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▶ WEBKINZ . TAKE CARE OF YOUR VIRTUAL PET WITH A FUN VIRTUAL LIVING SPACE AND VIRTUAL TOYS.



▶ JUMPSTART VIRTUAL WORLD . DEVELOP READING AND MATH SKILLS IN A 3D ENVIRONMENT.

3D Virtual worlds

ADDRESSING THE DIVERSE NEEDS OF STUDENTS IN REAL AND VIRTUAL WORLDS

While virtual may not be real it can be actual. Just as a virtual classroom has actual teaching occurring a virtual world can have actual communication, socialization, commerce, and learning.

The Magic of 3D Virtual Worlds

When word processor and spreadsheet software became available computer sales exploded and the way we wrote and planned our finances was transformed. As multimedia became common on the Internet and audio files became common the way we bought and shared music was transformed. Now the use of 3D virtual worlds is becoming common and how we interact, share information, and learn is again being transformed. Students and adults can walk into a virtual room and meet with people from all over the globe; sitting at tables and talking as if they were

in the same physical room. Students from different parts of the globe can meet together and build art galleries and museums; teach each other languages and customs. Technology is supporting the development of representational and abstract visual-spatial processing in a way never experienced in the past. And classrooms with diverse student populations are facing unique opportunities as well as unique accessibility challenges. Welcome to the magic of 3D virtual worlds.



THE METAVERSE

“What happens when video games meet Web 2.0? When virtual worlds meet geospatial maps of the planet? When simulations get real and life and business go virtual? When you use a virtual Earth to navigate the physical Earth, and your avatar becomes your online agent? **What happens is the metaverse.**”

<http://www.metaverseroadmap.org/overview/>

Glossary

Avatar : Computer representation of a user. Can mean “incarnation”.

MetaVerse : Fully immersive 3D virtual spaces where humans interact (as avatars) with each other (socially and economically) and with software agents in a cyber space that uses the metaphor of the real world without the physical limitations. From the book “Snow Crash” by Neal Stevenson. (Wikipedia)

RPG : Role Playing Game. Players typically take on fictional characters such as elves, vampires, dwarfs, wizards, etc.

MUD : Multi-User Dungeon, Domain or Dimension, a multi-player computer game that combines elements of role-playing, hack and slash style computer games and social chat rooms. Usually text-driven where players read descriptions of rooms, objects, events, other characters, and computer controlled creatures or non-player characters (NPCs) in a virtual world. (Wikipedia)

MOO : MUD Object Oriented - a text-based online virtual reality system in which multiple users (players) are connect at the same time. Object oriented means that users can perform object oriented programming within the server that changes how it behaves to all the users. Examples include creating new rooms, objects, and new interfaces.

MMORPGs : Massively Multiplayer Online Role Playing Game.

Pervasive : A pervasive game may be a game that runs 24 hours a day (though the game’s internal concept of a day may be different). Players can enter the game and interact with each other at any time. Second Life is an example of this type of pervasive game. Or a pervasive game may be a place independent game. For example a player may enter the game on a computer or on a cell phone, integrating to a degree the physical and virtual world. There are add-ons to SL, such as being able to text message into Second Life from an IM and receive messages live from SL, that make it pervasive in this context as well.



Examples of Virtual Worlds

There are hundreds of virtual worlds now. We often talk about digital immigrants (those of us who entered the digital revolution as adults) and digital natives (children who have grown up with digital technology). But we now have a second generation of digital natives emerging who are growing up using 3D virtual world technology. You can see a list of the top 100 virtual worlds for kids at VirtualWorldsExpo.com (www.virtualworldsexpo.com/schedule/100.html). Here is a short list of some of the virtual worlds being used today by all ages.

Webkinz : <http://www.webkinz.com/>

JumpStart Virtual World : <http://www.jumpstart.com/>

Cartoon Network FusionFall : <http://www.fusionfall.com/index.html>

Google Lively : <http://www.lively.com/html/landing.html>

Edusim : <http://edusim3d.com/index.php>

Dimension M : <http://www.tabuladigita.com/>

World of Warcraft : <http://www.worldofwarcraft.com/index.xml>

Quest Atlantis : <http://atlantis.crlt.indiana.edu/>

Second Life / Teen Second Life : <http://www.secondlife.com>

Google Earth : <http://earth.google.com/>

Portal : <http://store.steampowered.com/app/410/>

Portal 2D Flash : <http://portal.wecreatestuff.com/>

Spore : <http://www.spore.com/>

Photosynth : <http://photosynth.net/default.aspx>





accessibility

There are several areas of accessibility that some students may need to address to successfully operate in a virtual world. If the world is being run on a computer system then basic computer access will be a concern. Many worlds include keyboard shortcuts that facilitate the creation of alternative keyboard overlays (such as Intellikeys), on-screen keyboard overlays, and macros for voice control. One of the advantages of virtual worlds like Second Life is the ability for the user to move at their own pace. In most instances, unlike action games, the speed of the response is not critical.

While much of the communication in these worlds is text based, there is a move to voice chat which can pose a barrier for students who are deaf. Some users have looked at speech-to-text tools like Naturally Speaking but more work is needed in this area.

