SECOND LIFE FOR DISTANCE LANGUAGE LEARNING: A FRAMEWORK FOR NATIVE/NON-NATIVE SPEAKER INTERACTIONS IN A VIRTUAL WORLD

By

JENNIFER TUSING*   **ZANE L. BERGE****

*** Professor of Education, University of Maryland.*

ABSTRACT

This paper examines a number of theoretical principles governing second language teaching and learning and the ways in which these principles are being applied in 3D virtual worlds such as Second Life. Also examined are the benefits to language learning afforded by the Second Life interface, including access, the availability of native speakers of the target language, and the enhanced presence afforded by 3D virtual worlds as compared to multi-user object oriented domains and other chat interfaces that provide no sense of place. It is concluded that while an appropriate environment for communicative foreign language practice, not all students may be ready to meet the technological demands required by the use of Second Life.

Keywords: Second Life, Distance Language Learning, Virtual Words, Foreign Language Teaching, Multi-User Virtual Environments (MUVEs).

INTRODUCTION

In the face-to-face classroom, language learners have the opportunity to test their new language skills as well as develop communicative competence through daily interactions and guided conversational speaking tasks in the second language (L2). Synchronous interpersonal communication is one of the primary skills taught in credit language classes and language teachers generally fear that these skills will not be practiced and communicative competence will not be achieved by distance language learners (Blake, Wilson, Cetto, & Pardo-Ballester, 2008). Research, however, does not support these claims and shows, rather, that students can achieve similar degrees of oral proficiency in both distance and face-to-face formats if appropriate opportunities for synchronous interpersonal communication are provided as part of the course design. The purpose of this study is to determine the ways in which the virtual world of Second Life can be used as a medium for synchronous interpersonal communication between native speakers (NS) and non-native speakers (NNS) as one component of a primarily asynchronous distance language course design. This paper will provide a basic review and definitions of selected, relevant general and

language learning theories, a discussion of the potential benefits afforded by the medium of Second Life for the enhancement of language learning through text and voice chat, and specific suggestions for using Second Life with distance language learners.

Communicative Language Teaching

Over the past forty years, trends in foreign language teaching have been moving away from the reading and writing grammar-based instruction of the Grammar-Translation Method, in which students would learn grammar and vocabulary by translating texts into and out of the L2, and the choral drilling procedures of the Audio Lingual Method, in which students would memorize and repeat dialogues, toward more functional, communication-based instructional techniques. This occurred because educators and theorists realized that foreign language students could not use the target language effectively when needed. Students required practice in communication in order to express their ideas in a coherent, although not necessarily structurally correct, utterance (Standards for Foreign Language Learning, 1996). The goal shifted from structural accuracy toward negotiation of meaning. This theory of foreign language

learning began in the 1970's with the work of Savignon (1972) and is still slowly infiltrating foreign language classrooms throughout the world. Galloway (1993) describes the communicative classroom as very "hands-off" for the teacher, which may contribute to the slowness and difficulty of implementing such a methodology.

One goal of communicative language teaching is the development of what has been defined as communicative competence or, "the ability to function in a truly communicative setting – that is, in a dynamic exchange in which linguistic competence must adapt itself to the total informational input, both linguistic and paralinguistic, of one or more interlocutors" (Savignon, 1972, p. 8). This definition explains that communication is dynamic, involving the negotiation of meaning between two or more individuals. Communication may occur orally or through writing (although here the focus is on the oral aspect). It is dependent on context and varies by situation, prior experiences of the interlocutors, and social demands such as register and style. Competence in communication, or one's ability to communicate, is only observable through performance, which also helps to develop and maintain competence. Finally, communicative competence is relative, depending on the abilities and cooperation of all participants (Savignon, 1983).

A description of three manifestations of communicative language teaching and learning which may prove applicable within Second Life, task-based language learning, game-based language learning and tandem language learning, is provided below. While game-based learning may be considered a subset of tasked based learning, there are additional characteristics of the former which deserve special mention. Each of these may be considered communicative language teaching because they inherently provide a context for communication, making L2 use the means to an end, not the end in and of itself.

