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“Second Life” as a Cyber Learning Environment for Higher Education and Research Collaboration

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Abstract

This paper introduces the collaborative research on Second Life as a learning environment that has recently been undertaken between Hosei University and Hosei University Research Institute, California. Hosei University and Hosei University Research Institute, California have closely been collaborating to develop tools for education under the Sakai Project and to provide a learning environment for international distance education. Since 2002, many lectures and courses have been provided across the Pacific, sometime from the other side of the globe, via the Internet utilizing a standard H323 video/audio link to exchange lectures and the system to synchronize learning materials. Video-on-demand learning contents have been also developed to resolve the problem encountered during the conventional distance lectures using video conferencing system. But yet we felt that more interactivity and flexibility were needed to enhance the motivation of student for learning and took a new step forward and got into a research on Second Life. The Second Life Project between Hosei University and Hosei University Research Institute, California started with live streaming of plenary talks at the 16th IEEE International Symposium on Robot and Human Interactive Communication 2007 (RO-MAN2007) held from August 26 to 29 in Jeju-island, Korea. The success there made us decide to build our campus in Second Life and take the next step. As of now, many buildings including the symbolic tower for Hosei University in Tokyo called “Boissonade Tower” are built on its campus in Second Life. Another live streaming was provided for the Academic Seminar, spring 2008 co-hosted by Hosei University and Japan e-Learning Association held at Hosei University from March 13 to 14, where the distance lecture session from Hosei University Research Institute, California was live streamed in Second Life. At that time, PowerPoint slides were synchronously shown successfully and audiences in

Second Life venue could also attend the conference under almost the same environment with the venue in Real Life. These successes opened the door for new possibility for education and research collaboration as well. We believe the 3D virtual interactive environment such as Second Life together with open source collaborative learning system as Sakai may be an enhanced alternative to the conventional synchronous e-learning environment based on H323 video/audio link.

Introduction

Created and released by Linden Lab in 2003, at beginning ran on just sixteen servers with around one thousand users, Second Life, nowadays, has become a well-known 3-D real-time virtual environment, and the most sophisticated social network which has more than one million residents, and runs on more than three thousand powerful servers. It becomes more and more popular and catches a big attention from lots of presses, education researchers, business people, art designers, and mostly millions of users who have lots of fun. According to Philip Rosedale, (He is not a CEO anymore) and founder of Linden Lab in San Francisco, Second Life is a version of the Earth which alive via the Internet; it is a completely open-ended world, and has only one limitation which is users’ imaginations. Therefore, ninety percent of Second Life content is built by its residents. When a newbie come into Second Life world, he or she will be surprised because of its diversity, complexity, and realistic of those environments. Moreover, in Second Life world, a resident is represented by his or her avatar which is freely customized to pursue freedom, dreams or interests. In other words, Second Life basically is something users can be anyone who want to be. It’s truly a new life which is a virtual life.

On the other hand, Sakai is an Open Source Collaboration and Learning Environment which is a great collaboration of about two hundreds universities

around the world including some famous universities such as Harvard, Stanford, Yale, Oxford, and many more. In addition, Sakai project also receives some valuable supports from the most e-learning research leaders as IBM, rSmart Group,...Flexible, freed, open, and mostly design, and create by educators are the most powerful features that Sakai has overcome some commercial system like Blackboard or WebCT. Recently, Sakai has served for over a million users who use Sakai daily in their teaching, learning, and collaboration.

From those matters, we have joined Sakai project for three years, and our plan is fully implement it in April of 2010. On the other hands, we have purchased two Second Life education islands, Hosei University Campus and Hosei Research Center, and built our desired virtual learning environment and research places. In practical, we have done many virtual events; and the last live web cast we took care is Ro-man2008 in Munich, Germany. It's truly a virtual conference in which we hired a company to create some avatars which represent plenary speakers (Figure 2), and hosted parallel beside the real conference. Recently, we want to go forward to create a next step in virtual learning, and strongly believe that a integration of Second Life, and Sakai system will construct a most powerful virtual interactive learning environment with the most wanted features.



