

E-LEARNING INSTRUCTOR VIEWS ON PROFESSIONAL
DEVELOPMENT: AN INVESTIGATION
OF CURRENT PRACTICE

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ABSTRACT

The purpose of this study was to examine and explore the phenomenon of professional development specifically directed toward teaching and learning online. To facilitate this descriptive analysis, a web-based survey was constructed using six features of Garet, Porter, Desimone, Birman, and Yoon's (2001) model of effective professional development which include type, topic, duration, collective participation, active learning, and coherence. A link to the survey was sent via e-mail to 435 full-time, part-time, and adjunct instructors employed at three different community colleges within the state of Alabama. A 16% response rate ($n = 73$) fell within the norms of similar web-based surveys (Jin, 2011; Medway & Fulton, 2012). An analysis of variance (ANOVA) was used to determine if there was a relationship between faculty's perceived gain in knowledge and skill, related to teaching and learning online, and the six features of Garet et al.'s (2001) model of effective professional development. The results demonstrate that three of the six features (i.e., type, duration by number of days, and active learning) have a statistically significant impact ($p < .05$) on faculty's perceived gain in knowledge and skill. Therefore, it is recommended that college administrators and e-learning faculty implement and pursue professional development training workshops that incorporate active learning and span several days, weeks, or months. For further study, this researcher suggests that a meta-analysis of teacher education programs be conducted to identify the presence or absence of training for teaching and learning online.

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LIST OF ABBREVIATIONS AND SYMBOLS

df	Degrees of freedom; number of items free to vary after certain restrictions
F	The ratio of two mean square values
N	Number of participants
n	Number in sample
p	Calculated probability
Sig.	Significance where alpha = .05
Z	The standard score; statistical measurement of a score's relationship to the mean in a group of scores

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CHAPTER I: INTRODUCTION

Knowledge is an invaluable construct. Very few things in life shape our decisions and our future as much as what we know and understand. History and the events of the past keenly demonstrate the advantages of having information and the disadvantages associated with being without it. Yet, in times past, those who sought enlightenment may have found their search difficult and often restricted by time, space, money, social status, gender, opportunity, and access. Today, however, limitless wisdom and knowledge abounds at our very fingertips. The Internet, the cloud, and countless web and mobile technologies “allow people to access a plethora of information at any time from almost anywhere” (Terantino & Agbehonou, 2012, Introduction section, ¶1). Everything from the simplest word definition to the most complex mathematical equation to last night’s NCAA (National Collegiate Athletic Association) scores can be obtained within seconds. Georgina and Hosford (2009) have observed that not only have technological advancements altered the way the world accesses information, but it has also transformed the world’s view of information. Data, wisdom, facts, figures, and knowledge in any form are no longer concrete commodities tied to a fixed time and place. Information has gone digital. It is mobile, fluid, and free like the air we breathe. According to Washbon (2012), iterations along the technological spectrum can include instruments that extend one’s capacity and effectiveness, “enhance communications, entertainment, or physical well-being to systems that bring people and information together to solve everyday problems, or tools that help us manipulate materials, structure work, or organize information and concepts” (p. 43). This

seemingly boundless technology has seeped into every area of our lives. It has given rise to new levels of efficiency in our daily chores, hobbies, social and family connections, work, and, unequivocally, in the way we learn.

In this present age, learning is generally approached in an informal yet fast and efficient manner with the assistance of the web. This is especially true for those who have been exposed to the luxuries of digital technology all of their lives. Due to their high affinity for and knowledge of technology, it has been noted that they learn differently from learners of years past (DeGennaro, 2008; Spires, Lee, Turner, & Johnson, 2008; Gu, Zhu, & Guo, 2013) and may have different needs and preferences. The Partnership for 21st Century Skills (2005) noted “that since young people are becoming increasingly dependent on technologies to communicate, gather information, and extend social experiences it is essential that our educational system evolves to meet these new demands” which cultivate a meaningful connection between how students live and how they learn in this digital age (as cited in Spires et al., 2008, p. 498). The predispositions of these “new learners” have invariably led to the demand for e-learning. According to Bigatel, Ragan, Kennan, May, and Redmond (2012), “distance education has grown rapidly over the past few decades, and online enrollments have been growing substantially faster than overall higher education enrollments” (p. 59). Dymont, Downing and Budd (2013) added that “with the rapid and unswerving growth in online education most, if not all, academics in higher education institutions will be either designing, developing or delivering their teaching online in the near future” (p. 140). Hutti (2007) has submitted that “as the number of students involved in online learning increases, the expertise of those willing to lead such learning must increase as well” (p. 20).

Roby, Ashe, Singh, and Clark (2013) have revealed that “for both the student and the instructor, the online environment differs from the traditional classroom in terms of time spent, curriculum, and pedagogy” (p. 29). It is well known that students are tasked with taking a more active and independent role in e-learning (Stanford-Bowers, 2008; Roblyer, Porter, Bielefeldt, & Donaldson, 2009). However, very few realize that the teacher’s obligation can range from course facilitator (Baran, Correia, & Thompson, 2011) to course planner (Allen, Kiser, & Owens, 2013) to instructional designer and media developer (Roby et al., 2013, p. 30).

Every online instructor must maintain an “understanding of the unique ways in which technology interacts with subject matter expertise and pedagogical skills to promote student learning” (Benson & Ward, 2013, p. 154). However, most faculty members are void of the knowledge and skills needed to develop and implement e-learning course environments and resources. Even though these professors are considered advanced scholars and noted researchers in their area of study, it is challenging for them to construct “online instructional activities because most do not have formal training in curriculum and lesson planning and multimedia development” (Howel et al., 2004, p. 38). Furthermore, “few campuses currently offer the type of training that faculty need to succeed online” (Palloff & Pratt, 2013, p. 7). Thomas, Herring, Redmond, and Smaldino (2013) have posited that “teaching with technology is a *wicked problem* in that it has *incomplete, contradictory and changing requirements*” (p. 55).

Statement of the Problem

What Bonk (2009) refers to as “eye-ball-to-eyeball learning” is no longer as prevalent today as it once was (p. 10). In its place, e-learning has emerged as the popular and ever-growing medium of choice. Yet, it is important to note that teaching online (also known as e-learning) is not the same as teaching face-to-face. According to Baran et al. (2011), the very

nature of online learning “changes the way teaching responsibilities are performed” (p. 426). However, many “instructors receive little to no guidance in how to teach online and are thus put in a position of fending for themselves” which demands that they must become proficient in the use of the existing learning management system (LMS) and/or other web technologies (WT) and how to conduct and interact within a web-based course all on their own (Palloff & Pratt, 2011, p. 4). “The assumption seems to be that faculty will learn to use the systems to accommodate their instructional needs. It is as though faith in faculty’s ability outweigh the reality of learning a new paradigm” (Georgina & Hosford, 2009, p. 690). This notion has invariably led to negative outcomes such as 1) high rates of non-completion of online courses (Roby et al., 2013); 2) students feeling unsupported and isolated; and 3) faculty feeling disdain toward e-learning and overwhelmed with work (Dyment et al., 2013). All of which could work to undermine the success of any e-learning program.

Most educational institutions recognize the “importance of training” teachers to effectively wield technology to improve student outcomes (Hofer & Grandgenett, 2012, p. 83). Faculty, also, realize that “they must develop new skills to teach effectively at a distance” (Howell, Saba, Lindsay, & Williams, 2004, p. 35). Kokoc, Ozlu, Cimber, and Karal (2011) have found that professional development for instructors is a key and most critical component in educational change and improvement, systematic reform initiatives, better student outcomes, enhancing teacher quality, and improving school success (p. 68). Nevertheless, “the impact of online instruction is largely a function of a teacher’s perspective and ability” (Percy, 2014, p. 174). Therefore, this study sought to investigate e-learning instructor perceptions of the type and frequency of professional development they receive as it relates to the effective dissemination of e-learning.

Theoretical Framework

Research at its most rudimentary level endeavors to describe the current state or condition of a natural or man-made phenomenon (Gall, Gall, & Borg, 2007). A thorough and accurate depiction of said phenomenon opens the door to explaining or improving the concern of interest. The primary target for analysis in this study is professional development specifically aimed at online instruction. Yet, pinpointing this entity for review will involve a deliberate and strategic course of action. Researchers have noted significant challenges associated with identifying effective professional development. According to Earley (2010), a lot of information, concerning the make-up of effective [continuing professional development] CPD, has been produced “but it should be remembered that the characteristics influencing effectiveness are multiple and highly complex.” Furthermore, the notion of CPD encompasses a large assortment of modes and methods which make “the number of variables” that need to be considered substantial (p. 210). In addition, Guskey (2009) submitted that “schools rarely apply innovations one at a time; instead, they implement multiple innovations simultaneously.” Thereby, making the task of “isolating the effects of any one innovation and its accompanying professional development activities” nearly impossible no matter which research design was used (p. 226). Nevertheless, Desimone (2009) proposed a possible solution to this dilemma. She noted that

one way of translating the complex, interactive, formal, and informal nature of teacher learning opportunities into manageable, measureable phenomena is to focus measurement on the *critical features* of the activity – those characteristics of an activity that make it effective for increasing teacher learning and changing practice, and ultimately for improving student learning – rather than on the type of activity. (e.g. workshop or work study; p. 183)

The *Critical Features Approach*, suggested by Desimone (2009), was originally developed by Garet, Porter, Desimone, Birman, and Yoon (2001). The Garet et al. (2001) model includes the following six features:

1. The type or form of the activity (i.e., whether it is a reform type, such as study group or network, in contrast to a traditional workshop or conference);
2. The duration of the activity, including the total number of contact hours that participants spend in the activity, as well as the span of time over which the activity takes place;
3. Collective participation or the degree to which the activity emphasizes the use of groups of teachers from the same school, department, or grade level [to create a community of learners];
4. Content focus which is the degree to which the activity is focused on improving and deepening teachers' content knowledge;
5. Active learning or the extent to which the activity offers opportunities for teachers to become actively engaged in the meaningful analysis of teaching and learning; and
6. Coherence or the degree to which the activity is consistent with teacher goals, state standards, [school policies, and other forms of professional development] (p. 919-920).

Although Desimone (2009) has noted that the type of the professional development activity is not an element that directly contributes to effectiveness, this researcher thought it necessary to include it as a component of this study since it was a part of Garet et al.'s (2001) original model and it provides details pertinent to this descriptive analysis.

Statement of Purpose

According to Dymont et al. (2013), in spite of a growing collection of research, several attributes related to education for those who teach online are yet unexplored. They further proclaimed that there is a lack of literature that focuses on the experiences of faculty, their preparation, and ability. Therefore, the purpose of this study was two-fold. First, this study aspired to create and pilot a survey instrument designed to capture e-learning faculty views on professional development aimed at enhancing their skills for teaching and learning online. Secondly, this study intended to investigate the perceptions of e-learning instructors on the current condition of professional development, for teaching and learning online, and how it is being applied. The specific details gained through this work provide groundwork for more informed practice.

Significance of the Problem

“Technology has impacted learning at an extraordinary pace,” most assuredly unlike any other innovation in our recent history (Hutti, 2007, p. 18) and the continuation of even more technological developments is inevitable (Dymont et al., 2013) especially if they direct their energy toward what students need and aid their learning goals (Gosper, McNeill, Woo, Phillips, Preston, & Green, 2011, p. 92). “Yet, technology alone does nothing to enhance pedagogy/andragogy. This, of course, means that faculty must be trained in the use of the tools—not just given access to the tools” (Georgina & Hoford, 2009, p. 690). Although several researchers (Eliason & Holmes, 2010; Gosper et al., 2011; Saltmarch & Sutherland-Smith, 2010) have found that professional development, designed to enhance instructor competence, is a vital component of e-learning, Palloff and Pratt (2011) have noted that the preparation and instruction of online instructors is not in line with the market’s expectations of excellence in the online

classroom. Furthermore, this researcher noticed a void in the literature specifically addressing faculty views on professional training for e-learning instruction and consequently, valid instruments that measure this specific phenomenon, irrespective of content area, were scarce (Lane, 2013; Terantino & Agbehonou, 2012; Archambault & Crippen, 2009; Boyle, While, & Boyle, 2004; Quick, Holtzman, & Chaney, 2009; Hahn & Lester, 2012; Paver, Walker, & Hung, 2013).

Research Questions

The following research questions served as the guiding parameters for this study:

1. What types of professional development, related to teaching and learning online, do e-learning instructors participate in;
2. Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to;
3. Is there a relationship between faculty's perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development; and
4. Is there a difference between the most recent employer sponsored professional development and the most recent self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development?

Methods

In order to extract e-learning instructor views on professional development specifically related to online instruction and facilitation, a survey based on Garet et al.'s (2001) model of effective professional development was developed and piloted with community college faculty. A review and evaluation of the survey for content validity was conducted by a panel of subject matter experts. The study data were entered into the Statistical Package for Social Science (SPSS; version 22) and the research questions were addressed using descriptive statistics, a correlation, and an analysis of variance (ANOVA).

Assumptions

E-learning instructors from three community colleges that serve the residents of several economically diverse counties within the state of Alabama, were identified for the purposes of this study. It is assumed that the participants 1) are self-aware; 2) are able to interpret each survey item appropriately; and 3) provided honest answers.

Limitations

The limitations of this study included the following:

1. Only community college faculty members were surveyed;
2. The sample was based on the number of faculty members who teach online at three community colleges;
3. The study focused on self-reported teacher perceptions; and
4. The study was conducted in the state of Alabama and may not be generalized to other states.

Definition of Terms

Digital: Available in electronic form; readable and accessible via the various computing devices (Dictionary.com, n.d.).

Distance Education: Education in which the student and the teacher are not in the same place; usually outside of the traditional classroom; may be facilitated via the Internet. For the purposes of this study, the terms distance learning and e-learning will be used interchangeably with distance education.

E-Learning: Learning that is constructed and facilitated over the Internet. For the purposes of this study, the terms cyber-learning, online learning, and distance education will be used interchangeably with e-learning.

Information and Communication Technologies (ICT): Various hardware and software systems and applications used to develop, implement, organize, and communicate information electronically (MacDonald, 2008). For the purposes of this study, the terms digital technology, information technology, technology, and web technology will be used interchangeably with ICT.

“New Learner”: Students who have grown up with modern technological advancements (i.e., the Internet). For the purposes of this study, the term “digital native” will be used interchangeably with “new learner” (Pensky, 2001; as cited in Lahaie, 2007)

Online: Operating under the direct control of or connected to a computing device and/or the Internet (Dictionary.com, n.d.).

Pedagogy: The art and science of teaching, instruction, and education (Dictionary.com, n.d.).

Professional Development: Ongoing learning opportunities available to teachers and other educational personnel through their employer; schools, colleges, and universities (Edweek.org, n.d.); and other organizations.

Virtual School: A school whose entire program of study is offered online; may be K-12 or on the collegiate level.

Summary

Chapter I serves as the preamble for this project, which endeavors to explore the perceptions of e-learning instructors on professional development. The brief introduction sheds light on the major concepts that surround this topic. In addition, concise descriptions of the problem, purpose, and significance of the study give meaning and merit to its plight. Chapter II features the literature review that provides a catalog of the major findings garnered by other researchers. Chapter III offers an outline of the methodology and includes a discussion of the setting, the participants, the instrumentation, and the data collection and analysis procedures. Chapter IV presents a detailed account of the findings and a review of the results derived from each statistical analysis. Lastly, Chapter V provides a discussion and interpretation of the findings, conclusions, and recommendations for practice and future research.

CHAPTER II:
THE LITERATURE REVIEW

Introduction

A review of the literature was conducted in order to uncover and study the factors that impact teaching and learning online in the current information age. Major themes brought to light by this review include the following: an increased use of online resources and technologies, changes in the way we learn and gain information, how e-learning has altered the roles and definitions of both teachers and learners, and the need for and benefit of professional development that targets e-learning instruction.

The Online Revolution

Learning online is the now and current revolution. Unlike the war-weary revolutions romanticized by history teachers everywhere, this insurgency builds an e-bridge that connects you to people, places, things, and knowledge that otherwise would be far beyond your grasp. Curtis Bonk (2009), author of *The World is Open: How Web Technology is Revolutionizing Education*, pleads with us to join this rebellion (p. 19), which has the potential to educate every single person on this planet (p. 7). He has proclaimed (and I concur) that “anyone can now learn anything from anyone at any time” (p. 7). The ideals ingrained in this sentiment are very encouraging. It demonstrates how easy it is for the novice and the scholar to impact each other’s life by sharing information. It is the creation and expansion of the Internet that has made these kinds of connections possible. Bellanca and Stirling (2011) noted that “the Internet is literally, figuratively, and educationally bringing together the citizens of the world, the richest and the

poorest, in a mass, electronically connected community;” the likes of which has never been seen, imagined, or experienced before (p. 3).

Back in 2001, Benamati and Lederer heralded that “information technology is rapidly changing [as new] products seem to emerge daily [and] this rapid change is accelerating and will likely continue to do so into the future” (p. 183). Fast-forward to today and we now see the manifestation of their seemingly modest declaration. Illingworth (2012) stated that “information is not only accessible but it has become increasingly easy to seek out without any concerted effort” (p. 181). This digital age of change and innovation moves with astronomical speed. The Internet, web technologies, websites, web authoring tools, communication devices, apps, social media, the cloud, video-conferencing, video creation, mobile technologies, open source content, RSS feeds, wikis, blogs, mash-ups, computers, tablets, podcasts, iPods, e-mail, e-readers, e-games, e-commerce, text, chat, instant messaging, cell phones, animation, simulation, virtual worlds, hardware, software, etc. are changed, updated, and transformed at an astronomical rate.

So, what is the impact? Well, physics educators would refer us to Newton’s third law of motion which states that “for every action, there is an equal and opposite reaction” (Physicsclassroom.com, n.d.). Taranto (2011) has provided us with some insight into the scale of this reaction. He has proclaimed that “the real world is merging with the digital world to form one interactive experience where people work, network, communicate, socialize, and play” (p. 4). Washbon (2012) has suggested that “technology change alters the way we apply knowledge and skills to control and adapt to our environment” (p. 43). According to the U.S. Department of Education (2005), current advancements in technology that were born at the end of this century “have revolutionized the way people communicate, exchange ideas, inform one another, and learn” (as cited in Schwartz, 2008, p. 389). Bonk (2009) parallels today’s technology to the

invention of the written word in Plato's time as it "was a historic transformation for the people of this planet because learning could now take place beyond a singular geographic location and moment in time" (p. 9). It could occur outside of the classroom and unfold wherever the learner was. Georgina and Hosford (2009) added that web technologies have "successfully collapsed the notion of time and distance as they have been applied to information access" and thus has "changed the way the world accesses and views information" (p. 690).

The collective ideas, thoughts, perspectives, and predictions of these scholars and institutions seem to convey that the way we connect and learn, which is an integral part of our life and culture, is now online and unbound by the prehistoric limits of the past (i.e., time and space). Case in point, if you want to know the middle name of the 5th president of the United States of America, Google it; if you want to know how much you spent on gas last month, click your bank's app; if you want to know what time your favorite singer will arrive in town for the concert, follow them on Twitter; if you want to learn how to make your own shampoo, go to ehow.com; if you want to wish your friend a happy birthday, post an announcement to their wall in Facebook; and if you want to know if your class will be cancelled due to the imminent inclement weather, check your text messages (you probably received a text from SchoolCast). In our modern age, information (or whatever we want or need to know at the time) transcends the pages of textbooks and classroom doors. The knowledge that a person may desire can be theirs anytime anywhere instantly.

Today's New Learner

The dynamic of immediate digital knowledge has expanded, multiplied, spread, and infiltrated almost every corner of the earth, in a fashion not unlike the most heinous and infamous pandemic. It is not hard to imagine that this constant and ever-increasing infusion has

quietly and suddenly altered those of us who have been exposed to its charms. Examples of those affected include (but are not limited to) the stay-at-home-mom, the financial executive, the retired army veteran, the community volunteer, the auto-mechanic, the traveling salesman, the foot-ball player, the farmer, the radio announcer, the newspaper journalist, the girl scout, the boy scout, the pastor, the actor, the musician, the mayor, the surgeon, the fast-food worker, the small-business owner, and yes even (if not especially) the student and the teacher. Perhaps more than any other group, students and teachers have encountered the full weight of how web technologies (WT) and digital innovations can transform your life and livelihood.

As we all know, the business of education is teaching and learning. Traditionally, teachers teach and students learn (Schwartz, 2008, p. 389). The introduction and immersion of WT have thrown this relationship off-balance. Conrad (2008) has offered a thoughtful review. “Within the realm of education, our brave new Web 2.0 world is characterized by technological advancement and the blurring of boundaries between formalized learning and the informality of popular culture” (p. 157). Our students have a higher probability of learning from an online news feed than they do from reading a textbook and are more likely to use a smart phone or clicker to communicate their comprehension than actually raising their hand. “This reflection takes as its inspiration the nature of the digitally-savvy 21st century learners who await us” (p. 157). According to Conrad (2008), the “nature” of learners today is dramatically different from the learners of yester-year. Dictionary.com (n.d.) maintains that the “nature” of a person or thing consists of that particular combination of qualities, instincts, temperament, and inherent tendencies that direct their behavior. This revelation warrants a deeper look into the full spectrum of this “new learner.”

Lahaie (2007) stated that almost all of today's learners "are being raised on a diet of digital technology; MP3 players; personal digital assistants; Blackberry devices; iPod players; laptops; video games; and cellular phones that take pictures, receive television signals, and [access the internet]...They live in a wired world" (p. 337). Gu et al. (2013) echoed that the digital environment wherein the "new learner" was raised has shaped how they think, behave, and act (p. 392). They have suggested that these learners are different "in terms of their patterns of thinking and communication, notions of learning, needs of control, and even their personal and social values. For instance, multitasking is taken for granted by new millennium learners as a normal social practice" (p. 393). The manner in which learners today operate technology to get things done "outside school, from instant messaging, mobile phones, and handheld games to digital music players and video game consoles is similar to how today's workers use technology in their professional careers" which is "on-the-go and fast paced" (Spires et al., 2008, p. 498). Spires et al. (2008) also added that the way "new information and communication technologies [ICT] are being used suggests that [these new learners] today are creating understandings and knowledge in new and different ways" especially since they are quite "comfortable using these technologies for interacting with information and with each other" (p. 497). DeGennaro (2008) found that new learners learn information differently due to the extensive technology driven and supported social activities and interactions they pursue. Research reports (DeGennaro, 2008) have demonstrated that these new learners "use the Internet, interactive simulations, Instant Messenger (IM) and text messaging as a natural part of their everyday lives" (p. 1). This appears to suggest that when involved in "technology-mediated participation [new learners] are decidedly engaged and are, more often than not, involved in enveloping, distributed, fluctuating, and emergent participation" (p. 1).