Within these types of language learning situations, an argument can be made for the application of Vygotsky's theories (Vygotsky, 1978; Wertsch, 1985) of child first language (L1) acquisition to L2 acquisition. In fact, Myers (2000) makes such an argument for task-based language learning while Appel (1999) does the same for tandem

language learning. Appel (1999) argues that both child L1 acquisition and L2 acquisition involve "collaborative interaction and the notion of scaffolding" (p. 5) and "seek to develop learners' inner speech" (p. 6). It is this author's belief that this argument can be made for all three learning situations discussed below, and for communicative language practices in general, as students are not specifically learning to communicate, but rather are communicating to learn. Language development occurs, but as a byproduct of a situation which requires communication.

Task-Based Language Learning

According to Oxford (2006), "in L2 teaching and learning, task is now often viewed as an outcome oriented instructional segment or as a behavioral framework for research or classroom learning" (p. 97). Language learning that is task-based involves learner completion of some task that requires a negotiation of meaning. Tasks are usually completed in pairs or small groups and can be highly scaffolded and require minimal learner autonomy or loosely scaffolded to require high degrees of learner autonomy. It is important to note that task-based language learning always involves some degree of instructor influence (Oxford, 2001).

Game-Based Language Learning

When one plays a game, one completes a task, or perhaps a series of tasks, to achieve a goal. Game-based language learning is, therefore, a type of task-based language learning that requires use of the L2 for success. Adcock (2008) provides the following reasons why digital games in specific could be useful for learning:

Being intrinsically motivated to play, students are eager to practice new skills. Games provide a place for trial and error play. They are natural environments for problem solving. Taking many paths through a game, some leading to a solution and some not, allow a student to engage in deep cognitive activity. Not only do they have to remember where they have been and the consequences of their prior actions, they must also think in a new environment with plenty of opportunities for interaction. Students can interact with characters in the game or with fellow players (p. 56).

While Adcock (2008) speaks of digital gaming for learning in general terms, these premises can certainly be applied specifically to language learning, especially regarding the opportunities for interaction.

Tandem Language Learning

The theory of tandem language learning has existed for many years and is grounded in the central principle of two language learners, each a native speaker of the language the other is learning, working together to practice their respective foreign language skills (Cziko, 2004). Appel (1999) completed a comprehensive survey of the theoretical background of tandem language learning and highlights the principles of reciprocity and autonomy as key to the success of a tandem dyad's learning. Tandem learning is reciprocal because each learner must help the other learn and autonomous because the interactions between the dyad as well as the topics they discuss and the grammar studied are learner, not instructor, driven. Tandem language exchanges may take many forms, from low-tech options such as face-to-face meetings to the high-tech options described by Cziko (2004) as eTandem and can be oral or written, synchronous or asynchronous. In the discussion below, the tandem interactions described will necessarily be synchronous eTandem exchanges.

Why Second Life

Second Life may or may not be the answer to providing synchronous interpersonal conversation practice to distance education students. The examples in the next section of this paper include information on how Active Worlds has been used by language educators (Campbell, 2003; Zheng, Young, Brewer, Wagner, & Seo, 2006), and Vickers (2008) suggests that upon completion, Twinity may be more appropriate than Second Life for language learning as linguistic communities will probably develop more amply since the interface is designed to mimic locations in the real world. Yet regardless of which 3D virtual world proves most effective for language learning, their potential is obvious for a number of reasons.

Computer Mediated Communication (CMC) and Oral Proficiency

Blake et al. (2008) conducted a study in which the oral proficiency of distance, hybrid, and face-to-face learners of Spanish as a second language was tested using a standardized electronic testing instrument. The results of this study were quite promising; the difference in oral proficiency among the three groups was statistically irrelevant. The CMC model used by the distance and hybrid students in this situation included NNS-NNS as well as NNS-teacher interactions and occurred as both voice and text chat.

