by the Ministry of Education and KERIS (Korea Education & Research Information System, 2003), learning supported by ICT was about 63 percent of university education courses in Korea in 2002 and 67 percent in 2003. According to the statistics from June 2003, among the 204 universities in Korea, more than 50 percent of classrooms are now equipped for online e-learning (KERIS, 2003). According to a study conducted in 2002 and 2003 (Allen & Seaman, 2003), one of the major findings is that both campus-based universities and online universities are extremely focused on blended learning and the quality of e-learning.

The extensive use of e-learning in Korea is due to the prevalence of Internet access and well-planned and supported infrastructure. In fact, Korea has several world records in Internet usage and availability, including the highest broadband diffusion rate, the longest Internet access time, and the highest percentage of streaming media applications (WEF, 2004). For instance, currently more than 65 percent of Internet users in Korea use audio video streaming service (ITU, 2004). Such pervasive presence of the Internet certainly helps people to become familiar with and take advantage of e-learning. The Net Generation in Korea seems to take for granted the ability to work and learn in cyber space.

The widespread growth of e-learning became a common trend around the planet and it is even more so in Korea, we still do not know much about e-Learning. In this paper, I am proposing what we have learned so far from the e-learning practice based on the four years of cyber university experience and surveys.

II. Cyber Universities

As every country has its own educational environment, Korea is unique in its educational resources and demands on those resources. With the strong political support from the government and need for the new market for the booming IT industries in 1998, a consortium of universities and colleges for online learning opened in 65 universities and 14 companies. Due to the success of pilot approach of online learning, cyber university system could be able to launch in 2001 successfully.

By the year 2001, the number of authorized entrants at universities (including 2 year and 4 year universities combined) exceeded the number of high school graduates. Nevertheless, there remains a high demand for the quality higher education. Such trends have caused serious imbalance of

student enrollments among universities. The severe disproportionality of entrants at these universities has caused competition and innovation within their respective educational services. Universities now recognize the need for educational reform that leads to student-oriented education and cost effective management of an e-campus and e-learning. As part of this effort, they have begun to reap enrollment gains from enabling students to work at their own pace at their own convenient time and place.

It was in 2001 that Internet industries began to seek massive application of technology within higher education in response to the problem that higher education was not as well equipped with information technology as primary and secondary schools. In 2001, the Korean Ministry of Education (MOE) finished the first stage of support for ICT infrastructure in primary and secondary schools and was ready to begin supporting Korean higher education with the Internet infrastructure and applications. At that time, the Korean government encouraged universities to apply ICT in instruction and promoted the trial of the cyber university within Korea. In 1999 and 2000, the pilot cyber university project was so popular that the Ministry of Education accepted more cyber university applications than originally planned. Most of these trial cyber universities were campus based university consortiums located next to or within the traditional campus.

With that success, the Korean government launched a new higher educational system in 2001 related to cyber universities. A cyber university is a unique instructional medium that is modeled after student admission policies used in the Open University and, hence, admission is not based on the student's prior records of academic achievement. To date, these cyber universities have drawn attention from university administrators and the public. The growth of the Korean cyber university project from 2001 to 2004 is detailed in Table 1.

It was in 2001 when the first nine cyber universities with 39 study areas were

Table 1. List of cyber universities with the authorized number of new entrants per year

