

E-Learning, Is it tool for Social Inclusion?

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Abstract

Purposes of this paper are to show the status and policies for the digital divide, and to review the potential of e-learning as a efficient tool to improve capacity of socially marginalized persons. Despite a rapid expansion of informatization in Korea, internet usage rates for elderly and people with disabilities are far below the national average. One of main reason not to use the Internet in Korea is still the lack of abilities despite massive efforts of Government to improve people's digital literacy. E-learning is widely recognized as a convenient and effective tool to close the digital divide. In Korea, 17 cyber universities are functioning and more than 30,000 students are enrolled in cyber universities. BaeUm Nara project(e-learning based IT training program) is also offering special training programs for the deaf and blind. As such, e-learning has a great potential as a tool to improve knowledge of socially marginalized groups. However, if e-learning project does not fully consider the physical and social situation of socially marginalized groups, it will deepen the existing knowledge gap between digital haves and digital have-nots rather than narrow the gap.

Key Words: the digital divide, e-learning, people with disabilities

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Introduction

The importance of ICT in achieving the goal of development has been widely expressed by many experts including international institutions. For instance, The World Bank (2002) stated, “ICT is a key weapon in the war against world poverty. When used properly, it offers a tremendous potential to empower people in developing countries to overcome development obstacles: to address the most important social problems they face; and to strengthen communities, democratic institutions, a free press, and local economies.”

ITU (2002) also remarks that the Internet works in many development areas – education/learning, health, information services/libraries and archives, governance, agriculture and rural development, environment and disaster management, culture, the mass media, and scientific research.

Accenture, Markle Foundation, and UNDP (2001) identified two roles of ICT in social development: namely ICT as a producer of economic benefit; and ICT as an enabler of socio-economic development. The role of ICT as a producer of economic benefits involves policies which focus on the development and/or strengthening of ICT-related industries such as computer hardware/software, telecommunications equipment and ICT-enabled services. In this case, ICT can be a tool to solicit income generating activities through the development of ICT related industry, or facilitating online sale of locally produced products. Two model cases in which ICT played this role include - Costa Rica’s policy focusing on ICT as an engine of export growth, and Brazil’s policy to build national IT industry.

On the other hand, the role of ICT as an enabler of socio-economic

development involves the adoption of holistic, cross-sector strategies which aim to harness the strength of ICT to accelerate development process. Therefore, ICT functions as a tool to increase efficiency, transparency, social solidarity, and quality of public service by adopting ICT in delivering public services. In this respect, ICT plays an important role in guaranteeing social development. Malaysia's strategy of focusing on improving Nation's global positioning and South Africa and Estonia's using ICT for economic and social development are examples of this ICT role.

Despite the potential huge benefits of ICT to social development, usage of ICT for some social groups is blocked due to the lack of infrastructure, equipment, and human capacities needed for use of ICT. Therefore, ICT is mainly used in socially prestigious groups. In this respect, many scholars (Haywood, 1998; Schiller, 1966; Loader, 1998; Wresch, 1996; Perelman, 1998) warned that unequal diffusion of ICT usage among digital users and digital non-users would widen the current gap between them.

Although the Internet has far outpaced the adoption rate of other technologies, due to distinctive features of the digital technology - the Internet, the gap between digital users and non-users will not be narrowed. The Internet differs in usage from other technologies. First, it has a much more complex set of prerequisites for usage. For instance, not only just digital literacy but also knowledge of IT terminology and search engines are needed to use various services offered by the Internet. Second, the Internet offers higher rewards to more expert users, since availability of the services and information largely depend upon the users' ability to manipulate the Internet. Third, the speed of innovation in Internet technology means that the technology is constantly evolving and reinventing itself, unlike the

relatively static technology of the telephone and television(Kuttan & Peters, 2003). Due to these Internet features, late Internet users can not easily catch up with early Internet users.

