Blended e-Learning Strategies for Effective Teaching in Traditional Universities

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The purpose of this study was to suggest instructional strategies applicable to Blended e-Learning. After examining how traditional universities utilized e-learning, it is attempted to have an interview with three working-level people and seven instructors, who widely applied e-learning to their classes. As a result, it is found that the instructors had some wrong understanding of e-learning, and their wrong perception was rooted in their lack of experience of providing e-learning and their reliance on fragmentary, superficial information. It deterred them from putting e-learning into active practice. Besides, it's additionally attempted to describe how blended e-learning could respectively be applied to different types of lectures, how to improve its social presence and how it could be used for evaluation

Keywords: Blended e-Learning strategy, effective teaching, traditional university, social presence

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Introduction

The fashion of "fusion", which represents the variety of our society, has been applied in the education, as well as in our lives including food industries, music businesses, and so forth. Namely, it is called "blended learning". Blended learning is a strategic learning process which optimizes learning environments where more than two learning strategies, methods, and technologies can be integrated in order to maximize learning effectiveness(Mantyla, 2001). The representation of blending learning depends on what would be blended. There is a variety of blends such as self-directed and collaborative learning, structured and ill-structured learning, working and learning, and online and offline learning. Blended e-Learning is, among these blends, more focused on a blend of online and offline learning(Bielawski & Metcalf, 2002). Blended e-Learning is more than just e-Learning. It is a blend of the merits of individual learning mode, traditional face-to-face learning and e-learning.

The blending strategy has characteristics to relieve traditional classroom professors' burden and even reluctance to accept technology-based learning. Therefore, it is rather easily acceptable by professors who have considered the very traditional face-to-face apprenticeship as a single methodology of learning and teaching.

Hence, the efforts to adopt blended e-learning strategies have been gradually appreciated in the formal universities as an appropriate method to persuade traditional classroom professors to get accustomed to the benefits of information society. Blended e-learning has been strategically executed as a tool to improve a university quality control and enhance the utilization of instructional contents on which researches have been conducted. The trials and errors from the applications of blending have been accumulated as assets of individual university.

However, it is not easy to find out appropriate studies on the applications of blending. Most of the studies have been conducted about instructional strategies in traditional face-to-face education settings or in complete e-learning environments. Therefore, it does not seem to be appropriate that the study results and their

applications would be relevant to blending of both traditional education and e-learning. Namely, the researches on blending which can help university professors haven't been conducted. Therefore, more feasible studies of blending can be needed for university professors who have more preference to traditional teaching strategies and take more sincere consideration to adopt prompt implementation of changes in education.

Therefore, this study was intended to suggest blended learning strategies as tools to improve the quality of traditional university education. For the purpose of this study, there are research processes as follows: 1) to conduct literature reviews, 2) to analyze the actual problems by the execution of blending, and 3) to suggest appropriate strategies of blending through interviews of experts who have succeeded in applying their own blending strategies in e-learning.

Blended e-Learning: Definition and Strategies

Definition of Blended e-Learning

Blended Learning is defined as a learning process taking two or more presentation and distribution methods and combining them to enhance the learning content and experience for the learner(Mantyla, 2001). Simply, it can be described as a learning method combining diverse learning events.

Blended learning has various types according to blending elements. Singh and Reed(2001) suggest the blending of self-face vs. collaborative learning, structured vs. unstructured learning, work vs. learning, and online vs. offline learning. Smith(2001) claims the combining technology(TV, internet, telephone etc.) with traditional education or training. Valiathan(2002) presents the mixing varied delivery methods with technologies, such as Web-based courses, EPSS, and knowledge management practices.

Blended e-Learning is, among these, more focused on online & offline learning(Bielawski & Metcalf, 2002). The term is new but, the concept has been around for several years as Smith(2001) introduces it as "an old friends get a name". It is linking of the merits of each learning mode, traditional face-to-face learning and e-learning.