Name of the cyber universities	2001	2002	2003	2004	Address
Kyung Hee Cyber University	800	1,600	2,400	2,400	khcu.ac.kr
Sejong Cyber University	500	1,300	1,300	1,600	cybersejong.ac.kr
Seoul Cyber University	900	1,800	1,800	1,800	iscu.ac.kr
Seoul Digital University	800	1,600	2,400	2,400	sdu.ac.kr
Open Cyber University	800	1,400	1,400	1,500	ocu.ac.kr
Korea Digital University	900	1,800	2,500	2,500	koreadu.ac.kr
Korea Cyber University	900	1,650	1,650	2,000	kcu.ac.kr
Daegu Cyber University	-	800	600	800	dcu.ac.kr
Wonkwang University	-	700	700	700	wdu.ac.kr
Hanyang Cyber University	-	1,000	1,500	2,200	hanyangcyber.ac.kr
East West Cyber Univ	-	400	600	400	ewcu.ac.kr
Hanseung Digital University	-	500	750	600	hsdu.ac.kr
Semin Digital University	-	-	600	800	usm.ac.kr
International Digital Universit	-	-	500	900	gdu.ac.kr
Cyber Foreign Language Univ.	-	-	-	1,000	cufs.ac.kr
Sub-total	5,600	14,550	18,700	21,600	
Name of 2yr cyber colleges					
World Cyber College	500	1,300	1,300	1,300	world.ac.kr
Semin Cyber College**	120	450	-	-	usm.ac.kr
Youngjin Cyer College	-	400	600	800	ycc.ac.kr
Sub-total	620	2,150	1,900	2,100	
New entrants authorized	6,200	16,700	20,600	23,700	
Actual enrollment	5,041	11,006	11,833	11,570	New entrants
Actual enrollment rate (%)	81.3	65.9	57.4	48.8	
Total of entrants authorized*	6,200	22,920	43,520	67,220	
Actual enrollment of total	5,041	16,874	28,707	39,450	Total of entrants
Actual enrollment rate of total(%)	81.3	73.6	66.0	58.7	

* Ministry of education and human resource development do not authorize the number of total enrollment every year; the ministry authorize only the number of new entrants. Therefore the actual enrollment rate is a roughly estimated number, not from the official statistics.

** Semin cyber university was opened as a two year college in 2001 but turned into four year university from 2003 and changed the name to Semin Digital University.

initially authorized by the Korean Ministry of Education and Human Resource Development. The actual enrollment rate in the spring semester of 2001 was about 84 percent of what had been authorized and now in 2004, 58.7 percent (39,450). The actual enrollment rates in 2001 varied across the cyber universities from roughly 89 percent of the authorized total (Kyunghee cyber university) to a low of 38 percent according to the educational statistics according to the Ministry of Education and Human Resources Development (2004).

With the continued popularity and growth of cyber universities, in 2002 another 6 more universities were authorized which increased the number of cyber universities from 9 to 15. With 79 study areas and 16,700 new entrants authorized, these 15 cyber universities could have totaled 22,920 entrants however, the actual enrollment rate was just over 73.6 percent of what was authorized in 2002. The nine cyber universities which were authorized in the first year were allowed to rearrange their entrants based on the enrollment rate of the previous year (MOE, 2004). Again, the actual enrollment rate was extremely polarized among the universities from a high of nearly 90 percent at Seoul Cyber University to as low as almost 10 percent (MOE, 2004).

In 2003, one more new cyber university was authorized bringing the total to 16 cyber universities and 149 study areas with 20,600 entrants and Semin cyber college turned into four year university Semin Digital University. Despite the continued growth, the actual enrollment rate in that third year was just 57.4 percent for the new entrants and 66 percent of what was authorized total. Again the actual enrollment rate was widely varied. For example, while one university had more than 90 percent of authorized enrollments and another was at over 80 percent, 13 other universities were operating at less than 50 percent of authorized capacity.

In 2004, there was one new cyber university authorized increasing the total

to 17 cyber universities (2 two year colleges and 15 four year universities) with total entrants of 23,700 students and 162 study areas based on simple counting of the areas of study each cyber university offered, not considering the areas of overlap. While five universities received less than 20 percent of the students authorized, the total actual enrollments across these 17 cyber universities and colleges was now nearly 40,000 (58.7 percent). The new entrants' actual enrollment is 48.8 percent. The new entrants' enrollment decreases 8 percent per year approximately since 2002. The sections below provide more detail of these cyber universities after the initial four years of existence.