Among the various barriers to access to digital information, a lack of knowledge about how to use ICT products is often regarded as one of the major obstacles. Therefore, many initiatives have been implemented to overcome this matter. In recent times, particularly, e-learning has become widely recognized as an efficient means to improve the skills of people. In Korea, e-learning has emerged as a new trend resulting in the establishment of 17 Cyber universities and development of the e-learning Industry Development Promotion Act. Therefore, in this paper, the possibilities of e-learning as a tool for social inclusion will be reviewed. For this purpose, other issues such as general pictures of the digital divide, general understanding of e-learning, usage of e-learning in Korea, etc. also will be covered.

1. General Picture of the Digital Divide in Korea

It is widely known that Korea is one of the leaders in usage of digital information. In July 2003, Internet Users were 28.61million persons, which was 64% of the total population, and broadband subscribers were almost a quarter of the population(11.2 million). Korea's broadband penetration rate(17.16%) is the world-wide top compared with the figures of 8.40% in Canada, 4.47% in the U.S., 2.23% in Japan and 1.55% in the EU average(OECD). Internet banking has also become a part of everyday life with the existence of 18.8 million Internet banking accounts in 2003. Despite the enormous development in the usage of digital information, it has

spread in unequal ways.

Table 1: Internet usage rates by social groups

Category	Sub-Category	Internet Users(%)
Gender	Male	70.7
	Female	57.5
Education	Middle School Graduates and Below	5.8
	College Graduates and Above	82.1
Occupation	Housewives	47.0
	Manual Workers	31.8
	Office Workers	88.7
Age	50 and Above	23.2
	6-19	91.3
Monthly Income	Less than \$ 1,250	22.9
	More than \$ 2,500	67.2
Region	Metropolitan Cities	86.1
	Rural towns	44.2
Total		64.0

Source: Korea Network Information Center.2003.Survey on the Computer and Internet Usage

As shown in the table, Internet usage rates of female(57.5%), middle school graduate and below(5.8%), manual workers(31.8%), the elderly(23.2%) are lower than male(70.7%), college graduate and above(82.1%), office workers(88.7%) and youth(91.3%).

Table 2: Internet usage rates among people with disabilities

Category	Sub-Category	Internet users(%)
Age	7-19	81.8
	50 and above	7.1
Total		27.6

Source: Korea Agency for Digital Opportunity and Promotion. 2003.
2003 Survey on Information usage among the disabled

Internet usage rate of people with disabilities is far below the national average. For it is 81.8% in the group of teens with disabilities and 7.1% in the elderly with disabilities.

Table 3: Main reasons not to use the Internet in Korea

	Don't Want it	Lack of Ability	No Computer	Too Expensive	Don't Have time	Others
1999.10	34.6	34.0	23.1	6.8	1.2	0.3
2000.8	32.3	36.0	16.8	2.3	11.9	0.7
2001.6	44.5	27.5	14.9	2.0	10.9	0.2
2002.6	47.8	22.9	11.6	0.6	16.7	0.3
2003.6	44.4	36.3	6.5	0.9	7.6	4.2

Source: Korea Network Information Center. 2003. Survey on the Computer and Internet Usage

The main reasons not to use the Internet in Korea have been 'don't want it' and 'lack of ability'. However, as the number of Internet users is increasing, the reasons have slightly changed. While the number of persons to mention 'No Computer' has decreased, the 'don't want it' and 'lack of ability' are still important barriers to using the Internet.

Comparing Internet access barriers in Korea with those of the U.S.,

where the main barriers to Internet use at home are ‘don’t want it’ and ‘too expensive, Korea is quite unique in the sense that ‘lack of ability’ is still a significant barrier.

Table 4: Main reasons for no Internet use at home in the U.S.

Don't Want it	Lack of Ability	No Computer	Too Expensive	Don't Have time	Others
53.1	25.3	11.6	3.2	5.9	8.5

Source: National Telecommunications Information Administration. 2001. A Nation Online

The digital divide was recognized by opinion leaders in Korea as one of the significant social problems that impeded social integration. Therefore, the Digital Divide Act was made into law in 2001. Under this law, a comprehensive Plan for Closing the Digital Divide should be prepared every 5 years and a yearly Implementation Plan should be initiated by all Ministries. The Korea Agency for Digital Opportunity and Promotion (KADO, <http://www.kado.or.kr>) was also launched to implement the nation’s plan and projects for closing the digital divide.

