The AETZone Experience: A Qualitative Analysis of the Use of Presence Pedagogy in a 3D Immersive Learning Environment

Robert L. Sanders
Appalachian State University
Boone, NC 28608 USA
sandersrl@appstate.edu

Shanna J. Melton
Appalachian State University
Boone, NC 28608 USA

Abstract

Faculty in the Department of Leadership and Educational Studies at Appalachian State University have utilized AETZone, a 3D virtual world to deliver graduate coursework for the past nine years. Instruction has been guided by the Reich College of Education's social constructivist conceptual framework, resulting in a learning environment that emphasizes the social construction of knowledge through interaction with others within virtual communities of practice. Over time, certain teaching and learning behaviors and practices that reflect both the tenets of the social constructivist framework and the features of the virtual world have organically developed through faculty and student engagement in this unique learning space and have been referred to as Presence Pedagogy (P2). However, for this new pedagogical approach to serve as a model for future instruction, a more articulate operational definition of this model is needed. Therefore, the research question discussed in this paper is: To what extent is the Presence Pedagogy framework reflected in the actions and behaviors of students and faculty in the AETZone? The authors conclude that while the overall characteristics of P2 are supported, a gap exists in the model regarding interactions that are more social in nature. While social interaction may be implied in the P2 framework, more attention and emphasis is needed in terms of creating and maintaining this AETZone experience.

Keywords: Social Constructivism, Presence Pedagogy, Virtual Worlds, AETZone, Presence, Interaction.

Introduction

With the recent development of virtual worlds such as Second Life, There, and Whyville, millions of people are adopting avatars and venturing into environments that are both similar and different from the "real" world. The educational implications of such three-dimensional (3D) worlds have not gone unnoticed. Educators are investigating new and innovative ways of using these and other immersive technologies in their classrooms to provide powerful learning experiences for geographically dispersed students. While virtual worlds can utilize more traditional two-dimensional (2D) types of distance learning technologies (i.e., discussion boards, web pages, chats) and newer Web 2.0 technologies (i.e., blogs, wikis, You Tube), the inclusion of notions of presence and co-presence, awareness, and engagement distinguish this new 3D immersive learning environment from 2D learning management systems such as Blackboard and Moodle, which are commonly used in colleges and universities across the nation and world (Schroeder, 2006).

Graduate courses in the Department of Leadership and Educational Studies (LES) at Appalachian State University rely heavily on Internet-based technologies for both content and interaction with both on and off-campus students. The principles of social constructivism, central to our college's conceptual framework inform our thinking as we construct teaching and learning environments, both face-to-face (F2F) and online (Reich College of Education, 2005). Guided by these frameworks, faculty members in the LES department have developed the AETZone – a 3D virtual world for teaching and learning (Cheney, et al., in press; Gilman, et al., 2008) built upon an ActiveWorlds platform (www.activeworlds.com). Graduate students from four different program areas, Instructional Technology,

Library Science, School Administration, Higher Education, and doctoral students from our program in Educational Leadership use this shared space to access tools and resources, and interact with other students and faculty. It is also common to find other invited guests present in the AETZone, including undergraduate students, speakers, researchers, and even students and faculty from other universities. The AETZone is a closed environment to those who are not granted citizenship. However, once a citizen, faculty, students, and guests have full access to all tools, resources, and spaces in the AETZone. There are no artificial barriers imposed based on their section, course, or program area. In fact, cross-disciplinary interactions and collaborations are encouraged to engage these pre-service instructional technologists, librarians, principals, community college instructors and administrators, and superintendents in dialogue around real-world issues facing education in the 21st century.

