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3D Collaboration Spaces for Enterprise Work: A Thought Leaders' Dialogue and Conference Summary Paper UPENN Virtual Organizational Dynamics Design Laboratory

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Abstract

On February 8th, 6pm to 10pm Eastern, presenters from CCL's Innovation Group, IBM's Center for Advanced Learning (CAL), Stanford's Project Based Learning Lab (PBL) and Proton Media/PPD 3D joined UPenn's Virtual OD Design Lab for our first fully immersive 3D Peer learning Conference, hosted and supported by Proton Media in ProtoSphere. In this exciting event, the Lab team engaged thought leaders in real time dialogue about their state-of- the-art cases covering advanced uses of 3D immersive technologies for leadership and organization development, collaboration and global enterprise training.

Comments

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UPENN Virtual Organizational Dynamics Design Laboratory

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Summary

On February 8th, 6pm to 10pm Eastern, presenters from CCL's Innovation Group, IBM's Center for Advanced Learning (CAL), Stanford's Project Based Learning Lab (PBL) and Proton Media/PPD 3D joined UPenn's Virtual OD Design Lab for our first fully immersive 3D Peer learning Conference, hosted and supported by Proton Media in ProtoSphere. In this exciting event, the Lab team engaged thought leaders in real time dialogue about their state-of- the-art cases covering advanced uses of 3D immersive technologies for leadership and organization development, collaboration and global enterprise training.

Welcome, Overview and Introductions

The conference began when participants teleported into the Asian themed Zen Garden surrounded by blooming Cherry Blossoms, where they informally introduced themselves and networked a little before walking over to the outdoor conference seating area in the large garden. This outdoor garden space was surrounded by tall stone walls on three sides and furnished with swiveling rosewood chairs, soji lanterns, a rosewood pergola and shared multimedia screens and note boards for presentation and interaction. Beautiful outdoor landscaping and moving clouds in the sky completed the ambiance for the learning dialogue.



Ana Reyes, the Lab founder, opened the conference with a warm welcome and thank to Proton Media and all the participants for their willingness to take on the presentation and tool preparation work necessary to participate in the 3D conference. Dr. Reyes reviewed the Conference Agenda and 3D Participation Guidelines and Roles, including avatar nonverbal communication. This was followed by a round robin of participant introductions.



CCL's SL Coaching Pilot

The Center for Creative Leadership (CCL) is a top ranked, non-profit executive education provider, whose stated mission is "to advance the understanding, practice and development of leadership for the benefit of society worldwide." Crescencio Torres, Senior Faculty, David Powell, Coaching Talent Manager and Ollie Bermoyo, Technology Coordinator, from CCL's San Diego Innovation group came to the peer learning conference to share their experiences using Second Life (SL) for virtual executive coaching. The team told the story of how they partnered with the University of the Pacific to learn how to create their SL coaching island and how they joined George Mason University in acquiring a Society for Human Resources Management (SHRM) grant to support a comparative study of face-to-face and virtual SL coaching efficacy.



Over the course of a year, CCL trained 15 of their certified executive coaches to work in SL. They selected their flagship Leadership Development Program (LDP) and enlisted 1-2 participants per LDP session to participate in the virtual coaching study until they reached a total of 45 participants for the research. LDP is a five-day residential program that includes a half-day of coaching on the 4th day, during which participants normally spend 3.5 hours in person with a coach working through their individual psychometric assessment results and creating a development plan. The SL Coaching Island was designed to illustrate the metaphor of a coaching journey with a welcome area, multiple confidential assessment data presentation rooms and retreat-like settings for debriefing conversations and development planning paths.

The greatest challenges proved to be getting the participants up and running on the SL software and maintaining coaching assessment data confidentiality. In order to make the SL coaching possible, CCL set up special computers with pre-loaded and configured software, and a predefined avatar for each participant. Confidentiality was accomplished by establishing a “private” Second Life Island for the coaching program that required participants to have specific accounts and credentials in order to enter. CCL also created a coaching protocol specific to Second Life. This protocol reduced the learning curve and guarded participant confidentiality. Coaches were not only taught how to build rapport with clients in the virtual environment while training the participants to walk and talk as avatars and to use the private chat feature to maintain confidentiality, especially when they left the private CCL island to explore other places in the SL virtual world. Since the SL island was designed to replicate the natural world as much as possible, the participants were able to use their knowledge of the physical world to intuitively navigate the virtual world.