In particular, to improve the ability to use digital information, the Korean government devised a national plan to provide this opportunity to 10 million persons by 2002. In working toward this goal, the government has been cooperating with private computer academies, colleges, welfare organizations, post offices etc. using various outreach methods such as mobile and visiting learning programs. 5,358,840 residents in local communities, 129,170 farmers, 129,170 fishermen, 434,003 housewives, 100,578 people with disabilities, 442,735 elderly, and 120,198 prison

inmates received IT learning opportunities by 2002.

The government implemented "The 2nd National IT Learning Program" to produce creative another 5 million Koreans by June 2002 who can fully utilize IT in their lives. For that goal, the government provided customized programs suitable for various social circumstances and made efficient use of existing facilities and online learning programs. The government has also made good use of IT literacy gauging tools to increase its efficiency.

Table 5: Number of persons attending IT training class(June, 2002)

Group	2000	2001	2002	Total
Student in low-income household	53,734	1,929,331	1,598,339	4,481,404
Residents in local communities	1,265,062	2,949,937	1,143,841	5,358,840
Farmers	33,161	75,738	20,271	129,170
Prison Inmates	23,075	70,767	26,356	120,198
Housewives	299,947	124,212	9,844	434,003
Persons with disabilities	13,680	47,354	39,544	100,578
The Elderly	36,330	361,875	44,530	442,735
Others	1,870,521	746,891	1,020,852	2,738,264
Total	3,595,510	6,306,105	3,903,577	13,805,192

Source: Ministry of Information and Communication. 2002 Result of 10Million IT Training Project

2. e-Learning as a tool for social inclusion

Traditional classroom based face-to-face learning has many limitations such as time and location. In other words, traditional learning requires learners to be present in the classroom at certain times. In order to overcome these traditional learning limitations, e-learning, which takes place anywhere and anytime, is gaining attention from training institutions.

A vital difference between e-learning and conventional learning is the role of the instructor. In traditional learning, the instructor plays a critical role so that the quality of learning depends mainly upon the instructor's abilities. However, learners in e-learning situations can learn subjects directly so in this case the instructor may play a secondary role.

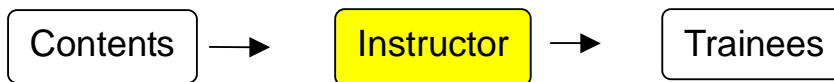


Diagram 1: Learning model of Conventional Training

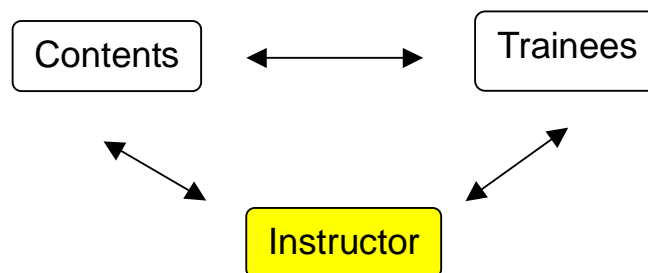


Diagram 2: Learning model of e-learning

E-learning has many strong points which are not shared by conventional learning methods. Strengths commonly numerated by many scholars

include:

- 1) reduction of the unit costs of training as well as the traditional costs of chapters (such as travel, expenses, hotels, etc.);
- 2) 'the possibility of utilizing non-productive periods for training, both at work and at home';
- 3) taking advantage of the contributions of new technologies to learning;
- 4) overcoming the need for teacher/student class time to coincide -- the virtual model does not require synchronization;
- 5) overcoming travel limitations due to distance or physical limitations of students.

Despite the many strengths of e-learning, it also has limitations. In order for e-learning to be possible, learners must be able to access a network and have the ability to use IT tools. In addition, e-learning may in many cases lack effective communication among instructors and learners. If learners are not managed properly, they may lose their desire to participate in training. Therefore, the research done by Thomas Russell (1999) concluded that no one training method is more effective than another. While it can be said that e-learning is the cheapest, whether it is the most cost-effective method of training is questionable when assessing quality vs. quantity of output.