These same faculty have been engaged in the development of a new pedagogical framework to teaching and learning in a virtual world intended to help create an environment in which students are actively engaged in a learning space that exists in the praxis of these multiple communities of practice (virtual, real, social, academic, and professional). This framework, titled Presence Pedagogy (P2), serves as a catalyst for learning by creating and maintaining a "churn," a cycling through the P2 set of practices among all the stakeholders in this overlapping space, a community of communities (Bronack, et al., 2008; Cheney, Sanders, Matzen, & Tashner, 2009). This churn manifests itself through faculty and students' active and ongoing engagement in projects and activities that include the following framework characteristics:

- Asking questions and correcting misperceptions;
- Stimulating background knowledge and expertise;
- Capitalizing on the presence of others;
- Facilitating interactions and encouraging community;
- Supporting distributed cognition;
- Sharing tools and resources;
- Encouraging exploration and discovery;
- Delineating context and goals to act upon;
- Fostering reflective practice; and
- Utilizing technology to achieve and disseminate results.

Anecdotal evidence suggests the interrelatedness that exists in the convergence of this framework and 3D virtual world may hold great potential for how we might further our understanding of teaching and learning. However, for this new pedagogical approach to serve as a model for future instruction, a more articulate operational definition of this model is needed. The purpose of this research study was therefore to examine, understand, and describe the teaching and learning that has emerged from the praxis of social constructivism and a 3D virtual world with the goal of generating a "thick" ethnographic description of an emergent set of practices. In order to do so, the research question we intend to answer is: To what extent is the Presence Pedagogy framework reflected in the actions and behaviors of students and faculty in the AETZone? In asking this question, we hope to be able to better understand and articulate the set of practices known as P2; determine if all P2 practices are, in fact, represented in the teaching and learning behaviors evidenced in the AETZone; and, to identify other practices that are evidenced but not currently represented in the P2 model.

Review of the Literature

Presence and Co-presence

A student's sense of presence and co-presence afforded by a 3D learning environment differentiates virtual spaces like AETZone from most 2D learning management systems used by colleges and universities. Schroeder, et al. (2001) define "presence" as "having the experience of being in a place other than the one in which you are physically present" (p. 785) and define "co-presence", as "the subjective sense of being together or being co-located with another person in a computer-generated environment" (p.786). Together, these two conditions serve to create an environment in which students are aware of self in relation to others and share in the collective use and manipulation of persistent resources and artifacts collocated throughout the virtual world.

Developing an awareness of presence and the co-presence of fellow users is an important first step in becoming successfully integrated in the virtual environment and building personal and professional relationships. Unlike 2D classroom management systems, 3D virtual environments provide users with the

ability to identify when fellow classmates are logged into the environment. Schroeder, et al. (2001) notes, "…the presence of one's partner makes a difference to the experience of the VE [Virtual Environment] as a place" (p. 788). This ability to "see" other users and interact with them through real-time text and audio chats is an element of virtual worlds that enables users to begin viewing the virtual environment as a "place" and ultimately establish a learning community of practice. While most 2D online communities are thought to foster feelings of social isolation (Thomsen, Straubhaar, & Bolyard, 1998), the use of avatars as virtual representations of their physical selves makes it difficult for users of 3D virtual environments to feel isolated. By spending time and exploring the spaces in a virtual world, "in world" users are reminded of other participants because of the presence of their avatars and the conversations and interactions taking place around them. Garrison, Anderson, and Archer (2000) expand this notion of presence by describing it as having three core elements: cognitive presence, social presence, and teaching presence. These three forms of presence comprise what they refer to as a Community of Inquiry, in which critical thinking, affective goals, and the "binding element" (p. 96) of a teacher, work together to facilitate learning.

Social Interactions

While Zhao argues that face-to-face interaction is often held by educators as ideal and "undoubtedly generates the most vivid sense of co-presence" (Zhao, 2003 p. 453), interpersonal exchanges within virtual worlds are also capable of providing rich social interactions between and among students and faculty. In fact, social presence has been found by Garrison, Anderson, and Archer (2000) to be a "direct contributor to the success of the educational experience" (p. 89). In order to ensure that all exchanges are substantive and relationships are formed, users of virtual environments must develop their own sense of personal presence within the world and note the co-presence of their fellow users. Initially, users focus on maintaining presence by creating an avatar. Once presence is established and users feel comfortable with their virtual identity and the space in which they now inhabit, they begin to consider participating in social interactions with other avatars. Those who become fully invested in the environment, however, soon realize that their "presence" is demonstrated not only by maintaining a physical representation of themselves but also by developing long term relationships with other participants in the virtual world.