Research findings were remarkable. Customer satisfaction and LDP program ratings were exactly the same statistically for those who did their coaching in Second Life as those who did it in person. Some of the 48 virtual coaching participants were ‘ICT sophisticates and others were Luddites’, and yet that dimension did not enhance or diminish their virtual coaching experience. Beyond the research findings, the SL coaching pilot provided a rich learning experience in translating existing learning materials for virtual world learning. For example, walking across a rickety bridge in the SL Island led a person with a fear of heights to have the same visceral reactions when she almost slipped off that she had to heights in real life. Other visual stimuli in the virtual world facilitated individual reflection, goal setting and meaningful discussions as well as these do in the physical world. The team concluded that that the value that SL added when compared with telephones for distance coaching was the ability to look together at the data and to simulate the physical process of taking an experiential journey together.

In the conference dialogue that followed, other participants suggested experimenting with a more user friendly web-conferencing experience for virtual coaching or creating an Open Simulator version of their SL coaching island that could be hosted behind their firewall to manage privacy concerns. For those participants who were able to overcome the technical and privacy challenges of using virtual worlds for work, the biggest challenges were helping participants to adapt their mental attitudes and behaviors and learn new work practices in order to share flexible 3D spaces effectively such as Teleplace. Best practices included designing straightforward download and trouble-shooting processes, hand holding to ensure initial positive experiences for people new to the technology and peer to peer coaching to accelerate the learning of the least experienced users with Teleplace.

IBM's "Succeeding@IBM Academy"

IBM, the 100 year old multinational technology and consulting corporation headquartered in Armonk, New York, is now a virtual global company. The 400,000 IBM employees and over 100,000 contractors are spread around the globe with over two thirds living outside the Americas and about half working remotely. The company currently manufactures and sells computer hardware and software and it offers infrastructure, hosting and consulting services in areas ranging from mainframe computers to nanotechnology. Not surprisingly, the Center for Advanced Learning creates and executes virtual learning strategies. Having realized that different globally dispersed teams were building in many different Virtual Worlds, the learning team at IBM developed a campus on the public Grid in Second Life called the "Learning Commons." The Learning Commons housed the collection of the "best" kinds of meeting spaces that teams across IBM had created for different purposes in many virtual environments.



Two members of the Center for Advanced Learning, Yi Qing He, Manager and Senior Learning Specialist, and Amy Groves, Senior Learning Technology Consultant, facilitated a dialogue about their flagship onboarding program "Succeeding@IBM Academy" using Active Worlds. The purpose of this project was to create a highly immersive 3D virtual world Academy for new hires in the Greater China Group (GCG). IBM created a learning journey inside the 3D space by embedding the key onboarding topics for new employees. Employees can log in and engage in self-paced learning inside the 3D space at any time.



A unique feature highlight of this project is that the team created a robot application for learning tracking. Though this is a common feature for some more traditional e-learning courses, such an application within a 3D learning environment is indeed an innovation. IBM also has a web portal which shows the overall progress and scores of each learner. Individual learners can browse their learning status on the web and then hop into the last exit location inside the 3D world to resume their learning.



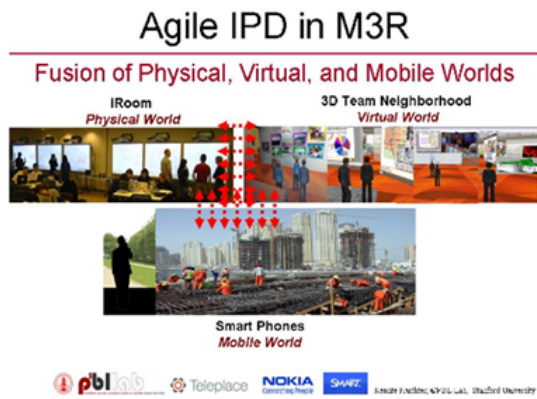
IBM's evaluation surveys indicate that this 3D learning provided almost the same level of learning satisfaction and effectiveness as in-person learning with more flexibility in time arrangements. Learners could also take advantage of the social networking tool built into the platform to easily communicate with their facilitators and peer-learners. This community building feature adds extra value by building a sense of belonging for those new employees who are remote workers.