Figure 1: Snapshot of one of plenary talk of Ro-man 2008 in our virtual Sky Hall on Hosei University Campus island



Figure 2: Picture of Prof. and Dr. Kazuhiro Kosuge and his avatar who is a keynote speaker for Ro-Man2008

1 Enhance students' and instructors' learning comforts

1.1 Anytime and anywhere access

Recently, we have used synchronous e-learning environment based on H323 video/audio link. Our students have to come to our IT Research Center in Tokyo in early morning of weekends, and our instructors have to come to HURIC in Burlingame, California and stay very late on Friday nights. We have known how hard the instructors and the student have encountered to commute, and to feel the different in distance and in time. If we can cut those, it's a wonderful help to save a lot of students' and instructors' efforts. Here come Second Life and Sakai have solved the problem. Both of them are web-based application. All accesses are granted by a PC with a fast internet connection. They can join in their class easily at anywhere with a single sign in. The virtual environment brings all students and their instructors in one place so that they do not feel the different of distance and time.

1.2 Multiple ways for communication

The Second Life grid provides many ways of communication. An avatar can use 3-D voice chat, text chat, or even a video chat with any individuals, or any groups. For example, an avatar type some text and want to send it, with "Say" and "Shout" option, he or she can send to some avatars nearby or send it to all avatar in a same region. As an instructor or a learner, sharing an image, or creating an achieve or a live video are doable. In addition, a visible indicator of speech and spatial 3D-voice makes it easy to identify the speaker from among those present. Secondly email is also available for any individuals and groups. With a single click, an email will be sent out Second Life world. Finally, right now, Second Life supports multiple languages, and real-time text chat translators

to make virtual learning must more convenience.

However, when students step in a virtual class room, they expect much more. What they want to have is valuable information such as class assignment, class schedule, grade, syllabus,...Those are easy to be organized in Sakai. Therefore, integration with Sakai is very important so that students can have anything they want at once. One place provides all information.

1.3 An adaption for a realistic learning participation

Second Life is a 3-D environment and has a set of avatar movement called “gestures” which can customize or create. It’s not a surprise to see an avatar dancing, playing a piano or playing some music instrument. Or in a classroom, students can raise their hands to ask a question, shake their heads to show an agreement, or even laugh to express an happiness. The environment is more realistic when a student can hold a hot virtual coffee cup, or a can soda in a break-time, drive around the environment on a virtual car or helicopter, or relax on a sailboard at a beautiful ocean. Moreover, class room can take place anywhere. It could be in a formal classroom with chairs and tables, white board, microphone; or it can take place on the beach with a fire place. All those features in Second Life together make a best real-time virtual environment.



Figure 3: One of virtual class room in Hosei Research Center island

1.4 customization of learning environment

If a student steps in the same classroom every time, he or she must feel bored. Second Life is a flexible environment so that an instructor can customize the classroom. Changing color, adding more objects, decorating class content in the class room are so easy. Using drag and drop tools, and many friendly user interfaces, an instructor can easily construct or change

a class room without knowing a lot of technical skills. As a student, sharing or expressing ideas in class are always doable. If both learners and instructors are happy in the same environment, a good learning impression must be created.

2 Enhance student’s confident

2.1 Overcome language barrier

Through for the years of research on global virtual learning, we have faced a problem with students’ English skills. Some of students’ reading, speaking, and listening are not meet requirement. Usually they don’t fully participate in the class. They are quiet, don’t ask question when they don’t understand lectures, don’t make comment when they like to share. In the real class room, if a student could fully understand lectures, and if he or she wants to archive the class knowledge, working very hard is only a solution. Specially, in Second Life world, an avatar represents for a student who have more confident to talk with anyone in many ways. An avatar talk with other avatars is more freely than a student talk with other students or an instructor.