3. Usage of e-learning in Korea

Due to the high penetration of Broadband Internet, the network environment for e-learning is well developed in Korea. Thus many training institutions have adopted e-learning as an efficient and cost saving way to provide training. In order to accelerate e-learning, particularly cyber universities, the Life-long Education Act was made into law in 2001. This

law stipulates that anybody can offer lifelong learning to specific or nonspecific groups through telecommunication media, and a life-long education institute can bestow degrees equivalent to those of junior colleges or 4 year universities if they meet the requirements set by the Minister of Education and Human Resource Development. Thus, the Life-long Education Act laid the foundation for easy establishment of the Life Long Education Center which can offer college degrees to enrolled students through e-learning even without campuses or off-line education. By the year 2003, 17 cyber universities had been established as shown in Table 6.

Table 6: Status of cyber universities in Korea (2003).

Name of Cyber University	Name of Website	Yearly admission number
Yeungjin Cyber University	http://www.ycc.ac.kr	400 students with 4 departments
Hanyang Cyber University	http://www.hanyangcyber.ac.kr	1,000 students with 5 departments
Gukje Digital University	http://www.gdu.ac.kr	
International Cyber Beauty College	http://ibc.kingston-college.net	300 students with 2 departments
Daegu Cyber University	http://www.idaegu.ac.kr	800 students with 4 departments
East West Cyber University	http://www.ewcu.ac.kr	400 students with 5 departments
Han Sung Digital University	http://www.adu.ac.kr	1,000 students with 5 divisions
Wonkwang Digital University	http://wdu.ac.kr	700 students with 2 divisions
Korea Digital University	http://www.koreadu.ac.kr	2,700 students with 11 departments
Sejong Cyber University	http://www.cybersejong.ac.kr	1,800 students with 2 divisions
Seoul Cyber University	http://www.iscu.ac.kr	2,700 students with 3 divisions
Open Cyber University	http://www.ocu.ac.kr	2,200 students with 6 departments
Korea Cyber University	http://www.kcu.ac	2,550 students with 6 departments
Seoul Digital University	http://www.sdu.ac.kr	2,400 students with 5 departments
Kyung Hee Cyber University	http://www.khcu.ac.kr	2,400 students with 9 departments
Semin Digital University	http://www.usm.ac.kr	570 students with 3 departments
World Cyber University	http://world.ac.kr	1,800 students with 9 departments

Table 7: Age distribution of students enrolled in cyber universities

Age	10-19	20-24	25-29	30-39	40-49	50-59	More than 60
%	1.1	15.7	21.9	39.2	18.1	3.6	0,3

Source : Korea Education & Research Information Service, 2002. White Paper on Education Informatization

As shown in the table, the age group of 30-39 comprises almost 40 % of cyber university's total student enrollment, which means cyber universities are appealing to the employed who need their job related re-training. 85.8% of students enrolled in cyber universities are employed and this may also indicate that e-learning is a suitable means to help the employed learn the skills necessary to keep them competitive in the continuously changing social and business environments.

Therefore, the courses offered by cyber universities are mainly application based courses such as e-business, foreign language, Information Technology, design, and leisure which are currently needed in a learner's industry, field, or work place. As of 2003, more than 30,000 students have enrolled in cyber universities. In order to facilitate e-learning in universities, two associations called Korea University Alliance for Cyber Education (<http://www.kuace.org>), and Korean Association of Cyber Education (<http://www.kaoce.org>) were created. Traditional universities are also interested in providing e-learning and to date over sixty percent now offer e-learning opportunities to their students.