Despite the great success of this project, the team identified unique challenges in designing such learning experiences in 3D environments. Sharing these challenges helped other participants understand first hand, issues involved in implementing such cutting edge tools. Firstly, IBM asked what good learning design for learning in virtual worlds is. Ideally one would want to create intrinsic engagement for learners throughout the learning journey, but this becomes difficult given the platform constraints and lack of best practices in learning design.

Secondly, the team asked how one could promote collaborative learning experiences by leveraging the co-habitation feature of 3D virtual world platform? One takeaway is that being together with other learners is not sufficient for collaborative learning. IBM is looking for sound practices that encourage learners to actively share and collaborate with each other and solve problems together.

Stanford’s Project Based Learning Lab

The award winning Project Based Learning (PBL) Lab, headed by Dr. Renate Fruchter, is the home of a unique, innovative, integrated research and curriculum development effort launched in 1993 in the Department of Civil and Environmental Engineering at Stanford University. The mission of PBL is to engage graduate and undergraduate students, faculty, and industry practitioners in multi-disciplinary, collaborative, geographically distributed PBL activities.



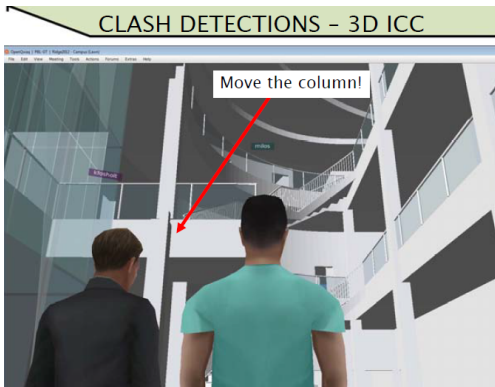
PBL is a process of teaching and learning that focuses on problem-based, project-centered activities that produce an actual product for a client. PBL’s objectives are to develop, test, deploy, and assess radically new and innovative collaboration and learning technologies and work processes.

During the conference, Dr. Fruchter posed a key question: If the workplace as we know it today is going away, then what are the new workspaces that will foster high degrees of engagement; How will these impact workplace behavior and performance, and how can we interact effectively in these new space? Dr. Fruchter presented her case: the Architecture, Engineering, and Construction (AEC) Global Teamwork Program at Stanford. The AEC Program hosts an annual AEC design challenge.

The 2010 Challenge brought together 36 global participants, grouped in 6 AEC globally distributed project teams. The competition took place over two academic quarters. Each team was given a



