Academic Exchange Quarterly Spring 2019 ISSN 1096-1453 Volume 23, Issue 1
To cite, use print source rather than this on-line version which may not reflect print copy format requirements or text lay-out and pagination.

Fostering a Community of Inquiry in Online Discussions

Julie A. Delello, The University of Texas at Tyler
Rochell R. McWhorter, The University of Texas at Tyler
Heshium Lawrence, The University of Texas at Tyler

Delello, Ph.D. is an Associate Professor of Education; McWhorter, Ph.D. is an Associate Professor in Human Resource Development; and Lawrence, Ph.D. is an Associate Professor of Industrial Technology and Industrial Management.

Abstract
With increased demands for online courses, instructors are challenged to facilitate discussions that promote critical thinking and mastery of content. Synchronous and asynchronous discussion forums are used to create a Community of Inquiry (COI) across four respective disciplines and areas: English as a Second Language (ESL), Teacher Education, Industrial Technology, and Human Resource Development (HRD). Understanding the benefits and limitations of each forum and their applications allows instructors to facilitate quality online discussions that foster development of social, cognitive and teaching presence.

Introduction
The 21st century is characterized by new methods of communication, which have moved from letter writing to emails, texts, and social networking, that are inherent to U.S. college students. Virtual learning environments (VLEs) moved from instructor-driven to learner-customized environments through Web 2.0-based Internet platforms (Kompen, Edirisingha, & Monguet, 2012). These online platforms foster collaboration between instructor and student allowing faculty and students to engage in critical thinking and deeper collaboration (MacKnight, 2000).

New technologies offer educators a variety of asynchronous and synchronous approaches; however, limited literature describes ways forums are used to develop a community of inquiry (COI) incorporating social, cognitive, and teaching presence necessary for higher order thinking and learning (Arbaugh, 2008; Mandernach, Gonzales, & Garrett, 2006). The purpose of this article is to explore the limitations, benefits, and applications of online discussion forums that provided different opportunities for developing a COI across four respective disciplines and areas: English as a Second Language (ESL), Teacher Education, Industrial Technology, and Human Resource Development (HRD).

Presence in an Online Forum
Based upon social constructivist theory, Garrison, Anderson and Archer's (2000) COI framework suggested that instructors consider three areas of student learning in online environments: *cognitive presence*, *social presence*, and *teaching presence*. *Social presence* is how people socially interact within learning environments. Researchers need to "consider a host of new things related to social presence with continued blurring of boundaries between classroom and fully online courses as well as course bound communication tools (e.g.,

discussion forums)" (Lowenthal, 2010, p. 21). Garrison (2011) defined social presence as "the ability of participants to identify with the group or course of study, communicate purposefully in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities" (p. 34).

Cognitive presence is the construction, exploration and confirmation of understanding through reflection and collaboration within a COI; and, "cognitive presence is defined in terms of a cycle of practical inquiry where participants move deliberatively from understanding the problem or issue through to exploration, integration, and application" (Garrison, 2007, p. 65). Akyol and Garrison (2011) noted that "establishing and sustaining cognitive presence and deep approaches to learning in online and blended learning environments are dependent upon a dynamic balance of all the presences to support a collaborative community of inquiry."

While social and cognitive presences are integral, a strong *teacher presence* is required for students to engage in higher-order learning necessary to gain competence in their fields of study. Teacher presence may focus on dialogue or discourse. Facilitation may support a dialogue "with minimal shaping of the course of the discussion. Discourse is disciplined inquiry… [requiring] a knowledgeable teacher with the expectation that discourse progresses in a collaborative constructive manner and students gain an awareness of the inquiry process" (Garrison, 2007, p. 67). According to Garrison, Anderson, and Archer (2010), the COI instrument provides a means to study the dynamics of online communities of inquiry, both among and within the presences (p. 9).