The opportunities of blending have been sought in e-learning environments. Because e-learning environments have been considered to provide the abundant possibilities of learning opportunities. E-learning refers to a digital technology-based, learning environment (Horton, 2001). Therefore, it has been a comparative research topic with traditional face-to-face learning.

Researchers have reported that the levels of students' interaction and satisfaction were improved, when students had the opportunities to learn in traditional sessions supported by e-learning methodologies (DeLacey & Leonard, 2002; Leung & Tran, 2000). It is possible that the similar results of the reports can be found from each of learning environments: face-to-face learning and e-learning.

In the traditional face-to-face learning settings, students and teachers are supposed to experience the realistic, same educational environments at the same time frames in the same places. Those environments have provided the opportunities to help learners experience some of instructors' personal characteristics as well as obtain learning contents themselves, which could make students' have unintentional learning (Heo, 2000). However, Heo pointed out that uniformed lecture-oriented instructions could be one of shortcomings of traditional education system.

On the other hand, in the cyber space where physical realities do not exist, instructors and learners freely experience synchronous or asynchronous learning. The virtual learning environment gives learners the opportunities to become providers as well as consumers of information (You, 2002). He also suggested that e-learning environments help learners save and share certain information into digital formats. However, he told that e-learning might have instructors and learners recognize that their educational activities are not realistic.

Accordingly, nowadays, the modes of blended e-learning have been expended with advantages of face-to-face as well as of e-learning. However, You(2002) told that the appropriate effects from the blending would have significant meanings as far as there are legitimate reasons why both subjects of learning and teaching need to be integrated.

Strategies for Building Blended e-Learning

A blend is far beyond just tasks of mixing educational factors such as environmental conditions, learning and teaching methodologies, types of media, and so forth. Valdez(2001) compared the blending to chemistry. He stated that a blend would be simply referred to an integration of educational factors. However, he put more emphasis on how to blend.

However, it is not easy to find the optimal formula to achieve the desired outcome. A lot of factors need to be considered could be the leading cause. Therefore, several researchers makes an attempt to provide some guidelines for blending. For example, Rossett et al.(2003) present the possibilities of what can constitute a blended learning approach then, show a breakdown of content types based on stability vs. urgency, touches vs. cost, and Learning resources vs. experience. clarifies before selecting the elements of a blended solution and applying the techniques to meet the learning outcome.

In addition to focusing on contact types, there is a blending guide considering on learning activity. Im(2003b) suggest the teaching-learning models linking classroom instruction and cyber learning. First, teaching-learning models are classified; problem-solving, project, experiential, and explorative learning and then learning events(introduction, feedback etc.) are described according to models. Finally, instruction methods available on classroom and e-learning are presented. Similarly, Valiathan(2002) classified blended learning into three models; skill driven, attitude-driven, competency driven. Then, according to models, learning events are

categorized. Lastly, blending options are presented.

In summary, several researchers suggest blending strategies, but most of them is to propose options blended. Therefore, practical guides are needed, such as when e-Learning is applied or how lecture can achieve social presence on e-Learning etc.

Blended e-Learning Status in Traditional Universities

The General Status

The beginning of e-Learning started among a few department in several universities. Since then, there has been a significant improvement in the e-Learning service. Lm & Im(2004), in the current state of e-Learning in higher education report, e-Learning has been implemented about 85% of Korean universities(including on-line university), 201 universities, either partially or entirely in their curriculum. Jung & Lim(2002) pointed that 151 university operate e-Learning courses, 76% of them have been implementing the e-Learning courses as part of the traditional classroom curriculum. These studies indicate that many universities have provided e-Learning is general type of blending.