Studies suggest that it is possible to cultivate and maintain these long-term, personal and professional relationships within 3D virtual environments (Thomsen, et al., 1998). Schroeder (2002) notes students with high levels of participation and interaction tend to develop meaningful relationships with fellow students and teachers. These users are those that have become "experts" or "old-timers" within the virtual world and have assumed some level of ownership and responsibility for the environment. Expert users are those that take advantage of the presence of students and faculty, even those not from their own program, to build on their learning experiences and form online learning communities of practice.

Schroeder (2002) cites multiple studies that describe these long-term relationships as "meaningful and rewarding for users," and explains,

> ... that long-term users trust each other, that they tend towards stable identities in terms of appearance and name, that they use non-verbal communication less the longer they inhabit the VE [virtual environment], that they take an active interest in the choice of their appearance and in shaping the VE, and that they develop 'stake' in the social environment (p. 12).

Those students who spend time in the virtual world and take advantage of the multiple opportunities in world to initiate and maintain social contact with others experience a more rewarding and satisfying learning environment than those students who do little more than log in and complete their assigned tasks.

Communities of Practice

Lave and Wenger define a Community of Practice (CoP) as "…a set of relations among persons, activity, and world, over time and in relation with other tangential and overlapping CoPs" (as cited in Kimble, et al., 2001, p. 98). Kimble and colleagues (2001) go on to argue,

> … a CoP does not necessarily imply co-presence, socially visible boundaries or a well-defined or identifiable group. However, it does imply participation in an activity where participants have a common understanding about what it is and what it means for their lives and community. The community and the degree of participation in it are inseparable from the practice (p. 222).

Communities of Practice are not tied to geographic boundaries or to demographics, and can form in virtual worlds as readily as they do in the "real world". More, importantly, CoPs are dependent upon their

members' participation in the activities of the community, which is key to meaning making, identity formation, and the subsequent propagation of culture. Cohen (1985) explains, "Whether or not its structural boundaries remain intact, the reality of community lies in its members' perception of the vitality of its culture. People construct community symbolically, making it a resource and repository of meaning, and a referent of their identity" (p. 45). For CoPs to exist in a learning environment, virtual or otherwise, students and faculty must collectively participate in its formation through their presence in it, contributions to it, interaction within it, and responsibility for it. Students who develop a sense of personal presence and co-presence within the environment indicate that they are actively engaged in the community and find value in its educational and social opportunities. In essence, participation is "… central to the evolution of a community" (Cohen 1985, 224) and to the creation of those personal and professional relationships upon which those communities are based (Kimble, et al., 2001).

A logical conclusion based on these findings is that users of virtual environments such as Second Life and AETZone may develop a sense of community as newcomers adopt this common understanding and interact with other members of the community. As Altalib (2002) points out, "communities are always taking in newcomers who at some point come in as peripheral members who then through time become practitioners who guide the community into the future" (p. 9). Online communities develop around a shared understanding and value of the virtual environment. It is important to note, however, that virtual communities are also "real" communities in that they are simultaneously situated in the real world. Those who are members of the community are real and the learning that takes place within the community is real, not virtual (Lueg, 2000).