Asynchronous Platforms

Asynchronous learning (on demand) forums are a popular means to foster course discussions when instructors and learners are in different locales. Advantages of using asynchronous discussion boards include students having additional time to create responses, and postings are less intrusive than real-time meetings (See Figure 1). The Academic Technology and Creative Services (ATCS, 2009) noted that "asynchronous discussions can be just as beneficial as traditional face-to-face discussions, if not more" (p. 1). Asynchronous tools help students with "reflective dialogue…making reflection an interactive, shared process rather than merely a solitary process and…facilitate[s] the constructivist method of reflective knowledge acquisition" (Bye, Smith, & Rallis, 2009, p. 843).

While asynchronous discussions allow students to engage in the reflective process, they also have disadvantages (See Figure 1). According to McInnerney and Roberts (2004), asynchronous activities may not facilitate the types of interactions necessary for discourse or "automatically become interactive and collaborative" (Pawan, Paulus, Yalcin, & Chang, 2003, p. 137). Low social presence can be problematic in text-based asynchronous discussion forums, as miscommunication can occur whereby, "a learner's connectivity and sense of belonging (relatedness) may be reduced, as may perceived competencies [reducing]…social interaction" (Giesbers, Rienties, Gijselaers, Segers, & Tempelaar, 2009, p. 301). Research concerning asynchronous forms of communication has largely focused on students' perceptions of their learning (Rourke & Kanuka, 2009). Therefore, it is important to provide examples across disciplines of how instructors use asynchronous discussion forums to create a sense of presence.

Figure 1: Asynchronous Discussion Forums

Platform	Description	Benefits	Limitations
Online Discussion Boards	Typically posted through a content management system (CMS) where boards contain threads that answer questions posed by an instructor.	Easy to use. Students respond before deadlines at their own pace. Students access discussion items and responses. Instructors may use the "post first" option for academic integrity.	Since postings can be made over a number of days or weeks, responses are not immediate. Messages may be misinterpreted.
Blogs	A forum or diary used as a means to dialogue with classmates.	A blogger can continuously update online blog page and others can make comments. Blogs can demonstrate the learner's growth over time.	Postings occur in chronological order, so grading can be difficult. Discussion can shift to the recent contribution topic.
Wikis	Website easily created allowing all interested users to contribute or edit pages.	Facilitates content creation and collaboration between members of the course or a group within a course.	Contributions can be deleted.
Facebook	Popular social platform that can be set up for a class or group with link posted in LMS.	Encourages collaboration and rapid status updates on various topics posed by instructor (or students).	Privacy issues; distracting.
Instagram	Visual social media platform allowing postings of relevant course content/learning.	Students can share images to document their learning in the course and add hashtags to make class postings easily searchable.	Visually distracting; responses may not be easily graded without hashtag.
YouTube	Platform for posted video creations.	Video is motivating and instructors can record videos; also, students can post a video privately and share URL with instructor and/or class members who can comment.	Privacy issues; distracting.
Twitter	Online social blogging platform; enables users to read and send short messages.	Increases participation; supports learning between class sessions; documents learning.	Privacy issues; distracting; limited length of messages; may not be easily graded without hashtag.
Pinterest	Online social platform enabling users to save images to online pinboard.	Users can visually share, curate, and discover new interests and document learning.	Copyright infringement; distracting, time-consuming.
LinkedIn	World's largest online professional social networking site.	Users collaborate and can share their learning or new resources using class hashtag for commenting/grading.	Privacy issues; time consuming.

Asynchronous Forums in Practice

Wikis, Blogs, and Discussion Boards

One example of using multiple asynchronous platforms occurred in an undergraduate ESL course beginning Spring, 2012. Students used online discussion boards, blogs, and Wikis to discuss basic course concepts. Students were provided online tutorials within a learning management system (LMS) and from the instructor. Timelines for online postings were essential; misconceptions were reduced or eliminated by requiring frequent postings by students to an online discussion board. The students clarified posts for their classmates and discussed basic content knowledge from the course.