Instructor's perception about Applying e-Learning

The perception of professors is not seen as much positive as the speed at which e-Learning is spreading. Lim(2004) made it clear that the answers by professors indicated that they did not have a great understanding of the need to introduce e-Learning to their own lectures regardless of the stimulation of e-Learning and the type of universities' foundation, which he found in an interview with professors of 7 universities. Rather, a lot of them were found to have strong resistance and only 10~20% of professors responded that they understand the need to introduce e-

Learning in a practical sense. This can be also confirmed by the survey on the introduction of cyber education, which was conducted for all professors in I university in the university year 2003. According to Im(2003a), while 89.1% of professors were found to agree that e-Learning is necessary, only 11.9% of professors responded that they see the need of having the e-Learning in place. The reason why professors have negative view about the introduction of e-Learning is found to be their sense of burden in technical aspect or their concern that they may have more works to do than before. This tendency was found to be general not only in this university but in most of universities. Seo(2005) reports that educational and technical support are required for professors to promote Blended e-Learning in order to ensure the information of lecture, which he found in a survey that he conducted for 1,026 professors of S university. Moreover, he suggested that the overlapping or additional work is the greatest stumbling block when professors are trying to use online features.

This report was not different very much from the earliest time when e-Learning was introduced. Yun(1998) investigated into the most difficult things in setting up virtual lecture for 1,160 professors of S university, and 48.8% of respondents said that they face the greatest difficulty in preparing for the lecture, which means that a great deal of respondents are finding it difficult to put in time for setting up virtual lecture. Others said that they have concern over the worsening effect of interaction between professors and students in a face-to-face way. In addition, this study found that different professors are suggesting different and contradicting ideas: Some professors suggest that e-Learning may be suitable for lecture for many students, and others suggest that e-Learning is suitable for lecture on the theory. This plainly reveals the sense of burden and resistance with respect to the e-Learning that professors still have.

In summary, though more than half of professors at national and private universities across the nation are using e-Learning partially or wholly, they were found to feel burdensome or have prejudice against using the online features, and it was confirmed that they need more specific help in terms of why and how they have to

apply the online feature to their lectures.

Method

Participants

To extract strategies of Blended e-Learning, experts of two groups were interviewed. One group is consist with three working-level people, who design, develop and implementation e-Learning in university. They are also professors. other group is with 7 lectures and professors, who apply e-learning to their classroom in university. The universities they employed have adapted e-learning since 4~5 years, at stage of e-Learning development.

Procedures

In this study, semi-structured, in-person interviews were used as the primary data collection method. Ten respondents were interviewed about 2 hours during Jun-July in 2005.   Interview is recorded under the permission.

Questionnaires

Interview was conducted with two types according to group for investigating problems and strategies solving them. Working-level people are asked about the status of e-learning in their universities, the problems, the best practices about utilizing e-learning, and blended e-Learning strategies. Lectures are asked about utilizing e-Learning practices on instruction planning, interacting, evaluating.

Results and Discussion

This study aims to suggest the effective and efficient Blended e-Learning strategies, and conducted interviews with professors and relevant people working in related departments who are actively using e-learning for their traditional way of lecture in universities. As a result from the interview, it was found that most of the professors who are not using e-leaning actively have wrong perception about it. Experts points out that this is because of the prejudice that comes from their lack of experience in using the e-learning. Here, we summarize the strategy of Blended e-Learning that can be applied to the traditional way of lecture in universities, presented by experts, after we discuss the wrong perception by professors in traditional universities.

Professors' perception

It was confirmed that the wrong perception that professors have about applying e-learning is an obstacle, which was found from the interview.

First, professors think that they must have good computer skills to use e-learning properly. However, lectures are not needed to be computer programmers or designers, just like drivers are not needed to be a car mechanic. All they are needed is teaching know-how and mind communicating with digitalized students.

Second, professors are unwilling to apply and try to stick to the traditional ways because they think that their workload becomes heavier than under the traditional ways. But in reality, it can be known that the e-learning can be used very conveniently if some attention is paid for several weeks in the beginning, if they can use it well. The questions asked by students can be answered by assistant professor and then filtered by professor, which would result in not very many questions. To make it better, the lecture can go on even during holidays, obviating the necessity of canceling the lecture.

