

ONLINE VS FACE-TO-FACE: EDUCATOR OPINIONS ON PROFESSIONAL
DEVELOPMENT DELIVERY METHODS

by

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ABSTRACT

The purpose of this study was to assess teacher perceptions regarding the effectiveness of online courses as a delivery method for professional development. Participants were divided into two groups, educators who have participated in and now teach professional development courses online (instructors) and educators who have participated in the instructors' online professional development classes (online participants). Additionally, the study explored the rationale for professional development and the need for a revolution in the methods of delivery for professional development. The focus was on the opinions of instructors and online participants regarding the ability of online professional development to address this change.

Results indicated an overall positive perception of online professional development by both groups. Instructors and online participants with more years of teaching experience were found to have a more positive perception of the effectiveness of online professional development. They also prefer to teach/participate in online professional development over face-to-face professional development. Additionally, online participants who had participated in the largest number of online courses responded more positively that their teaching methodology had changed due to the courses they had taken. The ability to work anytime and the ability to work from any Internet accessible computer were selected by the majority of both groups as factors that influence teaching/taking online professional development courses and as benefits of online professional development. The majority of both groups selected slow Internet and lack of face-to-face interaction as the barriers to online professional development.

Future research should focus on several areas related to the effectiveness of online professional development, including the effect of the quality of the online professional development content and design on educator learning. Comparing the design of online professional development courses to traditional courses would allow for expansion of this topic. Another area for future investigation might focus on the effects of online professional development on the participating educator's students. The true litmus test for any professional development is its ability to improve student learning.

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CHAPTER 1

INTRODUCTION

The inception of No Child Left Behind (NCLB) with requirements for “highly qualified” teachers and the resulting restrictions placed on Federal Funds have greatly impacted many professional development programs across the United States. Additionally, the adoption of new NETS (National Educational Technology Standards) for Teachers by ISTE and recent revision of the Alabama Course of Study: Technology for Grades K – 12, increases the urgent need for technology professional development (Alabama Department of Education [AL DoE], 2008a; Baird & Parks, 2007; ISTE, 2009; *Technology in Alabama*, 2008). A National Center for Education Statistics (NCES) study reports that “fewer than half of teachers feel very well prepared to meet the challenges they are facing in today’s classroom, with almost two-thirds of all teachers reporting that they do not feel prepared to teach with technology” (Oelrich, 2001, ¶6).

In May of 2009, the Alabama State Department of Education adopted EDUCATEAlabama to replace the Professional Education Personnel Evaluation (PEPE) program (Davis, 2009). Technology and professional development activities are key components in both of these systems of employee evaluation. Evaluation programs combined with long-standing requirements for teacher and administrator certification makes the attainment of professional development Continuing Education Units (CEU’s) and Professional Learning Units (PLU’s) a necessity (Bishop, 2006; Hall, 2005; McLain, 2009; Morrow, 2002).

Most Title I Fund applications require that between 10% and 25% of the funds be dedicated to professional development programs (Bush, 2005; Cavaalluzzo, Lopez, Ross, Larson, & Martinez, 2005; Hirsh, 2009). However these funds are not available to all school districts and the cost of effective professional development is increasing. In response to declining tax revenue, budget deficits, and declining NCLB funds, many states are turning to other federal resources, such as the American Recovery and Reinvestment Act (ARRA) of 2009 and the Race to the Top Fund, to finance professional development programs (Metta-Gallagher, 2006; U.S. Department of Education [US DoE], 2009b). The state of Alabama is currently offering free online professional development to educators through a collaboration formed between 10 states and the public broadcast system, which is funded by the Ready to Teach federal grant (*eLearning Alabama, n.d.*).

Dedicated funds and increased need for professional development have led to new and innovative methods for offering training. “Train-the-Trainer” and “Just in Time Training” are buzzwords used in many school district plans to describe the methods used for the delivery of professional development (Bray, 2001; Grant, 1996; Poplin, 2003). Another movement in education is the use of distance education courses for the attainment of advanced education certifications or degrees, with a new component focusing on online or Internet-based methods for the delivery of professional development (Bush, 2005; Davis, M.R., 2009; Poftak, 2003). The noticeable differences between seeking additional certification and renewing certification through professional development courses are the amount of time invested, types of courses, and monetary compensation received for higher degrees. In addition, professional development courses are generally offered by the employing school district at no charge to its employees.

The evolution of professional development programs in education is very short. Prior to the 1950s, teacher training was basically non-existent. The 1950s brought many workshops, which declined in the 1960s with the advent of a systemic approach to teaching (Grant, Young, & Montbriand, 2001). During the 1970s, behaviorism, several new programs, and laws revived the teacher workshop series (Grant et al.). *A Nation at Risk* and *Goals 2001* published during the 1980s and 1990s, respectively, raised different concerns, thus bringing about new professional development programs (Grant et al.). It is also notable that many states developed re-certification programs and some adopted teacher testing during the 1980s (Grant et al.). However, throughout the decades, profound changes in the delivery methods for professional development programs cannot be established. “Professional development has usually been measured and evaluated by the number of participants, hours attended, or credits earned. . . . The ‘how much’ approach has been stressed rather than the ‘with what results’ approach” (Zahner, 2002, p. 12). Currently the standard for evaluating the effectiveness of professional development is its ability to support the improvement of student learning thus helping schools to achieve adequate yearly progress (Grant, 1996; Zahner). Harwell (2003) suggests that to achieve effectiveness, the antiquated “one-time events” once known as professional development workshops must be replaced with “sustained, systematic professional development programs that unfold as *processes* over time” (p. iii). Harwell goes on to state that a hybrid professional development program, a combination of online and face-to-face meetings, is the ideal method for achieving interaction and ongoing education. Thus, the tendency is that “traditional one-size-fits-all professional development workshops are giving way to a new, more teacher-centered, self-directed model of teacher learning” (Web-Based Education Commission, 2000, p. 60).

Statement of the Problem

Demands on teachers' time, new programs and methods for instruction, certification requirements, and budget cuts have necessitated the restructuring of professional development courses (Davis, M.R., 2009; Hall, 2005; Morrow, 2002). To address the needs of educators, many school districts are utilizing a combination of face-to-face, online, and hybrid professional development courses. According to Killion (2000), "this evolution is reshaping staff development in schools and districts worldwide" (§ 2). The movement toward online professional development provides the opportunity for educators to train anytime and anywhere at a reduced cost to the district, in addition to other benefits such as readily available resources, wider course offerings and flexibility in the length of time devoted to the course (Davis, M.R.).

The impact of online professional development on teacher quality and student success is undetermined. Research is not readily available to either support or discredit the effectiveness of online professional development. Mary Jean Sandall, Salem-Keizer Public Schools Online's Principal, says, "Online staff development isn't significantly different from traditional training. For the learner to really merit something out of the training, you want to have meaningful work in a meaningful setting" (Joiner, 2002, ¶ 36). Additionally, the National Center for Education Statistics (NCES) reports that teachers with 8 or more hours of professional development indicate that this improved their teaching "a lot" (Tyre, 2002). This research does not cite a specific type of professional development, however, according to Rem Jackson of Classroom Connect, the preferred model is now a hybrid course in which online delivery is combined with face-to-face interactions (Tyre).

The lack of specific research brings to the forefront specific questions for future research such as the following:

- How is quality control in an online professional development course established and maintained?
- How does on-line learning affect the relationship between K-12 educators and those in postsecondary education? (Brown & Green, 2003)
- What are the effects of online professional development on student learning?
- How does the effectiveness of online professional development compare to the traditional delivery methods for Professional development?

To address these questions, online professional development must be implemented in school districts. Doubler et al. (n.d.) recommends the integration of online professional development into a school district's continuing education program by combining face-to-face learning experiences with follow-up via online and one-on-one support.

Statement of Purpose

The purpose of this study was to assess teacher perceptions regarding the effectiveness of online courses as a delivery method for professional development. Participants in this study were divided into two groups, educators who have participated and now teach professional development courses online (Group 1) and educators who have participated in Group 1's online professional development classes (Group 2). Group 1 participants received instruction via the web from an outside company in order to become knowledgeable about the process for designing and facilitating an online course. The class included discussions about related topics and activities such as practice teaching, delivery platform navigation, and course design. Group 1 participants conduct online professional development courses for other teachers within their district. Group 2 participants have received instruction from the Group 1 participants. The

courses Group 2 took were created by the aforementioned outside company and were designed to integrate technology within specific content areas. Through this study, knowledge was obtained regarding the participants' opinions of their experience in this course and online course methods in comparison with face-to-face methods.

Significance of the Problem

The National Staff Development Council (NSDC) recommends, "25 percent of educators' work time be devoted to learning and collaborating with others" (National Staff Development Council [NSDC], 2001, p. 21). Unfortunately this is difficult to implement because of the demands on teachers' time. Additionally, research has shown that traditional professional development is not effective and new designs are difficult to implement (Riddle, 2004). Though teachers enjoy certain aspects of online learning, most still prefer face-to-face interactions, making a hybrid course the optimal option (Goldman, 2002). According to Samsonov and Beard (2003), "an online course combined with several face-to-face sessions offers multiple advantages such as the ease of organization, low or no cost, opportunity to tailor individual pace, and potential to develop pedagogical effectiveness for the participants" (p. 1).

While online professional development remains a relatively new method for professional development, ongoing research suggests that scheduled asynchronous online professional development courses appear to be at a minimum as effective as traditional professional development (Killion, 2000; Tinker, 2000). Since online professional development is in the early stages of implementation and "emerging as a viable and potentially successful mode of professional development" (Riddle, 2004, p. 1), additional research advocating its effectiveness from a participating educator viewpoint is not readily available. Additionally Riddle states

“Research that identifies reasons for voluntary participation in teacher online learning is necessary” (p. 1).

Theoretical Framework

Professional development is designed for the improvement of an employee’s skills in their selected profession, thus it is generally intended for adult learners. Adult learners have different learning styles from younger learners and bring several more years of experience and knowledge to any learning situation (Haung, 2002). Constructivism and andragogy both address the needs of adult learners and their existing knowledge base. Constructivists believe that learners build new knowledge through activities that draw on their current knowledge base (Oliver & Herrington, 2003; Sargeant et al., 2006; Vrasidas & McIsaac, 2000). Andragogists have outlined several principles, which also include the adult learner’s current knowledge and the need of professional development designers to develop activities that build on this knowledge (Blondy, 2007; Gibbons & Wentworth, 2001; Knowles, 1980). Often courses offered online are designed to guide the learner to discover or develop new knowledge through activities. This type of design is more effective because it takes into account the learning styles of adult learners and acknowledges their current abilities and knowledge. This research investigated the effectiveness of online professional development as a learning method for educators and analyzed the survey results based on years of teaching experience.

Research Questions

1. Is there a difference in the study participants' perceptions of the effectiveness of online professional development based on teaching experience or number of OPD courses taken?
2. Is there a difference in the study participants' preference of a professional development model based on teaching experience or number of OPD courses taken?
3. Is there a difference in the study participants' perceptions of changes in their teaching methodology after participating in online professional development based on teaching experience or number of OPD courses taken?
4. What factors influence K-12 educators to teach or participate in online professional development courses?
5. What are the benefits noted by K-12 educators who teach or participate in online professional development?
6. What are the barriers noted by K-12 educators who teach or participate in online professional development?

Assumptions of the Study

1. The participants were representative of educators that participate in online professional development.
2. Participants read the questions carefully and respond honestly.
3. Participants fully participated in and completed the online professional development course.
4. The survey instrument utilized was valid and reliable.

Limitations of the Study

1. Participants may have devoted different amounts of time and effort while participating in online professional development. This could possibly skew the results of the data.
2. Participants had different instructors, which may have influenced their perceptions of the online professional development experience.
3. It may have been over a year since the participants completed their online professional development course, causing them to have forgotten key aspects of the experience.
4. Participants may have been wary of responding negatively about the online professional development due to the climate of their school district and fears regarding confidentiality.
5. Participants' comfort level with technology may have influenced their opinions of online professional development.
6. The study looked at perceptions of participants to analyze the effects of online professional development on students.
7. The study was limited to a single urban school district and the results may not be generalizable to all K-12 educators.

Operational Definition of Terms

Asynchronous--Learning activities or instruction in which the participants and instructor do not participate at the same time (Belanger & Jordan, 2000; Moore, 2002).

Attrition--The loss of qualified teachers prior to retirement age due to various reasons such as pursuit of a different career.

Distance Learning Courses--Courses in which the instructor and participants are in different locations (Fairbarns, Kearns, & Fair, 2000; Lewis, Snow, & Farris, 1999).

Extrinsic Motivators--External factors that motivate a person to attend professional development, such as re-certification, monetary benefits, etc. (Field, Copeland & Prigent, 2006; Schrum, Burbank, Engle, Chambers, & Glassett, 2005).

Face-to-Face Professional Development--Traditional professional development that occurs with all participants and instructors in the same place at the same time.

Facilitator--Instructor who guides learning through the use of activities instead of purely lecturing.

Hybrid Professional Development--Professional development that incorporates a combination of face-to-face, traditional professional development, and online professional development activities.

Interface--The website or delivery platform for a class where the course material, discussions, mail, activities, etc. are located.

Intrinsic Motivators--Internal factors, such as self-esteem or sense of responsibility, which motivate a person to attend professional development (Field et al., 2006; Schrum et al., 2005).

Online Professional Development Courses (OPD)--Professional development courses offered via the Internet.

Professional Development Courses--Courses offered for educators to remain current on trends in education and to retain certification.

Stipend--Monetary incentive for completing a professional development course.

Synchronous--Learning activities or instruction in which the participants and instructor participate at the same time (Belanger & Jordan, 2000; Moore, 2002).

Summary

Providing professional development for educators is not a new practice and new trends in professional development frequently become available. This study investigated the effectiveness of a relatively new process of providing professional development via the Internet. The first chapter provides an introduction to this topic, along with the statement of the problem, statement of purpose, significance of the problem, research questions, assumptions, limitations, and definitions. Chapter 2 provides an in-depth examination of the current literature related to professional development, distance learning, and online professional development. The rationale for professional development and recommendations for developing and providing effective online professional development are also presented in this chapter. Chapter 3 contains a description of the methodology used to investigate this topic. The chapter includes the setting, participants, research instrument, data collection method, and data analysis. Chapter 4 contains a detailed analysis of the data. Chapter 5 contains a summary of the research findings, implications for professional development, and recommendations for future research related to online professional development.

CHAPTER 2

REVIEW OF LITERATURE

Continuous development of personnel is challenging for most companies, especially those in the business of education. As new knowledge on best practices in education becomes available, it is necessary to transfer this information to educators in a timely manner. Without a transfer of knowledge, best practices develop into ineffective and obsolete theories. There are several methods for distributing information to educators such as bulletins, professional journals, college courses, etc.; however, most information is shared through professional development courses or workshops provided by the employing school district (Lieberman & Pointer-Mace, 2008). Even with courses provided internally by the school district there are many different approaches and methods for delivery. Traditionally professional development has been offered in short, one afternoon workshops or, at most, over a period of a week (Cavaalluzzo et al., 2005; Lieberman & Pointer-Mace). With new demands on educators, the traditional method of professional development has become obsolete and alternative delivery platforms for professional development are being sought (Bishop, 2006; Center for American Progress, 2009; Lieberman & Pointer-Mace).

Three current delivery types for professional development courses include those taught in a face-to-face situation, those offered from a distance, and a combination of the two, termed hybrid. Each of these types can be further broken down according to the format utilized to deliver information. Face-to-face professional development occurs in a setting where the instructor and participants are in the same location. A face-to-face course may be offered over a

period of several days or in a single afternoon, it may be purely lecture or include a wide variety of activities. Distance education may have these same components, but often the format varies. Distance education encompasses any type of education where the learner and instructor are not in the same geographical location; this includes correspondence courses, videoconferences, online (web-based) courses, video courses, etc (Fairbarns et al., 2000; Lewis et al., 1999). Many educators are turning to distance learning courses to fulfill their professional development needs. Accordingly, school districts have dramatically increased the number of on-line courses offered during the past decade, with over half providing some type of Internet-based professional development (Brown & Green, 2003; Tyre, 2002). Current research indicates that hybrid courses, which combine face-to-face and distance learning, are the most effective methods for delivery of professional development (Dziuban & Moskal, 2001; Young, 2002).

