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BUILDING AN ONLINE LEARNING COMMUNITY FOR TECHNOLOGY INTEGRATION IN EDUCATION

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Introduction

Our professional learning community (PLC), or the Technology Integration Learning Community (TILC), consists of nine professors from the Fischler College of Education at Nova Southeastern University who embody a wide range of knowledge and skills related to instruction, research, and technology. Our TILC provides a supportive, collaborative, safe, and non-judgmental environment for sharing that knowledge (and questions) about technology tools and ideas that can be used to enhance both instruction and learning. Through a self-study, the TILC developed a framework for members to improve their own effectiveness when working with students enrolled in their courses at both the graduate and undergraduate levels.

Literature Review

The mission of our TLC emerged from our need for professional development so that we could better meet the needs of and engage our diverse, non-traditional, adult learners, most of whom complete their courses online. This literature review presents an overview of online learning, technology integration, and professional learning communities as the method of effective professional development selected for our journey.

Online learning. Online learning has become one of the most popular approaches to learning in the 21st century (Allen & Seaman, 2008; Parsad & Lewis, 2008). Studies have shown that there is no significant difference of learning outcomes between online learning and traditional face-to-face learning (Allen, Bourhis, Burrell, & Mabry, 2002; Johnson, Aragon, Shaik, & Palma-Rivas, 2000). The use of the Internet, and technology tools, such as Blackboard, allow the adult non-traditional student more flexible learning formats to meet their unique needs. Interaction and student engagement can be

challenging to maintain in online learning. Due to the time and space separation, learners may have few opportunities to interact with their instructor or classmates in online environments depending on the course design (Kuo, Chen, & Kuo, 2015). Interaction has been shown as one of the major variables that have an influence on student learning in online education (Bernard, Abrami, Borokhovski, Wade, Tamim, Surkes, & Bethel, 2009; Kuo, Walker, Schroder, & Belland, 2014). A positive relationship was found between interaction and satisfaction (Chejlyk, 2006; Kuo, Walker, Belland, & Schroder, 2013). The more interaction learners have in online settings, the more satisfied they were with instruction and learning.

Integration of technology. The process of adopting educational technologies, as traditionally understood, has three phases: (a) Familiarization—one's first exposure to a technology, (b) Utilization—one's initial use of a technological tool in the classroom, and (c) Integration—when a teacher uses technology to support curricular goals (Hooper & Rieber, 1995). A more contemporary perspective adds a fourth phase—reorientation—in which the educator rethinks the educational process; this is often marked by a shift in focus from instruction to learning. In the 20 years since Hooper and Rieber proposed this model, the literature of the field has blurred the boundaries of Phases 3 and 4, so that it is often assumed that technology integration implies reorientation.

Meaningful technology integration, then, is not primarily about any particular technology. As Kim, Lee, Merrill, Spector, and Merrienboer (2008) have noted, it is not about a thing, but a goal: "technology is successfully integrated into learning and instruction when the interest and focus are not on the technology but rather on that which the technology makes possible" (p. 811). As Spector (2016) has observed, "successful integration of an educational technology is marked by that technology being regarded by users as an unobtrusive facilitator of learning, instruction, or performance" (p. 166).

The use, integration, and study of technology in education has a surprisingly long history—at least 100 years (Saettler, 2004). However, while perspectives have arguably become more sophisticated, technology integration itself seems not to have progressed to a similar degree. In 1999, Cuban noted that, after a decade in which schools had invested hundreds of millions of dollars in computers, software, and related infrastructure, only 20% of teachers were "serious" users of computers in the classroom. Six years later, Bauer and Kenton (2005) noted that the 30 "tech-savvy" teachers they studied did not consistently integrate technology for teaching and learning. As Kim et al. (2008) have noted, "There is now much talk about technology integration but very little real work is going on" (p. 811).