Methodology

This qualitative inquiry utilized the emerging methodology of Virtual Ethnography, "an ethnography that treats cyberspace as the ethnographic reality" (Mason, 1996, p. 4) and "a method in which one actively engages with people in online spaces in order to write the story of their situated context, informed by social interaction" (Crichton & Kinash, 2003). This approach served to develop a deeper understanding regarding the nature of learning as it emerges from the praxis of social constructivism and 3D immersive learning environments. Using an avatar named, Shanna Mead – Virtual Ethnographer, the authors developed this study to examine teaching and learning behaviors and activities in the AETZone through partial participant observations and interviews of nine (9) students in the AETZone. An observation tool was developed to document activity in the AETZone. Included in this tool were notations of the time and duration of the observation, activities observed, and researcher reflections. An interview guide consisting of three demographic questions and 11 open-ended questions was used by the research assistant to conduct the interviews in the AETZone. Criterion sampling was used to guide our selection of students. All participants were required to be graduate students who were taking, or had taken, at least one course using the AETZone during the past year. The authors also selected a cross-section of students, representing three programs that had been using the AETZone for instruction during the time of the study. Of these nine students, five were from library science (MLS), two were students in the higher education (HE) program, and two were instructional technology students (ITC). Neither gender nor age was recorded.

Codes to assist in the analysis of the data were developed using sensitizing concepts from the literature regarding interaction, presence and co-presence, sense of community, affordances of virtual learning environments, and the current P2 framework. Additional codes were utilized based on indigenous concepts that emerged naturally from the data. Codes were initially developed by the authors independent of one another and later compared and discussed to achieve a reasonable degree of concurrence on the application of each code. The use of two analysts (the primary investigator and research assistant) and two data sources (observations and interview data) permitted two types of triangulation during the inductive analysis of the data collected. The indigenous concepts that emerged from the data and sensitizing concepts were used to draw conclusions in the context of the research question. Using these codes, patterns emerged from the data, allowing us to triangulate key themes in the data through the variety of questions asked and the diversity of students interviewed. The discussion below reflects these analyses.

Discussion of Data

Three basic themes emerged from the data. The first of these themes focused on the interaction among students leading to their shared sense of community. The second theme focused on the students' sense of presence and co-presence related to these interactions. The third theme focused on the students' value for the AETZone and its perceived impact on the learning experience.

Interaction and Community

Students suggested that the 3D environment supported interactions between and among their peers that were more immediate, conversational, and prone to fewer misunderstandings than interactions typically associated with 2D learning spaces. According to one student, "The interactions in the AETZone are much richer than those using just posts, etc. Real-time interaction allows for fewer problems and misunderstandings, etc." Another added, "I actually do feel involved with others and in a strange way part of a group…more so than when I interact in non-virtual worlds." Students also noted the helpful, friendlier nature of the interactions they had with others in this space. As one student put it, "the interaction with new people is great. Everyone is helpful no matter if it is student or faculty."

These interactions fell into two broad categories: *formal* – work related and planned, and *informal* – social and serendipitous. While there was some overlap between the two types, most students engaged in the former rather than the latter in the context of course projects and activities. Few of these formal, academic interactions were cross-cohort or cross-program although some interaction, albeit on a limited scale, did occur between students in different courses, cohorts, or programs. Students expressed value for these cross-disciplinary interactions when they did occur in the AETZone. As one student shared,

> I actually think this is one of the best parts about the AETZone. I've been able to talk with classmates and faculty, both during class time and just randomly, and to ask questions and get help as needed. Even if none of my particular classmates or professors is online, I'm able to get help from people in other cohorts or programs.

In contrast to the students' more limited engagement in terms of *formal* interactions, they did report extensive use of the 3D environment for *social* uses and for making and maintaining friendships with other students and with faculty. While some barriers existed that occasionally resulted in students' not responding to requests for or displays of friendship, most students interviewed spoke about how often they use the AETZone to connect with friends and make new ones. Many of these more informal, social interactions took place outside the context of working on formal assignments and through both planned and serendipitous meetings with others.

Social interactions also appeared to be tied to the students' sense of a community in the AETZone. They referred to "meeting up with friends in the AETZone" and "sparking friendships." Students felt like they were members of a group or community and viewed the AETZone as, "…an enriching way of interacting with other students as opposed to emails or wikis… [O]ne feels like it is a big family and everyone is important and will be helped." As another student explained,

> It creates a nice community, especially for those students who rarely see each other in face-to-face (F2F) class meetings. We can discuss assignments, have group meetings, chat informally, and keep in contact with those students and professors with whom we no longer have class.

