

# The 1<sup>st</sup> APEC Future Education Forum 2005



Asia-Pacific  
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Agenda Item:

**‘Cyber Home Learning System’ : Promise, Status, Future**

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**The 1<sup>st</sup> APEC Future Education Forum**

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LECTURE REPORT FORMAT

## Face sheet

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<b>Topic of Lecture:</b> ‘Cyber Home Learning System’ : Premise, Status, Future	
<b>Participating Economy (-ies):</b> Korea	
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<b>Brief description of Lecture(including its purpose:</b> The presentation is aimed to introduce a new educational support system, called ‘Cyber Home Learning System’, launched nationwide by Korea MOE in April, 2005. The topics to be covered in the presentation would be the context of development of a new system, how the system has been developed, what has been achieved so far, problems and issues the system has been faced with, and suggestions for the future development that the government need to work on for the system.	
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<b>Signature of Research Team Leader:</b> Innwoo Park  <b>Date:</b> August 24, 2005	

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### Abstract

The presentation is aimed to introduce a new educational support system, called ‘Cyber Home Learning System’, launched nationwide by Korea MOE in late March, 2005. The topics covered in the presentation are the context of development of a new system, how the system has been developed, what has been achieved so far, problems and issues the system has been faced with, and suggestions for the future development that the government need to work on for the system.

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## 1. Introduction

In May this year, more than 100 scholars, researchers, and educational administrators had 'Partners in Learning Advisory Meeting' for two days in Cebu, Philippine, sponsored by Microsoft. They were all from APEC economies. The theme of the meeting was about education in the future. The participants were provided with several presentations regarding future trends in other fields, and sessions for generating, analyzing, and organizing ideas for education in the future.

One of the ideas presented by each country was a system that may support learning any time, anywhere, and anyone. Especially, most of the participants expected that the system would expand learning at school to home. The system may enable students to learn at home as like at school. They will have an access to the learning activities, materials, and even their own teachers. And they will have their peers to have a discussion for issues. That system is available in Korea now, not in the future, named as 'Cyber home learning system'.

This presentation is aimed primarily to introduce the future educational system, Cyber home learning system. During the presentation, it would be also explained that why have driven to build the system, what goals are accomplished through the system, what have been done so far, and what problems and challenges need to be tackled.

## 2. Background

Cyber home learning system(CHLS) has been built upon not only theoretical and technical ones, but also practical one. As well known already, many researchers support the effectiveness of e-learning theoretically and have reported enough positive findings of e-learning empirically to build a cyber learning system nationwide(Kwon, 2003).

However, there have been always two needs to be met before the system is built in a real setting. First, if the system is an answer, what would be the problem to be solved? In many cases, technological revolutions have been introduced without clarifying the problems to tackle with(Cuban, 1996). Second, many revolutionary ideas have been implemented in a real setting because of logistical conditions. For instance, it wouldn't be possible for a teacher use notebooks for instruction if he can't get them, though notebook has been found to enhance learning in classroom from several studies. Thus, these two reasons, practical and technical, are explored in the following section.

Every country has its own educational systems, which are deeply rooted in its own

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unique historical, economical, political, and social context. It is true in Korea. Most of educational issues are not exactly ‘educational’, but rather social and political. For instance, one of the biggest (not just educational) issues in Korea is ‘college entrance exam’, though more than 90% of high school graduates enter a university. Students have to start their preparation for the entrance exam from the elementary school, reaching the peak at high school. Every student is allowed to take the exam, and wants to get in a few top universities, ‘myungmun’ in Korean. Thus, private tutoring is popular and the expense is rocketing high and increases every year.

According to a survey done by Korea Educational Research Institute(KEDI)(Choi, 2003), the private tutoring expense in 2003 was 13.6 trillion(US \$289 per a person). The percentage of students who had private tutoring increased from 58% in 2000 to 73% in 2003. Although the researchers presented more specific results according to the level of schools, parent’s income, and regions, these results would be enough to become aware of seriousness of the private tutoring in Korea. What is worse is that students neglect school activities because they have to spend most of their time on getting private tutoring. Thus, we need to have a system that could reduce the burden of private tutoring and substantiate schooling, which is the practical reason for CHLS in Korea.