Professional Development

Rationale

There are several justifications for the development and implementation of professional development. Government mandates, guidelines established by professional organizations, improving the practice of teaching, 21st Century skill attainment, and retaining teachers are a few of the foremost rationales for professional development. According to the National Commission on Teaching and America's Future (NCTAF), successful professional development is crucial to retaining high-quality educators (Salpeter & Bray, 2003). All of these reasons have the underlying goal of improving student learning and preparing students to participate in a global workforce, which is greatly influenced by teacher professional development (Bush, 2005; Fenton & Watkins, 2007b; "Results That Matter," 2006).

No Child Left Behind (NCLB) legislation outlines several requirements for the professional development of educators, which include the implementation of continuous, rigorous, and classroom-focused professional development (Cavaalluzzo et al., 2005; Lowden, 2005; U.S. Department of Education [US DoE], 2004). The obligation to meet the NCLB accountability requirements that all schools have highly qualified teachers and provide sustained professional development creates several challenges for school districts (Cavaalluzzo et al.; Snow-Renner & Lauer, 2005; Thomas, 2004). Many districts are not currently providing the type of professional development that leads to certification or that lasts longer than a few hours. The National Staff Development Council has proposed professional development goals that align with the NCLB requirements. One of which is “that all teachers in all schools should experience high-quality professional learning by 2007” (Salpeter & Bray, 2003, p. 34). Additionally, federally funded grants, such as the Enhancing Education Through Technology (EETT) grant, often require that a portion of the allotted funds be used specifically for professional development (Bush, 2005; Alabama Department of Education, [AL DoE], 2004). The requirements of NCLB and other programs have increased the sense of urgency regarding the development and implementation of effective professional development to meet the goal of having highly-qualified teachers in every classroom (Gordon, 2003; Tyre, 2002).

Teachers and professional development providers both view professional development from different aspects. However, they have the commonality of being oriented toward the enhancement of student learning via the improvement of teacher practices (Feist, 2003; Guskey 1986; Schlager & Fusco, 2003). Professional development is important for remaining current on trends in education, refreshing skills and learning new methods for instruction. It also provides a time for interacting with other educators for sharing techniques that work, those that do not

work, and analyzing both so that educators are successful in their classrooms (Vrasidas & Zembylas, 2004). Educators must become the initiators of their professional development and foster a view of professional development as an ongoing process in order to effectively achieve the goal of improved student learning (Guskey, 1995; Guskey & Sparks, 1996; Harfitt & Tavares, 2004; Schlager & Fusco; Stephens & Hartmann, 2004). Therefore it is essential for all teachers to be provided with high-quality professional development, which is current and germane (Thomas, 2004).

Attrition, a major factor in the shortage of qualified educators, can be reduced through effective professional development (Center for American Progress, 2009; Dove, 2004; “Unraveling”, 2002). Between 20% and 30% of educators leave the profession within the first 3 years of employment, with rates as high as 50% in urban areas (Dove; Pittinsky, 2005; Satin, 2005; “Unraveling”). Several factors influence teacher attrition, including feelings of isolation, limited resources, salary dissatisfaction, teacher preparation, and district support (Lauer, Stoutemyer, & Van Buhler, 2005; Rogers & Babinski, 2002; “Unraveling,” 2002). In a study conducted in Alabama, only 76% of the surveyed educators responded that their school district provided adequate professional development on a regular basis (*Technology in Alabama*, 2006). One solution to eliminating several of the contributing factors to attrition is professional development that enables teachers to establish professional communities (Lauer et al.; Pittinsky; Salpeter & Bray, 2003).

It is important that educators are well-versed in 21st Century learning skills and use methods in their classrooms that provide these skills to students (Alabama Department of Education [AL DoE], 2009; “Results That Matter,” 2006). Students who are lacking 21st Century skills are more likely to drop out of high school and those that do graduate often fail to

complete college and are unprepared for the workforce (“Results That Matter,” 2006). The State of Alabama has established requirements for online experiences and several initiatives such as the First Choice Diploma, ACCESS Distance Learning, CareerForward, and Alabama 21 with the intent of preparing students to participate in a global economy (AL DoE, 2008b, 2009; “Alabama Students,” 2009; *High School Distance Learning*, 2009). Many of these programs advocate for teacher training in order to meet the student’s need for 21st Century skills. Specifically the Alabama 21 program, a grant program developed with ARRA funds, requires that 25% of funding be spent on professional development (AL DoE, 2009). “The intent of the American Recovery and Reinvestment Act (ARRA) is to transform the instructional methods by training teachers to use 21st Century tools in order to increase the graduation rates and reduce dropout rates of Alabama students” (AL DoE, 2009, p. 3). The Alabama State Department is offering free online professional development courses to educators in order to address these requirements (*eLearning Alabama, n.d.*).

Benefits and Impediments

The benefits of professional development are immense and impact both teachers and students in a positive manner. It is essential to the education of students that their teachers attend professional development courses to remain up to date on current trends in education (Guskey & Sparks, 1996; Sparks & Loucks-Horsley, 1989; Vrasidas & Zembylas, 2004). Research indicates that professional development has a positive impact on student achievement on federal and state mandated assessments (Snow-Renner & Lauer, 2005; *Standards for Online*, 2004). As advances are made in curriculum and technology, teachers must continuously study so as not to become obsolete and to continue to provide students with up-to-date instruction. Through participation in

professional development, teachers are able to learn new techniques, refresh skills, network with other educators, and satisfy government and professional guidelines (Gordon, 2003, *Standards for Online*; Stephens & Hartmann, 2004; Thomas, 2004).

Networking with other teachers is difficult to accomplish during the work day, yet is essential to a teacher's development (Killion, 2000). Professional development addresses this need by bringing educators together and forming a "dynamic flow of knowledge" (Pittinsky, 2005, p. 2). Replacing episodic professional development with continuing professional development builds learning communities in which teachers have the opportunity to communicate and collaborate with other teachers (Gordon, 2003; Stephens & Hartmann, 2004; Schlager, & Fusco, 2003). These communities are "critical if teacher professional development is to result in changes in teacher practice" (Lauer, Stoutemyer, & Van Buhler, 2005). Eventually the improvements will return to the teacher in the form of pride for a job well done, positive reputation, and possibly even pay raises or other incentives.

The list of reasons for not attending professional development courses is extensive and unwieldy. Educators could certainly enlighten their young protégés in regard to providing legitimate excuses. Galland (2002) includes some wonderfully creative and realistic quotes from teachers in his article, "I have choir practice [that] night, I am just too tired after teaching all day, It seems that I spend all summer taking courses these days, and never really have time for a vacation" (p. 7). These are all valid reasons for educators. Lack of time for personal and professional activities remains a major complaint heard from most teachers. According to a report published by the Web-Based Education Commission [WBEC] (2000), "most teachers (82%) cited lack of 'release time' (time outside classroom)" (p. 57) as a barrier to professional development activities. Inevitably, one activity, usually professional development, must be

forfeited to accommodate for another. However, a “new style of professional development offered online would possibly address the conflicting schedules incurred by most teachers” (WBEC, 2000, p. 57).

Unfortunately these are not the only impediments in the implementation of effective professional development. In the instance of online professional development, other factors prevent implementation such as technology literacy, family commitment, lack of time, cost, limited content knowledge, lack of teacher commitment, unsupportive supervisors, and availability of programs (Benson, 2004; Cage, 2003). According to research, strong leadership combined with adequate infrastructure, access, and ongoing training are necessary to implement an effective online professional development program (Ertmer, Bai, Dong, Khalil, Park, & Wang, 2003).

Models

The types of professional development available to educators vary widely among school districts. Professional development can be categorized by the delivery method (often called the model), design, and participant activities. Sparks and Loucks-Horsley (1989) divide professional development into five models:

- (a) individually guided staff development,
- (b) observation/assessment,
- (c) involvement in a development/improvement process,
- (d) training, and
- (e) inquiry (p. 3).

Other researchers categorize professional development models using the following terms: train-the-trainer, face-to-face, just in time, web-based, and coaching/mentoring (Bray, 2001; Norton & Lewis, 2000; Poplin, 2003). These modes of professional development may be designed to address professional standards, curriculum, or district goals (Bray; Maldonado, 2002; Norton & Lewis).

The availability of a broad spectrum of activities and assessments expand the variety of professional development models exponentially. Professional development course activities include collaboration, research projects, study groups, reflections, mentoring/coaching, and networking (Bray, 2001; Maldonado, 2002; Norton & Lewis, 2000; Poplin, 2003). Regardless of the delivery method or design utilized, the effectiveness of professional development is determined by key attributes. These include the duration, focus, collective participation, active involvement, follow-up, and continuous evaluation (Lowden, 2005; Maldonado; Snow-Renner & Lauer, 2005).

Funding

Education budgets during the last few years have dwindled due to lower tax revenue, decreased federal funds, and budget cuts (“Schools Expect Budget Cuts,” 2008). This has caused school districts to become creative in funding professional development by offering a variety of cost-effective professional development classes such as streaming video, interactive video conferencing, and online courses (Fontana, n.d.). New federal funds recently became available through the ARRA, but will be short lived and come with the recommendation to invest wisely so as to extend the effects of the funding (USDoE, 2009a). To meet the requirements of sustained learning with a constrained budget, many districts are turning to online professional development

(Center for American Progress, 2009; USDoE, 2009a). Online professional development reduces the cost of professional development by eliminating travel, facility costs, substitute costs, etc.

(Brown & Green, 2003)

Distance Education

Evolution

Distance Education is a term that is used to refer to learning situations in which the instructor and student are in different geographical locations (Belanger & Jordan, 2000; Schrum, et al., 2005). The first form of distance education was correspondence courses in which the learner only communicated with the instructor and has existed since the advent of the postal service (Schrum, 1998; Schrum et al.; USDoE, 2009d). Universities first introduced correspondence courses during the mid-1800s from which time these have progressed to use a wide variety of delivery methods (Kidwell, Freeman, Smith, & Zarcone, 2004).

Distance education has evolved over the years along with the advancement of technology, resulting in improved teaching methods and communication between students and instructors (Belanger & Jordan, 2000; Schrum et al., 2005). Content is now delivered via video cassettes or DVDs, Internet, CD-ROMs or other media storage formats, television, radio and video-conferencing email, synchronous and asynchronous e-conferencing, faxing, video-streaming, telephoning, and snail mail (Fairbarn et al., 2000, Lewis et al., 1999). Enrollment in distance education courses has increased along with these advancements.

Models

There are two primary models of distance education, synchronous and asynchronous (Belanger & Jordan, 2000; Moore, 2002). Synchronous learning describes a situation in which all learners participate at the same time while asynchronous occurs at different times (Belanger & Jordan; Moore). Synchronous distance education participants are able to interact with the instructor and each other in real-time using video-conferencing and other similar technology (Moore). The disadvantage of time restrictions that is encountered in synchronous learning is often outweighed by the increased interactions (Moore). Asynchronous distance education has the advantage of greater flexibility in time and delivery methods (Belanger & Jordan; Moore). Asynchronous distance education is most often delivered via the Internet, but providers may also use video, television, snail mail, etc. (Fairbairn et al., 2000, Lewis et al., 1999). Unfortunately, this flexibility may lead to a disconnection among participants and with the instructor (Moore).

Education Uses

Implementation of distance learning at all levels of education provides a solution for education barriers such as travel and time restraints (“E-learning,” 2001; Flores, 2007; Tyre, 2002). The majority of colleges offer distance education courses, which has resulted in an enrollment of over 4 million students (Ebersole, 2007; National Center for Education Statistics, [NCES], 2003; Petrides & Nodine, 2005; Wirt, Rooney, Choy, Provasnik, Sen, & Tobin, 2004). Postsecondary students are not the only learners who are able to benefit from distance education, but teachers and students in the K-12 system also benefit from courses and professional development offered via distance education methods. The National School Boards Foundation reports that “Nearly two-thirds (63 percent) [of school districts] provide some type of Internet-

based staff development” (Tyre, 2002, p. 37) and over 700,000 of students enrolled in grades K - 12 are participating in online courses (Flores). “Teachers now have the opportunity to take online courses for professional development and graduate credit in scores of subjects from a number of institutions” (Brown & Green, 2003, p. 148). Professional development offered via distance education can “bring current issues, teaching resources, and best practices directly to teacher’s desktops for just-in-time learning” (Powers & Barnes, 2001, p. 63).

Advantages and Disadvantages

Distance education has several advantages for both learners and providers of education including flexibility. Many students are now considered non-traditional because they have families, jobs, or other commitments that restrict them from attending traditional courses (Davis, 2007; Schrum, 1998; Schrum et al., 2005). This includes educators who are seeking professional development and high school students who attend schools that do not offer a variety of advanced courses. Participants in distance education are not restricted by time or location, which has led to the coining of the phrase, ‘anytime, anywhere’ learning (Belanger & Jordan, 2000; Borady-Ortmann, 2002; Bush, 2005; Fusco, Gehlbach, & Schlager, 2000; Kidwell et al., 2004; Tyre, 2002; USDoE, 2009d).

Students also benefit from the affordability of distance education courses. The cost of participating in distance education is reduced by the decrease or elimination of travel and travel related expenses such as gasoline, car maintenance, food, and lodging (Belanger & Jordan, 2000; Borady-Ortmann, 2002; Kidwell et al., 2004; Piskurich, 2006; Thomas, 2004). Cost is also a benefit for the providers of distance education courses (Piskurich). Distance education providers do not incur the expenditures of maintaining facilities and increase revenue by providing a wider

variety of courses, which meet the needs of more students (Kidwell et al.; Piskurich; Thomas). “Evidence from a national project, Technology Cost Methodology, found that initial development costs of online courses were higher than traditional course development, but over time online costs were lowered significantly because of reduced physical plant and traditional operating costs” (Thomas, p. 3).

Continuous learning has been documented as a requirement for effective professional development. Distance education is usually provided in an easy to use format, which is conducive to continuous learning (Piskurich, 2006). Continuous learning cannot be achieved in a short 1 or 2 hour workshop, it must occur over a longer period of time, which is often difficult for many educators to schedule. “When the bottom line is mere hours, the motive to try online professional development becomes even more compelling” (Tyre, 2002, p. 37).

Unfortunately distance education is not suitable for every topic and is plagued with poor development of content (Piskurich, 2006; Pittinsky, 2005). Distance education instructors must input more time to develop and facilitate distance education courses (Piskurich; Pittinsky). Instructors cannot expect students to learn merely by reading lectures online and the development of effective online learning activities can be time consuming. Additionally, it is often hard to evaluate student learning in a distance education course because it requires honesty of students (Pittinsky).

While distance is a benefit, it is also a drawback because students often have trouble with the “lack of personal interaction” (Kidwell et al., 2004, p. 142). Additionally, learning becomes the responsibility of the student and requires more work than a traditional course (Bush, 2005; Pittinsky, 2005). The dependency of distance education courses on the participation of students often leads to greater drop-out rates (Brown & Green, 2003; Piskurich, 2006; Pittinsky).

Therefore it is imperative that students are evaluated, by themselves, the instructor or the professional development provider, to determine the suitability of distance education for their learning style (Yoder, 2001).

Online Professional Development

Definition

According to EdTech Leaders Online (ETLO, 2004) “[online professional development] refers to using the Internet to provide activities, information, and interactions with mentors and colleagues that enable educators to improve their knowledge and professional practices” (¶ 1). Alternatively, Northrup and Rasmussen (2002) state “[online professional development] is the delivery of professional development where participants and instructors are separated by time and usually by distance, using the World Wide Web as the tool for instruction, communication, and collaboration” (p. 2). A simpler definition of online professional development is distance-learning courses offered via the Internet to address the continuing education of professionals. This study will focus on a specific subset of professionals known as educators.