Downes and Bishop (2012) interjected that these new learners “learn best through trial and error, process information quickly, connect with graphics before text, and require relevance in their learning. They have grown accustomed to flashy, high-definition graphics, constant multitasking, and the excitement of gaming” (p. 6-7). When tasked with finding answers to questions, new learners, locate information quickly taking full advantage of web resources and search engines like Google. If they desire to “acquire a new skill, they watch a YouTube video to learn it” (p. 6-7). When they seek advice from their peers and others, “they tap into an electronic forum or social network that provides them access to [a] myriad [of] others who share their interests” (p. 6-7). Thus, normal standards and “patterns of learning have been transformed by readily accessible technologies” (p. 6-7). In addition, DeGennaro (2008) stated that new learners “figure out things for themselves, tinker with technology, work across people in groups, multitask, learn through a variety of media and collaborate with others” (p. 1-2). They also are experts at operating within and through multiple contexts and are “particularly savvy at developing relationships within interactional technology systems such as Instant Messaging, text messaging, and social networking. Through such unique interactions, students have a novel ability to read multiple texts (e.g. words, images, and video)” (p. 1-2).

Moreover, “new learners” are keen at “navigating complex ‘information spaces.’ [Also], they learn through discovery which requires new forms of reasoning. Specifically, this reasoning encompasses using objects and tools, texts, codes, etc., and using them to create a product that is considered important to them” (p. 1-2). Consequently new learners “access, absorb, interpret, process, and use information fundamentally different than previous generations” (p. 1-2). It is obvious that today’s “new learners” are cut from a different mold. In 2001, Pensky (as cited in Lahaie, 2007, p. 337) was able to shed some light on this anomaly. He identified these new

learners as *digital natives*. By definition, these individuals natively speak the digital language. Anyone born before the digital/information age, who has chosen to learn, practice, and adopt the precepts and constructs of technological advancement, are referred to as *digital immigrants*. Pensky (2001) further declared that “digital natives are used to receiving information really fast, like to parallel process and multitask, prefer their graphics before text, function best when networked, thrive on instant gratification and frequent rewards, and prefer games to serious work” (as cited in Lahaie, 2007, p. 337). In contrast, “digital immigrants learned to choose to teach—slowly step by step, one thing at a time, individually, and, above all, seriously” (as cited in Lahaie, 2007, p. 337). So, how do “digital natives” approach formalized e-learning (in contrast to the informal learning that they engage at their discretion)? Howe and Strauss (2000) have stressed that they “need a different type of educational experience” (as cited in Skiba, 2010, p. 251), at least different from what most conceive to be the traditional educational format with teacher lectures and textbook assignments. Downes and Bishop (2012) reported that “digital natives expect more from their teachers than did students in decades past” (p. 6). The Microsoft Corporation (2003) conveyed that digital natives expect that (as cited in Lahaie, 2007):

1. their classroom experience will be enhanced through technology;
2. technology will facilitate communication between professors and students;
3. aspects of their course work will be available online (syllabi, lectures, handouts, grading, and homework);
4. different learning styles will be accommodated through the use of technology; and
5. professors will be proficient in e-learning. (p. 337)

Conrad (2008) added that, in relation to e-learning, new learners are concerned with how they present themselves to others; respond to social and external stimuli in creating a sense of self; and can and will construct multiple selves according to circumstance (p. 158). Allen et al.

(2013) have highlighted that “twenty-first century students [i.e., digital learners] have been web consumers most of their lives. They demand online instruction that supports interaction while providing opportunities for them to collaborate with other students” (Structuring for interaction and collaboration section, ¶1). Defining who and what “digital natives” are is vitally important for educators. However, Gu et al. (2013) warned us to not put this group in a box. Their research has observed that the “digital native is by no means an identifiable generation defined solely by age; they possess a diverse range of technology skills and preferences; [and] their traits are situated and [are] by no means shared across the entire generation” (p. 393).

E-Learning and Its Impact

Learning anything anywhere at any time from anyone (or in anyway) is a unique and solemn privilege afforded to this generation. At no other time in history has knowledge been so easily obtainable (and just as easily discarded seconds later) by the masses. Perhaps thinking back to the days when knowledge (or schooling at any level) was a luxury (tied to a specific geographic location) reserved for the rich (and/or highly intelligent); and then only to men; and then only to a particular racial group would awaken an enlightened perspective and reverence for this new paradigm and its unknown yet pending and highly anticipated future impact. Howbeit, Thormann, and Zimmerman (2012), and possibly every other e-learning enthusiast in the free world, have expressed that “there is no going back to a world that does not use technology in teaching and learning” (p. 1). Wilson, Parr, and Parr (2012) reflectively stated that “what was once referred to as *correspondence* courses, where content, literature, and assignments were delivered to students through the postal service, distance education has continually evolved through the implementation of emerging communication technologies” (p. 157).

These technologies can best be described as “digital tools that enrich student-learning experiences” (Bellanca & Stirling, 2011, p. 34). These digital tools, which are collectively known as information and communication technologies (ICT), “encompass a range of hardware such as computers, graphing calculators, personal digital assistants (PDAs), digital video equipment, peripherals like scanners, digital cameras, digital projectors,” scientific instruments, and “software (generic, subject specific, and multimedia)” (MacDonald, 2008, p. 429); wikis, blogs, Learning or Course Management Systems, social networking sites, podcasts, shareware, Voice Operated Internet Protocol (VOIP), webquests, email, Twitter (Bellanca & Stirling, 2011); simulations, e-mentoring, e-coaching, m-learning, Live Virtual Classroom, and various websites (Driscoll & Carliner, 2005). Dziekan and Main (2012) have maintained that, in addition to the multitude of ICTs, distance education today consists of five modalities: correspondence, low residency, interactive television, learning management systems, and the hybrid model. Table 1 contains a brief description of each modality (p. 298).

Table 1

Distance and Traditional Education Course Delivery Modalities

Course Delivery Modalities	Description
Correspondence	Allow students to self pace their completion of their assignments by mailing their assignments to their instructor. Student and educator usually have little to no contact with each other.
Low Residency	Educators and their students meet face-to-face periodically during a semester and /or quarter. The class may meet only a few weekends in a classroom setting to discuss the subject matter. Course work may be submitted electronically or when the student returns on another weekend.
Interactive Television	ITV classroom participants meet with other sets of ITV classroom participants at different locations. Live broadcast can reach a variety of students on a variety of different ITV campus locations at a specific time to conduct a class session.
Learning Management Systems	LMSs allow distance education to be transmitted via the internet. LMSs are conducted via an asynchronous format where cyber-educators and cyber-students conduct classroom activities at separate locations and separate times that are convenient and accessible to the each of the cyber-participants. Can be enhanced with a synchronous learning format.
Hybrid Model	Classroom instruction combines any of the above modalities.

These modalities serve as the vehicle through which e-learning tools are applied in order to facilitate and enhance student learning. Hodges and Nelson (2013) purported that “the digital options that are available today far exceed those of the past and they offer extensive flexibility and support for the diversity of learners” found particularly in web based college-level environments (p. 7).

Thormann and Zimmermann (2012) noted that learning online, in all of its modes, “is becoming an important aspect of all levels of education [formal and informal; Pre-K-Doctorate]” (p. 1). Archambault and Crippen (2009) noted that current advancements in technology have dramatically altered the methods we use for communicating, learning, and “engaging with one another. As a result, the 21st century educational landscape has also been altered. One of these changes has been the addition [and growth] of online distance education, specifically the proliferation of virtual schools in K-12 settings” (p. 363). Although several states, including “Alaska, [Arizona], Arkansas, California, Colorado, Florida, Georgia, Hawaii, Idaho, Indiana, Kansas, Minnesota, New Jersey, Nevada, Ohio, Oregon, Pennsylvania, South Carolina, Texas, Utah, Washington, Wisconsin, and Wyoming” (Archambault & Crippen, 2009, p. 364) have implemented e-learning programs at the K-12 level (with varying degrees of success), Palloff and Pratt (2011) provided the following observances that may serve to hinder growth in this sector:

- 1) development level of students;
- 2) ways in which the courses are offered;
- 3) nature of the curriculum;
- 4) need to be responsive to multiple audiences (students, parents, schools, districts, states, and even the federal government); and
- 5) [using and focusing e-learning on] what is known as “grade replacement” or “credit recovery,” [which has the potential to expose teachers to the challenge of] one or more unmotivated students or students who do not have sufficient skill with the subject matter being taught, thus creating significant need for additional tutoring, contact, and feedback to keep the students engaged and moving forward. (p. 80)

Colleges and universities, on the other hand, are continuing to see explosive growth. Allen and Seaman’s (2014) research has found that over seven million students took at least one online course, which is an increase of over 400,000 from 2013 (p. 4). Also, their inquisition of

academic leaders revealed that 90% of them “believe that it is *Likely* or *Very Likely* that a majority of all higher education students will be taking at least one online course in five years’ time” (Allen & Seaman, 2014, p. 6). Phillips and Scott (2013) offered three insights regarding “this increase in enrollment in online courses:”

1. shift in strategy by higher education institutions to meet the increased student demand by increasing online course offerings;
2. demand by non-traditional students for access to higher education that has been driven by the labor market; and
3. impact of Web 2.0 technologies on communication and learning preferences of traditional students. (Literature review introduction section, ¶1)

Hoffmann and Dudjak (2012) added that “academic settings that do not offer this option risk losing potential students [and revenue] to universities with more innovative approaches to education” (p. 255). Moreover, Baran et al. (2011) expressed that the rising concern for and attention on e-learning provokes colleges and universities “to rethink their cultural, academic, organizational, and pedagogical structures in adapting to a new culture of teaching and learning” (p. 421). Therefore, Roby et al. (2012) have found that “many colleges and universities now consider online learning as essential to their overall strategy” (p. 30).

In addition to being a smart business move for colleges and universities, e-learning provides substantial benefits to the students who so eagerly pursue it. According to Chang and Smith (2008), “distance education [which includes teaching and learning online] has become widely used around the world today and is available in a number of forms” and is especially advantageous because it decreases and nearly removes the roadblocks inherent in traditional classrooms due to time and space constraints; which “makes learning accessible to students all day, every day, giving them immense control over their own learning schedules” and it provides convenience and easy access to the needed content (p. 407).

“Newlin and Wang (2002) emphasize that, in addition to cyber-learning communities being more accessible to students on the basis of positionalities, they believe that cyber-learning has opened the playing field in promoting social justice” (as cited in Dziekan & Main, 2012, p. 297). They maintain that learners who were previously made anxious by the context of the traditional learning format now have the liberty to engage and share their opinions in an unbiased forum. “In other words, cyber-learning community educators evaluate their cyber-students’ contributions based more upon a student’s merit, and not his or her visible characteristics such as disability or ethnicity” (as cited in Dziekan & Main, 2012, p. 297). Thormann and Zimmermann (2012) added that “online courses provide access to expert knowledge and resources” (p. 2). Tallent-Runnels et al. (2006) reviewed findings suggesting that “in asynchronous discussions, students had more time to think about their discussions” which enhanced the quality of each reply and the overall conversation (p. 96), and that the “online environment may offer a unique social advantage as compared to the traditional classroom” (p. 97; as cited in Roblyer et al., 2009, p.121). Allen et al.’s (2013) research is consistent with Tallent-Runnels et al. (2006). They also concluded that in web-based courses, “students and teachers have ample time to think critically, problem solve, develop responses, and research topics before responding to each other. In a virtual classroom, all peers are held accountable by the design and structure of the course” (Including communication strategies section, ¶7). With the teacher serving as facilitator and peers serving as secondary monitors, it should be impossible for anyone to avoid interacting with the multiple facets of the online course environment which may include discussions and/or blogs, etc. Combined these observances seem to suggest that, in addition to convenience and social justice, e-learning may provide educational advantages for students. Moreover, Prensky’s notion of *digital wisdom* may be the greatest benefit to date. He has posited that *digital wisdom* “arises

from the use of digital technology to access cognitive power beyond our innate capacity and wisdom” (as cited in Skiba, 2010, p. 251). This concept would seem to suggest that the use, operation, and manipulation of digital technologies, formally and informally, develops a new kind of intelligence within us. Skiba (2010) has suggested that “digital wisdom [which] does not just focus on one’s ability to easily use or even creatively use technology” is centered on selecting better options because your choice was aided by technological advancements (p. 251).

Role Clarity for Instructors and Students

Research and the current trends, that have seemingly and almost entirely engulfed the landscape of post-secondary education, all appear to agree that e-learning is now and will continue to be an essential component of the way we educate people in this modern age. The usual players (students, teachers, and content) now have a new and formidable participant (technology; specifically ICT) that they need to assimilate into the team dynamic of education. Historically, every member knew their position and played it with great pride. Albeit, recent societal demand, and the impossible to ignore allure and advantages of ICT, have made it an entity that has forced new definitions and roles upon each of the traditional players without prejudice.

Williams, Paprock, and Covington (1999) have noted that technology is a powerful force that must be directed toward the overall success of education. Technologies in and of themselves are not an end to aspire to. “They are used to extend the opportunities of learning to new groups, to make learning more efficient and flexible, and to enrich the learning processes. A variety of technologies are available at different levels of sophistication that may” suit most requirements (p. 21). The goal and consequently the challenge is to apply this potential to precise educational goals and infuse “cultural and conceptual developments” inherent in new technologies (p. 21).

Russell's (n.d.) work led him to "conclude that nothing inherent in technologies elicits improvements in learning." He has surmised, however, "that learning outcomes can be enhanced by adapting the content to the technology. In other words, technology itself is not responsible for the development of [mental capacity]" (as cited in Lahaie, 2007, p. 336-337). Lahaie (2007) added that "technology should enhance the learning experience and not be the learning experience" (p. 337). These findings seem to suggest that technology is a mere means to an end that should be directed by students and teachers for educational purposes. Schmid, Miodrag, and Di Francesco's (2008) thoughts follow this idea as they expressed that if "used effectively, computers have unique capabilities [that] allow learners to interact with content, to provide instantaneous and flexible assessment, to adapt to individual student needs, and to facilitate record keeping" (p. 65). Schwartz (2008) has confirmed that, at the most basic and rudimentary level, technology in any form is a tool that can be used to complete an educational objective or task. He implied that challenges occur when teachers and others fail to view technology as a tool (p. 392). As a pliable instrument, technology and the content it serves are subject to the hands that wield it. Therefore, in this digital age, since both students and teachers have control of technology, the power that was once long held by the teacher has been divided amongst them both.

In this new schematic, students (*digital natives*) engaged in e-learning are responsible for supervising the learning activities they choose to engage in, setting goals for themselves, investigating helpful instructional resources, and "sharing in decision making, assessment, and evaluation of themselves, the instructor, and the course" (Stanford-Bowers, 2008, Role of the learner section). Dyer (2005) expressed that student success in distance education is tied to a student's "motivation, self-efficacy, critical thinking, disposition, computer proficiency, and

attitude” (as cited in Wilson et al., 2012, p. 159). Shahdad and Shirazin (2012) stated that e-learners “have to teach themselves” (p. 1216). Gu et al. (2013) even added that the “current students are more knowledgeable than their teachers when it comes to ICT” presumable because they “have been raised in a digital environment that has shaped how they think, behave, and act (p. 392). These revelations seem to point to the fact that it is imperative, if not mandatory, that e-learners take a more active role in the “planning, monitoring, evaluation, [and completion] of their own learning” (Dyment et al., 2013, p. 140).

So, what is the teacher’s role in this new paradigm? Well, if students are to take a more active role then instructors should take a more passive role. Lahaie (2007) pointed out that “students must become more self-directed, thereby assuming more accountability for learning, and instructors must cede some control” (p. 336). Palloff and Pratt (2013) have noted that “teaching in the virtual classroom requires that we move beyond what have been considered traditional models of pedagogy, predominantly involving lecture, into new, more facilitative practices” (p. 21). Teaching online is considerably more complex than merely copying best practices from the traditional classroom and applying them to e-courses. Managing the e-learning environment demands instructional methods that foster interaction between learners and cultivates collaboration while navigating the content. “Unlike in the face-to-face classroom, attention in online education needs to be paid to developing a sense of community in the group of participants in order for collaboration to occur and the learning process to be successful” (p. 21). Here, in e-learning, facilitation is preferred (even recommended) over direct instruction.

Apparantly, “online teaching is different from face-to-face teaching and that, as such, it requires the development of its own pedagogies” (Baran et al., 2011, p. 425). According to Lane (2013), “theories of how people learn usually guide the development of pedagogy, and arguably

this activity has been going on since Socrates, and includes work by such figures as Jean Piaget, Lev Vygotsky, and John Dewey” (Shifts in pedagogy section, ¶1). The developments in this digital age are moving away from “instructivist methods, such as lecture and presentation, to more constructivist approaches, where students participate actively in creating their own learning through experiences” (Lane, 2013, Shifts in pedagogy section, ¶1). The research on learning theory uncovers a change of view that supports less cognitive-behaviorism and promotes more inclusion of social constructivism. This emphasis on constructivist ideology has been increasing over time and is currently expanding through the luxuries provided via ICT’s. Emergent learning theory and connectivism are two rising forms of constructivism that encourage the “full participation of the student in the learning experience” and uphold the view “that connections among people, groups, and information are the central source of learning (Lane, 2013, Shifts in pedagogy section, ¶1).

Maintaining a working knowledge of e-learning pedagogy is vital. According to Connors (2001) “electronically mediated courses need to integrate sound pedagogic principles of teaching/learning with the use of the technology—Techno-Pedagogy” (as cited in Lahaie, 2007, p. 337). In addition, instructors are required to “consider a variety of features and levels of involvement as activities are designed and digital tools are selected to enhance coursework.” Since, “a student’s learning process is enhanced through careful activity preparation on the part of the instructor,” opportunities for collaboration and interaction cannot be ignored (Allen et al., 2013, Including communication strategies section, ¶1). Baran et al. (2011) found and “described the main roles of online teachers [as]: process facilitator, advisor/counselor, assessor, researcher, content facilitator, technologist, designer, and manager/administrator” (p. 426). Roby et al. (2013) added “instructional designer, subject matter expert, media developer, and occasionally

[course] programmer” to the list (p. 30). These diverse responsibilities, ingrained in the role of the e-learning instructor, imply that “teaching in a technology-rich environment is complex, so the online instructor must possess a broader set of skills and competencies in order to ensure learner success” (Bigatel et al., 2012, p. 59).

E-Learning Instructors Need Professional Development

The role of the online instructor is very different from that of the face-to-face instructor. New responsibilities can range from course facilitator to instructional designer to even programmer for a single or multiple e-learning courses. Yet, expecting instructors to be well versed in each of these skill-sets and the ever-emerging trends and new technologies that accompany them is unreasonable unless assistance is provided. Ostashewski, Moisey, and Reid (2011) have admitted that educators are responsible for developing learning activities that incorporate these new technologies, even though very few have any formal training in digital and social media. This harsh reality is exacerbated by a culture of constant and relentless change in information technologies and novel processes “are emerging faster than they can be integrated into course material and textbooks, so even newly graduated teachers are often sorely behind in their knowledge of the technologies of which they are expected to be skilled practitioners” (p. 722). Consequently, professional development that targets the integration of these new technologies into teaching practice is vitally needed. “Additionally, access to timely, ongoing, and relevant” professional development activities designed to address these kinds of issues remains a challenge (p.144).

Archambault and Crippen’s (2009) study of K-12 distance educators found that as student enrollment in online classrooms continues to rise, the demand for tech-savvy instructors will grow more and more and thereby become essential. Since most instructors are currently being

pulled and recruited from the traditional classroom to teach in online settings, it is reasonable to predict that, with continued increases in demand, soon online teachers will be solicited directly from undergraduate programs. “Currently a majority of teacher education programs address teaching with technology in a single, isolated technology course. This lone technology-related course is already stretched wide to cover a multitude of technology-related topics as they pertain to quality teaching” (Crippen, 2009, p. 383). Moreover, this single course is hard-pressed and unlikely to fully disseminate the knowledge and skills needed to teach online. “This puts a huge burden on the virtual schools themselves, which must then provide professional development to get teachers up to speed with the nuances of teaching in an online environment” (p. 383).

Baran et al.’s (2011) critical analysis of the literature on the roles and competencies of online teachers offers the following implications for practice: “As teachers move from traditional to online classrooms, they face constant challenges of finding their teacher-self (p. 435-436).” There is a constant struggle and tendency to revert back to and utilize face-to-face teaching methods but the constraints and demands of the virtual classroom will likely present difficulties for all who try to maintain and implement traditional classroom techniques and practices online. “Programs preparing faculty to teach online need to encourage them to critically reflect upon their past experiences, assumptions, and beliefs towards learning and teaching, question them, and transform their perspectives by engaging in critical reflection, pedagogical inquiry and problem-solving” (p.435-436). Thus, it is important to provide training and support for online instructors “so that they know what to expect and how to establish their online teacher persona” through the infusion of professional development activities (p. 435-436). Roby et al. (2013) found this to be true in their study that surveyed the students and teachers of a large public university and purported to identify factors that would enhance student and instructor

experiences in online and blended courses. They found that “instructors recognize that they cannot be experts in every facet of online course development and facilitation and they have identified the area where they most need support” (i.e., instructional design and electronic material development; p. 34-35).

