Title
K-12 Online: An Action Research Project on Professional Development for High School Online Pedagogy

Author
Gotanda, Linsey

Publication Date
2014

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

K–12 Online: An Action Research Project on Professional Development for High School Online Pedagogy

A dissertation submitted in partial satisfaction of the

Requirements for the degree of Doctorate in Education

by

Linsey Gotanda

2014

ABSTRACT OF THE DISSERTATION

K–12 Online: An Action Research Project on

Professional Development for High School Online Pedagogy

By

Linsey Gotanda

Doctor of Education

University of California, Los Angeles, 2014

Professor Tyrone Howard, Co-Chair

Professor Eugene Tucker, Co-Chair

Online learning has grown exponentially in higher education during the past decade—and the trend is flourishing in public high schools. It has become a desirable alternative for busy high school students, as it offers flexibility and an alternative learning environment. This expansion to online has necessitated teachers to move to an electronic setting, many of who are veterans of the brick-and-mortar classroom. Most of these teachers have vast face-to-face teaching experience but have not had the proper training to teach online. This high demand for online teachers and the lack of training has resulted in mixed outcomes for online course takers. The purpose of this study was to get online teachers' perspectives about their needs for professional development for online pedagogy.

This study was conducted as a qualitative action research project to gain teacher perspective on their perception and experience in developing and participating in an online professional development for online pedagogy. Data was collected through interviews, action research group meetings, and an interactive online website, while the teachers participated in the professional development. The study revealed that teachers responded positively to professional development but need an ongoing program. Additionally, teachers need one another to support and collaborate about online strategies as well as active involvement from the administration. Online learning continues to grow, and providing teachers with the proper training and professional development with time to collaborate is a solution to sustain rigorous and successful online course offerings.

The dissertation of Linsey Gotanda is approved.

Mark Kevin Eagan

James Stigler

Tyrone Howard, Committee Co-Chair

Eugene Tucker, Committee Co-Chair

University of California, Los Angeles

2014

Dedication

Mom and Dad

It is because of you that I am so tenacious and accomplished.

Table of Contents

List of Figures and Tables

Acknowledgments

This study would not have been possible without the awesome teachers who volunteered to be a part of my work. Thank you for all of your time, dedication, and honesty throughout this study. You all are inspirational. I value all of the hard work and countless hours that you devote to give students an amazing educational experience.

I had the honor and privilege to work with Dr. Eugene Tucker and Dr. Tyrone Howard, my co-chairs. Dr. Tucker, your amazing encouragement, lightning-fast responses, and patience were a blessing. Dr. Howard, thank you for giving up time in your busy schedule for me! I feel very lucky to have worked with you both. Your guidance and wisdom are so appreciated.

I wish to extend my gratitude to my committee members, Professors Kevin Eagan and Jim Stigler. I truly appreciate your advice, support, and encouragement throughout my study. I am truly indebted to Professor Cindy Kratzer for always being there when I freaked out. Her ability to simplify things and talk me off the ledge was much needed and for that, I am grateful. You are such an amazing woman! Last, Barbara Jaffe, thank you for your support and guidance in the early stages of this project.

Thank you to my colleagues in Redondo Beach Unified School District. I have appreciated your understanding and support the last three years. I could not have accomplished this without you all.

My time in ELP would not have been the same, if it were not for my "b@$t@rd$." It is because of you that I have been able to cross the finish line. Julie, you have been my best supporter, and your enthusiasm for life is infectious. Jenny, Liz, and Andy, thank you for always being there to make me laugh, let me vent, and keep me in line, even if I didn't always listen! I have treasured our time in the program together. Catherine, your passion for education is so

admirable. I have truly enjoyed being your twin! And to the rest of Cohort 19, it has been an amazing journey to be with such intelligent and outstanding educators. I know you will all make your mark on the world.

Most of all, I want to acknowledge that my amazing family is truly why I am successful. To my parents, Tats and Sachi, my first teachers: Mom, you taught me to always fight through anything that challenged me. Feel free to go brag to anyone who will listen that I have graduated! I am proud to be the first Dr. Gotanda! And Dad, my sense of humor that I got from you is what has kept me sane through this process. . . and trust that I will look good in everything that I do! You both have supported me through every professional and personal decision that I have made, and without you I could not have accomplished all that I have. Traci and Scott, I am glad I didn't push the easy button. As you can see, what doesn't kill me makes me stronger. It is because of your understanding, wisdom, and support that I am here. To my amazing husband, Kevin, thank you for supporting me through this arduous process. You were patient, kind, and forgiving, always taking care of me when I couldn't take care of myself. I am eternally grateful for you being by my side through every decision that I make. I love that you are my husband! And to Reggie, the best study partner I could ever have. You truly are the BDE.

Vita

1999	B.A. Social Science UC Irvine Irvine, California
2001	M.Ed. Education Single Subject Teaching Credential Concordia University Irvine, California
2001–2007	Social Science Teacher North High School Torrance, California
2007	M.A. Counseling Pupil Personnel Services Credential Loyola Marymount University Los Angeles, California
2007–2010	Counselor Redondo Union High School Redondo Beach, California
2008–2011	Lecturer Education Department, Master's Degree Program Loyola Marymount University Los Angeles, California
2010—2011	Teacher on Special Assignment Adams Middle School Redondo Beach, California
2011–present	Assistant Principal Adams Middle School Redondo Beach, California

CHAPTER ONE

STATEMENT OF THE PROBLEM

Introduction

Online high school courses, defined as instruction on a web-based educational delivery system, are rapidly increasing in number and evolving in many different formats (Watson, Murin, Vashaw, Gemin, & Rapp, 2011). As of late 2010, 48 states and Washington, DC, have offered their secondary students some sort of online learning option presented in a variety of ways, including virtual statewide programs, multidistrict programs, and single district programs (Watson et al., 2011). Some schools have purchased courses with prepackaged and predeveloped curriculum, while others, in an effort to save money, have utilized a learning management system (online platform to post coursework) requiring teachers to create their own online curriculum (Karen Oliver, Kellogg, Townsend, & Brady, 2012). As the number of courses increase, there is a driving need to provide pedagogical training to assist teachers moving from the traditional "brick-and-mortar" classroom (also referred to as face-to-face [F2F] instruction) to virtual teaching (Marianne Bakia, Shear, Toyama, & Lasseter, 2012). Unfortunately, many teachers are not receiving such training, even though they meet the requirements of No Child Left Behind to teach their content area (Archambault & Crippen, 2009). As a result, many teachers are overwhelmed and are delivering inconsistent, low-quality courses to students online with many scholars debating the quality and effectiveness of online learning (Zhao, 2003).

Online learning has received criticism concerning the quality of the learning that students have received since the beginning of distance education. Researchers have yet to find studies

that prove the effectiveness of online instruction (Driscoll, Jicha, Hunt, Tichavsky, & Thompson, 2012) compared with the experience and level of learning of traditional F2F courses. Evidence suggests online student dropout rates are higher (I. E. Allen & Seaman, 2013; Park & Choi, 2009; Zhao, 2003), students are not getting proper social interaction with their peers, nor are they getting as much academic rigor (T. Allen, 2006). Driscoll et al. (2012) found that students in F2F courses asked far more technical and logistical questions, allowing students to interact spontaneously with peers and the instructor, something that takes good planning and structure to replicate in an online classroom. This inability of the online students in low-quality courses to ask questions and get immediate answers might be granting F2F students a clearer understanding of content and requirements, concluding that students in online courses are not receiving the same level of academic engagement. In fact, one study reported that students who took online courses earned an overall grade point average (GPA) 2.28 versus F2F students taking the same class with a 3.42 GPA (Urtel, 2008). Similarly, only 16 percent of the fully online tenth- and eleventh-grade students in Minnesota scored proficient in comparison to 41 percent in F2F in math and a 3 percent discrepancy with online students lower than F2F in reading. In Southern California, the *Daily Breeze* newspaper reported that students in the virtual Capistrano Connections Academy, hosted by Capistrano Unified School District, have an overall Academic Performance Index[1] (API) of 782. Although this is 40 points above the national average, it is the lowest of all the high schools in Capistrano Unified School District (Kunzia, 2012). There could be many reasons for the student underachievement, but one fact remains: good instruction positively affects student achievement. Teachers will have better opportunities to provide a

[1] Academic Performance Index (API) is an annual measure of test score performance of schools and districts.

quality online course and be successful in their teaching with training and professional development (Pagliari, Batts, & McFadden, 2009).

Teachers need better training and access to new, available resources in order to create an effective learner-centered environment (Revere & Kovach, 2011). Also, they need professional development time in order to improve practice (Orr, Williams, & Pennington, 2009). While some teacher preparation programs include a little online instruction training, the majority of online teachers are not new to the education field, so they wouldn't receive this training support. In a 2009 study surveying 596 online teachers in the United States, the average years of experience was 14, with more than 40 percent of those teachers creating their own curriculum using an Internet-based learning management system (LMS) (Archambault & Crippen, 2009). These teachers are lacking in training (Kerr, 2011b; Karen Oliver et al., 2012; Orr et al., 2009), pedagogical and technological support (Karen Oliver et al., 2012; Kevin Oliver, Osborne, & Brady, 2009; Orr et al., 2009) to help manage the high workload that is greater than traditional brick-and-mortar classrooms. In order for schools to successfully integrate online learning into their course options, the infrastructure must be set up to provide teachers with resources and support to deliver high-quality courses (Pagliari et al., 2009). Teachers need to be fully prepared to teach online and can only do so with adequate training and professional development.

The purpose of this study was to develop and implement an online professional development program for online high school instructors, providing them with pedagogical strategies for effective online teaching. This professional development was created with teacher input as a qualitative action research project with two school districts in southern California.

Background of the Problem

Distance education, under which online learning falls, began in higher education; thus, much of the research has been done at that level. It has become an integral part of higher education with more than 54,000 courses being taught online across the nation, most of which are teacher-created curriculums (Li & Irby, 2008). Like higher education, K–12 online learning is gaining traction because of its flexibility and accessibility to content, allowing K–12 educators to use effective practices found in higher education and apply them to their online K–12 courses (Means, Toyama, Murphy, Bakia, & Jones, 2009).

As the demand for online courses increases, the number of instructors is rising. However, only 4 percent of teachers reported that they are learning to teach online, while an additional 39 percent do not have an interest (Hathaway & Norton, 2012). This high student demand for online courses and the lack of supply of teachers are challenges in adequately delivering quality online courses. Most of the teachers who are currently online instructors have come from a traditional classroom and have the prerequisite knowledge about how to run a traditional F2F classroom (Archambault & Crippen, 2009), but such knowledge does not translate into strong online teaching. The majority are untrained and unaware of best practices for online learning and teaching; there are fundamental similarities to F2F instruction, but online teaching requires a different skill set (DiPietro, Ferdig, Black, & Preston, 2008). In fact, one of the assumptions of many people is that traditional classroom and online delivery methods are the same (Kerr, 2011b). Teaching online is generally a different process and experience from conventional F2F teaching in terms of changes to pedagogy (Crawford-Ferre & Wiest, 2012; DiPietro et al., 2008; Kerr, 2011a, 2011b; Zhao, 2003). Successful online courses should be designed around strong pedagogical standards rather than new complicated technology. Higher education students have

repeatedly stated a greater concern for solid online teaching over "bells and whistles" (Driscoll et al., 2012, p. 5) substantiating the need to train teachers in effective online practices.

It is essential that faculty are adequately trained about the differences in teaching online classes (Miller, 2010) as compared to traditional classroom instruction. Unfortunately, California (when compared to other states) seems to have fallen behind in this area (Rice & Dawley, 2007). K–12 teachers are most often accredited by their state agency; however, online teacher accreditation is inconsistent, and for many states, there are no requirements for those who want to teach online. In an effort to standardize online instruction, the International Association for K–12 Online Learning (iNACOL) in 2008 published standards for quality online teaching, including criteria for good online teaching. This included academic credentials, technology skills, interactive and collaborative teaching strategies, online classroom management, and communication, legal, and ethical issues in online teaching, in addition to experience in online teaching. Two years later, the National Education Association (NEA), the nation's largest teachers union, published its own "Guide to Teaching Online Courses" emphasizing the need for training online instructors. "It is essential that educators who instruct online are not only proficient in their subject area, but also specifically prepared for the unique challenges of online instruction, and adequately supported in their online pedagogy" (NEA, 2008, p. 9). Although these guidelines are written for districts and teachers, many instructors are not receiving the proper training and professional development to address unique issues, such as classroom management and building community in an online classroom.

Online teachers should be provided with annual training to assure that they are prepared to teach online and are up-to-date on the most current practices (Pagliari et al., 2009). Often, many instructors are not adequately trained, which leads to frustration for both the instructor and

the students (Yang & Cornelious, 2005). To date, the most common form of training is technical training that instructors receive, which teaches them to use the course or learning management software (CMS or LMS) (Pagliari et al., 2009). While learning the technical side of the software is important, the pedagogical training and exposure to best practices will determine the success of the course (Pankowski, 2004; Watson et al., 2011). Instructors need to know what works and what does not work online, and the sooner they can determine that, the more likely their students will succeed (Pankowski, 2004).

It is recommended that instructors receive online training or professional development, particularly because it will model the same learning experience as their students (Pagliari et al., 2009; Powell, 2010; Rice & Dawley, 2007). Teacher input is essential to ensure that the training needs are met as well as ample time allotted for teachers to become proficient (Powell, 2010). Currently, many school districts have purchased prepackaged curriculums that include training, however other school districts are relying on teachers to be the course developers as well as the media and technology designers, making training their faculty a more significant task (Kampov-Polevoi, 2010). Teachers who play these multiple roles (instructor, course developer, and technology designer, et cetera) mirror what higher education faculty do in their online courses, allowing K–12 instructors to learn from their effective practices and training in order to offer a quality, online experience for their students

Research Methods

This study included developing and implementing a professional development/training program for teachers new to online course development (fewer than four years) as an action research project with the Booker Unified School District (BUSD) at Robles High School (RHS) and Helix High School (HHS) in the Reginald Unified School District (RUSD). This program

was a blended model with meetings in person as well as online modules to help guide teachers to best practices of online instruction. As teachers utilized the modules, they gave feedback to the researcher as to what they felt was helpful, recommended changes, and reported how they perceived the pedagogical strategies to be useful (or not) for their online instruction development. By implementing and developing this professional development program, this study sought to answer the following research questions:

1) What are the perceptions reported by teachers, site and district administrators about the process and experience of collaborating to develop and implement an online pedagogical training program for the district?
2) What, if anything, do teachers report changed in their instructional practice as a result of the professional development?
3) In what ways, if any, do teachers who participated in the online training program perceive the training as an effective way to help new instructors with online pedagogy?
4) How do the members of the action research team perceive the online training program will support student achievement in online coursework?

To answer these questions, the study utilized qualitative action research, consisting of action research group meetings comprised of teachers of online courses, site administrators, and district administrators to find out what they perceived the action research process to be like, the needs of the online instructors, and how online learning supports student learning and achievement. The action research group met with teachers three times throughout the course of the study. This gave them the ability to speak freely. The researcher also conducted individual interviews with teachers and site and district leadership to determine their perceptions about the benefits and

obstacles to online learning and the supports they received to be effective online instructors. Additionally, teachers completed open-ended discussion questions and poll questions during the professional development modules to determine if they felt the instructional strategies presented were beneficial and gave them pedagogical tips that they could implement.

Research Sites

Booker Unified School District is home to approximately 8,400 students K–12 (in 2014) in the city of Booker, California. Innovation and creativity are part of the district's core values. The district is continually looking for new ways to achieve its 2012–2015 strategic plan goal of meeting the social, emotional, physical, and academic needs of the 21st-century learner (BUSD, 2012). BUSD is one of the few districts in the Los Angeles County of Southern California that is currently implementing teacher-created online/hybrid courses and plans to grow in this area of technology. While all the schools in the BUSD are integrating technology, the high school is certainly taking greater leaps in this direction.

Robles High School (RHS) is the sole high school in BUSD with an approximate enrollment of 2,600 students in grades 9–12 (in 2014). At RHS, more than 50 percent of the students are involved in athletics and another 20 percent of students are involved in some form of extracurricular activity, creating busy schedules for students (RHS, 2011). As a result, BUSD has attempted blended courses to give students more flexibility and access to curriculum.

In 2012, Robles High School launched its rollout of teacher-created, blended courses in mathematics, engineering, and work experience. RHS plans to expand its offerings to English, social studies, and electives in future years. In these courses, students take most of their course work online but meet face-to-face for assessments and have the option to meet with their

instructor for assistance when needed. There are approximately 100 students currently enrolled in these courses.

The teachers of these courses were part of a pilot group that was given a half-day training on the usage and technology of the LMS, however, they were not provided with any pedagogical training to guide their practice. The pilot group had an article discussion around the use of technology in the classroom. Using personal resources, the teachers sparingly utilized the LMS without research-based pedagogy and as a result, students in the online math course have performed lower by 6 percent than those students in the F2F courses. In the work experience class, students are responsible for turning in their weekly assignments online, however, many students did not follow through, resulting in them dropping the course (A. A, 2012). This study intended to help teachers deliver well-managed and pedagogically sound online instruction to increase student achievement and decrease attrition.

Reginald Unified School District (RUSD) is a medium-size district servicing more than 25,000 students. The district's strategic plan includes improvement of technology across the district and employment of two Teachers on Special Assignment (TOSA) to work exclusively with teachers and their instructional use of technology in the classroom. Six years ago, the district piloted its first online summer school class, and since then has made a commitment to growth. For the 2013–2014 school year, there is at least one online high school course on each of the four campuses (C.N., 2013).

Helix High School is home to about 2,220 students. Similar to Robles, Helix prides itself on its extracurricular offerings to students. Students are involved and connected, also resulting in very busy schedules. As a solution, Helix has been offering online courses for the past four years in an effort to give students more flexibility and to keep up with current educational

technology trends. Teachers of those courses have created their own curriculum, some with success while others struggle due to the lack of professional development and support (T. A, 2013). The school has utilized a trainer of trainers model with a lead teacher offering her support to new and struggling teachers during their conference periods or after school. To date, however, the teachers have not received any formal pedagogical training for online instruction (C.N., 2013).

Public Engagement

By analyzing the data collected from the research methods, this study intended to create a sustainable training program and professional development for teachers of online courses. I shared my work with the BUSD, RUSD, and plan to share with other school districts that are considering a move toward online learning, as many local districts are still in the planning stages for online courses. Additionally, because there is a dearth in research on K–12 training and professional development, I intend to share the results of my study with the major K–12 online learning associations by presenting at conferences such as iNACOL's Virtual School Symposium and submitting research for publication to the major education technology journals.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

As the demand for online courses increases, so does the demand for instructors to move from the traditional classroom to the virtual world. Unfortunately, many of the teachers have not been properly trained in online pedagogy, resulting in inconsistent delivery and debatable rigor and quality of coursework (T. Allen, 2006; Zhao, 2003). This increase in demand and inconsistency of quality coursework have resulted in a significant need for teachers to be adequately trained on proper online pedagogy (Marianne Bakia et al., 2012). Teachers who are properly trained will be less overwhelmed (Archambault & Crippen, 2009) and have the tools to deliver more consistent, quality courses to students who will benefit from the content delivered. With strong pedagogical training, it is hopeful that students will benefit from rigorous, student-centered courses that will rival traditional, F2F instruction. Much of the research in online instruction has been conducted at the higher education level, priming secondary schools to employ the effective practices learned there.

This chapter begins with the theoretical underpinnings of online learning, and then presents the historical background of online courses in higher education and the recent growth of online education in K–12, including student performance and retention at both levels. Next, I review effective online practices at the higher education level, resulting in higher student achievement. Finally, I discuss related research on effective professional development with support and training needs for online teachers.

Theoretical Underpinnings

Professional development for online instruction is grounded in three core theoretical areas. First, successful online instruction occurs when teachers possess and understand Technological Pedagogical Content Knowledge (TPCK). Second, with this knowledge, teachers have the ability to create a Community of Inquiry (CoI) online, utilizing the basic tenets to allow their students to construct meaning through their online learning experience. Third, teachers must be able to reflect, problem solve, and collaborate with other colleagues online through Communities of Practice (CoP), making the professional development experience meaningful and productive.

Technological Pedagogical Content Knowledge (TPCK)

Integrating technology into curriculum can be challenging for teachers because there is no "right" way to accomplish this. Technology will not change education, but rather the way in which the teacher utilizes the technology will change education (Koehler & Mishra, 2005) requiring that teachers are creative and structured in the way that they integrate the technology they choose (Koehler & Mishra, 2009). TPCK builds on the work of Shulman (1986), who introduced Pedagogical Content Knowledge (PCK) layering technology as an additional domain. At the core of the framework, PCK refers to the content expertise that teachers have within a specific discipline. This includes the teachers' knowledge about how new content should be taught, as well as how instruction should be altered in response to student needs. According to Koehler and Mishra (2005) there are three areas of knowledge (K): content (C) is the subject matter that is to be learned and taught; pedagogy (P) is the practices, strategies, processes, and methods of teaching and learning; and technology (T) encompasses all modern technologies, including computers, the Internet, digital video, and others.