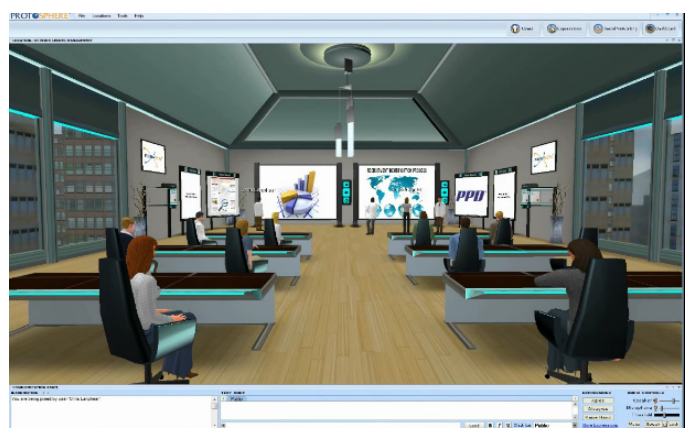
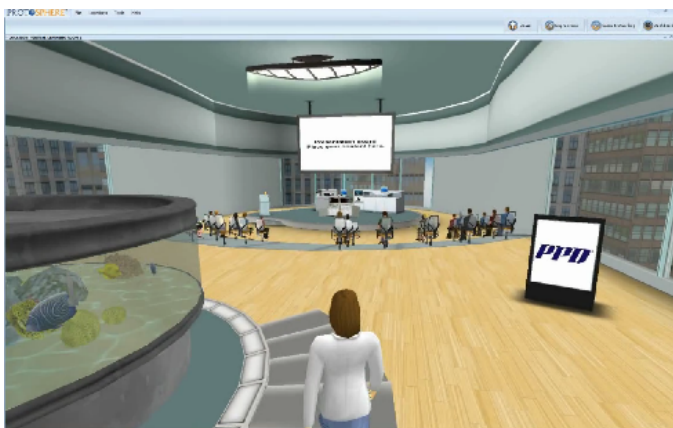
site and a mission: to collaboratively design a building or space for their “client,” for example: a multi-purpose university building incorporating classrooms, labs, and social spaces. These globally distributed teams used a collaboration tool ecosystem, including the Teleplace (now 3DICC) 3D immersive environment for everything from virtual team meetings and project “war rooms” complete with project artifacts and deliverables to virtual walkthroughs of their building designs using an integrated version of Google Earth maps in the 3D spaces.



Dr. Fruchter attributed the high level of team engagement in these spaces to the ability of the teams to: 1. Move from simply viewing to truly experiencing their creations as these evolved; 2. Developing significant personal bonds through the use of the 3D immersive space that are difficult to achieve in less social and engaging collaborative environments. These conclusions were supported by their previous meeting participation research, which showed that participants in a 3D immersive environment, versus a web-based desktop sharing environment, demonstrated 24% higher levels of engagement (Fruchter & Cavallin, 2011). Dr. Fruchter illustrated

these lessons learned about virtual global team engagement at the *Peer Learning Conference* with a video of one of her AEC Program teams. This team became so comfortable interacting as avatars in their 3D virtual “neighborhood” that they even threw a virtual surprise birthday party for one person. The team members joined from across the globe to present a virtual birthday cake in their colleague’s favorite flavor! If you would like to view the Stanford PBL projects please visit the AEC Global Teamwork project gallery <http://pbl.stanford.edu/AEC%20projects/projpage.htm>. If you would like to view the story of a typical AEC Global Team visit <http://www.youtube.com/watch?v=6c9rFnutwo0>.

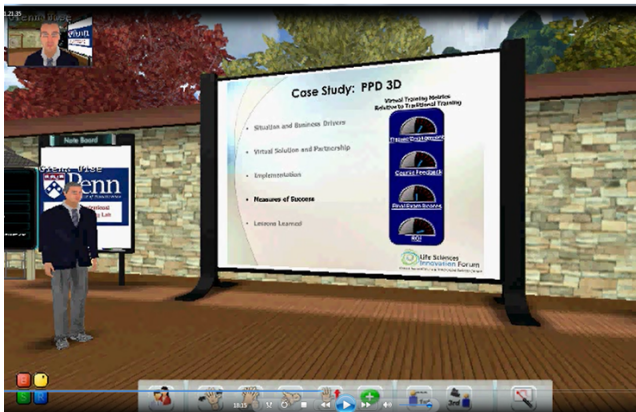
The Development of PPD 3D in Protosphere



PPD is a Clinical Research Organization (CRO), providing contracted clinical research services to life sciences organizations across the globe. They developed a 3D immersive learning and collaboration course called PPD 3D to reinvent their flagship clinical employee onboarding and training, the Clinical Foundations Program. The 3D learning and development program replaced their existing two-week, intensive, live training. For clinical staff, this training program is

a prerequisite for continued employment with PPD, and frames the course in terms of training and development for new employees. PPD 3D's goals were to reduce the costs of this program, which ran at over \$2 million annually, mostly in travel-related expenses, while maintaining or improving the quality and participant satisfaction levels of the live classroom training.