With the use of blogs and Wikis, students discussed the course content in regards to real-life applications, and they shared resources with one another. As online discussions moved from theory into practice, a sense of *cognitive presence* evolved. The discussion board, blog and Wiki activities necessitated advanced planning and modeling by the instructor through ongoing posts to ensure learning moved from discussion to discourse. *Instructor presence* facilitated deep, meaningful discourse. Limitations existed for the platforms: Blogs, posted in reverse order, were time-consuming to grade, while the Wikis were easily deleted or edited by others.

Flipgrid Video

Purchased by Microsoft in 2018, Flipgrid is a free video-based discussion platform where students record short, authentic videos from 15 seconds to five minutes in length. An instructor teaching a graduate level educational technology course created a grid, posted a topic specifically concerning the use of digital distractions, and shared the specific URL grid link with the class. The students clicked on the link, read the prompt, recorded and reviewed their video response, and submitted their video to the grid. The students in the course were able to watch all of the posted videos and provide feedback to one another. Students were also able to download the videos and add stickers, selfies, and drawings to their posts. The instructor tailored the assignment by adding a custom assessment rubric for the assignment in addition to providing private, individual video feedback to each student. Flipgrid moved learning beyond a traditional discussion post by giving students a voice in a more engaging way.

Pinterest for Creating Community

Higher educators have utilized Pinterest to build community in a number of ways. For example, the institution can connect with prospective and current students and alumni to tell the institution's story through visual media (Lytle, 2012). In addition, Delello and McWhorter (2014) examined Pinterest as a virtual community of practice (VCoP) in online courses and they found it facilitated unique ways for communicating through visual social media and also promoted student learning on the curation of relevant information. However, due to its visual nature, it was found that Pinterest can also be distracting to students so higher educators are encouraged to post the URL for the course Pinboard along with focused written instructions to direct student efforts for collaboration only within the designated course space so that they achieve expected learning outcomes.

Social Media in Higher Education

Three popular social media platforms, Facebook, Twitter and LinkedIn, provide spaces for interaction and social presence. According to a recent Pew Research Center publication (Smith & Anderson, 2018), Americans ages 18 to 24 are likely to use social media platforms such as YouTube, Facebook, Snapchat, Instagram and Twitter. Palmquist and Barnes (2015) noted that "Facebook allows groups to share information, documents, videos, music and more or to chat asynchronously or synchronously easily… ideal and necessary conditions for a community of practice" (p. 95). In addition, research that is more recent suggested that Facebook groups could increase student engagement and remove many of the barriers associated with the lack of face-to-face interaction with their instructor and fellow classmates (Hall, Delello, & McWhorter, 2017).

Examples of Asynchronous Social Media Discussions

One undergraduate online HRD class during Summer, 2012 utilized closed (private) Facebook Groups for teams to collaborate asynchronously while working on a project. Likewise, the class used Twitter to continue conversations in-between classes (Bozarth, 2010). The instructor posed a *question-of-the-day*, tweeted reminders, and offered web-links to supplemental resources. In an HRD capstone course in Fall 2016, LinkedIn provided a professional way to network with experts (HR professionals) and develop their professional brand. Students explored the LinkedIn Help Center (http://help.linkedin.com) for advice. The class found open discussion groups where experts and organizational members responded to key topics. Students joined discussions, kept abreast of trends, and added their voice to conversations, increasing their marketability (McWhorter & Delello, 2016).

Synchronous Forums

With the advent of new technologies, synchronous discussion forums are increasingly available to educators. Synchronous discussions allow users to communicate with one another in "real- time" through mobile devices, instant messaging (IM), screen sharing, videoconferencing, and face-to-face discussions with the convenience of distance education. Synchronous discussions reduce frustration that students may feel when waiting for responses during asynchronous communications.

Numerous advantages of using synchronous discussions for online learning have been documented in the research. Park and Bunk (2007) remarked "Synchronous communication has a great potential to increase individual participation and performance" (p. 245) while enhancing social interaction within online courses (McInnerney & Roberts, 2004). However, several disadvantages were noted. Not all students have the software, hardware, or bandwidth necessary to connect with classmates. Finkelstein (2006) said, "Most tools that transmit audio or video on the Web will have some decree of latency—a delay between the time something is actually said or done to the time those words or images arrive for remote participants" (p. 143). Time zones may hinder participation, and many synchronous platforms are costly creating institutional limitations for use (See Figure 2).