Content knowledge (CK) refers to the teachers' knowledge about the content that they are teaching. This includes concepts, theories, ideas, organizational frameworks, and knowledge of evidence and proof (Shulman, 1986). Depending on the subject, the teachers' content knowledge might appear different. For example, science knowledge is much different than art history, as science is related to scientific facts, theories, and evidence-based reasoning. On the contrary, art history could include art evaluation based on aesthetic theory. Pedagogical knowledge (PK) is teachers' knowledge about process and practices related to teaching and learning. This includes knowledge about methods used in the classroom to support learning, and strong pedagogical knowledge helps teachers understand how students construct knowledge, acquire skills, and develop a positive attitude toward learning. PCK is the belief that subject matter could be transformed for teaching (Shulman, 1986). In this transformation, the teacher interprets content, presents in multiple ways for diverse student needs, and adapts based on students' prior knowledge and experience.

Adding technology to PCK further enables teacher adaptation of content. Teachers' technology knowledge (TK) is continually evolving as technology develops (Koehler & Mishra, 2009). To define one's TK is difficult because different technology is used for different purposes in the classroom. However, a teacher's TK should be on par with the goals of the course. Technology and content knowledge have been deeply rooted, since invention began making their way into the classroom. Teacher Technological Content Knowledge (TCK) is the understanding of how content is enhanced and constrained by technology, allowing teachers to enhance the content that they are already teaching. In doing so, they must differentiate which technologies are best suited for certain content areas and lessons. This is technological pedagogical knowledge (TPK) and is defined as an understanding of how teaching and learning

are changed by certain technologies in education, an understanding that emerges from interacting with the content, pedagogy, and technology (Koehler & Mishra, 2009). Essential to online learning, teachers need to be well versed in ways to engage students in the content while using different pedagogical techniques within the technology chosen.

Community of Inquiry (CoI)

Online instructors who are able to understand and effectively transform learning within the TPCK framework then must put their presence online as a substitute for being in front of students in a traditional classroom. Garrison, Anderson, and Archer (2001) developed the Community of Inquiry (CoI) framework that describes the online learning experience as the interaction among three overlapping presences: teaching, social, and cognitive.

Figure 2.1: The Community of Inquiry Framework

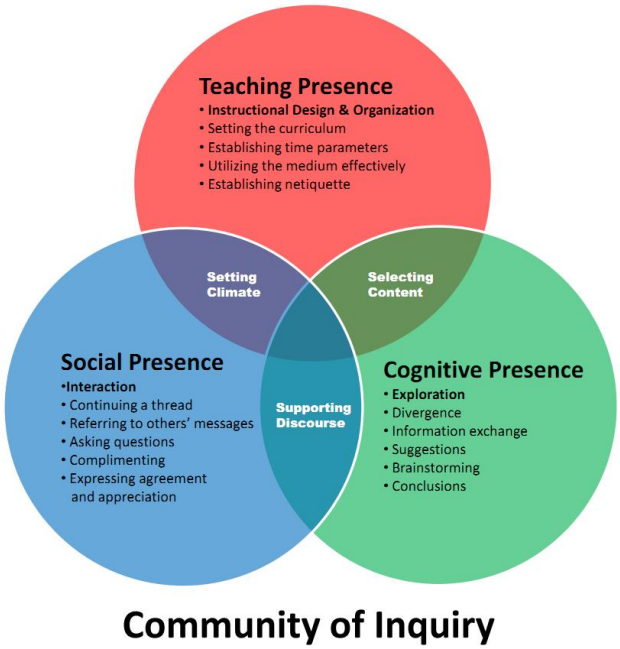


Figure 2.1: The Community of Inquiry framework describes the three roles teachers and students must play online in order to provide the most supportive, academic online environment. Adapted from Garrison, Anderson, and Archer (2001).

The social presence is the basis of collaborative, open learning and the true foundation for constructivist online learning (Boston et al., 2009). In the context of online learning, social presence is students' abilities to project themselves openly, socially, and emotionally as well as perceive other students online as real people (Swan & Shih, 2005). The three main factors that allow for effective social presence are affective expression, open communication, and group cohesion (Richardson & Swan, 2003; Swan & Shih, 2005). In fact, there is a link between perceived social presence and perceived satisfaction with online courses and student outcomes (Picciano, 2002). Online teachers must have TPCK in order to structure their courses in such a way to create social presence.

Cognitive presence is the extent to which learners are able to construct meaning through the reflection and discourse that takes place during the online course (Garrison et al., 2001). It is the reflective process where a triggering event sparks inquiry that leads to research and exploration, both individually and within the community of learners. Finally, students construct meaning based on the findings during the exploration stage, allowing them to then apply what they have learned. This is where TPK is essential in order to design instructional opportunities for students to construct their own meanings of their learning. The various activities that teachers create online will create the cognitive presence necessary for successful constructivist learning.

Teaching presence as defined by Garrison et al. (2001) is a three-part structure of instructional design and course organization, facilitation of communication, and direct instruction. This structure is the basis of a strong online course. Infusing TCK into this structure will allow students to have a structured and manageable learning environment. The design of the course and the organization encompass the activities, curriculum, and clear schedule for student

learning. Expectations and grading should also be addressed early in the start of the course (Garrison et al., 2001).

Teaching presence is accomplished through strong communication, the basis of the teaching and social presence in online learning. Communication also builds social presence for students. Instructors must understand how to facilitate the discourse that takes place in order for teaching presence to be felt. This includes assessments, timely and appropriate feedback on assignments, facilitating posts, moving discussions along, drawing out inactive students, and limiting dominant students (Shea, Li, Swan, & Pickett, 2005). While teachers are not F2F in online courses, some direct instruction does take place in the form of presentations of content. Content knowledge is infused through direct discussions and PK is utilized when teachers have to scaffold material to take students to higher-level thinking (Shea et al., 2005).

Communities of Practice (CoP)

While online teachers might possess the TPCK and ability to create CoI, they also need a place to collaborate with colleagues in order to experience authentic growth in their teaching. Communities of practice (CoP), particularly in professional development, allow teachers to collaborate, reflect, and promote meaningful shifts in instructional practices (Butler, Lauscher, Jarvis-Selinger, & Beckingham, 2004). Lave and Wenger (1991), who originally coined the term in their anthropological work, defined these communities as groups of people informally bound together by a shared expertise and passion for a joint enterprise. In this case, the online instructors, tackling a new mode of instructional delivery would be the community of practice, coming together during professional development and training to improve the educational experience for their online students. In a CoP, researchers argue that new knowledge about teaching and learning is situated in practice (Barab & Duffy, 2000) and teachers benefit from the

opportunity to share and reflect. "The knowledge that is constructed from this discourse is richer than the knowledge that a teacher can construct on his or her own" (Butler et al., 2004, p. 438). These CoPs can provide a meaningful professional development for an online instructor in need of pedagogical practices.

Collaboration in a CoP gives teachers valuable insight to problem solve, share expertise, and share ideas. The teachers also provide support, deflect challenges, and give feedback and motivation to continue to hone the skill of online instruction, so that improvement is possible (Elmore & Burney, 1997). Particularly for teachers who have not had pedagogical training, collaborative opportunities for professional development are indispensible (Butler et al., 2004). Researchers cite that participation in CoPs is "an integral factor in achieving effective, sustainable professional development" (Schlager & Fusco, 2003).

The Evolution of Online Education

Distance education, the large umbrella under which online education falls, traces its roots in the United States to the mid-1800s with its beginnings in rudimentary vocational courses made possible by the postal service (Casey, 2008). Today, distance education has flourished into boundless possibilities, ranging from single credit-bearing courses to full delivery systems that grant degrees online.

Defined by the US Department of Educational Research and Improvement, distance education, incorporates the "application of telecommunications and electronic devises which enable students and learners to receive instruction from some distant location" (Bruder, 1989, p. 28). Distance education has evolved greatly in the United States, particularly at the higher education level, for a number of reasons. First, there are many students who geographically and socioeconomically do not have access to educational institutions. Second, there are many people

who want to further their education, and third, it has become possible because technology has advanced to make it accessible and cost effective (Casey, 2008).

Since its humble roots at the University of Chicago in its first college-level distance program, partnered with the postal service in 1892, distance education advanced yet again when radio shows were able to immediately deliver educational programs, closing the gap between students and their instructors. By 1946, more than 200 colleges were granted licenses for educational delivery, reaching underserved rural areas (Casey, 2008; Souder, 1993). Then the disruptive innovation of television changed the map of the distance education landscape, allowing streaming television to create the first fully televised college course in 1970 at Coastline Community College in Orange County, California (Casey, 2008). This enabled schools and businesses to effectively train and educate students and employees at a reduced cost. Television changed the academic game as a cost-effective and easy way to deliver information (Bruder, 1989; Casey, 2008; Souder, 1993). Now, coursework and training could be delivered at any time and also allowed for students to utilize the phone system with their professors, if they needed any assistance, making this one of the most effective sources of distance education (Souder, 1993).

Concurrently, the Internet was being developed by the US Department of Defense. Its impact did not hit the distance education scene until 1991 when Tim Berners-Lee and his colleague released what is now known as the World Wide Web (Perry & Pilati, 2011). Within two years, the University of Illinois launched the first web browser that evolved into large-scale web-based educational learning (known today as online learning) by the mid 1990s (Perry & Pilati, 2011). With the invention of web-based or online coursework, course or learning management systems were developed, such as BlackBoard and WebCT, that allowed for

educational interaction between student and instructor (Casey, 2008). With these new advancements, the educational discourse around online learning changed. New studies about online pedagogy and effectiveness emerged as more students enrolled and became part of this online educational movement (Perry & Pilati, 2011). Online courses used to be viewed as part of the periphery of campus, relegated to extension courses, leaving them without true academic merit. The launching of online initiatives by top-tiered universities, such as Columbia, Yale, and Stanford, provided legitimacy and acceptance in the academic area (Larreamendy-Joerns & Leinhardt, 2006). Today, distance education is defined as "courses that are credit-granting, technology delivered, have either instructor in a different location than the students and/or have the course content developed in, or delivered from, a different location than the students" (Aud et al., 2012)

Higher Education Online Learning

Within the realm of online learning, there are many ways that the content can be delivered. For the purposes of this study, the following definitions, defined by Allen and Seaman (2013), will be used throughout:

- Traditional or Face-to-Face (F2F)—courses where no online technology is used. Content is delivered orally or in writing.

  Web-Facilitated—courses that use web-based technology to facilitate what is essentially a face-to-face course. Might use a course management system (CMS) or web pages to post the syllabus and assignments (no more than 29 percent of the content is delivered online).

- Blended/Hybrid—courses that blends online and F2F delivery. Substantial portion of the content is delivered online (30–79 percent of content is delivered online), typically uses discussions and has a reduced number of F2F meetings.
- Online—courses where most or all (80 percent or more of the content) is delivered online. Typically students have no F2F meetings.

Blended/hybrid and online instructional delivery seems to allow both the traditional and nontraditional students options for course taking. Today, higher education students enrolled in online courses has risen to an all-time high of 6.7 million students (as of fall 2011) taking at least one course (I. E. Allen & Seaman, 2013). This accounts for almost 70 percent of all higher education institutions, many of them community colleges, that offer online courses and 32 percent of the students (I. E. Allen & Seaman, 2013). The growth of online learning can be attributed to a number of reasons. Most commonly, students report taking online courses because of the flexibility and convenience (Clark-Ibáñez & Scott, 2008; Hartley & Bendixen, 2001; Li & Irby, 2008; Thomas, 2011) as well as access to courses that they would not normally have (Driscoll et al., 2012; Hartley & Bendixen, 2001; Xu & Jaggars, 2011b). Other students have looked to online study as a way to experience different universities and even interact with students from around the world (Li & Irby, 2008). Public universities provide the most online offerings in a number of disciplines. The most popular subject of study to offer in online courses is business (33 percent) with liberal arts and education following behind. The discipline with the least offerings is engineering (I. E. Allen & Seaman, 2008).

Many of the colleges and universities that have gone toward online offerings have done so because of the lack of physical classroom space, allowing for more courses to be offered as well as tapping into new markets, such as attracting international students (Mayadas, Bourne, &

Bacsich, 2009). Additionally, some colleges have seen a financial benefit to offering online courses, offering more sections and courses that students simply would not have access to in a classroom setting (Figlio, Rush, & Yin, 2010; Xu & Jaggars, 2011a). Particularly for introductory courses, it behooves colleges (with regard to student retention) to open more sections than to slow progress toward degree completion, making online sections a good solution (Figlio et al., 2010).

Over the past nine years, online education has an annual growth rate ranging from 36.5 percent in 2005 to a ten-year low of 9.3 percent in 2011 (I. E. Allen & Seaman, 2013). Some believe that the number of online learners is beginning to level off at the higher education level, and that universities and colleges are finding the balance between online and traditional offerings (Mayadas et al., 2009).

K–12 Online Learning

As growth rate at the higher education level seems to be tapering off, online education at the K–12 level reflects a rapid increase during the past five years. K–12 education has lagged in its growth, partially because today's traditional school system was built to educate the masses (Horn, 2010). Many have gone through the US education system without ever questioning whether or not there was another way to learn, until the innovation of the Internet. In fact, Christensen, Horn, and Johnson (2008) believe that online learning is an integral part of K–12 education reform and predict that one quarter of all high school students will be online by 2016 and half by 2019 (Christensen et al., 2008). With this predicted growth, it is essential to examine various forms of online learning to which students in K–12 have access. Currently, students across the nation have access to a variety of educational options and delivery systems defined by Watson et al. (2011) and the International Association of Online Learning (iNACOL):

- Fulltime online schools—fulltime online program—fulltime online schools, also called cyberschools, work with students who are enrolled primarily (often only) in the online school. Cyberschools typically are responsible for their students' scores on state assessments required by No Child Left Behind, which is the primary way in which student outcomes, and school performance, are measured. In some states most fulltime online schools are charter schools (Watson et al., 2011).
- Supplemental online program—provides a small number of supplemental courses to students enrolled in a physical school (Watson et al., 2011).
- State virtual schools—virtual schools created by legislation or by a state-level agency, and/or administered by a state education agency, and/or funded by a state appropriation or grant for the purpose of providing online learning opportunities across the state. (They might also receive federal or private foundation grants, and often charge course fees to help cover their costs.) (Watson et al., 2011).
- Asynchronous learning—communication exchanges, which occur in elapsed time between two or more people. Examples are email, online discussion forums, message boards, blogs, podcasts, etc.
- Synchronous learning—online learning in which the participants interact at the same time and in the same space.

For the purposes of this literature review, all types of delivery programs will be included; however, this study will concentrate on a blended, supplemental online program at the high school level.

K–12 online learning rooted its beginnings in the early 1990s as conversations around equity and access began and have since moved to address the issue of education reform (Smith,

Clark, & Blomeyer, 2005). Beginning with fulltime online schools, such as the large Florida Virtual School in 1997 (Means et al., 2009), online learning has evolved, manifesting itself differently for various school districts; some are fulltime state or district virtual, while others are supplemental. K–12 online has grown to an astounding 1.8 million enrollments in distance education courses, almost all of which were online and 74 percent were high school courses (iNACOL, 2012).

K–12 online numbers are projected to increase for some of the same reasons as in higher education. Flexibility (Watson et al., 2011) and access to curriculum not offered in their traditional schools (BlackboardK-12, 2011; Picciano & Seaman, 2010; Smith et al., 2005) are the two most common reasons that K–12 students take online classes. For students previously homeschooled, the virtual school gives them access to a wide array of courses. Additionally, other students who live in rural areas can access courses, such as Advanced Placement (AP) options that were previously too expensive to offer F2F. Others look to online as a way to earn college credit (BlackboardK-12, 2011).

On the other hand, many high schools have utilized online courses for credit recovery, preventing higher dropout rates (Barbour et al., 2011; Picciano & Seaman, 2010; Smith et al., 2005). As districts have looked to cut summer school and other recovery options, online has been a solution for many students. Additionally, it allows schools to keep the student currently enrolled in the brick-and-mortar and supplement with credit recovery courses (Picciano & Seaman, 2010). School districts have looked to supplemental online coursework as a financial benefit to supplement the curriculum that students are already offered. For many online programs, teachers are paid the same amount, regardless of the number of students and often, the cost per pupil expenditure in online programs is less than the brick-and-mortar (Horn, 2010;

Miron & Urschel, 2012). There have also been discussions around online learning being able to serve students in unique populations, such as special education and English language learners, because of the teacher's ability to differentiate instruction (Smith et al., 2005). With online learning as a new disruptive innovation, education can be accessed "any time, any place, any path, any pace" creating a student-centric model (Horn, 2010). The options for students seem to be varied, with a growing number of students looking for alternative means to complete their education.

Student Performance in Online Courses

Is there a "significant difference?"

While the number of students learning online is growing exponentially each year, the debate about whether or not online learning is efficacious remains. In 2001, Thomas Russell published the fifth edition of a book called *The No Significant Difference Phenomenon*, that compiled numerous articles, papers, and research studies asserting that distance education and F2F resulted in "no significant difference" in student achievement (Russell, 2012). With a companion book and a website, this phenomenon has become widely accepted in distance education. With the field expanding, researchers question the data presented and have found there is limited empirical data existing. A large meta-analysis, conducted by the US Department of Education in 2009, sought to provide more supporting empirical research for online education. The meta-analysis reviewed more than 1,000 articles, but only 45 studies of the 99 quasi-experimental or experimental included information to compute effective size, making much of the data unusable (Means et al., 2009). While these early studies support that there is no significant difference in performance between online and F2F, this research suffered from methodological weaknesses; small, nonrandom samples; and comparing courses that have

substantially different content, materials, and instructors (Bernard et al., 2004; Means et al., 2009; Merisotis & Phipps, 1999; Rice, 2006). Additionally, the researchers did not control for extraneous effects, reactive effects, and questionable validity and reliability in the measurements used (Means et al., 2009; Merisotis & Phipps, 1999). Again, distance and, specifically, online education effectiveness had yet to be proven.

With this knowledge of previous research, more data has sought to address these concerns. Barbara Means, an original researcher on the meta-analysis of 2009 referenced some "impact studies" at a conference in 2012. She indicated that the Community Colleges Chancellors Report on distance education has shown that students are successfully (with a grade C or better) completing courses at approximately 57 percent for the year 2009–2010 (Chancellor, 2011) compared to those who are in a traditional setting at 67 percent. Along the same lines, studies done at the university level and community college level in Indiana, Washington, and Virginia support these findings with their research showing students were more likely to withdraw or fail in online courses than in traditional settings (Figlio et al., 2010; Urtel, 2008; Xu & Jaggars, 2011a, 2011b). Those students who withdrew from an online course were also less likely to return to school (Xu & Jaggars, 2011a). One study specifically found that the students who performed worse online were students who were relatively low achieving (compared to the average student population at this university) as well as male and Hispanic. This demographic is more likely to attend fewer selective universities and community colleges where online courses are growing the fastest (Figlio et al., 2010).

Retention in these online courses was also an issue. Studies indicated that students in online courses were more likely to withdraw at a significantly higher rate (between 10 and 20 percent) than those in F2F courses (Chancellor, 2011; Merisotis & Phipps, 1999; Urtel, 2008; Xu

& Jaggars, 2011b). There are various hypotheses as to why adult learners withdraw from online courses, but none have been empirically studied. Anecdotally, students report that they are busy, personal reasons (Park & Choi, 2009), difficulty of the course, frustration regarding the lack of feedback, or lack direction from the instructor (Angelino, Williams, & Natvig, 2007; Park & Choi, 2009). Online learning does not allow for students to feel fully integrated into the learning community and, according to higher education professor Vincent Tinto's student integration theory, in order to engage with the academic content, the student must also be socially engaged (Angelino et al., 2007; Bloemer & Swan, 2012; Park & Choi, 2009).

K–12 Online Student Achievement and Retention

The same conversations about retention and achievement are occurring at the K–12 level, however, because of its novelty, there is less research. The research that does exist is a compilation of all the different models of K–12 online, mostly high school. Similar to the higher education data, the results are mixed. Recent data shows that students in the Florida Virtual School had better odds of passing a course, earned higher grades, and scored higher on the state achievement tests in the spring (Means, 2012). However, this data did not take into account attrition; those who drop a course after one semester were unlikely to enroll in a second course. Comparing data at the end of the first semester, students in traditional courses complete the semester more often and had higher semester grades than online (Means, 2012). Additionally, a recent study of K12 Inc., one of the nation's largest fulltime online programs, showed that attrition and student achievement are lagging behind F2F students (Miron & Urschel, 2012). Specifically, only 27.7 percent of the 48 K12 Inc. schools were meeting Adequate Yearly Progress compared to the nation's 52 percent of public schools, as well as only seven of the schools meeting satisfactory progress in state-assigned performance ratings of schools. Of more

concern was the 49.1 percent of students who graduated on time for K12 Inc. programs compared to 79.4 percent of students in the states where K12 Inc. operated (Miron & Urschel, 2012). On the contrary, there has been some positive online study of Algebra I based on data from Nebraska-based Class.com's course (Heppen et al., 2012). This study sought to determine the effects of giving students access to Algebra I in eighth grade to students who would not otherwise be able to take it. The results showed that those who took the course online did in fact outperform those who took it F2F in other schools, and these students were twice as likely to take an advanced high school math sequence than their peers, who were in schools where Algebra I was offered. The same students still took the general mathematics assessment (not Algebra I) at the end of the year, and their results were satisfactory, unaffected by their taking the Algebra I course (Heppen et al., 2012) .