1. Enrollment Rate

The total number of new entrants increased since its first year but it is expected the new entrants authorized will stay around roughly 23,700 students which is the number for 2004. The statistics of 2004 are important because it is the first year when students across the four years of a university experience are enrolled. This year, the total number of authorized enrollment is about 67,220 with 58.7 percent of actual enrollment rate. The actual enrollment rate continues to drop while the number of actual enrollment of students grows (Table 1) because year 2004 is when all 4 years of students enrolled. It will be interesting to find the actual enrollment rates of new students during the upcoming years whether the popularity of cyber universities wanes or continues to grow.

The lower than expected or hoped for enrollment rate is due, at least in part, to lower respect for cyber universities as compared to campus-based traditional universities in Korea. In addition, traditional universities have attempted to expand their e-learning courses so that many potential cyber university students can have their needs met at campus-based universities.

2. Types of Cyber University

While the 17 present cyber universities are all private, they are classified into three different types: (1) cyber university-based on a campus-based university foundation-11 institutes, (2) cyber university consisting of a campus-based university consortium-4 institutes, and (3) cyber university without affiliations with any other universities- 2 institutes (KERIS, 2003).

The first type of cyber university which is based in an existing campus setting, naturally have some immediate name recognition and infrastructure to build from. The brand name of the campus-based university provides an identity for the cyber university. Cyber universities typically can use the resources of the campus-based university such as support from the professors, digital libraries and research facilities. For example, Hanyang Cyber University and Kyunghee Cyber University are two good examples of the borrowing the identity of campus-based university for the cyber university since both of these universities are well known campus based university. In fact, Hanyang University allows students to take classes at the Hanyang Cyber University and vice versa. Although cyber university students are allowed to take courses from the campus-based university, most are unable to due to their time and location constraints. However the power of university brand name for cyber universities are only possible when the campus based university has prestigious name.

The second type of cyber university is one based on the university consortium. Such cyber universities have the privilege of having access to students from all participating universities even though they are not students of the cyber university. Of course, cyber universities of this type have their own enrollment as well. Among the four cyber universities of this type now in Korea, Seoul Digital University, which was based on the 21 universities lead by Donga University, is quite successful which offers the most variety of areas of study (8 areas with 15 sub areas). Korea Digital University

which was based on a consortium of six universities lead by Korea University is a successful example also as indicated by their over 80 percent enrollment rate.

The third type of cyber university, the regular foundation approach without any specific university affiliation, are Seoul Cyber University and Hanseung Digital University. Interestingly, Seoul Cyber University now offers campus education which is unique among cyber universities except those run by a four year campus university, emphasizing blended learning.

3. Demography

In terms of age, as expected, statistics report that the largest percentage of freshman at a typical cyber university in 2002 were in their 30s (38 percent). The second largest group was in their late 20s (21 percent). In addition, 17 percent were in their early 20s and 18 percent were in their 40s (KERIS, 2003). Such data reveal that the typical student in a Korean cyber university is older than the average freshman in traditional universities. Such data indicates that cyber universities seem to be meeting the needs of life long education.

Cyber university students primarily have a high school degree or equivalent (nearly 87 percent in 2003). The remaining ones are two year college graduates (4 percent), four year university graduates (4 percent), high school diploma certificate examination holders (4 percent) or graduate school graduates (1 percent). Some of students are enrolled for a second university degree.

For the enrollment of female students, interestingly, female students (35 percent in 2001, 38 percent in 2002, 38 percent in 2003, 42 percent in 2004) quickly increasing. In the traditional universities, the female student population is almost 39% (MOE, 2004) which is less than that from the cyber universities.

Majority of cyber university students are part time students: 86 percent of cyber university students in 2003 were employed and recognized the enrollment at the cyber university as a chance for earning a degree also for job retention. Nearly three out of four of cyber university students live in or near the Seoul area (KERIS, 2003).

4. Study Areas

Program area offerings within cyber universities continue to increase. For instance, in 2001 there were 39 areas of study, in 2002 there were 79 areas, in 2003 there were 149 areas and in 2004, 162 areas were offered. The growth of program areas and study disciplines reveals how cyber universities can satisfy their students. The study disciplines include business management (23 percent), IT (22 percent) and many other areas portrayed the need of labor market such as non-governmental organizations (NGOs), social welfare, theology, foreign languages, and oriental humanities in 2003.