Hoffmann and Dudjak’s (2012) work with converting their university’s clinical nurse leader (CNL) program from a traditional structure to completely online found that online course delivery for graduate or continuing education is a viable professional development option (p. 258). They noted that “faculty need assistance both in course development and delivery [and] focused efforts must be undertaken to assess faculty learning needs and to provide formal and informal education related to recommended teaching strategies and available technology” (p. 258). Georgina and Hosford’s (2009) study of faculty perceptions on technology integration and training found that 56% of the faculty preferred professional development in a “small group faculty forum;” 52% preferred “asking colleagues; 50% (to some extent) would attend “University-sponsored faculty trainings;” and 63% noted that the “most important factor for faculty in the training process was regarding trainer quality” (p. 693-694).

Stanford-Bowers’ (2008) study of community college administrator, faculty, and student perceptions of persistence in online courses rendered the following recommendations: “In addition to funding for technical updates and IT support staff, there must be a focus on professional development initiatives for new and existing faculty members” (Recommendations section, ¶1). Gosper et al.’s (2011) study of a web-based lecture technology initiative, which occurred across four different Australian universities and garnered input from both students and instructors, found that (among other implications) unending professional development initiatives are a vital condition to assist and support staff with the absorption of new pedagogical methods

and strategies that address and complement the needs and wants of “new learners,” the challenges of new technology, and the content area/discipline obligations. “Programs need to go beyond the provision of technical information and training to encompass the development of a deeper understanding of the capability of learning technologies based on sound teaching and learning principles” (Gosper et al., 2011, p. 92).

Roblyer et al. (2009) used a mixed method approach to garner feedback from K-12 instructors who teach face-to-face and online through their state’s virtual school. The study focused on the impact of virtual course experiences on teachers’ face-to-face practice and they concluded that their results, if supported by other studies, “have implications for teacher preparation and for building a rationale to emphasize training in and use of online technologies.” In order for teachers to benefit from “the unique and powerful capacity of these technologies, to encourage reflection and build stronger connections between students and instructors, teachers must be taught how to design online activities” (p. 124). Eliason and Holmes (2010) developed and delivered a WebCT training course for college faculty. Data from their participants revealed that their “faculty certification course effectively promoted inquiry and reflection [in online teaching] for the participants” (Findings section, ¶1). Furthermore, “the facilitators have observed that successful course completers use the pedagogical knowledge from the course in both blended and face-to-face courses” (Conclusions and future research section, ¶1), which may imply that the professional development provided had a positive impact.

Dyment et al.’s (2013) review of the literature in conjunction with the data from their study of 27 Australian university instructors, concerning their readiness to prepare pre-service educators online (p. 136) yielded the following recommendation: It is best to provide a variety of professional development options “including access to academic resources such as relevant

journals that profile best practice” (Dyment et al., 2013, p. 141). Moreover, they add that to inspire scholars to personally pursue teaching and learning online “the effective preparation of the teachers of the future classroom, is paramount” (p. 144). Howell et al.’s (2004) review of current trends related to faculty success in distance education focused on the institution’s role and responsibility regarding professional development for faculty. They found that institutions need to design pathways toward future roles for instructors and “invest in faculty training that emphasizes best practices so that faculty receive the help they will need as they adapt to distance education and technology innovations” (p. 46).

Heirdsfield, Walker, Tambyah, and Beutel (2011) surveyed university students and staff within the faculty of education, regarding the implications of using a learning management system as an online learning environment. They found that distance learners need more than just access to learning materials, although this is important. It is apparent “that online technologies offer much more potential for interaction than is currently being realized by academic staff. The findings support the view that educators could use learning management systems more creatively and consistently as part of their pedagogy” (p. 10), which indicates that more training and exposure with this technology is warranted. Saltmarch and Sutherland-Smith’s (2010) review of research on teacher education in online environments concluded that the importance of instructor “subjectivities [i.e., professional disposition] to the everyday pedagogic practices, as well as the willingness to innovate and explore new pedagogic possibilities, suggests a need for new approaches to university staff development in the area of online teaching and learning” (p. 23).

Holmes’ (2013) case study of primary and secondary teachers involved in a large scale continuous professional development initiative, housed in an online community, led him to conclude that “teachers clearly benefit from trying out what they are learning in the context of

their everyday practice as part of their [Continuous Professional Development] CPD activities rather than when the training has finished (p. 107). Allowing teachers to observe the impact on student outcomes influences their outlook, attitude, and propensity for positive change. This seems “to be particularly important for the pedagogical use of ICT, where practical use of technology in the classroom can help teachers make the transition from developing skills in ICT to mastering competence in the pedagogical use of ICT” (p. 107). Therefore, instead of creating opportunities outside of the classroom (virtual or traditional) to promote technology integration and use, decision-makers should champion CPD that allows instructors to engage and test the pedagogical benefits of ICT in the intended context which is their “everyday teaching” (Holmes, 2013, p. 107). Benamati and Lederer’s (2001) survey of Information Technology (IT) professionals on information technology change found that of the five coping mechanisms (i.e., education and training, internal procedures, vendor support, consultant support, and endurance) implemented by IT institutions to manage high speed changes in IT “the most frequently applied coping mechanism category was Education and Training” (p. 199-200).

Ostashewski et al. (2011) studied constructivist principles and teacher professional development through the use of online courselets (or mini-courses) for school teachers. They found that online teacher professional development (oTPD) has two modes. It can be professional development housed in an online format and it can be professional development designed to support instructors who teach online. Both of these modes can operate at the same time. They noted that “activities in a social networking site, as the authentic online learning opportunities themselves, are a form of oTPD. Teachers reported learning about the use of online learning tools as a result of participating in the [online] courselet,” which was an important outcome (p. 152). Roehrs, Wang, and Kendrick (2013) conducted a mixed methods

descriptive study of higher education faculty use of the Quality Matters [QM] model. They report their primary finding as follows: “Short-duration training (none to six hours of class) allowed online instructors to learn to use the QM rubric accurately enough to match about two thirds of the scoring of certified peer reviewers” (p. 65), which again associates a positive outcome to professional development. Murdock’s (2006) study of online course development in technical teacher education, at the higher education level, found that teacher development initiatives “that utilize a more individualized approach may lead to a higher level of implementation of Web-based courses. Therefore, if such resources are included as part of an institution’s support infrastructure, they should be readily available to the faculty member” (p. 87). In Miglino and Walker’s (2010) description of their teaching with technology (T3) project, which aims to encourage the use of advanced learning technology by university instructors, school teachers, and industry trainers (p. 2494), they discussed how “fulfilling the promise of advanced e-learning requires a willingness to invest not just in technology but above all in skilled human resources [i.e., online instructors]” (p. 2495).

Kokoc et al.’s (2011) qualitative study of primary and secondary teachers’ views on using e-learning for in-service education found that teachers viewed online professional development as positive regarding the capacity to train more people, use resources efficiently, communicate easier, include people with disabilities, and be flexible with time and place. However, they did comment that in their view it was difficult “using online techniques when learning practical skills” versus “theoretical context” (p. 80-81). The multiple research studies reviewed appear to emphasize that professional development is a vital component toward the preparation, growth, improvement, and on-going enrichment of online instructor competencies.

Professional Development for Teaching and Learning Online

According to Gregory and Salmon (2013), very few faculty members have engaged online learning as either a student or a teacher. Yet, many are being assigned to teach online due to high demand, technological advancements, and shifts in our culture. These realities can make the move to teaching online an uncomfortable and undesirable undertaking. It is also important to note that “any changes in teaching entail an element of risk-taking requiring changes in personal beliefs, rather than simply the addition of new skills” (Gregory & Salmon, 2013, p. 257). This, coupled with the reality that some faculty members are frustrated by the fact that they are offered little to no professional development for e-learning, receive a low level of institutional support (Herman, 2012), but are yet expected to create, teach, and manage online courses, makes it easy to understand how Stein, Shephard, and Harris (2011) found “that the biggest hindrance to the uptake of e-learning is people” (p. 146). In order to change faculty views of the challenges associated with online instruction and equip them with the skills they need to be successful, professional development for teaching and learning online should feature a combination of characteristics and approaches (Wilson, 2012) that match “the nature of the content to be learned with learning processes that are appropriate for that particular content [based on instructor needs]” (Thompson & Goe, 2009, p. 9).

Professional development for teaching and learning online should be research based and aligned with “best practices” (Baghdadi, 2011). According to Lawless and Pellegrino (2007), this is accomplished when instructors are trained to apply “theories and research on learning, instruction, and assessment” to “decisions about when to use technology, what technology to use, and for what purposes” (p. 581). To this point, Young, Young, and Hamilton (2013) noted that the notion of technology integration itself is not an easy construct to teach especially since the

“complexity of teaching how to teach with technology stems from the need to teach general technology utilization skills for a given tool as well as the pedagogical constraints and affordances of the tool in a subject matter specific context” (p. 166). Furthermore, Lawless and Pellegrino (2013) have found that professional development for the enhancement of teaching and learning with technology can be divided into three distinct areas: 1) “professional development that focuses on integrating technology into instruction; 2) professional development that focuses learning about technology; and 3) professional development that focuses on learning how to use a particular type of software or information technology tool” (p. 581-582). These ideals appear to suggest that professional development for e-learning instruction has multiple facets. Both trainers and instructors have a responsibility to assess the most critical need, based on an understanding of the known circumstances, before prescribing or engaging in a particular form of development.

Spotts (1999) has suggested that those tasked with implementing professional development for online instruction should carefully consider “five significant e-learning variables: the learner, faculty, technology, environment, and perceived value” (as cited in Esterhuizen, Blignaut, & Ellis, 2013, p. 60). Gaytan and McEwen’s (2010) research stated that “a high quality model for the evaluation of professional development activities related to the effective integration of instructional technology” includes 1) feedback from participants; 2) participant learning; 3) organizational support; 4) changed instructional practices; and 5) student impact (p. 90). The work of Stein, Shephard, and Harris (2011) has yielded four categories of professional development for e-learning instruction which include the following:

1. Category A- E-learning professional development is seen as training to use technologies/tools/equipment;
2. Category B- E-Learning professional development is seen as opening up possibilities for using technologies for teaching and learning;

3. Category C- E-Learning professional development is seen as a collaborative exercise that can take many forms; and
4. Category D- E-Learning professional development is seen as being about relevance and purpose. (p. 156-157)

Esterhuizen, Blignaut, and Ellis' (2013) research identified five themes “beneficial to faculty development of technology enhanced learning” (p. 60):

1. The environment in which faculty members adopt technology enhanced learning from the perspective of support from the institution;
2. The environment in which faculty members adopt technology enhanced learning from the perspective of local realities;
3. The human factors relating to the adoption of technology enhanced learning;
4. The concerns and reservations relating to the use of technology enhanced learning; and
5. The continuous professional development needs, expectations, and motivators of faculty. (p. 74)

Gibson and Peacock (2006) studied what constitutes effective virtual learning for the promotion of faculty technology use and their results gave rise to “five core areas” that are relevant to web-based professional development tools (p. 68):

1. The amount of information which refers to how “text heavy” the web environment is;
2. The quality of information which refers to balancing local and external resources;
3. The ease of use as it relates to site navigation;
4. The appearance which concerns visual appeal; and
5. The usefulness of the information for the intended audience. (p. 68-69)

Wilson's (2007) research has suggested that professional development for online instruction is a transformative course of action that encompasses an educational institution's entire e-learning strategy which may include: diffusion of innovation, peer learning, embedding practice, project based, online professional development, and accredited courses (as cited in

Wilson, 2012, p. 893). In addition, Gregory and Salmon (2013) have posited that the knowledge and skills needed to teach online should be acquired by and occur via digital means and they maintain two reasons for this assertion: “First, staff benefit from becoming learners in the online environment and experiencing what their students experience; and second, an embedded approach to the development of knowledge and skills is much more likely to impact their teaching practices” (p. 259). Hill, Hawk, and Taylor (2001) support this notion as they reported that professional development “must be located as much as possible in the teacher’s real world [i.e., where instruction will occur]” and the content thereof should “be relevant to a teacher’s day-to-day concerns [and/or needs]” (p. 4).

Borko, Jacobs, and Koeliner (2010) reported that current technological trends in professional development include “digital libraries, web-based virtual learning environments, online and electronic conferencing features,” online discussion forums, chat rooms, and the use of bulletin boards (p. 554). To this list, Grant (2004) added that faculty development centers are a key supplement in the provision of professional development aimed at improving online instruction. These centers offer access to “specialists, such as instructional designers, graphic designers, teaching assistants, library media specialists, and audio/video producers” (p. 330). Also, they provide support for “course redesign, training in the use and application of distance education technologies, as well as media and technical support” (p. 330).

Effective Professional Development

As highlighted earlier, instructors are the most essential component of the teaching and learning process and they require “support and encouragement as well as new knowledge, skills, and abilities to be able to integrate e-learning into their teaching” and professional development is a well-respected channel through which this enhancement is widely known to be derived

(Stein, Shephard, & Harris, 2011, p. 146). Since professional development for teaching and learning online can be presented via multiple modes and methods to suit a variety of needs, it would seem prudent to explore how researchers describe and view effective professional development. According to Boyle, While, and Boyle (2004), “the continual deepening of knowledge and skills is an integral part of the development of any professional working in any profession” and the field of “teaching is no exception” (p. 46). The San Diego City Schools Blueprint for Student Success (2000) proclaimed that professional development is “the most effective tool” available to educational institutions for the improvement of teaching practice (as cited in Quick, Holtzman, & Chaney, 2009, p. 45). Desimone, Porter, Garet, Yoon, and Birman (2002) noted that “professional development is considered an essential mechanism for deepening teachers’ content knowledge and developing their teaching practices” and consequently functions as “a cornerstone of systematic reform efforts designed to increase teachers’ capacity” (p. 81).

Armour and Makopoulou (2012) added that educational practitioners have “the right and the responsibility to engage in appropriate and effective career-long professional learning (Brunetti, 1998)” and the rationale upholding this ideal is that “a profession exists to serve its clients, and a professional practitioner should be able to draw upon best knowledge at any given time to serve clients effectively” (p. 336). Therefore, one can surmise that “members of professions are, by definition, lifelong learners” (Armour & Makopoulou, 2012, p. 337). Moreover, the benefits derived from professional development are of great importance. They assist teachers in staying abreast of new and ever-changing student performance standards, content specific pedagogy and teaching methods, instructional technology tools, “shifting school environments,” culture, societal demands, and “an increasingly diverse student population” (Lawless & Pellegrino, 2007, p. 575). To obtain these benefits, Caffarella and Zinn (1999) have

identified three avenues that frame professional development: “1) self-directed learning experiences, 2) formal professional development programs, and 3) organizational development strategies” (p. 242).

While an explicit understanding of professional development, its benefits, and how to gain them is vitally critical, the following question still remains: What makes professional development effective? According to Thompson and Goe (2009), effective professional development “leads to observable, measureable improvements in teaching practice, [which is] a requisite step toward improving student learning” (p. 2). They further added that effective professional development aligns with and undergirds the “local circumstances” that impact teachers, proceeds over a span of time that exceeds one-day workshops, and involves “active [and] collective participation” (p. 3). Morlier (2012) found that “effective professional development is adjusted and re-molded for each setting. Factors that come into play include the following: the learning needs of teachers and students, teaching practices, the learning environment, school culture, leadership stance, policies, resources, and the community” (p. 16). “Peery (2004) states that professional development is meaningful and encourages positive growth only if it has an *inside-out* nature where teachers look inside their classrooms and determine what needs improvement” (as cited in Burke, 2013, p. 250).

Sun, Penuel, Frank, Gallagher, and Youngs (2013) added that high-quality professional development “should be sustained over time” with no gaps in between interventions, “anchored to practice, in terms of its subject-specific contents and skills and being linked to standards, curriculum, and assessments employed in teachers’ schools and districts,” and they should also utilize active learning which has been shown to have a greater impact on “instructional practice” (p. 346). “Darling-Hammond and Richardson (2009) report that high-quality professional

development must be centered on student learning, allow for collaboration among staff for an extended period of time, and promote active learning for teachers in their schools and classrooms” (as cited in Burke, 2013, p. 250). It has also been noted that the attributes identified by field experts as being vital to effective professional development include the following: an appropriate amount of time, additional resources, fosters collaboration, incorporates evaluation, and is in line with reform efforts (Gaytan & McEwen, 2010). The collective expressions, of effective professional development, presented by each of these researchers supports the chief goal of education based professional development, which is to heighten the capacity of instructors so they will be well equipped to enhance the learning process of all students“ (Morlier, 2012). However, Cormas and Barufaldi (2011) noted that historically professional development programs have not always adhered to or been crafted under the parameters outlined by research (p. 256). They cited that

The problem with professional development programs has been that endeavors were based on anecdotal ideas, shallow understandings of learning, poor evaluation techniques, and unclear goals (Sparks, 2002). To remedy the problems of professional development programs, researchers (e.g. Loucks-Horsley et al., 2003), research agencies (e.g. Educational Research Service and Educational Testing Service), teacher associations (e.g., American Federation of Teachers), national education organizations (e.g., The National Partnership for Excellence and Accountability in Teaching), and the US Department of Education (Guskey, 2003) began to publish lists that described effective characteristics of professional development. (p. 256)

These lists were devised to assist reform efforts and “aid educational leaders in [the] design, implementation, and evaluation of professional development” (Cormas & Barufaldi, 2011, p. 256). Some of these lists were presented as working models.

Garet et al.’s (2001) Framework for Effective Professional Development

According to Quick, Holtzman, and Chaney (2009) “one of the most currently well-known and widely cited models of effective professional development” is the Garet et al. (2001)

model of the critical features of effective professional development that “grew out of the national evaluation of the Eisenhower Professional Development Program” (p. 47). It is “based on a large body of literature on professional development, has been employed in several different contexts” and has maintained its value and relevance to the field (Quick, Holtzman, & Chaney, 2009, p. 47). The six critical features include:

1. The form or type of activity (i.e., internship, study group, mentor program, course, or workshop);
2. The duration of the activity which includes the total contact hours as well as the span of time over which the activity occurred;
3. The degree to which the activity emphasizes the collective participation of groups of teachers from the same school, department, or grade level;
4. The extent to which the activity offers opportunities for active learning
5. The degree to which the activity promotes coherence with teacher goals, state standards, etc.; and
6. The degree to which the activity has a content focus. (Desimone, Porter, Garet, Yoon, & Birman, 2002, p. 83)

Researchers who have built their work on the Garet et al. (2001) model are discussed below.

Desimone et al.’s (2002) study of the effects of professional development on teacher instruction was structured around all six critical features and they found that there is a benefit “to technology related professional development when there is collective participation of teachers from the same school, department, or grade level,” professional development that encompasses active learning increased “the impact of professional development activities,” and the benefits to teachers are magnified when “reform types of professional development that focus on a set of higher order instructional or alternative assessment methods” are used versus traditional methods (i.e., one-day workshops) (p. 101-102). Grant’s (2004) study of learning to teach with the web marked several of Garet et al.’s (2001) critical features as must-haves for professional

development (p. 330). Penuel, Fishman, Yamaguchi, and Gallagher (2007) have admitted that the theoretical constructs they used for their study “build from those explored by Garet et al. (2001)” although they did modify them (p. 927). Furthermore, their results found correlations among many of Garet et al.’s (2001) critical features (p. 952).

Thompson and Goe (2009) cited two of Garet et al.’s (2001) features (active learning and collective participation) in their study that focused on using teacher learning communities in professional development. In addition, their results noted a greater need to focus on content that is another critical feature. Cormas and Barufaldi (2011) studied the works of Garet et al. (2001) and others (Loucks-Horsley et al., 2003; and Tinoca, 2004) to develop “16 effective research-based characteristics of professional development” (p. 260). Kopcha (2012) stated that the professional development activities in his study “were selected because they align directly with the six research-based principles for effective professional development” that “were initially identified by Garet et al. (2001)” (p. 1111). In his discussion on implications for practice, he noted that “offering activities that align with the principles of effective professional development may be a critical step toward long-term changes in teacher perceptions and practice” (p. 1119).

Morlier’s (2012) review of the literature highlighted several features of Garet et al.’s (2001) model and her analysis of the Correlated Sciences and Mathematics Professional Development Program deemed it to be “an effective model of professional development” as it’s design fit “into the framework for effective development (Birman et al., 2000) in that it is mostly a traditional format, spans an entire school year, and strongly urges participants to attend collectively, as mathematics-science partners from the same school” (p. 132). Burke’s (2013) research on experiential professional development discussed the importance of all six critical features and the “data from [their] fieldwork reports, reflection papers, post-EPD [Experiential

Professional Development] questionnaire, observations, and field notes showed evidence in the development of all teachers' understandings" (p. 255).

In 2013, Sun et al. reported that "following Garet and colleagues' studies (Desimone et al., 2002; Garet et al., 2001) [they] identified three composite measures of professional development quality as [their] focal independent variables to examine the direct and spillover effects of professional development" (p. 350). In their results discussion, they found a "strong correlation among three measures of professional development features" (p. 355). Short (2013) cited the importance of coherence, from Garet et al.'s (2001) six critical features, and the implications it has regarding sheltered instruction (p. 121). Perkins and Cooter's (2013) study on improving teacher capacity was almost solely devoted to the importance of building the content feature of the model and the need for it to match school improvement needs (p. 183).

In addition to the research referenced above, Table 2 displays a visual representation of how current professional, state, and national policy align to the six critical features of Garet et al.'s (2001) model of effective professional development.