Retention of K–12 online students manifests itself in different ways from students in higher education. High school students who withdraw from a course online or are unsuccessful will take the course over, often resulting in success in subsequent attempts (M. Bakia, Caspary, Wang, Dieterle, & Lee, 2011). Different from higher education students, K–12 students can reenroll in their traditional school setting at any time, giving them more options to prevent drop out. From the school perspective, online courses are often a supplement to F2F courses to ensure that students do not drop out completely, and it is becoming commonplace to use online learning for credit recovery (M. Bakia et al., 2011; Means, 2012; Picciano & Seaman, 2010).

Is K–12 Online Learning Successful?

With inconsistent data about online learning, where do educators go from here? Based on the research collected, there are recommendations to make online learning work as growth continues, despite the unreliable empirical evidence. To start, many researchers believe that

students (K–12 and higher education) should be educated and screened before they take an online course (Bloemer & Swan, 2012; Cavanaugh, Gillan, Kromrey, Hess, & Blomeyer, 2004; Ronsisvalle & Watkins, 2005). Clark (2001) reports that many schools do a prescreening and give students a grace period to withdraw without penalty in order to enroll the most appropriate students to the online coursework. This prescreening should not, however, be used as a gatekeeper, as one purpose of online learning is making curriculum accessible to more students.

Anecdotal and descriptive research suggests that there are particular personal and psychological learner characteristics that are attributed to online success. Such attributes are self-regulatory skills (Cavanaugh et al., 2004; Park & Choi, 2009; Wang & Newlin, 2002), locus of control (Roblyer & Marshall, 2003; Smith et al., 2005), and intrinsic motivation (Kerr, 2011b; Smith et al., 2005). Prior online course experience has also been linked to student success (Wang & Newlin, 2002). K–12 educators do need to be mindful though that adult learners are different from adolescents, with less-developed learner characteristics and different needs from higher education students (Rice, 2006). Self-regulatory skills, for example, increase as students mature, requiring the need for instructors to help K–12 students acquire those skills with competently designed courses. Similarly, one's internal locus of control increases with age, requiring teacher support to keep students engaged and motivated (Cavanaugh et al., 2004).

Some students, regardless of delivery method (F2F or online) might not have the particular learner attributes to be successful in schools, leaving learner support necessary. Learner support is defined as forms of support provided by the school or instructor to help the students when they are struggling (Rice, 2006). In online higher education, this would be instructional support, technological support, services that help create a sense of community, and the design of the learner environment. At the high school level, little research has identified

what support students need most, but success has been tied to the amount of engagement by the instructor and the amount of quality interactions with peers (Rice, 2006). In short, students who experience consistent, positive relationships with teachers are less likely to drop out. In an online course, this support is the guidance and engagement made by the instructor. Courses where teachers are appropriately involved and peer collaboration is built in have the most success (Means et al., 2009). This ties back to a well-designed course, tailored for high school learners.

The work conducted by US Department of Education meta-analysis found that blended learning is the most effective online environment. When incorporated with additional resources and learning activities, it has been report to rival F2F instruction in terms of student satisfaction (Means et al., 2009). This is congruent with studies that have indicated that the most influential factor in student success or failure in traditional environments, even when taking socio economic status and demographics, is teacher and course quality (Darling-Hammond, 2007; Xu & Jaggars, 2011a). For many online instructors, there has been little formal preparation and very little time for teachers to develop their expertise as online instructors. As professional development increases and expertise grows, student success is likely to grow as well (Cavanaugh et al., 2004).

Effective Strategies for Teaching Online in Higher Education

There are a number of different contributing factors as to why students have not been successful in online coursework. Although student characteristics play a role, instructors' roles are critical in creating a more effective online learning environment (Chickering & Ehrmann, 1996; Dixson, 2010; Dykman & Davis, 2008b; Edwards, Perry, & Janzen, 2011; Fish & Wickersham, 2009; Lewis & Abdul-Hamid, 2006). It is particularly important that instructors possess the TPCK required for successful online instruction and the ability to create a CoI

(Garrison, Anderson, & Archer, 1999; Koehler & Mishra, 2005). Much of the research on effective pedagogical strategies suffers from the same limitations as other online research: small sample sizes, limited empirical research, and too much dependence on anecdotal and descriptive data. However, there are some general areas of online instruction that prove to be effective practices for online learners within the framework of TPCK. One of the most cited examples is Chickering and Ehrmann (1996), who expanded their work on the "Seven Principles for Good Practice in Undergraduate Education" to online environments. They cited seven practices that should be employed, which are similar to other researchers: contact between students and faculty; reciprocity and cooperation among students; active learning techniques; prompt feedback; time on task; communicating high expectations; and respect for diverse talents and ways of learning. Lewis and Abdul-Hamid (2006) sought to find how effective online practices were implemented and found four main practices effective: (a) fostering interaction; (b) providing feedback; (c) facilitating learning; and (d) maintaining enthusiasm and organization. Bailey and Card (2009), found eight effective pedagogical practices through their qualitative work with experienced instructors. Other researchers cite careful planning and course design as essential in incorporating these principles seamlessly into the course content (Dykman & Davis, 2008b). The practices found by Lewis and Abdul-Hamid (2006) encompass what other researchers have found to be effective and will therefore be used as the general structure for this study.

Fostering Interaction

To begin, interaction is key in online learning and essential in creating a CoI. This guiding principle has been cited as the most important aspect to student success. A well-developed course provides students opportunities to interact with one another as well as the

instructor, increasing the students' social presence in the course (Garrison et al., 1999). Instructors of online courses must evolve into facilitators in the online environment as opposed to the teachers. This change from "sage on the stage" to "guide on the side" (King, 1993) necessitates that the instructor help students in this transition. Teaching approaches that facilitate this change are central to the success of students when moving to a virtual environment (Edwards et al., 2011). It is imperative that online instructors are clear with their expectations, remind students of course requirements in the syllabus and throughout the course, and do not dominate an online course but rather make their presence known by making announcements, providing general feedback to the class, and facilitating the course content (Clark-Ibáñez & Scott, 2008). Instructor presence is crucial (Garrison et al., 1999), but it has been found that too much instructor participation in areas such as discussion boards will decrease student participation (Dixson, 2010).

Interaction in the form of structured, regular communication is a basic tenet behind online teaching (Dixson, 2010; Dykman & Davis, 2008b; Fish & Wickersham, 2009; King, 1993; Knowlton, 2000; Lewis & Abdul-Hamid, 2006). Instructors must build relationships with the students because they have little to no face time. One strategy is to start the course with dynamic online interaction where students have to introduce themselves and post comments about other students (Lewis & Abdul-Hamid, 2006). While this takes more effort and time on the part of the instructor, the result is a level of trust that is comparable to a traditional classroom. Additionally, relationships are further strengthened when instructors reach out to students via email if there is a concern or need to check in (Dykman & Davis, 2008b). Affirmation and encouragement from faculty are also greatly appreciated by students (Edwards et al., 2011). Because the distance between students and instructors is inherent in online learning, it is crucial that instructors are

creative about integrating and connecting students to the content and one another. By creating these interactions online between students and the instructor, students will produce stronger commitments to the institution, increasing persistence and retention (Park & Choi, 2009).

Instructors are additionally charged with the task of creating a safe learning environment for students to interact with one another. From the start, the syllabus should reinforce this expectation and reminders throughout the semester should emphasize the necessity of mutual respect, student participation, and tolerance of differences (Kerr, 2011b). A climate of acceptance is necessary because well-developed content will implicitly challenge student ideas and allow other students to give and gain perspective from one another (Meyers, 2008). This is accomplished by instructors validating student contributions and opinions, remaining attentive to emotions and reactions, facilitating positive interactions among students, mediating conflicts when they occur, and remaining open and available (Taylor, 1998).

Student discussions, synchronous or asynchronous, will facilitate student collaboration as well as promote tolerance and differences (Meyers, 2008). Online instructors must create an atmosphere of respect and tolerance for debate and collaboration to flourish (Tallent-Runnels et al., 2006). Often, online students are more apt to disclose information that they would not disclose in a F2F setting, because there is, to some degree, anonymity online. Tone is extremely important in discussion postings, and it is crucial for the instructor to facilitate these discussions and scaffold ways for students to interact with one another. Collaborative learning online has shown to increase engagement and can take the form of peer editing, group research projects, and blogging.

Providing Feedback

In order for students to grow academically, feedback to students should be timely and thorough. Feedback that is prompt, relevant, and consistent contributes to high student satisfaction in online courses (Fish & Wickersham, 2009). This is essential for cultivating the learning experience as well as fostering a connection with the instructor. Feedback should be given to students contributing to discussions, on assignments at every stage of the course, whether individually, public or private (Lewis & Abdul-Hamid, 2006). Feedback can be used to encourage students to continue the quality of work that they are submitting or to bring students up to par with the rest of the class. In fact, consistent, individualized feedback resulted in higher satisfaction and academic gains than for those students who received collective feedback (Gallien and Oomen-Early (2008). Lack of immediate feedback has been shown to encourage procrastination and cause students to withdraw from discussion (Tallent-Runnels et al., 2006).

Instructors also need to set boundaries to maintain manageable workloads by specifying the amount of time it will take for feedback. Faculty can also help decrease the number of questions by posting responses to frequently asked questions to a discussion board for students to refer. Utilizing online grade books and rubrics with clear expectations will also communicate progress to students directly.

Facilitating Learning

The most important role above all in online course design is how the instructors facilitate learning and use their TPCK. Similar to the traditional classroom, online courses must be organized with high expectations in order to engage active learning. To begin, the course should start with a detailed and clear syllabus with understandable learning goals. To prevent frustration and confusion, it is critical that requirements and expectations do not change once the

course has started (Dykman & Davis, 2008b). For some instructors, each module or new section will state the learning goals or make the goals known through a classroom announcement.

Depending on the content area, strategies employed by instructors vary. Direct instruction (lecture) is much easier for certain content areas as opposed to a group discussion board; however, passive learning results in lower retention of material. This is where the teacher's PCK is utilized in order to keep students engaged and participatory (Koehler & Mishra, 2005). Active learning leads to successful online instruction (Chickering & Ehrmann, 1996). Students always need access to the textbook should they need to reference it, however students learn more by doing. Instructors must be creative in ensuring that students get the information that they need. Different mediums, such as video, Internet hyperlinks, audio clips, application activities, case studies, current events, and others are encouraged. Additionally, engaging discussion prompts, those that require thought and time, are also a form of active learning. Bender (2003) suggests using thought-provoking questions as well as evaluative questions. This increases cognitive processing and requires the students to analyze and synthesize material. Learning is also facilitated by giving students the opportunity to ask for help, report on what they have learned, and seek assistance from peers. These strategies have shown to keep students more engaged online, motivated, and connected to the class cognitively and socially (Dixson, 2010).

Maintaining Enthusiasm and Organization

One of the greatest challenges in teaching online is the students' inability to hear the tone of voice and see body language and facial expressions. Instructors are challenged in an online environment to stay organized and energetic, thus making them "visible" to the students. To start, as stated previously, the course design will dictate what the students will produce based on

course expectations and requirements. It should be explicit in the way students are assessed, daily or weekly requirements, and how students can get the most out of the course.

The organization of the course should be easy for students to navigate as well as user friendly for students to find the answers that they need. Before the course begins, course and learning goals must be developed, reading material and assignments should be identified, student interaction options should be identified, and student expectations should be clarified (Dykman & Davis, 2008b). Unlike a traditional F2F, online and blended courses require forethought, as students are able to move at their own pace with general timelines (usually by week) as opposed to daily F2F interaction and check ins. Courses should be "chunked" or modularized with well-written directions and clear requirements for the students (Clark-Ibáñez & Scott, 2008; Dykman & Davis, 2008b).

Generally, students will strive to meet teacher expectations, but they need to be explicit and teachers need to know what they expect from students. Often, novice instructors do not know what to expect and in an attempt to make their course rigorous, overload students with unnecessary work (Fish & Wickersham, 2009). Instead, instructors must develop their expectations ahead of time and communicate to the entire class (perhaps using the CMS announcement tool) (Dykman & Davis, 2008b).

In online courses, maintaining student enthusiasm and motivation is difficult because the physical ability to look someone in the eye or make a real-time connection is missing. This makes course organization, fostering interaction, and strong instructor facilitation imperative to successful online courses. Because of this challenge, blended learning has been proven to the most effective for K–12 (Means et al., 2009), as younger students do not have the same motivation and drive as adult learners.

Effective Strategies in Online High School Courses

In the context of K–12 online and blended learning, many of the effective strategies at the higher education level apply to younger learners, but it is important to differentiate between an adult learner and a K–12 student. Because of their ages, many of the strong learner attributes have to be developed and coached in high school students (Cavanaugh et al., 2004). One of the ways that high school instructors can support students is by staying engaged and interacting with them. At the K–12 level, the teacher‘s organization and presence is even more vital to student success (Rice, 2006). Encouragement, timely and precise feedback, coupled with consistent teacher expectations will help students develop more meaningful learning (Kerr, 2011b).

Teacher interaction with students at the K–12 level is more crucial than at the higher education level. When an instructor is learner-centered, it fosters students' emotional and social growth while helping intellectual growth as well. Students who feel connected to their environment feel as if they belong in class, translating to retention and engagement in an online course (An & Reigeluth, 2012).

Kerr (2011b) published best practices for high school online learners from her research in high school in 2009. Many of her tips overlap with the effective strategies at the higher education level with slight modification to adjust for the learners' ages. Fostering interaction is the same at both levels. Students, regardless of age, need the interaction, and some argue, for high school students, this is the heartbeat of an online course (An & Reigeluth, 2012) making both teaching and social presence crucial for student success (Garrison et al., 2001). Providing feedback is also critical for high school students and will keep them engaged and motivated beyond the assessment scores. Rubrics given to students ahead of time will inform them of expectations and also informs them of the criteria used to assess their work. High school

students should be given choices in their assignments. Choice in assignments will allow them to show their autonomy and represent their learning in their own way, promoting diversity. Student choice inherently differentiates learning, as students are likely to choose activities most conducive to their learning style and preference.

In the area of facilitating learning, it is recommended that high school teachers do all that higher education instructors do, however, involving students in articulating learning goal produces buy-in and allows students to self-assess their knowledge (Kerr, 2011b). Teachers also need to scaffold and model for their students online by showing them examples and encouraging students to follow suit. Models should show the depth and breadth that students are expected to produce. By using structured interactions and discussions, teachers should model interactions and gradually allow students to take responsibility for the discussion boards. Proper grammar must be required as well. For many young people, the virtual world exists of emoticons, vernacular, and acronyms. Academic language must be required for discussion posts and cognitive discourse, however, if instructors create social realms for students to interact, they should be free to do so (Kerr, 2011a), allowing students to increase their social presences in the class. This will teach students how to appropriately interact and the level of thinking required for the course (Kerr, 2011b).

Overall, high school teachers with online courses have more demands on them than higher education instructors necessitating professional development to hone their online pedagogy. Without it, the courses might not deliver the quality and consistency necessary for high school students to be successful.

Effective Professional Development

With growing school reform, teacher accountability, and mandates about how schools spend their federal funding, professional development has been debated in the educational community for the past few decades. It has become necessary for schools to provide teachers with some sort of opportunity for professional growth (Wei, Darling-Hammond, Andree, Richardson, & Orphanos, 2009). Traditional forms of professional development, such as one-day workshops and off-site meetings, have been deemed inadequate (Elmore, 2002; Little, 1993). Currently, researchers define effective professional development "as that which results in improvements in teachers' knowledge and instructional practice, as well as improved student learning outcomes" (Wei et al., 2009, p. 3). This perspective focuses on the improvement of students learning through the improvement of the skill and knowledge of the educators.

Successful teacher learning should take place at school sites and in classrooms and involve work with teachers around the observation of actual teaching (Elmore, 2002). Teachers should work collectively on problems of practice in their own settings as well as with educators in other settings (Elmore, 2002) in CoPs. Furthermore, when teachers are able to collaborate with others at their site, teachers take more risks, solve problems, and are able to look at issues related to their own content (Bryk, Camburn, & Louis, 1999; Elmore, 2002; Garet, Porter, Desimone, Birman, & Yoon, 2001; Wei et al., 2009). The advantage to collective practice at a school site begins with teachers collaborating during their professional development experience, because they are at the same school. Teachers who are at the same site and share departments or grade levels are likely to share curriculum and assessment practices. Likewise, teachers who share students can collaborate on student needs (Garet et al., 2001). Bryk et al. (1999) found much of this to be true in a study using data from a large survey of 5,690 Chicago elementary

school teachers to research core practices of professional learning communities and its effect on innovative instructional practices. As expected, when supported by the administration, collaborative professional development sparks reflective dialogue and change in instructional practice (Bryk et al., 1999). Similarly, another case study of three elementary schools "beating the odds" of poverty, found that their success was due to teachers' collaborative efforts toward instructional improvements (Strahan, 2003).

Additionally, successful professional development that is intense and sustained over time has shown greater changes in teaching practice and student learning (Garet et al., 2001; Supovitz & Turner, 2000). Duration of professional development is important for two reasons. First, longer activities allow for more in-depth discussion and thought around pedagogy and student learning. Second, professional development over time allows teachers to implement what they learn in their classrooms and obtain feedback to collaborate (Garet et al., 2001). While studies have found that the number of hours coincides with student achievement (Garet et al., 2001; Supovitz & Turner, 2000), it is important to note that the traditional one-day workshops are not effective.

Professional development is most effective when teachers are able to be active learners. This model of "hands-on" work enhances their knowledge of the content to be taught and how to teach it (Garet et al., 2001). This can be in the form of reviewing student work; planning classroom implementation; observing and being observed; and presenting, leading, and writing. When teachers actively participate, they report greater self-efficacy as well as satisfaction with the professional development program (Elmore, 2002).

Effective Professional Development for Online Courses

Oversight in the Quality of K–12 Online Courses

Currently, because there are no consistent means to control the quality of online courses, there is even more of a need for quality professional development and training for teachers. Unfortunately, California, compared to other states, has fallen behind in this area (Rice & Dawley, 2007). K–12 schools are often accredited by their state agency; however, online accreditation is inconsistent and, for many states, there are no requirements for those who want to teach online. In an effort to standardize online instruction, the International Association for K–12 Online Learning (iNACOL) published standards for quality online teaching in 2008, including criteria for good online teaching. These standards included (1) academic credentials, (2) technology skills, (c) interactive and collaborative teaching strategies, (4) online classroom management and communication, and (5) legal and ethical issues in online teaching and experience in online teaching. Two years later, the National Education Association (NEA), the nation's largest teachers union, published its own *Guide to Teaching Online Courses* emphasizing the need for training online instructors. "It is essential that educators who instruct online are not only proficient in their subject area, but also specifically prepared for the unique challenges of online instruction, and adequately supported in their online pedagogy" (NEA, 2008). Although these guidelines are written for districts and teachers, many are not receiving the proper training and professional development to address such unique issues as classroom management and building community in an online classroom.

Professional Development for Online Teachers

Rice and Dawley (2007) conducted a nationwide survey of 828 K–12 online teachers to determine the needs and status of professional development. Of the 828 teachers surveyed, 50

percent were from virtual schools, 38.4 percent were supplemental program instructors, and 9.8 percent were blended course instructors. Forty percent of the teachers had fewer than five years of overall teaching experience, and 25 percent of those teachers had no training in online teaching. Overwhelmingly, 94 percent of the respondents had received training by their organization or school within five to seven years of teaching online, indicating the need for initial teacher training and ongoing professional development. From this study, it is recommended that teachers have competent technology skills, ongoing training beyond the LMS, and training that mirrors what students experience in the online environment (Rice & Dawley, 2007). This data is congruent with other researchers who found that the majority of teachers of online courses were new and had received little to no pedagogical training (Barbour, Kinsella, Wicks, & Toker, 2009; Pankowski, 2004; Yang & Cornelious, 2005).

While most instructors are trained in the LMS, pedagogical training is quite different. Development in this area is imperative because techniques that are effective in the traditional environment are not necessarily effective in an online environment. It is difficult for teachers to make the transition to online instruction intuitively, making training necessary for online teachers (Pankowski, 2004). Topics should include facilitation, how to give students critical feedback, encouraging student interaction, and "classroom" management (Yang & Cornelious, 2005). This training should take place before instructors begin to teach online, which would result in better course development, higher teacher morale, and, more important, increase student satisfaction with the course (Pankowski, 2004).