Figure 2: Synchronous Discussion Forums

Platform	Description	Benefits	Limitations
Instant Messaging	Typically posted through a learning management system (LMS) such as Canvas, Facebook or Blackboard.	Easy to use. All students have access. Notification when peers are online.	Software, hardware, and bandwidth requirements. Students must enroll in service.
Skype	A forum used as a means to dialogue with classmates.	Allows for face-to-face conversations across distance. Can be used with audio or video. Students can also use it to instance message.	Software, hardware, and bandwidth requirements. Students must enroll in service. Subscription for video conferencing with3 or more users.
Adobe Connect	A web-based platform for online conferencing and webinars.	Facilitates collaboration between members of a class or group. Allows for screen sharing.	Software, hardware, and bandwidth requirements Time limitations; costs involved for institutions. Difficult to monitor with large groups.
Collaborate and Zoom	Web conferencing tools that allow faculty to synchronously communicate online with students anywhere in the world.	Allows for audio and video screen sharing. Features include public/private chat and instant messaging. Sessions can be scheduled and recorded.	Software, hardware, and bandwidth requirements. Students engage in off-task conversations. Difficult to monitor with large groups.
Chat	Typed messages sent to another user's computer. Twitter is one platform that allows for asynchronous and synchronous chats.	Conversation happens quickly and informally: short phrases are normally used.	Software, hardware, and bandwidth requirements Requires typing. Students may have difficulty finding chats taking place online or some chats may be too fast paced.
Second Life	A platform in which an avatar is created to move about in a virtual world.	Supports a wide variety of communication channels, including text, chat, voice, document sharing, and mind mapping in fun, gaming environment. Free if sharing learning spaces.	Software, hardware, and bandwidth requirements; steep learning curve for many students and faculty. High costs associated with owning space (region).
Google+Apps Hangout	A multilingual social networking service	Connect with any device and you can share screens or customize your screen with special effects.	Software, hardware and bandwidth requirements; can only video chat with up to 10 people and no recording option.

Synchronous forums in practice

In the past decade, with the advent of video conferencing platforms (i.e. Skype, Zoom, GoToMeeting), online courses have gotten very popular because they save costs in travel time, fuel costs, and impact on the environment. To combat the paucity of student engagement in online courses, instructors have been adding synchronous activities that are relevant to online students (Palloff & Pratt, 2013; Bennett & McWhorter, 2017). One such activity held is real-time group meetings (RTGMs) defined by McWhorter (2018) as "a synchronous meeting facilitated by technology" (see McWhorter, Helfers, & Consalvo, 2018). These RTGMs can be held through various platforms such as video conferencing (i.e. Skype.com; Zoom.us; GoToMeeting.com), social media synchronous meetings (i.e. Facebook chat, Twitter Group chats) or virtual worlds (i.e. SecondLife.com).

Twitter

One social media platform that is increasingly used synchronously in higher education is Twitter. Twitter, a microblogging tool, allows users to tweet or retweet messages of up to 280-characters with additional images or videos. Twitter allows for a synchronous conversation or chat to take place in "real-time" around one unique hashtag, a type of metadata that contains the prefix sign #, used to organize topics or find followers with similar interests. Recent research in a teacher education course disclosed how synchronous Twitter chats enhanced students' social presence in a virtual environment, improving the learning experience and providing students with new ideas for professional growth (Delello & Consalvo, 2019).

Collaborate

An example of incorporating a synchronous platform occurred in an undergraduate Total Quality Management (TQM) course within an Industrial Technology program from the Fall, 2010 to Spring, 2013. Prior to the first meeting, students received an email explaining how to access Blackboard Collaborate. The first class meeting lasted about 45 minutes and introduced the course. Collaborate allowed students and instructor to communicate for setting weekly meeting times to discuss course content, presentations, and other pertinent information. In addition, the instructor used Collaborate as a review portal for exams by organizing sessions and asking questions through video conferencing and instant messaging (IM).