Table 2

The Alignment of Garet et al.'s (2001) Model of Effective Professional Development to Professional, State, and National Policy

		Type	Duration	Collective Participation	Content Focus	Active Learning	Coherence
Professional Organizations	American Federation of Teachers (AFT): Tenants of PD for Educators	S3-Reflect Research; S6-Contribute to improvement; S9-Designed by teachers & experts; S10-Variety of forms	S8-Sufficient time & support	S9-Cooperation between teachers and experts	S1-Deepen knowledge; S2-Foundation of pedagogy; S3-Knowledge of teaching & Learning	S4-Reflect research; S7-Engaging & reflect the complexities of teaching; S11-Job embedded	S5-Align to standards
	National Education Association (NEA): Standards for PD Products	S-Incorporate quality supplemental materials	S-Ongoing feedback	S-Builds & supports professional collaboration	S-Content is research based; S-Expand job skills & knowledge	S-Appropriate chunking & scaffolding of the content; S-Demonstration of participant learning	R-Linked to state standards; S-Align to national standards & meets state goals
	Learning Forward (formerly National Staff Development Council): Standards for Professional Learning	S-Data driven PD; S-Learning Designs	S-Implementation (for long-term change)	S-Learning Communities	S-Learning Designs	S-Learning Designs	S-Outcomes (align to standards)
	National Council for Accreditation of Teacher Education (NCATE): Standards for Professional Development Schools	S-Accountability & quality assurance	S-Structures, Resources, & Roles	S-Learning Communities; S-Collaboration	S-Structures, Resources, & Roles	S-Structures, Resources, & Roles	S-Structures, Resources, & Roles
State Policy	Alabama Standards of Effective Professional Development	S4-Use data to set priorities for PD	S2-Continuous instructional improvement	S1-Learning communities; S9 & S3- Collaborate	S12-PD provides knowledge to involve stakeholders; Prepare educators to: S6-apply research; S10-appreciate students; S11-Content knowledge; S5-Multiple sources of info	S7-Appropriate learning strategies, S8-Applies knowledge	S1-Align to school, district, & state standards
Legislation	No Child Left Behind Act of 2001 (as cited in Yoon et al., 2007)	HQ PD is regularly evaluated for effectiveness; HQ PD is founded on scientifically based research	HQ PD is sustained	----	HQ PD is content focused; HQ PD improves content knowledge	----	HQ PD is aligned to state standards
National Reports	2007 Report from the National Center for Education Evaluation & Regional Assistance (as cited in Grossman, 2009)	HQ PD is driven by data	PD should last a minimum of 14 hours; HQ PD is ongoing	----	HQ PD focuses on improving content knowledge	HQ PD allows practice, feedback, & implementation	HQ PD is connected to school & district goals
	2010 Report from the Office of Planning, Evaluation & Policy Department, U.S. Department of Education (Zaslow et al.)	EPD has specific articulated objectives	EPD has intensity & duration matched to the content	EPD has collective participation	EPD links the focus to knowledge & practice	Practice is an explicit focus of PD	EPD is appropriate for the organizational context & is aligned with standards
	2013 Report from the Center for Public Education	PD should not be in the traditional workshop style; EPD utilizes coaches & mentors	EPD must occur over time & be ongoing	Professional Learning communities are recommended	EPD is delivered in the context of the teacher's subject area	EPD stresses the implementation of new approaches	----
Key: S= Standard; R= Requirement; HQ= High Quality; PD = Professional Development; and EPD= Effective Professional Development							

Summary

Chapter II explored field and industry perspectives and research related to the current digital culture, the impact and change of learners today, the dynamics of e-learning, new roles for students and teachers, the relevance of professional development for online instruction, and the characteristics of effective professional development. The collective voices of these experts convey that our beloved profession is in a new day and a new age. The novel commodity of information and knowledge is now available 24-7 at the click of a button. The “good old days” of waiting to come to school to learn something new is gone. The traditional relationship between the student and teacher has been violently shaken. Today’s students desire stimulating learning activities from tech savvy mediators. Yet, sadly, the vast majority of our industry continues to allow pre-service and in-service teachers to instruct students in a manner that ignores the fact that ICT’s have infiltrated every facet of our very existence. However, societal demands have forced the inclusion of e-learning to the point where it has now spread to every corner of education (K-12 to Doctorate). This obligatory adoption has thrust some instructors into unfamiliar, uncharted, and, at times, unwelcome territory. Nevertheless, hope appears to reside in the application of professional enrichment. Many have found professional development activities to be a well-documented and established provision for the enhancement of instructor competence in e-learning development, design, and facilitation. The unanswered question may be, are schools and universities providing teachers with the training and learning opportunities that we all know they so desperately need?

CHAPTER III:
RESEARCH DESIGN AND METHODOLOGY

Introduction

The purpose of this study has two aims. The first is to construct and pilot a survey designed to elicit faculty views on professional development for teaching and learning online. The second is to explore the perceptions of e-learning faculty regarding the current state of professional development for online instruction. The specific research questions that guide this effort are as follows:

1. What types of professional development, related to teaching and learning online, do e-learning instructors participate in;
2. Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to;
3. Is there a relationship between faculty's perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development; and
4. Is there a difference between the most recent employer sponsored professional development and the most recent self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of

duration, collective participation, active learning, and coherence, as described in
Garet et al.'s (2001) model of effective professional development?

Special attention is directed toward how the instructors view and describe the e-learning professional development they participate in, current attributes thereof, and its impact. This study took note of any differences that arose among faculty members. This chapter provides information regarding the setting, the participants, the instrument, data collection, and data analysis.

Setting

The Alabama Community College System has divided Alabama's 67 counties into seven districts. The three community colleges selected for this study serve students who hail from one or more of Alabama's most densely populated counties, who tend to represent the higher end of the socio-economic scale, as well as students who reside in one or more of Alabama's least populated counties, who tend to represent the lower end of the socio-economic scale.

College A serves central Alabama via two campuses in a mostly urban area. It has 3,028 students enrolled: 59% are female; 41% are male; 59% are age 24 and under; 41% are age 25 and over; 59% are full-time; and 41% are part-time. The ethnicities represented include 75% African-American; 14% Caucasian; 1% Hispanic; 9% Other/Unknown. College A offers associate degrees, long and short certificates, and industry credentials in academic transfer areas ranging from general education and the humanities to business and pre-medicine and career and technical programs ranging from automotive technology and office administration to nursing and welding. College B serves the south-central portion of Alabama within a small town. It has 1,745 students enrolled: 66% are female and 34% are male; 67% are age 24 and under; 33% are age 25 and over; 61% are full-time; and 39% are part-time. The ethnicities represented include

74% African-American; 1% Asian; 23% Caucasian; 1% Hispanic; College B offers associate degrees and long and short certificates in academic transfer areas ranging from general studies and the arts and sciences to business and criminal justice; and career and technical programs ranging from practical nursing and cosmetology to drafting and masonry.

College C serves the southern-most edge of Alabama in a mid-sized city. It has 3,896 students enrolled: 60% are female and 40% are male; 60% are age 24 and under; 40% are age 25 and over; 56% are full-time; and 44% are part-time. The ethnicities represented include 62% African-American; 1% American Indian or Alaska Native; 2% Asian; 31% Caucasian; 1% Hispanic; 3% other/unknown. College C offers associate degrees and long and short certificates in academic transfer areas ranging from general education and the social sciences to computer information systems and business; and career and technical programs ranging from commercial food service and barbering to construction and welding technology.

Participants

The participants for this study are those instructors at College A, College B, and College C who teach or have taught online courses that have no face-to-face interaction. College A has 81 full-time faculty and 116 part-time faculty with a 17-to-1 student to teacher ratio. College B has 40 full-time faculty and 40 part-time faculty with a 17-to-1 student to teacher ratio. College C has 85 full-time faculty and 73 part-time faculty with a 23-to-1 student to teacher ratio. The participants include faculty members who hold doctoral, master, and bachelor degrees coupled with several years of industry experience. Also, every discipline and subject area is represented except for certain career technical programs (i.e., welding) that are not offered online at this time (N=435).

Instrumentation

At the time of this research, surveys from studies with a similar focus were reviewed and analyzed (Lane, 2013; Terantino & Agbehonou, 2012; Archambault & Crippen, 2009; Boyle, While, & Boyle, 2004; Quick, Holtzman, & Chaney, 2009; Hahn & Lester, 2012; Paver, Walker, & Hung, 2013; Morlier, 2012). If professional development or e-learning were a component, several other characteristics (such as a heavy focus on core subjects like reading or math; the K-12 level; library sciences; or face-to-face teaching) made the survey invalid for use in this work (Boyle, While, & Boyle, 2004; Hahn & Lester, 2012; Morlier, 2012). In addition, of those examined, some may have used a few aspects of Garet et al.'s (2001) model (Quick, Holtzman, & Chaney, 2009; Morlier, 2012), but none used all six features as a theoretical framework. Therefore, for this study, an original survey was constructed in accordance with the critical features approach prescribed by Desimone (2009) and based on all six characteristics of the Garet et al. (2001) model of what makes professional development effective. Each item of the questionnaire links to one of the six critical features of professional development (Garet et al., 2001) which include 1) the type of activity; 2) the content focus of the activity; 3) the duration of the activity (contact hours and span); 4) the collective participation in the activity; 5) the active learning involved in the activity; and 6) the coherence of the activity. Table 3 provides a visual representation of this arrangement.

Table 3

Garet et al.'s (2001) Six Characteristics by Survey Item

Characteristic	Type	Content	Duration	Collective Participation	Active Learning	Coherence
Survey Item(s)	#3, 6, 16, 25	#4, 7, 17, 26	#8, 9, 18, 19, 27, 28	#10, 20, 29,	#11, 21, 30	#12, 22, 31

Note. Item #1, 2, 13, 14, 23, and #32-37 will be used to report demographic and preliminary information.

The survey, provided in Appendix A, is divided into the following seven sections: 1) greetings and introduction; 2) directions; 3) type and content of the professional development that the participant engaged (Items #1-4); 4) greatest impact of the professional development (Items #5-12); 5) employer sponsored professional development (Items #13-22); 6) self-sponsored professional development (Items #23-31); 7) demographics (Items #32-37).

Thirty-one (31) questions are related to instructor perceptions of professional development for online instructors and its impact (Items #3-12, 15-22, and 24-31) and six demographic type inquiries (Items #1-2, 13-14, 23, and 32-37). The survey includes 14 yes/no, 2 check all that apply, 6 check only one option, 6 fill in the blank, 6 demographic questions, and 3 Likert-type items (Vagias, 2006) that use a 7-point scale where the scale was as follows: not at all (1), very little (2), slightly (3), somewhat (4), moderately (5), very much (6), or extremely (7). Each question was entered into Qualtrics and a web link to the survey was established. Responses were collected through this online survey and the multiple-choice item design was formatted so that it would take participants approximately ten minutes to complete the survey.

Two separate measures were used to establish the content validity of the instructor-developed survey. According to Isaac and Michael (1995), “content validity is demonstrated by showing how well the content of the test [or survey] samples [represents or models the] subject matter about which conclusions are to be drawn” (p. 129). The first demonstration of content validity was performed via a panel review of the survey by subject-matter-experts, who hold multiple years of experience and service in educational training and leadership at an Alabama university, and subsequent editing/revising occurred in accordance with their suggestions. The second demonstration of content validity was performed through this initial pilot of the survey instrument with the participants from College A, College B, and College C.

Data Collection

The data collection process for this study proceeded as follows. The first phase included applying for and gaining approval from the Institutional Review Board (IRB) at the University of Alabama on all study related procedures and materials (see Appendix D). The second phase required requesting and gaining permission from the President of all three community colleges which serve students from the highest and lowest populated counties within Alabama via e-mail (see Appendix B).

The third phase included designing and sending a short email to all faculty members at College A, College B, and College C. The email contained a greeting and the following two items: 1) a short screen-capture video presentation that invites the faculty members to participate in this study, introduces the researcher, discusses the topic and purpose of this research, and notes that participation is completely voluntary and responses will be kept confidential. [The purpose of this video is to provide potential participants with the information they need in order to make an informed decision. This video is designed to function similar to a face-to-face introduction often utilized in research (see Table 4)]; and a link to the online survey (that includes an e-version of the informed consent (see Appendix C).

Table 4

Screen-Capture Video Script

Greetings Faculty,

My name is Stephanie Henry and I am both a graduate student researcher and a community college instructor. I like many of you have been faced with the joys and challenges of teaching online. Therefore, I am interested in exploring faculty member views of professional development for teaching and learning online through the use of a short web-based survey that can be completed in approximately 10 minutes using a computer, tablet, or smart phone. I assure you that all responses will be kept confidential and I would greatly appreciate your input. You can even request a summary of the results by emailing me at snhenry2day@yahoo.com . If you are willing to participate, please click the link provided. Thank you!

Link: <http://youtu.be/MEPpIfHhC84?hd=1>

The next two phases (4 and 5) were designed to provide follow-up with potential participants in order to solicit the best response rate possible, thereby aiding statistical power. Phase four included asking one representative from each college to make a verbal reference to the study invitation email during one faculty meeting or faculty professional development activity (as permitted by the college president). The verbal reference stated the following: “Greetings Faculty, Recently you were e-mailed a research invitation which contains a link to a short online survey on professional development for teaching and learning online. Please review it and consider participating. It can be completed from your smart phone, tablet, or laptop in approximately 10 minutes. Thank You!”

Phase five allowed 40 days for faculty members to respond and then sending follow-up e-mails at day 15 and day 29. The follow-up e-mails both stated the following: “Reminder to All Faculty, Recently you were e-mailed a research invitation which contains a link to a short online survey on professional development for teaching and learning online. If you have not done so

already, please review it and consider participating. It can be completed from your smart phone, tablet, or laptop in approximately 10 minutes. Thank You!”

In phase six, the researcher exported the web survey data from Qualtrics to the Statistical Package for Social Science (SPSS) version 22. All study participants were asked to submit their responses via the web version of the survey constructed using Qualtrics technology. The data retrieved from the online survey was reviewed and analyzed using SPSS. The data was then processed in the statistical analysis software and the findings were summarized.

Data Analysis

The research questions (see Table 5) that were used to guide this study provide a foundation for the review of e-learning faculty views on the current state of professional development and whether it upholds the six characteristics of Garet et al.’s (2001) model of effective professional development. Survey items #1, 2, 13, 14, 23, and #32-37 represent demographic information that was used to convey pertinent and informative details about the study participants. The remaining survey items are outlined by research questions.

For research question #1, survey item #3 and a set of descriptive statistics from SPSS were generated to reveal which professional development activities the population has participated in. The variable of interest is the type of professional development. The statistics provided frequencies for the observed variable.

For research question #2, survey item #4 and a set of descriptive statistics from SPSS were generated in order to expose the content of the professional development reported by the population. The variable of interest is content which is the topic or subject of the professional development. The statistics displayed which topics the majority of the participants reported learning about.

For research question #3, survey items #5-12 and a correlation statistic (i.e., Pearson's product-moment correlation coefficient) were calculated in SPSS in an attempt to determine whether perceived skill gain covaries (positively or negatively) with any or all of the attributes of Garet et al.'s (2001) model. This statistic also unveiled the strength of the association (Leech, Barrett, & Morgan, 2008). Also, an analysis of variance (i.e., ANOVA) was executed in SPSS as a means of comparing duration as number of hours and duration as number of days to demonstrate whether there was a difference between them related to the impact of the professional development. In this inquiry, impact or faculty's perceived gain in knowledge and skill served as the dependent variable and Garet et al.'s (2001) six critical features served as the independent variables.

For research question #4, survey items #15-22, 24-31 and a Chi-square test was executed in SPSS as a means of comparing employer sponsored and self-sponsored professional development. Moreover, a Wilcoxon Signed Ranks test was used to demonstrate whether there is a difference between them on any or all of the attributes of Garet et al.'s (2001) model of effective professional development (Leech, Barrett, & Morgan, 2008). The Data Analysis Plan (see Table 5) presents a visual schematic of this inquiry.

Table 5

Data Analysis Plan

Research Question	Survey Item	Independent Variables	Dependent Variables	Analysis Method-Statistical Test
1. What types of professional development, related to teaching and learning online, do e-learning instructors participate in?	#3	N/A	N/A	Descriptive statistics (i.e., frequency distribution)
2. Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to?	#4	N/A	N/A	Descriptive statistics (i.e., frequency distribution)
3. Is there a relationship between faculty's perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development?	#5-12	Type (#6), Content (#7), Duration (#8,9), Collective Participation (#10), Active Learning (#11), Coherence (#12)	Impact (faculty perceived skill gain) (#5)	ANOVA and Correlation
4. Is there a difference between the most recent employer sponsored professional development and the most recent self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development?	#15-22, 24-31	N/A	Employer sponsored (#15-22) and self-sponsored professional development (#24-31); Type, Content, Duration, Collective Participation, Active Learning, Coherence	Chi-square and Wilcoxon Signed Ranks

Notes. For all statistical procedures, normal distribution is assumed. If normal distribution is not present, non-parametric procedures will be used. Survey items #1, 2, 13, 14, 23, and 32-37 will be used to report demographic and preliminary information.

The results were examined in order to describe the current state of professional development for e-learning instructors from the perspectives of the instructors. A detailed review of these results can be found in Chapter IV.

Summary

In Chapter III, the methodology for this study was revealed and outlined. This study was designed to capture a detailed view of the current state and condition of professional development, for e-learning instructors, directly from the faculty members themselves. Recommendations from field experts were used to guide the development process. An online survey based on Desimone's (2009) Critical Features Approach and Garet et al.'s (2001) model of what makes professional development effective was used to amass and explore participant responses. After IRB and administrator approval, survey data was collected, analyzed, and recorded for educational use and enrichment.

CHAPTER IV:
FINDINGS AND DATA ANALYSIS

Introduction

This descriptive research study is designed to shed light on the phenomena of professional development directed toward teaching and learning online. At the core of this project is the aim to uncover teacher experiences, views, and practices. Gaining their perspective sets the foundation for understanding the various factors that affect this form of learning. The participants for this study hail from three distinct community colleges within the state of Alabama. The tool used to collect the data was a web based survey and several statistical analyses were run in SPSS version 22 to uncover the presence of a relationship or an effect. For clarity, this chapter is organized as follows: (a) review of the demographics, (b) results for research questions #1-4, and (c) the summary.

Demographics

The total population for this study is 435. The total number of participants who completed the online survey is 73. This represents a 16% response rate, which is standard for online survey research (Jin, 2011) and does not necessarily indicate less pertinent data (Visser, Krosnick, Marquette, & Curtin, 1996). Also, 42 of the 73 participants reported that they have taught an online class that had no face-to-face interaction. Tables 6-11 present data for the entire sample (n=73), Tables 12-36 display data for the target audience (n=42), and Tables 37-55 show data for those instructors who have participated in an employer sponsored (n=37) and a self-sponsored (n=11) professional development activity related to teaching and learning online.

Gender

Within the group of participants, 33.3% were male and 66.7% were female (see Table 6).

Table 6

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	23	31.5	33.3	33.3
	Female	46	63.0	66.7	100.0
	Total	69	94.5	100.0	
Missing	System	4	5.5		
Total		73	100.0		

Employment Status

There are three categories of faculty employment at the community college level which includes full-time, part-time, and adjunct. For most institutions, full-time faculty members work a full course load of five classes within a 35-40 hour work week. Depending on the organization and policy of the school, part-time faculty members may work any number of hours less than 40 per week and usually have a course load of less than five per semester. Adjunct instructors work a schedule similar to part-time faculty but their schedule does not occur regularly from semester to semester. Some work only as needed and at some institutions only retirees are eligible for adjunct status. For the purposes of this study, all part-time employees and all adjunct employees were considered the same since both groups work part-time. According to the results, 73.9% of the respondents represent full-time faculty while 26.1% represent part-time faculty (see Table 7).

Table 7

Employment Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Full-time	51	69.9	73.9	73.9
	Part-time/Adjunct	18	24.7	26.1	100.0
	Total	69	94.5	100.0	
Missing	System	4	5.5		
Total		73	100.0		

Educational Program

At the community college level there are two primary program divisions: academic transfer and career technical. The academic transfer segment focuses on the study of specific subjects like English, math, and science, etc. Traditionally, students majoring in these areas are positioning themselves to continue their studies at the baccalaureate level. Career technical programs focus on skill based trades such as cosmetology, food service, and welding, etc. Traditionally, students majoring in these areas are positioning themselves to join the workforce upon program completion. Both areas offer long certificates, short certificates, and the associate’s degree. The results show that 63.8% of the participants represent the Academic transfer division while 34.8% represent the career technical division (see Table 8). These results appear to align with current trends since more and more academic programs offer students web based course options while there are still several career technical programs that have not yet made the transition to e-learning. The challenge concerns taking heavily performance-based

programs and transforming them for the e-learning environment. This distribution in faculty sheds light on the need to address e-learning options for students in career technical programs.

Table 8

Educational Program

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Academic	44	60.3	63.8	63.8
	Career Technical	24	32.9	34.8	98.6
	Other: Please list	1	1.4	1.4	100.0
	Total	69	94.5	100.0	
Missing	System	4	5.5		
Total		73	100.0		

Teaching Experience

The years of teaching experience held by the participants of this study ranged from 1 year to 44 years where 34.8% of the group has taught 1-10 years, 39.4% has taught 11-20 years, 16.7% has taught 21-30 years, and 9.1% has taught for over 30 years (see Table 9).

Table 9

Frequencies for Years of Teaching Experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-10 yrs	23	31.5	34.8	34.8
	11-20 yrs	26	35.6	39.4	74.2
	21-30 yrs	11	15.1	16.7	90.9
	Over 30 yrs	6	8.2	9.1	100.0
	Total	66	90.4	100.0	
Missing	System	7	9.6		
Total		73	100.0		

The mean or average years of teaching experience was 16.3 years with 15 years representing the mode or most commonly occurring value (see Table 10). These results appear to indicate that both novices and veterans provided their input for this research study.

Table 10

Descriptive Statistics for Years of Teaching Experience

	N	Range	Minimum	Maximum	Mean	Mode	Std. Deviation
Years of Teaching Experience	66	43.00	1.00	44.00	16.2879	15	10.63342
Valid N (listwise)	66						

Years of Experience Teaching Online

In comparison to the range of years that the participants have taught overall, the number of years that they have taught online is noticeable less. The results show that 36.4% do not have any years of experience teaching online while 22.7% have 1-4 years of experience, 33.3% have 5-10 years of experience, and only 7.6% have more than 10 years of experience teaching online (see Table 11).

Table 11

Frequencies for Years of Experience Teaching Online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 years	24	32.9	36.4	36.4
	1-4 years	15	20.5	22.7	59.1
	5-10 years	22	30.1	33.3	92.4
	Over 10 years	5	6.8	7.6	100.0
	Total	66	90.4	100.0	
Missing	System	7	9.6		
Total		73	100.0		

Also, the years of experience teaching online ranges from 0 to 16 with a mean of only 3.6 years and a mode of 0 years (see Table 12). This suggests that the majority of the respondents have very little experience teaching online even though many have taught for several years.