Barriers to teacher adoption and integration of educational technologies are generally well documented and understood. Ertmer (1999) divided them into first-order barriers, those that are "extrinsic to teachers and include lack of access to computers and software, insufficient time to plan instruction, and inadequate technical and administrative support," and second-order barriers that are "intrinsic to teachers and include beliefs about teaching, beliefs about computers, established classroom practices, and

unwillingness to change" (p. 48). First-order barriers are, in a way, more easily addressed—through purchases and training. Second-order barriers are tougher, as overcoming them "requires challenging one's belief systems and the institutionalized routines of one's practice" (Ertmer, 1999, p. 48).

The barriers that affect the integration of technologies for teaching and learning by educators have also been classified as internal or external. Examples of external barriers are the constant evolution and change in technologies that force educators into continuous active engagement with new technologies, and the lack of access to technologies, both in quantity and quality, within schools (Funkhouser & Mouza, 2013; Ryan & Bagley, 2015). Ryan and Bagley (2015) referred to the following internal barriers: "personal beliefs, perceptions and understanding" (p. 33) that may cause individuals to experience unease and discomfort in the use of technologies for learning. One important factor to improve teachers' effective use of technology for teaching and learning emphasized by Ryan and Bagley was the importance of effective modeling by teacher preparation course faculty both within technology integration and methods courses. The TILC has found ways to address some of the barriers for technology integration, but most importantly, offers a safe space for faculty to challenge their own beliefs about teaching, technology, and teaching practices.

If not much technology integration is happening, it is not because of a lack of helpful literature. Spector (2016) has offered what he terms "a preliminary and tentative list of technology integration principles" (p. 171):
1. Technology integration in education should enhance learning, performance, and/or instruction.
2. Stakeholders should be informed and key users should be properly trained on new technologies.
3. Training teachers and trainers how to make effective pedagogical use of a new technology is essential.
4. Training of users on a new technology is critical.
5. Proper support for a new technology should be in place prior to deployment.
6. A systemic representation of the role and use of a new technology should be developed prior to implementation.
7. Technology costs should not outweigh the benefits.
8. Technology should not be expected to quickly or magically transform learning and instruction. (p. 171)

Teachers must take leading roles to effectively integrate technology in their classrooms; however, this empowerment is possible only with support from administration. As Jacobsen (2001) observed, fundamentally rethinking the role of technology in the classroom "requires effective and enabling leadership by visionary and knowledgeable school administrators and boards, and effective, ongoing professional development and support for teachers" (para. 1). However, as Niederhauser and Wessling (2011) have noted, there has been a dearth of professional development for teachers despite more than two decades of calls for more training.

Professional learning communities. The TILC constitutes an autonomous and safe academic forum of professional development that addresses most of the principles of technology integration described by Spectors (2016) and offers faculty opportunities to learn, share their experience with sophisticated technology, reflect, and discuss pedagogy regarding integration of technology and students' engagement. The characteristics of effective professional development include a focus on content knowledge and students' learning, and alignment with teachers' needs and school goals (Murray, 2014; Goldschmidt & Phelps, 2010; Wei, Darling-Hammond, & Adamson, 2010). Fogarty and Pete (2007) list seven critical qualities of effective professional development: sustained; job-embedded; collegial; interactive; integrated; results-oriented; and practical, hands-on. A method of sustained, collegial, job-embedded, results-oriented, and practical professional development is a professional learning community (PLC). Related to the concept of Communities of Practice (Wenger, 1998), PLCs are defined by DuFour, DuFour, and Eaker (2008) as

> educators committed to working collaboratively in ongoing processes of collective inquiry and action research to achieve better results for the students they serve. Professional learning communities operate under the assumption that the key to improved learning for students is continued, job-embedded learning for educators. (p.14)

By offering educators a forum to collaborate, PLCs challenge traditional conceptions of education as an individual and isolated endeavour (Martin-Kniep, 2004; Mullen & Schunk, 2010) and promote a culture of collaboration and reflection. To meet their goals, PLCs need to share a vision, meet regularly, and work collaboratively, focusing on student learning (DuFour et al., 2008; Martin-Kniep, 2004; Owen, 2014). In order to function, PLCs also require institutional or leadership support (DuFour et al., 2008; Martin-Kniep, 2004; Owen, 2014).