Models

Kleiman, Dash, Ethier, Johnson, Metrick, and Treacy (2000) categorize online professional development into five different types based on the level of interaction between the instructor and the participants. Broadcast courses and independent study courses are basically lectures or materials online and generally have the least amount of communication between the participants and with the instructor (Kleiman et al.). College lecture courses have a moderate amount of communication while tutorial and learning community models both emphasize

interactions between the participants and the instructor (Kleiman et al.). All of these methods of online professional development can be effective, depending on the capabilities and needs of the participants. However, most researchers would deem learning communities as the most effective method for online professional development (Cavaalluzzo et al., 2005; Schrum et al., 2005).

History

The history of online learning began a mere 12 years ago and has grown with developments in the field of telecommunications (Fournier, 2006). According to Fournier, the “initial interest and investment [in online professional development] was . . . over inflated and overly enthusiastic” however “this was followed by a more moderate and tempered approach as the field matured” (p. 15). Kruse (2004) correlated the dramatic changes in online professional development with Gartner’s Technology Hype Cycle. According to Kruse, the hype began in 1996 at the ASTD conference, peaked during the year 2000 and began to decline in 2001 with the dissolution of several elearning companies. Kruse predicted a period of enlightenment starting in 2004, which has been substantiated by Fournier, who indicates that online professional development is moving away from novelty toward valuable method for professional development.

Education Uses

There has been an increase in online professional development courses provided by school districts in lieu of face-to-face professional development (Ally, 2004; Mather, 2000; Tyre, 2002). This increase follows a trend noticed in business. Many companies are now utilizing e-Learning, another term for online professional development, to train their employees. Lack of

participant time, availability of professional development courses and funding are contributing factors to the move away from face-to-face professional development, both in education and in the business sector (“E-learning,” 2001; Piskurich, 2006; Tyre). “Adding an online perspective to professional development activities provides an individual with the chance to participate in education and training opportunities at times and places that are convenient” (Northrup & Rasmussen, 2002, p. 1). The majority of school districts have the equipment and Internet access to support this move.

Rationale

The rationale for online professional development courses is two-fold, the necessity for professional development and the critical need for an online delivery platform. Darling-Hammond (2000) states “measures of teacher preparation and certification are by far the strongest correlates of student achievement in reading and mathematics” (Abstract section, ¶ 1). One can assume that the preparation of educators, via continuous professional development could possibly be a factor in other subject areas, thus validating the need for professional development. Additionally, the demands upon teachers and school districts are increasing with the implementation of the NCLB legislation. NCLB calls for professional development activities that are “sustained, intensive and classroom-focused; are not one-day or short-term workshops” (US DoE, 2004, p. 49). This was previously concluded in the research of Feiman-Nemser (2001) who stated “if we want schools to produce more powerful learning on the part of students, we have to offer more powerful learning opportunities to teachers” (p. 1). Furthermore she suggested replacing “superficial, episodic sessions [with] sustained and substantive learning opportunities” and “discrete, external events” with professional development that is “built into

the ongoing work of teaching and relate to teachers' questions and concerns" (p. 30). The design of online professional development has the propensity to be sustained, intensive, and focused on teacher needs, thus meeting these requirements.

It is difficult, if not impossible, to create face-to-face professional development courses that are intensive and extend over periods of time. Time constraints, for both teachers and instructors, are usually the demise of any such type of professional development (Galland, 2002; WBEC, 2000). This is not the case with online professional development, because participants do not have to meet in the same place or at the same time ("E-learning," 2001; Tyre, 2002). The flexible nature of online professional development accommodates any number of participant schedules, while still allowing for collaboration and learning (Benson, 2004).

Benefits and Impediments

Researchers, instructors, and students all agree regarding the benefits of distance education and online learning (Fenton & Watkins, 2007b; Richardson & Swan, 2003; USDLA, 2007). Likewise professional development offered via these methods can be expected to have similar benefits for professional development providers, school districts and participants. Providers of online professional development benefit from flexibility and the elimination of facility expenses. Brown and Green (2003) state that administrators view online professional development "as a 'cash cow'--a means of delivering instruction to a large number of paying customers without the expense of providing things like temperature controlled classrooms and parking spaces" (p. 148). This is verified by Tinker (2000), who states that with online professional development "staff development can be less expensive, easier to schedule, and more

effective” (¶1). Researchers also cite time flexibility as one the benefits of online professional development for course instructors (Brown & Green).

Online professional development adequately addresses the needs of the school districts through several factors. These include cost effectiveness, preventing loss of instruction time, increase in teacher productivity, and ease of scheduling (ETLO, 2004; Killion, 2000; McCampbell, 2000; Tinker, 2000; Wiesenberg & Willment, 2001; Yang & Liu, 2004; Zenger & Uehlein, 2001). Cost is diminished by eliminating training materials, operating costs of providing a training facility, travel expenses, lowering the need for substitutes, and reaching more participants with fewer repetitions of a course (Brown & Green, 2003; Cavaalluzzo et al., 2005; ETLO; Killion; McCampbell; Tinker; Zenger & Uehlein).

The benefits that participating educators realize extend even further beyond these. Online professional development offers the benefits of flexibility and accessibility that are generally not feasible with the face-to-face courses (Brown & Green, 2003). Travel is often a barrier to professional development because of cost and distance (Brown & Green). Often professional development classes are not available within driving distance and funds are not generally available for other means of travel. According to Stephanie Hirsh, National Staff Development Council (NSDC), online professional development is extremely “beneficial to educators who are isolated either geographically or by subject area” (Joiner, 2002, ¶6). Employees can participate in online professional development anytime and anywhere without traveling after school or leaving their classes unattended (Anderson, 2002; ETLO, 2004; Killion, 2000; Richardson, 2002; Riddle, 2004; Tinker, 2000; Zenger & Uehlein, 2001). This increases the participant’s learning time by reducing travel time and time spent preparing for a substitute.

The wide variety of online professional development courses provides teachers with the ability to access new approaches to education, connect with other professionals and gain access to rich resources (ETLO, 2004; Killion, 2000; Riddle, 2004; Tinker, 2000; Zenger & Uehlein, 2001). Time constraints of face-to-face courses are also eliminated by the flexible nature of online professional development. Most online professional development courses have set deadlines, but are usually asynchronous, allowing the participants to log on, complete work, and participate in discussions at times convenient to them (Fairbarn et al., 2000, Richardson & Swan, 2003, Young, 2002). This opens the door to many busy teachers who may work part-time, have families to care for, or other similar time restrictions (Singleton, 2007).

In addition to eliminating time and location constraints, online professional development provides the following benefits:

- Exposure to various resources and emerging technologies
- Ability to meet special needs and goals through customization
- Collaborative learning opportunities with other educators and mentors
- Direct impact on classroom practice
- New opportunities for follow-up reflection and participation
- Instructional designs for a variety of learning styles and paces
- Different social dynamics due to learning community (Brown & Green 2003; Cavaalluzzo et al., 2005; Hamilton-Pennel, 2002; Joiner, 2002; Killion, 2000; Kleiman, 1999; Thomas, 2004; Treacy, Kleiman, & Peterson, 2002; Yoder, 2001).

Online professional development does have barriers that both participants and providers must consider when deciding if this type of program is appropriate for them. Often the shortcomings of online professional development are equal if not greater for the instructor of the

online professional development. Tyre (2002) notes that the “time to teach online professional development” along with the “time and money [required] to develop [online professional development] is greater than expected” (p. 38). The impediments to online professional development include the following:

- Misinterpretation due to lack of facial expressions, voice tone, and body language
- Lack of intensive brainstorming
- Lack of trust
- Hidden costs
- Inadequate technology skills
- Inadequate access to technology, (software, hardware, bandwidth, and technical support)
- Fragmenting of information
- Feeling of isolation and reticence due to lack of face-to-face interaction
- Poor quality of content and instructional design (Brown & Green 2003; Galley, 2002; Hamilton-Pennel, 2002; Killion, 2000; Kleiman, 1999; Tyre, 2002; Vrasidas & McIsaac, 2000).

Students in online professional development courses often feel isolated due to the physical separation between the participants and instructor (Edmundson, 2002; Richardson, 2002; Wiesenberg & Willment, 2001). The feeling of isolation is often intensified because instructors are not able to see the students and receive and react to visual cues that indicate frustration or confusion (Edmundson; Schrum & Benson, 2000). Students are also wary of taking courses provided online because of technical difficulties, unfamiliar formats, lack of personal interaction with the instructor, and different learning tasks (Edmundson; Gordon, 2003;

Richardson; Wiesenberg & Willment). In addition to these issues, students often find that while flexible in time and location, it is impossible to succeed in online courses if they do not have any time to dedicate to the course (Brown & Green, 2003).

“Dropout rate[s] for online courses is significantly higher than for face-to-face courses” (“Learning Online,” 2002, ¶15) with some reports indicating ranges from 32% to 75% (Ganzel, n.d.; *Learning Styles*, n.d.). Rebecca Ganzel (n.d.) asserts the “‘anytime, anywhere’ nature of at-your-laptop learning all too easily becomes ‘no time, nowhere’” (¶9). Researchers indicate that a lack of motivation, low levels of satisfaction, isolation and deficient performance gains are contributing factors to high dropout rates in online education (Brown & Green 2003; Cameron, 2003; Tyre, 2002). Other reasons such as the “difficulty communicating, subtle social cues, . . . [and] little or no direct opportunity for an instructor to effectively model classroom teaching in an on-line environment” (Brown & Green, p. 150) have also been cited as reasons for discontent with online professional development. Proper planning by both the student and instructor can eliminate the majority of the difficulties that students encounter while participating in online courses.

The disadvantages of implementing online professional development for providers are limited and easily overcome with preparation and budgeting. These can be summarized as hidden costs, increased teacher student ratios, learner readiness, and low-quality content (Killion, 2000; Tinker, 2000). Hidden costs include the provision of technology, support, and the purchase of online content. With careful budgeting, these costs will balance with the reduction of the cost of traditional professional development. Not all content is appropriate for the online arena, and not all learners are ready for online professional development either, due to lack of self-motivation,

technology skills, and support (Killion). These barriers can be addressed with careful planning, which is required with the design of any professional development opportunities.

Effectiveness

Are online professional development courses effective in improving classroom instruction and student learning? “Early research indicates that learning online is at least as effective as learning in conventional classrooms” (Killion, 2000, ¶9). Research regarding online learning suggests that it is a lucrative venture for most participants. However, Joiner (2002) asserts, “there’s no evidence to date that online professional development has been extremely effective or that it’s better than traditional workshops” (¶38). This statement in correlation with the comments of Killion and lack of research statistics provide strong evidence for the need of research in the area of online professional development.

Various studies support the effectiveness of distance learning used to deliver courses for advanced degrees. However specific statistics for online professional development are difficult to locate, which is confirmed by Kirsten Peterson of the Education Development Center (EDC). She states, “although there is abundant anecdotal evidence of the effectiveness of online professional development, little formal research has been completed” (“E-mentoring,” 2003, ¶11). According to Peterson, the National Science Foundation (NSF) “recently awarded EDC a grant to compare the impact of online professional development with face-to-face and hybrid approaches” (“E-mentoring,” ¶ 11). The NSF also awarded a grant to the “Gender and Diversities Institute at Education Development Center, Inc. (EDC) to conduct some of the first national research on the impact of online professional development on participants’ attitudes and

practices related to gender equity in mathematics and science” (Gender and Diversities Institute, n.d., ¶ 1). Thus research is ongoing and results are forthcoming.

The following statistics provide a promising foundation for future research in the area of online professional development:

- Researchers indicate that training time is reduced from 25% to 60% through the implementation of web-based training (Berke & Wiseman, 2004; Butcher, 2006).
- The participants in a Colorado Library Marketing Council’s class, ‘Creating Change in Challenging Times: Marketing Tools for Library and Information Professionals’, indicated a ‘strong’ increase in self-perceptions. Additionally, “93 percent . . . would recommend the course to others and 92 percent indicated they would enroll in other online courses” (Hamilton-Pennell, 2002, p. 35).
- Participants in an NSF funded online courses report significantly high levels of satisfaction with the courses. “Over 90 percent of the participants found the course interesting and over 80 percent said that they usually understood the content; found the instructor accessible, the course goals clear, and the course requirements clear; and would recommend the course to colleagues” (Killion, 2000, ¶9).

Participants

Many educators decide to participate in online professional development because they perceive that online professional development is easier than traditional professional development courses. Unfortunately, the online professional development is often more time consuming than participants expect, due to the fact that the learner is responsible for their own learning (Anderson, 2002; Bush, 2005). According to Tyre (2002), teachers should be intrinsically

motivated to participate in online professional development in order to “improve their content knowledge and . . . learn new methods for teaching in the classroom” (p. 38). Unfortunately, teachers often need a better reason to select professional development over family and other activities. As a result, many school districts often provide incentives for employees, such as stipends, computers and release time to compensate for the additional time requirements of online professional development (Bush; Fusco et al., 2000).

Even though participants may have different motivations for attending online professional development, to be successful they “have to adjust their expectations of what their roles and activities in the class will entail” (Gordon, 2003, p. 2). Online professional development participants should be self-directed, independent, self-motivated, detail oriented, and comfortable with technology (Anderson, 2002; Fairbarn et al., 2000; Kidwell et al., 2004; Wiesenberg & Willment, 2001). Additionally, they should take into consideration their professional goals, the amount of time they have available, and their level of patience (Fairbarn et al.). These characteristics and considerations will help the participant to overcome barriers to success in online professional development such as technology failure, poor feedback, and unclear instructions (Piskurich, 2006).

Instructors

The motivation for instructors to teach an online professional development course can be divided into two categories, intrinsic and extrinsic (Schrum et al., 2005). Intrinsic motivation is used to describe a person’s engagement in an activity when they are not influenced by external (extrinsic) incentives, but because the activity is innately appealing and pleasurable (Field, Copeland, & Prigent, 2006). Intrinsic incentives include self-satisfaction, autonomy,

achievement, responsibility, and recognition (Field et al.; Schrum et al.). Flexibility of scheduling, stipends, and decreased workload are noted as extrinsic motivators for teaching online (Field et al.; Schrum et al.).

Often teachers are falsely motivated by the idea that conducting a class online is easy and not time consuming when, in fact, the opposite is true (Kleiman et al., 2000; Vrasidas & McIsaac, 2000). Online professional development courses require more planning to be effective (Vrasidas & McIsaac). “It is sometimes estimated that online teachers spend 90% of their planning and development on creating content and online learning resources” (Oliver & Herrington, 2003, p. 117). Instructors need to carefully consider the amount of time required to successfully facilitate online professional development course, which is not always compensated by their employers (Brown & Green, 2003).

Instructors have to change their view of themselves as teachers into one of a facilitator or coach (Anderson, 2002; Oliver & Herrington, 2003; Santovec, 2004; Vrasidas & McIsaac, 2000). As facilitators of learning, instructors must guide discussions, acknowledge various views, guide the course, encourage interaction among participants, and develop activities that allow exploration (Anderson; Piskurich, 2006; Santovec). The most difficult task of an online professional development instructor is to create a learning community in which learners feel like part of a team (Piskurich; Wiesenberg & Willment, 2001). To create a learning community, instructors need to be positive, provide feedback in a timely manner, be empathetic to students, and encourage discussion (Gordon, 2003; Piskurich; Zygouris-Coe, Yao, Tao, Hahs-Vaughn, & Baumbach, 2005).

Developing and Evaluating Online Professional Development

Design

Design quality is essential to any successful professional development opportunity, especially those offered via the Internet. Researchers believe that effectiveness of any course, regardless of delivery method, is directly correlated with the course design (Hinson & LaPrairie, 2005; Zhao, Lei, Yan, Lai, & Tan, 2005). According to Tyre, (2002), “Well-designed online training can be highly effective” (p. 37). The design and delivery of online professional development is similar to traditional professional development; however the advantage is that it can be so much more (Kleiman et al., 2000). Distance education, once characterized by correspondence courses, videotapes, and satellite downlinks, has migrated to the Internet and involves streaming video and audio, self-paced lessons, desktop videoconferencing, video broadcasting, and high-end multimedia (Joiner, 2002; Killion, 2000).