"There are not very much positive reaction to Blended e-Learning. We do not think that it is unnecessary. Rather, we think that it is inconvenient. We are aware that this is a service that we can provide to our students and can be used conveniently if we organize it well. But we are afraid that we may be asked many questions if we run this. Less than 10% of professors regard this urgently necessary, though the university tells us to apply e-Learning to lecture. The remaining professors stick to the existing way, and 10% of professors have resistance to e-learning." - working-level people in A university -

Third, they are also thinking that the effect of learning would not as good as the lecture in classroom. Meanwhile exactly as the average of group varies depending on how professors teach students in classroom, it is the same case with the lecture that applies e-Learning. The quality of lecture is determined by how effectively professor teaches students regardless of e-learning and lecture in classroom. Instance of same contents, same teachers, e-learning is more or less than face-to face learning(Tucker, 2000). Thus, Researchers have reported that student interaction and satisfaction was improved, when students learned in online sessions were added to traditional courses(Dean et al., 2001). Those reports support that it is prejudice to insist on face-to-face exclusively.

By the way, most of professors who have negative view of e-Learning or a sense of burden toward it have never experienced e-Learning in a right way. This result is in the same context with the assertion by Bonk(2004). He points out that there are several myths related to teaching online in higher education. First, college faculties believe that young instructors are the main ones teaching online. Actually, his survey indicates that the vast majority(over 70%) utilizing e-learning had over 10 years of teaching experience. Second, College instructors will flock to sophisticated technologies. But many studies show(Peffers & Bloom, 1999), most instructors use technology to share one's ideas and use electronic boards. Third, college faculties believe that college instructors can teach the same way that they teach face-to-face. But, Dennen(2001) found that more successful instructors fostered student

collaboration, interactivity, and engagement online. Forth, College instructors simply need a little more training to teach effectively on the Web. But, his survey indicates that college instructors need many forms of training and support. Fifth, Time needed for online learning is equal to traditional instruction. But his experience indicates that it is the first course that takes the most time and that there is some balance in later offerings of the course. Besides, Dennen(2001) suggests that student can learn with more ownership over their learning, if lectures provide opportunities about peer-interaction, mentoring. Sixth, Professors believe that online learning will not impact them. They anticipate teaching with same methods until they retire because of residential students will always be there to teach. But students are demanding online courses and experiences. Moreover, as technology developing, experiences teaching on the Web will only serve to prepare instructors for more sophisticated technologies.

In Summary, professors in traditional universities can not e-learning actively because of their several misunderstandings. Those perceptions were rooted in their lack of experience and their reliance on fragmentary, superficial information about e-Learning.

Blended e-Learning Strategies

Strategies by instruction types
On the interview, professors who widely applied e-learning adapt e-learning according to four instruction types.

Blending for theory-based instruction: Professors may be worried about whether the e-Learning lecture focusing on the theory would bring about the same effect as they can expect from face-to-face interaction. Material for well-structured web lecture would be more effective than running discussion room where the concept has to be explained. Lee(2004) suggests that the well-structured material does not have less effect on the acceptive learning like understanding the concept or

learning the principle, compared to the face-to-face interaction between professor and students.

"···It is a prejudice that students have to be given the explanation verbally anyway, or professors have to give feedback one by one. You would have the experience of immersing yourself in reading a good novel all night long because you were deeply moved, even though the novel do not have any picture you like at all. ···"

- working-level people in B university -

Blending for discussion-based instruction: Discussion is more important in modern society that regards critical thinking as important. Discussion is one of the strategy that traditional way of teaching has adopted, but has the shortcomings like some students having monopoly on discussion or class getting distracted. The technique for online discussion is simple. All that is required is the bulletin. Synchronous online discussion can go on in an improvising way, but the asynchronous discussion gives the time for thinking and presenting the supporting materials. It also allows a person to go over his or her statement and reflect. According to Lee(2004), a comparison between a group, to which a professor presented only one topic of discussion and did not intervene in the discussion within the group, and the other group, to which a professor presented pros-and-cons in summary for their own research, indicates that the former were found to show an overwhelmingly greater improvement than the latter in terms of critical thinking. In a word, direct discussion is far more effective in cultivating the ability of critical thinking than the self-study on the outcome of discussion. The following is about the useful strategy of discussion via the web bulletin.