When the areas of study offered by cyber universities are crucial for student recruitment cyber universities should have their own identity, not just mimicking the campus based university in cyber space. For instance, they should have a different curriculum and services because they have different students with distinct needs. Consequently, administrators at cyber universities must pay more attention to the needs from the marketplace to make decisions about what academic programs they might support and help prosper and what programs might lose resources (Learning Times Network, 2004).

III. Trends of Cyber Learning

In order to understand how the cyber learning is perceived, surveys and

interviews were conducted with students and faculty members who had experienced cyber learning in 2001 May-June from 213 faculty members and staff, 630 students and in 2004 May-June with 401 students. The 2001 study was conducted to find out how students, academic faculty, and instructional staff (technical staff for the system, tutors, content developers) perceive online learning. Importantly, this study was replicated in 2004 which explored students perceptions of weekly working hours, work load, levels of satisfaction, academic achievement, and suggestions for e-learning.

1. Weekly Working Hours per Course

Students were asked how many working hours per week they spent studying for each e-learning course including the online class time. In 2001, including online classroom hours, students spent on average 3.4 hours a week. More specifically, the largest percentage of students, 38 percent, spent 2-4 hours for studying an online course each week. 32 percent spent less than 2 working hours per course per week which makes more than 70 percent of cyber university students studied less than four hours per week in each course. On the other end of the scale, 13 percent of students worked on

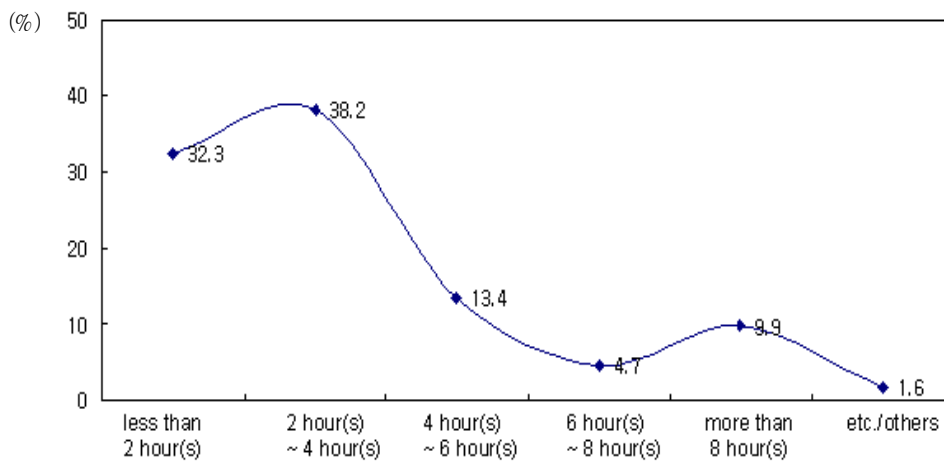


Figure 1. Weekly studying hour of online students per course in 2001

each courses 4-6 hours per week, and 10 percent were even more heavily in their studies by spending more than 8 hours studying per course.

In the 2004 study, excluding any online classroom time, nearly 40 percent of students spent just 1-2 hours studying for each course each week and another 30 percent of cyber students spend less than 1 hour per course per week. So, it appeared that they were studying even less per week than the previous sample from the first year of the program in 2001.

While they may have been studying less than their 2001 counterparts, the 2004 online class students studied slightly less or about the same hours as FTF students (Ha, 2004). And while the data from 2001 showed that students with more e-learning experience tended to spend more hours studying, this was not replicated in the 2004 study. The 2004 findings are somewhat in contrast to those from Oblinger and her colleagues (2002) in the United States which claimed that online students (cyber university students) tended to spend more time studying because they weremore motivated and eager to do self directed learning. Perhaps this motivation and enthusiasm for cyber classes has decreased as online learning (cyber instruction) has become common. Or perhaps as online learning has grown, it is no longer just the highly self motivated students who are enrolling in online learning as in Oblinger's U.S. study. It would be interesting to see if such trends held true in other parts of the world.