The “anytime, anyplace learning” nature of online professional development is not reflected in the ease of design or execution (Kleiman et al., 2000). Hinson and Bordelon have outlined five stages for the development of online professional development courses, planning, instruction, implementation, refinement, and evaluation (2003). These are noticeably similar to the steps used in developing any professional development course with the exception of implementation and refinement. Often these two components are not part of traditional professional development because of the lack of sustained interaction between participants. For professional development to be effective, participants need sustained exposure to the content, time to practice implementing new methods, and time for reflection and refinement of the new methods, which is often difficult with face-to-face professional development (Galland, 2002; Lowden, 2005; WBEC, 2000).

Interface design. While the district or provider establishes the foundation for online professional development, the instructor, or instructional developer, is often assigned the tasks of interface and instructional design. Interface design can be summarized as the process to ensure that participants in online learning experience interactions that are straightforward, effortless and efficient (Lynch & Horton, 2002; *Standards for Quality*, 2006). There are four components of instructional design: accessibility, usability, functionality, and visual communication and aesthetics (Vertelney, Arent, & Lieberman, 1990; *Web Interface Design*, 2006). “Although a reliable and stable delivery platform, easy to master and versatile in functionality is an important part of the online delivery equation, it is nothing more than a tool used to affect the transfer of knowledge” (Gibbons & Wentworth, 2001, p. 1).

Ease of course navigation, or interactivity, is one of the most important interface design elements of an online professional development course and is listed by the Southern Regional Education Board (SREB) as an indicator for online professional development program standards (Meyen, Aust, Bui, Ramp, & Smith, 2002; Sims, Dobbs, & Hand, 2002; *Standards for Online*, 2004; *Standards for Quality*, 2006). Simple and intuitive are the common adjectives when discussing the navigation of an online professional development course (Lynch & Horton, 2002; Treacy et al., 2002; Tyre, 2002). Additionally, developing learning units with similar formats increases the ability of students to successfully complete course requirements (Kidwell et al., 2004; Meyen et al., 2002). The predictability of a course is similar to maintaining a daily schedule; when the schedule is in place things run smoothly, versus a day without a schedule, which is hectic and often unproductive.

The course technologies must be judiciously selected in order to effectively support the learning goals and meet the needs of the participants (Huang, 2002; Kleiman et al., 2000; *Web*

Interface Design, 2006). “The newest technology product or the most expensive tool may not be the best one, but appropriate types of technology can really assist learners to improve their achievement” (Huang, 2002, p. 31). Course developers should ensure that the course technologies not only support the needs of the instructor, but also contain tools that will facilitate the transfer of information to the participants (Kleiman et al., 2000; *Standards for Online*, 2004; *Web Interface Design*, 2006).

The visual aesthetics of any website are essential to attracting and maintaining the user’s attention; this is especially true for online professional development courses which require regular visual interaction. The effective use of graphics, fonts, and color can assist users in maintaining focus, recalling information, and assisting with the development of higher order concepts (Fahy, 2004). Recommendations for the visual format of an online professional development course are as follows:

1. limit the number of colors to approximately four
2. remember certain colors affect emotions
3. limit the number of fonts
4. use sans serif fonts
5. use a mix of upper and lower case
6. place the most important information in the top-left of the screen
7. implement the “rule of thirds” for placing important information
8. consider the learners age and culture
9. icons should represent the content to which they link
10. maintain a consistent location for navigation icons (Caplan, 2004; *Web Interface Design*, 2006).

People with disabilities are guaranteed the right of equal access by the Americans with Disabilities Act (ADA) of 1990 and Section 504 of the Rehabilitation Act (Kleiman et al., 2000; *Standards for Online*, 2004; *Standards for Quality*, 2006; *Web Interface Design*, 2006). In 1998 this Act was amended with section 508 to address accessibility to technology (*Standards for Online*; *Standards for Quality*; *Web Interface Design*). Online professional development platforms need to be designed to provide access to all participants regardless of their handicap or impairment (Kleiman et al.). Developing an online professional development course that meets the criteria established by the ADA does not require removing images, video, audio, or interactive components but requires providing alternatives for those with disabilities (*Web Interface Design*). There are a variety of resources, including several university websites, to assist the online professional development designer with meeting the requirements set forth by Section 508 of the ADA.

Instructional design. The instructional design of an online course consists of the activities and procedures that are used to enhance understanding and retention of the targeted learning goals. According to Cavaalluzzo et al. (2005), an effective online professional development course design provides “an appropriate balance of content structuring (presentation); personal reflection; interaction with colleagues; and hands-on, or applied, learning enhances adult motivation and engagement” (p. 5).

The asynchronous nature of online professional development creates a distance between participants and instructors called transactional distance (Sargeant, Curran, Allen, Jarvis-Selinger, Ho, 2006). This tendency necessitates that the instructor pay specific attention to pedagogy, social interactions, technology, and administrative tasks in order to alleviate the sense

of isolation and motivate students (Sargeant et al.; Treacy et al., 2002; Tyre, 2002). Activities should be carefully designed to foster interactions among participants and should have a sound foundation in adult learning principles and accommodate the diversity of adult participants (Cavaalluzzo et al., 2005; Wiesenberg & Willment, 2001). The most important activities incorporate discussion boards, chat features, and email, which are key in forming relationships between students (Tyre). Activities are often similar to those found in face-to-face courses; however, the nature of online professional development allows for more reflection on the activities. Recommended activities include small group interactions, individual reading and posting, group discussions, projects, brainstorming, problem solving, web search, debates, games, modeling, observations, and collaborations (Hinson & LaPrairie, 2005; Piskurich, 2006).

For online professional development to be successful, instructors must provide an atmosphere of support and community (King, 2002; Schrum et al., 2005; Sims et al., 2002; Sparks & Loucks-Horsley, 1989). Instructors must take on a role of facilitator in developing an environment that incorporates communication and collaboration (King; Sims et al.). Online professional development participants indicate that support from the instructor in the form of flexibility and sensitivity to their unique circumstances is vital to the student's success (Kidwell et al., 2004; Sims et al.). Additionally, it is important to online students for the course developer to include an orientation to the course and a tutorial for using the online delivery software (Schrum et al.).

Regardless of the delivery method, activities, and design, professional development must be substantial and not episodic (Anderson, 2002; Hinson & LaPrairie, 2005). This is necessary to improve the knowledge and practices of educators in order to achieve the overarching goal of improving student learning (Guskey & Sparks, 1996; Shaha, Lewis, O'Donnell, & Brown, 2004).

Cavaalluzzo et al. (2005), also maintains that the key design element online professional development is the length of the course. They indicate in their research “learning occurs over time” (Cavaalluzzo et al., p. 5). Tyre (2002) discovered that “teachers with more than eight hours of activity per year in a single area of professional development are three times more likely than their peers to say it improved their teaching “a lot” (p. 37).

Logistics. Successful online professional development requires extensive planning, attention to detail, and a combination of efforts both from the participant, instructor, and provider (Hinson & LaPrairie, 2005). Participants must be carefully assessed either by themselves or by the provider to determine if they exhibit the self-discipline, resourcefulness, and independence required to become a successful online professional development course participant (Yoder, 2001). Online professional development instructors should be carefully selected and trained by the provider to ensure their ability to plan, develop, and facilitate online courses (Treacy et al., 2002; Tyre, 2002). The provider or sponsoring school district must offer reliable access with technical support, provide incentives for participation, publicize the courses, assess the local professional development needs, and develop an online professional development plan (Treacy et al.; Tyre).

As with any successfully implemented program, online professional development must be carefully planned and implemented in stages. Prudent districts solicit input from both instructors and participants. Fenton and Watkins (2007a) suggest offering orientation sessions, hands-on-practice with the delivery platform, advertising the course, starting with minimal offerings, and collecting and analyzing data. Online professional development offerings should support existing programs or district-wide strategic plans.

Learning Theory

Any number of learning theories can be applied to the development of online professional development. According to Jonassen (2006), “there is not best model of instruction or theory of learning” (p. 2). However, course designers/instructors need to utilize proven learning theories when developing online professional development to insure that the course is meaningful to the learner (Ally, 2004; Fidishun, 2000; Sargeant et al., 2006). Most research calls for the utilization of constructivist theories and the principles of andragogy when developing online learning courses (Blondy, 2007; Gibbons & Wentworth, 2001; Huang, 2002; Oliver & Herrington, 2003; Vrasidas & McIsaac, 2000). Constructivism aligns with andragogy because they both view learning as being based on a person’s ability to build (construct) new knowledge utilizing problem-solving and past experiences (Blondy; Gibbons & Wentworth).

Constructivism. Constructivist theory is based on the belief that learners construct or build their own meaning and knowledge from experiences (Oliver & Herrington, 2003; Sargeant et al., 2006; Vrasidas & McIsaac, 2000). Thus effective instructors develop experiences that will build new knowledge and that address a student’s current development level. There are two main branches of constructivism, social and cognitive. Social focuses on the cultural, societal environment, as well as the teachers and other adults involved in providing learning experiences (Gordan, 2009; Sargeant et al.). Cognitive focuses on a student’s personal development of knowledge based on activities designed to build knowledge skills (Gordan).

When applying the principles of constructivism to online professional development, designers should remember to incorporate interactions between participants and various environments (Huang, 2002). Online professional development designers and instructors should

utilize collaborative learning, reflection, critical thinking activities, and authentic learning activities such as case studies (Huang; Oliver & Herrington, 2003; Sargeant et al., 2006). It is essential that instructors provide learning supports, including feedback, guidance, and scaffolding, to assist students with the construction of knowledge (Oliver & Herrington).

Andragogy. “Adults have special needs and requirements as learners compared with children and adolescents, thus online educators should know how adults can learn best because of their special characteristics” (Huang, 2002, p. 27). To address these special needs, Malcolm Knowles developed a self-directed theory of adult learning termed andragogy (Blondy, 2007; Gibbons & Wentworth, 2001; Knowles, 1980). Knowles originally outlined five key principles to consider when planning adult education.

1. Adults are self-directed learners (Knowles, 1980). According to Blondy (2007), online professional development designers should involve learners in the development of course objectives and activities. This addresses their need to personalize professional development to meet their goals.
2. Adults possess a greater base of experience (Knowles, 1980). The learner’s wealth of experience should be incorporated into the course through activities that encourage discussion and sharing experiences (Blondy, 2007; Gibbons & Wentworth, 2001; Knowles, 1980). Sharing personal experience aids with the formation of a learning community and fosters the self-worth of a participant.
3. Adults are ready to learn topics that are germane to their job or personal life (Knowles, 1980). Online professional development instructors should assist the participants in defining why they are taking the course (Blondy, 2007; Knowles,

- 1980). Adapting the course to meet the needs of the participants will result in more interactions among the participants.
4. Adults prefer problem-centered learning rather than content-oriented learning (Knowles, 1980). Adults are often motivated to participate in professional development because of direction from supervisors, professional needs, or a need to advance within the workplace (Smith, 2007). Activities need to reinforce how the course content is applicable to the learner. This can be accomplished by incorporating problem-solving activities, simulations and case studies. (Blondy, 2007; Gibbons & Wentworth, 2001; Knowles).
 5. Adults are intrinsically motivated (Knowles, 1980). While the initial motivation for participating in professional development may come from external forces, most adults are internally motivated and remain in the course due to feelings of positive contribution (Blondy, 2007; Knowles; Smith, 2007).

These were later expanded to include a learner's need to know "how learning will be conducted, what learning will occur, and why learning is important" (Knowles, Holton, Swanson, 1998, p.133). Through the incorporation of learning theory, a familiarity with technology, and the careful conversion of the curriculum to an online format, instructors will achieve success (Gibbons & Wentworth, 2001).

Best Practices

Hybrid. Current research indicates that hybrid courses, which blend both online learning with face-to-face encounters, are the most effective method for delivering content (Bush, 2005; Treacy et al., 2002; Tyre, 2002; Zhao et al., 2005). According to Allen (2006), "'face time" with

faculty and peers is necessary for students to feel included and integrated into the academic environment” (p. 123), thus eliminating the isolation experienced by online learners. Hybrid courses provide the platform to develop collaborative professional development communities through a variety of communication methods, such as face-to-face discussions, threaded discussions, email, class presentations and group activities (King, 2002). Overall, hybrid courses provide “the best of both worlds, offering some of the convenience of all-online courses without the complete loss of face-to-face contact” (Young, 2002, p.2). Additionally they are financially prudent and less controversial (Young).

Learning community. Research indicates that successful online professional development design incorporates a community environment for participants (Cavaalluzzo et al., 2005; Schrum et al., 2005). Researchers advocate the use of online professional development not only as a method for delivering content, but also as a means of developing communities of professional educators (Pittinsky, 2005; Thomas, 2004; Treacy et al.). Learning communities are easily developed and facilitated utilizing online communication tools such as discussion boards, email, and chat rooms (Yang & Liu, 2004). For the course to be useful, the various forms of communication must be available 24/7 (Anderson, 2002).

Evaluating Online Professional Development Effectiveness

There are several key elements, including both instructional and interface design elements, which are essential to the effectiveness of professional development. Instructionally sound online professional development is grounded upon goals for improvement and developed through combined efforts of the school district, individual school, and participants (Lowden, 2005; Maldonado, 2002). Structurally sound online professional development provides extended

contact, ongoing support, and is job-embedded (Lowden; Maldonado; Schrum et al., 2005). Ineffective online professional development is characterized as being random, sporadic, intermittent, irrelevant to current issues, and lacking in meaningful activities (Lowden). Online professional development courses must be evaluated to determine if the course meets the criteria for effectiveness established by the district. In addition to improving student achievement, school districts are often trying to conserve financially (Maldonado; Shaha et al., 2004). By evaluating an online professional development course, districts are able to determine if the course simply needs to be restructured in order to improve student achievement or if the course is not a prudent investment (Maldonado; Shaha et al.). While evaluation of online professional development is critical, it often does not occur due to time restraints, financial reasons, or simply from a lack of qualified evaluators (Guskey, 2002; Kidwell et al., 2004).

Meaningful evaluation of an online professional development course requires more than an opinion survey of participant satisfaction or experience at the end of a course (Lowden, 2005). Data and information need to be collected from a variety of sources and reflect the impact of online professional development on participating educators and the students they teach (Guskey & Sparks, 1991; Shaha et al., 2004). During the development phase of online professional development, school district leaders should clarify the goals for online professional development and how these goals will be achieved because this will drive the evaluation process (Guskey, 2002; Guskey & Sparks, 1996). The evaluation process should address the following areas:

1. Effect on student learning
2. Participant learning of predetermined goals and objectives
3. Participant reactions to online professional development
4. Change in participants methodology of teaching

5. District and school support for change
6. Content of online professional development
7. Support of online professional development instructor (Guskey, 2002; Guskey & Sparks, 1991; Lowden, 2005; Sims et al., 2002).

Online Training Industry

Guidelines

When preparing to utilize online professional development, school districts often begin with prepackaged programs because they are often affordable and easy to implement. Caution must be taken when selecting an online professional development provider because the content may be outdated, generic, not aligned with district goals, and not properly designed for online delivery (Joiner, 2002; Minkel, 2003). Extensive research and caution can prevent the unwise selection of expensive poorly developed online professional development. Bishop (2006) suggests the following questions be posed to potential online professional development providers:

1. How long are course materials available?
2. Will the course materials/resources be updated?
3. Does the cost cover multiple offerings of the course?
4. Who will develop and teach the content?
5. Is the content aligned with the local and state curriculum?
6. Is face-to-face time provided for learning to use the technology?
7. What types of assessments are used to evaluate the participants?
8. What type of data will be provided to the district?

Additionally, such measures as a statement, which outlines the responsibilities of the online professional development provider, will help to insure that school districts are receiving quality professional development (Joiner, 2002).