Collaborate was used similarly in an ESL education course, except that the instructor required all students to connect at a specific time. Students entered separate chat rooms for group activities; the screen sharing option allowed the instructor to share documents and conduct presentations as necessary. One disadvantage (See Figure 2) of the Collaborate session occurred when students engaged in "sidebar" conversations that were distracting to classmates. Also, when used with a large group, sessions became difficult to moderate while some students were typing comments and others were voicing comments. However, both *cognitive* and *social presence* were established as discussions encouraged reluctant students to ask questions; and, it supported collaboration within a culture of respect, allowing for a deeper understanding of the material.

The students used IM through the CMS to discuss assignments and connect to the instructor for virtual office hours. The CMS allowed the IM system to convert to a Collaborate session, which permitted screen sharing and white board applications with individuals or small groups.

IM helped establish the *teacher presence*, further developed through online chats and Collaborate class sessions. In addition, the students were able to discuss their applications of the theories and clarify misconceptions, building *cognitive presence*. However, one issue at the beginning of the ESL course was some students' unfamiliarity with the technology. Once the students gained understanding, they discovered applications beyond what the instructor planned, including virtually connecting with students in other classes.

Zoom

During the fall 2018 semester, an undergraduate industrial materials course utilized the video conferencing tool Zoom. Zoom is a cloud-based video conferencing software that integrates real-time messaging applications, allows for audio and video content sharing, and enables session recordings. Zoom was used to synchronously lecture to two course sections at the same time. One section was taught face-to-face at the university campus; the other section was located 40 minutes away at a community college. The use of Zoom allowed the satellite section to interact with the face-to-face section in real-time. Both groups were able to ask the instructor questions, complete tests, and have open discussions pertaining to the subject matter, promoting a sense of collaboration/social presence between the student groups.

Adobe Connect

Globally, students connected with face-to-face students through the web conferencing software Adobe Connect (AC). One Saturday per month, paraprofessionals engaged in professional development activities while collaborating with specialists from a variety of backgrounds. Using AC, students had meaningful conversations on topics ranging from school law to classroom management. The instructor promoted a COI by assisting student-to-student discourse. Students heard how schools globally dealt with educational issues, asked important questions and made valuable connections with peers as well as professional educators. When using platform tools such as AC, the instructor must consider time zones as several students were meeting during the day while others were foregoing sleep to meet at night; further, not all learners had access to high-bandwidth necessary to stay connected to peers and required frequent re-connections. In addition, AC has been utilized as an option in online courses for RTGMs and was found to be useful for connecting graduate business students synchronously to discuss various business concepts in the course and the students overwhelming reported value in discussing their experiences with peers in real-time (see McWhorter, Helfers & Consalvo, 2018).

Second Life

The 3D space of Second Life (SL) provides a sense of presence and *immersion* (feeling of being in same location) that some instructors and students find more compelling than traditional venues (Texas A&M University, 2009). Real-time interaction occurs through the use of an avatar (on- screen character) and voice and text chat. During the 2011-12 school year, a 3D safety laboratory (built from digital images of a working lab) was constructed as a prototype to explore the emerging field of Nanotechnology (McWhorter & Lindhjem, 2012). Instructor and students toured the virtual lab (see https://www.flickr.com/photos/rochells/32621591778/in/dateposted-public/) interacting at safety stations such as adding safety goggles, respirator mask, and lab coat to their avatar. SL creates a 3D space allowing movement, experiential learning, customized content creation

such as adding school logo and familiar buildings, and real-time group meetings (RTGMs) with instructor and students (McWhorter, 2009; 2010).