2. Working Load

In 2001, students and faculty were asked how their cyber classes compared with FTF classes in terms of effort. Students (81 percent) and academic faculty (93 percent) all reported more burden with cyber classes compared with that of FTF classes. Nevertheless, additional stress was more often experienced by cyber faculty (45 percent felt it was twice the burden) than by cyber students (34 percent felt it was twice the burden). In contrast, in

the 2004 study, more than 40 percent of the students felt that the workload of their cyber courses was similar to FTF courses. Still, nearly 30 percent felt overworked with e-learning, which is somewhat ironic given that they tend to study slightly less than students in FTF settings. Given these findings, there seems to be a high need for more student guidance and support in cyber courses.

3. Level of Satisfaction

When students were asked whether they are satisfied with their online learning class experience compared with FTF classes, over half of the 2001 students (57 percent) were satisfied, but approximately three years later in 2004, just 32 percent of students were equally satisfied. In addition, 35 percent of students were slightly less satisfied while just one in four students were slightly more satisfied.

The data indicated that the 2003 students were slightly less satisfied with their online learning experiences than students in 2001. When they were asked about the level of satisfaction for online learning contents and instructional strategies, they were less satisfied with instructional strategies.

Year 2001

Year 2004

그림은 원본에서 사용합니다

Fig 2. Comparison of satisfaction level with e-learning

Again, it is interesting that students showed less satisfaction with e-learning in 2004. Apparently, students seemed to display higher expectations for their online learning courses as they gained more experience with this educational delivery method.

The data from 2001 was analyzed again according to instructional media and found that students' satisfaction was the highest when the main instructional format was blended learning, such as FTF instruction with online supplements (68 percent) or online courses with FTF supplements (59 percent). Satisfaction with full online courses was lower but still positive at 55 percent satisfied with such courses. Such findings indicate that blended learning approaches may be the most appropriate for cyber university students. The 2004 study also showed that students prefer blended learning (FTF with online learning support, 42 percent; online learning with FTF support, 32%).

4. Perception of Academic Achievement

The survey asked how different faculty members perceived students' academic performance compared to FTF courses. Overall, faculty members in 2001 responded that the academic achievement for e-learning would be lower than that of FTF courses. Specifically, about 1 in 4 thought it would be the same as FTF, another 1 in 4 thought it would be better, and the other approximately 50 percent thought it would be lower. Students in 2001 also reported that they would have better levels of academic achievement in FTF classes than in online classes.

A similar trend regarding student perceptions of their value of their learning occurred in the 2004 study (this latter study did not deal with faculty). In this study, 42 percent of students reported they would expect lower achievement, 34 percent expected similar achievement, and 13 percent higher achievement. Interestingly, from the data of 2004, female students were

more critical about cyber learning than male students. The reason why female students were more skeptical about academic achievement needs to be investigated because female students are often known to be more active in online discussions (Gadio, 2001; Im & Lee, 2003).

5. Difficulties for Online Learning

In the 2001 study, students claimed that there were many online learning difficulties. Among the more salient difficulties were problems in receiving help for instructional or administrative questions, too high of a workload, a lack of course-related information, and inaccessibility of the Internet. Some of the other issues included boring instructional contents, a lack of interactivity with instructors, and too frequent evaluation. In the 2004 study, cyber students were more concerned with the boring instructional contents, inadequate management of the learning process, slow speed of the Internet, inadequate cyber instructional pedagogy, and minimal feedback from the instructor. In addition, some voiced concerns about inadequate evaluation, inadequate amount of content, high difficulty level of the course content, and little chance for the peer communication. Interestingly, when comparing the results of the two surveys, the students showed extremely different priorities over just a three year span. For instance, the 2004 students were much more aware of the importance of contents and instructional processes than administrative support and technical problems.