It is recommended that teachers receive the training and professional development in an online or blended format to mirror what students experience (Pagliari et al., 2009; Pankowski, 2004; Rice & Dawley, 2007). When teachers are able to have the same experience as students,

they can see the needs of an online student, making their course design even better when they create it. Teachers learn the most from experience, even more than professional development, yet experience comes slowly; incorporating the two is quite effective for new online instructors (Pankowski, 2004). Additionally, when teachers are able to work together online, it reinforces the collaborative process that is successful in traditional professional development. To maximize teacher commitment, the professional development should be ongoing (Barbour et al., 2009), based on teacher needs and wants (Watson et al., 2011), and teachers should be given ample time to become proficient with the technology (Kennedy & Archambault, 2012).

Conclusion

The number of online high school courses continues to increase (I. E. Allen & Seaman, 2013) creating a dire need for instructors who are well-trained and knowledgeable in TPCK (Koehler & Mishra, 2009). While there is a dearth in empirical research proving the effectiveness of online instruction, many K–12 schools are increasing their offerings and allowing teachers with little to or no experience to teach those courses (Kerr, 2011b). Teachers of online courses must have the knowledge and ability to create effective online learning environments for students (DiPietro et al., 2008; Kerr, 2011b). Currently many instructors at both the higher education and K–12 level have not been properly trained in online pedagogy, resulting in the need to provide teachers with effective, meaningful, and applicable online teaching strategies (DiPietro et al., 2008; Kerr, 2011a; Pagliari et al., 2009; Pankowski, 2004; Rice & Dawley, 2007; Tallent-Runnels et al., 2006; Yang & Cornelious, 2005). The primary objective of this study is to create an online professional development for teachers of online high school courses as an action research project. This study will give current teachers the

opportunity to collaborate on the professional development within a CoP as well as create a sustainable resource to be shared with future online teachers.

CHAPTER THREE

RESEARCH DESIGN AND METHODS

Introduction

In recent years, as technology has become increasingly integrated into education, high school online courses have grown in popularity, necessitating an immense increase of online instructors. Many of these teachers have made the transition from face-to-face (F2F) instruction in the traditional brick-and-mortar setting to the virtual classroom with little to no professional development or training to help with their conversion (Kerr, 2011a). Concerns about rigor (McLean, 2005; Means, 2012), course quality (McLean, 2005), comparative value with F2F courses, and engagement (Means et al., 2009) are prevalent, yet schools are moving forward citing flexibility, increasing course offerings, and convenience as justifications. As a result, teacher professional development and training in online pedagogy is necessary in order to provide quality courses equal to F2F (Kerr, 2011b; Pankowski, 2004). The goal of this study was to develop and implement a professional development and training program focusing on online pedagogy for teachers new to online course development (fewer than four years) as an action research project. It was the intent that this sustainable program would be available to teachers new to online instruction.

Chapter two provided a conceptual framework of literature relevant to online instruction. Online instruction is a relatively new phenomenon in the K–12 realm, growing exponentially each year, mostly at the high school level. As a result, the number of instructors is also increasing, requiring more teachers to have a deeper understanding of the needs and changes necessary to teach quality, student-centered online courses. Many schools and districts provide

training on the course or learning management systems (LMS) but give limited guidance about the pedagogy of online teaching. Much of the research and data for online instruction has been done at the higher education level, allowing high school online instructors to glean pertinent information to guide their instruction. This lack of research at the K–12 level necessitated a study that involved online high school teachers to get their opinions and perspectives in order to properly prepare instructors for the virtual world. This study explored the process of creating professional development modules for online high school teachers on online pedagogy. Through my research, I answered the following research questions:

1) What are the perceptions reported by teachers, site and district administrators about the process and experience of collaborating to develop and implement an online pedagogical training program for the district?
2) What, if anything, do teachers report changed in their instructional practice as a result of the professional development?
3) In what ways, if any, do teachers who participated in the online training program perceive the training as an effective way to help new instructors with online pedagogy?
4) How do the members of the action research team perceive the online training program will support student achievement in online coursework?

Research Design

In order to respond to the research questions, I created and developed a web-based professional development program providing high school online instructors training in effective online pedagogical strategies. This study was a qualitative action research study with the action research group comprised of online instructors who were creating their own curriculum for

online courses from two high schools in two different school districts. This approach enabled me to determine the participants' perceptions about the professional development program that they were a part of, and if the program was providing them with tangible effective strategies that could be utilized in their online courses. I also obtained the perspective of site and district leadership about the needs of the online instructors and the vision of the school and district regarding online learning.

Qualitative research is a way to explore and understand the meaning one might have behind a problem or phenomena (Creswell, 2009). This was the most appropriate method because it allowed research to determine the action research team's perspective and involved the group in the process of developing a program in school districts where no online pedagogical practices have been shared. Action research is a collaborative partnership where the members of the action research team participate actively in the cyclical process of action research (Coghlan & Brannick, 2007). Thus, qualitative action research was selected to obtain teacher input to create a training program where one currently does not exist. Research on professional development has shown that when teachers have input, the information will be more well received by other educators (Barab & Duffy, 2000). The training modules were set-up to model a student perspective in a blended format. Blended professional development has been found to be the most satisfactory for teachers as well as effective (Garet et al., 2001; Pagliari et al., 2009; Powell, 2010; Rice & Dawley, 2007). The action research group helped create and develop the modules as the training progressed, giving their perspective as to what is or is not successful. This iterative process allowed teachers to plan, take action, evaluate, and led to further data collection during the project (Coghlan & Brannick, 2007). Teachers and other action research group members shaped the modules and the content provided about online pedagogy.

In order to get teacher perspective on the professional development modules, data was gathered through action research group meetings with the teachers; data was collected through discussion questions, text responses, and polls during the professional development modules and individual interviews. The multiple methods of data collection allowed triangulation of data across the various data sources. This reduced the risk that the conclusions reflected the bias of a particular method (Maxwell, 2012). The action research group meeting initially provided teachers' perspectives on their current needs for professional development in online pedagogy. Input was obtained from the research team about what they wanted included in the modules. During the second action research group meeting, participants discussed how they thought the professional development was working or helping and suggested changes they believe need to be made. During the third and final action research group meeting, participants provided their perspectives about the teachers' experiences and any additional information to be included. After the third action research group meeting, district and site administrators were invited to hear the outcome of the data collected.

Last, face-to-face individual interviews examined specific teacher experiences in the action research process and got more in-depth information after the professional development modules were completed. Additional interviews were conducted with district and site administrators to get their perspectives about the current state and future of online teaching and learning at the schools.

Site Selection

The two sites that I selected for this study were Robles High School in Booker, California, and Helix High School in Reginald, California. These sites were purposefully selected because they are the only two schools that are implementing teacher-created online courses within the

five cities in the geographical region. Many schools in the area do have online courses that are created and purchased from outside companies; however, these two schools are using their teachers to create the curriculum for the courses that they are offering.

I chose two school sites to study to get varied data on the different ways that schools were implementing teacher-created online courses as well as perceptions about what is successful and teacher professional development needs. Neither site provided its online teachers with a professional development or training beyond how to use the learning management system (LMS), showing the need for professional development in pedagogy. There were discussions among teachers informally about pedagogy, however, nothing formal was put in place for the teachers.

Robles High School is the sole high school in the Booker Unified School District. The student population is just more than 2,550 students with a credentialed faculty of close to 100. The average class size for 2013–2014 was approximately 32.6 with online course enrollment just under 30. Online instruction was implemented in 2012–2013 with three courses in the areas of math and electives with hopes to increase the offerings in the future (RHS, 2011). Robles is considered a middle-class school, with approximately 22.9 percent of the students on free and reduced lunch (RHS, 2013).

In the spring of 2011, the administration sought teachers who were interested in teaching online courses. There was a group of about ten teachers interested at the time. Those teachers were part of a committee that was able to choose the district's LMS and they received a half-day training on the usage of the LMS features. During that time, the teachers were also given articles to read and had discussions around online instructional strategies. From there the first hybrid classes were created in 2012 in the areas of math and electives. In that same year, an iPad pilot

launched at one of the middle schools, where students utilized the iPads for math practice in the seventh and eighth grades. Students who were enrolled in the online courses signed an agreement that they either had or would gain access to a computer to do their work.

The district has one to two (one at each elementary and two at secondary sites) Lead Instructional Technology Teacher (LITT) at each school site who is paid an annual stipend to help teachers with technology. The purpose was to have these teachers teach the staff best practices with technology. However, at many sites, this person defaulted to the technology "fixer" (A. A, 2012). The LITTs were also trained in 2012 on the LMS, however, only two teachers from the pilot and the LITTs were using the LMS.

Booker Unified School District passed Measure Z in November 2012. The sole purpose was to improve student access to computers and modern technology; upgrade inadequate electrical, network, and data systems; make energy efficiency improvements to provide relief to the district budget; construct new up-to-date classrooms; and make health, safety, and security improvements (BUSD, 2013). Every school site in Booker Unified has seen upgrades to the wireless network, new laptops for teachers, and a Google Chromebook Pilot, for one grade at each school. With Measure Z dollars, the district plans to fully rollout one to one Chromebooks for every student in grades 3–12 in the district for the 2014–2015 school year.

Helix High School is one of four high schools in the Reginald Unified School District with a student population of 2,187 in 2012–2013. It is located in Los Angeles County in California. Teachers average between 32 and 36 students per class with the online sections in the same enrollment range (RUSD, 2013). Online courses have been implemented in different subjects, the majority taught at different levels in English. Teachers range from two to four years of experience in online instruction and all have more than seven years of traditional teaching

experience. Teachers of online courses are scheduled with a five-period day with one preparation period. The teachers can use their online course period as an extra preparation period to be used for course development and student meetings as needed, because students are not present during that time (C.N., 2013). Students in the online courses signed an agreement that they had computer access, while the school had one computer lab and rolling carts with laptops for classroom use. Some of the online teachers have Netbooks in their classrooms from a grant (C.N., 2013). Other than that, students are expected to gain access to computers on their own. With the integration of the Common Core State Standards (CCSS)[2] and the new standardized testing, Reginald Unified is looking into adopting Chromebooks or iPads for student learning and assessment.

In order to gain access to both sites, I had informal telephone and in-person conversations with school site administration as well as online instructors at each school. In the early fall of 2012, I met with the assistant superintendent of Instructional Services and principal of Robles High School about this project and later (spring of 2013) had a telephone conversation with the assistant principal of Helix High School. I sent an email (Appendix A) to all online teachers explaining my study. I had a preliminary visit to the schools to allow teachers and site administration to ask questions that they might have related to my study. Each participant signed a Consent to Participate in Research form (Appendix B).

---

[2] Common Core State Standards (CCSS) are the next generation of K–12 standards to help ensure that all students are college and career ready no later than the end of high school. CCSS, adopted by forty-four states, outline what students should be able to do at the end of each grade level.

I offered incentives for participation in the study, including small gift cards (five to ten dollars to Starbucks) and provided snacks for every time the teachers participated in an action research group. Participants (including site and district administrators) were incentivized/thanked with a ten-dollar gift card for their interview. Each time participants completed a module (with discussion and poll responses), their names went into a drawing to win an iPad Mini for one of the participants—the chances of winning were extremely good, given the small sample size.

Population

My research population was veteran teachers who have been in the classroom for more than five years but are new (fewer than four years) to online teaching. This purposeful sample was selected because of their unique experiences; they were the only teachers in the geographical region that have created and implemented their own curriculum online. These participants were essential to the study, because they provided the information that was needed to answer the research questions on online instruction (Maxwell, 2012). Additionally, they have classroom experience and are knowledgeable about pedagogy and professional development because of their longevity in the field. Their input to the creation and development of this program was valuable to this specific, professional development to make online teaching more successful. This population was chosen because they were implementing the online curriculum and, other than the LMS, none of them had been formally trained in online pedagogy.

Seven teachers, ranging from seven to eighteen years of teaching face to face (F2F), volunteered to participate in the study. Each teacher had been teaching online in some capacity (either fully online or hybrid) between one and four years. Of the seven teachers, each of them completed every online module with the exception of two. Five of the seven teachers attended

all of the action research group meetings for teachers. Table 1 shows the teacher demographics, years of experience in the classroom, years online, subject taught online, modules completed, and action research groups attended.

Table 3.1: Teacher demographics and participation level in the study

Name	Years F2F	Years Online	Subject Taught online	# of modules completed	# of action research groups attended
Brandon	15	3	English	3	2
Christie	9	2	Elective	2	3
Ed	8	2	Math	3	3
Ella	20	4	English	3	3
Jennifer	8	3	English	3	3
Linda	14	2	Elective	3	2
Suzie	20	3	Elective	2	3

Data Collection Methods

Action Research Groups and Online Modules with Online Teachers

To answer the research questions, the study utilized qualitative action research, beginning with an action research group comprised of online instructors and then moved to an online professional development. The online professional development modeled a blended class format, where parts of the study took place in person and other data was collected online. Blended academic online courses have shown the most success for students (Means et al., 2009). The

action research groups allowed the participants to hear one another's responses and to make additional comments beyond their own original responses, as they heard what other people had to say (Merriam, 2009). The action research groups followed semi-structured protocols (Appendix C). The first action research group meeting was to determine the needs of the teachers and what they wanted to see in their modules. During the online professional development, the plan was to create four modules that focused on four major domains of effective online instruction. They were (a) fostering interaction; (b) maintaining enthusiasm and organization; (c) facilitating learning; and (d) providing feedback, keeping in mind that if the instructors have other areas to address, they will be included (Lewis & Abdul-Hamid, 2006). Before the first module was created, the action research group members met to discuss how they felt about the suggested domains of online instruction. At the first meeting, it was decided by the group to combine two modules and change the order of what was presented. The meeting resulted in three modules: (a) getting started online, organization, and maintaining enthusiasm; (b) fostering interaction and facilitating learning; and (c) providing feedback.

Utilizing an online, interactive video tool, I created discussion questions for teachers to comment on, questions with text responses, and polls to take that allowed me to gather data on their perceptions on that particular section of the professional development. While teachers were participating online, I held two more action research group meetings during the project to find out what they perceived to be their experiences with the professional development program. The modules had a planned run time of approximately 15–20 minutes. The first module ran approximately 25 minutes. The action research team suggested, in its second meeting, that the module be separated into two different videos: first, getting started, which would include course organization, and second, maintaining enthusiasm. They also wanted to add narration to every

part of the video and add in more YouTube videos or vignettes of other teachers. The second module on fostering interaction and facilitating learning was approximately 28 minutes and the action research team did not want to make any changes to it. After the second module, the action research team met again to discuss any changes they wanted to suggest for the final module on assessment. At that time the teachers requested strategies for online instruction and Common Core State Standards (CCSS). The final module ran approximately 63 minutes. In post interviews, four of the teachers commented that the last module was "less organized as the other modules" and "too much at once." It was suggested by six of the seven teachers that assessment be separate from the CCSS, which could potentially evolve as CCSS integrates into curriculum, which is a final total of five modules: (a) getting started, which included course organization; (b) maintaining enthusiasm; (c) fostering interaction and facilitating learning; (d) assessment; and (e) strategies for online instruction within the CCSS. At the conclusion of the modules and the action research group meetings with teachers, I invited the site and district leadership were invited to meet to discuss the findings of this study.

The action research groups met three times during the course of the study. Each meeting lasted approximately 30 minutes and was held at one of the two high schools involved in the study. Because they were in close proximity of each other, I rotated locations to be fair to the teachers from both sites. Action research group meetings were conducted so that the action research team members could collaboratively discuss their experiences and use one another as a source of support. It was also an opportunity for teachers to talk through some of their experiences with implementing what they learned from the online modules in an open forum (Merriam, 2009).

Individual Interviews

Individual interviews were conducted with teachers who were part of the action research group to determine their perceptions about the benefits and obstacles to online learning and the supports they would need to be effective online instructors. These interviews provided participant perspectives and feelings on the training modules. The interviews followed a semi-structured protocol (Appendix D), as the specific information that I researched allowed me to respond to a situation that emerged to gain more insight (Merriam, 2009). Prior to the interviews, the interview protocols with teachers to determine if the questions worked as intended (Maxwell, 2012). The pilot test also allowed me to gather a set of strong questions that yielded the different information needed for my research (Maxwell, 2012). I interviewed them for approximately 20 to 45 minutes in a location of the teacher's choice. The interviews with the teachers took place before and after the professional development, to ask more specific details about their experiences with the process and the online program. Interviews were conducted because to allow me to delve deeper into the thoughts and perceptions of the teachers without them feeling judged by others (Maxwell, 2012).

Interviews were conducted with district and site leadership to get their perceptions of the online courses at each school. These interviews lasted 25 to 60 minutes at the location of his/her choice, using a semi-structured interview protocol (Appendix E). I interviewed the leadership before the professional development took place, to gain their insight about the future of online learning in the school/district.

Data Analysis

Data for this study was collected three different ways: information from discussion questions and polls that were posted during the professional development modules; action

research group meetings; and interviews with individual teachers. The multiple methods of data collection are congruent with Creswell (2009) procedures of qualitative data collection, which uses multiple sources of data to allow the researcher to review all the data, make sense of it, and organize it into categories that cut across the data sources.

The teachers provided data in the form of discussion and response to polls during the online professional development. Research indicated that professional development for online instruction should model for instructors what students will be doing (Pagliari et al., 2009; Powell, 2010; Rice & Dawley, 2007). I created discussions around the modules presented and asked questions that were related to their perceptions of how they were able to implement a given strategy in their courses or their perceptions of effectiveness in their courses (they were also welcome to comment on anything else that they wanted to). These discussions were asynchronous, and participants were able to have a student-like experience as well as the ability to work within a community of individuals who have the same goal—to be effective online teachers. In each module, there were approximately ten discussion questions and polls to gather perceptions on the material presented in the module. These discussion questions also modeled for teachers, questions that they could implement in their classroom (Pankowski, 2004). I then read and sorted through these data, to analyze the common themes, utilized by research questions using open coding, and then "dumped" the extraneous information to make changes to the current and next module based on the feedback (Merriam, 2009). Modules were created prior to the action research group meetings. However, teachers provided feedback, and modules were adjusted before the next module was rolled out, allowing the teachers to have input as the project continues (Coghlan & Brannick, 2007). At the end of the project, teachers had an opportunity to

review the professional development in its entirety and give any more feedback they deemed necessary.

Action research groups were another way to collect data for the study. The first meeting was to address the needs of the school districts and teachers, where they gave input and guidance to what should be included in the modules. The second group meeting met to discuss what the teachers liked, what they were implementing, experiences, challenges, what they learned, and how they thought it could be improved. The third action research group meeting allowed teachers to again give feedback before the conclusion of the product. A fourth meeting was planned to include district and/or site leadership to present the data collected during this study, however, teachers were not interested in being a part of any meeting with administration. Each meeting lasted approximately 30–60 minutes. The action research group meetings were recorded with a digital recorder as well as an iPhone as a backup. The recordings allowed for everything said to be preserved for analysis (Merriam, 2009). The action research group meetings were transcribed by a transcription service within 72 hours, as this was the best database to refer to for analysis of the group meeting (Merriam, 2009). After the meetings were transcribed, the data was reviewed for common categories that emerged through other means of data collection or new themes. The data was organized into themes by research question, coded, and individual documents were created with quotes from the action research groups (Guest, MacQueen, & Namey, 2011). This data was compared to what was said during the modules and interviews to find similarities.

Last, face-to-face interviews with individual teachers and site and district administrators were conducted. The purpose of the interviews was to delve more deeply into teachers' experience in participating in the action research group, get their perceptions on the online

professional development and the success of online coursework, and find out more about implementation of strategies provided to the teachers; something only individual interviews could accomplish (Maxwell, 2012). The interviews were recorded using a handheld digital recorder and iPhone for backup. Handwritten notes were also taken for a reminder of follow-up questions to ask (no more than a few key words) while the semi-structured interview was being recorded (Merriam, 2009). The interviews were transcribed within 72 hours of the interview by a transcription service. After the transcripts of the interviews were completed, they were reviewed, coded, and scanned looking for common themes. I compared the other data that I had already collected and from those themes, I created individual documents with quotes from interviews that fell under that code/theme (Guest et al., 2011). I then moved to summarize my findings based on all the data collected.

Role Management and Ethical Issues

The identity of the participants will remain confidential, as a pseudonym was used exclusively for each one. Any identifiable names were redacted from the transcripts of the interviews and action research group meetings when they arose. All materials dealing with the study, participants, and data collected, were stored on a USB drive with password-protected documents. This USB drive and any notes pertaining to the study were in a locked cabinet in the residence of the researcher.