Further, multi-user object oriented domains (MOOs) have been used successfully for a number of years as practice venues for foreign language students. In fact, Rein (2003) lists twenty different MOOs that can be used for the practice of seven different languages. A number of discourse analysis studies have been completed on chat-based tandem language exchanges in MOOs (Kötter, 2001; Kötter, 2003; Schwienhorst, 2002; Schwienhorst, 2004; Von Der Emde, Schneider, & Kötter, 2001) and the results have shown that "MOOs are very suitable as a venue for culturally and linguistically challenging language learning experiences" (Kötter, 2001, p. 289). These ventures in using MOOs for tandem exchanges were successful in part due to proactive instructional design including induction periods where participants became familiar with the environment and the (generally) paired nature of communication. According to Mazar and Nolan (2009), studies on learning in MOOs are especially relevant to the development of Second Life as a learning environment as the latter may be considered a "graphical grandchild" of the former, "sharing in many of the constraints and opportunities of these original virtual environments".

NS-NNS Interactions in a Virtual World

One of the most important features of language learning in Second Life is language learner access to native speakers. In one study on NS-NNS interactions in CMC chat, it was noted that the exchanges "offered authentic language discourse for the NNSs to acquire new lexical items and correct grammatical structures through collaborative scaffolding" (Lee, 2004). In addition to the linguistic development achieved through CMC interactions, several researchers have noted the potential benefit of these interactions for the development of intercultural competence. Thorne (2005) argues for the development

of this skill via international telecollaborative class-to-class partnerships, chat networks, and tandem collaborations. However, just as these interactions can foster intercultural competence, an initial lack of this skill can cause the learning relationships to fail (Belz, 2003).

The interactions described above do not, unfortunately, relate specifically to the immersive environment of 3D virtual worlds. It should be expected, however, that linguistic competence as well as intercultural competence should develop appropriately in this type of environment. Reasons for this include both the mode and medium of message exchange. First, Second Life provides a venue for text chat as well as voice chat. In a study on the difference between text and voice chat for language learning, Yamada and Akahori (2007) found that while using voice chat increased "perceived consciousness of the partner's presence," "text-chat enabled low level subjects to understand their partners' utterances without listening ability, and seemed to lessen the load of second language communication" (p. 57). This idea is echoed by Vickers (2009) who considers text-chat an appropriate stepping stone toward voice-chat. It may be concluded, therefore, that text-chat provides an appropriate means of practice for less proficient students, while voice-chat is appropriate for more advanced students. The medium of Second Life and other virtual worlds is equally important for student success. Cooke-Plagwitz (2008) suggests that the interaction of avatars with each other may "mimic a face-to-face experience" (p. 549) and thereby increase the learner's sense of community and belonging.

Anywhere, Anytime Language Practice

One final benefit of Second Life as a platform for language learning is the distance learner's ability to practice from anywhere in the world at anytime. When answering a question on why they chose to take a course online, 29.7% of respondents indicated answers of time management or fitting that clash into their professional or academic schedule (Hastings, 2000, p. 4). Time and timing are, therefore, very important factors in the selection of online courses. Since users in Second Life come from around the globe and speak a number of different languages, with a simple visit to an area where the target language is spoken,

distance language learners can engage in meaningful conversations with native speakers at their convenience. With 24-hour accessibility seven days per week, Second Life provides an ideal practice venue for distance language learners.