6. Suggestions for Improvement

In the 2001 study, students made suggestions for improvement. Among their suggestions were for greater quality control of contents, providing quality tutoring, stable accessibility to the Internet, higher quality online class server, and greater interaction between instructors and students. In the 2004 study, students suggested creating more diverse quality contents, using

more adequate instructional strategies for blended learning (different pedagogy from the FTF class), greater interaction among instructors and students, better utilization of the high speed of the Internet, more proper evaluation methods, improvement of the learning system, more relevant tasks, and enhanced access to the digital materials. These findings indicate that through the years, online class students consistently request higher quality contents, more frequent interaction with instructors, and more unique pedagogy in their e-learning. Also, as online technology continues to develop, students wish to have the privilege of using high speed video streaming contents but it will be interesting to observe how heavily they actually use such contents.

IV. Discussion: the Impact of Cyber Learning

Korea is experiencing new era of e-learning which simultaneously evolved from the needs of education and the emergence of many new technologies for delivering education. As if the presence of refrigerators fundamentally changed the way we produce, disseminate, and consume food, information communication technology changed our way of producing, processing and delivering knowledge. Knowledge creation no longer belongs to a few chosen people, instead anyone can take a role in the knowledge generation and dissemination process. Knowledge storage and retrieval is not only available at the library: it is available anywhere where there is a computer and internet. It is not only accessible through book printing, it is open to any one anytime. The impact of this new wave of technology is clearly not restricted to education, but it did force us to change our primary ways of teaching and learning.

The presence of cyber university made us to rethink about higher education: what are the different needs that this new generation students have, how we cope with the new needs, how faculty members should be prepared for this change, how administrator recruit cyber students, and how to manage the

new educational system. Traditional universities began to offer online classes more to help students take classes without time and place constraints. Faculty members at campus-based universities are asked to use ICT more which requires the sensibility of faculty members to the needs of net generation students. Fortunately, many faculty members wish to adopt e-learning for their teaching. As a result, e-learning is becoming favored by many students and professors. To administrators, they see the introduction of online classes as a cost saving opportunity: once the infrastructure is in place, educational cost reaches the break if the class hits certain level and professors are properly trained, educating students more than the crucial mass do not require further cost.

But this technology integration in education created new issues for universities in Korea including new qualifications for professors as well as various tuition issues. Students claim that they should pay less because e-learning students do not use school facilities as intensively as students on campus (Im & Lee, 2003). In addition, faculty feel extra burden to conduct e-learning classes which shows they need support and education for how to conduct e-learning and develop e-learning content. Since faculty members feel more burden with online classes, one online class was treated with more weigh but now since majority of classes are in blended learning, such support is no longer available. Furthermore, faculty members feel insecure if they do not have the skills to conduct an e-learning class and experience pressure to become a star lecturer or book author that institutes prefers.

“Look at the Ed2Go Web site. Ed2Go was recently purchased by Course Technology. It appears that they need one teacher per course, regardless of how many students are in the course. Look at their list of client institutions! Their teachers are the authors of textbooks. Some teachers are thinking that the textbook publishers are about to "get cut out of the action.”

<http://home.learningtimes.net/learningtimes?go=403627> Retrieved 2004.8.21

In most of institutes, it becomes a crucial issue regarding how to maintain a quality education in e-learning since it reaches out to students who cannot be assessed on campus. As shown in our research (Lee, Chun, Heo, & Im, 2002; Im & Lee, 2003; Lee & Jo, 2004), professors and students think the quality of e-learning is lower than the traditional learning. FTF learning with the support of ICT (i.e., blended learning) is the most preferred delivery method for students and this trend will continue to grow.

Based on the analysis of student and faculty member perceptions of online learning and cyber universities in Korea, there are both many macro as well as micro level suggestions we point to below. The suggestions and discussions are valid for online learning but also equally valid for blended learning.

First of all, blended learning was suggested to be the most preferred instructional format in fact, students and professors preferred FTF with online support.

