**MDDE 663 – Emerging Technologies**

# Adding Social Presence and Beyond to Distance Education

Karyn Mart

2751068

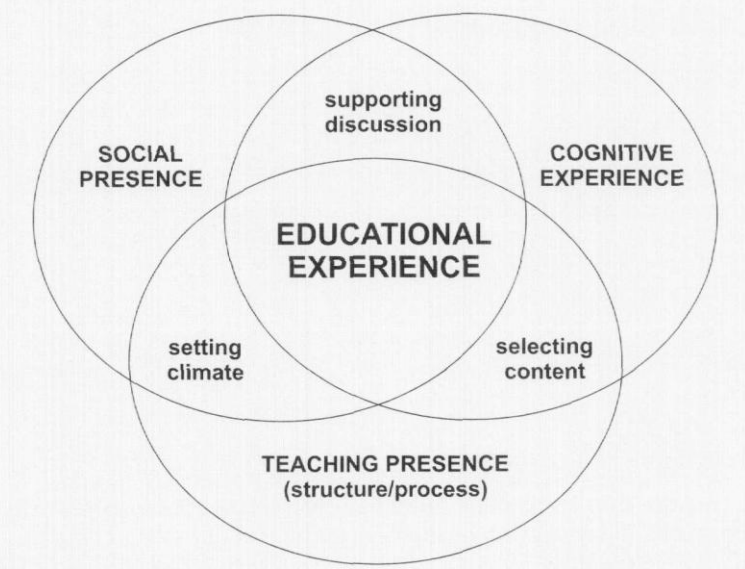
December 6, 2010

## Introduction

Social presence can be defined as a non-verbal conveyance of oneself in a communicated medium or as Garrison, Anderson and Archer (2001) suggested "It was Short et al. who introduced and defined the term *social presence* as “the salience of the other in a mediated communication and the consequent salience of their interpersonal interactions” (p. 65)." (para. 4). These interpersonal interactions are dependent on if they are with the instructor or other students as well as the medium.

Swan (2001) suggests "a useful way of thinking about the three forms of interaction is provided by [Garrison, Anderson and Archer's] 'community of inquiry' model of online learning (figure 1). If one equates cognitive presence in this model with interaction with content, teaching presence with interaction with instructors, and social presence with interaction among students, it gives a good representation of how all three work together to support learning online." (p. 307). This model shows the dependency on teacher presence and social presence to add to the educational experience.

Figure 1- Community of Inquiry Model of Online Learning




Social presence is the addition of "nonverbal cues such as facial expressions, body movements, and eye contact [to] increase the sensory stimulation of interlocutors. This in turn would lead to more intense, more affective, more immediate interactions." (Garrison et al., 2001, para. 4). These interactions as Tu (2002) postulates means "Social presence is based on user's perception and the attributes of media...Lack of non-verbal cues in CMC causes an

impersonal feeling" (p. 35). As Hayashi et al. (2004) adds "In the asynchronous e-learning environment, cyber-students who have low self efficacy performed better when they received virtual feedback and confirmation from other study partners. The high virtual social presence community increased learner satisfaction." (p.142). Therefore social presence leads to better perceived learning.

Richardson (2003) suggests "Teacher immediacy behaviors and the presence of others are especially important issues for those involved in delivering online education. Instructors need to be aware of the impact that their immediacy behaviors and social presence or lack thereof may have on their students' satisfaction, motivation, and learning." (p. 81). Distance education would benefit in finding ways to incorporate social presence into courses. The introduction of the Internet and subsequent release of the World Wide Web have brought many changes to the tools and affordances of distance education. The tools have increased the capacity to add a collaborative social approach to teaching at a distance. The abundance of technology tools and the exponential growth of web applications make it difficult to determine the most effective tools to employ with distance education. The 2009 Horizon Report suggests "The common features that unite collaborative environments are that multiple people can work within them at once; that users can leave evidence of their thoughts, and reflections on the thoughts of others; and that they can support users in any location at any time." (2009, para. 2) This report also recommends that VoiceThread "make[s] it easy to collect multiple voices and viewpoints in a single media package." (2009 Horizon Report, 2009, para. 3).