Google Applications
Cloud based platforms such as those provided by Google's G Suite for Education, which include Google Docs, Sheets, Slides, and Drive (see Hayes, 2017) and Google Hangouts Meet, allowed students to collaborate in real time from geographically diverse locations in a teacher education classroom. As part of a blended synchronous-asynchronous environment, such tools from the G Suite allowed students to work with one another on a class podcast project, provide simultaneous peer feedback, and review their shared document before submitting the assignment. Google Hangouts Meet also allowed the students to use a virtual platform to communicate through video, chat, instant messaging, or phone discussions as needed in order to discuss their work.

Discussion and Conclusion
Today's technology provides instructors with a variety of platforms to use to create a COI. When making a decision about the appropriateness of a forum, consider the following recommendations:

- Choose forums that foster a COI
- Train students and ensure they have the technology necessary for the platform
- Multiple forums may be appropriate for one course
- Consider advantages and disadvantages of forums
- Keep high expectations and a strong *teacher presence* to ensure students meet learning outcomes.

In four distinct disciplines, instructors utilized different online discussions forums to create a COI that promoted cognitive, social, and teaching presence. While limitations existed for each forum, the instructors carefully chose the appropriate forums for their disciplines and planned discussions within the COI framework to ensure that online discussions were meaningful, customized, and promoted critical thinking and deep collaboration.

Endnotes
[1] This article updates and extends previous study published in Academic Exchange Quarterly. See Delello, J. A., Everling, K., McWhorter, R. R., & Lawrence, H. (2013, June). Fostering online discussions. Academic Exchange Quarterly, 17(2).

References
Academic Technology and Creative Services (2009). *Online discussions for blended learning*. California State University, Sacramento. Retrieved from https://www.linfield.edu/assets/files/instructional-support/blended-learning/discussion-board-best-practices-53e0fe0b41f4b.pdf

Akyol, Z., & Garrison, D. (2011). Understanding cognitive presence in an online and blended community of inquiry: Assessing outcomes and processes for deep approaches to learning. *British Journal of Educational Technology, 42*(2), 233-250.

Arbaugh, J. B. (2008). Does the Community of Inquiry Framework Predict Outcomes in Online MBA Courses? *International Review of Research in Open & Distance Learning, 9*(2), 1-21.

Bennett, E. E., & McWhorter, R. R. (2017). Reaction – Organizational learning, community, and Virtual HRD: Advancing the discussion. *New Horizons in Adult Education & Human Resource Development, 29*(3), 19-27.

Bozarth, J. (2010). Social media for trainers: Techniques for enhancing and extending learning. San Francisco, CA: John Wiley & Sons, Inc.

Bye, L., Smith, S., & Rallis, H. (2009). Reflection Using an Online Discussion Forum: Impact on Student Learning and Satisfaction. *Social Work Education, 28*(8), 841-855. doi:10.1080/02615470802641322

Delello, J. A., & Consalvo, A. (2019, in press). I found myself retweeting: Using Twitter chats to build professional learning networks. *Educational Technology and Resources for Synchronous Learning in Higher Education.* DOI: 10.4018/978-1-5225-7567-2

Delello, J. A., & McWhorter, R. R. (2014). Creating virtual communities of practice with the visual social media platform Pinterest. *International Journal of Social Media and Interactive Learning Environments (IJSMILE), 2*(3), 216-236.

Finkelstein, J. (2006). *Learning in real time: Synchronous teaching and learning online.* Jossey-Bass.

Garrison, D. R. (2007). Online community of inquiry review: Social, cognitive, and teaching presence issues. *Journal of Asynchronous Learning Networks, 11*(1), 61-72.

Garrison, D. R. (2011). *E-Learning in the 21st century: A framework for research and practice* (2nd Ed.). London: Routledge/Taylor and Francis.

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.

Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. *Internet and Higher Education, 13*(1-2), 5-9.

Giesbers, B., Rienties, B., Gijselaers, W. H., Segers, M., & Tempelaar, D. T. (2009). Social presence, Web videoconferencing and learning in virtual teams. *Industry & Higher Education, 23*(4), 301– 309.

Hall, A., Delello, J. A., & McWhorter, R. R. (2017). Using Facebook to supplement instruction in online and hybrid courses. *International Journal of Innovation and Learning, 22*(1), 87-104.