Providers

Many different types of organizations and businesses are jumping onto the online professional development bandwagon (Brown & Green, 2003). These include professional organizations, national education labs, universities, museums, newspapers, magazines, Federal Government Departments, and TV networks such as PBS, National Geographic, Discovery Channel, and CNN (Galley, 2002; Tyre 2002). Harcourt, owner of publisher Holt, Rinehart, Winston, recently purchased Classroom Connect (a major online professional development provider) in order to target a \$1.5 billion professional development industry (“Harcourt,” 2002). An abundance of online organizations and providers have been recognized by researchers as effective or noteworthy. The SREB website, <http://www.sreb.org/programs/EdTech/MOPD/providers.asp> contains an extensive list of online professional development providers. Some of the most frequently mentioned websites are as follows:

www.tappedin.org--Tapped In was developed in 1995 by SRI International to provide educators a community in which they could share best practices, post questions and communicate (Gordon, 2003).

www.edtechleaders.org--EdTech Leaders Online (ETLO) provides training and online support for online instructors selected from within the school district. ETLO also has developed online workshops for these instructors to present within their district (ETLO, 2008).

http://cu.classroom.com--Connected University provides instructor-lead and self-guided professional development covering such topics as mathematics, technology integration, educational leadership and data assessment (CU, 2008).

www.classroomconnect.com--Classroom Connect, a division of Houghton Mifflin Harcourt, provides professional development programs and online instructional materials for K-12 educators (CC, 2008; Tyre, 2002).

http://wideworld.pz.harvard.edu/about/mission/I--“WIDE World (Wide-scale Interactive Development for Educators), developed at Harvard Graduate School of Education to offer training in assessment, curriculum development, integration of new technologies, and the use of educational models such as “Teaching for Understanding” (TfU) (Gordon, 2003, p. 2).

http://forpd.ucf.edu--Florida Online Reading Professional Development “FOR-PD is an online staff development project designed to help teachers improve reading instruction for learners in Grades preK-12” (Zygouris-Coe et al., 2005 p. 914).

Summary

The literature clearly documents the need for quality professional development. Professional development is necessary to ensure the quality of education that K – 12 students receive. Government mandates, such as No Child Left Behind, professional organization guidelines, state recertification requirements and K – 12 district requirements have been established to guarantee that educators receive the types of professional development necessary to make them effective teachers. However these efforts do not prescribe the delivery method for

professional development, leaving educators to determine which type of professional development is most beneficial.

Distance education has a long history dating back to the 1800s with the advent of correspondence courses. These original distance education courses were delivered via mail. Distance education has evolved throughout the years as new technologies have become readily available at most households. Traditional professional development has given way to these new methods of distance education and many educators now select distance education as the delivery method of professional development to satisfy their professional development requirements.

Online professional development is the most common form of distance education utilized to meet professional development requirements. Educators often cite flexibility and availability topics as reasons for participating in online professional development. School districts that provide online professional development often find that using this method of delivery is not only effective, but also affordable. Online professional development allows educators to participate in professional development over an extended period of time, thus improving retention of material and the effectiveness of the course.

The development of online professional development courses requires detailed attention to format. The activities that are selected need to be analyzed for effectiveness when delivered via the Internet. In addition, the interface (the way the course visually appears) needs to be easy to navigate. These items are essential to the success of online professional development participants. It is also important to note that the Americans with Disabilities Act and Section 504 of the Rehabilitation Act have established guidelines for accessibility to online content including online professional development courses.

Constructivism and andragogy are two common theories utilized when developing online professional development courses. Constructivist theory is based on the key principle that learning is founded in prior knowledge. Therefore activities should be designed to help participants build upon their current knowledge. Acknowledging that participants have already attained a certain level of knowledge in their field, gives them a sense of self-worth. The theory of andragogy addresses the specific needs of adult learners. Recognizing the maturity of adults and their reasons for attending online professional development and their different learning styles is important to creating a successful online learning environment.

Best practices for online professional development include the use of hybrid courses and development of learning communities. Hybrid courses are designed in a manner that fulfills an educator's need for flexibility as well as face-to-face networking with other educators. This networking often leads to the formation of a learning community. Learning communities are essential for educators to share what is working in their classrooms and explore the potential of new methods and activities.

Evaluating online professional development is similar to the evaluation of any professional development course. The overarching goal of professional development, regardless of the delivery method, is to improve student achievement. This should be the main focus when evaluating online professional development. This can be partially achieved by reviewing the interface design of the course, the course content, and online professional development participant reactions to the course.

A large variety of companies provide online professional development course content for K-12 educators. Some of these companies have joined the online professional development course business for profit and do not necessarily have the background to provide quality online

professional development courses. School districts should carefully research the course content, alignment with content standards and district goals, length of course availability, and cost when purchasing an online professional development course from a vendor.

CHAPTER 3

METHODS

Most researchers have found mixed results when evaluating the effectiveness of online courses (Cavaalluzzo et al., 2005; Hinson & LaPrairie, 2005; Shaha et al., 2004; Sims et al., 2002; Zhao, et al., 2005). Many believe that online courses and distance learning courses are no more or less effective than face-to-face courses (Hinson & LaPrairie; Sims et al.; Zhao et al.). Even less evidence is available supporting the effectiveness of online professional development (Cavaalluzzo et al.; Lauer et al., 2005; Shaha et al.). However, researchers indicate that online professional development has the potential for sustaining teacher education programs (Lauer et al.).

Limited research regarding the use of online professional development is available. Therefore, the purpose of this study was to determine the effectiveness of online courses as a delivery method for professional development. This was a quantitative study involving the survey of participants in online professional development. Effectiveness was determined by measuring participant opinions of the delivery method along with an analysis of archival data related to the dropout and completion rates for an online professional development course.

Research Questions

1. Is there a difference in the study participants' perceptions of the effectiveness of online professional development based on teaching experience or number of OPD courses taken?

2. Is there a difference in the study participants' preference of a professional development model based on teaching experience or number of OPD courses taken?

3. Is there a difference in the study participants' perceptions of changes in their teaching methodology after participating in online professional development based on teaching experience or number of OPD courses taken?

4. What factors influence K-12 educators to teach or participate in online professional development courses?

5. What are the benefits noted by K-12 educators who teach or participate in online professional development?

6. What are the barriers noted by K-12 educators who teach or participate in online professional development?

Pilot Study

The researcher conducted a similar study in the fall of 2005, which was unpublished. A random number generator was utilized to randomly select 75 study participants from 290 teachers who enrolled in an online professional development course offered during the summer of 2005. The study participants were employed by an urban, predominately African American school district in a southeastern state. From the initial 62 respondents, 12 surveys were eliminated, leaving 50 surveys for analysis. The 50 study participants were comprised of 22 elementary school (44%), 15 middle school (30%), 11 high school (22%), and 2 other teachers (.04%). The study participants' years of teaching experience ranged from 3 to 37 years ($M = 17.820$, $SD = 9.187$).

The final survey contained 37 Likert-style items that focused on the effectiveness of online professional development (see Appendix A for the revised instrument). The revised instrument had a Cronbach's alpha coefficient of .951 with item-to-total correlations from .304 to .811, which, according to Carmines and Zeller (1979), is an indication of reliability. The standard error of measurement was found to be 3.025.

An ANOVA found no significant difference between the opinions about the effectiveness of OPD and the years of teaching experience, $F(3,46) = 1.440, p = .243$ at .05. Separate t tests were performed to compare elementary, middle, and high school opinions on the effectiveness of online professional development. Upon analysis of the three different t tests, a significant difference was found in the opinions toward the effectiveness of OPD between the middle and high school teachers, $t(24) = -2.339, p = .028$ at .05. There were no significance differences found between elementary and middle school teachers, $t(35) = .684, p = .499$ at .05 nor between elementary and high school teachers, $t(31) = -1.623, p = .115$ at .05.

Ninety-six percent of the study participants agreed or strongly agreed that online professional development should continue to be offered. These results verify that the majority of the participants have similar perceptions of the effectiveness of online professional development. In coordination with item frequencies that reveal a satisfaction with online professional development, these results support the overall effectiveness of online courses as a delivery method for professional development.

Setting of the Study

This study was conducted with educators who were employed by an urban, predominately African American school district in a southeastern state. The school district had

several specialized departments that offered professional development courses within designated curriculum areas. These departments included language arts, social studies, mathematics, science, athletics, fine arts, career technical education, special education, and instructional technology. Most of these departments offered face-to-face professional development, with the exception of the instructional technology department.

The instructional technology department applied for and received funds from the Enhancing Education Through Technology (EETT) grant. “The primary goal of this grant is to improve student achievement through the use of technology” (U.S. Department of Education [US DoE], 2009c, ¶ 1) with a requirement that a portion of the grant be used for sustained professional development. Federal regulations require that private schools that serve students from a public school system receive equal opportunities to participate in initiatives funded by federal grants. Therefore any technology items purchased or professional development offered had to be equally shared with private schools in the surrounding area.

During the fall of 2004, the instructional technology department decided to add online professional development courses to address low enrollment in professional development courses. Using funds from the Enhancing Education Through Technology (EETT) grant, the department employed EdTech Leaders Online (ETLO) to train a core group of 75 teachers to conduct online professional development courses. These teachers were enrolled in a 10-week online course titled *Online Professional Development Specialist Training*. This course was developed by ETLO to prepare educators to teach via the Internet. The course was facilitated and hosted by ETLO employees and delivered using Blackboard. Sixty-one of these teachers, including one private school teacher, became online instructors for the school district.

As a requirement for becoming an online professional development instructor, these teachers were required to facilitate a minimum of one online professional development course for the school district. Instructors began facilitating courses that were developed by ETLO during the summer of 2005. The ETLO course catalog contains over 40 titles from which instructors can select (see Appendix C for a list of titles offered in the school district). After the instructors selected a course to teach, the Instructional Technology Department published the offerings in a district-wide catalog. Each course was project-based, delivered via Blackboard, and lasted approximately 6 weeks. Teachers who enrolled in an online professional development course were required to attend an initial meeting, which lasted less than 1 hour. During this time the teachers were provided with the website and logon information required to participate in the online professional development course.

The school district has continued to offer online professional development courses in which several hundred educators have participated (see Appendix C for a complete list of courses with enrollment data). Each course had a minimum enrollment requirement that was set by the Instructional Technology Department. EETT funds were used to pay instructors of courses that meet this requirement. Participants who successfully completed all course requirements were paid a stipend and received 40 hours of professional development credit, which is equivalent to 4 Continuing Education Units (CEUs). Ninety-nine online professional development courses have been offered between the summer of 2005 and the spring of 2009, with over 1,100 participants completing the course requirements. During this time, instructors and participants were paid a \$300 stipend per course for a total investment over \$400,000. Due to a reduction in funding, the summer of 2009 participants were not provided a stipend for participating in online professional development courses.

All professional development is optional; however, the school district does have a policy requiring all certificated employees to attain a minimum of 30 hours of professional development and all non-certified employees to obtain a minimum of 15 hours of professional development per year. Certified teachers who have worked less than 3 years within the district must obtain 40 hours of professional development. Beginning in the fall of 2009, the current method for evaluating teachers will be replaced by EDUCATEAlabama (Davis, T.D., 2009). A component of the new evaluation program requires the principal/evaluator to rate the teacher's participation in ongoing professional learning. Currently there are no restrictions on the type of professional development that an employee must participate in to be recertified. However new requirements for instructional leadership certification are being developed at the state level, which will restrict the types of courses that will count toward recertification. For employees that hold an instructional leadership certificate, CEUs will be replaced by Professional Learning Units (PLUs) (McLain, 2009). "A Professional Learning Unit (PLU) is a content driven, long-term unit of professional study for instructional leaders" (McLain, 2009, ¶1). Online professional development courses have the potential to meet the requirements of the evaluation system and qualify as a PLU.

Participants

A total of 250 study participants were selected from employees of an urban, predominately African American school district in a southeastern state. Each employee has either instructed or participated in an online professional development course offered between 2004 and 2008. The participants worked in various schools within the participating school district. The

anticipated age, gender, and racial composition of the study population varied with a minimum age of 21.

The district currently employs only 50 instructors from the initial group of teachers who were trained to become online professional development instructors. All of the online professional development instructors were surveyed and are referred to as Group 1. Group 2 participants were selected from over 1,197 teachers who have participated in online professional development courses offered between 2005 and 2008. Many teachers participated in several online professional development courses during this time period. The list of online professional development participants was processed using Excel to remove duplicate names, leaving 410 unique participants in group 2.

Instrumentation

A researcher-developed survey that combines information from a pilot study and published literature on professional development and online professional development was utilized to collect data for this study. Since this instrument was used in a prior pilot study, the pilot study participants were removed from the list of potential participants for this study. The pilot provided valuable information regarding the appropriateness of instructions and items contained in the survey. The content validity of the survey was determined through a review by educators with knowledge in the field of instructional technology and peers participating in a course on survey analysis. A process developed by Gregory (1996) was utilized to determine the coefficient of content validity rating of .912. Through the pilot study, the original survey of 47 Likert-type items was reduced to 37 items to improve the Cronbach's alpha of .891 to .951.

The revised survey was adapted to address the two different groups of participants. Group 1 was K-12 educators who had participated in online professional development courses and had taught at least one professional development course online. Group 2 was K-12 educators who had participated in at least one online professional development course.

The survey for Group 1 contained 10 Likert-type questions with a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*), 3 multiple choice questions, and basic demographic data, which was utilized to eliminate the possibility of a non-participant in online learning taking the survey (see Appendix A for the survey). The 10 Likert-type items were focused on the effectiveness of online professional development as a delivery method and contained items such as *“It is more convenient for me to teach face-to-face professional development courses than online professional development courses.”* The multiple choice items focused on the factors that influenced the instructors to teach online professional development courses. The completion time for the survey was approximately 30 minutes.

The survey for Group 2 contained 16 Likert-type questions with a 4-point scale (1 = *strongly disagree*, 4 = *strongly agree*), 3 multiple choice questions, and basic demographic data, which was utilized to eliminate the possibility of a non-participant in online learning taking the survey (see Appendix B for the survey). The 16 Likert-type items were focused on the effectiveness of online professional development and contained items such as *“I have a more positive perception of Online Professional Development than Face-to-Face.”* The items were divided into three sections. The first section focused on the effectiveness of online professional development as a delivery method. The second focused on the impact of the online professional development course on the participants’ teaching methods. The third section focused on the

factors that influenced teachers to participate in online professional development. The completion time for the survey was approximately 30 minutes.

Data Collection

Permission to conduct this study and contact participants was obtained from the district superintendent. All selected participants were sent a letter via email requesting their participation in this study. The letter contained a link for the consent form, which was available online. The consent form contained two links from which potential participants could select, one for declining participation and another consenting to participate. Those who did not consent to participate were directed to a website thanking them for their time. Those who decided to participate were directed to a website with links to the instructor survey (Group 1) and participant survey (Group 2). Participants were provided the opportunity to download and print the consent form for their reference. Each participant was sent a follow-up email reminder 2 weeks after the initial mailing to encourage participation in the survey. A final email was sent 4 weeks after the initial e-mail thanking all participants.

Data Analysis

The data submitted via the website was collected into a comma-delimited text file. Microsoft Excel was used to convert the data from text to numerical form and for eliminating incomplete surveys. The data were then transferred to SPSS[®] (Statistical Package for the Social Sciences) for statistical analysis. The statistical analysis procedures utilized in this study included descriptive statistics, reliability, and ANOVA.

Demographic data were analyzed to describe the characteristics of the participants in this study. Descriptive statistics was used to analyze all components of the survey. Further analysis was conducted using ANOVA at a significance level of .05.

Research Question 1 was addressed by using responses from questions 6 - 10 on the surveys from both groups and analyzed using ANOVA. Follow-up procedures were conducted using Tukey. Frequency tables provided additional information.

Research Question 2 was addressed by using responses from questions 1 - 5 on the surveys from both groups and analyzed using ANOVA. Follow-up procedures were conducted using Tukey. Frequency tables provided additional information.

Research Question 3 was addressed by using responses from questions 11 - 16 on the survey for group 2 and analyzed using ANOVA. Follow-up procedures were conducted using Tukey. Frequency tables provided additional information.

Research Question 4 was addressed by analyzing item 11 on the Group 1 survey and item 17 on the Group 2 survey, using frequencies and percentages.

Research Question 5 was addressed by analyzing item 12 on the Group 1 survey and item 18 on the Group 2 survey, using frequencies and percentages.