A review of VoiceThread was completed with the perspective of attempting to answer what VoiceThread has to offer distance education. This paper will examine what VoiceThread is, followed by the pedagogical affordances, available literature, product

capabilities and drawbacks with a wrap up of what, if anything, VoiceThread has to offer distance education. First we determine what VoiceThread is.

## What is VoiceThread?

Figure 2- Screen capture of a VoiceThread thread


VoiceThread is an asynchronous web application that allows for communication and collaboration on images, documents and videos. This ability to communicate and collaborate on the web is classified as a Web 2.0 application. VoiceThread has the ability to increase social presence in a digitalized conversation. VoiceThread offers its services under two different pricing models.

The main or open site is available to anyone with web access. Anyone may obtain a free account when they register with a valid e-mail address. The cost of access, for an individual, ranges from a free basic account to a professional account. The access options for business and higher education include single person access, departmental account and site license.

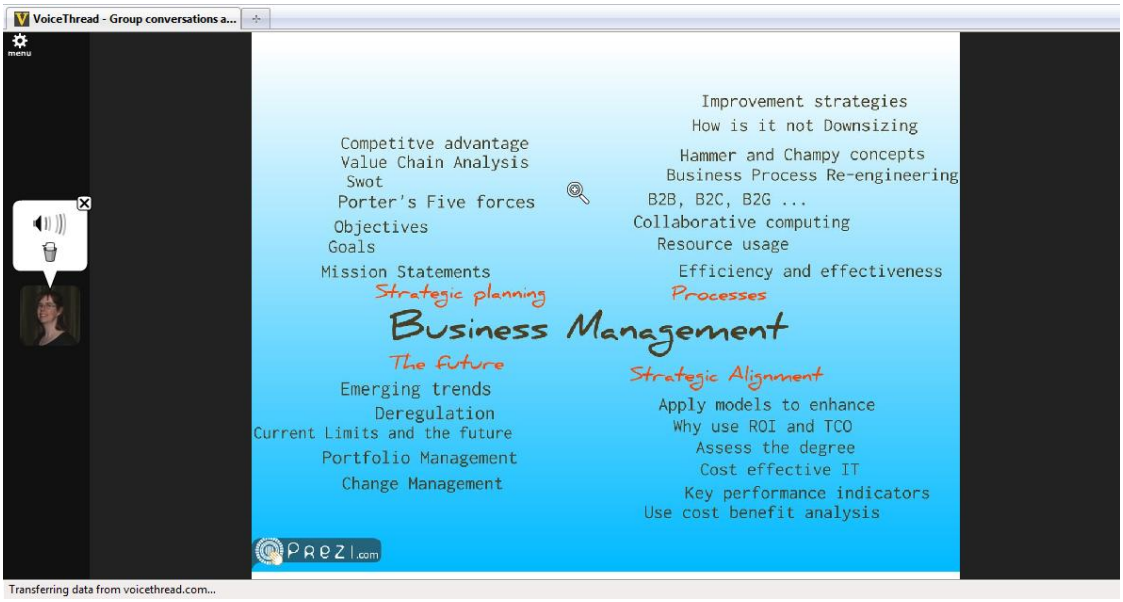
The educational site of VoiceThread, called ed.voicethread.com, is locked down for usage by teachers and schools and requires account administration. The main focus of the educational site is for usage by K-12 classes that require more security due to the minors involved. Threads on the educational site can be opened to the World Wide Web to invite comments from the general public. The tool, regardless of site, has the same functionality.

VoiceThread allows a user to post a document in the form of a slideshow, a graphic, text or multimedia and then allows others to comment on it using video comment via

webcam, text comment, and audio comment via microphone, telephone or audio file. While VoiceThread records the comment it also records graphic annotations the user can make on the document termed as doodling. Once a thread is started and set from private to public, anyone in the open area can leave a comment. This product is similar to an asynchronous text dialogue but centred around a document, presentation or image, with the added touch of voice and video.