During the last half of 2011, PPD launched the Clinical Foundations Program in PPD 3D, ran eleven or twelve full training cycles and trained over 160 new PPD employees. Based on the success of the global pilot, PPD will continue to roll out the Clinical Foundations Program and intends to continue running the training exclusively in the PPD 3D environment.



At the VOD Peer Learning Conference, Glenn Wise, Associate Director of the Center for E... and co-presenter, Ron Burns, CEO of Proton Media, discussed several key learnings and best practices identified in their successful 3D implementation. First, the PPD 3D initiative incorporated a robust change management program into the project lifecycle, including: getting strong executive and organizational leadership support, providing robust and timely communications, and leveraging early adopters and key organizational stakeholders to serve as champions for the initiative from within different areas and levels of the enterprise.

Creating time for and facilitating participants' exploration of the novel learning and collaboration environment was another important lesson learned by the PPD 3D team. To accomplish this, they created a "Virtual Reception," which included an in-world scavenger hunt. Conceptually, this activity provided participants with an opportunity to explore and experience the novel environment and to interact and have some fun before moving forward with the serious required learning.

Finding a way to allow this type of peer learning to happen during the actual program was identified as another area for ongoing development of the program. And finally, PPD noted that bringing learning programs into 3D collaboration spaces, as compared to other technology-enabled collaboration tools like web-conferencing or traditional eLearning, almost forces an organization to create more activity-based and experiential learning programs in lieu of more didactic or lecture-based learning. This will be another area for further development for PPD as they continue to develop the PPD 3D learning and development offerings.

Conference Closure



The conference dialogue ended with Ron Burns, CEO of Proton Media, describing Protosphere platform development work in the areas of high definition video, simulation of physical spaces, integration of Microsoft Kinect capabilities and the gift of the private Protosphere Conference Space for the conference group's ongoing use. Ana Reyes then closed the conference by eliciting the most memorable moments of the evening, the lessons learned from the dialogue, the themes to carry forward from the conference and the Lab team's intended follow up actions.

Memorable moments mentioned by participants included: The great energy of the break-out sessions; The statement that guesses about who would be most engaged in these immersive environments are likely to be wrong; The amazing breadth of virtual world experiences used to bringing a wide

range of perspectives and understandings to the conference regarding the challenges and possibilities of these environments; The great series of case studies and stories about the transition or transformation from traditional learning to activity and experience-centric learning.

Insights and lessons derived from the conversation included: The conclusion that engaging the hands, in addition to the eyes and ears, is critical to maintaining participant engagement in virtual work; The notion that one should always remember when designing 3D experiences that "you can do things in virtual worlds that you cannot do in the real world" and that activity and experience-centric learning is a huge design effort that requires a whole new set of people and resources to deploy; The possibility that the current undergraduate generation's asynchronous texting and Facebook-heavy communication patterns may not necessarily lend themselves to 3D immersive tool adoption; That we should always leave openings in our designs for serendipity at learning events.

The themes to carry forward from this Conference included: Exploring how this group can continue the conversation, grow over time to share research and lessons learned across a wide range of organizational areas; Seeing more from the learning, development and application perspectives on best practice or killer applications in the 3D virtual world; Incorporating research and observational learning on cultural areas of virtual global learning experiences that were not discussed during the evening in order to really understand how to design and localize learning as well as project-based experiences.

Dr. Reyes promised that the VOD Lab Team would write a conference summary to share with participants, learn more about individual experiences, wow's and wishes going forward, and seek to stay in conversation with each group in order to explore potential research partnerships or sponsorships. Final thoughts included



the notion that the series of case studies and stories about the transition or transformation from traditional learning to activity and experience-centric learning is a huge design effort that requires a whole new set of people and resources to deploy.

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Fruchter, R. & Cavallin, H. (2011). *Attention and Engagement of Remote Team Members in Collaborative Multimedia Environments*. American Society for Civil Engineers 2011 Conference Proceedings, Retrieved May 1, 2012 from [http://dx.doi.org/10.1061/41182\(416\)108](http://dx.doi.org/10.1061/41182(416)108)