Practical Applications of Virtual Worlds for Language Learning

Despite its newness as a venue for language learning, much is being done in Second Life and other 3D virtual worlds to facilitate NS-NNS speaker interactions. While the activities described below involve varying degrees of instructor involvement and learner autonomy, they are all designed to work outside the confines of a synchronous class meeting and could therefore be implemented as supplements to an otherwise asynchronous online class.

eTandem Exchanges

Given its great diversity in format, eTandem can be easily transferred to the venue of Second Life. This platform provides opportunities for text and voice chat, both of which are considered acceptable options for eTandem exchanges. At present, only one tandem language learning network exists for users of Second Life, Teach You Teach Me: A Second Life Language Buddy Network (KipYellowjacket, 2009). This network is free to join and the creator has also built an in-world meeting space for members to carry out their eTandem exchanges (http://slurl.com/secondlife/VIRTLANTIS/147/96/22). Unfortunately there are only a handful of users currently registered at this site, but there are numerous networks for general eTandem exchanges. Any dyad participating in these networks who also happens to frequent Second Life can certainly meet there during their chat sessions.

WebQuests

Defined as "an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the internet" (Dodge, 1997), the WebQuest has been modified slightly to make it applicable to language learning in Second Life. This new manifestation of the WebQuest has been coined "SurReal Quest" by Vickers (2007), and is defined as a WebQuest that makes use of information found from conversations within Second Life as well as information that learners will find using traditional

web sources.

Vickers (2007) describes a country profile assignment where students must not only perform traditional research, but also hold in-world conversations with native speakers of the target language to learn more about their country. Learners then create some sort of product, such as a podcast, to share what they learned. Of importance to this research are the conversations held with native speakers. These are task-driven conversations, but again it is the task that is highlighted, while use of the target language is a byproduct.

A second example of a WebQuest using Second Life requires students to travel to the Paris 1900 island, interview residents they find there, make purchases at two stores, and then report their findings (Morua). Each component of this activity is firmly rooted in sound language learning theory and as a whole the activity provides opportunities for two types of NS-NNS interaction. First students are asked to create interview questions that they can ask to whomever they choose. The questions they ask are of their own design, so this part of the task is highly autonomous. Second, students are asked to complete two transactional tasks, the purchase of an ice cream as well as the purchase of a coffee. These are tasks that any traveler may have to complete and so provide very functional language practice.

Building Projects

Campbell (2003) describes a course format designed to enhance communicative competence through both synchronous and asynchronous communication technologies (Blackboard and Active Worlds, respectively). This course follows the theories of tandem language learning and task-based language learning as Japanese-English speaking groups must work together to develop terrain in Active Worlds. One positive observation about this learning task is that it remains highly autonomous while still providing students with a context for language use. This is important as it allows the conversation to flow naturally without language itself becoming the subject of conversation.

Questing

Zheng, et al. (2006) provides an example of how a 3D

virtual world can be used to promote NS-NNS language learning in children. This example uses Quest Atlantis, a "virtual gaming Active Worlds metaverse" (p. 14). In this study, four girls, two from China, two from the United States co-quested through the tasks of the Quest Atlantis interface. All communication took place in English as the American girls were not learning Chinese, but the Chinese girls were learning English. Although the Chinese students could have moved through the Quest Atlantis interface and practiced their English without the benefit of native speaker interaction, the co-quest scenario "provided different resources for language acquisition" as well as showed "how idiomatic usage is picked up directly and indirectly through embodiment" (Zheng, et al., 2006, pp. 22-23). Zheng and Zhao (n.d.) have continued along this vein with the creation of a quest-based Chinese language learning island in Second Life: Second Life Chinese School.

An additional example includes Story Quests, sponsored by The Virtual Worlds Story Project. Currently available to the public are a Healing Quest, a Vision Quest and monthly Poetry Quests (Ball & Keltz a). Specifically regarding the Vision Quest freely available, the developers highlight the fact that these activities "encourage collaborative and creative teamwork" and facilitate "group encounters" (Ball & Keltz b) as well as provide context for language use. Participation in these events is not restricted to native speakers of English, and so learners of this language should feel free to participate and engage native speakers in conversation.