Table 12

Descriptive Statistics for Years of Experience Teaching Online

	N	Range	Minimum	Maximum	Mode	Mean	Std. Deviation
Years of Experience Teaching Online	66	16.00	.00	16.00	0	3.6061	3.84759
Valid N (listwise)	66						

Number of Online Courses Taught

According to the data, 42.4% of the respondents have not taught a single class online, that had no face-to-face interaction; 34.8% have taught 10 or fewer; and 22.7% have taught over 10 (see Table 13).

Table 13

Frequencies for Number of Courses Taught Online

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Taught 0	28	38.4	42.4	42.4
	Taught 10 or less	23	31.5	34.8	77.2
	Taught over 10	15	20.5	22.7	100.0
	Total	66	90.4	100.0	
Missing	System	7	9.6		
Total		73	100.0		

The participants collectively reported teaching a range of 0 to 66 online courses (that contained no face-to-face interaction). The results further show a mean of 7.6 courses and a mode of 0 courses taught (see Table 14). Here the results indicate that the majority of the participants do not have much experience teaching online.

Table 14

Descriptive Statistics for Number of Online Courses Taught

	N	Range	Minimum	Maximum	Mode	Mean	Std. Deviation
Number of Online Course Taught	66	66.00	.00	66.00	0	7.6212	12.48478
Valid N (listwise)	66						

The results from the demographic section of the survey notes that a diverse mix of both new and veteran teachers provided input yet many of them have very little experience teaching online courses.

Target Audience

The focus of this study is to gain insight on the experiences of faculty members who teach online courses that contain no face-to-face interaction. Therefore, the first two questions of the survey were designed to pinpoint this specific audience. In survey item #1, the participants were asked had they ever taught an online class that was fully administered online with no face-to-face interaction. The results show that 57.5% of the participants (42 out of 73) have taught an online class with no face-to-face interaction while 42.5% (31 out of 73) have not (see Table 15).

Table 15

Taught an Online Class with No Face-to-Face Interaction

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	42	57.5	57.5	57.5
No	31	42.5	42.5	100.0
Total	73	100.0	100.0	

In survey item #2, the participants who answered yes to item #1 (n = 42) were asked had they ever participated in a professional development activity that was related to teaching and learning online. The data shows that 97.6% of the respondents, who have taught an online course that contained no face-to-face interaction, have participated in a professional development activity related to teaching and learning online while 2.4% have not (see Table 16).

Table 16

Participated in Professional Development for Teaching and Learning Online

	Frequency	Valid Percent	Cumulative Percent
Yes	41	97.6	97.6
No	1	2.4	100.0
Total	42	100.0	

Research Questions

The results for the research questions are presented in order from #1 to #4. Research questions included the following:

1. What types of professional development, related to teaching and learning online, do e-learning instructors participate in;
2. Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to;
3. Is there a relationship between faculty’s perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.’s (2001) model of effective professional development; and

4. Is there a difference between the most recent employer sponsored professional development and the most recent self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development?

Question 1

What types of professional development, related to teaching and learning online, do e-learning instructors participate in? The results for Question 1 were derived from survey item #3. In item #3, participants were asked to select each type of professional development, related to teaching and learning online, that they had participated in from the following: 1) in-service; 2) training workshop; 3) conference; 4) webinar (or Web resource); 5) college course; 6) print material (book, etc.); 7) peer-to-peer discussion/mentoring; 8) consultation with an instructional designer; and 9) other (please list). The results show that each type of professional development has been engaged. A little over 80% of the respondents have participated in a training workshop related to teaching and learning online; 66.7% have attended an in-service; 59.5% have engaged a webinar or web resource; just over 40% have consulted an instructional designer, attended a conference, and/or engaged a peer-to-peer discussion (respectively); 38.1% have used print materials; and 31% have taken a college course related to teaching and learning online (see Table 17).

Table 17

Frequencies for Type of Professional Development

	Frequency	Percent	Valid Percent	Cumulative Percent
Training Workshop Participation				
Valid 1	35	83.3	100.0	100.0
Missing System	7	16.7		
Total	42	100.0		
In-Service Participation				
Valid 1	28	66.7	100.0	100.0
Missing System	14	33.3		
Total	42	100.0		
Webinar/Web Resource Participation				
Valid 1	25	59.5	100.0	100.0
Missing System	17	40.5		
Total	42	100.0		
Participated in a Consultation with an Instructional Designer				
Valid 1	18	42.9	100.0	100.0
Missing System	24	57.1		
Total	42	100.0		
Conference Participation				
Valid 1	17	40.5	100.0	100.0
Missing System	25	59.5		
Total	42	100.0		
Peer-to-Peer Discussion Participation				
Valid 1	17	40.5	100.0	100.0
Missing System	25	59.5		
Total	42	100.0		
Print Materials Participation				
Valid 1	16	38.1	100.0	100.0
Missing System	26	61.9		
Total	42	100.0		
College Course Participation				
Valid 1	13	31.0	100.0	100.0
Missing System	29	69.0		
Total	42	100.0		

Question 2

Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to? The results for Question #2 were derived from survey item #4. In this item, the respondents were asked to identify each topic, related to teaching and learning online, that they had been exposed to through some form of professional development using the following: 1) best practices; 2) Web 2.0 technologies; 3) Learning Management Systems (LMS); 4) E-learning course design principles; 5) E-learning hardware; 6) E-learning evaluation programs; and 7) Other (please list).

The results reveal that LMS's, E-learning course design, and Best practices, were the topics that over 75% of the participants had been exposed to (respectively); about 50% had been exposed to Web 2.0 technologies (such as Google Docs and GoAnimate) and E-learning hardware (respectively); and less than 30% of the participants had been exposed to information on E-learning evaluation programs (such as Quality Matters). None of the participants reported a topic in the "Other (please list)" category (see Table 18).

Table 18

Frequencies for Topic of Professional Development

	Frequency	Percent	Valid Percent	Cumulative Percent
Professional Development on LMS's				
Valid 1	33	78.6	100.0	100.0
Missing System	9	21.4		
Total	42	100.0		
Professional Development on E-learning Course Design				
Valid 1	33	78.6	100.0	100.0
Missing System	9	21.4		
Total	42	100.0		
Professional Development on Best Practices				
Valid 1	32	76.2	100.0	100.0
Missing System	10	23.8		
Total	42	100.0		
Professional Development on Web 2.0 Technologies				
Valid 1	22	52.4	100.0	100.0
Missing System	20	47.6		
Total	42	100.0		
Professional Development on E-learning Hardware				
Valid 1	20	47.6	100.0	100.0
Missing System	22	52.4		
Total	42	100.0		
Professional Development on E-learning Evaluation Programs				
Valid 1	12	28.6	100.0	100.0
Missing System	30	71.4		
Total	42	100.0		

Question 3

Is there a relationship between faculty's perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development? The results for Question #3 were derived from items #5-12. Participants were asked questions that 1) linked specifically to the professional development activity, related to teaching and learning online, that had the greatest impact on their knowledge and skills as an e-learning instructor, and 2) aligned to the six characteristics of effective professional development which include the 1) type of activity; 2) content focus of the activity; 3) duration of the activity; 4) collective participation in the activity; 5) active learning involved in the activity; and 6) coherence of the activity.

Preliminary data. In survey item #5, participants were asked to think about the one professional development activity, related to teaching and learning online, that had the greatest and most positive impact on them using the following scale: not at all (1), very little (2), slightly (3), somewhat (4), moderately (5), very much (6), or extremely (7). The results show that, for 14.6% of the respondents, the one professional development activity that had the greatest and most positive impact on them increased their knowledge and improved their skills as an e-learning instructor to an extreme extent, for 46.3% the extent was very much, for 19.5% the extent was moderate, for 7.3% the extent was somewhat, for 2.4% the extent was slight, for 7.3% the extent was very little, and for 2.4% the extent was not at all (see Table 19). Here the data shows that, for well over half of the participants, the extent of the professional development activity that had the greatest impact was moderate or better where the mean = 5.32 and the mode = 6 (very much).

Table 19

Extent of the Greatest Impact Professional Development

	Frequency	Valid Percent	Cumulative Percent
1 Not at all	1	2.4	2.4
2 Very Little	3	7.3	9.8
3 Slightly	1	2.4	12.2
4 Somewhat	3	7.3	19.5
5 Moderately	8	19.5	39.0
6 Very Much	19	46.3	85.4
7 Extremely	6	14.6	100.0
Total	41	100.0	

In survey item #6, participants were asked to select the type of professional development that had the greatest and most positive impact on their knowledge and skills as an e-learning instructor. The data reveals that an overwhelming 65.9% of the participants recorded training workshop as the type of professional development that had the greatest impact on them (see Table 20). Here it is important to note that training workshop was also reported as the most engaged type of professional development.

Table 20

Type of Professional Development that had the Greatest Impact

	Frequency	Percent	Valid Percent	Cumulative Percent
In-service	1	2.4	2.4	2.4
Training workshop	27	64.3	65.9	68.3
Conference	3	7.1	7.3	75.6
Webinar (or other web resources)	3	7.1	7.3	82.9
College course	4	9.5	9.8	92.7
Print material (i.e., book, journal, etc.)	1	2.4	2.4	95.1
Peer-to-peer discussion/mentoring (related to the improvement of online instruction)	1	2.4	2.4	97.6
Other: Please list	1	2.4	2.4	100.0
Total	41	97.6	100.0	
Missing System	1	2.4		
Total	42	100.0		

In item #7, participants were asked what was the topic of the professional development activity that had the greatest and most positive impact on their knowledge and skills as an e-learning instructor. The results show that 31.7% of the participants noted that learning about LMS's had the greatest impact for them; just over 26% chose best practices; another 26% said e-learning course design principles helped them the most; 9.8% selected Web 2.0; and only a little over 2% reported that information on e-learning hardware had the greatest impact on their knowledge and skills related to teaching and learning online (see Table 21).

Table 21

Topic of Professional Development that had the Greatest Impact

	Frequency	Percent	Valid Percent	Cumulative Percent
Best practices, strategies, and/or learning theories	11	26.2	26.8	26.8
Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.)	4	9.5	9.8	36.6
Learning Management Systems (i.e., Blackboard, Moodle, etc.)	13	31.0	31.7	68.3
E-learning course design principles and construction	11	26.2	26.8	95.1
E-learning hardware (i.e., Web cams, microphones, etc.)	1	2.4	2.4	97.6
Other: Please list	1	2.4	2.4	100.0
Total	41	97.6	100.0	
Missing System	1	2.4		
Total	42	100.0		

In items #8 and #9, participants were asked for how many hours and for how many days did the professional development activity that had the greatest and most positive impact on their knowledge and skills as an e-learning instructor last. The participants reported a duration of 1-70 hours with a mean or average 8.85 hours spanning over a range of less than one day (0 days) to 30 days with a mean of 3.85 days (see Table 22). Here the data reveals that the professional development considered to have the greatest impact was reported as lasting for a little over eight hours in less than a week.

Table 22

Descriptive Statistics for Duration (Hours and Days) of Greatest Impact Professional Development

	N	Range	Minimum	Maximum	Mode	Mean	Std. Deviation
Number of Hours	37	69.00	1.00	70.00	2.00	8.8514	13.24180
Number of Days	37	30.00	.00	30.00	1.00	3.8514	5.85338
Valid N (listwise)	37						

In item #10, participants were asked whether other instructors from their department or content area participated with them in the professional development activity that had the greatest and most positive impact on their knowledge and skills as an e-learning instructor. The results show that, for a large majority (72.5%) of the respondents, a fellow instructor from their department engaged in the professional development activity with them but for a little less than 1/3 (27.5%) participation did not include peers from the same content area (see Table 23).

Table 23

Frequencies on Collective Participation for the Professional Development Activity that had the Greatest Impact

	Frequency	Valid Percent	Cumulative Percent
Yes	29	72.5	72.5
No	11	27.5	100.0
Total	40	100.0	

In item #11, the participants were asked whether they were able to practice and gain feedback on what they were learning during the professional development activity that had the greatest and most positive impact on their knowledge and skills as an e-learning instructor. The

results reveal that almost 79.5% were able to practice and gain feedback during the activity and 17.9% were not (see Table 24). Here it is important to note that one respondent (2.6%) reported that this question did not apply to the type of professional development that had the greatest impact on them. Non-facilitated types of professional development (i.e., print materials, etc.) may hold characteristics that would not lend themselves to the inclusion of practice and feedback.

Table 24

Frequencies on Active Learning for the Professional Development Activity that had the Greatest Impact

	Frequency	Valid Percent	Cumulative Percent
Yes	31	79.5	79.5
No	7	17.9	100.0
Not Applicable	1	2.6	
Total	39	100.0	

In item #12, the respondents were asked whether the professional development activity, related to teaching and learning online, that had the greatest and most positive impact on them was directly connected to college goals, accreditation, government/state policy, or a personal goal of theirs. The results show that for 80.5% of the participants the professional development activity was connected to a goal but for 14.6% the activity was not connected to a goal. Moreover, 4.9% reported that they didn't know if the professional development activity was connected to a goal (see Table 25). A response of this nature may indicate that the participant was not the sponsor of the professional development activity.

Table 25

Frequencies on Coherence for the Professional Development Activity that had the Greatest Impact

	Frequency	Valid Percent	Cumulative Percent
Yes	33	80.5	80.5
No	6	14.6	95.1
Don't Know	2	4.9	100.0
Total	41	100.0	

Analysis. In order to address research question #3, each component of Garet et al.'s (2001) model of effective professional development must be compared with the participant's rating of the professional development activity that had the greatest impact on their knowledge and skills as an e-learning instructor. Since it is important to determine if each independent variable has an effect on the dependent variable or on any of the other independent variables, an Analysis of Variance (ANOVA) is the most appropriate analysis to perform. However, an examination of the data reveals that two of the independent variables (professional development type and professional development topic) are nominal and have over the recommended 2-4 levels (8 and 6 respectively). Therefore, before conducting the ANOVA, the levels for both of these variables must be recoded (Leech, Barret, & Morgan, 2008). For professional development type, the levels were recoded based on the method of facilitation which included the following: Face-to-Face (FTF) Facilitation for in-service, training workshop, conference, and college course; web facilitation for webinar or web resource; and non (or not)-facilitated for print material, peer-to-peer discussion/ mentoring (related to e-learning instruction), and consultation with an instructional designer for e-learning course design. An analysis of the recoded variables reveals

that 85.4% of the respondents reported that facilitated types of professional development had the greatest impact on their knowledge and skills as an e-learning instructor while 9.8% reported web facilitated types as having the greatest impact and only 4.9% reported non-facilitated types as having the greatest impact (see Table 26).

Table 26

Greatest Impact Type Recode

	Frequency	Valid Percent	Cumulative Percent
F-T-F Facilitated	35	85.4	85.4
Web Facilitated	4	9.8	95.1
Non-Facilitated	2	4.9	100.0
Total	41	100.0	

For professional development topic, the levels were recoded based on whether they related to E-learning pedagogy or E-learning design. Best practices, strategies, and/or learning theories were recoded as E-learning pedagogy and Web 2.0 technologies or other web resources, LMS's, E-learning course design principles, E-learning hardware, and E-learning evaluation programs were recoded as E-learning design. An analysis of the recoded variables reveals that 70.7% of the respondents reported that professional development topics related to E-learning design had the greatest impact on their knowledge and skills as an e-learning instructor while 29.3% reported topics related to E-learning pedagogy as having the greatest impact (see Table 27).

Table 27

Greatest Impact Topic Recode

	Frequency	Valid Percent	Cumulative Percent
E-learning Pedagogy	12	29.3	29.3
E-learning Design	29	70.7	100.0
Total	41	100.0	

After the variables for the professional development type and topic that had the greatest impact were recoded, the resultant data now complies with the 2-4 levels recommended for an ANOVA (Leech, Barret, & Morgan, 2008). Table 28 provides an overview of how each variable was labeled for entry into SPSS version 22 for analysis.

Table 28

Variables and Recoded Levels

Variable Name	Variable Type	Level(s)	Code	Survey Item
Extent of Greatest Impact	Dependent	1-Not at all; 2-Very Little; 3-Slightly; 4-Somewhat; 5-Moderately; 6-Very Much; 7-Extremely	N/A	#5
Professional Development Type	Independent	1-In-service; 2-Training workshop; 3-Conference; 4-Webinar (or web resource); 5-College course; 6-Print material (book, journal article, etc.); 7-Peer-to-peer discussion/ mentoring (related to the improvement of e-learning instruction); 8-Consultation with an Instructional Designer for e-learning course planning & design;	Face-to-Face Facilitated = Level 1, 2, 3, 5 Web Facilitated = 4 Non-Facilitated = 6, 7, 8	#6
Professional Development Topic	Independent	1-Best practices, strategies, and/or learning theories; 2-Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.); 3-Learning Management Systems (i.e., Blackboard, Moodle, etc.); 4-E-learning course design principles and construction; 5-E-learning hardware (i.e., Web cams, microphones, etc.); 6-E-learning evaluation programs (i.e., Quality Matters, Sloan-C Quality Scorecard, etc.)	E-learning Pedagogy= Level 1 E-learning Design= Level 2, 3, 4, 5, and 6	#7
Professional Development Duration (Hours)	Independent	Any whole number including 0.5 for half an hour	N/A	#8
Professional Development Duration (Days)	Independent	Any whole number including 0.5 for half of a day	N/A	#9
Collective Participation	Independent	Yes or No	N/A	#10
Active Learning	Independent	Yes, No, or Not applicable (N/A)	N/A	#11
Coherence	Independent	Yes, No, or Don't know	N/A	#12

Note. Alpha = 0.05 for all tests

Greatest impact vs. type of professional development. A Univariate Analysis of Variance was run with greatest impact as the dependent variable (survey item #5) and the recoded type of professional development (survey item #6) as the independent variable. The initial test of between-subjects effects shows that the interaction is statistically significant, $p = .028$ (see Table 29).

Table 29

Tests of Between-Subjects Effects for Impact and Recoded Type

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	15.192 ^a	2	7.596	3.917	.028
Intercept	218.498	1	218.498	112.680	.000
Greatest Impact Type _Recode	15.192	2	7.596	3.917	.028
Error	73.686	38	1.939		
Total	1248.000	41			
Corrected Total	88.878	40			

a. R Squared = .171 (Adjusted R Squared = .127)

Note. Dependent Variable: Professional Development that has the Greatest Impact

So, the type of professional development does have an effect on the participant's perceived gain in knowledge and skill related to teaching and learning online. However, to determine if there are differences between each variable (or type of professional development) at each level of the other variables a Post Hoc test, which compares all combinations of variable pairs, was run. It reveals that there is no significant difference between web-facilitated forms of professional development versus facilitated and non-facilitated types of professional development. However, the difference between non-facilitated and facilitated forms of professional development was statistically significant at the .05 level (see Table 30). Here it is

observed that the type of professional development does influence the impact of the professional development and there is a difference between facilitated and non-facilitated forms of professional development.

Table 30

Post Hoc Test

(I) Greatest Impact Type_Recode	(J) Greatest Impact Type_Recode	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
FTF Facilitated	Web	1.04	.735	.341	-.75	2.84
	Non-Facilitated	2.54*	1.012	.042	.07	5.01
Web	FTF Facilitated	-1.04	.735	.341	-2.84	.75
	Non-Facilitated	1.50	1.206	.435	-1.44	4.44
Non-Facilitated	FTF Facilitated	-2.54*	1.012	.042	-5.01	-.07
	Web	-1.50	1.206	.435	-4.44	1.44

Note. Based on observed means. The error term is Mean Square (Error) = 1.939.

Note. FTF = Face-to-Face

Note. Dependent Variable: Professional Development that has the Greatest Impact Tukey HSD

Note. *The mean difference is significant at the .05 level.

Greatest impact vs. topic of professional development. A Univariate Analysis of Variance was run with greatest impact as the dependent variable and topic of professional development as the independent variable. The initial test of between-subjects effects shows that the interaction is not statistically significant, $p = .787$ (see Table 31). So, the topic of the professional development does not have an effect on the participant's perceived gain in knowledge and skill related to teaching and learning online.

Table 31

Tests of Between-Subjects Effects for Impact and Recoded Topic

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	.168 ^a	1	.168	.074	.787
Intercept	970.412	1	970.412	426.628	.000
Greatest Impact Topic_Recode	.168	1	.168	.074	.787
Error	88.710	39	2.275		
Total	1248.000	41			
Corrected Total	88.878	40			

a. R Squared = .002 (Adjusted R Squared = -.024)

Note. Dependent Variable: Professional Development that has the Greatest Impact

Greatest impact vs. duration (hours and days) of the professional development. Since duration includes number of hours and number of days, it was separated into two questions on the survey (item # 8 and #9). Yet, both of these variables represent a different aspect of duration. Therefore, a correlation would be the most appropriate statistic to apply given that correlations are used to explore the relationship that exists between two variables (Leech, Barret, & Morgan, 2008).

First, Pearson's correlation was run on greatest impact and number of hours. This relationship was not statistically significant, $p = .09$ (see Table 32).

Table 32

Correlations for Greatest Impact Professional Development (PD) and Number of Hours

		Number of Hours	Greatest Impact PD
Number of Hours	Pearson Correlation	1	.283
	Sig. (2-tailed)		.090
	N	37	37
Greatest Impact PD	Pearson Correlation	.283	1
	Sig. (2-tailed)	.090	
	N	37	41

Second, Pearson's correlation was run on greatest impact and number of days. Here it was discovered that the perceived impact of the professional development was significantly correlated with the number of days of the professional development, $p = .025$ (see Table 33), which means that there is a statistically significant relationship between the perceived gain in knowledge and skill and the number of days of the professional development.

Table 33

Correlations for Greatest Impact Professional Development (PD) and Number of Days

		Greatest Impact PD	Number of Days
Greatest Impact PD	Pearson Correlation	1	.367*
	Sig. (2-tailed)		.025
	N	41	37
Number of Days	Pearson Correlation	.367*	1
	Sig. (2-tailed)	.025	
	N	37	37

*. Correlation is significant at the 0.05 level (2-tailed).