And, the technical reason for CHLS is apparent, since Korea is a well-known IT country. One of most difficult problems to handle with when any country tries to utilize ICT in education is the lack of ICT equipment and infrastructure, which is not the obstacle in Korea(NCA, 2005). As shown in figure 1, more than 70% of Korean are using Internet in 2004.

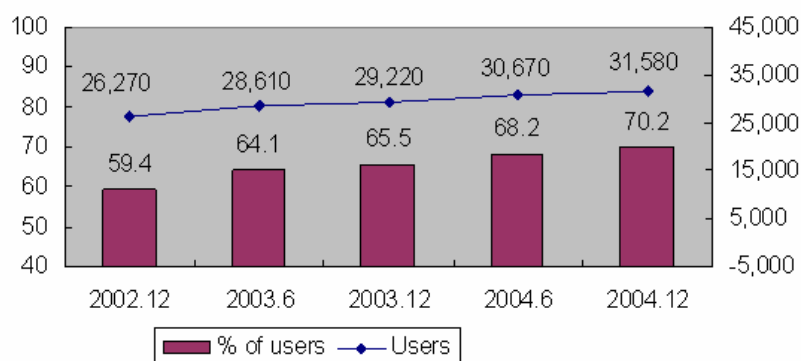


Figure 1. Number and % of Internet users

Since CHLS is for the students who are in elementary and secondary school, the number need to be subdivided by age, which is shown in figure 2. At the end of 2004, 96.2% of 6-19 years old used Internet. In addition, 77.8% of the households responded

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to have computers at home connected to Internet. That means virtually all students in schools have access to and using Internet in 2005. Thus, technically, there is a need to harness the well-built IT infrastructure for enhancing students' learning and eventually reducing the private tutoring.

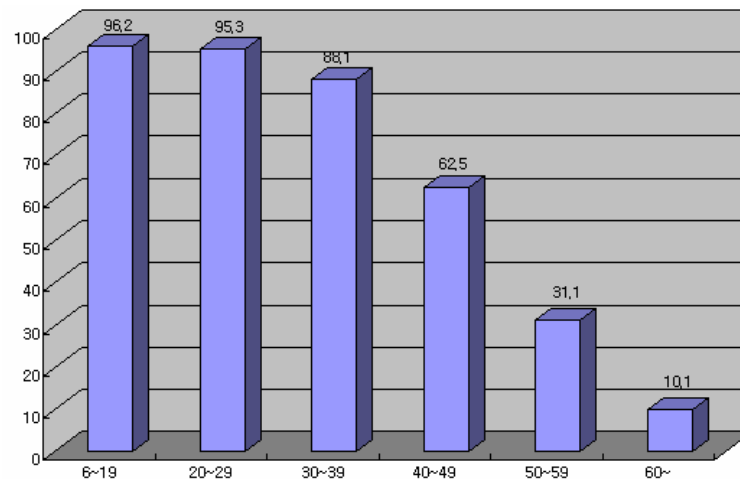


Figure 2. % of Users by Age(2004.12)

## 3. Cyber Home Learning System

### 3.1 What is CHLS

The “Cyber Home Learning System” has mostly been studied, designed, and built by Korea Education & Research Information Service(KERIS), which is funded by Minister of Education in order to enhance ICT use in education and distribute research information. The institute defines CHLS as “an organic system of learning resources, human resources, and environmental resources that supports independent study over the Internet that matches the learning level of each student”(KERIS, 2004).

The system has several characteristics being expressed in the definition. First, the system assumes that students learn independently, while minimizing direct instruction from teacher or tutor and maximizing learning support in various ways. Secondly, the system assesses achievement level of each student, and then provides the best learning support accordingly, that is individualization. Thirdly, the system provides services via Internet in an e-learning format. However, the system isn't supposed to replace, but to supplement the offline schooling. Students may use the system in order to review what they have learned in class, or expand their knowledge acquired from the class. CHLS

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allows students to receive personalized help in cyberspace from teachers and allows students to choose the method and time of learning at home via the Internet. These characteristics of CHLS are depicted in figure 3.