• Present detailed and controversial topic of discussion, against which disagreement can be made.
• It is desirable to conduct group discussion if there are many students attending the

lecture.

- Be sure that students mark the number beside their name when they are posting their writings, indicating how many times they are posting such writings.

Blending for large class: The effect of blending e-learning is most conspicuous in large lecture rooms. If group discussion is conducted even in large lecture rooms, the effect from small lecture room can be copied. But it is important to make sure that the trace of group learning activities is left in the bulletin. Because students think that all activities during the lecture are the basis of evaluation, they would actively engage themselves in activities just if professors make only one comment on requirements at the early part of semester. In relation to the distribution of material related to learning, if the contents required for the class are posted on the online library in advance, so that students can download them, they would not miss the contents of lecture while being preoccupied with writing down them.

Strategies for improving the social presence in e-Learning

The interface that students are contacting in e-Learning is not human but computer display. Therefore, they can feel as if they are alone. In this environment, a strategy to reinforce the sense of students that they exist in real society is required as if a real person exists on the other side of computer. Social presence is defined as a quality of a given media that affects the degree of salience of a conversational partner in a one-to-one interaction(Short, Williams & Christie, 1976). Gunawardena & Zittle(1997) report that the social presence enables to increase motivation and satisfaction. The following is about the guidelines of achieving presence.

Socialization in early semester: Writing a self-introduction in online board could increase social presence. If unique letter is asked, with required elements such as name, major, contact information, expectation about class, students would reveal "human" dimensions of their own personality wanting to present. It also provides opportunities for identifying other classmates and feeling friendly.

Use of Emoticons(^_^): Using emoticons could increase social presence. The emoticons serve to "warm" and personalize the discussions or messages by greeting each other, showing agreement, clarifying the intent of a message, and suggesting a solution while leaving the discussion open (Fahy, 2003) and generally adding charm to a message.

Reply: Reply makes students interest. But, professors are not need to reply every message. Students believe that lectures read their every message, if professors comment about subject writing on board in face-to-face learning. And if those belief is expanded, to writing on board becomes part of class activity.

"···At the real class in the lecture room, we remind students of the contents that we discussed online. And then, students put down their own ideas online more actively. There is no need to comment on all of writings during the lecture. We remark, saying "as some of your writings say..." And then students think that they can write and get comment from professor, stimulating their participation and naturally linking the lecture both in lecture room and online .···"

<div align="right">- working-level people in C university -</div>

Coffee bar: Instructor teaches more than contents. Students learn the view, personality from instructor. Those are not related with subjects, they are affective with student well. Hence, writing about philosophy and experience of instructor is helpful to transmit subject with open mind.

Method to make text statements of e-Learning: Naturally, there is a concern that the absence of professor in remote learning would result in less effective learning. One of the ways to overcome this concern is using spoken language for stating texts for textbook.

Strategies for evaluation

Group evaluation: Blended e-Learning can induce the collaborative learning among the students in same small group, and competition among groups. At this time, professor can make individual evaluation of achievement by students one by one, but the better strategy is to use the perspective of students in evaluating each group. Importantly, professor has to indicate the item of evaluation in advance before handing out. Here, the absolute value of score that students give is not important very much, but the result of relative evaluation is important. If the top ranking 1st and 2nd group and the bottom 1st and 2nd group are selected to view the result, it can be found that there is no great difference from the evaluation by the professor himself or herself.

Individual evaluation: If the project is set into motion by group, there may be some students who would free ride on the efforts by other group members. One of basic duty of professor is to distinguish between the hard-working students and free-riding students to ensure consistent and fair evaluation. The following is about the strategy for that.

• The peer-evaluation is helpful. No one knows better than team members, who worked together on the task, about who made how much contribution. Therefore if the evaluation form for their colleagues and themselves is given, and they submit it to professor in email, it is clearly seen who made how much contribution in the team.