Online learning did not meet the satisfaction level that faculty groups and students desired and this trend did not change during the three years that the cyber university system has existed. Faculty members seem anxious about student academic achievement since the delivery of instruction is physically separated, so the degree of students' learning depends more on individual students than on imparting knowledge in FTF instruction. The perception of lower academic achievement in Korea is consistent with the Sloan Consortium research (Allen & Seaman, 2003) in the USA which reported that chief academic officers in higher education perceived that the quality and outcomes of online learning are currently inferior to FTF. However they predicted the quality of online learning would equal or surpass FTF in the next few years. Recent research by Bonk and Kim (2004) on college faculty and administrators related to the future of e-learning replicated the Sloan findings related to expectations for both online course quality and students outcomes surpassing FTF in the next few years.

Interestingly, as students have more experience with online learning, they spend less studying time, and are slightly less satisfied. Such results show that online learning should be blended with FTF instruction.

Secondly, in terms of the types of contents preferred, cyber university students wanted web streamed contents, while FTF class students preferred web based materials and resources. Online students, in particular, wanted to see their own professor in the video. In essence, they wish to have the feeling of presence in the real classroom. When cyber university facilities were being designed, there were debates in Korea about which system is more suitable for e-learning: web-based content or video-based lectures. Considering that each type of contents has its own use, when both mediums deliver the same information, campus-based students who take the FTF classroom lectures prefer web-based contents since they deliver information in a condensed way. But students from cyber universities want to have video lectures for their online classes (Lee, Kwak, & Cho, 2004). For the cyber university administrators, the cost for Web content delivery is an extremely serious matter. Now, it is proven that video lecture (about \$7,000 per course) cost much less than developing web contents (approximately \$35,000 per course) and students have shown similar level of achievement (personal communication with the dean of Kyunghee cyber university, February, 2004). Of course, most of classes use both format with different degrees: often supported by various supplement materials such as printed books. Fortunately, in Korea, the infrastructure exists for live online video streaming lectures which allow cyber universities to utilize whatever format they need.

Thirdly, a new definition of instructors may be needed. When the content developer and the teacher for the video streaming are different which actually happens often, the teacher on the video should be a person with authority in that content area. In vocational education, often content developer and teachers are not identical. Authorities are invited to provide contents and those instructional packages are used for delivery of contents

while the educational activities are conducted by tutors or instructors. When those contents are used, a new role for instructors is required. Having the authority on the video is one way of enhancing the quality of the class, especially when online learners have lower satisfaction and expectation regarding the quality of online contents.

Fourthly, professional development for instructional strategies and blended learning content development is needed. As shown in the research reviewed here, many cyber professors feel overwhelmed and not happy about the quality of their e-learning classes. Particularly when new roles for instructors are required and materials are boring or there is inefficient pedagogy (as the students claimed), faculty want to learn about content development and instructional strategies for online learning. In response, most major Korean universities have recently begun building and operating Centers for Teaching and Learning (CTL) which include a focus on supporting e-learning pedagogy.

Similar initiatives are underway in higher education institutions in Australia, Canada, Finland, and the United States. In Australia, for instance, university of Woolongong has a policy to require professors to complete master's level instructional methodology classes for promotion. Even their traditional research oriented universities have put an emphasis on such online teaching.

Fifth, faculty member's success story should be recognized and rewarded. In our research, faculty and staff typically felt greater burden than students. One reason for the high stress may come from their perception of the wide exposure of the e-learning medium. Faculty members tend to try to provide more and perfect content for online classes than in their FTF classes since online contents are reusable and possibly open to public viewing. But instructional activities are as equally important and online success stories learned during professional development can be a model for them. Providing instructional environments for blended learning can also help faculty to become aware of alternative pedagogy for online learning, cybergogy.

Sixth, students do need guidance and support for the use of blended learning when they spend less study hours, feel more burden and their satisfaction level of the online learning is low. CTL often supports faculty members with contents development and providing information about the cyber pedagogy.

The emergence of the cyber university has certainly brought significant changes to the Korean higher education system in just a short amount of time. It will be interesting to watch trends in fully online learning as well as blended learning in Korea and around the world during the next few years.