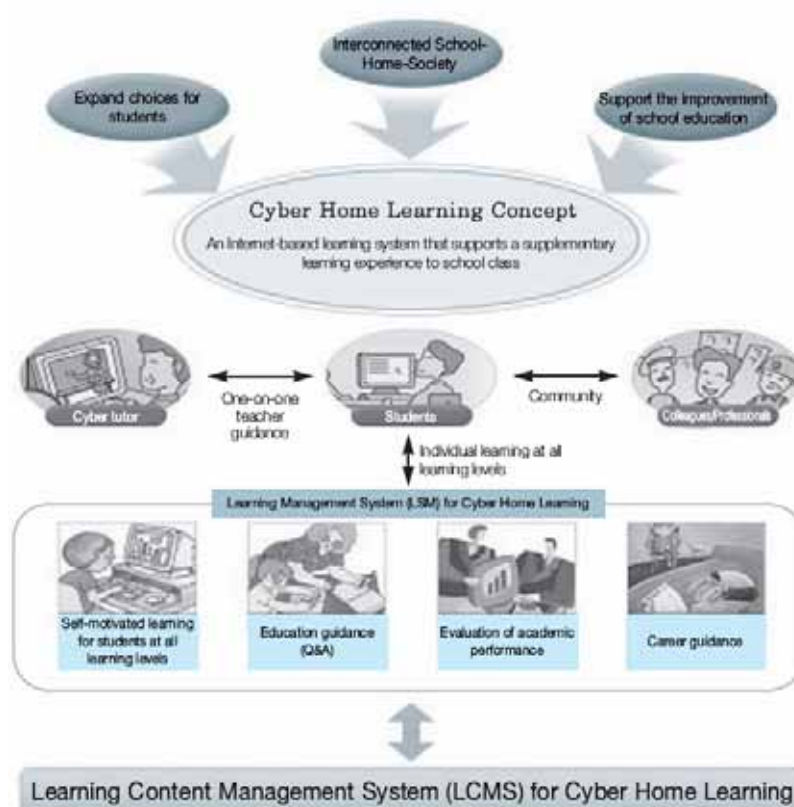
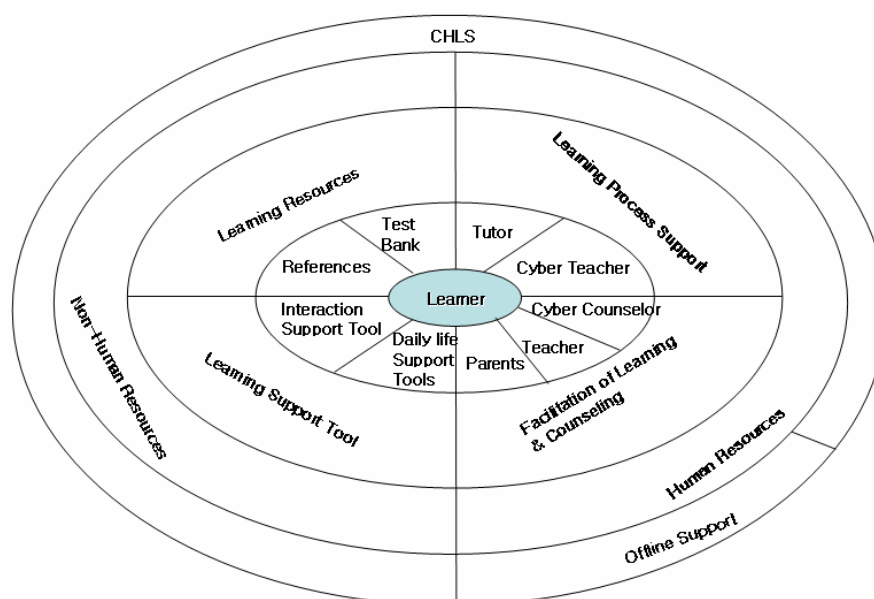


Figure 5. Cyber Home Learning System Service

## 3.2 Basic elements of CHLS

The CHLS is divided into two parts whether a service is provided by a human or not: human and non-human resources. Human resources are tutor, cyber teacher, and cyber counselor who support learning process, facilitate learning, and provide counseling. Non-human resources include test bank, reference materials, interaction support tools, and daily life support tools. These resources are provided for learners as learning resources and support tools that students may use to enhance their learning at home, end even in classroom.