As an action researcher, I was sure to present myself from a research perspective and not an administrator. I was careful not to overstep my bounds in telling teachers what they were doing right or wrong, but gathered data on their perceptions of online course implementation at their sites and their perceptions on the professional development. Because this study was not

evaluative in nature, I encouraged the participants to be as candid as possible. There were pros and cons to being a researcher in these two schools.

I had some advantages because I previously worked at both schools. I am familiar with the teachers, their work ethics, the student success rates, and the culture of the campus. Due to this knowledge, I was able to create better professional development modules and tailor the program to the needs of the teachers and the district. Additionally, because I have a relationship with the teachers at both schools, they trusted me and participated in the study. Teachers really went out of their way to make time to meet me.

On the other hand, because of my intimacy with both schools, such a relationship could have hindered the outcome of my study. Teachers might not have been as candid as they were afraid to offend me or because of my role as an administrator in the district. I continually reassured them that the data collected was solely exploratory and their identities would remain confidential. The most pressing ethical issue was confidentiality of the teachers. It was essential that I did not reveal any information that would link a particular teacher to a subject, allowing someone to figure out his/her identity because there are so few online teachers in this particular area. For this reason, I remained close to the design method and asked questions that pertained to pedagogy and not content. When I reported the findings, I spoke in general terms, careful not to link any teachers to their content area.

I have followed up to give back to the school districts that allowed me do my research, ensuring that they have access to the modules and can meet with me to discuss findings. I met with middle school principals in one district to discuss online strategies and how best to train teachers. Creswell (2009) argues that research is a reciprocal process and dissemination of the findings is important.

Reliability and Validity

There were three threats to validity. They were bias, reactivity, and small sample size.

First, I needed to monitor my own bias. As a former high school teacher and colleague of the participants, I needed to keep my own biases about their instructional practices at bay. I had to make sure that my opinions of the type of teachers they were (when I worked with them) did not impede on my study. I triangulated the data that I got from the discussions boards/polls, interviews, and action research groups to validate the instructional practices that the teachers found useful as well as their opinion on the program.

Second, reactivity was another threat, because I have a previous working relationship with all the participants. To start, the asynchronous nature of the discussion allowed teachers to work in their own time and space, making the program feel less formal. Additionally, I had to be sure that confidentiality remained when sharing the study with administrators. Because of the action research process, I was working with the teachers collaboratively and not in an evaluative nature to be sure to get their input. I made them part of the process from beginning to end.

Third, the small sample size was unavoidable because of the limited number of teachers who are creating their own curriculum and teaching online. Due to the small sample size, I collected data in three different ways: action research groups, interviews, and discussion forums/polls during the online modules.

Feedback to Clients

In this project, the clients were Booker Unified School District and Reginald Unified School District. Both districts have invested in rolling out online courses at the high school level without formal professional development on online pedagogy. The goal of this project was to

work with the school districts, particularly the online instructors, to create an online professional development module for future online teachers.

After I collected and analyzed the data, I invited the site and district leadership to meet to present the findings from this project. I also offered to present to each school site and school board if they were interested. Based on my research, I also offered in-person training to the districts for pre-service teachers.

I would also like to utilize my findings to present in the K–12 online community to schools that are going to implement online teacher created courses. I plan to submit for presentation at the Computer Using Educators (CUE) conference as well as submit for publication in various journals related to the field.

Summary

The purpose of this study was to create an online professional development with teacher input on teacher pedagogy for online courses. This study used qualitative action research with data collected three different ways: through discussion and text response questions and polls in the online modules, the action research groups, and individual interviews. The different methods of data collection allowed for triangulation of data. The data was utilized to create a collaborative professional development that can be used by districts and school sites for future online teachers. Chapter Four will examine the findings from the data collected.

CHAPTER FOUR

FINDINGS

Introduction

The growing trend of technology in the classroom has resulted in a rise in the number of students who are taking online courses. Historically, online courses are more popular at the higher education level but have made their way into the high school system, often because they allow busy high school students an alternative to coursework and flexibility in their schedules. The shift to online high school courses has necessitated a change from face-to-face (F2F) instruction to teachers teaching virtually. Many of the teachers who have transitioned to online instruction have had little to no training beyond the learning management system (LMS) and often taught by trial and error with no research-based online instructional strategies. Consequently, many courses lacked rigor, or students had to struggle through the curriculum, as the instructors were ill prepared. This action research project sought to develop and implement a professional development and training program focusing on online pedagogy for teachers new to online course development (fewer than three years). This study sought to answer the following questions:

1) What are the perceptions reported by teachers, site and district administrators about the process and experience of collaborating to develop and implement an online pedagogical training program for the district?
2) What, if anything, do teachers report changed in their instructional practice as a result of the professional development?

3) In what ways, if any, do teachers who participated in the online training program perceive the training as an effective way to help new instructors with online pedagogy?
4) How do the members of the action research team perceive the online training program will support student achievement in online coursework?

The findings in this chapter are based on analysis of the following data: pre- and post-interviews with the teachers who participated in the professional development, interviews with the site and district leadership from both school districts, action research group meetings with the teachers, and data collected from the teachers while they were participating in the professional development through an interactive website.

From the fall through the winter of 2014, this work was done with an action research group of seven high school online teachers, providing them with a series of online professional development modules, focusing on online pedagogical strategies. The teachers, representing two different high schools in southern California, taught English, math, and electives online. The researcher developed the professional development modules using a presentation software that was screen casted, loaded to Vimeo, and then to an interactive online video tool that allowed the participants to answer polls, participate in discussions, and respond to open-ended questions. A link to each module was disseminated once a month between November and January. Participants were given approximately two to three weeks to finish the module after the link was disseminated.

The original plan was to create four modules that focused on four major domains of effective online instruction: (a) fostering interaction; (b) maintaining enthusiasm and organization; (c) facilitating learning; and (d) providing feedback, keeping in mind that if the

instructors had other areas to address, they would be included (Lewis & Abdul-Hamid, 2006).

Before the first module was created, the action research group members met to discuss how they felt about the suggested domains of online instruction. At the first meeting, it was decided by the group to combine two modules and change the order of what was presented. The meeting resulted in three modules: (a) getting started online, organization, and maintaining enthusiasm; (b) fostering interaction and facilitating learning; and (c) providing feedback.

The modules had a planned run time of approximately 15–20 minutes. The first module ran approximately 25 minutes, and the action research team suggested, in their second action research group meeting, that it be separated into two different videos: (1) getting started, which includes course organization and (2) maintaining enthusiasm. One of the teachers felt that it was "too much information and too overwhelming for someone who is just getting into online teaching." They also wanted to add narration to every part of the video and add more YouTube videos or vignettes of other teachers. The second module on fostering interaction and facilitating learning was approximately 28 minutes long, and the action research team did not want to make any changes to it. After the second module, the action research team met again to discuss any changes they wanted to suggest for the final module on assessment. At that time the teachers requested strategies for online instruction and Common Core State Standards (CCSS). The final module ran approximately 63 minutes. In post interviews, four of the teachers commented that the last module was "less organized as the other modules" and "too much at once." It was suggested by six of the seven teachers that assessment be separate from the CCSS, which could potentially evolve as CCSS integrates into curriculum. This provided five modules: (a) getting started, which includes course organization, (b) maintaining enthusiasm, (c) fostering interaction and facilitating learning, (d) assessment, and (e) strategies for online instruction within the CCSS.

The teachers were interviewed individually before the professional development began and after the professional development concluded. Data was also collected through teacher participation in the interactive modules. District and site leadership was interviewed during the professional development.

Research Question 1: What are the perceptions reported by teachers, site and district administrators about the process and experience of collaborating to develop and implement an online pedagogical training program for the district?

The first research question of this study was designed to explore the perceptions reported by the action research group members about the process and experience of collaborating to develop an online pedagogical training program for the school district. During the action research process and at the end of the professional development training modules, all seven of the teachers who participated had a positive opinion of them. While there were things that they felt were more helpful than others, overall the teachers found value in participating in development of the modules. Teachers and administrators shared in individual interviews and action research group meetings that they felt the modules were, "enlightening, validating, inspiring, and necessary." The modules made Brandon reflect on his current practice. In his post-interview, he shared:

> Oh, they were actually pretty eye opening. There were a lot of things that made me rethink some of the things that I do and maybe some of the stuff I need to add. It was an eye-opener. I have to go back and look at some of the things that I haven't really thought about in a while.

Another teacher, Linda, said in her post-interview, that she thought that the modules were "very enlightening, the entire process, going from the first module, to the next module." In the third action research group, teachers shared that the modules reinforced what they were already doing online, as Ella explained, "It was nice to hear, just to be validated and what I see and what I find works and isn't working. And, just from a teacher perspective, a lot was validated through many of the modules." Jennifer, in the same action research group meeting echoed the same response, stating:

> Well, what Ella was saying is, almost the validation of like, 'Yes, I do that too.' Or, 'Yes, I have those struggles.' Or, as I'm watching the modules and saying, you know, 'Oh, I do that, good for me.' That confidence in what I'm doing, I think helps me to do it more often or to, to push myself to do it differently.

Site and district administrators also felt that the professional development was a positive for teachers. One site administrator shared in her interview that training at her school site has been "more self- driven and self- directed, so this is an opportunity that they have not had yet." Additionally, a district administrator shared in her interview that pilot teachers were trained when the group "shared articles, [the group] talked about instructional practices. I ordered a number of books. So, I think there's definitely work to be done there. This will help them moving forward."

Professional Development Validated Teacher Practices

All the teachers who participated in the study and all the administrators interviewed concurred that the online teachers have had little to no training for online instruction. In Reginald Unified School District, at Helix High School, the teachers had received no formal training on the LMS nor had they received any training on pedagogy for online courses.

Teachers had anecdotally shared in the second action research group as well as pre-interviews that their first year was "hard," "experimental," and "thrown at them," and that they had to make adjustments to their teaching in order to get both the students and themselves through the course.

In Booker Unified School District, administrators at Robles High School sought out interested teachers who became part of an initial pilot on the LMS. They received a half-day training and read articles to discuss online pedagogy but beyond that initial session, the teachers had not been trained. Similar to Helix High School, teachers at Robles High School had been experimenting with online components in a F2F setting, and they had offered a hybrid and an online course.

As a result of their lack of training, teachers had to teach themselves and make decisions about their online practices and curriculum without having any best practices to follow. Teachers had little to no training, not truly knowing if they were doing what was best for their students. The professional development training modules helped reinforce that the "gut decisions," as one teacher put it, were aligned with research-based strategies. Four of the teachers stated that they felt validated and more confident about what they were doing online. Ella shared in her post interview that:

> A lot of it was really validating just to. . . because we did this in such a . . . I don't want to say backward way, but because especially for me, I went into it with virtually no training at all. So I felt my way through and just figured things out and got some feedback and you know, read some things. It's nice to know I made the right decisions along the way.

Suzie shared in the third action research group meeting that she was pretty happy with her pedagogy online and felt that the modules were actually a "pat on the back for doing a lot of

things right already." Linda was also using some research-based strategies with her presence on discussion boards and did not even know it. She also shared in the third action research group meeting, "I don't know where I learned that, I just did it because, you know, that's me. Nobody taught me that. I didn't even know I was using a method!"

Teachers also liked seeing what other teachers were doing in their online instruction. Jennifer shared in the second action research group:

> I like models. They are always helpful for me, being able to see what other teachers do and then be able to apply to that my class. I think that's super helpful. I think real-world lessons, you know, something that I can take right away and apply to my online class is really helpful.

Brandon concurred, right after agreeing:

> … For sure, that's how I got started, because Ella told me about it and then she showed me some of the basics, and then she just said 'take some of these assignments.' And then from there, I adjusted it myself. So, if she hadn't modeled the whole thing, I would never even be doing it.

Suzie also added:

> And I think also, having someone kind of explain just because like on Moodle, for example, the quiz feature, I use that a lot for things that aren't quizzes. And you wouldn't know that unless you have the conversation with the teacher who created that quiz? You would never know unless you asked.

In individual interviews, both district and site administrators in both districts thought the modules would be the most helpful way for teachers to learn. When asked how teachers should be prepared for online instruction, one district administrator said, "I think lots of short vignettes.

I think if teachers can see in short five-, less than seven-, minute clips, examples, and ways in which that can happen, you will get them onboard." Another site administrator, Kate, reiterated those comments. In her individual interview, she agreed that a combination of modules and hearing from other teachers would be beneficial. She said

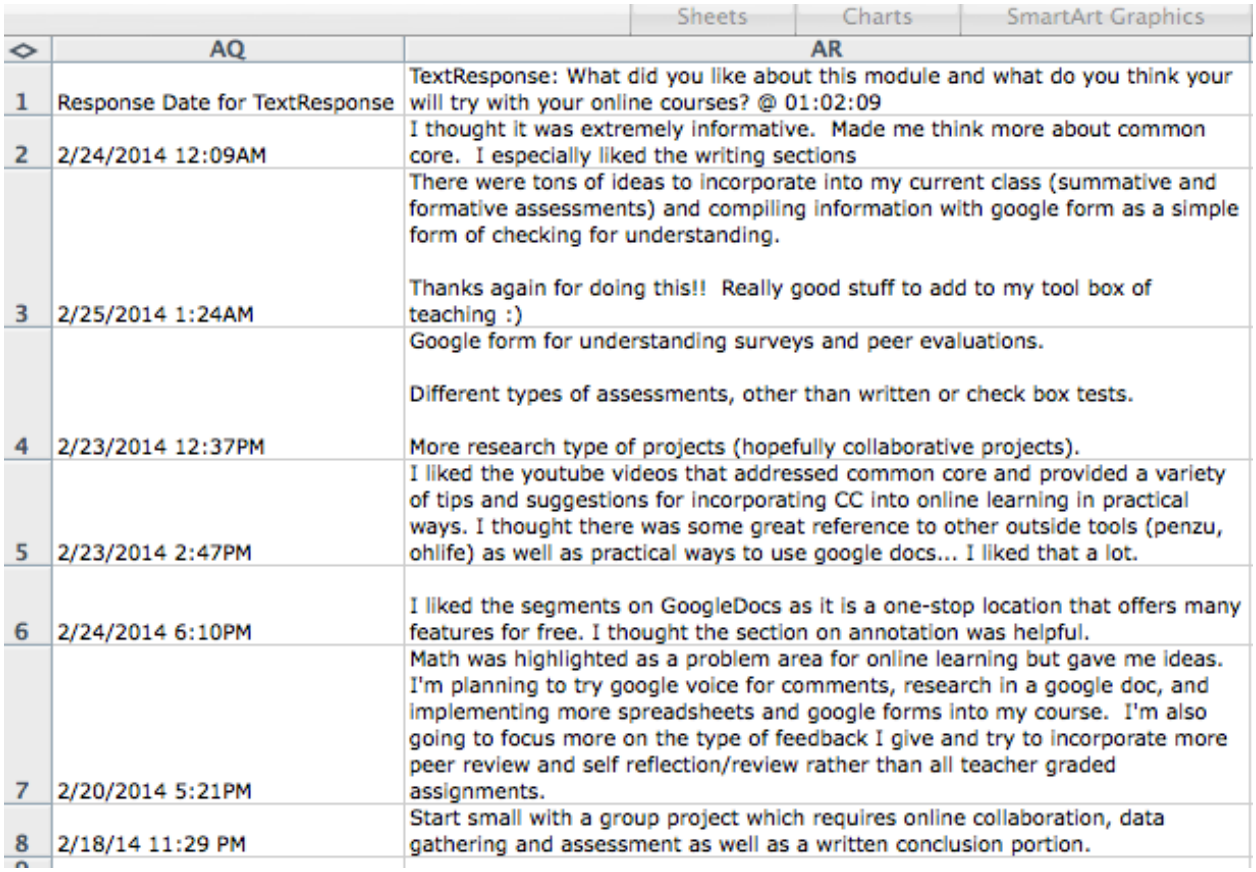
> Well, I think if teachers did the modules together, we'll learn from each other. I plan to have a faculty meeting or mini PD [professional development] on using technology in the classroom, and I want to really use the teachers who were doing online classes to discuss their experiences with online learning. And I really think that their anecdotes and their ability to discuss what they see as benefits to this medium will help those teachers who are sort of on the cusp and want to go down this route but maybe haven't taken that leap yet. The district can bring in professionals from the outside, but I think our teachers would be more receptive to those who are actually trying this. So if we want to move down this medium, I think it would be important for us to set aside time for teachers to hear from other teachers who've had success teaching online courses.

Helix High School has seen some success from teachers recruiting and training other teachers on campus.

Teachers Are Willing to Try New Things

During the first and second action research groups, teachers commented on the resources that they were presented with in the modules. However, during the modules, they were continually asked what was useful, what they could implement, and what they did not find helpful. In every module all seven teachers responded with something positive. Figure 4.1 is an example of analytics from the participants during the third module.

Figure 4.1. Responses from participants regarding Module 3



Sheets | Charts | SmartArt Graphics

	AQ	AR
1	Response Date for TextResponse	TextResponse: What did you like about this module and what do you think your will try with your online courses? @ 01:02:09
2	2/24/2014 12:09AM	I thought it was extremely informative. Made me think more about common core. I especially liked the writing sections
3	2/25/2014 1:24AM	There were tons of ideas to incorporate into my current class (summative and formative assessments) and compiling information with google form as a simple form of checking for understanding. Thanks again for doing this!! Really good stuff to add to my tool box of teaching :)
4	2/23/2014 12:37PM	Google form for understanding surveys and peer evaluations. Different types of assessments, other than written or check box tests. More research type of projects (hopefully collaborative projects).
5	2/23/2014 2:47PM	I liked the youtube videos that addressed common core and provided a variety of tips and suggestions for incorporating CC into online learning in practical ways. I thought there was some great reference to other outside tools (penzu, ohlife) as well as practical ways to use google docs... I liked that a lot.
6	2/24/2014 6:10PM	I liked the segments on GoogleDocs as it is a one-stop location that offers many features for free. I thought the section on annotation was helpful.
7	2/20/2014 5:21PM	Math was highlighted as a problem area for online learning but gave me ideas. I'm planning to try google voice for comments, research in a google doc, and implementing more spreadsheets and google forms into my course. I'm also going to focus more on the type of feedback I give and try to incorporate more peer review and self reflection/review rather than all teacher graded assignments.
8	2/18/14 11:29 PM	Start small with a group project which requires online collaboration, data gathering and assessment as well as a written conclusion portion.

Figure 4.1: Text response from the interactive website, time stamped when they responded, and what they see using their online courses.

The teacher responses above show that the teachers were reflective on what they felt they could incorporate into their online teaching as well as positive about the module. They were also willing to incorporate new strategies and technologies into their teaching for improvement. For some of the teachers, they wanted access to new technology and ways to use existing technology (such as Google Apps) specifically in their online course.

Research Question 2: What, if anything, do teachers report changed in their instructional practice as a result of the professional development?

Because teachers did not have any significant or consistent training on online pedagogy, they did what they believed was best for their online courses. The second research question sought to find out what instructional changes, if any, were made after participating in the training modules. At the end of the professional development training modules, all seven teachers had yet to truly implement significant change to their instruction. Five out of the seven teachers shared in the third action research group that they began to give students feedback a little more quickly, and three out of the seven began to send more email reminders. The bulk of what they want to change is planned for the fall, to avoid making significant changes to grading and structure in the middle of a course (Lewis & Abdul-Hamid, 2006).

In the second action research group meeting, every teacher shared an instructional strategy that they were going to integrate or improve for their next course. Three out of the seven agreed that they were going to work on discussion forums and student interaction. These teachers expressed a need to incorporate more discussions and chats into their courses after seeing the research on the Community of Inquiry (Garrison et al., 2001) in the second module. Christie said in her post-interview that she hoped to get students "just a little bit more, ownership or usability, from the discussions." Brandon also hopes to incorporate more discussions as well. He said in his individual interview that he knows, "that's a big one because they're not interacting enough on there." The modules even sparked a conversation among all online teachers at a district meeting in Reginald Unified concluding that district-wide online teachers will begin to work on their discussion boards to allow students to interact in their online class.

Two teachers said that they wanted to incorporate more video and screen-casting to their instruction. Interestingly, in that same meeting, all but one of the teachers said that they were aware of what changes they should be making to enhance their online courses but had not made the changes just yet. Jennifer was candid in that second action research group meeting, talking about where her shortcomings were:

> Because I have seniors, I just expect that a lot of them came trained. Oh they know what to do, so it [the module on getting started] showed me I need to set up good practices and common themes that we're all going to abide by and rules. So that's one thing for sure, and then um, I'm still struggling with and gonna (*sic*) try the chat and the discussion forums, I think that's super important, and it just reiterated how important they are and how terribly I'm addressing them. I think I ran at the risk of like "Here's some questions, answer them. Here's some questions answer them" and then they take tests.

Moreover, with the shift to Common Core State Standards (CCSS), changes will have to be made to instruction and assessment. Brandon discussed, in his-post interview, some of the changes he needs to make, "I haven't changed anything yet, but since Common Core is coming, I have to make some modifications for the fall coming up. A lot of the items in the modules will be added to enhance the course." Suzie said, in her post-interview, that she found the section on Common Core writing interesting. "I don't do enough of that and need to start incorporating Google docs to get the kids Common Core aligned in their writing."

