

Conference on 3D virtual worlds in learning

October 9th 2008 - NTNU Gløshaugen, Trondheim

Program

(Auditorium S8, Sentralbygg II, Gløshaugen)

09.00-09.30 Welcome address from UNINETT ABC/LIKT

09.30-11.30 Keynote: The Oasis of the Surreal: Real Minds in Virtual Worlds
John Lester, Linden Lab, Boston, USA

11.30-12.30 Lunch at Kjelhuset, Gløshaugen

(Auditorium S3, Sentralbygg I, Gløshaugen)

12.30-1.30 What does it mean? Students' procedural and conceptual knowledge construction in a computer-based 3D model designed within the field of science education.
(Dr. Ingeborg Krange, UiO)

1.30-1.45 Break

1.45-2.30 The SL Kamimo Project: Design of Transient Learning Spaces in Second Life for Flexible Learning.
(Dr. Judith Molka-Danielsen, Molde University College)

2.30-3.15 An explorative, qualitative study of three-dimensional virtual learning environments in support of distance learning.
(Kristine Ludvigsen, UiB)

3.15-3.30 Break

3.30-4.15 Choosing between serious games, virtual worlds or neither.
(Erik Harg, Terravision)

4.15-4.30 Using 3D virtual worlds for collaborative educational visualizations.
(Dr. Ekaterina Prasolova-Førland, LIKT, NTNU/Uninett ABC)

4.30-5.15 Virtual Heritage: Glimpses from the work at Department of Computer and Information Science, NTNU on Nidaros (former name of Trondheim) in Medieval Ages.
(Michael Stokes, IDI, NTNU)

5.15-5.30 Concluding remarks

About the speakers:

John Lester

Keynote speaker is John Lester aka Pathfinder Linden from Linden Lab (the creators of Second Life). John Lester is Linden Lab's Boston Operations Director and leads Second Life Proactive Education and Healthcare Mentoring Program, acting as a general resource and academic evangelist for people using Second Life for teaching, academic and healthcare research, and scientific visualization.

John Lester joined Linden Lab (the creators of Second Life) in 2005, bringing experience in online community development as well as a background in the fields of healthcare and education. Previously, John was the Information Systems Director for the Department of Neurology at Massachusetts General Hospital, where he pioneered the use of the web in 1993 to create online communities supporting patients dealing with neurological disorders. As a Research Associate in Neurology at Harvard Medical School, he also created online collaborative education environment for professors and students to advance the case-based teaching method in medical education.

John currently serves as Linden Lab's Boston Operations Director, coordinating the growth of Linden Lab's East Coast presence. He also leads Linden Lab's Proactive Education and Healthcare Mentoring Program, acting as Linden Lab's primary mentor and evangelist for people using Second Life for teaching, academic and healthcare research, medical education, simulation, and scientific visualization.

John lives in Boston, and is commonly referred to by his avatar's name in Second Life - "Pathfinder Linden." He frequently gives presentations at universities and conferences on how Second Life can be used as a platform for education and healthcare, focusing on strategies for success and sharing best practices. For more information, please see www.pathfinderlinden.com.

Dr. Ingeborg Krange

Dr. Ingeborg Krange has written a doctoral thesis about students' use of computer-based 3D models in distributed science education. She has published several articles, papers, and book chapters the last years. She is currently Post Doc at the Department of Informatics at the University of Oslo.

Dr. Judith Molka-Danielsen

Dr. Judith Molka-Danielsen has led the evaluation of research design for the international collaboration, known as the Kamimo Project or "Virtual Campus for Life Long Learning". As Associate Professor, she teaches at Molde University College in the Information Management Program: "User Support & Education", "E-Business" and "Knowledge Networks" and advises numerous student theses. Her Ph.D. (1998 in Information Sciences) is from the University of Pittsburgh, USA.

Kristine Ludvigsen

Kristine Ludvigsen is educated as a teacher and has worked as a teacher for five years. The presented research project is a part of her master's degree in education at the University of Bergen.

Erik Harg

Erik Harg is general manager of serious games development studio TerraVision, based in Trondheim, Norway. He graduated from NTNU in 2005 with an MSc in Computer Science, and has experience in both medical visualisation and serious games development. TerraVision is a small, but successful company focusing on development of games and visual solutions for marketing, research, communication and learning. TerraVision's customers include StatoilHydro, SINTEF, NTNU/St Olavs Hospital and the Technoport Festival, with a steadily growing customer base, and a wide range of completed and ongoing projects.

Dr. Ekaterina Prasolova-Førland

Dr. Ekaterina Prasolova-Førland is currently an associate professor at the Program for Learning with ICT (LIKT), NTNU and researcher at Uninett ABC. In her research, she has primarily been working with educational and social aspects of 3D Collaborative Virtual Environments. She is currently involved in two EU-financed projects focusing on educational games in 3D virtual worlds.