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### 3.2 Initial Agreements for the development of CHLS

When MOE and KERIS started to build CHLS, they had several common obstacles, including lack of time for the development, and skillful human resources. With these limitations, they had to build one CHLS per each metropolitan or provincial office of education, totally 16 CHLSs around the country. They had to finish the development as quickly as possible, and should be done in a year. Thus, the researchers from KERIS and administrators from those offices organized a committee for communicating and collaborating about the development of CHLS.

Since the CHLS was planned to be implemented nationwide, some agreements were needed for communicating and collaborating between metropolitan and provincial offices of education. These agreements coordinated by KERIS and MOE included standardizing, sharing, and free to use.

#### 3.2.1 Sharing

In order for CHLS to be successful, it was imperative to equip plenty of contents with high quality. However, there was no need for each office to develop contents for itself, since the curriculum for primary and secondary education is standardized and almost identical. Contents being developed by an office could be used by all the other offices for their own CHLS. Thus, the committee mentioned above allotted contents to each office. Table 1 shows how the contents were assigned to the offices of education.

While contents could be developed by each office, the learning management system(LMS) for each CHLS needs to be designed by each office so that the office

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could integrate policies and activities needed for their students into the system. Furthermore, it would provide offices with an opportunity to learn from each other how to operate CHLS for enhancing learning in cyberspace. Thus, KERIS provided a guideline to build LMS for CHLS, recommending the basic functions of LMS and the development steps to be taken.

**Table 1 Allotment of contents for CHLS**

Subject Grade	Korean	Mathematics	Social Study	Science	English
7	Seoul	Incheon	Ulsan	Chungbuk	Chunnam
8	Busan	Gwangju	Kyunggi	Chungnam	Kyoungbuk
9	Daegu	Daejeon	Kangwon	Chunbuk	Kyoungnam

### 3.2.2 Standardizing: SCORM-based

Since the contents produced by each office were supposed to be shared by all the offices of education in the country, they need to be in a specific and pre-determined format. Thus, the committee decided to adapt Sharable Content Object Reference Model(SCORM) of ADL, which is a standard for the development of sharable and reusable contents.

As shown Table 1, each office developed a content of a subject. And each contents was followed the SCORM so that LMS could run the contents without any modification while installing and servicing them to the students

### 3.2.3 Free to use

One of the main purposes of CHLS is to reduce the private tutoring expense. Thus, a new system should be free to all students and whoever wants to use for study. However, CHLS was built, run, and supported financially by each office, which made difficult to open the system to the students from other provinces or metropolitans. It was also not easy to allow public to use the system, since the LMS was designed for students mainly.

Although several technical problems existed, the committee members agreed upon to open CHLS to anyone for fee. Students who lives in Seoul may log in CHLS being operated by Busan, study the contents available in the system, and get help from the cyber teachers.

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## 3.3 Development of CHLS

The CHLS has been around for only 5 months. The nationwide systems started to provide its service on March 30, 2005. Before the nationwide implementation, there were a lot of theoretical studies, pilot tests, and formative evaluations. The development of the system was summarized as followed.