Social presence can be experienced in a magnitude of ways with VoiceThread. The interface itself adds social presence as can be seen in Figure 2 with a picture representing the person leaving a comment.

**Figure 3 – An object in VoiceThread containing a comment**




Additional social presence can then be added with the comments. With the ability to have a webcam record we add the appeal of voice but also add facial expression and gestures and this increases social presence (Garrison et al., 2001). The sound and sight of the commenter allow for a richer interchange of ideas in VoiceThread.

The interchange of ideas in VoiceThread is believed to elicit more social presence in a variety of ways with the different modes of discussion threads. VoiceThread was not designed with a pedagogical theory in mind but the inherent nature of the tool allows for affordances of a pedagogical nature.

## Pedagogical Affordances

McLoughlin and Lee (2007) state "An affordance is an action that an individual can potentially perform in their environment by using a particular tool" (p.666). A pedagogical affordance is then using that tool for the purpose of learning. As with all tools available on the web we need to know if they will be a beneficial tool in student learning.

VoiceThread was not designed for education and as such does not have an underlying pedagogy. Connections can be made to pedagogies based on the way the tool is used. The learning theories that may explain the expected affect of using VoiceThread are connectivism, social development theory and constructivism. VoiceThread has the potential of assisting students with learning through connections to peers, the public, and information.

Connectivism theory focuses on the use of networks for connection of information, knowledge and learners. It uses the concept of knowledge not wholly being contained within the learner but grown through establishing a network to assist in containing and managing the rapidly decaying information (Siemens, 2005). Tools like the internet and VoiceThread assist with this connecting and maintaining of knowledge through technology. As Siemens (n.d.) states "Learning is a process of connecting specialized nodes or information sources. A learner can exponentially improve their own learning by plugging into an existing network." (para. 4). VoiceThread connects the students not only to knowledge but to other learners allowing students to establish a social connection to each other and to the content. This then produces "collaborative platforms [that] are reshaping learning as a two-way process."

(Siemens, 2005, para. 58). This collaboration can lead to a more social environment for learning.

Vygotsky created several theories based on social development well before computers were invented (Driscoll, 2005). The theories involve human interaction with the world by use of tools. This connection for learning can be realized with communications tools such as VoiceThread. As distance education has evolved and the tools available mature they add to the social aspect of education and impact student learning. Vygotsky stresses the importance of having learners with different knowledge of the material to be covered meaning “Ideal partners in an instructional enterprise, then, should not be equal in terms of their present level of knowledge and skill." (Driscoll, 2005, p.257). With use of VoiceThread students of all levels could participate and in such learning contexts learn, not only from the material but also from other students. This shared experience may help students in constructing the knowledge.

Designing the course with collaboration will assist the student in constructing the sought after knowledge. Constructivism places the responsibility on the learner to construct the knowledge needed for the course. Driscoll (2005) reminds us that to assist in constructing that knowledge, "collaboration is a critical feature in the learning environment." (p.396). Using tools like VoiceThread help add the collaboration desired by constructivists.

The three theories of connectivism, social development and constructivism all have pedagogical affordances in VoiceThread. VoiceThread adds a level of connection to experts, peers and knowledge, it allows for a social presence and helps construct knowledge by peer-review and collaboration.

Regardless of the underlying theory, results need to show that VoiceThread's pedagogical affordances can be turned into valuable learning opportunities. Since VoiceThread is a young application there is limited research available. This limited research was reviewed to establish what general inferences can be made with VoiceThread.

## Review of the Literature

VoiceThread is a web application that was launched in 2007 by Benji Papell and Steve Muth (Rad, 2007). The original intent of VoiceThread was to create "VoiceBooks" or photo albums with voice commentary (Lowensohn, 2007). The added feature of group commentary allowed VoiceThread to find a unique niche in web applications. Collaboration is seen as one of the main attracters by education to this application.