An extensive body of knowledge regarding PLCs has focused on defining PLCs (Easton, 2011; Hord, 1997; Hord & Sommers, 2008; Kruse & Louis, 1995; Martin-Kniep, 2004; Owen, 2014). In addition, empirical studies have also used theory to hone the definition of PLCs. However, Van Lare and Brazer (2013) suggest the existence of a trend in current empirical work on PLCs. According to Van Lare and Brazer, studies on PLCs fail to address how teachers' learning takes place and fail to explore the contextual influences that shape that learning. The TILC Journey describes the context in which our PLC emerged and evolved and the ways in which our members have learned during this journey.

The TILC Journey

> We – you and I – and the ongoing dialogue we should be having with each other, are a vital resource for ongoing PD! One of the best forms of professional development is also free. We can learn so much from each other. When budgets get tight, we need to teach and learn with/from friends and colleagues. And of

course, there are so many great learning resources available on line, many from teachers and technologists like you and I! (Welsh, 2015, para. 13)

The TILC emerged out of a blue sky thinking focus group in May 2012. The overarching question presented to college of education faculty was, "What would you do to increase enrollments and engagement at NSU? The sky is the limit!" One of the ideas that surfaced from the focus group was to give every faculty member and incoming student an iPad, complete with everything needed to complete the program, and to imbed mobile learning into our curriculum. Two faculty members envisioned a pilot study, as part of a collaborative research agenda, with NSU's Athletic Administration Master's program, where one of the faculty members oversees the curriculum. In October 2012, we scheduled a meeting with the Dean of the College of Education to propose the Athletic Administration iPad initiative. Just prior to our meeting, NSU's Chief Information Officer, along with the Executive Director of the Office of Technology Innovation and Collaboration, gave a presentation to all faculty members to discuss recruitment and retention of students. They painted a picture of today's students who can simultaneously write papers on iMacs, surf the web on iPads, and communicate with iPhones. They emphasized we must be ready to meet the educational needs of today's digital generation. An hour later we were sitting in the Dean's office and he readily agreed to purchase 10 iPads for our iPad initiative (he too had been at the technology presentation).

The iPad initiative began with training focused on identifying the resources needed to integrate mobile learning into the curriculum. We initially trained the faculty overseeing the various courses in the Athletic Administration program, but ultimately left the faculty to develop the courses on their own. In the early phases of our iPad initiative, we learned what worked (i.e., collaboration, ongoing support) and more importantly, what did not work (i.e., lack of accountability, limited training; Lacey, Gunter, & Reeves, 2014). We decided to apply our newly developed knowledge and create an online learning community (since one of the faculty members lived and worked 3 hours away) and invite other members to join.

In September 2013 we expanded our pilot to include the Graduate Teacher Education Program faculty and the Undergraduate Teacher Education Program faculty. The eight faculty members who joined were given iPads. Zoom was our training platform and we began by learning how to use the iPad for teaching and learning. After our initial training, we decided on a collaborative training approach in which each of us would present on a new topic each month. We began with app reviews, with each faculty presenting on a new app each month. The TILC chair created a Wiki to host our app reviews, which consisted of (a) a general description, (b) suggestions for how professors can use the app, and (c) recommendations for how students can potentially use app as well. We learned about Google Drive, Dropbox, Evernote, Educreations, Poplet, Code Hour, Skype, ESOL iPad, SimpleMind+, Google Currents, SubText, Puppet Pals, Free Quotes, SuVoBi, KerPoof, Voki, Remind, Appitic (not an app, but a website with lots of great educational apps), AirDroid, Email My Texts, Keynote, Google+, Quizlet, GoAnimate, Toontastic, Dragon Dictation, and Office2HD, to name a few.