Research Question 6 was addressed by analyzing item 13 on the Group 1 survey and item 19 on the Group 2 survey, using frequencies and percentages.

CHAPTER 4

RESULTS

The purpose of this study was to assess teacher perceptions regarding the effectiveness of online courses as a delivery method for professional development. In addition the benefits, barriers, and factors that influence participation in online professional development either as an instructor or as a participant were examined. Participants in this study were divided into two groups, educators who have participated and now teach professional development courses online (Group 1) and educators who have participated in Group 1's online professional development classes (Group 2). Group 1 participants were asked via an Internet survey to assess the effectiveness of the online professional development course they taught. Additionally, they were asked to select factors that influenced them to teach online professional development courses, factors they perceived as benefits of teaching an online professional development course, and items that were barriers to teaching an online professional development course.

Group 2 participants were asked via an Internet survey to assess the effectiveness of the online professional development course(s) as a delivery method for professional development. This group was also asked to select factors that influenced them to participate in online professional development courses, factors they perceived as benefits of participating in online professional development, and items that were barriers to participating in an online professional development course. Both groups were asked to provide demographic information such as the number of years teaching experience, the number of online professional development courses in which they have participated, and their ability to use a computer.

Sample

One hundred three online professional development courses were offered between the summers of 2005 and 2009, with an average enrollment of 15 teachers. It is notable that the enrollment in online professional development courses sharply decreased in the summer of 2009 to an average of 9 per class, a decrease of 40%. It is possible that this was due to the limited number of offerings due to funding cuts and the lack of stipends for participation. A total of 1,197 educators, from the 1,568 teachers who enrolled between the summers of 2005 and 2009, completed an online professional development course resulting in a dropout rate of 23.7%. This number falls within the 20 to 50% range reported by Frankola (2001). Researchers have discovered several reasons for not completing an online class. These include dislike of the online platform and methods, disinterest in topics covered, lack of time, lack of motivation, and low self-efficacy of themselves as an online learner (Chyung, 2001). Several techniques can be utilized to increase the completion rate in an online course. Timely feedback, varied activities, structured content, provision of adequate time for completion of activities, and technical support and training (Chyung, 2001; Kleiman, 2000).

According to documentation obtained from the school district's Instructional Technology Department, only 58 of the originally trained instructors taught an online professional development course. The population size of instructors, also referred to as Group 1, was reduced to 50 from the original (number) because of conflict of interest or due to no longer being employed by the district. An email with a link to an online survey was sent to each of the 50 qualifying instructors on August 13, 2009. A follow-up email was sent on August 24, 2009, to remind potential participants of the survey. A final email was sent on September 13, 2009, to thank each participant. After a month of data collection, the sample size was 17, or 34% of the

population. After reviewing the instructor's responses, 6 surveys were eliminated due to incomplete data leaving 11, or 22%, for analysis.

Data were also collected from the Instructional Technology Department regarding the number of students who completed an online professional development course offered between 2005 and 2009. The online professional development participants, also referred to as Group 2, consisted of a total of 1,197 educators. Several teachers participated in more than one course, some were also instructors of online professional development, and others did not work for the school district, leaving a population of 410 unique participants from which to collect a sample. On August 13, 2009, an email with a link to an online survey was sent to each of the 410 educators who participated in online professional development. A follow-up email was sent on August 24, 2009, to remind potential participants of the survey. A final email was sent on September 13, 2009, to thank each participant. After a month of data collection, the sample size was 60, or 14.6%, of the population. After reviewing the online participants' responses, 10 surveys were eliminated due to incomplete data leaving 50, or 12.2%, for analysis.

Demographic Data

Each of the 50 online professional development instructors (Group 1) was emailed three times, an initial request, a follow-up request, and a thank you, resulting in the completion of 17 surveys. Six surveys were excluded due to incomplete data leaving 11 for analysis. The 11 instructors were comprised of 3 (27.2%) elementary school, 1 (.1%) middle school, 5 (45.5%) high school, and 2 (18.2%) central office employees. The Group 1 respondents were separated into four experience categories, with no participants in the 1 - 10 years of experience range, 5 (45.5%) participants in the 11 - 20 years of experience range, 4 (36.4%) participants in the 21 -

30 years of experience range, and 2 (18.2%) participants in the 31 - 40 years of experience range (see Table 1). The instructors have an average of 24.5 years teaching experience. It is notable that 91% of the instructors have taken three or more OPD courses and 45% have taught three or more OPD courses (see Table 2). All but one instructor had a computer and Internet access at home. Additionally, all participating instructors would rate themselves as either an intermediate or advanced computer/Internet user.

Table 1

OPD Instructor Years of Teaching Experience

Years' Experience	n	Percentage
1 – 10	0	0
11 – 20	5	45.5
21 – 30	4	36.4
30 or more	2	18.2

Table 2

Number of OPD Courses Taught

Courses Taught	n	Percentage
1	4	36.4
2	2	18.2
3	1	9.1
4	2	18.2
5	1	9.1
7	1	9.1

Each of the 410 online professional development participants (Group 2) was also emailed three times, resulting in the completion of 60 surveys. Ten surveys were excluded due to incomplete data, leaving 50 for analysis. The 50 online participants were comprised of 20 (40%)

elementary school, 9 (18%) middle school, 17 (34%) high school, and 4 (8%) central office employees. The Group 2 respondents were separated into four experience categories, with 12 (24%) participants in the 1 - 10 years of experience range, 23 (46%) participants in the 11 - 20 years of experience range, 12 (24%) participants in the 21 - 30 years of experience range, and 3 (6%) participants in the 31 - 40 years of experience range (see Table 3). It is notable that 52% of the online participants have taken more than three OPD courses (see Table 4). All but one participant had a computer and all but three had Internet access at home. Additionally, only two participants would rate themselves as beginning computer/Internet users.

Table 3

OPD Participant Years of Teaching Experience

Years' Experience	n	Percentage
1 – 10	12	24.0
11 – 20	23	46.0
21 or more	15	30.0

Table 4

Number of OPD Courses Taken

Courses Taken	n	Percentage
1 - 3	24	48.0
4 - 6	16	32.0
7 or more	10	20.0

Research Questions

Research Question 1

Is there a difference in the study participants' perceptions of the effectiveness of online professional development based on teaching experience or number of OPD courses taken?

To address Research Question 1, items 6 – 10 on both surveys were initially analyzed using frequency tables and ANOVA. However, due to a limited number of responses from the online professional development instructors (Group 1), ANOVA was only utilized to evaluate the hypothesis related to online professional development participants (Group 2). Respondents were asked to rate these items using a 4-point Likert-type scale. The responses were coded as follows: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. A total score was determined for each respondent by adding the code for each response. Using this method, the lowest score could be 5 and the highest could be 20. Item 8 was written as a reverse question to prevent respondents from selecting the same answer for each statement. This item was re-coded to match the other items before calculating the total score. The means and standard deviations for these items are contained in Table 5. With the exception of question 8, the online professional development instructors' (Group 1) mean score for each item was slightly higher than online professional development participants' (Group 2).

Table 5

Means and Standard Deviations of Responses Related to Perceptions of the Effectiveness of OPD

	<i>M</i>	<i>SD</i>
(Instructor) OPD is more effective method for training teachers than face-to-face PD.		
(Participant) OPD is a more effective way for me to learn than Face-to-Face PD.		
Instructor	2.82	.982
Participant	2.62	.725
OPD provides a more effective forum for continuous training than Face-to-Face PD.		
Instructor	3.09	.701
Participant	2.90	.789
Face-to-Face PD provides a more effective forum for collaboration than OPD.		
Instructor	2.09	.701
Participant	2.72	.730
OPD provides a more effective forum for networking than Face-to-Face PD.		
Instructor	3.18	.874
Participant	2.76	.797
(Instructor) The OPD design is more effective for training teachers than face-to-face PD design.		
(Participant) The OPD design is more effective than face-to-face PD design.		
Instructor	3.09	.701
Participant	2.52	.762

The majority of online instructors and online participants responded positively to the five items related to the effectiveness of online professional development (see Table 6). Fifty-six percent of online participants indicated that online professional development is a more effective way for them to learn, while 63.7% of the instructors believe that online professional development is a more effective training method. The majority of both groups *agreed* or *strongly agreed* that online professional development is a more effective forum for continuous training and networking; however, they indicated that face-to-face professional development provided a

better environment for collaboration. The two groups of respondents are split on their opinion of the professional development design. Fifty-six percent of the online participants either *disagreed* or *strongly disagreed* with the statement that online professional development design is better than face-to-face professional development design, while 81.8% of the instructors *agreed* or *strongly agreed* with the statement.

Table 6

Frequencies and Percentages of Responses Related to Perceptions of the Effectiveness of OPD

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
(Instructor) OPD is more effective method for training teachers than face-to-face PD.				
(Participant) OPD is a more effective way for me to learn than Face-to-Face PD.				
Strongly Disagree	1	9.1	2	4.0
Disagree	3	27.3	20	40.0
Agree	4	36.4	23	46.0
Strongly Agree	3	27.3	5	10.0
OPD provides a more effective forum for continuous training than Face-to-Face PD.				
Strongly Disagree	0	0	2	4.0
Disagree	2	18.2	12	24.0
Agree	6	54.5	25	50.0
Strongly Agree	3	27.3	11	22.0
Face-to-Face PD provides a more effective forum for collaboration than OPD				
Strongly Disagree	0	0	3	6.0
Disagree	2	18.2	13	26.0
Agree	6	54.5	29	58.0
Strongly Agree	3	27.3	5	10.0
OPD provides a more effective forum for networking than Face-to-Face PD.				
Strongly Disagree	0	0	2	4.0
Disagree	3	27.3	17	34.0
Agree	3	27.3	22	44.0
Strongly Agree	5	45.5	9	18.0
(Instructor) The OPD design is more effective for training teachers than face-to-face PD design.				
(Participant) The OPD design is more effective than face-to-face PD design.				
Strongly Disagree	0	0	2	4.0
Disagree	2	18.2	26	52.0
Agree	6	54.5	16	32.0
Strongly Agree	3	27.3	6	12.0

Hypothesis 1. There is no significant difference in the online professional development instructors' (Group 1) perceptions of the effectiveness of online professional development based on teaching experience.

Due to the limited number of respondents in each cell, an ANOVA was not conducted; however, the cell means were used to analyze the effect of teaching experience on online professional development instructors' opinions of the effectiveness of online professional development (see Table 7). The lowest mean score for effectiveness of online professional development was given by instructors with 11 - 20 years experience ($M = 12.80$), and the highest was given by instructors with 31 or more years of teaching experience ($M = 19.50$). It appears that the number of years of teaching experience an instructor has positively affects their perception of the effectiveness of online professional development.

Table 7

Descriptive Statistics for Hypothesis 1

Group	n	<i>M</i>	<i>SD</i>
11 - 20 years	5	12.80	1.643
21 - 30 years	4	15.75	2.986
31 or more years	2	19.50	.707

Hypothesis 2. There is no significant difference in online professional development participants' (Group 2) perceptions of the effectiveness of online professional development based on teaching experience.

A one-way between subjects ANOVA was conducted to determine the effect of teaching experience on online professional development participants' opinions of the effectiveness of

online professional development (see Table 8). There was no significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the years of teaching experience, $F(2,47) = 1.554, p = .222$. The mean score was lowest for the online participants (Group 2) with 1 - 10 years of experience ($M = 12.00$), and highest was for those with 11 - 20 years of experience ($M = 13.78$). This indicates that Group 2 respondents with 11 - 20 years experience have a more positive perception of the effectiveness of online professional development.

Table 8

Descriptive Statistics and ANOVA for Hypothesis 2

Group	n	M	SD	F	df	Sig.
1 - 10 years	12	12.00	3.568	1.554	2	.222
11 - 20 years	23	13.78	3.030		47	
21 or more years	15	12.87	1.922			

Hypothesis 3. There is no significant difference in the online professional development instructors' (Group 1) perceptions of the effectiveness of online professional development based on the number of online professional development courses they taught.

Again, since there were a limited number of responses for Group 1, the ANOVA was not conducted. An analysis of the cell means was used to examine the effect of the number of online professional development courses a respondent taught on their opinions of the effectiveness of online professional development (see Table 9). Instructors who taught 1 - 3 courses had the lowest mean ($M = 14.29$) and those who taught 4 - 6 classes had the highest mean ($M = 17.00$). This indicates that instructors who taught 4 - 6 classes have a more positive perception of effectiveness regarding online professional development.

Table 9

Descriptive Statistics for Hypothesis 3

Group	n	<i>M</i>	<i>SD</i>
1 - 3 classes	7	14.29	2.928
4 - 6 classes	3	17.00	4.359
7 or more classes	1	15.00	

Hypothesis 4. There is no significant difference in the online professional development participants' (Group 2) perceptions of the effectiveness of online professional development based on the number of online professional development courses in which they participated.

A one-way between subjects ANOVA was conducted to determine the effect of the number of online professional development courses a respondent participated in on their opinions of the effectiveness of online professional development (see Table 10). There was no significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the number of courses in which respondents participated, $F(2,47) = 2.434$, $p = .099$. Group 2 respondents who participated in seven or more online professional development courses had the highest mean score for effectiveness. The data showed a positive relationship between the number of courses and the perception of effectiveness.

Table 10

Descriptive Statistics and ANOVA for Hypothesis 4

Group	n	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	Sig.
1 - 3 classes	24	12.21	3.375	2.434	2	.099
4 - 6 classes	16	13.56	2.309		47	
7 or more classes	10	14.40	2.066			

Research Question 2

Is there a difference in the study participants' preference of a professional development model based on teaching experience or number of OPD courses taken?

To address Research Question 2, items 1 - 5 on both surveys were analyzed using frequency tables and ANOVA. However, due to a limited number of responses from the online professional development instructors (Group 1), ANOVA was only utilized to evaluate the hypothesis related to online professional development participants (Group 2). Respondents were asked to rate these items using a 4-point Likert-type scale. The responses were coded as follows: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. A total score was determined for each respondent by adding the code for each response. Using this method, the lowest score could be 5 and the highest could be 20. Items 3 and 5 on both surveys were written as reverse questions to prevent respondents from selecting the same answer for each statement. These items were re-coded to match the other items before conducting the ANOVA. The means and standard deviations for these items are contained in Table 11. With the exception of questions 3 and 5, the online professional development instructors' (Group 1) mean score for each item was slightly higher than the online professional development participants' (Group 2) mean score. Both groups indicated a preference for online professional development.

Table 11

Means and Standard Deviations of Responses Related to Preference of a Professional Development Model

		<i>M</i>	<i>SD</i>
I have a more positive perception of OPD than Face-to-Face.	Instructor	3.45	.688
	Participant	2.94	.793
(Instructor) I prefer teaching an OPD course to teaching a Face-to-Face PD course. (Participant) I prefer OPD to Face-to-Face PD.	Instructor	3.73	.467
	Participant	2.70	.863
(Instructor) It is more convenient for me to teach Face-to-Face PD courses than OPD courses. (Participant) It is more convenient for me to participate in Face-to-Face courses than OPD.	Instructor	2.00	1.18
	Participant	2.22	.975
I would recommend OPD to others more than Face-to-Face PD.	Instructor	3.45	.688
	Participant	2.78	.887
(Instructor) I would prefer teach a Face-to-Face PD course again more than an OPD course. (Participant) I would prefer to participate in Face-to-Face PD again more than an OPD course.	Instructor	1.82	.751
	Participant	2.60	.833

The majority of online instructors and online participants responded positively in response to the five items related to the preference of online professional development (see Table 12). Most respondents, 90.9% of instructors (Group 1) and 70% of online participants (Group 2), indicated that they have a more positive perception of online professional development. All instructors (Group 1) indicated on question 2 that they preferred to teach online professional development instead of face-to-face professional development. This was reinforced in item 5 to which only 18.2% of the instructors (Group1) indicated that they would prefer to teach face-to-face professional development.