• The 'self-evaluation' is also useful. It is a method to let students evaluate themselves in relative and absolute terms. The relative evaluation means evaluating in relative sense according to given item, and the absolute evaluation means letting students put down their own credit. Surprisingly, it will be found that a lot of students would not give themselves only A+.

• The strategy of disclosing 'my contribution report' to all is possible, too. It is

about describing his or her own contribution to the team project or task in detail as much as possible, and the reliability of it can be secured by disclosing it on the bulletin.

It should be noted that the method of evaluation has to be announced clearly at the early part of semester. Students would have no choice but to more actively participate if the fact is announced that the group and students would have different credits and the evaluation by colleagues would be reflected in their own evaluation, and finally, if the free-riding is warned.

Suggestion

The effort by this study was meaningful in that it presented blended e-learning as a vehicle to enhance the quality of college education and offered workable strategies. But there's something to be desired in this study, and it's expected that there would be a lot of follow-up research efforts to produce better results. First, just 10 working-level people and experts were interviewed, and acquiring more data from a lot of educators who take advantage of blended e-learning will make it possible to find out pervasive trend and come up with successful strategies. Second, the findings of the study might be interpreted in a more significant way if they are verified again to become more valid. Third, a wide variety of specific guidelines about how to design multimedia textbooks in blended e-learning setting are called for. Lately, it seems that lots of researchers are putting intensive research efforts into it with growing attention, and such attempts will make a critical contribution to helping traditional universities provide higher-quality education.

Reference

Allen, E., & Seman, J. (2003). Sizing the opportunity: The quality and extent of online education in the united states, 2002 and 2003. MA: The Sloan Foundation.

Bersin & Associates. (2003). Blended Learning : What works?. Retrieved September 2005 from:http://www.e-Learningguru.com/wpapers/blended_bersin.doc

Bielawski, L., Metcalf, D. (2002). Blended e-Learning: Integrating knowledge, performance, support, and online learning. MA: HRD Press Inc.

Bonk, C. J. (2004). The perfect e-storm: Emerging technologies, enhanced pedagogy, enormous learner demand, and erased budget. Keynote Speech of 2004 KSET International Conference, Korea.

Dean, P., Stahl, M., & Sylwester, J. P. (2001). Effectiveness of combined delivery modalities for distance learning and resident learning. Quarterly review of distance education, July/August.

DeLacey, B. J., & Leonard, D. A. (2002). Case study on technology and distance in education at the Havard Business School. Educational Technology and Society, 5(2), 13-28.

Dennen, V. P. (2001). The design and facilitation of asynchronous discussion activities in Web-based courses. Unpublished doctoral dissertation, Indiana University Bloomington: Bloomington, IN.

Fahy, P. J. (2003). Indicators of support in online interaction. International Review of Research in Open and Distance Learning, 4(1). Retrieved September 2005 from: http://www.irrodl.org/content/v4.1/fahy.html

Gunawardena, C. N., & Zittle, F. J. (1997). Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. American Journal of Distance Education, 11(3), 8-26.

Heinrich, R., & Molenda, M. (1998). Instructional media and technologies for learning. NJ: Prentice Hall.

Heo, H. O. (2000). The instructional considerations for integrating lecture-based

classroom with learning activities in cyberspace. Educational Research, 30(1).

Horton, W. (2001). Leading e-Learning. Alexandria, VA: ASTD.

Im, J. H. (2003a). Study for adaptation and development cyber education system in Inchoen university. Research Paper of Incheon university cyber education committee.

Im, J. H. (2003b). Study of community based teaching．learning model for integrating classroom instruction with cyberlearning. Research Paper of Korean Education & Research Information Service.

J. I. S., & Lim, B. R. (2002). Analysis of the cyber education status in universities. Research Paper of Korean University Alliance for Cyber Education.

J, I. S., Lim, B. R., & Im, J. H. (2003). The status and quality management in higher education in Korea. Educational Technology.