During 2014 and 2015, we evolved from each person presenting information to a true collaborative training model. Each month we learn about a new topic (e.g., social media, OERs, creating short instructional videos, flipped learning, YouTube, Google101) and then discuss integration ideas. We challenge each other (and hold each other accountable!) to integrate at least one new tool into our courses each semester. Over the last 2 years we evolved from a specific focus on mobile learning to technology integration in general and renamed ourselves the Technology Integration Learning Community (TILC).

Since the group's inception, members have published two articles, and conducted 20 presentations at local, national, and international conferences. We now incorporate flipped learning, YouTube videos, Pinterest, Blogs, Wikis, instructional videos, Google Apps for Education (i.e., Docs, Drive, Voice, Forms, Sheets, Slides), mobile learning, Avatars and other animations, Remind, interactive online simulations, QR codes, augmented reality, and electronic posters into our curriculum. As professors we are more engaged!

In June 2015 we conducted a self-study on TILC participants' experiences; each faculty member ($N = 9$) journaled their experiences of participating in the TILC. Participant feedback was analyzed using Colaizzi's (1973) method of phenomenological analysis in which significant statements were extracted, meaning was formulated, and themes emerged. One of the themes that emerged was having a support system. As one participant stated, "Whenever questions arise I have a support system that allows me to call on different members within the TILC group to get answers and support as needed." Another participant captured our mission nicely, "It [is] a unique group that strive[s] to help others learn through supporting each other for the betterment of the students we teach."

Another theme that evolved was collaboration. One participant stated, "It was through collaboration with TILC and research with my colleagues that allowed me to shift my focus to a more appropriately tailored technology course that suited the 21st century learners I was teaching." Another participant reflected, "The ability to question, engage, brainstorm, and present the ideas to others made a positive influence on my personal and professional learning experience." Another participant reflected on how the trainings have affected him, "Through this professional development journey I realized that I too am classified as a learner and must continue to share, and collaborate in order to remain relevant and current in education." Finally, one participant mentioned having a sense of community is what she values most: "what I value the most, is having a community of colleagues with whom I can learn, share what I know, consult and be in touch, not only once a month during our meetings, but all the time by email or on the phone."

The third theme that emerged was hands-on training. One participant reflected, "The meetings were very rich in content and more hands-on than any other training I had experienced in the past." Another participant expounded, "I was responsible for many of

the trainings; oftentimes I had to learn the tools or techniques myself so that I could facilitate hands-on training with the group. One of the best ways to really learn something is to teach it!"

The final theme that emerged was increased engagement as a result of participating in the TILC. According to one participant, "By breaking the isolation that is typical of online teaching, this PLC has made my job more enjoyable and my learning more engaging." One participant reflected on transferring her engagement to her students: "I have tried to transfer this experience to my students by challenging them to create or join a learning community and to integrate technology to engage their own students." Finally, one participant reflected on how collaboration has increased engagement, "as a result of the collaborative efforts of the TILC I wasn't sure who was more excited, me or my students."

According to one TILC member, "Students expressed their appreciation for the exposure and desire to have other courses delivered with the same rigor and depth that my course delivered." In an informal analysis of student evaluations, several students have expressed their enjoyment in our classes: "The Pinterest activity was fun, and functional!" and "[I] loved the flipped classroom." Another student commented, "[I] enjoyed the assignments requiring use of different media platforms to reinforce our understanding of the course content." While student added, "This by far was the best online course I have ever taken." Finally, one student summed up her experiences nicely, "This class was awesome!…The resources that you provided were amazing!!"

Other students commented on our use of flipped learning: "I especially appreciate the recordings you made for us to watch before our assignments were due or before the chats. It really helped clarify exactly what was expected and how to proceed through the assignment." Another added: "I think the professor went out of her way to make sure we understood the content knowledge with articulates and other resources so that we could be successful."