Third, a regression analysis was run to assess the predictive nature of this relationship. The results reveal that the number of days of a professional development activity is a significant predictor of the extent of the impact of the professional development, $p = .025$ (see Table 34).

Table 34

ANOVA on Impact and Number of Days

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10.879	1	10.879	5.445	.025 ^a
Residual	69.932	35	1.998		
Total	80.811	36			

a. Predictors: (Constant), Number of Days

Note. Dependent Variable: Greatest Impact Professional Development

Fourth, another regression analysis was run to determine if number of hours and number of days together would have a predictive influence on the extent of the impact of the professional development activity. The results show that number of hours and number of days combined are not significant predictors of the impact of a professional development activity, $p = .079$ (see Table 35).

Table 35

ANOVA on Impact and Number of Days and Number of Hours

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	11.222	2	5.611	2.742	.079 ^a
Residual	69.588	34	2.047		
Total	80.811	36			

a. Predictors: (Constant), Number of Days, Number of Hours

Note. Dependent Variable: Greatest Impact Professional Development

Greatest impact vs. collective participation. A Univariate Analysis of Variance was run with greatest impact as the dependent variable and the presence of collective participation as the independent variable. The initial test of between-subjects effects shows that the interaction is not statistically significant, $p = .445$ (see Table 36). So, the presence of collective participation in

the professional development does not have an effect on the participant's perceived gain in knowledge and skill related to teaching and learning online.

Table 36

Tests of Between-Subjects Effects for Impact and Collective Participation

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1.366 ^a	1	1.366	.596	.445
Intercept	864.866	1	864.866	377.608	.000
Greatest Impact Collective Participation	1.366	1	1.366	.596	.445
Error	87.034	38	2.290		
Total	1212.000	40			
Corrected Total	88.400	39			

a. R Squared = .015 (Adjusted R Squared = -.010)

Note. Dependent Variable: Greatest Impact Professional Development (PD)

Greatest impact vs. active learning. A Univariate Analysis of Variance was run with greatest impact as the dependent variable and active learning incorporated into the professional development as the independent variable. The initial test of between-subjects effects shows that the interaction is statistically significant, $p = .018$ (see Table 37). So, the incorporation of active learning into the professional development activity does have an effect on the participant's perceived gain in knowledge and skill related to teaching and learning online.

Table 37

Tests of Between-Subjects Effects for Impact and Active Learning

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	17.492 ^a	2	8.746	4.472	.018
Intercept	202.810	1	202.810	103.702	.000
Greatest Impact Active Learning	17.492	2	8.746	4.472	.018
Error	70.406	36	1.956		
Total	1176.000	39			
Corrected Total	87.897	38			

a. R Squared = .199 (Adjusted R Squared = .155)

Note. Dependent Variable: Greatest Impact Professional Development

Greatest impact vs. coherence. A univariate analysis of variance was run with Greatest Impact as the dependent variable and coherence of the professional development to a purpose (i.e., policy, goal, etc.) as the independent variable. The initial test of between-subjects effects shows that the interaction is not statistically significant, $p = .19$ (see Table 38). So, the coherence of the professional development to a purpose does not have an effect on the participant's perceived gain in knowledge and skill related to teaching and learning online.

Table 38

Tests of Between-Subjects Effects for Impact and Coherence

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	7.363 ^a	2	3.681	1.716	.193
Intercept	357.630	1	357.630	166.717	.000
Greatest Impact Coherence	7.363	2	3.681	1.716	.193
Error	81.515	38	2.145		
Total	1248.000	41			
Corrected Total	88.878	40			

a. R Squared = .083 (Adjusted R Squared = .035)

Note. Dependent Variable: Greatest Impact Professional Development (PD)

Question 4

Is there a difference between the most recent employer sponsored professional development and the most recent self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development? The results for Question #4 were derived from survey items #13-31. In this section of the survey, participants were asked a series of questions that 1) linked to the most recent professional development activity, related to teaching and learning online, that (a) was sponsored by their employer and (b) was sponsored or initiated by the participant and 2) aligned to the six characteristics of Garet et al.'s (2001) model of effective professional development which include 1) the type of activity; 2) the content focus of the activity; 3) the duration of the activity (contact hours and span); 4) the collective participation in the activity; 5) the active learning involved in the activity; and 6) the coherence of the activity.

Preliminary data. In survey item #13, the participants were asked if their employer had ever provided professional development related to teaching and learning online. The results reveal that 90% report that their employer has sponsored professional development on teaching and learning online while 7.5% report that their employer has not (see Table 39). Yet, one participant (2.5%) reported that they did not know if their employer had ever sponsored professional development related to teaching and learning online which could be attributed to the employees' length of employment or employment status (i.e., part-time or adjunct).

Table 39

Employer Has Sponsored Professional Development for Teaching and Learning Online

	Frequency	Valid Percent	Cumulative Percent
Yes	36	90.0	90.0
No	3	7.5	97.5
Don't Know	1	2.5	100.0
Total	40	100.0	

In survey item #14, the participants who answered yes to item #13, were asked had they ever participated in one or more professional development activity, related to teaching and learning online, that was sponsored by their employer. The results reveal that 100% of the respondents have (see Table 40).

Table 40

Participated in Employer Sponsored Professional Development

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	37	50.7	100.0	100.0

In survey item #15, participants were asked to think about the most recent professional development activity, related to teaching and learning online, that their employer sponsored. Then they were asked to rate the extent to which that activity increased their knowledge and skills as an e-learning instructor using the following scale: not at all (1), very little (2), slightly (3), somewhat (4), moderately (5), very much (6), or extremely (7). The results show that, for 11.4% of the respondents, the most recent employer sponsored professional development activity increased their knowledge and improved their skills as an e-learning instructor to an *extreme* extent, for 37.1% the extent was *very much*, for 28.6% the extent was *moderate*, for 5.7% the extent was *somewhat*, for 11.4% the extent was *slight*, for 5.7% the extent was *very little*, and none of the participants reported *not at all* (see Table 41). Here the data shows that, for a little over 75% of the participants, the extent of the most recent employer sponsored professional development activity was moderate or better where the mean = 5.14 and the mode = 6 (very much).

Table 41

Extent of the Employer Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
2 Very Little	2	5.7	5.7
3 Slightly	4	11.4	17.1
4 Somewhat	2	5.7	22.9
5 Moderately	10	28.6	51.4
6 Very Much	13	37.1	88.6
7 Extremely	4	11.4	100.0
Total	35	100.0	

In item #16, the participants were asked to think about the most recent professional development activity, related to teaching and learning online, that they had participated in that was sponsored by their employer. Then they were asked to select the type of that professional development. The results show that the most recent employer sponsored professional development event engaged by 42.9% of the respondents was a training workshop; 28.6% engaged a webinar (or other web resource) sponsored by their employer; 17.1% engaged an in-service, and 8.6% engaged a conference (see Table 42). Again, the data shows a heavy emphasis on training workshops. Yet, it is important to note that other types of professional development are being pursued.

Table 42

Type of Employer Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
In-service	6	17.1	17.1
Training workshop	15	42.9	60.0
Conference	3	8.6	68.6
Webinar (or other web resources)	10	28.6	97.1
Other: Please list	1	2.9	100.0
Total	35	100.0	

For item #17, the participants were asked to think about the most recent employer-sponsored professional development activity, related to teaching and learning online, that they had attended/participated in. Then they were asked to select the topic of that professional development. The data shows that, for 37.1%, employers sponsored professional development on LMS's; 28.6% were related to best practices; 22.9% were on Web 2.0 technologies; and

11.4% were on E-learning course design (see Table 43). Here the results indicate that employers may not fully realize the importance of E-learning course design in relation to the other topics.

Table 43

Topic of Employer Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
Best practices, strategies, and/or learning theories	10	28.6	28.6
Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.)	8	22.9	51.4
Learning Management Systems (i.e., Blackboard, Moodle, etc.)	13	37.1	88.6
E-learning course design principles and construction	4	11.4	100.0
Total	35	100.0	

In items #18 and #19, participants were asked for how many hours and for how many days did the professional development activity that their employer sponsored last. The participants reported a duration of 1-90 hours with a mean or average 7.45 hours spanning over a range of less than one day (0 days) to 180 days with a mean of 9.48 days (see Table 44). Here the data reveals that the employer sponsored professional development activity was reported as lasting for about an average workday for just over a week.

Table 44

Descriptive Statistics for Duration (Hours and Days) of Employer Sponsored Professional Development

	N	Range	Minimum	Maximum	Mode	Mean	Std. Deviation
Number of Hours	31	89.00	1.00	90.00	1.00	7.4516	16.00800
Number of Days	31	180.00	.00	180.00	1.00	9.4871	32.33231
Valid N (listwise)	31						

In survey item #20, the participants were asked if other instructors from their department participated in the employer sponsored professional development activity with them. The results show that 85.3% of the respondents did have peer involvement while 14.7% did not (see Table 45). This could indicate that for some employer sponsored activities attendance may not be mandatory.

Table 45

Employer Sponsored Professional Development Activity had Collective Participation

	Frequency	Valid Percent	Cumulative Percent
Yes	29	85.3	85.3
No	5	14.7	100.0
Total	34	100.0	

In survey item #21, the participants were asked if they were able to practice and gain feedback during the employer sponsored professional development activity. The results show

that 82.9% report that active learning was a component of the employer sponsored activity while 17.1% report that active learning was not a component (see Table 46).

Table 46

Employer Sponsored Professional Development Involved Active Learning

	Frequency	Valid Percent	Cumulative Percent
Yes	29	82.9	82.9
No	6	17.1	100.0
Total	35	100.0	

In survey item #22, the participants were asked if the employer sponsored professional development activity was directly connected to college goals, accreditation, government/state policy, or a personal goal. The results show that 85.7% report that the employer sponsored professional development was connected to a goal while 14.3% report that it was not (see Table 47).

Table 47

Employer Sponsored Professional Development Had Coherence

	Frequency	Valid Percent	Cumulative Percent
Yes	30	85.7	85.7
No	5	14.3	100.0
Total	35	100.0	

In survey item #23, the participants were asked if they had ever sponsored their own professional development related to teaching and learning online. The results reveal that 28.2% report that they have sponsored professional development, related to teaching and learning online, for themselves while a considerable 71.8% have not (see Table 48).

Table 48

Self-Sponsored Professional Development Related to Teaching and Learning Online

	Frequency	Valid Percent	Cumulative Percent
Yes	11	28.2	28.2
No	28	71.8	100.0
Total	39	100.0	

In survey item #24, participants were asked to think about the most recent professional development activity, related to teaching and learning online, that they themselves had sponsored. Then they were asked to rate the extent to which that activity increased their knowledge and skills as an e-learning instructor using the following scale: not at all (1), very little (2), slightly (3), somewhat (4), moderately (5), very much (6), or extremely (7). The results show that, for 27.3% of the respondents, the most recent self-sponsored professional development activity increased their knowledge and improved their skills as an e-learning instructor to an extreme extent, for 45.5% the extent was very much, for 9.1% the extent was moderate, for 9.1% the extent was somewhat, for another 9.1% the extent was not at all, and none of the participants reported slightly or very little (see Table 49). Here the data shows that, for over 70% of the participants, the extent of the most recent self-sponsored professional development activity was either extreme or very much where the mean = 5.55 and the mode = 6

(very much). This may indicate that a greater impact was derived from self-sponsored professional development.

Table 49

Extent of Self-sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
1 Not at all	1	9.1	9.1
4 Somewhat	1	9.1	18.2
5 Moderately	1	9.1	27.3
6 Very Much	5	45.5	72.7
7 Extremely	3	27.3	100.0
Total	11	100.0	

In item #25, the respondents were asked to think about the most recent professional development activity, related to teaching and learning online, that they themselves sponsored or initiated. Then they were asked to select the type of that professional development. Of those who had participated in a self-sponsored professional development activity, 27.3% engaged a training workshop; 18.2% engaged a conference; 18.2% engaged a college course, and 9.1%, respectively, engaged an in-service, webinar (or web resource), print material, or consulted with an instructional designer (see Table 50). Here there is a greater distribution of variety among the types of professional development sponsored by the participants, with the top three being training workshops, conferences, and college courses.

Table 50

Type of Self-Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
In-service	1	9.1	9.1
Training workshop	3	27.3	36.4
Conference	2	18.2	54.5
Webinar (or other web resources)	1	9.1	63.6
College course	2	18.2	81.8
Print material (i.e., book, journal, etc.)	1	9.1	90.9
Consultation with an instructional designer for e-learning course planning and design	1	9.1	100.0
Total	11	100.0	

In item #26, the respondents were asked to think about the most recent professional development activity, related to teaching and learning online, that they themselves sponsored or initiated. Then they were asked to select the topic of that professional development. The results show that 60% of the participants chose professional development on best practices; 20% chose to pursue information related to LMSs; 10% chose Web 2.0 technologies; and another 10% chose E-learning course design (see Table 51). From this data, it is evident that the majority of the participants saw value in learning about proven methods for teaching and learning online.

Table 51

Topic of Self-Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
Best practices, strategies, and/or learning theories	6	60.0	60.0
Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.)	1	10.0	70.0
Learning Management Systems (i.e., Blackboard, Moodle, etc.)	2	20.0	90.0
E-learning course design principles and construction	1	10.0	100.0
Total	10	100.0	

In items #27 and #28, participants were asked for how many hours and for how many days did the professional development activity that they sponsored on their own last. The participants reported a duration of 0.5-30 hours with a mean or average 8.72 hours spanning over a range of half a day to 30 days with a mean of 6.5 days (see Table 52). Here the data reveals that the professional development activity that the participant sponsored lasted for about 8 hours for just under a week.

Table 52

Descriptive Statistics for Duration (Hours and Days) of Self-Sponsored Professional Development

	N	Range	Minimum	Maximum	Mode	Mean	Std. Deviation
Number of Hours	9	29.50	.50	30.00	2.00	8.7222	9.32440
Number of Days	9	29.50	.50	30.00	1.00	6.5000	10.79352
Valid N (listwise)	9						

In survey item #29, the participants were asked if other instructors from their department participated in the self-sponsored professional development activity with them. The results show that 90.9% of the respondents did not have peer involvement while 9.1% did (see Table 53).

Table 53

Collective Participation in Self-Sponsored Professional Development

	Frequency	Valid Percent	Cumulative Percent
Yes	1	9.1	9.1
No	10	90.9	100.0
Total	11	100.0	

In survey item #30, the participants were asked if they were able to practice and gain feedback during the self-sponsored professional development activity. The results show that 81.8% report that active learning was a component of the self-sponsored activity while 9.1% report that active learning was not a component (see Table 54) and for another 9.1% report that active learning was not applicable based on the type of professional development they engaged (i.e., print materials).

Table 54

Self-Sponsored Professional Development Included Active Learning

	Frequency	Valid Percent	Cumulative Percent
Yes	9	81.8	81.8
No	1	9.1	90.9
Not applicable	1	9.1	100.0
Total	11	100.0	

In survey item #31, the participants were asked if the self-sponsored professional development activity was directly connected to college goals, accreditation, government/state policy, or a personal goal. The results show that 90% report that the self-sponsored professional development was connected to a goal while 10% report that it was not (see Table 55).

Table 55

Self-Sponsored Professional Development Included Coherence

		Frequency	Valid Percent	Cumulative Percent
Valid	Yes	9	90.0	90.0
	No	1	10.0	100.0
	Total	10	100.0	

Analysis. A review of the data reveals that the levels of each of the variables (or scales of measurement) are different. The types represented include nominal categories (i.e., training workshop, conference, etc.), ordinal categories (i.e., Likert-type items), and interval categories (i.e., number of hours, number of days, etc.). Given the complexity of the data types, it is unlikely that the data set will encompass equal intervals between scores, which is a key assumption of parametric statistics along with normal distribution of scores and equal variances in the scores (Gall, Gall, & Borg, 2005). It is for this reason that non-parametric statistics are appropriate for examining the results. The two non-parametric tests used were the Chi-square test and the Wilcoxon Signed Ranks test.

The Chi-square test was run to determine if there was a difference between the participant's view of their most recent employer sponsored professional development activity and the most recent professional development activity that they themselves had sponsored. The Chi-square test reveals that there is a significant difference between participant views on

employer sponsored versus self-sponsored professional development activities, $X^2 = 44$, and $p = .002$ (see Table 56).

Table 56

Chi-Square Tests for Greatest Impact of Employer-Sponsored by Greatest Impact of Self-Sponsored

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	44.000a	20	.002
Likelihood Ratio	30.068	20	.069
Linear-by-Linear Association	5.673	1	.017
N of Valid Cases	11		

a. 30 cells (100.0%) have expected count less than 5. The minimum expected count is .09.

In order to determine the potential source of the significant Chi-square test, the Wilcoxon Signed Ranks test was run on all six features of the Garet et al. (2001) model for the most recent employer sponsored and self-sponsored professional development activity. The results show that there is a significant difference ($p = .003$) between employer sponsored and self-sponsored professional development on collective participation, which refers to whether other instructors from the same department participated in the professional development activity at the same time as the participant. No significant difference was found on any of the other features of Garet et al.'s (2001) model (see Table 57).

Table 57

Wilcoxon Signed Ranks Test

Employer vs. Self on								
	Impact	PD Type	PD Topic	PD Hours	PD Days	Collective Participation	Active Learning	Coherence
Z	-.736b	-1.688b	-.719c	-.169b	-.085c	-3.000b	-1.414b	-1.000b
Asymp. Sig. (2-tailed)	.461	.091	.472	.866	.933	.003	.157	.317

a. Based on negative ranks.

b. Based on positive ranks.

Note. PD = Professional Development*Note.* Test Statistics for Employer-Sponsored vs. Self-Sponsored Professional Development

Summary

Chapter IV provided a detailed account of the data analysis procedures and tests that were executed in order to explore and give meaning to the results collected from the web-based survey. Both parametric (i.e., Pearson's Correlation, ANOVA, etc.) and non-parametric (i.e., Chi-square, Wilcoxon Signed Ranks, etc.) tests were applied based on the characteristics of the data. For Question #1, the data revealed that an overwhelming majority of the participants had engaged in training workshops (over 80%). For Question 2, it was discovered that 75% of the participants engage in professional development activities with content on best practices, LMS's, and E-learning design principles (respectively). For Question 3, a significant interaction was found between the impact of the professional development activity and type of professional development, number of days it lasted, and whether active learning was incorporated in the professional development (respectively). For Question 4, a statistically significant difference was found between employer sponsored professional development and self-sponsored professional development on collective participation. Moreover, a review of the demographic

data revealed that the majority of the respondents were full-time (73%) female (66%) instructors teaching in academic programs (63%) with 1 to 44 years of teaching experience.

CHAPTER V:
DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

A thoughtful review, analysis, and synthesis of the research findings has given rise to a new layer of information that must be weighed against the existing body of knowledge. Context and interpretation will drive the forthcoming discussion. The essential concepts addressed here seek to highlight the constructive discoveries made available by this research study. The topics presented in this chapter include (a) an overview of the study, (b) interpretation of the findings, (c) limitations, (d) conclusions, (e) recommendations for practice, (f) recommendations for future research, and (g) a summary.

Overview of the Study

The desire to understand and inform practice about the current state of professional development for e-learning instructors served as the driving force and foundation for this study. Observances from other researchers, related to the lack of literature addressing this issue (Dyment et al., 2013), the revolutionary speed of technological advancements and its impact on the realm of education (Hutti, 2007), and an apparent disregard for the training needs of e-learning instructors (Palloff & Pratt, 2011) served as further motivation to explore this phenomenon. With Garet et al.'s (2001) model of the six features of effective professional development as the guiding framework (see Table 58), a web-based survey was developed and distributed to the faculty members employed at three different community colleges within the state of Alabama. The survey instrument focused on professional development that had the

greatest impact on the participant's knowledge and skills as an e-learning instructor and employer sponsored and self-initiated professional development activities. After data collection, parametric and non-parametric statistical tests were used to analyze the results.

Table 58

Garet et al.'s (2001) Six Features of Effective Professional Development

-
1. The type or form of the activity (i.e., whether it is a reform type, such as study group or network, in contrast to a traditional workshop or conference)
 2. Content focus which is the degree to which the activity is focused on improving and deepening teachers' content knowledge
 3. The duration of the activity, including the total number of contact hours that participants spend in the activity, as well as the span of time over which the activity takes place
 4. Collective participation or the degree to which the activity emphasizes the use of groups of teachers from the same school, department, or grade level to create a community of learners
 5. Active learning or the extent to which the activity offers opportunities for teachers to become actively engaged in the meaningful analysis of teaching and learning
 6. Coherence or the degree to which the activity is consistent with teacher goals, state standards, school policies, and other forms of professional development
-

Interpretation of the Findings

The results for this study were examined in relation to the four research questions.

Research Question 1

What types of professional development, related to teaching and learning online, do e-learning instructors participate in? For this question, participants were given a choice of the eight types of professional development with a 9th option reserved for a type not included in the list. They included the following: 1) in-service; 2) training workshop; 3) conference; 4) webinar

(or web resource); 5) college course; 5) print material (book, etc.); 6) peer-to-peer discussion/mentoring; 7) consultation with an instructional designer; and 8) other (please list). The directions also indicated that participants were to select each type of professional development they had participated in as long as the activity was related to teaching and learning online. The results found that over 80% of the participants have participated in a training workshop, over 66% have attended an in-service, and nearly another 60% have engaged a webinar or web resource. From the data, it is clear that training workshops are the most prevalent type of professional development in use for e-learning instructor preparation at the community college level. This finding aligns with the research of Ebert-May, Derting, Hodder, Momsen, Long, and Jardeleza (2011) who found that “PD [professional development] workshops resulted in significant gains in faculty knowledge” (p. 554). This work currently presents that e-learning instructors, at the community college level within the state of Alabama, are receiving training for teaching and learning online through the use of a well noted (Ebert-May et al., 2011) type of professional development (i.e., training workshop).