During VoiceThread's young existence, various literature and studies to validate it's usage in education have been produced. The literature examined was found to fall into two distinct groupings. These groupings are implementation and research.

Burden and Atkinson (2008b) conducted the earliest study on VoiceThread; however their paper does not discuss the particulars of the study but explores the use of Digital Artefacts for Learner Engagement (DiAL-e) framework to determine the pedagogical affordances to the technological capabilities of VoiceThread. The DiAL-e framework developed by Burden and Atkinson (2008b) "is an active, iterative development [tool] that enables users to populate a dynamic matrix with exemplars drawn from personal practice." (p. 123). The paper discusses the use of the framework for "discriminating between the various affordances of a single Web 2.0 technology: a conversation sharing tool called Voice-Thread" (Burden & Atkinson, 2008b, p.121).

Elwood (2010) reviewed VoiceThread for implementation of digital storytelling using the DiAL-e framework. Elwood (2010) stresses the need "for educators to have a theoretical framework from which to evaluate and effectively use new and ongoing tool development."(p. 1076). The paper discusses what questions need to be answered to properly design digital storytelling followed by discussion of the DiAL-e framework with the possible pedagogical affordances it can offer. The paper concludes with the need for more "strategies or protocols for the various genres of digital storytelling" (p. 1078).

Digital storytelling was used by Bush (2009) to addresses the ability of VoiceThread to "extend their classrooms beyond the traditional brick-and-mortar walls to communicate with the world." (para. 1). Bush (2009) implemented VoiceThread with an elementary class for discussion of a presidential election. The paper comments on why technology like VoiceThread should be used with reference to computer-assisted language learning in which "language learning is successfully infused with technology integration." (Bush, 2009, para. 4). Bush (2009) did offer comments about using VoiceThread to promote verbal answers with justification of the answer. Bush (2009) also suggested that educators need "to teach [the students] how to share responsibly, ethically, and meaningfully."(para. 10). This need to teach responsibility in the on-line world may not only be for elementary students and links back to the constructivist imperative for students to construct and own their own knowledge.

Experiential studies have not been confined to use by elementary students Smith (2009) wrote about preparing graduate students to teach elementary language arts classes. The paper reviewed a project of adding VoiceThread to a graduate level class to integrate the suggested learning outcomes from the National Educational Technology Standards for Students (NETS) (Smith, 2009, p. 712). These standards require educators to incorporate technology into the curriculum. One of the focuses of NETS is "Students [will] use digital

media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others." (para. 2). Smith (2009) concluded her VoiceThread project with a survey of the 20 participants. The results listed indicate positive reactions to Web 2.0 tools but Smith (2009) says the survey also "revealed that graduate students in teacher education do not feel prepared and do not have access to the technology they need to use Web 2.0 tools." (p.714)

Smith (2009) suggests "Class assignments are no longer written just for the teacher. When creating presentations for their peers, the students seemed more concerned with the quality and accuracy of their work." (p.713). Students concern for peer review shows a good connection between the use of VoiceThread and the connectivism theory of collaboration.

The above papers all mention case studies but they do not report measureable outcomes of use, but only general comments. McCormack (2009), Borup, Graham and Velasquez (2010), and Millard (2009) are the only papers that present empirical research found amongst the literature for VoiceThread.

A graduate level case study looked at use of VoiceThread to increase responses of participants. McCormack's (2009) study targeted university students studying in education with sample size of 25 participants. McCormack (2009) discusses the methodology used to incorporate VoiceThread in two assignments to answer three questions: "how VoiceThread can be employed to elicit more in-depth responses", "how the mock-up VoiceThread case study helped the teacher candidates reflect better" and "how the sample VoiceThread miscue analysis increased the teacher candidates' skill in administering diagnostic tests" (para. 8).

McCormack (2009) completed semi-structured interviews with open-ended questions. The results conveyed are at a high level of general themes in favour of using VoiceThread.

McCormack (2009) concludes “There are advantages of infusing Web 2.0 tools [like VoiceThread] in all courses where students can utilize video, web-cam, image, and voice technologies for communicating, reflecting, and collaborating in electronic constructivist learning settings.”(para. 18).