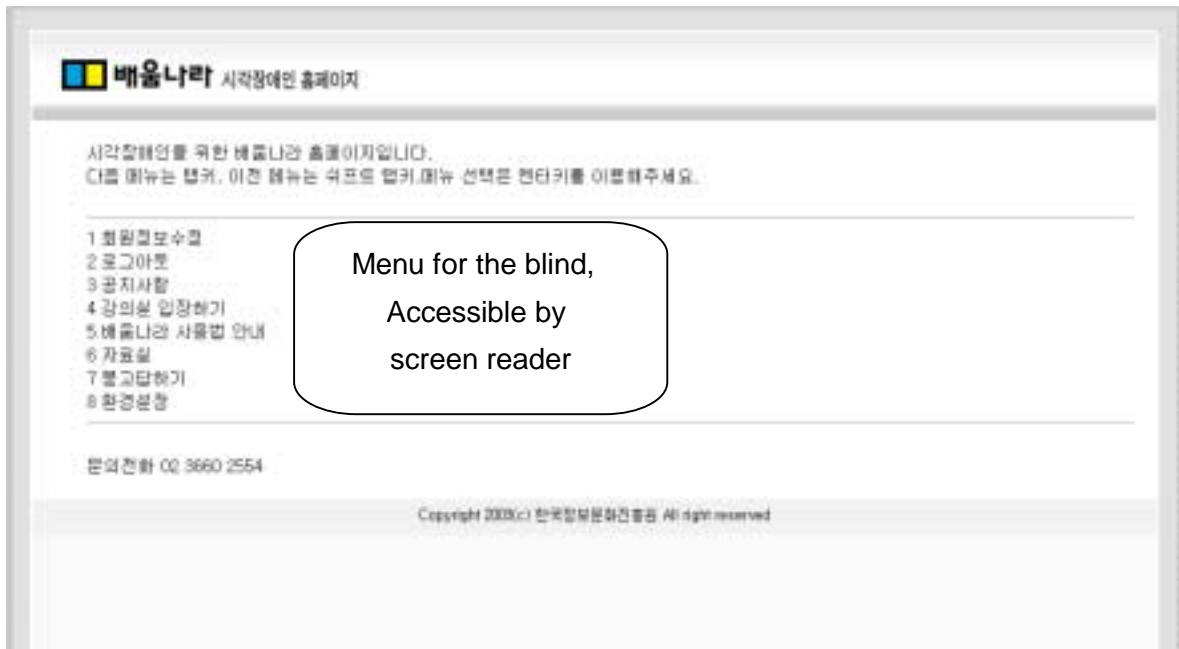
E-learning is also widely used in training for government officials. The National Government Official Training Center has offered more than 24 e-learning courses. Another area where e-learning is widely adopted is retraining of employees by various enterprises. Enterprises that adopt

e-learning are increasing rapidly, thus the number of persons enrolled in e-learning exceeds more than 400,000 among major companies (Contents Media. 2002, e-Learning Plus 12)

In December 2003, the E-learning Industry Promotion Act was also passed by congress as a means to promote e-learning. Main features of this Act are the provision of financial or policy support including tax incentives to e-learning related industries or e-learning adopting companies for training of their employees.

E-learning is also used for training of the elderly and people with disabilities in Korea. An e-learning based IT training project called BaeUm Nara (meaning learning place, <http://www.estudy.or.kr>; <http://blind.estudy.or.kr>) is a special project to provide e-learning opportunities to socially marginalized groups. It was launched in 2001 by the Korea Agency for Digital Opportunity and Promotion. Important features of this program are that it has special classes for housewives, the elderly and people with disabilities using multimedia tools such as audio, animation, motion character, etc. As of Dec. 2003, this program provided IT training to 120,943 persons (60,404 males and 60,269 females) of which the number of people with disabilities was 2,618.