Finally, one student truly captured our TILC vision, "You should teach other...instructors on the use of Bb for online courses. I was so impressed with the way in which you used the tools to fully involve the class in collaborative discussion. No other professors have used the tools in this manner and would have much to learn from you." Clearly, our TILC is making lasting impressions on our faculty, our curriculum, and our students.

The TILC Instructional Framework
The members developed the TILC Instructional Framework (see Figure 1) to improve our effectiveness when working with students enrolled in our courses. "A community is not a product; rather it is a process which is fluid in nature" (Lock, 2007, p. 130). The framework's development was based on the literature and successful practices that resulted in positive changes within our courses. We have enjoyed much success both professionally and personally. "The social grouping of people in a community involves communication, relationships, activities, membership and a shared history" (Lock, 2007,

p. 273). Based on the shared history that each member of the TILC community generated, a level of effectiveness emerged within the group that is reflected within the courses we teach.
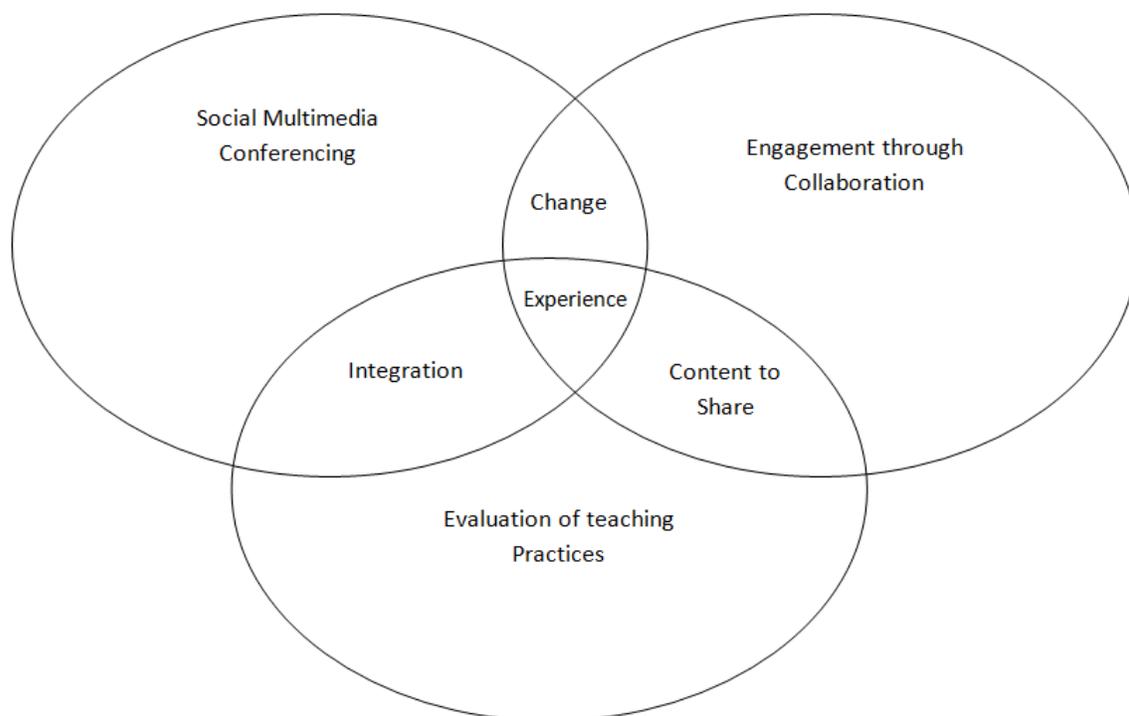