There are significant challenges for students who are blind. Some of the solutions are based on real world answers. For example <http://www.sl-educationblog.org/?p=274> includes information on a Second Life citizen who uses a "guide dog" in world. Braille keyboard overlays can be used to provide quick control over facial expressions, gestures, and communication. But the highly visual/spatial nature of virtual worlds will continue to include barriers.

One interesting aspect of customizable worlds like Second Life is the need to address avatar accessibility. Some avatars use wheelchairs. Stairs and steps are a barrier in world as well as in real life. Seating arrangements should also accommodate avatars who need a place to park their wheelchair. Even in a virtual world universal design is important.



Accessibility Resources

Assistive Gaming . <http://www.assistivegaming.com/>

AbleGamers . <http://ablegamers.com/>

PCS Games . <http://www.pcsgames.net/>

Groups in Second Life

Wheelies . <http://slurl.com/secondlife/Taupo/168/91/23>

GimpGirl Community . <http://slurl.com/secondlife/3DE/171/25/22>

Virtual Ability . <http://slurl.com/secondlife/Virtual%20Ability/129/129/23>

Autism Support in SL . <http://slurl.com/secondlife/Erzulie/230/152/84>

Autistic Liberation Front . <http://slurl.com/secondlife/Porcupine/29/177/107>





Discovering Virtual 21st Century Skills

If you want to see an example of how students will learn in the future, look at virtual worlds.

21st century skills include core subjects taught in a global context; learning and innovation skills including critical/creative thinking, communication & collaboration; information and media literacy; and life career skills, including the ability to be flexible, adaptable, self-directed, accountable, and responsible. Virtual worlds provide highly engaging learning environments to address these skills.

The trick here is to select a world that supports your learning goals. Teen Second Life is an excellent choice for many 21st century skills. Students in a classroom or from classrooms around the globe can learn to collaborate on projects like creating a museum with information panels on a variety of topics. Because this environment is highly project oriented and collaborative it is an excellent vehicle to address rigor and relevance, problem solving, and

critical/creative thinking. It is also a highly engaging environment to address core subjects. Spore is a great world to explore concepts of evolution, being adaptable, and social literacy. While students guide the evolution of their creations, the characters actually develop their own "intelligence" that guides their responses to the world around them. Eventually they start to operate in tribes; providing great opportunities to discuss social and global issues.

Pacific Rim Exchange . <http://pacificrimx.wordpress.com/>
Route21 . <http://www.21stcenturyskills.org/route21/>

K-2 LEARNING: Jumpstart Virtual Worlds



Many people are familiar with JumpStart learning software from Knowledge Adventure. JumpStart World brings reading and math educational activities into a 3D virtual world for K-2. The software uses a camp theme where the campers earn badges. Parents get progress report emails. This world runs locally on a computer with Internet.

Cognition & visual/spatial skills

Students today are growing and developing in virtual environments where success may depend upon good *visual memory, perspective coordination, spatial organization, mental rotations, and patterning*. Students that have problems with these types of skills may need support. One model of support involves continued movement from concrete spatial skill development to representational skills to abstract. Here are some resources to help support visual spatial development and making the connection between concrete, representational, and abstract.

Drawing & Painting

Draw 3D : <http://www.draw3d.com/lessons.htm> . A Mark Kistler drawing instruction site with lots of training videos on how to draw with perspective and a 3D effect. Scroll down in the video section to see some free drawing videos.

The Draw Squad : <http://www.drawsquad.com/> . Another 3D drawing site by Mark Kistler.

Sketch & Smudge : <http://www.sketchandsmudge.com/> . Inexpensive drawing software that realistically mimics chalk and smudge sticks. It includes drawing tutorials. For Windows.

Art Rage : <http://www.ambientdesign.com/artrage.html> . Free natural media paint software for Windows and Macintosh.

Modeling

Make It Software : <http://www.yourchildlearns.com/owlmouse.htm> . Free resources that include printable paper models for creating a town, village, farm, and castle.

Diorama Designer : <http://www.tomsnyder.com/products/product.asp?SKU=DIODIO> . Commercial software for creating printable dioramas.

Community Construction Kit : <http://www.tomsnyder.com/products/product.asp?SKU=CCKCCK> . Customize, print, and create a variety of paper towns and communities.

BlockCad : <http://web.telia.com/~u16122508/proglego.htm> . Virtual legos for Windows.

LEGO Factory : <http://factory.lego.com/> . More virtual legos.

Google Sketch Up : <http://sketchup.google.com/> . Design virtual architecture. Free, for Windows and Macintosh.

Visual Spatial

Jungle Chess : <ftp://ftp.paec.org/pd3/scs95.exe> . Virtual board game for Windows. Rules are included. Highly engaging.

Neighborhood Map Machine : <http://www.tomsnyder.com/products/product.asp?SKU=NEIV20> . Create maps of neighborhoods and communities, real or imaginary.

Lexia Cross Trainer : <http://www.lexialearning.com/forschools/products/crosstrainer.php> . Visual spatial skill intervention software that uses a game controller and charts skill progress.