

Recognition and Interaction Analysis of IIBS aided Distance Computing Teaching-Learning Model

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Abstract: Recently, IIBS(Individual Internet Broadcasting System) service has become a new instruction medium and it also can do Distance Education. Here, IIBS aided Distance Teaching-Learning can provide active real-time participation of teacher and student in class. Students have very strong motivation and it helps students have very powerful interaction with teacher, experts group and parents. In Korea, IIBS-aided education has been studied and that model can help teaching-learning to be more progressive and friendlier than traditional education. However, we need to examine the recognition and the interaction on the educational use of the IIBS aided Distance Computer Teaching-Learning in distance education. Therefore, we surveyed about the recognition and the interaction of that model between teachers and students in class. In this study, we could find that they have a positive perception of the use of the IIBS aided Distance Computer Teaching-Learning Model in class. Also, we identified what functionalities are required for the educational use of the IIBS aided Distance Computer Teaching-Learning Model in Korea.

Keywords: Distance Education, IIBS, Instruction

Introduction

With increasing Video Streaming Technology and use of high speed broadband, there is new thing to consider about. IIBS(Individual Internet Broadcasting System) is a new broadcast medium that designed for Web-Broadcasting. Those IIBS Technology aided Distance Computing Teaching-Learning model leading to a change in the educational environment, due to the advent of internet(broadband speed-up and the development of streaming technology), is becoming a new educational medium that is suitable for the future Distance Teaching-learning environment in Korea.

The IIBS Distance Computing Teaching-Learning Model provides educational services that meet the learner's requests(including secret questions, students use a whispering function of IIBS chatting program), anytime in class. Two results of related studies(ByoungChan Gwak, YuongJun Lee in 2008) have shown that IIBS-aided Computing education is effective in enhancing learners' motivation and academic achievement. [1][2]

Purpose and Methods

The purpose of this study is to examine learner's perception of the educational use of IIBS aided Distance Computing Teaching-Learning Model in class and to suggest proper functionalities as a new distance educational medium in regular class. To achieve these objectives, we surveyed the recognition and also checked interactions of related teacher to students and student to students of the educational use of IIBS aided Distance Computing Teaching-Learning Model

Background

First, ARCS theory of Keller(1984). The ARCS model is a problem solving approach to designing the motivational aspects of learning environments to stimulate and sustain students' motivation to learn. IIBS learning environment as a new medium surely can provide strong motivation to students and appropriate for them.[3]

Second, Teacher' and Student' Activities can save as AVI file and Text file in IIBS. It shows that students learn more effectively when they develop artifacts of the Class, concerned PBL theory. Students ask the question each other and teacher and then it makes the teacher use drawings, web site, computer-programs and so on. It supports students in developing understanding associated with the learning goal of the lesson. [4]

Third, this model is not saved VOD class but REAL-TIME class Activity. It means that students, teachers, and community members(parent group, expert group and so on) engage in collaborative activities to solve the problem and these activities are in Social-Interaction in learning(Social interactions based on PBL theory). The best learning results form a particular kind of social interaction: when teachers, students, and community members work together. It means IIBS aided real-time instruction support a powerful interaction.[4]

Participants and Methods

We surveyed university students using IIBS aided Distance Computing Teaching-Learning Model at KNUE(Korea National University of Education).

First, a total of 31 students of two classes in 2009-2010 year answered questions. The teacher checked the reactions of interaction quantity and interaction type(both teacher to student and student to student , those also have two kind of special feature(open interactions, whispering interactions)) at first semester 'Instruction method using Computer' class in 2009-2010 year.

Second, data from the answers and reactions were analyzed regarding the recognition and interaction for IIBS aided Distance Computing Teaching-Learning Model functionalities through percentage analysis.

Third, describes the impact on educational achievement and motivation in learning of IIBS aided Distance Computing Teaching-Learning Model.

IIBS Distance Computing Teaching-Learning Model

IIBS Computing Distance Teaching-Learning Model normally consists of a teacher, students, a microphone, educational website, each educational computers connected internet network and IIBS server/client software. The next Figure 1 express IIBS Distance Computing Teaching-Learning Model and it shows the construction of online lessons. And also the IIBS Software has chatting and whispering functions.

- a. Teacher broadcast today's lesson using IIBS sever-program and students join that channel. Teacher and student can talk each other and check attendance.
- b. Students prepare today's lesson and concentrate teacher's lecture.
- c. Student can do Additional Activities(after school activities) on Educational WBI site)
- d. The lecture can save as AVI file and students show that on WBI web site after school.
- e. Experts group or parents group can join this class and help the lesson.(option)
- f. IIBS Distance model consists of IIBS-Server/Client Software and do not demand special hardware equipments and additional budget than traditional Distance-Model. It means if someone want to use that model in one's class, it is very easy.

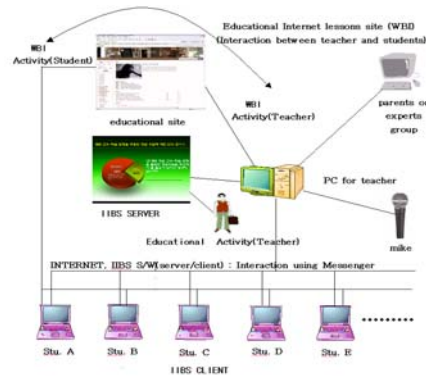


Figure 1: IIBS Distance Computing Teaching-Learning Model

Survey Questions

The questionnaire was divided into three Questions. The first question was to investigate ‘Is necessary the IIBS Distance Computing Teaching-Learning Model in class?’ and next we surveyed opinions about whatever IIBS-aided Distance Computing Teaching-Learning Model is suitable for computer lessons. The last was ‘How often IIBS-aided Distance Computing Teaching-Learning Model teach? (x weeks / 15 weeks, x = student’s opinion)’

Table 1: Needs Question in the Survey about IIBS Computing Teaching-Learning Model

Survey Questions 1		Answer	
Perceptions and Needs	Do you think that the IIBS Distance Computing Teaching-Learning Model can perform effectively?(Is necessary The IIBS Computing Teaching-Learning Model in class?)	Yes (54.84%) R : 17	No (25.81%) R : 8

R: the number of Response Students. (6 students say ‘I do not know well’) Total 31 Students.