Research Question 2

Which professional development topics, related to teaching and learning online, are e-learning instructors being exposed to? For this question, respondents were asked to select each of the e-learning professional development topics that they had been exposed to using the following six choices with a 7th option for any topic not included in the list. They included the following: 1) best practices; 2) Web 2.0 technologies; 3) Learning Management Systems (LMS); 4) E-learning course design principles; 5) E-learning hardware; 6) E-learning evaluation programs; and 7) Other (please list). Concerning the issue of content (or topic), Garet et al. (2001) and Desimone (2009) have agreed that effective professional development has a content

or subject matter focus. In this study, the top three e-learning topics experienced by over 75% of the participants (respectively) included best practices, LMS's, and E-learning course design. These results appear to indicate that the participants have had access to the topics that some researchers deem to be critical for all instructors who teach online (Ostashewski, Moisey, & Reid, 2011; Archambault & Crippen, 2009; Baran et al., 2011). These findings support that e-learning instructors, at the community college level within the state of Alabama, are being exposed to the professional development content considered vital for effective teaching and learning online.

Research Question 3

Is there a relationship between faculty's perceived gain in knowledge and skill, resulting from professional development related to teaching and learning online, and the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development? For Question 3, participants were asked to address a series of questions related to the professional development activity that had the greatest impact on their knowledge and skills as an e-learning instructor as aligned to the six features of Garet et al.'s (2001) model of effective professional development (see Table 58). Although the work of Garet et al. (2001) shows that all six features are effective, this study found that only three of the features, which include professional development type, number of days of the activity (duration), and the incorporation of active learning, are statistically significant ($p < .05$). While there are differences in opinion on the effectiveness of professional development type (Desimone, 2011; Garet et al. 2001), Grossman (2009), Garet et al., (2001) and Desimone (2011) have agreed that longer durations for professional development activities and active learning improve teacher effectiveness. Here the findings suggest that 3 of

the 6 features of Garet et al.'s (2001) model are present in the professional development activities that community college level e-learning instructors within the state of Alabama: 1) participate in and 2) deem as having the greatest and most positive impact on their knowledge and skills as e-learning instructors.

Research Question 4

Is there a difference between employer sponsored professional development and self-sponsored professional development (related to teaching and learning online) on the reported type, content, degree of duration, collective participation, active learning, and coherence, as described in Garet et al.'s (2001) model of effective professional development? For Question 4, participants were asked to answer a group of questions related to their most recent employer sponsored professional development activity and their most recent self-sponsored professional development activity. Here the objective was to determine if there were differences in employer sponsored and self-sponsored professional development on Garet et al.'s (2001) six features of effective professional development. Although, sponsor type was not an aspect of Garet et al.'s (2001) research, this researcher deemed it to be a vital component of this research since some researchers (Howell et al., 2004; Roehrs, Wang, & Kendrick, 2013) are initiating professional development programs, for e-learning faculty, on behalf of or in connection with employers in the education sector. For this study, significance between employer sponsored and self-sponsored professional development was found on only 1 of the 6 features of Garet et al.'s (2001) model and that feature was collective participation ($p < .05$). Here, the data shows that collective participation has an impact on the level of effectiveness of an employer sponsored professional development activity in comparison to a self-sponsored professional development activity. However, on all of the other features (type, topic, duration, active learning, and

coherence), there is no statistically significant difference between employer sponsored and self-sponsored professional development activities for teaching and learning online. In this work, the data indicates that the sponsor or provider of the professional development activity has little to no impact on the effectiveness of the activity.

Limitations

In this study, there are several factors that limited the ability of the findings to be generalized beyond this population. Since this study surveyed community college faculty, the results are specific to this group. Moreover, within this group, this study focused on those faculty members who teach online. When considering the data, it is important to note that the results are based on self-reported teacher perceptions. Lastly, this study was conducted at three community colleges in the state of Alabama and the results may not be generalized to other states.

Conclusions

Professional development is a multidimensional element housed within the arsenal of teacher education. It can encompass a myriad of attributes and it can be delivered through a variety of formats. Notwithstanding, this study found three particular features of effective professional development to be statistically sound for the elevation of the overall impact of the activity for the improvement of teaching and learning online.

First and foremost, it was noted that the type of professional development increases the effectiveness of the professional development activity. Although, web based resources, conferences, in-services, and consults with subject matter experts are valid forms of professional development, none of these types were supported statistically. Training workshops, on the other hand, were both heavily engaged and found to be statistically significant.

Secondly, the duration, in number of days, of a professional development activity is another statistically supported aspect of professional development that aids effectiveness. This study and others (Grossman, 2009) found that the more days the activity lasts, regardless of time spent per day, the greater the impact on teacher practice. So to enhance the value of professional development, number of days should be viewed as a key component for planning and implementation.

The third characteristic of effective professional development, that this research found to be statistically significant, is the infusion of active learning. It is apparent that the inclusion of feedback and time for practicing the newly learned concepts increases the knowledge and skill level (Garet et al. 2001; Desimone 2011) of e-learning faculty. Active learning eliminates passivity and makes the learner a vital and major contributor within the learning process. It allows instructors to frame new knowledge within the context of the content they teach. Also, active learning provides an opportunity for instructors to create, test, and modify instructional resources. Moreover, professional development that encompasses active learning elevates the overall impact of the professional development activity (Desimone, 2002).

Recommendations for Practice

Professional development for teaching and learning online is an important component of today's educational landscape. The forward and fast-moving tempo of technology will not wait for those who lack knowledge and skill. E-learning educators must stay abreast of the latest e-learning instructional trends as they evolve. However, to address this critical need, e-learning instructors will need support. Therefore, the following recommendations have been outlined by stakeholder.

For community college administration, the following recommendations are suggested.

They include

1. Survey e-learning faculty for professional development topics that they deem to be of need or of interest;
2. Fund and implement professional development training workshops, related to teaching and learning online, that incorporate active learning and span several days, weeks, or months; and
3. Establish training programs and compile resources for new and veteran e-learning instructors.

For LMS, content, book, and application publishers, the following recommendations are suggested. They include

1. Provide web based, face-to-face, and on-demand training workshops that encompass active learning; and span several days, weeks, or months;
2. Arrange and package e-learning training materials and resources by subject or content area to foster collective participation; and
3. Explain, compare, and contrast products and resources based on their usefulness for e-learning instruction vs. the traditional classroom.

For E-learning faculty, the following recommendations are suggested. They include

1. Conduct a self-assessment of knowledge/skills related to teaching/learning online;
2. Proactively pursue professional development related to teaching and learning online that applies active learning and spans several days, weeks, or months;
3. Apply the e-learning instructional strategies that you have learned; and
4. Stay abreast of content-related and e-learning design trends.

Recommendations for Future Research

The study of professional development targeted specifically for e-learning instructors continues to be a critical area of need. Current trends indicate that technological advancements, options for web-based learning, and the demand for competent e-learning instructors is steadily increasing. Furthermore, several researchers (Archambault & Crippen, 2009; Baran et al., 2011); Palloff & Pratt, 2013) have noted concerns related to whether teacher education programs are evolving and adding course-work related to teaching and learning online as quickly as they should. Therefore, the recommendations for future research are as follows:

1. Replicate this study with the following changes:
 - a. Revise the survey instrument so that all responses adhere to a Likert-type scale, where parametric testing would be applicable to each survey item to improve power, and edit the survey items to increase clarity for participants;
 - b. Increase the sample size (include more schools); and
 - c. Survey four-year university faculty;
2. Explore the difference between the most effective employer sponsored professional development and the most effective self-sponsored professional development, related to teaching and learning online, on Garet et al.'s (2001) six features of effective professional development (i.e., type, topic, duration, collective participation, active learning, and coherence);
3. Conduct a meta-analysis of teacher education programs of study (including all course work required to obtain a bachelor's and master's degree) across the state

- of Alabama (and/or a group of states or the nation); the focus should be to identify the presence or absence of training for e-learning instruction;
4. Construct an experimental design study that features a pre-test/post-test design with randomized groups on a novel or proven e-learning professional development program that targets college faculty;
 5. Conduct an action research study in partnership with a campus wide or department specific university level faculty resource center that features programs and resources designed specifically to enhance e-learning instruction;
 6. Conduct a trend study of new college faculty members' knowledge and skills of teaching and learning online over a five-year period; and
 7. Conduct a study on higher education administration views on and level of support for professional development for e-learning instruction

Summary

Teaching and learning online is a rapidly expanding genre of the educational system within the United States and abroad. Educators on every level are being faced with the challenge of catering to the needs of their students through web-mediated platforms. However, the clash between the slow to change traditions of teacher education and the constantly evolving nature of technology provide little recourse for novice and veteran instructors. In order to address this pressing need, key stakeholders (i.e., faculty, administrators, and teacher educators) cannot assume a position of defeat. Employers and educators must thoughtfully assess the climate of this educational environment, claim their duty and responsibility to gain competence in the new trends, teaching practices, and technology that impact their area of study, and pursue the resources and tools required to become proficient. One viable solution, to this seemingly

daunting task, is the implementation of purpose driven professional development. The construct of professional development is well suited to fulfill the demands associated with an ever-evolving industry like education. The flexibility, ease of use, and high customization factor inherent in professional development position it as the new standard for learning on or off the job.

REFERENCES

- Alabama State Department of Education. (2002). *Alabama standards for effective professional development*. Retrieved April 3, 2014, from <http://alex.state.al.us/leadership/Alabama%20Professional%20Development%20Standards.pdf>
- Allen, I. E., Seaman, J., & Consortium, S. (2014). *Grade change: Tracking online education in the United States, 2014* Sloan Consortium. Retrieved from <http://sloanconsortium.org/publications/survey/grade-change-2013>
- Allen, L., Kiser, B., & Owens, M. M. (2013, November). *Online learning community: Quality makes a difference*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Pensacola, FL.
- American Federation of Teachers. (n.d.). *Professional development for educators*. Retrieved April 3, 2014, from <https://www.aft.org/issues/teaching/proflevel/>
- 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.
- Armour, K. M., & Makopoulou, K. (2012). Great expectations: Teacher learning in a national professional development programme. *Teaching and Teacher Education, 28*(3), 336-346. doi:10.1016/j.tate.2011.10.006
- Baghdadi, Z. D. (2011). Best practices in online education: Online instructors, courses, and administrators. *Turkish Online Journal of Distance Education, 12*(3), 109-117.
- Baran, E., Correia, A., & Thompson, A. (2011). Transforming online teaching practice: Critical analysis of the literature on the roles and competencies of online teachers. *Distance Education, 32*(3), 421-439. doi:10.1080/01587919.2011.610293
- Bellanca, J. A., & Stirling, T. (2011). *Classrooms without borders: Using internet projects to teach communication and collaboration* Teachers College Press.
- Benamati, J., & Lederer, A. L. (2001). Rapid information technology change, coping mechanisms, and the emerging technologies group. *Journal of Management Information Systems, 17*(4), 183-202.

- Benson, S. N., & Ward, C. L. (2013). Teaching with technology: Using TPACK to understand teaching expertise in online higher education. *Journal of Educational Computing Research*, 48(2), 153-172. doi:10.2190/EC.48.2.c
- Bigatel, P. M., Ragan, L. C., Kennan, S., May, J., & Redmond, B. F. (2012). The identification of competencies for online teaching success. *Journal of Asynchronous Learning Networks*, 16(1), 59-77.
- Bonk, C. J. (2009). *The world is open: How web technology is revolutionizing education (1st ed.)* San Francisco, CA: Jossey-Bass.
- Borko, H., Jacobs, J., & Koellner, K. (2010). *Contemporary approaches to teacher professional development* doi:10.1016/B978-0-08-044894-7.00654-0
- Boyle, B., While, D., & Boyle, T. (2004). A longitudinal study of teacher change: What makes professional development effective? *Curriculum Journal*, 15(1), 45-68.
- Burke, B. M. (2013). Experiential professional development: A model for meaningful and long-lasting change in classrooms. *Journal of Experiential Education*, 36(3), 247-263. doi:10.1177/1053825913489103
- Caffarella, R. S., & Zinn, L. F. (1999). Professional development for faculty: A conceptual framework of barriers and supports. *Innovative Higher Education*, 23(4), 241-254.
- Center for Public Education. (2013). Teaching the Teachers: Effective Professional Development in an Era of High Stakes Accountability. Retrieved from <http://www.centerforpubliceducation.org/teachingtheteachers>
- Chang, S. H., & Smith, R. A. (2008). Effectiveness of personal interaction in a learner-centered paradigm distance education class based on student satisfaction. *Journal of Research on Technology in Education*, 40(4), 407-426.
- Conrad, D. (2008). Reflecting on strategies for a new learning culture: Can we do it? *Journal of Distance Education*, 22(3), 157-161.
- Cormas, P., & Barufaldi, J. (2011). The effective research-based characteristics of professional development of the national science foundation's GK-12 program. *Journal of Science Teacher Education*, 22(3), 255-272. doi:10.1007/s10972-011-9228-1
- DeGennaro, D. (2008). Learning designs: An analysis of youth-initiated technology use. *Journal of Research on Technology in Education*, 41(1), 1-20.
- Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, 3, 181. doi:10.2307/20532527

- Desimone, L. M. (2011). A primer on effective professional development. *Phi Delta Kappan*, 92(6), 68-71.
- Desimone, L. M., Porter, A. C., Garet, M. S., Yoon, K. S., & Birman, B. F. (2002). *Effects of professional development on teachers' instruction: Results from a three-year longitudinal study* American Educational Research Association. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=edsjsr&AN=edsjsr.3594138&site=eds-live&scope=site>
- Dictionary.com Unabridged. (n.d.). Retrieved February 1, 2014, from Dictionary.com website: <http://dictionary.reference.com/browse/>
- Downes, J. M., & Bishop, P. (2012). Educators engage digital natives and learn from their experiences with technology. *Middle School Journal*, 43(5), 6-15.
- Driscoll, M., & Carliner, S. (2005). *Advanced web-based training strategies : Unlocking instructionally sound online learning / margaret driscoll, saul carliner* San Francisco : Pfeiffer, c2005.
- Dyment, J., Downing, J., & Budd, Y. (2013). Framing teacher educator engagement in an online environment. *Australian Journal of Teacher Education*, 38(1) Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1008556&site=eds-live&scope=site>
- Dziekan, K., & Main, D. (2012). Distance education within the 21st century and its application to rehabilitation education. *Rehabilitation Research, Policy & Education (Elliott & Fitzpatrick, Inc.)*, 26(4), 297-304.
- Earley, P. (2010). *Continuing professional development of teachers* doi:10.1016/B978-0-08-044894-7.01077-0
- Ebert-May, D., Derting, T. L., Hodder, J., Momsen, J. L., Long, T. M., & Jardeleza, S. E. (2011). *What we say is not what we do: Effective evaluation of faculty professional development programs* University of California Press. doi:10.1525/bio.2011.61.7.9
- Edweek.org. (n.d.). Retrieved February 1, 2014, from <http://www.edweek.org/ew/marketplace/products/spotlight-professional-development-2012.html>
- Eliason, S. K., & Holmes, C. L. (2010). Reflective Practice and Inquiry in Professional Development for Online Teaching. *Journal of Online Learning & Teaching*, 6(2) Retrieved from <http://jolt.merlot.org/vol6no2/eliason0610.htm>
- Esterhuizen, H. D., Blignaut, S., & Ellis, S. (2013). Looking out and looking in : Exploring a case of faculty perceptions during E-learning staff development. *International Review of Research in Open & Distance Learning*, 14(3), 59-80.

- Gall, J. P., Gall, M. D., & Borg, W. R. (2005). *Applying educational research: A practical guide* (5th ed.). Boston: Allyn and Bacon.
- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). *Educational research: An introduction* (8th ed.). Boston: Allyn and Bacon.
- 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 Association. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=edsjrs&AN=edsjrs.3202507&site=eds-live&scope=site>
- Gaytan, J. A., & McEwen, B. C. (2010). Instructional technology professional development evaluation: Developing a high quality model. *Delta Pi Epsilon Journal*, 52(2), 77-94.
- Georgina, D. A., & Hosford, C. C. (2009). Higher education faculty perceptions on technology integration and training. *Teaching and Teacher Education*, 25, 690-696. doi:10.1016/j.tate.2008.11.004
- Gibson, S., & Peacock, K. (2006). What makes an effective virtual learning experience for promoting faculty use of technology? *Journal of Distance Education*, 21(1), 62-74.
- Gosper, M., McNeill, M., Woo, K., Phillips, R., Preston, G., & Green, D. (2011). Web-based lecture technologies and learning and teaching: A study of change in four Australian universities. *Journal of Asynchronous Learning Networks*, 15(4), 84-95.
- Grant, M. M. (2004). Learning to teach with the web: Factors influencing teacher education faculty. *Internet and Higher Education*, 7(4), 329-341. doi:10.1016/j.iheduc.2004.09.005
- Gregory, J., & Salmon, G. (2013). *Professional development for online university teaching* Routledge. doi:10.1080/01587919.2013.835771
- Grossman, T., Hirsch, E., & National Governors Association, Center for Best Practices. (2009). *State policies to improve teacher professional development. issue brief* NGA Center for Best Practices. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=ED507644&site=eds-live&scope=site>
- Gu, X., Zhu, Y., & Guo, X. (2013). Meeting the "digital natives": Understanding the acceptance of technology in classrooms. *Educational Technology and Society*, 16(1), 392-402.
- Guskey, T. R. (2009). Closing the knowledge gap on effective professional development. *Educational Horizons*, 87(4), 224-233.
- Hahn, T. B., & Lester, J., (2012). Faculty needs and preferences for professional development. *Journal of Education for Library & Information Science*, 53(2), 82-97.

- Heirdsfield, A., Walker, S., Tambyah, M., & Beutel, D. (2011). Blackboard as an online learning environment: What do teacher education students and staff think? *Australian Journal of Teacher Education*, 36(7), 1-16.
- Herman, J. H. (2012). Faculty development programs: The frequency and variety of professional development programs available to online instructors. *Journal of Asynchronous Learning Networks*, 16(5), 87-106.
- Hill, J., Hawk, K., & Taylor, K. (2002). Professional development: What makes it work. *SET: Research information for teachers*, 2, 12-15.
- Hodges, J. M., & Nelson, B. (2013, November). A Clash of Education Titans. Paper presented at the annual meeting of the Mid-South Educational Research Association, Pensacola, FL.
- Hofer, M., & Grandgenett, N. (2012). TPACK development in teacher education: A longitudinal study of preservice teachers in a secondary M.A.ed. program. *Journal of Research on Technology in Education (International Society for Technology in Education)*, 45(1), 83-106.
- Hoffmann, R. L., & Dudjak, L. A. (2012). From onsite to online: Lessons learned from faculty pioneers. *Journal of Professional Nursing*, 28(4), 255-258.
doi:10.1016/j.profnurs.2011.11.015
- Holmes, B. (2013). School teachers' continuous professional development in an online learning community: Lessons from a case study of an e twinning learning event. *European Journal of Education*, 48(1), 97-112. doi:10.1111/ejed.12015
- Howell, S. L., Saba, F., Lindsay, N. K., & Williams, P. B. (2004). Seven strategies for enabling faculty success in distance education. *Internet and Higher Education*, 7(1), 33-49.
doi:10.1016/j.iheduc.2003.11.005
- Hutti, D. L. G. (2007). Online Learning, Quality, and Illinois Community Colleges. *Journal of Online Learning & Teaching*, 3(1), 18-29.
- Illingworth, M. (2012). Education in the age of the information superhighway: An investigation into initial teacher training in Canada. *Canadian Journal of Education*, 35(3), 180-193.
- Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation: A collection of principles, methods, and strategies useful in the planning, design, and evaluation of studies in education and the behavioral sciences (3rd ed.)*. San Diego, CA US: EdITS Publishers.
- Jin, L. (2011). Improving response rates in web surveys with default setting. *International Journal of Market Research*, 53(1), 75-94. doi:10.2501 /IJMR-53-1 -075-094

- Kokoc, M., Ozlu, A., Cimer, A., & Karal, H. (2011). Teachers' views on the potential use of online in-service education and training activities. *Turkish Online Journal of Distance Education, 12*(4), 68-87.
- Kopcha, T. J. (2012). Teachers' perceptions of the barriers to technology integration and practices with technology under situated professional development. *Computers and Education, 59*(4), 1109-1121. doi:10.1016/j.compedu.2012.05.014
- Lahaie, U. (2007). Web-based instruction: Getting faculty onboard. *Journal of Professional Nursing, 23*(6), 335.
- Lane, L. M. (2013). An open, online class to prepare faculty to teach online. *Journal of Educators Online, 10*(1) Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ1004897&site=eds-live&scope=site>
- Lawless, K. A., & Pellegrino, J. W. (2007). *Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers*. NY: SAGE. doi:10.3102/0034654307309921
- Learning Forward. (n.d.). *Standards list*. Retrieved April 2, 2014, from <http://learningforward.org/standards/standards-list#.UzxL1fldXTo>
- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2008). *SPSS for intermediate statistics: Use and interpretation* (3rd ed.). Mahwah, NJ: Lawrence Erlbaum.
- MacDonald, R. J. (2008). Professional development for information communication technology integration: Identifying and supporting a community of practice through design-based research. *Journal of Research on Technology in Education, 40*(4), 429-445.
- Medway, R. L., & Fulton, J. (2012). When more gets you less: A meta-analysis of the effect of concurrent web options on mail survey response rates. *Public Opinion Quarterly, 76*(4), 733-746.
- Miglino, O., & Walker, R. (2010). *WCES-2010: Teaching to teach with technology - a project to encourage take-up of advanced technology in education* Elsevier Ltd. doi:10.1016/j.sbspro.2010.03.359
- Morlier, R. (2012). *Evaluation of the correlated science and mathematics professional development model, 2009-2010 cohort*. Retrieved from <http://files.eric.ed.gov/fulltext/ED531891.pdf>
- Mouza, C., & Karchmer-Klein, R. (2013). Promoting and assessing pre-service teachers' technological pedagogical content knowledge (TPACK) in the context of case development. *Journal of Educational Computing Research, 48*(2), 127-152. doi:10.2190/EC.48.2.b

- Murdock, A. K. (2006). Online course development in technical teacher education programs. *Journal of Industrial Teacher Education, 43*(1), 74-90.
- National Council for Accreditation of Teacher Education. (2001). *Standards for professional development schools*. Retrieved April 3, 2014, from <http://www.ncate.org/LinkClick.aspx?fileticket=FcHbf2B%2B670%3D&tabid=610>
- National Education Association (NEA) Academy. (n.d.). *Requirements and standards for online professional development products*. Retrieved April 3, 2014, from <https://www.neacademy.org/standards.html>
- Ostashewski, N., Moisey, S., & Reid, D. (2011). Applying constructionist principles to online teacher professional development. *International Review of Research in Open & Distance Learning, 12*(6), 143-156.
- Palloff, R. M., & Pratt, K. (2011). *The excellent online instructor: Strategies for professional development*. NY: Jossey-Bass.
- Palloff, R. M., & Pratt, K. (2013). *Lessons from the virtual classroom: The realities of online teaching* (2nd ed.). San Francisco: Jossey-Bass.
- Paver, J., Walker, D. A., & Hung, W. (2014). Factors that predict the integration of technology for instruction by community college adjunct faculty. *Community College Journal of Research and Practice, 38*(1), 68-85.
- Pearcy, M. (2014). Student, teacher, professor: Three perspectives on online education. *History Teacher, 47*(2), 169-185.
- Penuel, W. R., Gallagher, L. P., Fishman, B. J., & Yamaguchi, R. (2007). What makes professional development effective? strategies that foster curriculum implementation. *American Educational Research Journal, 44*(4), 921-958. doi:10.3102/0002831207308221
- Perkins, J. H., & Cooter, K. (2013). An investigation of the efficacy of one urban literacy academy: Enhancing teacher capacity through professional development. *Reading Horizons, 52*(2), 181-209.
- Phillips, M. S., & Scott, P. (2013, November). *Instructor and student perceptions of online courses: implications of positioning theory*. Paper presented at the annual meeting of the Mid-South Educational Research Association, Pensacola, FL.
- Physicsclassroom.com. (n.d.). Retrieved February 1, 2014, from <http://www.physicsclassroom.com/class/newtlaws/Lesson-4/Newton-s-Third-Law>
- Quick, H. E., Holtzman, D. J., & Chaney, K. R. (2009). Professional development and instructional practice: Conceptions and evidence of effectiveness. *Journal of Education for Students Placed at Risk, 14*(1), 45-71.