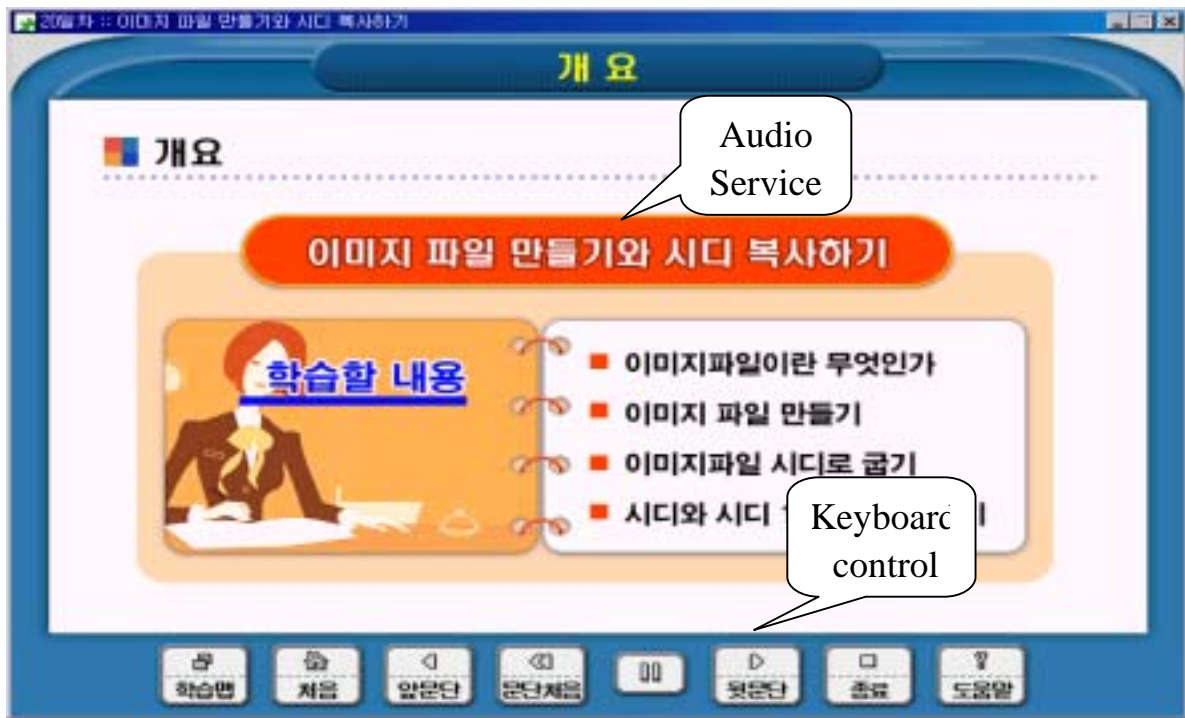
Figures 1: Special features of BaeUm Nara for the blind



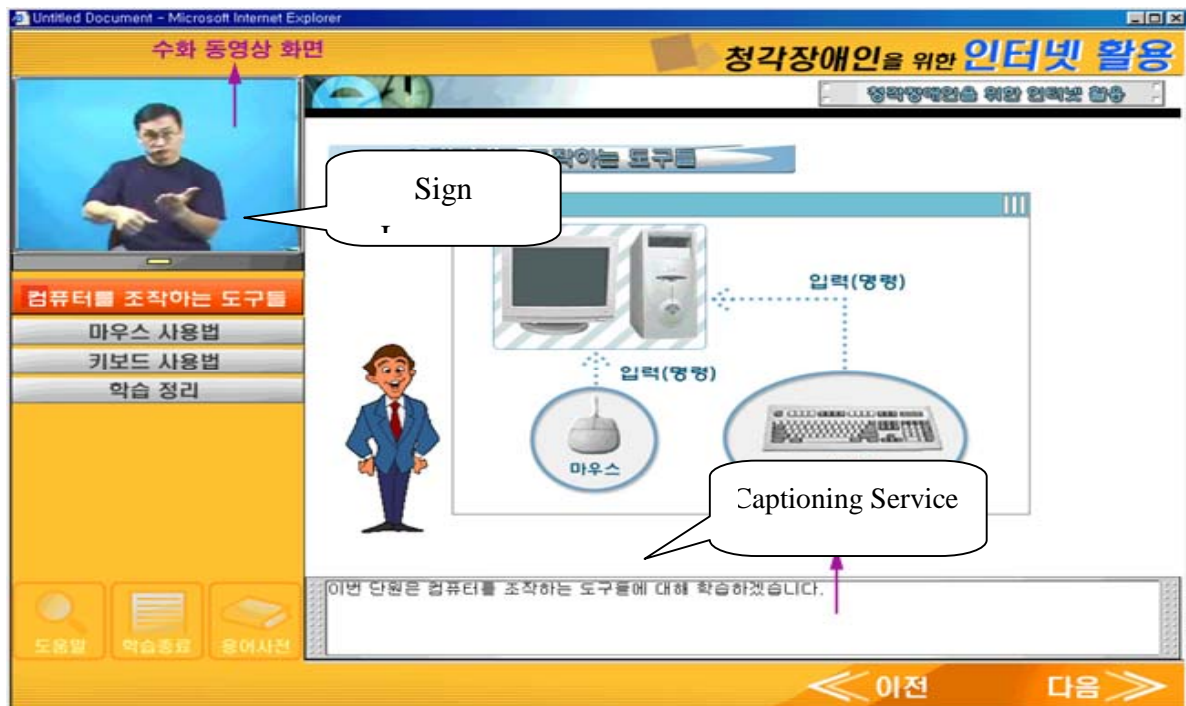
Figures 2: Special features of BaeUm Nara for the blind(2)