This result showed that students agree with using the IIBS Distance Computing Teaching-Learning Model in class.(54.84%) On the other hands, 25.81% of students have a negative perception about using IIBS Distance Model in class. The reasons is that 12 students say ‘yes’ because it was so interesting and exciting, 3 students say ‘yes’ because I do not go to classroom and also it has very friendly atmosphere. In case of ‘No’, 5 students say ‘The broadband sometimes has a bad buffering and so he cannot listen to teacher’s lecture. 3 students say because the place is not classroom, so do not concentrate the lecture.

Table 2: Recognition Question in the Survey about IIBS DCTL Model
(DCTL : Distance Computing Teaching-Learning)

Survey Questions 2		Answer			
Perceptions and Needs	Do you think that the IIBS-aided Distance Computing Teaching-Learning Model is suitable for computer lessons?	Very Suitable (16.13%) R : 5	Suitable (38.71%) R : 12	Normal (9.67%) R : 3	No (35.48%) R : 11

R: the number of Response Students. Total 31 students.

This result showed that most students agree with using IIBS Distance Computing Teaching-Learning Model in class (54.84%, plus very Suitable 16.13% and Suitable 38.71% at table 2). In this case, we can see that students have the positive perceptions about IIBS-aided Distance Computing Teaching-Learning Model in computing lessons.

Table 3: Question about ‘How often IIBS-aided DCTL Model teach?’

Survey Questions 3		Answer (x weeks/15weeks)						
Perceptions and Needs	How often IIBS-aided Distance Computing Teaching-Learning Model teach?	1W (0%) R:0	2W (6.45%) R:2	3W (16.13%) R:5	4W (3.23%) R:1	5W (54.84%) R:17	More than 5W (16.13%) R:5	Not necessary (3.23%) R:1

R: the number of Response Students

W: weeks, x = student’s opinion

Total 31 Students.

This result showed that most student think ‘5weeks/15weeks’ is suitable for IIBS aided Distance Computing Teaching-Learning Model and this means that students consider that the IIBS Distance model have educational effect(learner’s good recognition and interaction concerning the educational use of IIBS in class) and the model support educational practices.

Interaction Activities check Table

Table 4 explains educational interaction of CIM education class at the first semester 4-7 weeks at KNUE in 2009 and 2010 year.

At the 4-5 weeks, we did not use IIBS Distance Model and at the 6-7 weeks apply the IIBS Distance Computing Teaching-Learning Model. Now you can see the total interactions for 4 weeks. At table 4, the traditional class in 2009 year, the numbers of interactions are Teacher 7(4+3), Student 4(2+2). In 2010 year, the numbers of interactions are 11(5+6), Student 4(3+1). Therefore, total interactions of traditional instructions are 26.

By the way, at table 4 the numbers of total Interactions of IIBS aided Distance Instructions are 130. These results prove the effectiveness of Interactions of IIBS aided Distance Model. And also the table explains for improving interactions between teacher and student (Here, we except lots of non-educational questions).

In all lessons using IIBS-Distance model, students said that it was very interesting and free so I assert that is the reason to improve the Interaction.

**Table 4: Interaction of CIM class at the first semester in 2009-2010
(CIM : Computing Instruction Method)**

Interaction of CIM class at the first semester in 2009 and 2010				
	CIM class in 2009		CIM class in 2010	
	Traditional Instruction		Traditional Instruction	
4 th week	Teacher	Student	Teacher	Student
	4/impossible	2	5/impossible	3
5 th week	Traditional Instruction		Traditional Instruction	

	Teacher	Student	Teacher	Student
	3/impossible	2	6/impossible	1
6 th week	IIBS aided Distance Instruction		IIBS aided Distance Instruction	
	Teacher	Student	Teacher	Student
	11 / 7	9	8 / 11	18
7 th week	IIBS aided Distance Instruction		IIBS aided Distance Instruction	
	Teacher	Student	Teacher	Student
	9 / 11	11	7 / 21	7

* Teacher : Interaction with Student to Teacher.

* Student : Interaction with Student to Student.

* x / y : open chatting Question(normal question) / whispering Question.

Acknowledgements

To suggest optimal functionalities of the IIBS Distance Model, we surveyed what is students' recognition and reactions of functionalities to support educational practices in regular class. Also, we investigated interactions of between teacher and student, students' activities throughout class. Finally, we identified that student have a positive perception about the use of IIBS aided Distance Computing Teaching-Learning Model, and also it is more effective to improve interaction in class than traditional education method.

And also the result showed that the interaction between teacher and students improved that used IIBS Distance Computing Teaching-Learning Model than traditional instruction model in class. The Needs for Educational Functionalities of IIBS aided Distance Teaching-Learning model will be stronger and bigger.

However, there are two things to worry about this Instrument-Model. Those are the speed of broadband and the stability of network connection. If those thins do not warrant, this model will not progress.

We believe that the results of this study can be helpful in developing the optimal functionalities of the IIBS-aided distance education and maximizing its usability and educational effectiveness in schools. In the future, all of us maybe perform IIBS-aided distance education in regular class and closely analyze the reactions and the satisfaction levels of IIBS-aided distance education.

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