Figure 1. *TILC Instructional Framework*

Groups of learners working together will support each other using a variety of tools and information resources to achieve the learning goals (Wilson, 1996). As the TILC grew in size and scope, so did the learning goals; followed by the development of a framework by which teaching and learning took place. The community established a unified learning platform and then collectively worked together based upon the current strengths and skills members possess. Sharing our experiences remains at the core of the community and framework. The challenge of being at a distance was an innocuous barrier and may have fostered a stronger bond within the community, which helped to break the isolation (Martin-Kniep, 2004) that is typical in online teaching. We used a common video communication platform so that every member of the learning community would feel a sense of connection. Members did not feel as if they were working in isolation or that they needed to be a videographer to gain access to the meetings. This was a foundation to the learning community, keeping it simple and practical. The content to learn was selected as a group and was not thrust upon any member, but rather was embraced by the community at large. It is the sense of community and collaboration that is a key pillar to this learning community's effectiveness.

Through the framework the expected outcome is change. Change for this group is anything that fosters new learning and ongoing technology skills that creates an

environment of innovation and productivity for the students within the courses our learning community reaches. The learning process and the changes TILC members fostered in the courses we teach reflect different phases of technology integration. By learning how to use certain technologies, some of us familiarized ourselves with the tools, utilized them, and/or integrated them. Some of us also promoted a reorientation of technology in our courses (Hooper & Rieber, 1995). Change that promotes new knowledge is the foundation of our learning and furthers the goals to evaluate our own learning and progression within our learning community. Additionally, several faculty noted that their participation in the TILC engaged them in ways that were not achieved during previous training sessions offered at the university.

Recommendations for Implementing a PLC

Regardless of the content, technology budget, or unique makeup of the learning community participants, these tips and suggestions offered in the framework have proven to foster a successful learning community. Various ways to conduct meetings were explored as the group of faculty grew and became a cohesive learning community. A general sense of connection, risk-free of judgment, was developed within the learning community which fostered even more collaboration. This paved the way for more productivity and more hands-on training activities (Fogarty & Pete, 2007), and more interest in technology infusion. Being drawn together with a common purpose created an exclusivity that assisted in defining the learning community (Lock, 2007). The creation and implementation of a framework was necessary and served as a practical outline to achieve success while working in this learning community. According to Jonassen, Peck, and Wilson (1998), the emphasis is on the whole group which should collaborate and support members in their learning. For these reasons, many of the application software tools used and demonstrated in the meetings fostered collaboration while working together on the actual application. This means that although we were learning how to use technology, the focus was not on the technology itself, but on what the technology made possible (Kim et. al., 2008); in this case, to enrich our teaching and our students' learning experiences.

The framework discussed offers suggestions and benefits to begin establishing a successful learning community related to any content area or interest. To work successfully, the learning community needs to define clear common goals. These goals should be discussed and defined by the members of the PLC. In addition, a fundamental resource is an "online place" to meet regularly. Finding a video communication platform with which members feel comfortable, can see each other, and can share documents or other materials on a screen will promote a sense of connection among members. The use of Google documents to actively work together while developing projects and training is the preferred method to work on written products. This tool allows users to actively participate and type into a live online Word document working collaboratively with many others to articulate writing ideas and knowledge. This is a much more efficient way to work as a team rather than sending multiple copies of documents back and forth via email. Ideas flow much smoother and the users can see what others are thinking while they are typing.

Giving members the opportunity to teach to their colleagues creates a sense of engagement, responsibility, and accountability that benefits the community. In addition, offering the choice to teach or discuss a specific tool addresses two of the characteristics of the adult learner: the need to control their learning and to focus on issues that concern them (Knowles, 1973). Regardless of skill level, group members should help each other in an authentic way to move the group forward as a social community. Fixed monthly meetings should be planned to accommodate each participant so he or she could schedule other activities around the meeting of the PLC. Activities and training sessions should be developed as a collaborative group, rather than thrust upon the community by the administration. The activities should be practical, hands-on (Fogarty & Pete, 2007) and the meetings should include time to discuss strategies to transfer what has been learned into the online or face-to-face classroom.