Ed was less confident with the switch to CCSS and online learning, as he shared in the third action research group, "I can't breathe. I spent all this time building this curriculum and now I don't wanna (*sic*) have to reinvent it because the testing's different." It is possible that

Ed's online course will not be offered next school year as the leap to CCSS presents a challenge to continue online.

While the teachers have not made significant changes to their instruction as a result of the professional development, there has already been a shift in instruction for those going online. One online teacher, Christie shared in the first action research group:

> And I think the shift, is what's going to work better face-to-face and what's going to work better online. And with the fully online classes, it's getting out of that mindset that you have 53 minutes to kill every day. And that's a totally different way of thinking because we really are about filling 53 minutes. That's just the way it works, and it's really different to not divide up all of your instructions into this 53-minute chunk. It's a totally different way of thinking about it.

Another teacher, Jennifer, agreed:

> Which is like I'm spinning my wheels and acting everyday in front of my kids and then I'm like 'gosh, that was exhausting.' And then I get a paragraph. And then online and I posted some questions and gave them a website, and I get pages of wonderful expression. So, it's realizing I don't need to spin my wheels. I don't need to give them everything. If I give them a little bit of freedom, the result may be a lot better.

Brandon also agreed with the other action research group members in that same meeting:

> It's very humbling, and it reminds us we repeat to ourselves way, way too much. You say it like four times and they still don't get it. Seriously, you're asking me this question again when I've said it four times? And somehow, the online kids, because they have to, they figure it out and you didn't say it at all.

One site administrator shared in her individual interview that she feels the same way about F2F instruction and how she sees online instruction addressing that:

> I noticed, if want to just talk about a trend, as educators, tend to give a lot of information and tell students what they need to know instead of asking students questions which would lead them. Online, you facilitate these questions and lead them to discover the content which I think is a much more richer way to learn something. And so in the online world, if you want your students to be successful, you can't just leave them to read and look at the videos and the PowerPoints and all the discussion online without checking in to see how they're doing.

Another site administrator validated this when she shared how online teachers have had to change their instruction in her individual interview:

> I think that goes into like really looking at what the assignments are. I think that the teachers who are doing the online classes have had to take a look. 'Is there a purpose in this assignment?' I remember her [a teacher teaching online] coming in and saying, 'I really have so much busy work I gave them [in F2F] and that these kids don't need to do busy work, because I don't want to look at their busy work, you know?' If you need a guide to help them, then she'll put that guide up there, but not all kids need that guide so if they are writing, let's say they are writing a narrative and I want to outline somehow, here's is a graphic organizer that can help you to do that, well, some kids need it and some kids don't. Why do we give it to all kids?

Both the teachers and the administrators agreed that instructional practices have to shift from F2F when transitioning to online instruction and with the professional development the teachers participated in, the plan is for instruction to change even more.

Research Question 3: In what ways, if any, do teachers who participated in the online training program perceive the training as an effective way to help new instructors with online pedagogy?

The third research question explored whether or not participants perceived the online training program as an effective way to help new instructors with online pedagogy. Overall, through post-interviews, action research groups, and data collected from the modules, six out of the seven participants felt that the online training program would be a good support for new online teachers. However, all seven participants felt that it needed to be in conjunction with either time or collaboration with other teachers who are teaching online in order to maximize the benefits. Jennifer explained in the second action research group:

> The modules are super cool you know, sitting at home watching them then the next day I could say to Ella, "Hey did you see that . . .? How would you . . .?" So I think that talk of how does it practically fit; how do I make it work for my course? This is a cool idea, but how did it work? The collaboration I think is key.

Ella shared something similar in the same action research group:

> I think a place to start if you were offering professional development for teachers who've never taught online before, is take a look at those modules. Then, I would have them look at an activity or a unit, or a project, or something that they're already doing and then have them contemplate, discuss, research, experiment with how they would reach the same goals and objectives that those assignments and projects have in an online setting.

Jennifer said:

> I would agree. I think the crucial omen is how to switch the face-to-face instruction into an online format while still maintaining the same goals that you have, that you would

have in a face-to-face class. So, I think the discussion with colleagues on how to get there would be the first step.

Brandon differed from the group commenting:

> I think it should be a combination because, other teachers that are your colleagues, may only be going so far with it, whereas you get modules like that, that can really make you look at things that maybe teachers here don't do.

Ella then added:

> I think also another—and I'm not sure what this would look like, but, one of the huge elements and the difference between face-to-face instruction and online instruction, it is that goal, but it's also addressing concerns that teachers have about things, like cheating. It comes up a lot. So, you can help kids do an online test, but how do you know they're not looking at the book? And so that conversation and that discussion of 'well, I hope they're looking at the book,' it's a change in your mindset, dude. I don't know how to explain it, but it's a real change in thinking of the past where, here's the information you have to observe, the information I'm going to test to have the information in your head. I mean you're doing it online. You have to assume that kids are going to be accessing other resources they have available to them. So, how does that make your assessment different?

She reiterated her point in online module two, stating:

> Somehow we need to address new teachers' fears or concerns online because you get things like, 'It's not interactive enough and cheating.' Those are the two things that I really hear from teachers, like how do you even know your students or how do you know they are not using their book. When people get hung up on the cheating for example

> while you're giving the test on the *Great Gatsby*, asking how do you know they're not going to shmoop.com and using their book and you know, I expect they're going to shmoop.com and using their book.

Christie added, "Go with what the end result is, looking to shift your end results to fit an online platform, so they can use their books. The questions are not recall questions. They are deeper level questions. So shift that final assessment." Linda also shared in the same group meeting that she felt that because of the time that it takes to play with new technology, a combination of release time and modules would be the most beneficial. She commented, "maybe one of the PD days or late-start day, just giving 'em [teachers] an hour or two to work with this module. Then play around [on the learning management system]. See how they like it." Suzie agreed, adding:

> I mean, time to play around with the system I really think is one of the things that hinder people from doing it. It's not that overwhelming at first and as much as we can say 'Oh, It's super easy. Just put an assignment, put a discussion forum.' We'll do that, but then, there's no real follow-through, because it does become cumbersome to then grade. So I think, allowing people to create and fail, and let them go to that failure . . . I was afraid to put anything up because if it didn't work, oh no, but I fail every day. And so, I think allowing people to fail and work through it, I think that's super helpful for me.

Teachers Appreciated New Knowledge of Resources

Teachers also appreciated the resources that they were given through the modules, such as sample rubrics and guides on how to write good discussion questions. Any resources shared were emailed to the teachers for future reference. Linda was appreciative, commenting, "Thank you for, for sending the resources because I definitely printed 'em up and, you know, I have it

right there on the corner of my desk ready to use when I do go back and use them. These are things that new teachers wouldn't even know about if they didn't do those modules." And Ella stated, "There were some great resources that I wasn't aware of and those were really helpful."

Research Question 4: How do the members of the action research team perceive the online training program will support student achievement in online coursework?

The fourth research question explored the perceptions of teachers on professional development and how it would support student achievement online. Six of the seven teacher participants and three of five administrators agreed that the professional development modules would indeed help teachers become better prepared, which would translate into student success. Because many of the teachers started teaching online without any formal training, much of what they did was trial and error, which made the courses way too time consuming for students and less meaningful than it could have been. Christie shared during the first action research group that in her first year, both she and her students struggled through online instruction.

> My first year doing online I was all over the place, with no clear focus, no direction. I didn't know what I was doing. I think it was a disservice to students, so giving them [teachers] this kind of environment to brainstorm, you are going to reach those objectives.

As a result, Christie's class was not offered the second year and is an option for next school year pending enrollment. Jennifer echoed the same thing in that meeting. She said, "The more clear of a focus the teacher has, the better it is for the students. The poor kids—they just went with it." Suzie shared, "The biggest problem with the quality of teachers is our own lack of experience and knowledge. The more teachers know what to do online, the more comfortable they are, the better their lessons will be for their students." Ella also concurred saying "PD like these modules for teachers with visuals of different ways assignments can be approached online, how they can

be assessed, how teachers can interact with students, is super important. That's really great to have some training."

Brandon also agreed that the modules serve as a way to support both teachers and student achievement:

> The modules will help teachers be more prepared. The more prepared a teacher is and the more things they see, would allow the students to achieve. Any time the teacher is more comfortable and knows more things and has more strategies and ideas behind what they're doing, I think will always help the kids do better.

Administrators also agreed that the modules support both students and teachers. A site administrator said:

> Well the point of these modules [is] to help you figure out different ways to deliver the content better and get the kids to understand better. What's the best way for them to get it? I think it also can help differentiation. Maybe they [teachers] can actually give multiple ways to do one lesson. Students will be more apt to do it. Then you've got higher student engagement and higher achievement.

One district level administrator shared in her individual interview:

> I think that particularly for the adult learner or reluctant adult learner, I think that using strong research-based pedagogy as your basis and your framework for the training is what will sell, like these modules. I mean I think that's where the credibility comes in, because for the reluctant adult learner, I think there is a belief that this is a fad.

Unexpected Findings

Community of Practice among Online Teachers

Teachers had different opinions throughout the study; however, the one constant need that all the teachers kept reiterating was building a community of practice and the need for collaboration among teachers in order to be successful online. Ed, who had not had community on the Robles campus, felt that it was one of the reasons that he is so frustrated teaching his online class. At Robles High School, online instruction and its components (like using an LMS with F2F courses) were initially rolled out to a select group of teachers. During his first year teaching with online components, he had teachers on campus to whom he could go to problem solve and exchange ideas. Many of those colleagues were people he felt he could collaborate with. He shared:

> I feel like I learned how to use these systems because I had people to communicate with. You have another teacher next door that's using it and they kind of troubleshoot something. It's a lot harder to pioneer that kind of stuff because every little mistake you make leads you to another dead end. It's extremely frustrating. Last year I had a teacher using the LMS for her Spanish class and that's why I learned the most. This year I've been hesitant to use it.

Since the first online training at Robles High School, only four teachers out of the initial ten remain at the school site. As a result, Ed has not utilized the LMS for his online course and instead opted for the school website to post information for students and parents. Suzie on the other hand, was one of the few teachers on that campus who does use the LMS for her course because much of the curriculum is proprietary and is a copyright violation if posted to the public school website. Suzie had the idea of doing lunchtime tutorials for teachers on the LMS but the

administration asked her to move more toward Google Applications instead. She felt it was reasonable given the 1:1 Chromebook distribution coming up, however, she would like to collaborate with others, "just to have people to bounce ideas off of." The LMS has not been rolled out for teachers outside the pilot program to use at Robles High School, resulting in feelings of isolation as experienced by Ed.

On the contrary, five teachers from Helix High School found collaboration to be one of the most powerful processes for changing their instruction. The teachers had informally created their own community of practice at their site and within the school district. Having "online teachers support group meetings" where the teachers "talk a lot frequently and informally about what was that working, how do I want my kids to be able to do this and sort of that practice and what's our goal and what do we want from them," according to Christie. Additionally, at the start of 2014, Reginald Unified School District provided monthly release days for online teachers to collaborate as online learning is beginning to be piloted at other schools within the district. Ella found those monthly district meetings to be beneficial, describing them as "*really, really, really* [emphasis added] helpful. It's a good group of people because nobody in the group is full of crap. And everybody's willing to say, 'Oh my gosh, I tried this and it was awful and what do I do?'" This community of practice that the online teachers have created has been one of the most supportive pieces and the reasons why these teachers continue to try to recruit others.

Brandon shared that the only reason he moved online was because of his colleague who showed him how to do everything. "She made the case for the benefits and why I should do it. I just went from there." Helix High School teachers have recruited another content area teacher for next year and created a hybrid that Jennifer will teach in the tenth grade. For Helix, moving online is a reality because of the teachers: their drive, collaboration, and support for one another.

At present, they have expanded slowly but have hit some roadblocks in getting more staff to buy into online instruction.

Vision of Growth at Both School Sites

Every teacher and administrator in both the Booker Unified School District and the Reginald Unified School District expressed that online learning in their schools will grow. For Booker Unified School District at Robles High School both district and site leadership see online learning growing as a result of the multimillion dollar technology bond that will put Google Chromebooks into the hands of every student. Consequently, students will have access to technology in and beyond the walls of every classroom, so it is an expectation that teachers will be incorporating more online instruction in the classroom. As for course offerings, both the site and district administrators see hybrid courses expanding but are open to new ideas from teachers. Unfortunately, because of the integration of CCSS, a new data system, Illuminate and the Google Chromebook pilot, teachers are quite overwhelmed with all the changes. The LMS is available to the entire district, yet only a handful of teachers have been trained or use it presently. While some teachers are using outside programs for blogs and online quizzes, the district has not trained anyone since the initial pilot. Suzie discussed some of the reasons why online components have stalled at Robles High School. She said:

> Well we've hit a little bit of a glitch or road bump in the fact we only had two people model classes last year. And some of the other people who were doing it with their live [F2F] classes and using the LMS left the district. And with Illuminate and everything no one's talking about an LMS right now. And so, we don't have a new set of teachers and so it's kind of stalled. Um, we've got two teachers. That's it.

Additionally, because there is no community of practice, as Ed expressed earlier, and new technologies and curriculum rolling into the classrooms, taking courses online seems almost impossible. When asked about the future of online learning within the CCSS during an individual interview, Ed hangs in the balance:

> Within the school, I don't know. There are a lot of variables now with the switching to the Common Core. I certainly have to teach an online course with Common Core in mind and that's a unique challenge that I wasn't anticipating. So to answer your question, I don't know where this is going on campus, because I don't know anybody that would take this on in the next couple of years until we all figured out how Common Core is going to look. People are not going to want take on something this new and challenging and daunting that's like creating a new course. I know that online education is expanding at the college level so I can't imagine that it won't be expanding at the high school level.

An additional concern that has not been addressed could potentially be a collective bargaining discussion around class size, teacher pay, schedule, et cetera, in relation to online learning, according to one district level administrator. This concern has yet to be fully addressed until the pilot moves to a broader group of teachers and the union renegotiates their contract for the 2015–2016 school year.

At Helix High School, the reasons for little expansion are different. According to the teachers and the site administrators, the entire school had been encouraged to use the LMS, yet there are a number of different speculations as to why people had not taken on an online or hybrid course. Ella shared, "There aren't teachers who are asking to do it. At Helix, there are not a lot of teachers who are really very interested, because I think they realize how much work it is." Brandon added, "Getting buy-in would be huge, because a lot of people still don't believe

in doing stuff online. I think just the initial setup is overwhelming so, I think it's a combination of fear and just being lazy." This fear has translated in the core group of online teachers recruiting colleagues who they feel close to and are willing to support.

Another concern is the lack of required technology. Currently, online teachers try to incorporate as many online components as possible, such as online test and quizzes, handing in papers and assignments, as well as limited discussions, however, if they want to use any of those pieces during their F2F classes, they do not have computers on campus for all the students, and don't have the infrastructure to hold the bandwidth necessary for that many students to be online. Ella expressed her concern when she stated that she wanted "machines that work" for the campus. At Helix, students who are in online courses sign an agreement that they have access to technology or will find technology if need be. The school currently has one computer lab for student use. At Robles, access to technology is not the issue, as each student will have a Google Chromebook. Their obstacles are related to teacher buy-in, teachers being overwhelmed, and potentially a union issue.

Administrative Support is the Missing Link

Both school districts have a vision of providing learning opportunities for twenty-first century students, as they had supported the online endeavor. However the action research group members, while they felt supported in the online endeavor, did not feel as though the administration had full knowledge of what was happening in the online courses, nor did they have the knowledge required to coach online teachers. All seven teacher participants perceived the administration as being supportive by giving them no more than their contracted number of students in online or hybrid classes, a prep period for each online class taken, and had never questioned teachers if they were not on campus during prep periods. However, they want the

administrators to be more involved. Amy, an administrator herself, openly stated, "I'm not sure that at each school site that there are administrators or leaders who really feel confident in leading and kind of navigating those conversations [on pedagogical online practices]. So, I think there's definitely work to be done there." Five of the seven participants said they want the accountability. When asked what she would suggest to the school or district to improve online instruction for teachers at her site, Jennifer admitted:

> I think accountability for the teachers; which I can't believe I'm saying that, 'cause I like living in my own little world. But I think it's important, because, unlike your face-to-face class, it can be so isolating. I do what I do every day and my kids get that lesson, but unless somebody's in here saying 'Hey, have you thought about this, or you know, have you looked at it this way?' I think it's important for the administration and the district to understand what's going on in an online class. I think from an administrative level, if you're going to evaluate my teaching, which is what I want, I want to get better, I want to be evaluated, I want you to give me tips and tricks.

Ella also expressed her desire for accountability by the administration:

> So the fact that I know people aren't going on to my course and never have really, it makes me as a teacher feel like they have no idea what I'm doing, good or bad. I could be awful. I could be doing a terrible job. They're really supportive and nice to me, but they don't know what I'm doing. So that's kind of unfortunate.

Four of the five online teachers at Helix High School also felt that the lack of knowledge on the part of the administration and other student support providers contributes to the reason online growth to other departments has been thwarted.

Summary of the Findings

This action research project sought to develop and implement a professional development and training program focusing on online pedagogy for teachers. Data from teacher pre- and post- teacher interviews, indicated that the teachers, while they were participating in the online professional development, and action research group meetings, and interviews with district and site administrators, had a positive perception of the professional development modules that were developed. Additionally, while instruction has already changed from F2F, the online instructors had made plans to alter their instruction even more and add in elements learned from the modules as well. The teachers also perceived the professional development as a good way to support new online instructors in conjunction with a community of practice where colleagues can support one another.

Teachers and administrators at both sites shared their vision that online learning will expand, but there are some obstacles at both sites that are impeding the expansion of online courses. Moreover, teachers stated that while the administration is supportive of the online courses in regard to the structure of the online courses (for example, scheduling and conference periods), they are not aware of the instruction occurring online and teachers want and need that support. Teachers also would like the administration to give a directive to make online tools, such as the LMS or Google Apps, mandatory in all instruction (F2F and online). In the next chapter recommendations are discussed based on the findings of this study.

CHAPTER FIVE

DISCUSSION AND RECOMMENDATIONS

The purpose of my study was to examine the experience and perceptions that online high school teachers had with a professional development training program on online pedagogy. Through interviews, action research group meetings, and online participation in the professional development modules, I was able to gather data that led to key findings. From these findings, recommendations have emerged for school districts and school sites implementing online courses.

For this study, I developed and produced three online modules during the course of three months with action research groups taking place throughout the study. My intent was to get input from teachers as to what was helpful to their online instructional practice and to see what changes they would make to their courses. Additionally, I sought their perceptions of how to help new teachers in online instruction. During the course of the professional development, teachers reflected on their practice and shared their perception of the entire process. This study affirms the literature that teachers are lacking training and need a collaborative, community of practice in order to be supported and successful.

In this chapter, I discuss the recommendations that have emerged from the research questions in this study. The recommendations address teachers wanting both ongoing professional development and collaboration time; training all teachers on the learning management system (LMS) and implementing online features in face-to-face (F2F) classes across campus; rolling out multiple online classes in the same school year to allow teachers to collaborate and share practices; and administrators involved in the courses and understanding

what is taking place to give online teachers additional support. Following the recommendations, are limitations to the study, opportunities for future research, and my reflections on the importance of this study.

Connection to Theoretical Framework

Technological Pedagogical Content Knowledge (TPCK)

When looking at the findings in relation to the theoretical framework, it was apparent that teachers feel that they really do need to have the Technological Pedagogical Content Knowledge (TPCK), which layers technology on as an additional domain on the work of Shulman (1986) who introduced Pedagogical Content Knowledge (PCK). At the core of the framework, PCK refers to the content expertise that teachers have within a specific discipline. This includes the teachers' knowledge on how new content should be taught as well as how instruction should be altered in response to student needs. Adding the technology (T) is an additional challenge because teachers are taking the same content objectives and transferring it to the best possible way to teach it online. Jennifer shared her experience of gaining the TPCK when she first began teaching online. She said in an action research group:

> How am I gonna (*sic*) alter what I've done before? 'Well, I've done this way in my face-to-face class so now I'm gonna (*sic*) put this resource online and they could do it.' It's, it's not like that. It's, 'Here's this cool thing I do in face-to-face, how can I get up the same skills in this other medium?' I literally, wrote down all of my assignments and I said, "Okay, so how do I translate all of these?' . . . I was really looking at each of my assignments saying, 'What do I want them to learn? Okay, I want them to learn A, B, and C from this.' So, it was really looking at that end result of what I wanted and then, how best to get there, rather than this is what I do, how does it translate?

This piece of adequately addressing the best medium for the skill the teacher is teaching is the most difficult part of teaching online. In fact, this is where the teacher's TPCK is utilized in order to keep students engaged and participatory (Koehler & Mishra, 2005). Active learning leads to successful online instruction (Chickering & Ehrmann, 1996).