Unlike coursework done in the AETZone, these social activities typically extended beyond courses and cohorts and took place among students and between students and faculty, regardless of program.

Students' sense of community seemed to emerge from these less formal, more social, conversational aspects of the AETZone experience. Few students associated community as being limited to a particular group of others taking the same course or in the same cohort. Rather, students talked about belonging to a larger group that transcended these organizational structures. Community seemed to be tied more to friendships and building relationships that existed outside structured course activities and assignments. These more social relationships eventually fed back into the formal coursework by engaging students in a rich, academic dialogue with others who they now viewed as friends and colleagues rather than strangers. Students' sense of community seemed inextricably tied to the social dimensions of the AETZone. While course projects and assignments that required students to interact and collaborate might have initiated these relationships, the fact that students continued to interact with others outside these formal projects and activities appeared to be a major ingredient in developing their sense of belonging to a group and subsequent sense of a larger community of which they were new members.

Sense of Presence and Co-Presence

Students who indicated a sense of presence did so primarily in the context of their social uses of the AETZone. These students talked about the value of "being there" – presence, and more importantly, being there "with others" – co-presence. Despite the fact that much of the assigned work described by students was work that could be conducted in other F2F or 2D online environments, students expressed

an appreciation for the working in a virtual environment that allowed for presence and recognized the value of presence and co-presence in contributing to their learning experience.

The use of avatars and persistent spaces lent a sense of realism to the AETZone experience in terms of immediacy of interaction and feedback, and perhaps more importantly, the opportunity for serendipitous interactions with students and faculty. According to one student,

> There is no comparison of the immediacy of response. It is much more like a regular conversation with immediate feedback. If something isn't understood, immediate correction and clarification can occur. I used the speaker/microphone set-up some and it greatly added to the conversational aspect. Once I was wandering around exploring when an instructor from another class walked up and we started to talk. I was able to ask questions about the AETZone itself and the theoretical underpinnings of the world. That would never have been possible in real life without making an appointment with the professor, calling or driving to Boone and asking questions in a much more formal way.

These experiences resulted in students feeling more engaged in their courses and a part of something larger than themselves. This connection with the "real world" was important to several of those interviewed. Another added,

> Having an avatar and being able to 'see' who is in the room and to interact in a very real-world way really makes things seem more real and local. Even the funny little actions that the avatar can perform add humor, levity, and realism to the experience. To me, using the AETZone for class is very much like meeting in a real town, at the local town hall, with all of the resources and real life reactions that come with this.

Those who had taken courses using 2D learning management systems noted that presence, co-presence, and the affordances they offered were lacking in other learning spaces.

Students interviewed indicated that presence and co-presence were important and necessary aspects of their experience in the AETZone, and served as important factors in their level of participation and engagement in the community. They noted that the conditions of presence and co-presence were essential for interaction, collaboration, social use, and creating a sense of community. Presence and co-presence also served as catalysts for interaction to occur in both academic and social settings, to connect students with one another, and help students feel a part of a larger cause or greater purpose. The value of the avatar and the gestures the avatar was capable of making were identified as important to creating a sense of co-presence by adding a sense of realism, humor, and levity to the interactions between students.

Value of 3D and its Impact on Learning

For one HE student interviewed, the AETZone environment added little to his learning experience. This student felt that the work done in the AETZone could have been replicated in a 2D learning space and that the 3D quality of the AETZone did not add value to his learning. He explained,

> So far, using the AETZone has not been either a positive or negative experience for me. Perhaps younger students are more impressed by the ability to choose an avatar, walk around in a virtual world, etc. Honestly, I would be just as happy with a list of links to the discussion board, blogs, articles, etc! But I also realize the value of the virtual world when it comes to relating to the generation(s) we teach in the higher education system.

In contrast, the other students interviewed perceived an added value that the 3D environment of the AETZone brought to their learning experience. The AETZone allowed for rich, synchronous interactions; supported creativity; encouraged exploration and discovery; and, increased students' interest, involvement, and enjoyment in doing their coursework. According to one, "The very environment invites exploration and discovery in a way no other learning environment (including seated) can."

