

THE EFFECTS OF SPATIAL PRESENCE IN VIRTUAL LEARNING ENVIRONMENTS ON LEARNING OUTCOMES

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research in progress

What effects does spatial presence in VLE's have on learning outcomes?





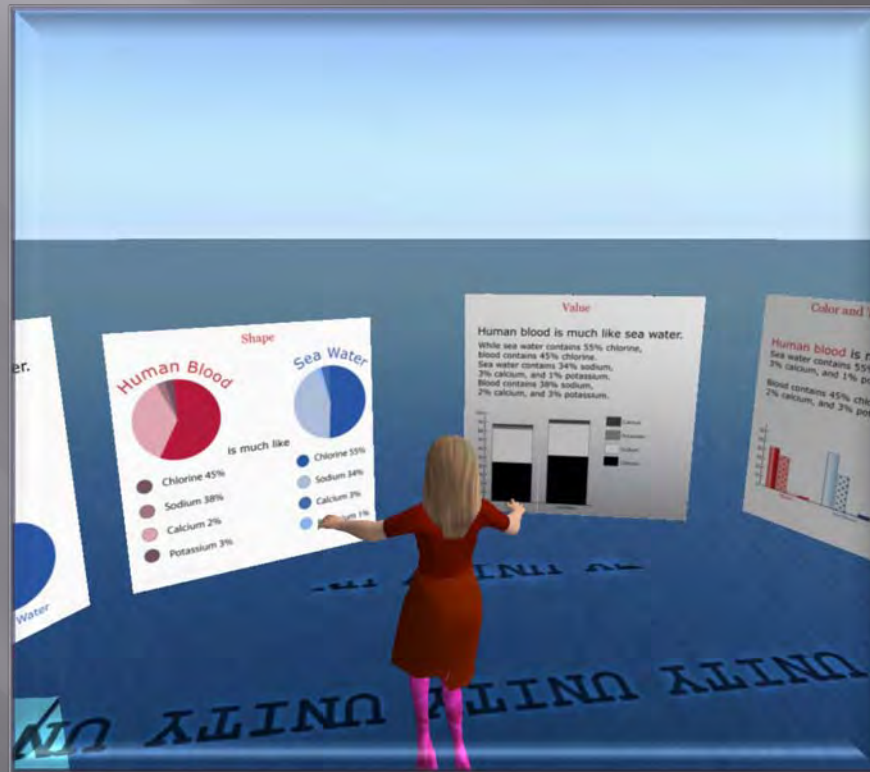
- ❑ Virtual worlds create complex new possibilities for instructional messages. Their unique array of affordances allow a much wider range of user experience than other forms of multimedia.
- ❑ With the introduction of new technologies, comes the need for research into how to use them effectively in education.



- ▣ The purpose of my research is to determine the effects of spatial presence, the sense of “being there”, accomplished through graphics and interactivity; on retention and transfer of learning.

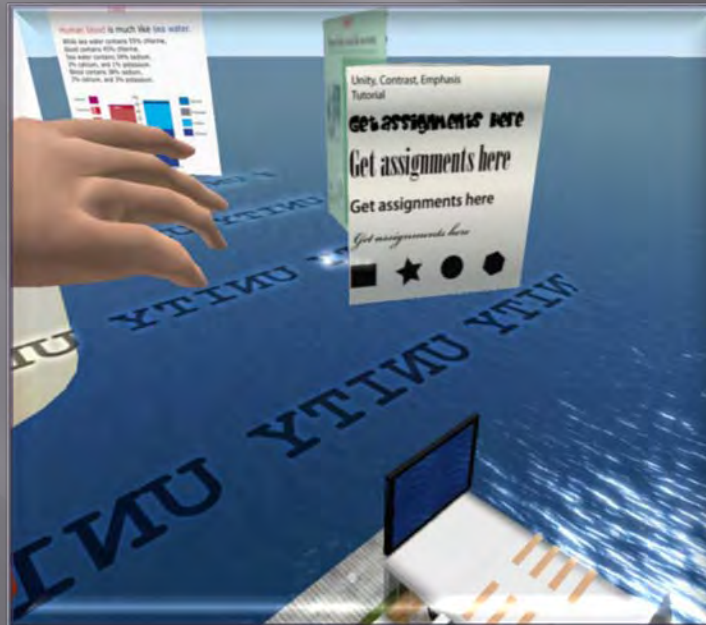
Theoretical foundations:

Most educational programs in virtual worlds are designed around constructivist learning theories.



Theoretical foundations:

Mayer's multimedia learning theory (2001) and Spiro's 1995 cognitive flexibility theory are two approaches to constructivist learning that are applicable to learning in virtual worlds.



Spatial presence defined

“Presence” is a state of mind, the user’s sense of being present in a virtual space. It includes the user’s purposeful suspension of disbelief and inclination to immerse them in the simulated environment while blocking out the real environment.

Spatial presence defined

“Presence involves the user feeling as though they are spatially located within an environment portrayed by a display system, and it is characterized by a sensation of a strong perception-action link between the display and the user.”

(Schubert, 2001)

Spatial presence defined

“A psychological state or subjective perception... of an individual's experience... filtered through human made technology.... part or all of the individual's perception fails to accurately acknowledge the role of technology in the experience. To some degree the individual perception overlook the environments are experienced as if the technology was not involved.”

(MIT presence listserv 2000)

Spatial presence measured

Schubert 2001 EFA using self- report Likert scales

Spatial presence - 31% variance

Immersion or involvement- 15% variance

Realism - 6% variance

Several other EFA and CFA studies by different researchers had similar results

Benefits to learning

- ▣ Creates first person experiences (Winn, 1993)
- ▣ Enables observation of processes or phenomena that would be difficult, expensive or impossible to observe in the real world. (Chittaro & Ranon, 2007)
- ▣ May stimulate higher order thinking, abstract and meta-cognitive thinking. (Depradine, 2007; Cai, Lu, et al., 2006; Lok, 2006; Antonetti & Cantoia, 2000; Millsa & Araujob, 1999).

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