Community of Inquiry

Fostering interaction among students in an online setting is one of the fundamental pieces of online learning to ensure that students do not feel isolated (Edwards et al., 2011). As a result, finding the intersect between teaching, social, and cognitive presence is the basis for good strong online courses (Garrison et al., 2001). Data showed that all the teachers in this study created little opportunity for interaction among students in their courses. It was also the number one change that instructors (five out of seven teachers) stated they would make in their courses for next year. The modules on interaction allowed the instructors to see how important discussion forums and chat rooms, et cetera, are to keep students engaged and not feeling alone. Teachers were aware that they have the ability to create this community, however, many have failed in previous attempts. With new resources and information from the modules and support from one another, most teachers from the study will attempt interaction among students online next year.

Community of Practice (CoP)

Community of Practice as defined by Lave and Wenger (1991) are groups of people informally bound together by a shared expertise and passion for a joint enterprise. In this case, the online instructors, tackling a new mode of instructional delivery, were the community of practice, coming together during professional development and training to improve the educational experience for their online students. Interestingly, what I found was that it already existed at one school site, and at the other site it was part of what was lacking to help teachers

feel supported. The "online teacher support group meetings" as Ella called them were one of the reasons their online program has been sustained throughout the past few years. This was conversely what Ed was lacking, leading him to feel "isolated" in teaching his hybrid class. This support that face-to-face teachers often find at schools is also necessary for online teachers to collaborate and problem solve together.

Recommendations

Research Question One: What are the perceptions reported by teachers, site and district administrators about the process and experience of collaborating to develop and implement an online pedagogical training program for the district?

The data revealed that the teachers found the professional development helpful, and they perceived it positively. The responses included comments such as "enlightening" and "eye-opening" and showed that the teachers learned something new. However, five out the six teachers made mentioned of "things they needed to be reminded of" or "things that they should be doing but forgot," which justifies the need for ongoing professional development. This is congruent data with the research that online teachers need ongoing training beyond the LMS (Rice & Dawley, 2007). I recommend this professional development take place at least biannually both online and F2F with other teachers, giving them the ability to discuss best practices with one another. As technology develops and as more teachers adopt online practices, more information and resources will become available, requiring ongoing professional development in order to stay up to date. Additionally, as more research is conducted in high school online instruction, new strategies and practices can be discussed and shared.

The combination of information and then the time to discuss what they are learning/reviewing is key to ensuring that teachers feel supported. A community of practice

particularly in professional development allows teachers to collaborate, reflect and promote meaningful shifts in instructional practices (Butler et al., 2004). There is little time, particularly at the high school level for teachers to collaborate, if not done on their own time, making release or collaboration time a necessity. As Linda stated in her post-interview, "You know that at 4:00, man, I'm done. Everybody has personal lives and there just is not enough time [to learn new online strategies]." Jennifer confirmed during the second action research group, "Time to play around with the system I really think is one of the things that hinders people from doing it." Therefore, it is recommended that site and district personnel look into using professional development time, such as pupil free days, late starts, and early outs, so online teachers can collaborate. This time is often used for distributing information, such as testing or Western Association of Schools and Colleges (WASC) meetings (as in the case of both schools this year), but rarely do teachers get time to get training on new software and time to explore its features.

If release time or collaboration time is not an option, it is recommended that the master schedule be organized such that online teachers have shared conference or "online" periods. At both schools, the teachers are still assigned a five-period day, whether students are sitting in desks or not, with one conference period. During the online class period, the teacher can use that time as they see fit, working on the course, planning, or responding to students. If the periods were aligned with other online teachers, they could collaborate at no additional cost to the school district.

Research Question Two: What, if anything, do teachers report changed in their instructional practice as a result of the professional development?

In the study, teachers made small changes to their online instructional practice, such as sending more emails or providing feedback more quickly. None of the participants made any

significant changes to his or her instruction during the course of the study. Timing might have been part of the issue, as research warns against making any significant changes to the structure of the course, curriculum, and grading mid-course (Dykman & Davis, 2008a). The teachers planned on integrating more discussion forums and opportunities for interaction as well as strategies for Common Core collaboration in their courses. That being said, it is important that as teachers receive their professional development, they are creating implementation plans for the next course (be it semester or year). This is key, as once teachers roll out an online course, they should not make significant changes midway. Additionally, it is crucial for instructors to have access to resources for grading and creating curriculum, such as rubrics or discussion questions before the course begins. This is where providing the time for teachers to learn and plan becomes important.

This also reinforces that teachers should infuse online learning components in their F2F courses, so they can assess the resources that they have and determine what medium would be best online. For example, if students use GoogleDocs for an assignment in a F2F class and the assignment is not successful, in the same F2F class the teacher can talk students through and model how to adjust so they are successful. On the contrary, if a teacher tries that assignment for the first time online and it fails, the only way to help the students is by giving them new online instructions. This is not to say that every student will be successful online but rather teachers have an opportunity to test what students will be able to do online by incorporating the LMS feature in their F2F classes.

Research Question Three: In what ways, if any, do teachers who participated in the online training program perceive the training as an effective way to help new instructors with online pedagogy?

All seven of the teachers had something positive to say about the professional development, and all but one felt it was an effective way to train new teachers in combination with collaboration time. Interestingly, six of the seven teachers in the study who had a successful transition to online instruction (meaning the class is still offered after its second year) began using the LMS in their F2F classes first. Both the teacher and the students were familiar with the LMS features, such as quiz taking, downloading assignments, uploading assignments, et cetera. When teachers transitioned to a hybrid or online course, the LMS features were familiar, leaving less of a learning curve. Then the focus was on the quality of delivering the content and the online pedagogy. Currently at both sites, the use of the LMS, although available to the entire campus, is used by a small group of teachers. My recommendation is that both schools implement LMS usage across campus. All teachers should first be trained properly on how to use the LMS, and those who are currently using it can share their experiences with different features on the LMS. It was recommended by Brandon that the school bring in an outside person to talk about the importance of using the LMS. He suggested in his post-interview, to have a speaker who is, "someone that's a higher up that is not just one of your colleagues. I think then people would feel it more if district higher ups or the superintendent came in." Additionally, the teachers need to receive proper training on the LMS. Both sites have not given school-wide training beyond teachers training teachers informally on some of the features of the LMS.

The next recommendation is that the LMS should replace the websites currently used by both schools for posting homework and due dates, as it is inconvenient for students to go to multiple websites to get the same information. It will also be cumbersome for teachers to update multiple websites consistently. Teachers at both school sites suggested that the administration should make it mandatory that all teachers use the LMS. Suzie suggested in her post-interview

that it should be, “mandatory that they have to use the LMS, and if they don’t, then admin will have to go track them down.” Ella said something similar in her post-interview, “I think there’s some elements that could be top-down directives, like not having students print out papers. It’s easy to require, or strongly suggest people to learn more.”

As teachers learn more and utilize the LMS, the online components (posting assignments, having students submit assignments, and taking quizzes) will become a normal part of instruction, therefore, making the jump to online or blended learning less extreme. Teachers will still have the challenge of deciding how to best meet their learning objectives, but the technology will not interfere with the online instruction.

This LMS implementation across campus should take place before expanding the online course offerings to students. Neither school site in this study has implemented usage of the LMS across campus, which this study has shown is one of the reasons the growth has stalled. The teachers have yet to be adequately trained on the LMS and are unaware of its features or value.

Research Question Four: How do the members of the action research team perceive the online training program will support student achievement in online coursework?

Student achievement in online courses has shown inconsistent results in research (Means, 2012; Means et al., 2009). However, members of the action research group in this study felt that the more prepared a teacher was to teach online, it would translate into a better end product allowing the students to be more successful. Brandon eloquently concluded, “Any time the teacher is more comfortable and knows more things and has more strategies and ideas behind what they’re doing, will always help the kids do better.” Jennifer lamented over how her kids struggled with her during her first year online, commenting that she “had no idea what she was doing” and the kids, “just went with it.”

This justifies why teachers should receive pedagogical training—before they begin teaching online and are still F2F, where they can try incorporating online learning features into their brick-and-mortar classroom courses. While some features, such as turning in assignments and taking quizzes can be done on a daily basis, teachers should be given guidance on how and when to use online features in the their F2F classroom. For example, Jennifer learned from trial and error. She described her experience in her post-interview, explaining:

> It is a shift I'm thinking because I tried to do forums online with my face-to-face kids, which doesn't make any sense because then, we come to class and have the same discussion in class. So, it was a waste of the technology, and I found myself not using the technology because I would just do it face to face. So, it's about finding what's appropriate to add online. I don't need to collect a paper essay from every student. I can have them submit it online. And it's still a learning curve for me because I default to face-to-face or I'll tell you the directions, or I'll talk to you about it, or I'll verbalize it with you instead of going online. So, it's definitely a shift in thinking and learning when to do what.

The earlier teachers can make this "shift in thinking" that Jennifer is referring to, the easier the transition will be to online instruction. However, without any training or others to get support from, most teachers will not take the leap online. Once teachers and students are more comfortable with the LMS, the TPCK will be more easily transferred. Teachers will be able to focus on the pedagogy and delivery of content and less on the technology, which research suggests is best practice (Pankowski, 2004).

Unexpected Findings

The study's research questions focused on teacher perception and experience with the professional development, yet the teachers shared their insight as to how to improve online learning at their schools.

The teachers in this study made it clear that one of the reasons they teach online and will continue (or not) is directly related to their colleagues who are also teaching online. They created their own community of practice, particularly at Helix High School, expanding their community across the district. It allowed the teachers to vent, ask for help, and support one another through the frustration of having no training and working trial and error. As a result, Reginald Unified has seen growth in online instruction across the district. Teachers feel supported and know they will receive help from their fellow online colleagues. Their help desk discussion forum allows online teachers to post questions and others can view the answers if they have the same question. The camaraderie is essential.

I recommend other sites rolling out multiple online courses so teachers will have one another to bounce ideas off of and to seek assistance. This will automatically create a community of practice. In a CoP, researchers argue that new knowledge about teaching and learning is situated in practice (Barab & Duffy, 2000) and teachers benefit from the opportunity to share and reflect. "The knowledge that is constructed from this discourse is richer than the knowledge that a teacher can construct on his or her own" (Butler et al., 2004, p. 438). The discourse will take place as challenges arise and teachers seek one another for help. Currently, having single online or hybrid courses force that teacher into isolation with no one to problem solve with, such as Ed. He commented, "If you can talk to somebody, say, what do you do when

this happens or what do you do when a kid stops showing up . . . I don't have that, that would be so helpful for me."

As more teachers take on online or hybrid courses, the community will grow, allowing more people to collaborate and problem solve together. I am hopeful that as new technology is rolled out into schools, more teachers will take on the challenge of teaching online.

As online courses grow, it is essential that administrators know and understand what is taking place. Not only do they need to be able to utilize the LMS, teachers explicitly expressed a desire for their administration to see what they are doing online, to give them tips or compliments. Ella said in her pre- and post-interviews that her administration is supportive of giving her flexibility in her schedule, however, she really wants them to "know what I am doing online." Brandon concurred in his post-interview, commenting that the administration, "obviously knows, but I don't think they know enough about any of it to be helpful to us."

First, it is recommended that administration familiarize themselves with both the LMS and the pedagogy of online instruction. They should also have the same training as the teachers. Second, administrators who have online courses at their site need to log in frequently to see what is happening in the course: how students are learning, interacting, and being assessed, and then they can determine if the learning objectives are being met. Administrators have the ability to influence the instruction at their school site in a positive way, online courses included (Bossert, Dwyer, Rowan, & Lee, 1982). More importantly, teachers are craving this feedback. Ella was quite clear when she said in her pre-interview:

> And just also quite honestly I do wish that administration knew what we were doing more because they have access to all courses and nobody ever looks at them and that's super discouraging that there's not ever, 'Hey, I saw in your course you have kids doing the

essential question—how does fear change or motivate people? And what kind of responses are you getting? Or gosh, I was wondering . . .' Like, there's none of that at all ever. And you can tell because you can go online and see who's been on your course.

As online offerings increase, it is going to become an expectation that administrators are still evaluating teachers, even if their courses are online. The administrators need to have knowledge about online instruction to give the teachers the support and encouragement that they need. Additionally, as instructional leaders, it will be an expectation that principals can speak to the school community about what happens in an online course.

Limitations of the Study

There are limitations of this study worth noting. To start, this study was conducted in two school districts within southern California that are relatively high performing in comparison to the state average. Additionally, the school sites have a lot of discretion about course offerings and the flexibility to test online courses in different content areas. Within the Reginald Unified School District, I only examined one high school of four that is experimenting with online course offerings.

Another limitation is the small sample size. I worked with seven teachers at these two sites, out of the possible nine online teachers from varying content areas. Their views and opinions are representative exclusively of their experience with teaching online courses at their school sites. Because every school has a different culture, more schools might have produced different findings than what I found from these two sites. Additionally, a larger sample size might have yielded differing opinions or would have further reinforced my findings.

The professional development modules in this study took place during the course of three months, which is another limiting factor. Perhaps if the teachers were in an ongoing professional

development with data collected throughout the course of an entire school year, I would have been able to see more significant instructional change with the integration of Common Core and the rollout of more technology for students.

Opportunities for Future Study

This study sought to examine teachers' perceptions and experiences with professional development on online pedagogy but was limited to a small sample in two small districts during a brief period of time. Further research could include a larger sample, perhaps gathering more data from a survey to start, over a longer period of time to see the effects of professional development. A new study could also focus solely on one content area and professional development around online learning strategies as related to that subject.

Additionally, it would be powerful to hear from high school students as to what they find most helpful or not in their online courses. In this study, and many others, it was assumed that the instructors knew what was the most beneficial for online high school learners. Interviews and surveys of online students could provide some helpful information in driving the content of professional development for online instructors.

Reflection

I was extremely motivated to conduct this research, as I started to see too much technology being pushed into the classroom in an effort to be "cutting edge." My biggest fear came true when I realized that teachers had technology with no training and were experimenting without best practices.

Conducting this research renewed my love for teaching and the people who put their heart and soul behind it—people who are willing to work hard and go the extra mile to ensure that students get a great education, even if it is virtual. In the two research districts that I worked

with, training and collaboration around online learning is already taking place. Teachers are beginning to have conversations about the "shift" to online instruction. This study will inform both of the districts as to some needed steps to take in order to have sound instructional change toward effective online learning. Although the change might be slow, it is happening with many people eagerly behind it.

This research provided me with an objective perspective on professional development for teachers, and the trials and tribulations teachers go through to make change. It made me realize that too often administrators (myself included) make quick decisions that impact teachers without giving them the proper support they need in order to quell the frustration and overwhelm they face every day while teaching (online or F2F). It also makes me realize that too often, teachers are not getting what they want and need from professional developments, but rather what administrators think they should have. My study is extremely timely as districts across the nation begin to roll out 1:1 initiatives with technology and online course offerings in K–12 continue to expand. It forces administrators to look closely at how overwhelming new technology can be, and search for best practices so both students and teachers are well prepared for a quality online experience.

As the nation moves forward with Common Core, and districts begin to push initiatives that include instruction via technology, I hope that other school districts will take a close look at the needs of online teachers and how to best support them as the instructional delivery shifts to the virtual world.

APPENDIX A

Recruitment Email

Dear _____,

My name is Linsey Gotanda and I am a doctoral student in the Educational Leadership Program at UCLA. I am conducting research for my dissertation on online pedagogy. For this study, I am seeking to work with online high school teachers like yourself to give me feedback to create professional development modules, based on research. The goal is to help new online teachers with ideas to keep students engaged and motivated and teachers feeling successful.

Participation in the study would entail the following:

- 2 interviews
- 3 group meetings with other instructors
- 4 online modules (run time of 15-20 minutes with some polls and discussion questions in each module).

So overall, it will be approximately seven hours of your time over the course of three months.

What are the benefits?

You may benefit from the study by gaining new insight on pedagogical online instructional strategies as well as an opportunity to collaborate and hear from other online instructors. Additionally, you will be instrumental in creating a professional development for new online instructors.

For incentives, you will receive a $10 gift card for every interview and group meeting. For each module completed, your name will be put into a raffle to win an iPad mini.

I hope that you will consider participation. My data collection phase will run from October until February.

Please let me know at your earliest convenience if you are interested. I look forward to hearing from you.

Sincerely,
Linsey Gotanda
linseygotanda@gmail.com
310-408-9464

APPENDIX B

Consent to Participate Letter

University of California, Los Angeles

CONSENT TO PARTICIPATE IN RESEARCH

K-12 Online: An Action Research Project on Professional Development for Online High School Pedagogy

Linsey Gotanda, from the *Educational Leadership Program* at the University of California, Los Angeles (UCLA) is conducting a research study.

You were selected as a possible participant in this study because *you teach a high school online course, have done so for three or less years and have been a face-to face classroom teacher for five or more years*. Your participation in this research study is voluntary.

Why is this study being done?

This study is being conducted to create and provide teachers with an online professional development in pedagogical strategies for online instruction.

What will happen if I take part in this research study?

If you volunteer to participate in this study, the researcher will ask you to do the following:

- *Participate in online professional development modules*
- *Participate in three action research groups*
- *Participate in individual interviews*

How long will I be in the research study?

Participation will take a total of approximately *seven hours over the course of three months.*

Are there any potential risks or discomforts that I can expect from this study?

The potential risks and discomforts are: trying strategies that do not work or help the online class, takes time, teachers do not find it helpful, teachers describe negative feelings about online learning, potential competition among teachers

Are there any potential benefits if I participate?

You may benefit from the study by gaining new insight on pedagogical online instructional strategies as well as an opportunity to collaborate and hear from other online instructors. Additionally, you will be instrumental in creating a professional development for new online instructors

The results of the research may result in more professional development, an initial training for new online instructors as well as the potential to increase the online instruction at your school site.

Will I be paid for participating?
You will receive a $10 gift card for each interview and action research group that you participate in. For each online module completed, subjects will receive one opportunity to be placed in a drawing to receive an iPad mini.

Will information about me and my participation be kept confidential?
Any information that is obtained in connection with this study and that can identify you will remain confidential. It will be disclosed only with your permission or as required by law. Confidentiality will be maintained by means of locked files, digital recordings which will only be accessible to the researcher and transcription service and coding during the data analysis. Names and school sites will never be disclosed during the research process.

What are the limitations to confidentiality in Action Research Groups?
Please be advised that although the researcher will take every precaution to maintain confidentiality of the data, the nature of focus or action research groups prevents the researchers from guaranteeing confidentiality. The researcher will remind participants to respect the privacy of your fellow participants and not repeat what is said in the focus or action research group to others.

What are my rights if I take part in this study?
- You can choose whether or not you want to be in this study, and you may withdraw your consent and discontinue participation at any time.
- Whatever decision you make, there will be no penalty to you, and no loss of benefits to which you were otherwise entitled.
- You may refuse to answer any questions that you do not want to answer and still remain in the study.

Who can I contact if I have questions about this study?
- **The research team:**
  If you have any questions, comments or concerns about the research, you can talk to the one of the researchers. Please contact:

  Linsey Gotanda (310) 408-9464

- **UCLA Office of the Human Research Protection Program (OHRPP):**

If you have questions about your rights while taking part in this study, or you have concerns or suggestions and you want to talk to someone other than the researchers about the study, please call the OHRPP at (310) 825-7122 or write to:

UCLA Office of the Human Research Protection Program
11000 Kinross Avenue, Suite 211, Box 951694
Los Angeles, CA 90095-1694

You will be given a copy of this information to keep for your records.

SIGNATURE OF STUDY PARTICIPANT

_____
Name of Participant

_____ _____
Signature of Participant Date

SIGNATURE OF PERSON OBTAINING CONSENT

_____ _____
Name of Person Obtaining Consent Contact Number

_____ _____
Signature of Person Obtaining Consent Date

APPENDIX C

Action Research Group Protocol

The goal of these action research groups is to gather data on the perceptions and experience that online teachers have had with the professional development modules and the instructional changes they have implemented as a result of the professional development. Questions will explore teacher experience, teacher and district needs and recommendations for future implementation.

1. Describe your teaching experience in the classroom and online.

2. What has your experience been like thus far? Challenges and benefits from your perspective for both teachers and students?

3. What challenges do you think the school has faced? Benefits??

4. Prior to this specific professional development, in what ways were you trained or given support on online pedagogy?

5. What do you think would be helpful or what do you need in order to effectively teach online?

6. What would you change if you could about the implementation of online courses at this school?

Meeting II

1. What has been your experience in working with and developing a professional development program for online pedagogy? Suggestions?

2. Thus far, what have you learned from the professional development that you did not previously know?

3. What have you implemented in your online instruction that you have learned from the professional development? What was the outcome?

4. How do you see the professional development supporting student success in online coursework?

5. What should be added to the professional development for online pedagogy?

Meeting III

1. Describe the experience with the process of developing professional development/training modules for online instructors.