In question 2, 56% of the online participants (Group 2) indicated that they would prefer to participate in online professional development again; however, 54% indicated in question 5 a

preference for face-to-face professional development. Very few of the respondents, 27.3% of instructors (Group 1) and 28% of online participants (Group 2), agreed or strongly agreed with the statement that face-to-face professional development is more convenient than online professional development. When asked if they would recommend online professional development courses over face-to-face professional development to others, 90.9% of instructors (Group 1) and 64% of online participants (Group 2) indicated they agreed or strongly agreed that they would do so.

Table 12

Frequencies and Percentages of Responses Related to the Preference of a Professional Development Model

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
I have a more positive perception of OPD than Face-to-Face.				
Strongly Disagree	0	0	1	2.0
Disagree	1	9.1	14	28.0
Agree	4	36.4	22	44.0
Strongly Agree	6	54.5	13	26.0
(Instructor) I prefer teaching an OPD course to teaching a Face-to-Face PD course.				
(Participant) I prefer OPD to Face-to-Face PD.				
Strongly Disagree	0	0	3	6.0
Disagree	0	0	19	38.0
Agree	3	27.3	18	36.0
Strongly Agree	8	72.7	10	20.0
(Instructor) It is more convenient for me to teach Face-to-Face PD courses than OPD courses.				
(Participant) It is more convenient for me to participate in Face-to-Face courses than OPD.				
Strongly Disagree	5	45.5	11	22.0
Disagree	3	27.3	25	50.0
Agree	1	9.1	6	12.0
Strongly Agree	2	18.2	8	16.0

(table continues)

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
I would recommend OPD to others more than Face-to-Face PD.				
Strongly Disagree	0	0	4	8.0
Disagree	1	9.1	14	28.0
Agree	4	36.4	21	42.0
Strongly Agree	6	54.5	11	22.0
(Instructor) I would prefer teach a Face-to-Face PD course again more than an OPD course.				
(Participant) I would prefer to participate in Face-to-Face PD again more than an OPD course.				
Strongly Disagree	4	36.4	4	8.0
Disagree	5	45.5	19	38.0
Agree	2	18.2	20	40.0
Strongly Agree	0	0	7	14.0

Hypothesis 5. There is no significant difference in the online professional development instructor's (Group 1) preference of a professional development model based on teaching experience.

The limited responses precluded the use of an ANOVA. The cell scores were used to examine the effect of teaching experience on online professional development instructors' preference of a professional development model (see Table 13). Instructors with 11 - 20 years of experience had the lowest score ($M = 15.20$) while those with 31 or more years had the highest score ($M = 20.00$).

Table 13

Descriptive Statistics for Hypothesis 5

Group	<i>n</i>	<i>M</i>	<i>SD</i>
11 - 20 years	5	15.20	2.683
21 - 30 years	4	17.25	2.217
31 or more years	2	20.00	.000

Hypothesis 6. There is no significant difference in the online professional development participants' (Group 2) preference of a professional development model based on teaching experience.

A one-way between subjects ANOVA was conducted to determine the effect of teaching experience on online professional development participants' preference of a professional development model (see Table 14). There was no significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the years of teaching experience, $F(2,47) = .136, p = .873$. Group 2 respondents with 11 - 20 years experience had the highest mean score related to the preference of professional development model.

Table 14

Descriptive Statistics and ANOVA for Hypothesis 6

Group	n	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>Sig.</i>
1 - 10 years	12	13.33	3.651	.136	2	.873
11 - 20 years	23	13.87	3.865		47	
21 or more years	15	13.40	2.165			

Hypothesis 7. There is no significant difference in the online professional development instructor's (Group 1) preference of a professional development model based on the number of online professional development courses they taught.

The small sample size prevented the use of an ANOVA; therefore, an analysis of the cell scores was conducted to determine the effect of the number of online professional development courses a respondent taught on their preference of a professional development model (see Table

15). Instructors (Group 1) who taught 4 - 6 classes had the highest mean score ($M = 19.00$). This indicates that they have a greater preference for online professional development.

Table 15

Descriptive Statistics for Hypothesis 7

Group	n	<i>M</i>	<i>SD</i>
1 - 3 classes	7	16.14	2.911
4 - 6 classes	3	19.00	1.732
7 - 9 classes	1	15.00	.

Hypothesis 8. There is no significant difference in the online professional development participants' (Group 2) preference of a professional development model based on the number of online professional development courses in which they participated.

A one-way between subjects ANOVA was conducted to determine the effect of the number of online professional development courses a respondent participated in on their preference of a professional development model (see Table 16). There was no significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the number of courses in which respondents participated, $F(2,47) = 1.748$, $p = .185$. Group 2 respondents who had participated in seven or more classes had a higher mean score related to the preference of a professional development model.

Table 16

Descriptive Statistics and ANOVA for Hypothesis 8

Group	n	<i>M</i>	<i>SD</i>	<i>F</i>	<i>df</i>	<i>Sig.</i>
1 - 3 classes	24	12.75	3.698	1.748	2	.185
4 - 6 classes	16	14.06	2.620		47	
7 or more classes	10	14.90	3.143			

Research Question 3

Is there a difference in the study participants' perceptions of changes in their teaching methodology after participating in online professional development based on teaching experience or number of OPD courses taken?

To address Research Question 3, items 11 - 16 on the online participant (Group 2) survey were analyzed using frequency tables and ANOVA. Respondents were asked to rate these items using a 4-point Likert-type scale. The responses were coded as follows: 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Agree*, and 4 = *Strongly Agree*. A total score was determined for each respondent by adding the code for each response. Using this method, the lowest score could be 6 and the highest could be 24. The means and standard deviations for these items are contained in Table 17. The average response is greater than 3 for all items except numbers 15 and 16.

Table 17

Means and Standard Deviations of Responses Related to Perceptions of the Change in Teaching Methodology for OPD Participants

	<i>M</i>	<i>SD</i>
OPD provided skills that I utilize in my classroom.	3.14	.670
The OPD course enhanced my teaching methods.	3.12	.627
I use practical instructional strategies in my classroom obtained by participating in OPD.	3.04	.638
After participating in OPD I implemented new instructional strategies.	3.06	.652
After participating in OPD I made long-lasting changes in my teaching.	2.98	.685
OPD improved my classroom management.	2.48	.646

The majority of online participants (Group 2) responded positively to the six items related to changes in teaching methodology after participation in online professional development (see Table 18). More than 80% *agreed* or *strongly agreed* with each of the items

with the exception of item 16. Only 48% of the respondents indicated that online professional development improved their classroom management.

Table 18

Frequencies and Percentages of Responses Related to Perceptions of the Change in Teaching Methodology for OPD Participants

		Strongly Disagree	Disagree	Agree	Strongly Agree
OPD provided skills that I utilize in my classroom.					
	Frequency	0	8	27	15
	Percentage	0	16.0	54.0	30.0
The OPD course enhanced my teaching methods.					
	Frequency	0	7	30	13
	Percentage	0	14.0	60.0	26.0
I use practical instructional strategies in my classroom obtained by participating in OPD.					
	Frequency	0	9	30	11
	Percentage	0	18.0	60.0	22.0
After participating in OPD I implemented new instructional strategies.					
	Frequency	1	6	32	11
	Percentage	2.0	12.0	64.0	22.0
After participating in OPD I made long-lasting changes in my teaching.					
	Frequency	2	6	33	9
	Percentage	4.0	12.0	66.0	18.0
OPD improved my classroom management.					
	Frequency	2	24	22	2
	Percentage	4.0	48.0	44.0	4.0

Hypothesis 9. There is no significant difference in the online professional development participants' (Group 2) perceptions of the change in teaching methodology based on teaching experience.

A one-way between subjects ANOVA was conducted to determine the effect of teaching experience on online professional development participants' perceptions of the change in

teaching methodology (see Table 19). There was no significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the years of teaching experience, $F(2,47) = .997, p = .377$. Group 2 respondents with 11 - 20 years experience had a higher mean score. This indicates that they had a more positive perception of the effect of online professional development on their teaching methodology.

Table 19

Descriptive Statistics and ANOVA for Hypothesis 9

Group	n	M	SD	F	df	Sig.
1 - 10 years	12	17.08	2.906	.997	2	.377
11 - 20 years	23	18.52	3.895		47	
21 or more years	15	17.33	2.350			

Hypothesis 10. There is no significant difference in the online professional development participants' (Group 2) perceptions of the change in teaching methodology based on the number of online professional development courses in which they participated.

A one-way between subjects ANOVA was conducted to determine the effect of the number of online professional development courses respondents participated in on their perceptions of the change in teaching methodology (see Table 20). There was a significant difference at the $p < .05$ level between the opinions about the effectiveness of online professional development and the number of courses in which respondents participated, $F(2,47) = 4.454, p = .017$. A post-hoc Tukey HSD test indicated that the mean score of participants who took 1 - 3 online professional development courses ($M = 17.08, SD = 3.020$) significantly differs from participants who took 7 or more online professional development courses ($M = 20.40, SD = 2.951$) (see Table 21). Online participants who have taken 7 or more online professional

development courses appeared to perceive a greater impact of online professional development on their teaching methodology.

Table 20

Descriptive Statistics and ANOVA for Hypothesis 10

Group	N	M	SD	F	df	Sig.
1 - 3 classes	24	17.08	3.020	4.454	2	.017
4 - 6 classes	16	17.31	3.198		47	
7 or more classes	10	20.40	2.951			

Table 21

Tukey HSD for Hypothesis 10

(I) Number of Classes Taken	(J) Number of Classes Taken	Mean Difference (I-J)	Std. Error	Sig.
1 - 3 classes	4 - 6 classes	-.23	.989	.971
	7 or more classes	-3.32	1.154	.016
4 - 6 classes	1 - 3 classes	.23	.989	.971
	7 or more classes	-3.09	1.236	.042
7 or more classes	1 - 3 classes	3.31	1.154	.016
	4 - 6 classes	3.09	1.236	.042

Research Question 4

What factors influence K-12 educators to teach or participate in online professional development courses?

To address Research Question 4, item 11 on the Group 1 survey and item 17 on the Group 2 survey were analyzed utilizing frequency tables (see Table 22). Survey respondents were asked to select the items that they perceived influenced them to teach or participate in online professional development. Respondents were also provided a space to write in any

additional reasons for teaching/participating in online professional development. The majority of respondents, 100% of instructors (Group 1) and 90% of online participants (Group 2), selected the *ability to work anytime* as a rationale to teach or participate in online professional development. It is also notable that 90.9% of instructors (Group 1) selected the *ability to work from any Internet accessible computer* as an influencer to teach online professional development courses. Sixty-eight percent of online participants (Group 2) also indicated this as a factor. Two respondents indicated that they participated in online professional development because several of the faculty at their school were participating, and another responded that they liked the “interaction with other professionals.” One online professional development instructor noted “I was injured in 2006 [and] I was able to conduct my classes from my bed.”

Table 22

Frequencies and Percentages of Factors which Influenced K-12 Educators who Taught OPD

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
Ability to work anytime	11	100.0	45	90.0
Ability to work from any Internet accessible computer	10	90.9	34	68.0
Lack of travel requirements	9	81.8	32	64.0
Stipend	8	72.7	34	68.0
Pre-packaged course materials	7	63.6	5	10.0
Reduced time requirements due to pre-packaged course materials	5	45.5	8	16.0
Reduced amount of preparation due to pre-packaged course materials	6	54.5	8	16.0
Increased my confidence due to pre-packaged course materials	5	45.5	6	12.0
Flexibility of pre-packaged course materials	7	63.6	13	26.0
Continuous improvement points	na	na	28	56.0
Self-improvement	na	na	34	68.0
Variety of course offerings	na	na	25	50.0

Research Question 5

What are the benefits noted by K-12 educators who teach or participate in online professional development?

To address Research Question 5, item 12 on the Group 1 survey and item 18 on the Group 2 survey were analyzed utilizing frequency tables (see Table 23). Survey respondents were asked to select the items that they perceived benefited them in teaching or participating in online professional development. Respondents were also provided a space to write in any additional benefits to teaching/participating in online professional development. It is notable that 100% of instructors and 90% of online participants selected the *ability to work anytime* as both an influencer and benefit of teaching/participating in online professional development. The *ability to work from any Internet accessible computer* and *lack of travel requirements* were also selected by a majority of the respondents. One online professional development participant did note that “our faculty was able to share resources and ideas more readily in the online forums” and another stated they were “able to participate even when I was out-of-state.”

Table 23

Frequencies and Percentages of Benefits noted by K-12 Educators who Taught OPD

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
Ability to work anytime	11	100.0	45	90.0
Asynchronous discussions	7	63.6	13	26.0
Ability to work from any Internet accessible computer	10	90.9	36	72.0
Lack of travel requirements	10	90.9	39	78.0
Stipend	8	72.7	32	64.0
Pre-packaged course materials	6	54.5	9	18.0
Reduced time requirements due to pre-packaged course materials	8	72.7	11	22.0
Reduced amount of preparation due to pre-packaged course materials	7	63.6	5	10.0

(table continues)

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
Increased my confidence due to pre-packaged course materials	5	45.5	5	10.0
Flexibility of pre-packaged course materials	5	45.5	10	20.0
Venue for ongoing interactions	8	72.7	16	32.0
Less expensive	7	63.6	17	34.0
Variety of offerings	na	na	23	46.0
Continuous improvement points	na	na	33	66.0
Improved student achievement	na	na	19	38.0

Research Question 6

What are the barriers noted by K-12 educators who teach or participate in online professional development?

To address Research Question 6, item 13 on the Group 1 survey and item 19 on the Group 2 survey were analyzed utilizing frequency tables (see Table 24). Survey respondents were asked to select the items that they perceived as barriers to teaching or participating in online professional development. Respondents were also provided a space to write in any additional barriers to teaching/participating in online professional development. Very few of the items provided were selected as a barrier; however, 90.9% of instructors (Group 1) and 64% of online participants (Group 2) indicated that *slow Internet* was a weakness of online professional development. *Lack of face-to-face interactions* was also indicated as a barrier of online professional development by 45.5% of instructors (Group 1) and 46% of online participants (Group 2). Several online participants (Group 2) provided other items that they saw as barriers to online professional development. These included the lack of advanced notice of course availability, inability to access the online professional development course from work, no hands-on experience, excessive reading and lack of meaningful participation by other students. One instructor also noted that he/she was unable to verify who was actually doing the students' work.

Table 24

Frequencies and Percentages of Barriers noted by K-12 Educators who Taught OPD

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
Limited by constraints of pre-packaged course materials	2	18.2	5	10.0
Increased time requirements	1	9.1	3	6.0
Asynchronous discussions	1	9.1	2	4.0
Slow internet	10	90.9	32	64.0
Lack of face-to-face interactions	5	45.5	23	46.0
Lack of participation	2	18.2	5	10.0
Distanced feeling	0	0	15	30.0
Increased preparation time	1	9.1	2	4.0
Lack of confidence	0	0	6	12.0
Lack of familiarity	2	18.2	5	10.0
Lack of flexibility	1	9.1	2	4.0
Limited professional development titles	5	45.5	14	28.0
Lack of convenience	0	0	1	2.0
Lack of continuity	1	9.1	4	8.0
Expensiveness	0	0	3	6.0

CHAPTER 5

DISCUSSION

Introduction

Current economic limitations are pushing school districts to look for innovative methods for offering professional development. Many districts are turning to online professional development courses as an alternative to traditional professional development. The purpose of this study was to explore the perceptions of educators related to the effectiveness of online professional development in comparison with traditional face-to-face professional development. Study participants were divided into two groups, Group 1 consisted of K-12 educators who conducted online professional development courses, and Group 2 was comprised of K-12 educators who participated in those online professional development courses. Study participants were asked to rate several statements on a Likert-type scale. These items were related to effectiveness of online professional development, preference of professional development model, and the impact of online professional development on teaching methods. Incentives for participation, benefits of participation, and barriers to participation in online professional development were also explored. Demographic data including years of teaching experience, online professional development courses taken or taught, comfort level with computers and the Internet, and teaching grade level were also collected.