- Roblyer, M. D., Porter, M., Bielefeldt, T., & Donaldson, M. B. (2009). "Teaching online made me a better teacher." Studying the impact of virtual course experiences on teachers' face-to-face practice. *Journal of Computing in Teacher Education*, 25(4), 121-126.
- Roby, T., Ashe, S., Singh, N., & Clark, C. (2013). Shaping the online experience: How administrators can influence student and instructor perceptions through policy and practice. *Internet and Higher Education*, 17, 29-37.
- Roehrs, C., Wang, L., & Kendrick, D. (2013). Preparing faculty to use the quality matters model for course improvement. *Journal of Online Learning & Teaching*, 9(1), 52.
- Saltmarsh, S., & Sutherland-Smith, W. (2010). S(t)imulating learning: Pedagogy, subjectivity and teacher education in online environments. *London Review of Education*, 8(1), 15-24. doi:10.1080/14748460903557613
- Schmid, R. F., Miodrag, N., & Di Francesco, N. (2008). A human-computer partnership: The Tutor/Child/Computer triangle promoting the acquisition of early literacy skills. *Journal of Research on Technology in Education*, 41(1), 63-84.
- Schwartz, N. H. (2008). Exploiting the use of technology to teach: The value of distributed cognition. *Journal of Research on Technology in Education*, 40(3), 389-404.
- Shahdad, M., & Shirazin, J. (2012). Preparing faculty to teach their first online class. *Procedia - Social and Behavioral Sciences*, 55(-), 1215-1218. doi:10.1016/j.sbspro.2012.09.617
- Short, D. (2013). Training and sustaining effective teachers of sheltered instruction. *Theory into Practice*, 52(2), 118-127. doi:10.1080/00405841.2013.770329
- Skiba, D. J. (2010). Digital wisdom: A necessary faculty competency? *Nursing Education Perspectives*, 31(4), 251-253.
- Southern Regional Education Board. (n.d.). *Standards for online professional development: Guidelines for planning and evaluating online professional development courses and programs*. Retrieved April 3, 2014, from www.sreb.org/programs/EdTech/toolkit/Standards
- Spires, H. A., Lee, J. K., Turner, K. A., & Johnson, J. (2008). Having our say: Middle grade student perspectives on school, technologies, and academic engagement. *Journal of Research on Technology in Education*, 40(4), 497-515.
- Stanford-Bowers, D. E. (2008). Persistence in online classes: A study of perceptions among community college stakeholders. *Journal of Online Learning & Teaching*, 4(1). Retrieved from <http://jolt.merlot.org/vol4no1/stanford-bowers0308.htm>
- Stein, S. J., Shephard, K., & Harris, I. (2011). Conceptions of e-learning and professional development for e-learning held by tertiary educators in New Zealand. *British Journal of Educational Technology*, 42(1), 145-165. doi:10.1111/j.1467-8535.2009.00997.x

- Sun, M., Penuel, W. R., Frank, K. A., Gallagher, H. A., & Youngs, P. (2013). Shaping professional development to promote the diffusion of instructional expertise among teachers. *Educational Evaluation & Policy Analysis*, 35(3), 344.
- Taranto, G. (2011). New-teacher induction 2.0. *Journal of Digital Learning in Teacher Education*, 28(1), 4-15.
- Terantino, J. M., & Agbehonou, E. (2012). Comparing faculty perceptions of an online development course: Addressing faculty needs for online teaching. *Online Journal of Distance Learning Administration*, 15(2). Retrieved from http://www.westga.edu/~distance/ojdl/summer152/terantino_agbehonou152.html
- Thomas, T., Herring, M., Redmond, P., & Smaldino, S. (2013). Leading change and innovation in teacher preparation: A blueprint for developing TPACK ready teacher candidates. *TechTrends: Linking Research & Practice to Improve Learning*, 57(5), 55-63. doi:10.1007/s11528-013-0692-7
- Thompson, M., Goe, L., & Educational, T. S. (2009). *Models for effective and scalable teacher professional development. research report. ETS RR-09-07* Educational Testing Service.
- Thormann, J., & Zimmerman, I. K. (2012). *The complete step-by-step guide to designing and teaching online courses* Teachers College Press.
- Vagias, W. M. (2006). *Likert-type scale response anchors*. Clemson International Institute for Tourism & Research Development, Department of Parks, Recreation and Tourism Management. Clemson University. Retrieved from www.clemson.edu/centers-institutes/tourism/documents/sample-scales.pdf
- Visser, P. S., Krosnick, J. A., Marquette, J., & Curtin, M. (1996). Mail surveys for election forecasting? *Public Opinion Quarterly*, 60(2), 181-227.
- Washbon, J. L. (2012). Learning and the new workplace: Impacts of technology change on postsecondary career and technical education. *New Directions for Community Colleges*, 2012(157), 43-52. doi:10.1002/cc.20005
- Williams, M. L., Paprock, K., & Covington, B. (1999). *Distance learning: The essential guide*. Thousand Oaks, CA: SAGE. doi: <http://dx.doi.org/10.4135/9781452229140>
- Wilson, A. (2012). Effective professional development for e-learning: What do the managers think? *British Journal of Educational Technology*, 43(6), 892-900. doi:10.1111/j.1467-8535.2011.01248.x
- Wilson II, J. S., Parr, B. A., & Parr, K. S. (2012). Student perceptions of distance education in a career and technical teacher education program. *Career & Technical Education Research*, 37(2), 157-169. doi:10.5328/cter37.2.157

- Yoon, K. S., Duncan, T., Lee, S. W., Scarloss, B., & Shapley, K. L. (2007). *Reviewing the evidence on how teacher professional development affects student achievement. issues & answers. REL 2007-no. 033*Regional Educational Laboratory Southwest.
- Young, J. R., Young, J. L., & Hamilton, C. (2013). The use of confidence intervals as a meta-analytic lens to summarize the effects of teacher education technology courses on preservice teacher TPACK. *Journal of Research on Technology in Education (International Society for Technology in Education)*, 46(2), 149-172.
- Zaslow, M., Tout, K., Halle, T., Whittaker, J. V., Lavelle, B., Office of Planning, Evaluation and Policy Development (ED), Policy and Program, Studies Service, et al. (2010). *Toward the identification of features of effective professional development for early childhood educators. literature review* Office of Planning, Evaluation and Policy Development, US Department of Education.

APPENDICES

Appendix A

Survey

Greetings!						
This research study is designed to gain insight on professional development for instructors who teach or have taught courses that are fully administered online with no face-to-face interaction. Note: Your participation is completely voluntary and your responses will be kept confidential.						
Your input is welcomed and greatly appreciated!						
Directions: Please read and answer each of the following questions.						
Form and Content						
1. Have you ever taught an online class that was fully administered online with no face-to-face interaction? Circle: Yes or No If yes, please proceed to question #2. If no, please skip to question #32.						
2. Have you ever participated in a professional development activity that was related to teaching and learning online? Circle: Yes or No If yes, please proceed to question #3. If no, please skip to question #32.						
3. Please select which forms of professional development (related to teaching and learning online) that you have participated in. (Check all that apply)						
<input type="checkbox"/> In-service <input type="checkbox"/> Training workshop <input type="checkbox"/> Conference <input type="checkbox"/> Webinar (or web resource) <input type="checkbox"/> College course			<input type="checkbox"/> Print material (book, journal article, etc.) <input type="checkbox"/> Peer-to-peer discussion/mentoring (related to the improvement of e-learning instruction) <input type="checkbox"/> Consultation with an Instructional Designer for e-learning course planning & design <input type="checkbox"/> Other (please list):			
4. Which topics (related to teaching and learning online) did the professional development activities (noted above) cover? (Check all that apply)						
<input type="checkbox"/> Best practices, strategies, and/or learning theories <input type="checkbox"/> Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.) <input type="checkbox"/> Learning Management Systems (i.e., Blackboard, Moodle, etc.)			<input type="checkbox"/> E-learning course design principles and construction <input type="checkbox"/> E-learning hardware (i.e., Web cams, Microphones, etc.) <input type="checkbox"/> E-learning evaluation programs (i.e., Quality Matters, Sloan-C Quality Scorecard, etc.) <input type="checkbox"/> Other (please list):			
Greatest Impact						
5. Think about the one professional development activity (related to teaching and learning online) that had the greatest and most positive impact on you. On a scale of 1 to 7, rate the extent to which this particular activity increased your knowledge and improved your skills as an e-learning instructor? (Circle your answer)						
1-Not at all	2-Very Little	3-Slightly	4-Somewhat	5-Moderately	6-Very Much	7-Extremely
Note: While still considering the professional development activity (referenced above) that had the greatest impact on you, please answer the following questions (#6-12).						
6. What form or type was it? (Check only one option)						
<input type="checkbox"/> In-service <input type="checkbox"/> Training workshop <input type="checkbox"/> Conference			<input type="checkbox"/> Print material (book, journal article, etc.)			

<input type="checkbox"/> Webinar (or web resource) <input type="checkbox"/> College course		<input type="checkbox"/> Peer-to-peer discussion/mentoring (related to the improvement of e-learning instruction) <input type="checkbox"/> Consultation with an Instructional Designer for e-learning course planning & design <input type="checkbox"/> Other (please list):				
7. What was the topic? (Check only one option)						
<input type="checkbox"/> Best practices, strategies, and/or learning theories <input type="checkbox"/> Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.) <input type="checkbox"/> Learning Management Systems (i.e., Blackboard, Moodle, etc.)		<input type="checkbox"/> E-learning course design principles and construction <input type="checkbox"/> E-learning hardware (i.e., Web cams, microphones, etc.) <input type="checkbox"/> E-learning evaluation programs (i.e., Quality Matters, Sloan-C Quality Scorecard, etc.) <input type="checkbox"/> Other (please list):				
8. How many hours did it last? # _____						
9. How many days did it last? # _____						
10. Did other instructors from your department (or content area) participate in the professional development activity with you (at the same time)? Circle: Yes or No						
11. Were you able to practice and gain feedback, on what you were learning, during the professional development activity (in real-time)? Circle: Yes or No or Not Applicable						
12. Was the professional development activity directly connected to college goals, accreditation, government/state policy, or a personal goal of yours? Circle: Yes or No or Don't Know						
Employer Sponsored Professional Development						
13. Has your employer ever provided professional development related to teaching and learning online? Circle: Yes or No or Don't Know If yes, please proceed to question #14. If no, please skip to question #23.						
14. "Have you participated in one or more of the professional development activities, related to teaching and learning online, sponsored by your employer?" Circle: Yes or No If yes, please proceed to question #15. If no, please skip to question #23.						
15. Think about the <u>most recent</u> professional development activity (related to teaching and learning online) that your employer sponsored. On a scale of 1 to 7, rate the extent to which this particular activity increased your knowledge and improved your skills as an e-learning instructor? (Circle your answer)						
1-Not at all	2-Very Little	3-Slightly	4-Somewhat	5-Moderately	6-Very Much	7-Extremely
Note: While still considering the professional development activity (referenced above) that your employer sponsored, please answer the following questions (#16-22).						
16. What form or type was it? (Check only one option)						
<input type="checkbox"/> In-service <input type="checkbox"/> Training workshop <input type="checkbox"/> Conference <input type="checkbox"/> Webinar (or web resource) <input type="checkbox"/> College course		<input type="checkbox"/> Print material (book, journal article, etc.) <input type="checkbox"/> Peer-to-peer discussion/mentoring (related to the improvement of e-learning instruction) <input type="checkbox"/> Consultation with an Instructional Designer for e-learning course planning & design				

		<input type="checkbox"/> Other (please list):				
17. What was the topic? (Check only one option)						
<input type="checkbox"/> Best practices, strategies, and/or learning theories <input type="checkbox"/> Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.) <input type="checkbox"/> Learning Management Systems (i.e., Blackboard, Moodle, etc.)		<input type="checkbox"/> E-learning course design principles and construction <input type="checkbox"/> E-learning hardware (i.e., Web cams, microphones, etc.) <input type="checkbox"/> E-learning evaluation programs (i.e., Quality Matters, Sloan-C Quality Scorecard, etc.) <input type="checkbox"/> Other (please list):				
18. How many hours did it last? # _____						
19. How many days did it last? # _____						
20. Did other instructors from your department (or content area) participate in the professional development activity with you (at the same time)? Circle: Yes or No						
21. Were you able to practice and gain feedback, on what you were learning, during the professional development activity (in real-time)? Circle: Yes or No or Not Applicable						
22. Was the professional development activity directly connected to college goals, accreditation, government/state policy, or a personal goal of yours? Circle: Yes or No or Don't Know						
Self-Sponsored Professional Development						
23. Have you ever sponsored or paid for your own professional development (related to teaching and learning on line) that was not connected to your employer? Circle: Yes or No If yes, please proceed to question #24. If no, please skip to question #32.						
24. Think about the <u>most recent</u> professional development activity (related to teaching and learning online) that <u>you sponsored or initiated for yourself</u> . On a scale of 1 to 7, rate the extent to which this particular activity increased your knowledge and improved your skills as an e-learning instructor? (Circle your answer)						
1-Not at all	2-Very Little	3-Slightly	4-Somewhat	5-Moderately	6-Very Much	7-Extremely
Note: While still considering the professional development activity (referenced above) that you sponsored for yourself, please answer the following questions (#25-31).						
25. What form or type was it? (Check only one option)						
<input type="checkbox"/> In-service <input type="checkbox"/> Training workshop <input type="checkbox"/> Conference <input type="checkbox"/> Webinar (or web resource) <input type="checkbox"/> College course		<input type="checkbox"/> Print material (book, journal article, etc.) <input type="checkbox"/> Peer-to-peer discussion/mentoring (related to the improvement of e-learning instruction) <input type="checkbox"/> Consultation with an Instructional Designer for e-learning course planning & design <input type="checkbox"/> Other (please list):				
26. What was the topic? (Check only one option)						
<input type="checkbox"/> Best practices, strategies, and/or learning theories <input type="checkbox"/> Web 2.0 technologies or other web resources (i.e., GoogleDocs, Twitter, GoAnimate, etc.)		<input type="checkbox"/> E-learning course design principles and construction <input type="checkbox"/> E-learning hardware (i.e., Web cams, microphones, etc.)				

<input type="checkbox"/> Learning Management Systems (i.e., Blackboard, Moodle, etc.)	<input type="checkbox"/> E-learning evaluation programs (i.e., Quality Matters, Sloan-C Quality Scorecard, etc.) <input type="checkbox"/> Other (please list):
27. How many hours did it last? # _____	
28. How many days did it last? # _____	
29. Did other instructors from your department (or content area) participate in the professional development activity with you (at the same time)? Circle: Yes or No	
30. Were you able to practice and gain feedback, on what you were learning, during the professional development activity (in real-time)? Circle: Yes or No or Not Applicable	
31. Was the professional development activity directly connected to college goals, accreditation, government/state policy, or a personal goal of yours? Circle: Yes or No or Don't Know	
Demographics (Please circle your answer)	
32. What is your gender? Male or Female	
33. What is your employment status? Full-time or Part-time/Adjunct	
34. What program or division do you represent? Academic or Career Technical or Other	
35. How many years of teaching experience do you have? # _____	
36. For how many of those years have you taught online? # _____	
37. How many online courses have you taught (that had no face-to-face interaction)? # _____	
Thank you for taking the time to complete this survey!	

Appendix B

Letter of Permission

July XX, 2014

Attention: President XYZ
XYZ Community College
Street Address
City, State, Zip

Greetings President XYZ,

The present digital age has had an immense impact on our culture and society. The way we live, work, and communicate has been dramatically transformed by technological advancements. Even our approach to learning and accessing information has been streamlined to the ever popular click of a button. Consequently, education is no longer confined to a fixed place and time.

Current research on distance education indicates that enrollment in online courses is rapidly and steadily increasing. In some cases, the increase exceeds overall higher education enrollments¹. Findings of this nature have caused many institutions to offer more and more e-learning courses which place unique and, at times, challenging demands on their teaching staff since many have not been formally trained to teach online². This is especially true for instructors who may have started their careers well before the advent of modern web technology.

As a graduate student researcher and community college faculty member, my research interests focus on the current condition of professional development for instructors who teach online. In partial fulfillment of the requirements for my dissertation, I would like to request permission to send your faculty members an email that: 1- Introduces my research study; and 2- Provides a web link to my online survey. The one-time survey should take approximately 10-15 minutes to complete. Participation is completely voluntary and all responses will be kept confidential.

Upon completion of the study, your school may request a complete report of the results. If you have any questions, you may contact me at (205) 447-0977 or snhenry2day@yahoo.com.

Sincerely,

Stephanie Henry, Doctoral Student
The University of Alabama

¹ Bigatel, P. M., Ragan, L. C., Kennan, S., May, J., & Redmond, B. F. (2012). The identification of competencies for online teaching success. *Journal of Asynchronous Learning Networks*, 16(1), 59-77

² Palloff, R. M., & Pratt, K. (2011). *The excellent online instructor: Strategies for professional development* Jossey-Bass

Appendix C

Web Survey Informed Consent (First page of the web survey in Qualtrics)

Research Invitation¹

Stephanie Henry, Principal Investigator from the University of Alabama, is conducting a study called E-Learning Instructor Views on Professional Development: An Investigation of Current Practice. She wishes to find out what types of professional development, for teaching and learning online, do faculty members participate in and what are the characteristics of these professional development activities.²

Taking part in this study involves completing a web survey³ that will take about 10 minutes.⁴ This survey contains questions about the topics, duration, and providers of professional development for e-learning.

We will protect your confidentiality by not collecting any personally identifiable information. Only the principal investigator will have access to the data. The data is *password protected for security*. Only summarized data will be presented at meetings or in publications.⁵

There will be no direct benefits to you. The findings will be useful to faculty members, administrators, and educators in general for creating dialogue, assessing needs, and planning.⁶

The chief risk is that some of the questions may stir up emotions related to your experiences. You may skip any questions you do not want to answer.⁷

If you have questions about this study, please contact Stephanie Henry at snhenry2day@yahoo.com. If you have questions about your rights as a research participant contact Ms. Tanta Myles (the University Compliance Officer) at (205) 348-8461 or toll-free at 1-877-820-3066. If you have complaints or concerns about this study, file them through the UA IRB outreach website at http://osp.ua.edu/site/PRCO_Welcome.html. YOUR PARTICIPATION IS COMPLETELY VOLUNTARY. You are free not to participate or stop participating any time before you submit your answers.⁸

If you understand the statements above, are at least 19 years old, and freely consent to be in this study, please click “I agree” below.

¹ A statement that the study involves research

² An explanation of the purpose(s) of research

³ A description of the procedures to be followed

⁴ The expected duration of the person’s participation

⁵ A statement describing the extent to which confidentiality will be maintained

⁶ A description of benefits to the individual or society that may reasonably be expected

⁷ A description of any reasonably foreseeable risks or discomforts

⁸A statement that participation is voluntary, refusal involves no penalty or loss of benefits to which the participant may be entitled, and that the participant may discontinue participation at any time without penalty or loss of benefits to which s/he may otherwise be entitled.

Appendix D

IRB Letter

Office of Research
Institutional Review Board for the
Protection of Human Subjects



July 29, 2014

Stephanie Henry
SSPRMC
College of Education
The University of Alabama
Box 870307

Re: IRB # TX-14-CM-088 "Teaching Instructor Views on Professional Development: An Investigation of Current Practice"

Dear Ms. Henry:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your protocol has been given exempt approval according to 45 CFR part 46.101(b)(1) as outlined below:

(1) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

Your application will expire on July 28, 2015. If your research will continue beyond this date, complete the relevant portions of Continuing Review and Closure Form. If you wish to modify the application, complete the Modification of an Approved Protocol Form. When the study closes, complete the appropriate portions of FORM: Continuing Review and Closure.

Should you need to submit any further correspondence regarding this proposal, please include the assigned IRB application number.

Good luck with your research.

Sincerely,



159 East Administration Building
Box 870117
Tuscaloosa, Alabama 35487-0117
Phone: 205-845-8451
Fax: (205) 348-9189
Toll Free: (877) 822-6056


Director & Research Compliance Officer
Office for Research Compliance
The University of Alabama