Further examples of quests in Second Life include the British Council's quests for the learning of English on the Teen Second Life Grid (Conference Program, 2007), Intel's quest to find all parts of and assemble a jet pack (Owyang) and The Pot Healers of Numbakulla (Dahl, 2008). While only one of these activities is expressly designed for language learners, these and other quests can be used to enhance foreign language skills. The instructor should verify, however, that the quest chosen requires some amount of synchronous interaction and if none is inherently provided by the activity itself, provisions should be made as part of individual lesson planning. Additionally, with the exception of one of the quests mentioned above, Second Life

Chinese School, all are English language interfaces. Teachers of languages other than English must continue to look for, or perhaps develop, alternate opportunities.

Other Task-Based Activities

Other task-based activities which may transfer easily to the Second Life interface are surveys, interviews and situational role plays. For the first two of these options, instructors may provide varying degrees of scaffolding, depending on the overall proficiency of the learner (Vickers, 2009). The learner would then go to an area of Second Life where the target language is the primary language of communication and ask their questions of other avatars. For the latter, situational role plays, students can again visit areas where the target language is used and make use of virtual stores and restaurants to practice the transactional exchanges they may encounter in real life when visiting countries where the target language is spoken, as suggested as part of the WebQuest on France 1900 mentioned above (Morua). KipYellowjacket, WlokekBarbosa, HowardVickers, and ErikPhillip (2009) describe an entire Second Life community designed for this purpose, Ciudad Bonita, which is staffed with native speakers. This site is part of a larger pay-for-use language school and so it is suggested that students can alternatively visit a holodeck area where they can practice a number of scenarios that they might encounter in real life.

Conclusion

Assuming that a language learner is already comfortable with Second Life or a different 3D virtual world, or even with 3D gaming principles in general, that student should certainly be able to reap linguistic rewards through actively engaging native speakers in-world. The opportunities to learn and interact are numerous, theoretically sound, and can even be enhanced with instructor and institutional involvement. From autonomous eTandem exchanges to structured interviews and surveys, language exists not for the sake of language learning, but rather for the sake of communication. Additionally, students are able to gain intercultural competence by working directly with native speakers as well as develop their interpersonal skills first through text-chat and later through voice-chat, a scaffold that is not readily available in the face-to-face classroom or via other CMC technologies.

Should a language learner not already be familiar with the interface, however, the difficulties (see: Cooke-Plagwitz, 2008; Stevens, 2007) may prove to outweigh the benefits. Additionally, even though the ideas exist, the infrastructure specifically designed for independent language learners is still weak, especially in terms of languages other than English. Many of the situations described in this paper were experimental models that now must be developed for a wider audience. At present, therefore, while Second Life may prove beneficial for some distance language learners (especially learners of English), further advances in the infrastructure as well as more universal familiarity and comfort with the interface will be necessary before Second Life can be used as a required component of credit distance language courses.

References

[1]. **Adcock, A. (2008).** Making digital game-based learning work: An instructional designer's perspective. *Library Media Connection, 26*(5), 56-57.

[2]. **Appel, M. C. (1999).** *Tandem language learning by e-mail: Some basic principles and a case study. CLCS Occasional Paper No. 54.* (ERIC Document Reproduction Service No. ED430396). Retrieved from ERIC Database.

[3]. **Ball, J. & Keltz, M. (n.d.a).** *The Virtual Worlds Story Project: Weaving the narrative threads of our lives.* Retrieved from http://www.tvwsp.com/home.html

[4]. **Ball, J. & Keltz, M. (n.d.b).** *Vision quests. The Virtual Worlds Story Project: Weaving the narrative threads of our lives.* Retrieved from http://www.tvwsp.com/questing/visionquests.html

[5]. **Belz, J. A. (2003).** Linguistic perspectives on the development of intercultural competence in telecollaboration. *Language Learning & Technology, 7*(2), 68-117. Retrieved from http://llt.msu.edu/vol7num2/belz/default.html

[6]. **Blake, R., Wilson, N. L., Cetto, M., & Pardo-Ballester, C. (2008).** Measuring oral proficiency in distance, face-to-face, and blended classrooms. *Language Learning & Technology, 12*(3), 114-127. Retrieved from http://llt.msu.edu/vol12num3/blakeetal.pdf