Figures 3: Special features of BaeUm Nara for the Blind(3)



Figures 4: Special features of BaeUm Nara for the Deaf



The level of user satisfaction is very high according to the online survey on users of the Baeum Nara Site done from July to Dec of 2003. Among 540 respondents, 33.9% said they are very satisfied with class, 45.5% said satisfied, another 20% said not bad, and only 0.7% said not satisfied. Concerning the effect of training, 15.6% said that training was helpful to getting a job and social participation, and 80.4% said that it improved their information literacy. Due to the successful achievement mentioned above, a website contest done by Donga Newspaper, one of Korea's leading daily newspaper and website evaluation Institutes, BaeUm Nana received AA level (94/100 point) in 2003, with especially high ranking in the fields of contents, service, and interface.

4. Conclusion

Despite the new trend of adopting e-learning as an efficient form of education, it does not always produce expected results. While e-learning is a cost effective training method, there is no guarantee it will be cost effective every time.

E-learning seems to be appropriate for job re-training for those who can not spare time to visit training institutions, and e-learning may be more appropriate for self-motivated and mature learners than other groups. In this sense, e-learning could be a powerful tool for training of trainers. Therefore, during the planning stage of e-learning, appropriate target groups should be well defined to maximize its training effectiveness.

Further, if e-learning does not consider the situations of socially marginalized groups, it could deepen the social isolation of the marginal rather than improve their opportunities to participate in information

society. For e-learning to be a tool for the promotion of the inclusion of socially marginalized groups, it should consider network and physical accessibility barriers to these groups. For the rural people who can not access a high speed Internet network, establishment of broadband networks in rural remote regions should precede the provision of e-learning. For the people with sight or hearing disabilities, special designs that enable people with disabilities to access e-learning contents to overcome their physical disabilities should be developed.

Usage of e-learning requires that learners have basic digital literacy. As such, proliferation of e-learning may provide new opportunities to those who are already well adapted to information society, but it may not give any opportunity to those who are not accustomed to digital media such as the Internet. Thus, expansion of e-learning without full consideration of socially marginalized groups may deepen the knowledge gap between digital haves and digital have nots. Keeping these considerations in mind, special attention to the positive and negative effects of the introduction of e-learning should be fully analyzed.

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E 化學習，是社會容納的工具嗎？

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摘 要

本文的旨在指出對應數位落差的處境和政策，並檢視 E 化學習做為一有效工具對社會邊緣團體增能的潛力。儘管韓國的資訊化快速發展，老年人和殘障人士在網際網路的使用率上卻遠低於全國的平均水準。在韓國無法使用網際網路的主要原因之一仍然是在於缺乏能力，儘管政府在改善人民數位讀寫能力方面已做了極大的努力。E 化學習做為一種結束數位落差的方便且有效的工具已被普遍地認同。在韓國，有十七個網路大學正在運作，並有超過三萬個學生在網路大學註冊學習。BaeUm Nara project(以 E 化學習為基礎的資訊科技訓練計畫)也有提供聽障與視障人士特殊的訓練課程。如此，E 化學習做為一個改善社會邊緣團體知能的工具擁有極大的潛力。然而，如果 E 化計畫不能顧慮到社會邊緣團體的肢體和社會處境，則它將會現有的數位有產者和數位無產者的知識鴻溝而非減輕。

關鍵字：數位落差、E 化學習、殘障人士。