Borup, Graham and Velasquez (2010) studied different asynchronous online tools with video capability through several semesters of the same course. Fall 2009 saw two studies with one of them using VoiceThread for video commenting and the other video blogging. The VoiceThread study had participants complete a survey using a six-point Likert scale as well as open-ended comments to determine how the students perceived the use of VoiceThread. Borup et al. (2010) give vague details to how the research was conducted with the 40 participants. The feedback received, at the end of the course, conveyed positive attitudes towards usage of VoiceThread similar to McCormack’s (2009) case study results.

The only study of a quantitative nature was completed at Indiana University by Mark Millard. In November 2009 a sample of threads were examined to determine if collaboration and interaction was evident. The study also investigated what topical themes emerged, who was participating and does this tool support social presence. The sample was taken from the open site of VoiceThread.

Millard (2010) describes the random selection of 50 samples from the public or open area of VoiceThread. Of these samples, Millard (2010) determined twelve common themes emerged from the selection with “English/Literary arts” as the most common type of thread. Of the 50 original samples 25 were selected based on particular attributes, like gender, age, avatar choice and media, for review of their comments. Only the first page from each of the 25 samples was coded to determine “level of addressivity, interaction and social presence” (Millard, 2010, para. 20). The empirical study showed no significant interaction amongst the

threads. Due to the fact the study did not involve any threads from the closed educational side of VoiceThread; this may have skewed the results. Millard (2010) does comment on the need for more research to confirm the findings. For future research it might be suggested to target VoiceThread's that are part of a formal educational activity to determine participation as well as interaction as this would give a better sense of results for education.

All the case studies extol the virtues of VoiceThread's potential abilities though little empirical evidence is provided to support these claims. The single quantitative study reported "no significant interaction or collaborative activity within the Voicethread sample." (Millard, 2010, p. 5) suggesting the tool may not produce the results as reported by the case studies. This empirical study as well as some of the case studies reported limitations of the studies as well as the need for proper instructional design of a course using VoiceThread to maximize the abilities with the targeted audience.

The target audiences in the majority of the case studies are university students or post graduate students studying various forms of education or educational technology. The small sample sizes and limited sample populations do not allow for generalized references to the larger population. These studies do indicate this limitation and offer possible suggestions to further studies using more generalized students for a better representation of the population. More research should be conducted with larger samples over a broad range of subjects to fully investigate the capabilities of the product.

## Product Capabilities and Drawbacks

The literature available from and about VoiceThread offers many possible applications and varied capabilities. These capabilities stem from the nature of the application as well as how it is intended to be used. The product capabilities are not wholly duplicated in

other products making VoiceThread quite unique. This uniqueness draws much appeal of the application.

The original purpose of VoiceThread was the general public as a collaborative tool but education quickly saw the potential. The potential of collaboration created with a thread made the transition into education easy. An advantage of web technologies that offer collaboration gives students access to peer review, as well as for instructor review with social presence. This collaboration can even expand to experts or general audiences if the thread is open to the public. VoiceThread, being asynchronous, allows for rich interaction, collaboration and social presence without the issue of time and place. These capabilities will enhance distance education.

## Conclusion

The slogan of VoiceThread is "Collaboration made simple." (VoiceThread, 2010). Review of the current usage in the open area of VoiceThread as well as suggested usages from the community forums shows a variety of educational uses including digital storytelling, second language practice, art appreciation, math concepts, and more. The studies indicate learners are enjoying the interaction and connection offered by the use of VoiceThread. The case studies warn of the need to design learning activities to leverage this collaboration. The majority of literature agrees that VoiceThread provides value to the learning experience but without empirical evidence to collaborate this it is just perceived value.

VoiceThread offers possibilities but empirical evidence of its benefits has not yet been proven . The next decade will see distance education grow and evolve as it has the past decade. This change will need to add a more human aspect to the design mix to accommodate more students that embrace technology and are eager to have a more personal experience.