2.2 Enhance learning environment to stimulate student’s impression

Participation in class is the most important in education environment. If student sit a class room with a few people or his or her classmates who are not willing to study, he or she must be distractive. In Second Life, an environment could be made easily. For example, because in Second Life you could have more than one account, an instructors, or a teaching assistant can play multiple roles in class. They can be a student who always concentrates, and fully participates in class and makes many good comments. They could be a good virtual friend who will friendly share or exchange some information about lectures. If multiple roles are played in a virtual classroom, as an instructor, he or she can understand about the students, and modify his or her lectures or adjust how to delivery lectures to them. As students, they will have a good impression about their classes, lectures and friends. Therefore, a great achievement will be inevitable.

2.3 Learning in the first-person

In the conventional class room, a student is a third-person learner who receives knowledge from his or her instructor. This is a passive learning model. But Second Life is a 3-D learning environment where everything is virtualized, and simulated. If a student with a curiosity steps in the environment, his or her exploration will be a key for learning in the first-person. For example, a student can easily explore a 3-D DNA structure in Second Life than reads text book.

He or she can go around a big virtual DNA structure, and see how it splits. So Second Life easily engages a student in self-study. This is an active learning model.

2.4 Social network

Today, in World Wide Web, people must know about social network. Specially the United States is leading of social networking development. MySpace, YouTube, FaceBook, Hi5, and many more have created a networking social infrastructure for the web community. However, when Second Life has released, it carries a new way of unite web users. In Second Life, a user can find a friend and know his or her present; making a new friend, forming a group, discussing with group are also doable. When an avatar logs in, Second Life connects the avatar with many present avatar in many ways which are depended on a configuration of avatar privacy setting options.

On the other hands, management of society is the most important issue. Just like a real world, if no regulation, it becomes a jungle. Therefore, there need a set of rules to protect user's privacy; if an avatar have bad behaviors, he or she has serious set a restriction to expand his or her communication.(?)

Second Life could not become a social network if its environment could not support file sharing. An avatar could upload an image and share it among of his or her friends in a 3-D world. Each avatar has an individual inventory folder so he or she can keep lots of objects, and easy share when needs.

Today, a social network must be global; therefore, multiple languages supports must be a primary feature. Right now, Second Life has supported many languages and real-time text chat translator. It's truly a 3-D social network.

3 Easy to form a student-centric model for learning environment

Most of today's schools have applied an interdependent teaching model so that students have to learn in a same way. Some students struggle learning in the environment because every student may study differently. If an instruction could not help, the students may face a serious problem. They may hate to come to class or could not pass it. Thus, a new model has been created, a student-centric model in which its goal is to educate every student. Second Life together with Sakai is a virtual place to pursue the goal.

3.1 Easy customization

Both Second Life and Sakai are computer learning so that students will be able to make tools that help their fellow students learn. Students learn from other students can share instructor's task or help their classmates learn in a different ways. In addition, multiple

ways for communication and multiple content sharing are the best tool for customize a virtual learning environment. Thus, a flexible environment like Second Life brings over student's impression.

3.2 Multiple roles in the classroom

The multiple roles in the classroom helps students understand other student, or students and instructor easily know each other. If anyone in class understand each other well, educate every student differently is not a big deal.

4 Conclusion and future work

Second Life together with Sakai offers a great enhancement for virtual leaning environment. This paper has introduced many advantages for experiential learning in a Second Life. We will continue researches to find solutions for such questions, as:

Can we have some tools to help an instructor to perform any movement in classroom? For example, an instructor can wear some electronic devices which are fully integrated with Second Life. When he walks, or talks, his movement will be expressed in Second Life. By implement this way, instructor has more time to concentrate on his lectures; and his lectures are more realistic.

Can we construct a motivation engagement to shift an instructor and learner from learning in a conventional interdependent model to a virtual student-centric model? People, sometimes, do not want to change when they already are used to work in an environment for long time.

While these questions remain, we believe that Second Life and Sakai together is a great innovation towards the future learning.

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