With the framework in place it becomes easy to get comfortable with expectations and the social aspect of a learning community, thus making presentations, publications, and personal learning goals a reality. The social bond that TILC members developed as a result of frequent video meetings created a sense of family, which enabled members to push and support each other equally. This bond and accountability factor allowed the community as a whole to work smarter and achieve much success both professionally and personally. Lack of participation by members was a problem this learning community did not have.

Conclusion

TILC members reported that they have gained a new set of skills and tools that they can use in their classes while becoming more engaged in the learning process. In turn, their students become more engaged. Our TILC will continue to share and explore new technology tools on a regular basis. The TILC minimizes external barriers to technology integration and provides a safe haven for engagement and learning. The constant evolution and change in technologies, considered by some as a barrier for technology integration (Funkhouser & Mouza, 2013; Ryan & Bagley, 2015), keeps the members excited about experimenting with new tools within the learning community. We will continue to provide an environment where each member can grow professionally while continuing to share what we have learned with others, encouraging other faculties to form their own professional learning communities. Every faculty member has something to contribute to a PLC -- and something to learn, as well.

References

Allen, M., Bourhis, J., Burrell, N., & Mabry, E. (2002). Comparing student satisfaction with distance education to traditional classrooms in higher education: A meta-analysis. *The American Journal of Distance Education*, *16*(2), 83-97.

Allen, I. E., & Seaman, J. (2008). *Staying the course: Online education in the United States.* Retrieved from http://www.sloanc.org/publications/survey/pdf/staying_the_course.pdf

Bauer, J., & Kenton, J. (2005). Toward technology integration in the schools: Why it isn't happening. *Journal of Technology and Teacher Education, 13*(4), 519-546.

Bernard, R., Abrami, P., Borokhovski, E.,Wade, A., Tamim, R., Surkes, M., & Bethel, E. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research, 79*(3):1243-1289.

Chejlyk, S. (2006). The effects of online course format and three components of student perceived interactions on overall course satisfaction. *Dissertation Abstracts International*, *67*(4). (UMI No. 3213421)

Colaizzi, P. F. (1973). *Reflection and research in psychology: A phenomenological study of learning*. Dubuque, IA: Kendall/Hunt.

Cuban, L. (1999, August 22). Don't blame teachers for low computer use in classrooms. *Los Angeles Times*. Retrieved from http://articles.latimes.com/1999/aug/22/opinion/op-2609

Dufour, R., Dufour, R., & Eaker, R. (2008). *Revisiting professional learning communities at work*. Bloomington, IN: Solution Tree.

Easton, L. B. (2011). *Professional learning communities by design: Putting the learning back into PLCs.* Thousand Oaks, CA: Corwin.

Ertmer, P. A. (1999). Addressing first- and second-order barriers to change: Strategies for technology integration. *Educational Technology Research and Development, 47*(4), 47-61.

Fogarty, R., & Pete, B. (2007). *From staff room to classroom. A guide for planning and coaching professional development.* Thousand Oaks, CA: Corwin.

Goldschmidt, P., & Phelps, G. (2010). Does teacher professional development affect content and pedagogical content knowledge? *Economic of Education Review, 29*(3), 432-439.

Hooper, S., & Rieber, L. P. (1995). Teaching with technology. In A. C. Ornstein (Ed.), *Teaching: Theory into practice* (pp. 154-170). Needham Heights, MA: Allyn and Bacon.

Hord, S.M. (1997). *Professional Learning Communities: Communities of Continuous Inquiry and Improvement.* Austin, TX: Southwest Educational Development Laboratory.

Hord, S. M., & Sommers, W.A. (2008). *Leading professional learning communities. Voices from research and practice*. Thousand Oaks, CA: Corwin.

Jacobsen, D. M. (2001, April). Building different bridges: Technology integration, engaged student learning, and new approaches to professional development. Paper presented at the 82nd Annual Meeting of the American Educational Research Association, Seattle, WA. Retrieved from http://people.ucalgary.ca/~dmjacobs/aera /building_bridges.html

Johnson, S., Aragon, S., & Shaik, N. (2000). Comparative analysis of learner satisfaction and learning outcomes in online and face-to-face learning eEnvironments. *Journal of Interactive Learning Research, 11*(1), 29-49.