Web 2.0 has brought many tools that assist in getting social presence into the computer classroom. Use of tools like VoiceThread leads distance education away from the text dimensional world into the rich multi-dimensional world where learners can experience a more social environment for enhanced learning.

**References**

Bates, A. & Poole, G. (2003) *Effective Teaching with Technology in Higher Education: Foundations for Success*. San Francisco: Jossey-Bass.

Bacer, K. (2009). Utilizing Auditory and Visual Tools to Engage The 21st Century eLearner. *In Proceedings of EDUCAUSE Australasia Conference 2009*. Retrieved on October 31, 2010 from http://www.caudit.edu.au/educauseaustralasia09/assets/papers/tuesday/Kathleen-Bacer.pdf.

Borup, J., Graham, C. & Velasquez, A. (2010). The Use of Asynchronous Video Communication to Improve Instructor Immediacy and Social Presence in an Online Course. In D. Gibson & B. Dodge (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2010* (pp. 337-344). Chesapeake, VA: AACE. Retrieved on October 31, 2010 from http://www.editlib.org/p/33358.

Burden, K. & Atkinson, S. (2008a). The Transformative Potential of the DiAL-e Framework: Crossing Boundaries, Pushing Frontiers. *In Proceedings ascilite Melbourne 2008* (pp. 110-120). Retrieved on October 31, 2010 from http://lse.academia.edu/SimonAtkinson/Papers/84900/The_Transformative_Potential_of_the_DiAL-e_Framework_Crossing_Boundaries_Pushing_Frontiers.

Burden, K. & Atkinson, S. (2008b). Evaluating pedagogical affordances of media sharing Web 2.0 technologies: A case study. *In Proceedings ascilite Melbourne 2008* (pp. 121-125). Retrieved on October 31, 2010 from

http://hull.academia.edu/KevinBurden/Papers/73672/Evaluating_pedagogical_affordances_of_media_sharing_Web_2.0_technologies_A_case_study.

Bush, L. (2009). Viva VoiceThread: Integrating a Web 2.0 Tool in the Additional Language Classroom. In I. Gibson et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2009* (pp. 3247-3250). Chesapeake, VA: AACE.
Retrieved from http://www.editlib.org/p/31146.

Centre for Instructional and Technology Development. (2009, July). *Profiling the Millennial Generation*. Paper presented at Teaching Excellence Foundations, Southern Alberta Institute of Technology Polytechnic. Calgary, AB.

Chicioreanu, T. (2010). VoiceThread 4 Education. *In Proceedings of The 6th International Science Conference eLearning and Software for Education (pp.427–430)*. Retrieved on October 31, 2010 from
http://adlunap.ro/eLSE_publications/papers/2010/1312.1.pdf.

Driscoll, M. P. (2005). *Psychology of learning for instruction*. Boston: Pearson Education, Inc.

Elwood, S. (2010). Digital Storytelling: Strategies Using VoiceThread. In D. Gibson & B. Dodge (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2010* (pp. 1075-1079). Chesapeake, VA: AACE.
Retrieved from http://www.editlib.org/p/33496.

Hayashi, A., Chen, C., Ryan, T., & Wu, J. (2004). *The Role of Social Presence and Moderating Role of Computer Self Efficacy in Predicting the Continuance Usage of*

*E-Learning Systems*. Journal of Information Systems Education. Retrieved on December 3, 2010 from http://jise.org/Issues/15/Vol%2015%282%29-p139-154.pdf.

International Society for Technology in Education. (2007). National Educational Technology Standards for Students. Retrieved on December 3, 2010 from http://www.iste.org/standards/nets-for-students/nets-student-standards-2007.aspx.

Johnson, L., Levine, A., & Smith, R. (2009). *The 2009 Horizon Report K-12 Edition.* Austin, Texas: The New Media Consortium. Retrieved on November 16, 2010 from http://wp.nmc.org/horizon-k12-2009/.