[7]. **Campbell, A. C. (2003).** *Foreign language exchange*

in a virtual world: An intercultural task-based learning event. Unpublished manuscript, University of Sheffield, UK. Retrieved from http://e-poche.net/files/flevw.html#_ftn1

[8]. Conference Program. (September, 2008). *2ⁿᵈ Annual Teacher's Conference.* Retrieved from http://www. british council.org/eu/spain-bilbao-teaching-elt-conference-08-blurb.pdf

[9]. Cooke-Plagwitz, J. (2008). New directions in CALL: An objective introduction to Second Life. *CALICO Journal 25*(3), 547-557.

[10]. Cziko, G. A. (2004). Electronic tandem language learning (eTandem): A third approach to second language learning for the 21ˢᵗ century. *CALICO Journal, 22*(1), 25-39.

[11]. Dahl, L. B. (2008, May 7). *A quest game on Second Life.* Message posted to http://www.edtechblog.org/technology/second-life/a-quest-game-on-second-life/

[12]. Dodge, B. (1997). Some thoughts about WebQuests. *The WebQuest page.* Retrieved from http://webquest.sdsu.edu/about_webquests.html

[13]. Galloway, A. (1993). *Communicative language teaching: An introduction and sample activities*. ERIC Digest. (ERIC Document Reproduction Service No. ED357642). Retrieved from ERIC Database.

[14]. Hastings, R. (2000). *Asynchronous learning from the student perspective*. (ERIC Document Reproduction Service No. ED452891). Retrieved from ERIC database.

[15]. KipYellojacket. (2009). *Teach you teach me: A Second Life language buddy network*. Retrieved from http://teachyouteachme.ning.com/

[16]. KipYellojacket, WlodekBarbosa, HowardVickers, & ErikPhillip. (2009, February 8). *100 ways to teach a second language in Second Life.* Retrieved from http://voicethread.com/#q.b341265.i0.k0

[17]. Kötter, M. (2001). MOOrituri te saluant? Language learning through moo-based synchronous exchanges between learner tandems. *Computer Assisted Language Learning 14*(3-4), 289-304.

[18]. Kötter, M. (2003). Negotiation of meaning and codeswitching in online tandems. *Language Learning & Technology 7*(2), 145-172. Retrieved from http://llt.msu.edu/vol7num2/kotter/default.html

[19]. Lee, L. (2004). Learners' perspectives on networked collaborative interaction with native speakers of Spanish in the US. *Language Learning & Technology, 8*(1), 83-100. Retrieved from http://llt.msu.edu/vol8num1/lee/default.html

[20]. Mazar, R., & Nolan, J. (2009). Hacking say and reviving ELIZA: Lessons from virtual environments. *Innovate: Journal of Online Education 5*(2). Retrieved from http:// innovate on line.info/index.php?view=article&id=547&action=article

[21]. Morua, A. *Go back to the past: Paris 1900*. Retrieved from http://newsecondlife.googlepages. com/ webquest Gobacktothepast.htm

[22]. Myers, L. L. (2000). Task interpretation and task effectiveness: A Vygotskian analysis of a French L2 classroom task. *Proceedings of the Texas Foreign Language [Education] Conference.* (ERIC Document Reproduction Service No. ED468307). Retrieved from ERIC database.

[23]. Owyang, J. (2007, June 28). *Exclusive tour of Intel's new Second Life Island. I gots me a jetpack!* Message posted to http://www.web-strategist.com/blog/ category/second-life/

[24]. Oxford, R. (2001). *Integrated skills in the ESL/EFL classroom. CAL Digests.* Retrieved from http://www.cal.org/resources/Digest/0105oxford.html

[25]. Oxford, R. (2006). Task-based language learning: An overview [Electronic Version]. *The Asian EFL Journal Quarterly, 8* (3), 94-121.