The AETZone was also described as an environment that promoted questioning and the development of new ideas; and broke down the traditional program discipline specific silos generally associated with higher education. Another HE student countered her colleague's critical perception of the AETZone noted above, sharing,

> I found it enjoyable to chat with others in the world whether they were in my class or some other group and found these serendipitous meetings to be quite beneficial if I had a question about functioning in the world, or was seeking to develop an idea. The most exciting aspect of the world

> was being able to interact in other classes (worlds) to explore course content and discuss concepts with other students. It was a classroom without walls.

Students valued shared responsibility among all the citizens for fostering a helpful, collaborative, culture in the AETZone. This shared responsibility served as a manifestation of a very different teaching and learning experience than what they were used to in other university settings. As one student expressed, "The virtual world has shown me a different way of instruction/learning material." Another elaborated on this shift in how students began to perceive and understand teaching and learning in the AETZone saying,

> I found the AETZone to radically expand my educational horizons. Our course utilized the AETZone simultaneously as a tool for class content and experience in a virtual world. Integrating the technology was key to understanding course material.

Student informants described the sense of co-presence and the informal, serendipitous connections with others the AETZone as contributing to a transformative learning experience – one that challenged their notions of teaching and learning. The immediacy of these connections with others, partly supported by the use of avatars and realistic 3D spaces, made learning more authentic, engaging, and enjoyable. Another student described the AETZone experience in terms of the comparison of watching a DVD to watching a live performance in a theater. In a live performance, she explained,

> You are there at the same time so there is a conversational quality to the interaction. … [The] live experience is always more compelling. The immediacy and connection between the actor and audience in a live presentation creates a synergy, and a possibility for connection that is impossible with the polished movie on a DVD. You never know what will happen with live theater; each performance is different because actions occur that change the dynamic from night to night. This also happens in the AETZone because there is always a different cast of characters.

One of her peers added,

> I would compare it to learning in a classroom setting as opposed to a study carrel – when you're in a classroom setting with others, even if you're focusing on different things, you have the comfort of being there in the presence of other learners. In a study carrel, you have to be completely self-reliant and might miss out on any insights from other students.

For these students, the realism, immediacy, and co-presence afforded by the AETZone had a profound impact on their graduate experience. Instead of a passive, instructor led, didactic environment in which students worked in isolation, these students described a learning environment in which they were active and engaged in a larger learning community of practice in which they were empowered through the presence of others. These students expressed an appreciation of this more informal, interactive, flexible, and supportive environment and its similarity to the "real word" they were used to working in outside academia vs. working in a more traditional classroom environments offered through face-to-face and 2D online experiences.

Conclusions

The original goal for this study was to answer the question: To what extent is the Presence Pedagogy framework reflected in the actions and behaviors of students and faculty in the AETZone? As indicated in the above discussion, there was some evidence of varying degrees of the ten P2 practices regarding student and faculty engagement in the AETZone. While P2 has great potential for guiding faculty in the design and development of an engaging, resource-rich learning environment that reflects our social constructivist philosophy, it is clear, however, that there is more for us to understand for this framework to be universally impactful on student learning. Whereas the fundamental characteristics of P2 were manifested in much of the activity observed and described by the students, we discovered that the churn of P2 clearly did not affect all students in the AETZone equally or consistently. Some students were more engaged through P2 in the AETZone community than others. Students interviewed for this study fell along the continuum of newcomer to old-timer based on their level of participation and time invested, a finding consistent with the research conducted by Thomsen, et al. (1998) and Schroeder (2002). Time is required for newcomers to become old-timers and can only do so through their participation with others in the community, through their contributions to that community, and through the construction of artifacts that give form to experience and meaning (Hildreth, 2004).