Jonas-Dwyer & Pospisil. (2004). *The Millennial effect: Implications for academic Development*. Retrieved on January 24, 2009 from http://www.herdsa.org.au/newsite/wp/wp-content/uploads/conference/2004/PDF/P050-jt.pdf.

Lowensohn, J. (2007). *VoiceThread: photos, voice, and forums*. Retrieved from CNet News on November 9, 2010 from http://news.cnet.com/8301-17939_109-9699117-2.html.

McCormack, V. (2010). *Increasing Teacher Candidate Responses through the Application of VoiceThread*. International Journal of Arts and Sciences. Retrieved on October 31, 2010 from http://openaccesslibrary.org/images/RLN147_Virginia_McCormack.pdf.

McLoughlin, C. & Lee, M. (2007). *Social software and participatory learning: Pedagogical choices with technology affordances in the Web 2.0 era.* Retrieved on November 13, 2010 from http://www.ascilite.org.au/conferences/singapore07/procs/mcloughlin.pdf.

Millard. M. (2010). Analysis of Interaction in an asynchronous CMC Environment. *Proceedings of Web Science Conference 2010*. Retrieved on October 31, 2010 from http://journal.webscience.org/391/2/websci10_submission_106.pdf.

Rad, S. (2007). *Voicethread launches group audio blogging*. Retrieved on November 9, 2010 from http://venturebeat.com/2007/03/23/voicethread-launches-group-audio-blogging/.

Richardson, J. (2003). Examining Social Presence in Online Courses in Relation to Students' Perceived Learning and Satisfaction. In Journal of Asynchronous Learning Networks. Retrieved on November 29, 2010 from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.119.9339&rep=rep1&type=pdf.

Garrison, R., Anderson, T., & Archer, W. (2001). *Assessing Social Presence in Asynchronous Text-based Computer Conferencing*. Journal of Distance Education. Retrieved on November 15, 2010 from http://auspace.athabascau.ca:8080/dspace/bitstream/2149/732/1/Assessing%20Social%20Presence%20In%20Asynchronous%20Text-based%20Computer%20Conferencing.pdf.

Schlosser, L. & Simonson M. (2006). *Distance education: definition and glossary of terms* (2nd ed.). Charlotte, NC: IAP - Information Age Publishing Incorporated.

Siemens, G. (n.d.). *Description of Connectivism.* Retrieved on October 27, 2010 from http://www.connectivism.ca/about.html.

Siemens, G. (2005). *Connectivism: Learning as Network-Creation*. Retrieved on October 27, 2010 from http://www.astd.org/LC/2005/1105_seimens.htm.

Siemens, G. & Tittenberger, P. (2009). *Handbook of Emerging Technologies for Learning*. Retrieved on October 31, 2010 from http://umanitoba.ca/learning_technologies/cetl/HETL.pdf.

Smith, J. & Dobson, E. (2009). Beyond the Book: Using VoiceThread in Language Arts Instruction. In T. Bastiaens et al. (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2009* (pp. 712-715). Chesapeake, VA: AACE. Retrieved on November 11, 2010 from http://0-www.editlib.org.aupac.lib.athabascau.ca/p/32538.

Swan, K. (2001). *Virtual Interactions: Design factors affecting student satisfaction and perceived learning in asynchronous online courses*. Retrieved on December 2, 2010 from http://observer.american.edu/provost/ctrl/upload/swan-article.pdf.

Tu, C. (2002). The Measurement of Social Presence in an Online Learning Environment. *International Journal on E-Learning*. Retrieved on December 3, 2010 from http://0-find.galegroup.com.aupac.lib.athabascau.ca/gtx/retrieve.do?contentSet=IAC-Documents&qrySerId=&inPS=true&tabID=T002&prodId=AONE&searchId=R1&retrieveFormat=PDF&currentPosition=1&userGroupName=atha49011&resultListType=RESULT_LIST&sort=DateDescend&docId=A90933922&noOfPages=12.

VoiceThread. *VoiceThread - Group conversations around images documents and videos*. Retrieved from http://voicethread.com/#.