

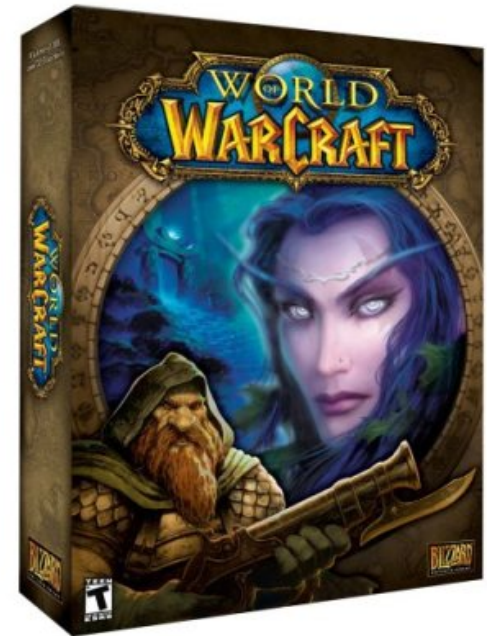
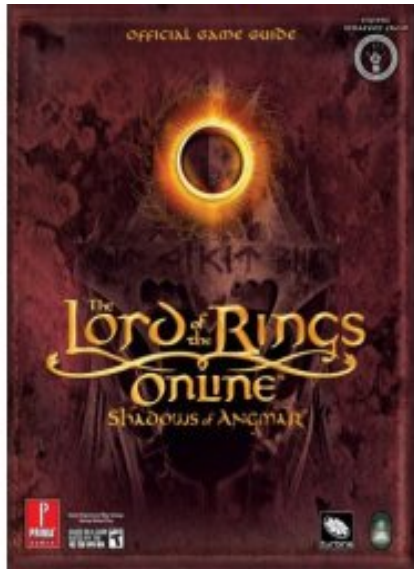
Persistent Immersive Synthetic Environments for Knowledge Management

Daniel Laughlin, Ph.D.

NASA Learning Technologies Project Manager

University of Maryland Baltimore County

Persistent Immersive Synthetic Environments



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Laughlin

PISE Statistics

- World of Warcraft: 8.7 million
- Second Life: 8.2 million
- Average MMO: 125K-500K

The latest industry estimates are that between 30 and 40 million Americans currently participate in persistent immersive synthetic environments. For comparison 26 million Americans golf.

The Concept and Planning Documents

“NASA eEducation Roadmap: Research Challenges in the Design of Persistent Immersive Synthetic Environments for Education & Training”

Federation of American Scientists and NASA Learning Technologies: 2007

<http://learners.gsfc.nasa.gov/NLT/road.html>

“Harnessing the Power of Video Games for Learning”

Federation of American Scientists:2006

<http://www.fas.org/gamesummit/>

“A Guide to Educational Uses of Games for NASA”

NASA Learning Technologies: 2005

<http://learners.gsfc.nasa.gov/NLT/road.html>

Third Spaces

PISE are not just connection points, they are meeting places.

PISE are the new public squares, village centers, malt shops, malls and pubs all rolled into one.

PISE come with a sense of 'thereness' that engages the mind like a real place does.



Collaboration Tools

Virtual teams can use PISE as meeting places where they can share ideas and brainstorm with a powerful sense of being in the same place as a real team.

Rather than imagining or seeing a 2D representation of a concept, the team can share 3D versions of tools or equipment rendered in the PISE. Early versions can be very low fidelity yet still ensure team members are “on the same page”.

Rather than simply debating approaches, PISE provide a simple way to render ideas into graphics to test competing approaches early in the early planning stages.

Example Areas of Opportunity



< - - Lectures, meetings,
salon discussions in small
settings

Multimedia presentations,
speeches and lectures in
large venues - - >



Example Areas of Opportunity



An engineer approaches a spacesuit locker. Objects could be usable.

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< - - An engineer inspects a Liquid Oxygen plant. Mockups could be operationally realistic.



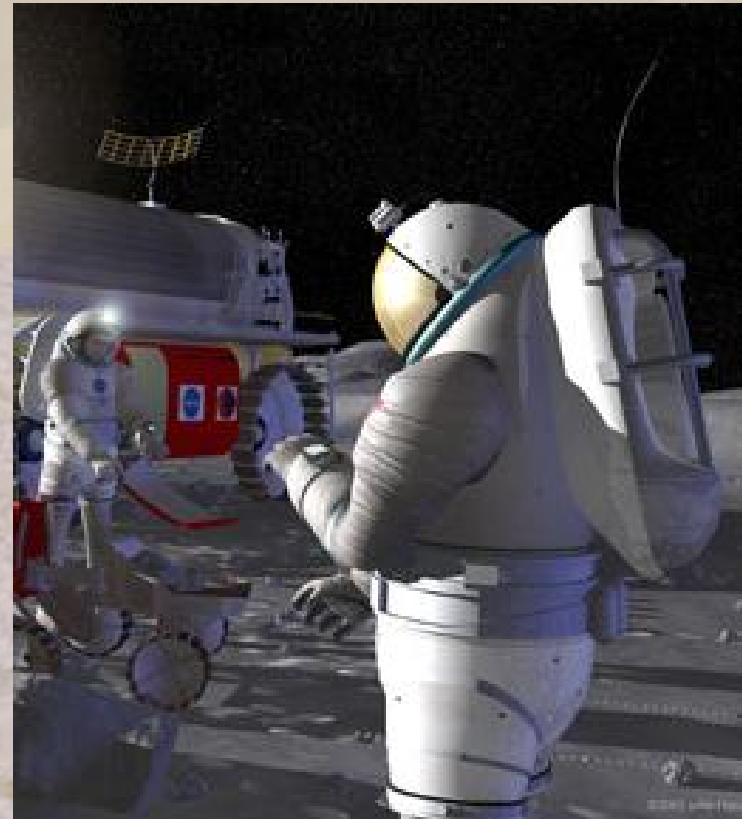
Knowledge Repositories

The 3D worlds of PISE are more than just flexible simulation and modeling locations. The objects created in the environments can be tagged and linked to external resources, annotated with lessons learned and generally enhanced with messages to future generations of users. Good knowledge management practices employed in persistent immersive synthetic environments will lead to the development of 3D knowledge repositories easily traversed and successfully employed by even novice user with no connections at all to the original development team. As long as the artifacts of a project remain, the knowledge and experience that went into forging them, and came out of using them, can be preserved indefinitely.

Because objects in PISE are discrete elements within the world, it is possible to meta-tag items create engines to search for them automatically.

A 21st Century Way of Sharing

When NASA returns to the moon in 2020, the people of Earth will be able to share that experience. Not just through the passive medium of television like the last time we went to the moon, but through the virtual experience of a persistent immersive synthetic environment. Kids are starting to use PISE at a very early age already. Nickelodeon and Disney each run their own online worlds. The children who play in those worlds are going to expect more from both their work and play as adult than 2D interactivity. They will expect 3D the same way people today expect cable television and those in the 1970s expected color television.



Contact Information

Daniel Laughlin, Ph.D.
NASA Learning Technologies
UMBC GEST

NASA Goddard Space Flight Center
Mail Code 130.3
Greenbelt, MD 20771

v: 301.286.1112
f: 301.286.1655
e: daniel.d.laughlin@nasa.gov
sl: greyark hightower





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