References

- Allen, I. E., & Seaman, J. (2003). Seizing the opportunity: The quality and extent of online education in the U.S., 2002 and 2003. Sloan Consortium. Retrieved August 29, 2004, from http://www.sloan-c.org/resources/sizing_opportunity.pdf
- Bonk, C. (2002). Designing innovative e-learning tools and environments based on sound research: What to do? Presentation at the Online Learning Conference, Anaheim, CA.
- Bonk, C. J., Olson, R. M., Wisner, R. A., & Orvis, K. (2002). Learning from focus groups: An examination of blended learning. *Journal of Distance Education*, 12(3), pp. 97-118.
- Bonk, C. J., & Kim, K. J. (2004, August). Future of e-learning in higher education and training environments. Proceedings of the 20th Annual Conference on Distance Teaching and Learning, Madison, WI.
- CredU News (2004). CredU.com. Retrieved August 22, 2004, from http://www.credU.com/credU_start2.html
- Gadio, C. M. (2001). Exploring the gender impact of the world links program: Summary of the findings of an independent study conducted in four African countries, World Links. http://www.world-links.org/english/assets/gender_study_summary.pdf. Retrieved on 30th of July, 2004.

- Ha, J. K. (2004). Preference of instructional medium for e-learning among middle school students, Unpublished master's thesis. Chungbuk National University, School of Education, computer education major, Korea
- Im, Y., & Lee, O. (2003, winter). Pedagogical implications of online discussions for preservice teacher training. *Journal of Research on Technology in Education*, 36(2), 155-170.
- ITU (2004) <http://www.itu.int/osg/spu/ni/broadband/oecd.pdf> retrieved on 1st of Oct., 2004
- KERIS (2003). Adapting education to the information age: A white paper 2003. Seoul, Korea.
- Learning Times Network (2004). Retrieved on 26th of September, 2004 <http://home.learningtimes.net/learningtimes?go=403627>
- Lee, D. Y. (2004, August). Tasks and support directions for the promotion of e-learning at higher education. *Communications of the Korea Information Science Society* 2004,22(8). Pp.5-13.
- Lee, D. (2000). An analysis of the effect and influential impact on the distance learning of the virtual university. Unpublished master's thesis. Kongju University, Korea.
- Lee, I., Chun, S., Heo, H., & Im, Y. (2002). Academic administration and organizational model of digital distance universities. The role of educational technology in knowledge- based society: Proceedings of KSET International conference 2002, Seoul, Korea.
- Lee, O., Kwak, D., Chun, S., Rah, M., Yoo, P., & Im, Y. (2001). Policy study for the cyber education at universities managed by the higher education law in Korea. Korea Research Foundation, Ministry of Education, Seoul, Korea.
- Lee, O., Kwak, D., & Cho, D. (2004). Direction for e-learning at the Central Officers Training Institute in Korea, unpublished report, Central Officers Training Institute, Seoul, Korea.
- Lee, O., & Jo, M. (2004). Analysis of e-learning experience of pre-service teachers. *Journal of computer education*, Vol.7. No.6. 96-106.
- MOE (2004) Educational statistics. Ministry of Education and Human Resources Development, Korea Educational Development Institute. Seoul, Korea. Retrieved, from <http://univ.kedi.re.kr/index.jsp> retrieved on 28th of September.
- Oblinger, D. (2002, August). E-Learning: Evolution or extinction. Paper presented at the 18th annual Distance Teaching and Learning Conference, University of

Wisconsin- Madison, Madison, Wisconsin.

SCORM (Sharable Contents Object Reference Model). (2004). <http://www.adlnet.org> retrieved on 20th of June, 2004.

WEF (2004) The global information and technology report 2003-2004. <http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Information+Technology+Report> retrieved on 30, Oct., 2004.

Learning Times Net (2004) <http://home.learningtimes.net/learningtimes?go=403627> 2004.8.21



Okhwa LEE

Associate Professor, Dept. of Computer Education, College of Education, Chungbuk University

E-mail: ohlee@chungbuk.ac.kr

Homepage: <http://edu.chungbuk.ac.kr/~ohlee>