- A policy was researched to build a cyber home learning system plan between September and December 2003.
- In the presidential briefing of April 2003, the MOE & HRD promised to establish private tutoring expense reduction measures that would bring relief to parents.
- In 2004, the MOE & HRD announced in the “2.17 Education Expense Reduction Measures” that the expense of private tutoring would be reduced through the normalization of public education.
- The basic resources for establishing the policy were obtained and a cyber home learning support system plan for building an e-Learning system was established based on the research findings in July 2004.
- To efficiently and effectively promote cyber home learning, the Ministry of Education, metropolitan and provincial offices of education, KERIS, Korea Institute of Curriculum and Evaluation (KICE) and other related institutions have built an inter-regional cooperation system and formed the Cyber Home Learning Operating Committee to designate responsibilities for each institution.
- Through this plan, the cyber home learning system was developed systematically on a national scale after testing pilot cyber home learning programs in some metropolitan and provincial offices of education including Gyeongsangbuk-do and Daejeon.
- In order to effectively build the Cyber Home Learning System, the well-prepared metropolitan and provincial offices of education were selected and pilot programs were gradually put into operation at the offices of education beginning in September 2004. The basic direction of the system has been set and planed to go full service in March 2005.
- Pilot Test : The offices of education in Daegu, Gwangju, and Gyeongsangbuk-do selected as the site of the pilot program began to operate the pilot systems in September 2004. Since the program began, the average number of students accessing each website for study was 2,996 and 3,992 questions and responses were tallied on the websites. During the pilot operation, there were a total of

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240 cyber classrooms operated in the three offices of education

- In March of 2005, 16 CHLSs started their services. They have mounted the contents developed by the 16 offices of education, and purchased from private vendors with their own funds. Most of the CHLSs have contents for 5 major subjects for elementary and middle school.

### 3.4 Contents

E-learning has been implemented in various forms of learning, including self-directed tutorial, problem-based learning, discussion, e-game based learning, and simulations. Although guidelines for the development of contents of CHLS and models of e-learning implementation with CHLS were provided by KERIS, the contents available in CHLS are mainly in the forms of self-directed tutorial.

When students select a subject to study, they are provided with the e-learning package for the subject, which are organized into several learning objects(LO). Each learning object is a module to learn a unit of the subjects, consisting of pretest and prerequisites, objectives, tutorials, formative evaluation and feedback, and corrective and enriched activities. These elements are called as sharable content object(SCO). The contents developed by 16 offices of education were stored into learning content management system(LCMS), developed and provided by KERIS. Then, these contents were reorganized at the SCO level. That is, each office of education may select the elements and organize them in a meaningful way.

### 3.5 Users

CHLS was primarily aimed to reduce private tutor expense. However, the system is open to anyone who wants to study the subjects of elementary and secondary education. During the three pilot tests in the last year and 5 months operation this year, most of users are students. In fact, some of 16 offices of education selected purposefully students with lower ability or lower social-economical status. Then, these students are put into classes managed by cyber teachers who monitor the students' progress and give them guides and feedbacks.

Students who are not selected are also allowed to use the system. They can select and study as they want. When they study a subject, then the cyber teacher or tutor assigned to the subject facilitates their learning. In sum, there are basically two types of users, the selected ones and the free ones.

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## 3.6 Teachers and Tutors

Like the teacher assigned in a physical classroom, a cyber teacher also bears the responsibility for managing a cyber class in CHLS. These cyber teachers are in fact teachers who currently teach students at school in the region. Right now, all the offices of education have teachers manage cyber class in CHLS. Some allow that teachers register his/her class in the offline setting to the CHLS, and use the system to supplement the offline teaching and learning. In this way, teachers can expand their teaching into the time after school.

In e-learning, tutors are commonly allotted to a class. Some offices of education employ tutors whose roles are to monitor students' learning progress, and to give them assistance needed. These tutors are not teachers. They may be preservice teachers, parents, or those who possess the teacher certification.

## 4. Initial Findings

The CHLS has been around about a year, since the first system for pilot test was launched last September. In last July, a survey was conducted to summarize how well the system is operating. According to the results, about 600,000 students are registered, which amounts to 5.37% of the total students in the country. There are 1,685 cyber classes with 43,321 students assigned. More than 4,000 cyber teachers play the teachers' role in the system. About 70,000 students visit per day. Although these results seem not to imply that the system has been successful, it seems to be a good start as a nationwide system.

## 5. Suggestions

The Cyber Home Learning System is not a learning system independent from school education, but rather a system created to support public education. Thus, research must be conducted to find the best way to perform this mission. While conducting cyber home learning model research, other kinds of research including the development of learning content-based model and the components for the cyber home learning support system should be carried out.

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