Jonassen, D. H., Peck, L. & Wilson, B. G. (1998). Creating technology-supported learning communities (On-line). Retrieved from carbon.cudenver.edu/~bwilson /learncomm.html

Kim, C., Lee, J., Merrill, M. D., Spector, J. M., & Merrienboer, J. J. G. (2008). Foundations for the future. In J. M. Spector, M. David Merrill, J. van Merrienboer, & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology*, (3rd ed., pp. 807-815). New York, NY: Springer.

Kruse, S. D., & Louis, K. S. (1995). Developing professional community in new and restructuring urban schools. In K. S. Louis & S. D. Kruse (Eds.), *Professionalism and community: Perspectives on reforming urban schools* (pp. 23-42). Thousand Oaks, CA: Corwin.

Kuo, Y, Walker, A., Belland, B., & Schroder, K. (2013). A predictive study of student satisfaction in online education programs. *The International Review of Research in Open and Distance Learning 14*(1), 16-39.

Kuo, Y., Walker, A., Schroder, K., & Belland, B. (2014). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education, 20*, 35-50.

Lacey, C. H., Gunter, G., & Reeves, J. (2014). Mobile technology integration: Shared experiences from three initiatives. *Distance Learning*, *11*(1), 1-8.

Lock, J. V. (2007). Laying the groundwork for the development of learning communities online. In R. Luppicini (Ed.), *Online learning communities* (pp. 129-149). Charlotte, NC: Information Age.

Martin-Kniep, G. (2004). Developing learning communities through teacher expertise. Thousand Oaks, CA: Corwin.

Mullen, C. A., & Schunk, D. H. (2010). A view of professional learning communities through three frames: Leadership, organization, and culture. *McGill Journal of Education/Revue des sciences de l'éducation de McGill*, *45*(2), 185-203. doi:

10.7202/045603ar

Murray, J. (2014). *Designing and implementing effective professional learning*. Thousand Oaks, CA: Corwin.

Niederhauser, D., & Wessling, S. (2011). Professional development: Catalyst for change? *Learning & Leading with Technology*, *38*(8), 38-39.
Owen, S. (2014). Teacher professional learning communities: Going beyond contrived collegiality toward challenging debate and collegial learning and professional growth. *Australian Journal of Adult Learning, 54*(2), 54-77.

Parsad, B., & Lewis, L. (2008). *Distance Education at Degree-granting Postsecondary Institutions: 2006-07.* Retrieved from http://nces.ed.gov/pubs2009/2009044.pdf

Saettler, P. (2004). *The evolution of American educational technology*. Charlotte, NC: Information Age.

Spector, J. M. (2016). *Foundations of educational technology* (2nd ed.). New York, NY: Routledge.

Van Lare, M. D., & Brazer, S. D. (2013) Analyzing learning in professional learning communities: A conceptual framework, *Leadership and Policy in Schools, 12*(4), 374-396. doi: 10.1080/15700763.2013.860463

Wei, R.C., Darling-Hammond, L., & Adamson, F. (2010). *Professional development in the United States: Trends and challenges.* Washington, DC: National Staff Development Council.

Welsh, K. (2015, November 16). *15 powerful and fun takeaways from the TLIPAD 2015 Conference* [blog post]. Retrieved from http://www.emergingedtech.com/2015/11/15-powerful-and-fun-takeaways-from-the-tlipad-2015-conference/

Wenger, E. (1998). *Communities of practice: Learning, meaning and identity.* Cambridge, UK: Cambridge University Press.

Wilson, B. (1996). Laying the groundwork for the development of learning communities online. In R. Luppicini (Ed.), *Online learning communities* (pp. 131). Charlotte, NC: Information Age Publishing.