K, H. J., K, S. S., & K, M. R. (1999). Direction of legal improvement in the cyber university. Computer Education, 2(2), 63-69.

Khan, B. H. (1997). Web-Based Instruction. NJ: Educational Technology Publications.

Kim, D. I. (2002). The status of applying online in Seoul national university. Discussion Materials in Center for Teaching & Learning.

Kim, H. B. (2004). e-Learning in university. Material of 2004 KSET e-Learning Seminar, Korea.

Kister, K. (2002). Is blended best? : Thomson learning studies the question. Retrieved 2005 from http://www.elearningmag.com/ltimagazine/article/articleDetail.jsp?id=21259

Lee, H. J. (2004). Learning process mechanisms in resource-based structured instruction and interpersonal interactive instruction in web-based distance learning environment. Unpublished doctoral dissertation, Seoul National University.

Lee, H. K., K, D. H., & Lim, C. I.(2001). The Status of distance university and strategy of improvement. Research Report of Ministry of Education & Human Resources Development.

Lee, O. H. et al. (2002). Perception analysis of cyber education operators. Korean information and broadcasting, 8(1). 135-163.

Leung, T. Y., & Tran, S. Y. S. (2000). Integrating the strengths of the web-based and traditional models of teaching. Paper presented at the International vocational education and training association conference, HongKong, August 6-9, 2000. (ED446247)

Lim, B. R., & Im, J. H. (2004). e-Learning status in higher education and its implications for policy-making. Research Paper of Korean Education & Research Information Service.

Mantyla, K. (2001). Blending e-Learning: The Power is in the Mix. Alexandria. VA: ASTD.

Oh, I. K. (2004). Blended Learning trends analysis : Korean trends & comparative study with foreign data. Corporate Education Research, 6(1), 41-62.

Park, M. S. et al. (2003). Status of university information. Research Paper of Korean Education & Research Information Service.

Peffers, K., & Bloom, S. (1999). Internet-based innovations for teaching IS courses: The state of adoption, 1998-2000. Journal of Information Technology Theory and Applications, 1(1). Retrieved Jun 21, 2005 from: http://clam.rutgers.edu/~ejournal/spring 99/survey.htm.

Rah, I. J. (2004). Anticipating the e-Learning's 2nd takeoff. e-HRD, 8.

Rosenberg, M. (2001). E-Learning: strategies for delivering knowledge in the digital age. NY: McGraw-Hill.

Rossett, A., Douglish, F., Frazee, R. (2003). Strategies for building blended learning. ASTD. Retrieved May 15, 2005 from: http://www.learningcircuits.org/2003/jul2003/rossett.htm.

Seo, I. J. (2002). An investigation on the demand for Seoul national university online education. Discussion material in Seoul National University.

Seo, I. J. (2005). Analysis of the information technology status and derivation sub task. Research Paper of Information Technology Organization in Seoul National

University.

Short, J., Williams, E. & Christie, B. (1976). The social psychology of telecommunications. London: John wiley & Sons.

Singh, H., & Reed, C. (2001). Achieving success with Blended-Learning. A White Paper. Centra Software.

Smith, J. M. (2001). Blended-Learning: An old friends get a new name. Executive Update. Greater Washington Society of Association Executives. Retrieved May 15, 2005 from: http://www.gwsae.org/ExecutiveUpdate/2001/March/blended.htm

Jung, I. S. (2003). Case study for e-Learning course activation. Distance Education, 3(1), 115-159.

Tucker, S. Y. (2000). Assessing the effectiveness of distance education versus traditional on-campus education. in AERA Business Education and Information Systems Research SIG: 2000 Proceedings, US. (ED 440271).

Valdez, R. J. (2001). Blended Learning: Maximizing the impact of an integrated solution. Click2learn Inc.

Valiathan, P. (2002). Designing a Blended-Learning Solution. NIT Ltd.

You, Y. M. (2002). E-world, e-learning. Seoul: Haneon.

Yun, J. I. (1998). Survey of need for cyber education in Seoul national university. Seoul National University Education Research Institute.

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