However, in an effort to answer this research question, our findings revealed a very interesting social dimension of AETZone previously unexplored and unarticulated in the P2 framework, enabling us to

envision ways in which P2 can be reworked and improved. Our analysis of the data revealed that while social interaction may be implied in the P2 framework (notably through the characteristics of "Capitalizing on the Presence of Others" and "Facilitating interactions and encouraging community"), more attention and emphasis should be given to social interaction in terms of creating and maintaining this AETZone experience. Much of what AETZone faculty described as the "churn" of P2 set of principles occurred through these informal, social interactions rather than the more formal, academic interactions. Students were consistent in describing the AETZone as a place to make and meet with friends. These relationships appeared to be less constrained by course, cohort, or program, and served to help develop a sense of community necessary for P2 to function. Based on these observations, it would seem that an important goal for faculty wanting to utilize P2 would be to focus on finding ways to encourage and facilitate social interactions between and among their students; not just interactions between students in a course or cohort, but across program areas to take full advantage of the diversity of ideas and perspectives of all stakeholders in an educational community. This finding is consistent with Garrison, Anderson, and Archer's (2000) assertion that "cognitive presence by itself is not sufficient to sustain a critical community of learners" (p. 94). They go on to argue, "high levels of social presence with accompanying high degrees of commitment and participation are necessary for the development of higher-order thinking skills and collaborative work." In other words, the academic work expected from students cannot be expected without providing them with opportunities to create a social connection with faculty and other students.

We need to re-conceptualize our thinking of the P2 framework to include social interactions as integral to the churn we are trying to promote. Faculty members who have been involved in the development of P2 should continue to examine this framework and identify ways in which all of the P2 characteristics can be more consistently woven into the fabric of the AETZone experience by continuing to maintain our own interdisciplinary dialogue about teaching and learning. While a sense of community cannot be forced upon the students, it can be nurtured and helped to develop through these collaborative types of activities. Students need spaces to meet and socialize outside of classroom environments, and need to have reasons to come to these in-world spaces that bring value to their online relationships. As two of our colleagues recently wrote:

> Indeed, the constructs that define technologies as "social" are so confounded with those that define pedagogies as such, it is difficult to consider the impact of one without recognizing the need for understanding the other. (Riedl & Bronack, 2007).

In other words, it would be difficult for us to dismiss or ignore our students' social use of the AETZone while using it for academic purposes. The technologies we use, from discussion boards to wikis to the virtual environment itself, are inherently Web 2.0, social networking tools. The concept of "social" is an inherent part of the AETZone experience and essential in creating that P2 churn that serves to create and maintain a virtual world learning community of practice that exists in the praxis of connected, real world communities of practice of which our students are or will be members.

Future research is needed to identify reasons why some students may not become engaged in the virtual world and take advantage of its potential for learning. Is the AETZone experience more dependent upon the technology used to create a sense of presence and co-presence, or the pedagogical model used to engage students in learning? Why do some students interact more readily than others and are there ways to minimize the barriers that might discourage these interactions? A further limitation of this study is the fact that only active users of the AETZone were selected as informants. Identifying students who have chosen not to fully engage in the AETZone community could further help identify those barriers to participation noted above.

While our own vision and understanding of P2 continues to evolve naturally through conversations we have with one another, we remain steadfast in our ultimate goal for Presence Pedagogy – to develop engaging, vibrant learning communities in 3D immersive learning environments. As we continue to develop our virtual world and continue to invite other program faculty to join us in its development, it is important for us to understand what makes the AETZone a uniquely engaging space for teaching and learning, and how this emerging pedagogical framework of Presence Pedagogy can serve to guide us in our ongoing use and development of 3D Immersive Learning Environments.

References

Atalib, H. (2002). *Situated cognition: Describing the theory*. (ERIC Document Reproduction Service No. ED475183)

Bronack, S.C., Sanders, R.L., Cheney, A., Riedl, R.E., Tashner, J.H. & Matzen, N.J. (2008). Presence pedagogy: Teaching and learning in a 3D virtual immersive world. *International Journal of Teaching and Learning in Higher Education*, 20(1), 59-69.