2. How have your online instructional practices changed as a result of the professional development? Why or why not?

3. In what ways do you feel the professional development will support student achievement online?

4. What would you change, do differently or suggest to the school/district so teachers will be prepared for online instruction?

5. What other ways do you feel the school or district can support quality online learning for teachers and students?

6. What are your concerns for the future of online instruction at this school?

APPENDIX D

Teacher Interview Protocol

The goal of these interviews is to gather data on the perceptions and experience that online teachers have had with the professional development modules and the instructional changes that they have implemented as a result of the professional development. Questions will explore teacher experience, teacher and district needs and recommendations for future implementation.

1. Describe your vision of online learning at this school and/or in this district?

2. What prompted your move to online instruction?

3. Describe your perception of the progress of online instruction thus far. What have been the for you? What have been the benefits? For you as the instructor, have the benefits outweighed the challenges? What can you report are the challenges for the students? What can you report have been the benefits? What is your perception on whether the benefits outweigh the challenges for students?

4. Prior to this specific professional development, in what ways were you trained or given support on online pedagogy?

5. What specific needs do you feel would help your online instruction?

6. What would you like to see in a professional development on online pedagogy?

7. Where do you see online instruction going in your school and district?

Teacher Post Professional Development Interview Questions

1. Describe the experience with the process of developing professional development/training modules for online instructors.

2. Have your online instructional practices changed as a result of the professional development? Why or why not and in what ways?

3. What did you notice from your students' when you made instructional changes?

4. In what ways do you feel the professional development will support student achievement online?

5. What would you change, do differently, or suggest to the school/district so teachers will be prepared for online instruction?

6. What other ways do you feel the school or district can support quality online learning for teachers and students?

APPENDIX E

Site and District Administrator Interview Protocol

The goal of these interviews is to gather data on the perceptions and experience that site and district administrators have had online instruction. Questions will explore administrator perception on teacher and district needs and recommendations for future implementation.

1. Describe your vision of online learning at this school and/or in this district?

2. What do you believe prompted the move to online instruction?

3. Describe your thoughts on how the implementation has been going?

4. Prior to this specific professional development, in what ways were teachers provided training or support on online pedagogy?

5. What are the next steps for the district in terms of online pedagogy?

6. How do you think instructional practices have changed as a result of implementing online courses?

7. In what ways do you feel the professional development will support student achievement online?

8. What would you change, do differently or suggest to the school/district so teachers will be prepared for online instruction?

9. What other ways do you feel the school or district can support quality online learning for teachers and students?

References

A, A. (2012, October 23, 2012). [personal communication].

A, T. (2013, April 13, 2013).

Allen, I. E., & Seaman, J. (2008). Staying the course: Babson Survey Research Group.

Allen, I. E., & Seaman, J. (2013). Changing course: Ten yers of tracking online education in the United States (pp. 1-47).

Allen, T. (2006). Is the rush to provide on-line instruction setting our students up for failure? *Communication Education 55*(1), 122-126.

An, Y.-J., & Reigeluth, C. (2012). Creating technology-enhanced, learner-centered classrooms: K-12 teachers' beliefs, perceptions, barriers, and support needs. *Journal of Digital Learning in Teacher Education, 28*(2), 54-62.

Angelino, L. M., Williams, F. K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *The Journal of Educators Online, 4*(2), 1-14.

Archambault, L., & Crippen, K. (2009). K-12 distance educators at work: Who's teaching online across the United States. *Journal of Research on technology in Education, 41*(4), 363-391.

Aud, S., Hussar, W., Johnson, F., Kena, G., Roth, E., Manning, E., . . . Zhang, J. (2012). The condition of education 2012. Wasington, D.C.: U.S. Department of Education.

Bailey, C. J., & Card, K. A. (2009). Effective pedagogical practices for online teaching: Perception of experienced instructors. *Internet and Higher Education, 12*(3), 4-4.

Bakia, M., Caspary, K., Wang, H., Dieterle, E., & Lee, A. (2011). *Estimating the effects of online learning for secondary school students: State and district case studies*. Stanford Research Institute, Center for Technology in Learning.

Bakia, M., Shear, L., Toyama, Y., & Lasseter, A. (2012). Understanding the implications of online learning for educational productivity.

Barab, S. A., & Duffy, T. (2000). From practice fields to communities of practice. In D. H. Johnassen & S. M. Land (Eds.), *Theoretical foundations of learning environments* (pp. 25-55). Mahwah, NJ: Erlbaum.

Barbour, M., Brown, R., Hasler Waters, L., Hoey, R., Hunt, J., Kennedy, K., . . . Trimm, T. (2011). Online and blended learning: A survey of policy and practices of K-12 schools around the world. Vienna, VA.

Barbour, M., Kinsella, J., Wicks, M., & Toker, S. (2009). Continuing change in a virtual world: Training and recruiting instructors. *Journal of Technology and Teacher Education, 17*(4), 437-457.

Bender, T. (2003). *Discussion-based online teaching to enhance student learning: Theory, practice, and assessment*: Stylus Publishing, 22883 Quicksilver Drive, Sterling, VA 20166-2012.

Bernard, R. M., Abrami, P. C., Lou, Y., Borokhovski, E., Wade, A., Wozney, L., . . . Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of educational research, 74*(3), 379-439. doi: 10.2307/3516028

BlackboardK-12. (2011). Learning in the 21st century: 2011 trends update. In B. K-12 & P. Tomorrow (Eds.): Blackboard K-12

Bloemer, W., & Swan, K. (2012). *Predicting student retention and success in online programs*. Paper presented at the 28th Annual Conference on Distance Teaching, Madison, Wisconsin. http://www.uwex.edu/disted/conference/2012_Conference.cfm

Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. *Educational Administration Quarterly, 18*(3), 34-64.

Boston, W., Díaz, S., Gibson, A., Ice, P., Richardson, J., & Swan, K. (2009). An exploration of the relationship between indicators of the community of inquiry framework and retention in online programs. *Journal of Asynchronous Learning Networks, 12*(3), 67-83.

Bruder, I. (1989). Distance learning: What's holding back this boundless delivery system? *Electronic learning, 8*(6), 30-35.

Bryk, A., Camburn, E., & Louis, K. S. (1999). Professional community in Chicago elementary schools: Facilitating factors and organizational consequences. *Educational Administration Quarterly, 35*(5), 751-781. doi: 10.1177/0013161x99355004

BUSD (Producer). (2012, November 20, 2012). BUSD Strategic Plan. Retrieved from http://rbusd.org/rbusdstrategicplan

BUSD. (2013). Booker Unified School District, Instructional Services Retrieved May 11, 2013, from http://www.rbusd.org/cms/page_view?d=x&piid=&vpid=1249305203660

Butler, D. L., Lauscher, H. N., Jarvis-Selinger, S., & Beckingham, B. (2004). Collaboration and self-regulation in teachers' professional development. *Teaching and Teacher Education, 20*(5), 435-455.

C.N. (2013, 9/27/13). [Personal Communication].

Casey, D. M. (2008). The historical development of distance education through technology. *Tech-Trends, 52*(2), 45-51.

Cavanaugh, C., Gillan, K. J., Kromrey, J., Hess, M., & Blomeyer, R. (2004). The effects of distance education on K–12 student outcomes: A meta-analysis: Naperville, Ill.: Learning

Point Associates. http://www. ncrel. org/tech/distance/index. html (accessed March 5, 2009).

Chancellor, C. C. C. (2011). Distance education report: California Community Colleges Chancellors Office.

Chickering, A. W., & Ehrmann, S. C. (1996). Implementing the seven principles. *AAHE bulletin, 49*(2), 2-4.

Christensen, C. M., Horn, M. B., & Johnson, C. W. (2008). *Disrupting class: How disruptive innovation will change the way the world learns* (Vol. 98): McGraw-Hill New York.

Clark, T. (2001). Virtual schools: Trends and issues. Report commissioned by the Distance Learning Resource Network, a WestEd Project co-sponsored by the Centre for the Application of Information Technologies at Western Illinois University, October.

Clark-Ibáñez, M., & Scott, L. (2008). Learning to teach online. *Teaching Sociology, 36*(1), 34-41.

Coghlan, D., & Brannick, T. (2007). *Doing action research in your own organization*. Los Angeles: Sage Publications.

Crawford-Ferre, H. G., & Wiest, L. R. (2012). Effective online instruction in higher education. *Quarterly Review of Distance Education, 13*(1), 11-14.

Creswell, J. (2009). *Research design: Qualitative, quantitative and mixed methods approaches*. Los Angeles: Sage Publications.

Darling-Hammond, L., Baratz-Snowden, J. (2007). A good teacher in every classroom: Preparing the highly qualified teachers our children deserve. *Educational Horizons, 85*(2), 22.

DiPietro, M., Ferdig, R. E., Black, E. W., & Preston, M. (2008). Best practices in teaching K-12 online: Lessons learned from Michigan Virtual School teachers. *Journal of Interactive Online Learning, 7*(1), 10-35.

Dixson, M. D. (2010). Creating effective student engagement in online courses: What do students find engaging? *Journal of the Scholarship of Teaching and Learning, 10*(2), 1-13.

Driscoll, A., Jicha, K., Hunt, A. N., Tichavsky, L., & Thompson, G. (2012). Can Online Courses Deliver In-class Results? A Comparison of Student Performance and Satisfaction in an Online versus a Face-to-face Introductory Sociology Course. *Teaching Sociology*. doi: 10.1177/0092055x12446624

Dykman, C. A., & Davis, C. K. (2008a). Online education forum--Part three: A quality online educational experience. *Journal of Information Systems Education, 19*(3), 281-290.

Dykman, C. A., & Davis, C. K. (2008b). Online education forum: Part two--teaching online versus teaching conventionally. *Journal of Information Systems Education, 19*(2), 157-164.

Edwards, M., Perry, B., & Janzen, K. (2011). The making of an exemplary online educator. *Distance Education, 32*(1), 101-118.

Elmore, R. F. (2002). Bridging the gap between standards and achievement: The imperative for professional development in education: Washington, DC.

Elmore, R. F., & Burney, D. (1997). Investing in teacher learning: Staff development and instructional improvement In L. Darling-Hammond & G. Sykes (Eds.), *Teaching as the Learning Profession: Handbook of Policy and Practice* (pp. 263-291). San Francisco, CA: Jossey-Bass.

Figlio, D. N., Rush, M., & Yin, L. (2010). *Is it live or is it Internet? Experimental estimates of the effects of online instruction on student learning*. National Bureau of Economic Research. Cambridge, MA.

Fish, W. W., & Wickersham, L. E. (2009). Best practices for online instructors: Reminders. *The Quarterly Review of Distance Education, 10*(3), 279-284.

Gallien, T., & Oomen-Early, J. (2008). Personalized versus collective instructor feedback in the online courseroom: Does type of feedback affect student satisfaction, academic performance and perceived connectedness with the instructor? *International Journal on E-Learning, 7*(3), 463-476.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B. F., & Yoon, K. S. (2001). What makes professional development effective? Results from a national sample of teachers. *American Educational Research Journal, 38*(4), 915-945.

Garrison, D., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and higher education, 2*(2), 87-105.

Garrison, D., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education, 15*(1), 7-23. doi: 10.1080/08923640109527071

Guest, G., MacQueen, K. M., & Namey, E. E. (2011). *Applied thematic analysis*: SAGE Publications, Incorporated.

Hartley, K., & Bendixen, L. D. (2001). Educational research in the Internet age: Examining the role of individual characteristics. *Educational Researcher, 30*(9), 22-26. doi: 10.3102/0013189x030009022

Hathaway, D., & Norton, P. (2012). An exploratory study comparing two modes of preparation for online teaching. *Journal of Digital Learning in Teacher Education, 28*(4), 146-152.

Heppen, J., Walters, K., Clements, M., Faria, A.-M., Tobey, C., Sorenson, N., & Culp, K. (2012). *Access to Algebra I: The effects of mathematics for grade 8 students*. Washington DC: National Center for Education Evaluation and Regional Assitance, Instutute of Educational Sciences, U.S. Department of Education.

Horn, M. B. (2010). Virtual schooling: Disruting status quo *Polcy Brief*. Florida: James Madison Institute.

iNACOL. (2012). Fast facts about online learning. In I. A. o. K.-O. Learning (Ed.).

Kampov-Polevoi, J. (2010). Considerations for supporting faculty in transitioning a course to online format. *Online Journal of Distance Learning Administration, 13*(2).

Kennedy, K., & Archambault, L. (2012). Offering preservice teachers field experiences in k-12 online learning: A national survey of teacher education programs. *Journal of Teacher Education 63*(3), 185-200.

Kerr, S. (2011a). High school online: Pedagogy, preferences, and practices of three online teachers. *Journal of Educational Technology Systems, 39*(3), 221-244.

Kerr, S. (2011b). Tips, tools, and techniques for teaching in the online high school classroom. *TechTrends, 55*(1), 28-31.

King, A. (1993). From sage on the stage to guide on the side. *College teaching, 41*(1), 30-35.

Knowlton, D. S. (2000). A theoretical framework for the online classroom: A defense and delineation of a student−centered pedagogy. *New Directions for Teaching and Learning, 2000*(84), 5-14.

Koehler, M., & Mishra, P. (2005). What Happens when teachers design educational technology? The development of technological pedagogical content knowledge. *Journal of Educational Computing Research, 32*(2), 131-152.

Koehler, M., & Mishra, P. (2009). What is Technological Pedagogical Content Knowledge (TPACK)? *Contemporary Issues in Technology and Teacher Education, 9*(1), 60-70.

Kunzia, R. (2012). Online schooling grows up, *Daily Breeze*. Retrieved from http://www.dailybreeze.com/crimeandcourts/ci_20925188/an-education-from-home

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of educational research, 76*(4), 567-605.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*: Cambridge university press.

Lewis, C. C., & Abdul-Hamid, H. (2006). Implementing effective online teaching practices: Voices of exemplary faculty. *Innovative Higher Education, 31*(2), 83-98.

Li, C.-S., & Irby, B. (2008). An overview of online education: Attractiveness, benefits, challeges, concerns and recommendations. *College Student Journal, 42*(2), 449-458.

Little, J. W. (1993). Teachers' professional development in a climate of educational reform. *Educational Evaluation and Policy Analysis, 15*(2), 129-151. doi: 10.2307/1164418

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach* (Vol. 41): Sage Publications, Incorporated.

Mayadas, A. F., Bourne, J., & Bacsich, P. (2009). Online education today. *Science, 323,* 85-89.

McLean, J. (2005). Addressing faculty concerns about distance learning. *Online Journal of Distance Learning Administration, 8*(4).

Means, B. (2012, December 6, 2012). *Effectiveness online: An overview of research evidence.* Paper presented at the Evaluating the Effectiveness of Online Learning, Sacramento, CA.

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2009). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies.

Merisotis, J. P., & Phipps, R. A. (1999). What's the difference? Outcomes of distance vs. traditional classroom-based learning. *Change, 31*(3), 12-17. doi: 10.2307/40165361

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*: Jossey-Bass.

Meyers, S. A. (2008). Using transformative pedagogy when teaching online. *College teaching, 56*(4), 219-224.

Miller, T. a. R., Michael. (2010). Moving beyond bricks and mortar: Changing the conversation on online education. *Educational Considerations, 37*(2), 3-6.

Miron, G., & Urschel, J. (2012). Understanding and improving full-time virtual schools: A study of student characterisitics, school finance, and school performance in schools operated by K12 Inc. Boulder, Colorado: National Education Policy Center.

NEA. (2008). *Guide to teaching online courses*.

Oliver, K., Kellogg, S., Townsend, L., & Brady, K. (2012). Needs of elementary and middle school teachers developing online courses for a virtual school. *Distance Education, 31*(1), 55-75.

Oliver, K., Osborne, J., & Brady, K. (2009). What are secondary students' expectations for teacher in virtual school environments? *Distance Education, 30*(1), 23-45.

Orr, R., Williams, M., & Pennington, K. (2009). Institutional efforts to support faculty in online teaching. *Innovative Higher Education, 34*, 257-268.

Pagliari, L., Batts, D., & McFadden, C. (2009). Desired versus actual training for online instructors in community colleges. *Online Journal of Distance Learning Administration, 12*(4).

Pankowski, P. (2004). Faculty training for online teaching. *T.H.E. Journal, 1*.

Park, J. H., & Choi, H. J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Educational Technology & Society, 12*(4), 207-217.

Perry, E. H., & Pilati, M. L. (2011). Online Learning. *New Directions for Teaching and Learning*(128), 95-104.

Picciano, A. G. (2002). Beyond student perceptions: Issues of interaction, presence, and performance in an online course. *Journal of Asynchronous Learning Networks, 6*(1), 21-40.

Picciano, A. G., & Seaman, J. (2010). Class connections: High school reform and the role of online learning.

Powell, T. (2010). *Delivering effective faculty training: A course and methods to prepare faculty to teach online.* Paper presented at the Second International Conference onMobile, Hybrid, and On-Line Learning, 2010.

Revere, L., & Kovach, J. (2011). Online technologies for engaged learners. *The Quarterly Review of Distance Education 12*(2), 113-124.

RHS. (2011). 8th Grade Parent Night Presentation.

RHS. (2013). Student Accountabilty Report Card.

Rice, K. (2006). A comprehensive look at distance education in the K-12 context. [Article]. *Journal of Research on technology in Education, 38*(4), 425-448.

Rice, K., & Dawley, L. (2007). Going virtual! The status of professional development for K-12 online teachers (pp. 2008): Boise State University.

Richardson, J. C., & Swan, K. (2003). Examing social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks, 9*(3), 115-136.

Roblyer, M., & Marshall, J. C. (2003). Predicting success of virtual high school students: Preliminary results from an educational success prediction instrument. *Journal of Research on technology in Education, 35*(2), 241-255.

Ronsisvalle, T., & Watkins, R. (2005). Student success in online K-12 education. *Quarterly Review of Distance Education, 6*(2), 117-124.

RUSD (2013). Helix High School Student Accountability Report Card.

Russell, T. (2012, 2010). No significant difference Retrieved January 28, 2013, 2013, from http://www.nosignificantdifference.org

Schlager, M. S., & Fusco, J. (2003). Teacher professional development, technology, and communities of practice: Are we putting the cart before the horse? *The Information Society, 19*(3), 203-220.

Shea, P., Li, C. S., Swan, K., & Pickett, A. (2005). Developing learning community in online asynchronous college courses: The role of teaching presence. *Journal of Asynchronous Learning Networks, 9*(4), 59-82.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 4-14.

Smith, R., Clark, T., & Blomeyer, R. L. (2005). A synthesis of new research on K-12 online learning: Naperville, IL: Learning Point Associates.

Souder, W. E. (1993). The effectiveness of traditional vs. satellite delivery in three management of technology master's degree programs. *American Journal of Distance Education, 7*(1), 37-53.

Strahan, D. (2003). Promoting a collaborative professional culture in three elementary schools that have beaten the odds. *The Elementary School Journal, 104*(2), 127-146. doi: 10.2307/3202983

Supovitz, J. A., & Turner, H. M. (2000). The effects of professional development on science teaching practices and classroom culture. *Journal of research in science teaching, 37*(9), 963-980.

Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks, 9*(3), 115-136.

Tallent-Runnels, M. K., Thomas, J. A., Lan, W. Y., Cooper, S., Ahern, T. C., Shaw, S. M., & Liu, X. (2006). Teaching courses online: A review of the research. *Review of Educational Research, 76*(1), 93-135. doi: 10.3102/00346543076001093

Taylor, E. W. (1998). The theory and practice of transformative learning. *A critical review*.

Thomas, M. (2011). *Online learning*. Los Angeles; London: SAGE Publications.

Urtel, M. G. (2008). Assessing academic performance between traditional and distance education course formats. *Educational Technology & Society, 11*(1), 322-330.

Wang, A., & Newlin, M. (2002). Predictors of performance in the virtual classroom: Identifying and helping at-risk cyber-students. *THE Journal, 29*(10), 21-25.

Watson, J., Murin, A., Vashaw, L., Gemin, B., & Rapp, C. (2011). Keeping pace with k-12 online learning.

Wei, R. C., Darling-Hammond, L., Andree, A., Richardson, N., & Orphanos, S. (2009). Professional learning in the learning profession (pp. 18).

Xu, D., & Jaggars, S. S. (2011a). The effectiveness of distance education across Virginia's community colleges: Evidence from introductory college-level math and English courses. *Educational Evaluation and Policy Analysis, 33*(3), 360-377. doi: 10.3102/0162373711413814

Xu, D., & Jaggars, S. S. (2011b). *Online and hybrid course enrollment and performance in Washington State community and technical colleges*. Working Paper. Teachers College, Columbia. New York: Community College Research Center.

Yang, Y., & Cornelious, L. F. (2005). Preparing instructors for quality online instruction. *Online Journal of Distance Learning Administration, 8*(1).

Zhao, F. (2003). Enhancing the quality of online higher education through measurement. *Quality Assurance in Education, 11*(4), 214-221.