Michael Stokes

Michael Stokes represents the Computer Graphics, Visualization and Virtual Reality Group at Department of Computer and Information Science of NTNU. The group is teaching and doing research in advanced computer Graphics. Application areas of special interest are physically realistic modeling and animation, virtual heritage and simulations for medical purposes especially training. The group runs well equipped laboratories.

Abstracts

The Oasis of the Surreal: Real Minds in Virtual Worlds (John Lester, Linden Lab)

Immersive 3-d online virtual worlds are a new medium for education and training, giving educators and students a platform for collaborative work, simulation, and experiential learning. John will give an overview of Second Life as a platform for innovative learning environments, providing examples of current educational and academic use as well as ideas for future exploration and strategies for success. During the presentation John will also give a live demonstration of Second Life, allowing attendees to see firsthand examples of educational projects and spaces in the virtual world. Lastly, he will touch on why virtual worlds in general resonate with human beings, and how they can be used to leverage our basic biological tendencies while at the same time giving us a change to grow beyond them.

The SL Kamimo Project: Design of Transient Learning Spaces in Second Life for Flexible Learning (Dr Judith Molka-Danielsen, Molde University College)

Through the Kamimo Project under the grant name “Virtual Campus for Life Long Learning” sponsored by Norgesuniversitet (NUV, 2007), our researchers have gained experience in the design and building of a virtual island or “sim” in Second Life for the purpose of education. By providing accessibility into 3D spaces and creating purposely designed activities that bring together a broad cross section of teachers and learners, transient learning spaces have enabled people that might not otherwise be able to partake in course activities, to come together to engage in meaningful communication at a distance.

This lecture presents our process and experiences in the design and development of the “sim” called Kamimo Education Island. We will discuss the virtual representations and spaces used in accredited college courses and those that are supportive of various course activities. It is suggested that while SL can be used to replicate the classroom lecture, that it gives further affordances for interactive teaching and active teaching. In brief the learning activity is not based on students and teachers in one stagnant or stationary learning space.

Students and teachers can preferably experience and perform learning activities in dispersed and diversified virtual spaces. Our research project defines spaces in Second Life as transient learning spaces because the participants, the activities and the representative spaces themselves are in frequent transition. Designing transient learning spaces has different challenges and benefits as compared to the traditional physical classroom. Challenges can include enabling new users to know where to go or how to behave. One opportunity is the ability to design and develop a new space for each course. This talk will help the teacher and “sim” designers to recognize the factors of designing effective transient learning spaces.

An explorative, qualitative study of three-dimensional virtual learning environments in support of distance learning (Kristine Ludvigsen, UiB)

The study will examine the educational potential of a 3D virtual learning environment for the purpose of distance learning. The study will focus on remote students’ and their teachers’ experience with the use of the virtual learning environment. The study will also examine how the fact that students and teachers are represented by avatars affects the learning situation. Fieldwork, interviews and meetings with supervisor will be performed in Second Life.

Choosing between serious games, virtual worlds or neither (Erik Harg)

The use of 3D for both entertaining and professional visual experiences has increased in recent years, as well as the variation in approaches to the subject, and the cases of its use. Choosing the right kind of 3D representation, the right tools for building the experience, and the best way to “set the stage” is very important regardless of the subject. We argue that the right choice is also highly dependent on the anticipated purpose of the solution; what works best for socializing is not necessarily the most fit for professional training or for marketing.

In this presentation Harg will present some case examples from TerraVision’s customers to illustrate this point. He will, for each project, also discuss the usefulness of the chosen approach, experiences gained during the process, and further development or alternative solutions that may be considered.

Using 3D virtual worlds for collaborative educational visualizations (Dr. Ekaterina Prasalova-Førland, LIKT, NTNU/Uninett ABC)

Different techniques can be used to help students to appropriate the body of knowledge presented in a course. In this context, 3D visualization is a powerful tool for supporting understanding of complex concepts and is widely used in educational settings.

There is evidence that 3D graphics can in some cases be beneficial for memorization and information retrieval. Due to the increasing possibilities of multimedia and VR technology, 3D collaborative virtual environments (3D CVEs) are to a greater degree used to demonstrate concepts that are difficult to represent efficiently enough in reality. 3D CVEs provide a constructivist learning environment where learners can collaboratively construct their understanding by exploring, building and sharing their experiences with peers. In addition, such virtual environments can act as a stimulating framework around collaborative creative processes and facilitate uninhibited ‘brainstorming’ by learners.

This talk focuses on how 3D CVEs can be used as a tool for creative collaborative elaboration and visualization of educational content and social structures in a learning community, and what challenges and possibilities are associated with this approach.

Virtual Heritage: Glimpses from the work at Department of Computer and Information Science, NTNU on Nidaros (former name of Trondheim) in Medieval Ages (Michael Stokes, IDI, NTNU)

The presentation shows examples of work done on methods for creating 3D virtual worlds from archaeological and historical data that is expanded with present time data when possible to facilitate augmented reality experiences. The examples chosen are results of cooperation with local museums for possible inclusion as exhibits to increase the public’s awareness of our heritage.