[26]. Rein, R. (2003). *Rachel's super moo list: Foreign language (ESL) MOOs*. Retrieved from http://cinemaspace.berkeley.edu/~rachel/moolist/esl.html

[27]. Savignon, S. J. (1972). *Communicative competence: An experiment in foreign language teaching and learning.* Philadelphia: The Center for Curriculum Development, Inc.

[28]. Savignon, S. J. (1983). *Communicative competence: Theory and classroom practice: Texts and contexts in second language learning*. Reading, MA: Addison-Wesley Publishing Co.

[29]. Schwienhorst, K. (2002). Evaluating tandem language learning in the MOO: Discourse repair strategies

in a bilingual internet project. *Computer Assisted Language Learning 15*(2), 135-145.

[30]. Schwienhorst, K. (2004). Native-speaker/non-native-speaker discourse in the MOO: Topic negotiation and initiation in a synchronous text-based environment. *Computer Assisted Language Learning, 17*(1), 35-50.

[31]. Standards for foreign language learning: *Preparing for the 21st century.* (1996). Lawrence, KS: Allen Press, Inc.

[32]. Stevens, V. (2006). Second life in education and language learning. *TESL-EJ, 10*(3). Retrieved from http://tesl-ej.org/ej39/int.pdf

[33]. Thorne, S. L. (2005). *Internet-mediated intercultural foreign language education: Approaches, pedagogy, and research* (CALPER Working Paper No. 6). University Park, PA: Center for Advanced Language Proficiency Education and Research at Pennsylvania State University.

[34]. Vickers, H. (2007). SurReal Quests: Enriched, purposeful language learning in Second Life. *The Knowledge Tree: An e-Journal of Learning Innovation, 15*. Retrieved from http://kt.flexiblelearning.net.au/tkt2007/edition-15/surreal-quests-enriched-purposeful-language-learning-in-second-life.

[35]. Vickers, H. (2008, February 6). *Twinity: Un nuevo mundo virtual para el aprendizaje de idiomas.* Message posted to http://www.avatarlanguages.com/blog.

[36]. Vickers, H. (2009, July 5). Second Life as a social learning environment (*Presentation at SLanguages 2009*).

Message posted to http://www.avatarlanguages. com/blog.

[37]. Von Der Emde, S., Schneider, J., & Kötter, M. (2001). Technically speaking: Transforming language learning through virtual learning environments (MOOs) [Electronic Version]. *The Modern Language Journal, 85*(2), 210-225.

[38]. Vygotsky, L. S. (1978). *Mind in Society.* Cambridge, MA: Harvard University Press. Downloaded from URL http://tip.psychology.org/vygotsky.html (March 1, 2009)

[39]. Wertsch, J. (1985). *Vygotsky and the social formation of mind*. UK: Harvard University Press.

[40]. Yamada, M., & Akahori, K. (2007). Social presence in synchronous CMC-based language learning: How does it affect the productive performance and consciousness of learning objectives? *Computer Assisted Language Learning, 20*(1), 37-65.

[41]. Zheng, D., & Zhao, Y. (n.d.). A virtual quest curriculum for language learning: Iterative design for embodiment and game play. Abstract submitted to the *Journal of Virtual Worlds Research*. Abstract retrieved from http://www.msu.edu/~zhengdo/publications/SL%20Design-based%20research.pdf

[42]. Zheng, D., Young, M. F., Brewer, R. A., Wagner, M., & Seo, J. H. (April, 2006). English language learning in a 3d virtual environment: native/non-native speaker dyads co-questing in Quest Atlantis. Paper presented as a featured session at the *Annual Meeting of the American Educational Research Association*, April 7-11. San Francisco, CA.

ABOUT THE AUTHOR

Zane L. Berge, Ph.D. is Professor and former Director of the Training Systems Graduate Program at the University of Maryland (UMBC campus). He has authored or edited 10 books and 300 articles, chapters, and presentations.