Hayes, H. B. (2017). Advances in technology foster collaboration between students and teachers: Cloud technologies and one-to-one initiatives boost engagement and learning. Retrieved from https://edtechmagazine.com/k12/article/2017/07/advances-technology-foster-collaboration-between-students-and-teachers

Kompen, R. T., Edirisingha, P., & Monguet, J. M. (2012). *Trends and issues in distance education: International perspectives (2nd ed.)*. In Visser, L., Visser, Y., Amirault, R. J., & Simonson, M. (Eds). (pp. 223-237). Charlotte, N.C., US: IAP Information Age Publishing.

Lowenthal, P. R. (2010). The Evolution and Influence of Social Presence Theory on Online Learning. In T. Kidd (Ed.), *Online Education and Adult Learning: New Frontiers for Teaching Practices* (pp. 124-139). Hershey, PA: Information Science Reference. doi:10.4018/978-1-60566-830-7.ch010

Lytle, R. (2012). Colleges try to find their voices on Pinterest. *US News and World Report*. Retrieved from https://www.usnews.com/education/best-colleges/articles/2012/04/12/colleges-try-to-find-their-voices-on-pinterest

MacKnight, C.B. (2000). Teaching critical thinking through online discussions. *Educause Quarterly, 4*, 38-41.

Mandernach, B. J., Gonzales, R. M., & Garrett, A. L. (2006). An examination of online instructor presence via threaded discussion participation. *Journal of Online Learning and Teaching, 2*(4): 248-260.

McInnerney, J. M., & Roberts, T. S. (2004). Online learning: social interaction and the creation of a sense of community. *Educational Technology and Society, 7*(3), 73-81. Retrieved from http://www.ifets.info/journals/7_3/8.pdf

McWhorter, R. R. (2009). Texas A&M Second Life campus. Retrieved from https://www.flickr.com/photos/rochells/albums/72157622050726848/with/3824683023/

McWhorter, R. R. (2010). Exploring the emergence of Virtual Human Resource Development. *Advances in Developing Human Resources, 12*(6), 623-631. doi: 10.1177/1523422310395367

McWhorter, R. R. & Delello, J. A. (2016). Green technologies enabling virtual learning environments. *International Journal of Information Communication Technologies and Human Development, 8*(4), 38-55.

McWhorter, R., Helfers, R., & Consalvo, R. (2018). Increasing learning outcomes for online students using real-time group meetings. Center for Teaching & Learning at The University of Texas at Tyler. April 17, 2018. Retrieved from https://www.youtube.com/watch?v=eO1KKhYVSig&feature=youtu.be

McWhorter, R. R., & Lindhjem, K. A. (2012). Student perceptions of a virtual learning environment for nanotechnology safety training. *Academy of Human Resource Development International Conference*, Denver, Colorado. February 29-March 4, 2012.

Palmquist, J. E., & Barnes, G. V. (2015). Participation in the school orchestra and string teachers, *International Journal of Community Music, 8*(1), 93-103.

Park, Y., & Bunk, C. (2007). Synchronous learning experiences: Distance and residential learners' perspectives in a blended graduate course. *Journal of Interactive Online Learning, 6*(4), 245-255.

Pawan, F., Paulus, T. M., Yalcin, S., & Chang, C-F. (2003). Online learning: Patterns of engagement and interaction among in-service teachers. *Language Learning & Technology, 7*(3), 119-140. Retrieved from http://llt.msu.edu/vol7num3/pdf/pawan.pdf

Rourke, L., & Kanuka, H. (2009). Learning in Communities of Inquiry: A Review of the Literature. *Journal of Distance Education: Renue de L'Éducation á Distance, 23*(1), 19-48.

Smith, A., & Anderson, S. (2018). *Social media use in 2018.* Pew Research Center. Retrieved from http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/

Texas A&M University (2009). ITS debuts the Texas A&M Second Life Campus. *Teaching & Technology*, 7(1). Retrieved from http://its.tamu.edu/files/09-09-its-newsletter.pdf