Cheney, A., Sanders, R.L., Matzen, N.J., Bronack, S.C., Riedl, R.E., & Tashner, J.H. (in press). A virtual world for collaboration: The AETZone. In T. A. Mikropoulos,. V. S. Pantelidis & C. Jen Chen (Eds.) *Virtual Reality in Education*. Athens: Klidarithmos Books.

Cheney, A., Sanders, R.L., Matzen, N.J., & Tashner, J.H. (2009). Instructional design and pedagogical issues with Web 2.0 tools. In Kidd, T.T. & Chen, I (Eds.) *Wired for Learning: An Educator's Guide to Web 2.0.* (pp. 85-89). Charlotte, NC: Information Age Publishing.

Cohen, A.P. (1985). *The symbolic construction of community*. London: Tavistock Publications.

Crichton, S., & Kinash, S. (2008). Virtual ethnography: Interactive interviewing online as method. *Canadian Journal of Learning and Technology / La revue canadienne de l'apprentissage et de la technologie*, 29(2). Retrieved May 28, 2009, from http://www.cjlt.ca/index.php/cjlt/article/view/40/37

Garrison, D.R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105.

Gilman, R., Tashner, J.H., Riedl, R.E., Bronack, S.C., Cheney, A., Sanders, R.L., & Angel, R. (2008). Teaching IT through learning communities in a 3D immersive world: The evolution of online instruction. In S. Negash, M. Whitman, A. Woszczynski, K. Hoganson, & H. Mattford (Eds.) *Handbook of Distance Learning for Real-Time and Asynchronous Information Technology Education* (pp. 65-82). Hershey, PA: Information Science Reference.

Hildreth, P. M. (2004). *Going virtual: Distributed communities in practice*. Hershey, PA: Idea Group Publishing.

Kimble, C., Hildreth, P., and Wright, P. (2001). *Communities of practice: Going virtual*. Retrieved May 28, 2009, from http://www.getcited.org/cits/PP/1/PUB/103396967

Lueg, C. (2000). *Where is the action in virtual communities of practice?* Paper presented at the Workshop Communication and Cooperation in Knowledge Communities, at the German Computer-Supported Cooperative Work Conference (D-CSCW), Munich, Germany. Retrieved May 28, 2009, from http://wwwstaff.it.uts.edu.au/~lueg/papers/commdcscw00.pdf

Mason, B.L. (1996). Moving toward virtual ethnography. *American Folklore Society News*, 25(2), 4-6. Reich College of Education (2005, September 29). *Conceptual Framework*. Retrieved May 28, 2009, from http://www.fd.appstate.edu/rcoe_framework/cover_page.htm

Riedl, R. & Bronack, S. (2007). *CRIOLE Center Proposal*. Unpublished Manuscript: Appalachian State University, Reich College of Education.

Schroeder, R. (2002). *Copresence and interaction in virtual environments: An overview of the range of issues*. Paper presented at the 5th Annual International Workshop: Presence 2002. Retrieved May 28, 2009 from people.oii.ox.ac.uk/schroeder/wp-content/uploads/2006/03/copresence%20and%20interaction%202002.pdf

Schroeder, R. (2006). Being there together and the future of connected presence. *Presence*,15(4), 438-454**.**

Schroeder, R., Steed, A., Axelsson, A-S., Heldal, I., Abelin, A., Widestrom, J., Nilsson,A., Slater, M. (2001). Collaborating in networked immersive spaces: As good as being there together? [Special Issue] *Computers & Graphics*, 25(5), 781-788.

Thomsen, S.R., Straubhaar, J.D. & Bolyard, D.M. (1998). Ethnomethodology and the study of online communities: Exploring the cyber streets. *Information Research*, 4(1), Retrieved May 28, 2009, from http://informationr.net/ir/4-1/paper50.html

Zhao, S. (2003). Toward a taxonomy of copresence. *Presence*, 12 (5), 445-455

Manuscript received 2 Nov 2009; revision received 24 Jan 2010.