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3D Recording as Enabling Technology for Serious Games and Educational Role Playing

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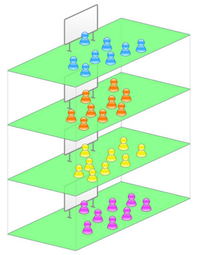
vAcademia

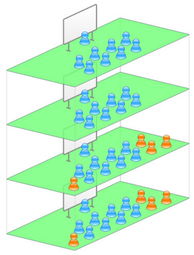
vAcademia is a 3D virtual world designed for collaborative learning. It is developed by a Russian company Virtual Spaces LLC in collaboration with the Volga State Technical University. The system is currently under beta testing and is free to use.

Layers of space



Real time class 1
Real time class 2
Real time class 3
Real time class 4

Layers of time

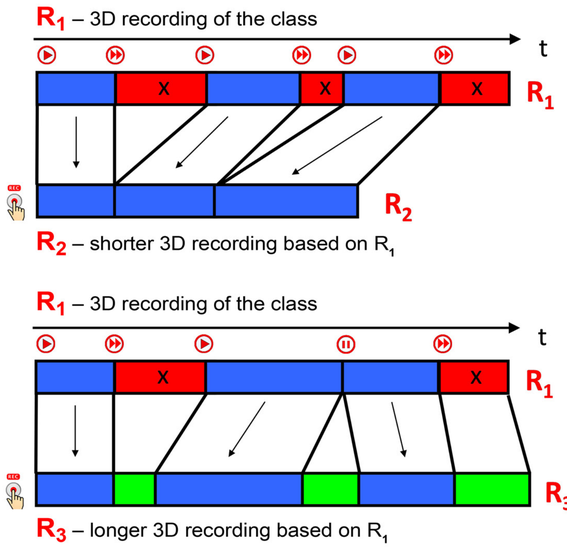


Real time class 1
Class recording 1
Real time replay
Class recording 2

3D Recording

The nature of 3D recording is difficult to grasp. It is often misunderstood and treated as an embedded screen capture mechanism. However, it is conceptually different from the video recording or screen capturing. A replayed 3D recording does not only delivers a virtual camera image and a synchronized communication messages, but much more. A 3D recording contains the entire 3D scene with all 3D objects and avatars. It can be entered by a group of avatars. All the actions of the avatars and in the environments are also saved in a 3D recording. These actions happen again when a 3D recording is replayed or, better to say, visited. In such a way, this feature allows creating a new type of content that comprises both space and time.

Editing 3D recordings



Motivation

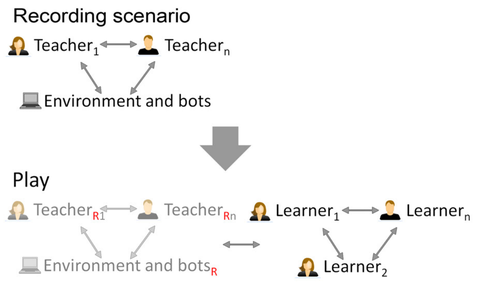
In this work, we propose an innovative approach, 3D recording, to support serious games and educational role-playing. 3D virtual worlds are often used for generating educational content. Even though this technology allows creating full context of the real-life educational process, it is usually recorded as flat 2D video (such as Machinima in Second Life), which eliminates many advantages of the technology, such as sense of presence. In addition, there are no systematic approaches for combining synchronous and asynchronous learning modes. We propose that 3D recording is capable of solving these challenges, as it offers an easy way for creating advanced 3D content from synchronous activities, as well as accessing this content in both synchronous and asynchronous modes.

Case Study

We propose evaluating the 3D recording feature of in a case study at the University of Hawaii-Manoa, at the College of Education. We plan to use vAcademia to create 3D recordings of educational role-playing simulation to assist pre-service teachers in gaining more experience managing student behavior e.g., for learning how to react appropriately to disruptions of every type in order to bring the classroom back to an optimal learning environment. The recorded 3D role-playing simulation allows a great range of behaviors and responses. In particular, recordings of such simulations will greatly enhance the learners' experience, as they will be able to review and improve their skills. All the actions and conversations can be analyzed in detail and later used as a tutorial.

3D recording basic use

3D recording in role playing



Acknowledgments

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NTNU
Det skapende universitet

Training Prototype

Training scenario implementation

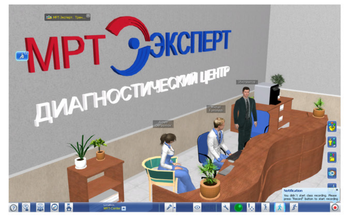
- Script
- 3D design
- Actors or teachers play agents
- 3D recording R_a is generated
- Actors or teachers play agents and trainees
- 3D recording R_b is generated

Training scenario use cases

R_a + live training

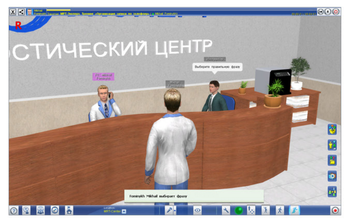
R_a agents environment
trainees

R_a + live training + support or control



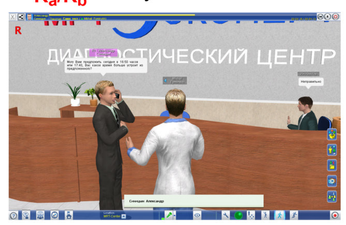
R_a agents environment
trainees
teachers

R_b - best/worse case + live training



R_b agents environment teachers
trainees

$R_{Ra/Rb}$ + analysis or reflection



R_a/R_b
$R_{Ra/Rb}$ agents environment teachers trainees
trainees and teachers

REC

3D Recording related work
- Asynchronous Virtual Classroom (1999)
- N*Vector (2000)
- MASSIVE-3 (2002)
- Wonderland

Application domains
- Teacher training
- Corporate training
- Medical and emergency training
- Military training

Contact us
- Constructive feedback
- R&D partners
- Investors
- Customers

Current work
- Ideas for 3D recording for learning
- CAVE interface
- Virtualizing lectures with Kinect
- Custom learning environments

Future work
- All operating systems
- Mobile devices
- Browser-based client
- Hypergriding

STOP