Demographic Findings

The school district offered a total of 103 online courses developed by ETLO and had 1,197 employees successfully complete the course. An email containing a link to the online survey was sent to 50 online professional development instructors (Group 1). The response rate for this group was 34%, which was reduced to 22% after the elimination of incomplete surveys. A similar email was also sent to 410 online professional development participants (Group 2). The response rate for this group was 14.6%, which was reduced to 12.2% after the elimination of incomplete surveys. The respondents were asked to indicate the years of teaching experience, grade level taught, the number of online professional development courses they have taught or taken, and rate their computer and Internet ability (see Table 25). The majority of the Group 1 respondents fell into the 21 or more years experience, high school grade level, and 1 - 3 courses range, while the Group 2 respondents fell into the 11 - 20 years experience group, the elementary school level, and the 1 - 3 courses range. Two online participants (Group 2) and none of the instructors (Group 1) rated themselves at the beginner level for computer and Internet ability.

Table 25

Demographics

	Instructors (Group 1)		Participants (Group 2)		
	<i>f</i>	%	<i>f</i>	%	
Years Experience					
	1 – 10	0	0	12	24.0
	11 – 20	5	45.5	23	46.0
	21 or more	6	54.6	15	30.0

(table continues)

	Instructors (Group 1)		Participants (Group 2)	
	<i>f</i>	%	<i>f</i>	%
Grade Level				
Elementary School	3	27.2	20	40
Middle School	1	.1	9	18
High School	5	45.5	17	34
Other	2	18.2	4	8
Number of Courses				
1 - 3	7	63.6	24	48.0
4 - 6	3	27.3	16	32.0
7 or more	1	9.1	10	20.0

Results, Conclusions, and Discussion

Research Question 1

Is there a difference in the study participants' perceptions of the effectiveness of online professional development based on teaching experience or number of OPD courses taken?

Questions 6 through 10 on both surveys asked respondents to rate items on a 4-point Likert-type scale regarding the effectiveness of online professional development. Effectiveness has been defined as having a positive impact on student learning (Feiman-Nemser, 2001). However, determining student impact was outside the scope of the research; therefore, effectiveness was based on teacher/online participant perceptions, sustainability, collaborative environment, facilitation of networking, and elements of design (Cavaalluzzo et al., 2005; Feiman-Nemser; Schrum et al., 2005). Question 6 directly asked survey respondents to rate whether online professional development is more effective than face-to-face professional development. The instructors (63.7%) and online participants (56%) both ranked this item positively for online professional development. These frequencies indicate that online professional development is deemed effective, which correlates other research that has shown

online professional development to be at least as effective as face-to-face professional development (Alonso, Manrique, & Vines, 2009; Donavant, 2009; Hamilton-Pennell, 2002; Killion, 2000; Lorenzo & Moore, 2002; Tinker, 2000; USDoE, 2009d).

The majority of respondents *agreed* or *strongly agreed* with the statement regarding the ability of online professional development to provide *continuous training* (81.8% of Group 1 and 72% of Group 2). It has been recommended that episodic professional development be replaced by sustainable professional development (Feiman-Nemser, 2001; US DoE, 2004). In a recent report released by the U.S. Department of Education (USDoE, 2009d), the authors state “online learning is much more conducive to the expansion of learning time than is face-to-face instruction” (p. xvii).

The majority of respondents also indicated agreement with the statement that online professional development provides a *forum for networking* (72.8% of Group 1 and 62% of Group 2). In the free-response area of the survey, three online participants (Group 2) stated that they selected the online professional development course because of the ability to interact with other school staff. Another online participant stated, “I learn from other teachers. They have good methods and ideas.” Previous research that indicates a learning community is an effective method for professional development (Cavaalluzzo et al.; Schrum et al.). Similar to other research, this study shows that online professional development has the propensity to provide a forum for a learning community (Guldberg, 2008, Haythornthwaite, Kazmer, Robins, & Shoemaker, 2006).

The respondents were split on the design effectiveness of the two different delivery methods. Instructors (81.8%) *agreed* or *strongly agreed* that the online professional development design was more effective than face-to-face course design. However, only 44% of the online

participants responded in favor of online professional development. The differences in opinion regarding the design elements of both types of professional development could be attributed to a lack of understanding by the online participants of the term design. The online professional development instructors are taught about design elements when they are trained to become online professional development instructors; however, online professional development participants may not have any knowledge about professional development design.

Instructors (81.8%) and online participants (68%) both *agreed* or *strongly agreed* that face-to-face professional development provided a better forum for collaboration. These responses could possibly be attributed to the question being reverse worded and a tendency of respondents to mark the same response to all questions or to mark only positive responses. Alternatively, this may be an accurate representation of the respondents' perceptions of the ability of face-to-face to provide an atmosphere, which is more conducive to collaboration. The distance that is inherent to online professional development may be a barrier to effective collaboration (Edmundson, 2002; Richardson, 2002; Wiesenberg & Willment, 2001). Conversely it has been shown that students feel online tools facilitate collaborative learning and that learning in a group is more effective than working alone (Bennett, 2004; Lorenzo & Moore, 2002; USDoE, 2009d; Uribe, Klein, & Sullivan, 2003).

Item 8 was reversed scored and a total score was calculated for items 6 - 10 on both surveys. Analyses of mean scores and one-way ANOVA were conducted to determine whether differences existed in the opinions of the instructors and online participants based on years of teaching experience and the number of courses in which the respondents taught or participated. Years of teaching experience was divided into four categories, 1 - 10 years, 11 - 20 years, 21 - 30 years, and 31 or more years. It is notable that no instructors were categorized in the 1 - 10 year

experience range. The number of courses taught was divided into 3 categories, 1 - 3 classes, 4 - 6 classes and 7 - 9 classes. It is important to note that each instructor was required to teach at least one online professional development course. Additionally, since several respondents participated in more than 6 online professional development courses an additional category was created labeled 7 or more classes.

Hypothesis 1 explored the differences in perceptions of effectiveness among instructors (Group 1) based on teaching experience. Due to limited responses, this item was analyzed using descriptive statistics. Instructors with 11 - 20 years experience had the lowest mean score ($M = 12.80$), and those with 31 or more years had the highest mean score ($M = 19.50$). This is an interesting result because many would assume that teachers with 31 or more years of experience are at least 50 years of age, are not technology natives, and did not have exposure to technology in their K-12 school or college. However, it is their level of teaching experience that provides extra validation to their ability to judge the effectiveness of a course. Constructivism and andragogy theorists would both say that these more experienced educators have a greater existing knowledge base from which to build new knowledge upon (Knowles, 1980; Sargeant et al., 2006).

Hypothesis 2 explored the possible differences in perceptions of online participants (Group 2) regarding online professional development effectiveness based on their years of teaching experience. A one-way ANOVA revealed no significant differences among the four categories of teaching experience. While no significant differences were detected, it is notable that the respondents in the 11 - 20 years teaching experience category had a higher mean score on these five items.

Hypothesis 3 looked for differences in perceptions of instructors (Group 1) regarding effectiveness of online professional development based on the number of courses they taught. An ANOVA could not be used due to limited respondents. The mean scores of instructors (Group 1) who taught 4 - 6 classes were highest, indicating that they have a more positive perception of effectiveness of online professional development. Hypothesis 4 looked at the differences in participants' (Group 2) perceptions of effectiveness based on the number of courses in which they participated. There was no significant difference revealed by a one-way ANOVA. The mean total response score for online participants (Group 2) who participated in 7 or more classes were the highest, indicating that they have a more positive perception of the effectiveness of online professional development. This could be attributed to the fact that these courses were not mandatory and the participants choose to take courses online to complete professional development requirements. Additionally, if a participant did not succeed in their first attempt at an OPD course they probably did not highly rate the effectiveness of OPD nor continue to take OPD courses.

Research Question 2

Is there a difference in the study participants' preference of a professional development model based on teaching experience or number of OPD courses taken?

Questions 1 through 5 on both surveys asked respondents to rate items on a 4-point Likert-type scale regarding their preference of a professional development model. These five survey items asked respondents to *agree* or *disagree* with statements comparing online and face-to-face professional development. Question 2 directly asked respondents if they preferred online professional development to face-to-face professional development. Every instructor (Group 1)

indicated that they preferred teaching online professional development to face-to-face professional development. The majority of Group 2 online participants (56%) also *agreed* or *strongly agreed* with this statement. Question 1 asked respondents to provide a response to the statement *I have a more positive perception of online professional development than face-to-face*. All but one online professional development instructor (90.9%) and 70% of online participants indicated that they *agreed* or *strongly agreed* with this statement. Similarly, 90.9% of instructors and 64% of online participants would recommend online professional development to others.

Question 3, regarding convenience, was reverse worded and also showed similar results. Only 27.3% of instructors (Group 1) and 28% of online participants (Group 2) indicated that it is more convenient for them to participate in face-to-face professional development. Accordingly, on item 5, which was also reverse worded, only 18.2% of instructors (Group 1) indicated that they would prefer to teach face-to-face over online professional development. Online professional development participants (Group 2) were split on their opinions regarding which model of professional development in which they would prefer to participate, with 54% *agreeing* or *strongly agreeing* that they would prefer face-to-face professional development and 46% *disagreeing* or *strongly disagreeing* with this statement.

The frequencies and mean responses for these five items indicate an overall preference for online professional development as a delivery method. In general, the mean responses of the instructors (Group 1) were higher (when items 3 and 5 are reversed scored) than those of online participants (Group 2). This could be attributed to the instructors experience as both a participant and teacher of online professional development. Lack of experience with online professional development could also be a reason for the online participants' (Group 2) middle of the road

responses to item 5, which inquired about a preference to participate again in either model of professional development.

Each of the first five items were coded on a scale of 1 to 4, with items 3 and 5 being reverse coded to accommodate for reverse wording. A total score was found for these items and mean scores and one-way ANOVAs were used to analyze each hypothesis. Hypothesis 5 investigated the possibility of a difference of preference for a professional development model among Group 1 respondents based on years of teaching experience. ANOVA could not be used due to the low response rate; therefore, this hypothesis was addressed by analyzing the mean scores. It is notable that the mean score increased with the number of years of teaching experience, with the 31 or more years experience group again demonstrating the highest score.

Hypothesis 6 looked for a difference in preference for a professional development model based on the years of teaching experience of the online participants (Group 2). The ANOVA revealed no significant difference in professional development model preference based on years of teaching experience. The average score varied little over the four experience categories; however, it is noticeable that once again the average score of participants in the 31 or more years experience category was the highest.

Hypothesis 7 explored the possibility of a difference in preference for a professional development model based on the number of courses taught by Group 1. Due to limited responses, an analysis of the mean scores was used. The lowest score, ($M = 15.00$) was given by the instructor who taught 7 - 9 classes. Instructors who taught 4 - 6 classes had the highest mean score ($M = 19.00$). This is significant because the highest possible score was 20, which indicates a high preference for online professional development by instructors who taught 4 - 6 classes online.

Hypothesis 8 explored the possibility of a difference in preference for a professional development model based on the number of courses participated in by Group 2. It might be expected that respondents who participated in more online professional development courses would show a greater preference for online professional development. While the ANOVA revealed no significant difference in preference based on the number of courses, the data revealed a trend relating the mean score and the number of courses. A study conducted by Arbaugh (2004) showed “most indicators of online learning quality and effectiveness increase significantly as students take subsequent online courses” (p. 177). Indeed respondents who had participated in the most online professional development courses had the highest mean score.

Research Question 3

Is there a difference in the study participants’ perceptions of changes in their teaching methodology after participating in online professional development based on teaching experience or number of OPD courses taken?

This research question was analyzed using only data from the online participants’ (Group 2) survey responses. Items 11 - 16 requested participants to rate statements related to changes in teaching methodology after participating in online professional development using a 4-point Likert-type scale. These items were not written as a comparison with face-to-face professional development nor were any written in reverse wording. The majority of respondents, over 80%, *agreed* or *strongly agreed* with the first five items in this set.

When asked if online professional development enhanced their teaching, 86% *agreed* or *strongly agreed*. The same percentage also *agreed* or *strongly agreed* that they implemented new instructional strategies after participating in online professional development. Eighty-four

percent of the Group 2 online participants indicated that online professional development provided skills they utilize in their classroom and that they made long-lasting changes to their teaching after participating in online professional development. This is important as improved teaching has the potential to make a positive impact on student learning, which is the true indicator of effective professional development (Feiman-Nemser, 2001).

While the online participants overwhelmingly agreed that the online professional development enhanced their teaching methods, they did not have the same response to the last question in this set. Only 48% indicated that online professional development improved their classroom management. The mean scores for each of these questions also reflected a general agreement that online professional development improved their teaching, but showed an indifference to the question regarding classroom management. These results can be expected because the objectives of the online professional development courses were to change or improve the teaching practices of a teacher, not specifically improve classroom management.

Further analysis was conducted on a total score for this set of questions using an ANOVA. Hypothesis 9 sought to determine whether there was a difference in the Group 2 online participants' perceived change in teaching based on their number of years of teaching experience. No significant difference was noted; however, the participants with 11 - 20 years of experience had a higher average score for these items. This indicated a greater perceived impact on the teaching methodology of these teachers.

Hypothesis 10 was designed to determine whether a difference in perception of change in teaching methodology in Group 2 online participants could be related to the number of online professional development courses in which they participated. In this case, the ANOVA revealed a significant difference in perception based on the number of courses. A post-hoc Tukey HSD

test indicated that this difference existed between Group 2 online participants who took 7 or more classes and those who took 1 - 3 classes online. The educators in Group 2 who took 7 or more classes had a higher mean score on this set of questions related to teaching methodology. This result is to be expected because the respondents who have taken multiple courses have had more exposure to instruction. It is a well-known fact that sustained and repeated exposure to information results in increased retention and thus a more effective professional development experience (Feiman-Nemser, 2001).

Research Question 4

What factors influence K-12 educators to teach or participate in online professional development courses?

Instructors (Group 1) and online participants (Group 2) were asked to select as many choices as were applicable from a list of items that were possible factors influencing them to teach or participate in online professional development. Both groups were also given an area to provide additional reasons or information related to their decision to teach or participate in online professional development. The *ability to work anytime* was selected by all of the instructors (Group 1) and 90% of the online participants (Group 2). Similarly 90.9% of online professional development instructors and 68% of online participants chose the *ability to work from any Internet accessible computer* as a contributing factor to their selection of online professional development. These results supported previous research and the common statement of “anytime, anywhere” made regarding online learning (Anderson, 2002; Bush, 2005; ETLO, 2004; Riddle, 2004). A follow-up statement by an instructor reinforces this as a major factor; she stated that

while injured she was still able to conduct the online professional development class from her bed.

Online professional development instructors (Group 1) and online participants (Group 2) also agreed that *lack of travel requirements* (81.8% and 64%, respectively) was an incentive for selecting online professional development. This research appears to support the notion that travel is a barrier to attending professional development (Brown & Green, 2003) and that online learning can in fact, as has been suggested previously, be an aid to eliminate this barrier (Flores, 2007; Piskurich, 2006; Tyre, 2002). In our current economy, travel is expensive and the ability to reduce the cost of professional development is essential to many educators' ability to participate in professional development as either an instructor or participant.

Additionally, 72.7% of instructors (Group 1) and 68% of online participants (Group 2) indicated that a *stipend* was a motivator for them to teach or participate in online professional development, which again ties to our current economy. Many school districts provide stipends as incentives to encourage participation in professional development (Bush, 2005; Fusco et al., 2000) and stipends have been noted in previous studies as extrinsic motivators for teaching online (Field, Copeland, & Prigent, 2006; Schrum et al., 2005). The fact that a sharp decrease was noted in course offerings and participation when stipends were not being offered also validates the fact that monetary incentives truly affect the selection of online professional development courses. On the contrary, one online participant (Group 2) stated "I think getting paid a stipend takes away from the quality of online courses" and another indicated that the stipend made it more difficult to enroll in the desired class. Online professional development course enrollment was limited and the stipend encouraged many employees to register for multiple classes, which prevented other employees from being able to register.

Other factors related to the selection of online professional development did not rank as high or equally between the two groups of survey respondents. The instructors (Group 1) selected items related to the pre-packaged course materials developed by ETLO significantly more frequently than the online participants (Group 2). Two items, the pre-packaged course materials and the flexibility of the pre-packaged course materials, were selected by 63.6% of the instructors as being influential in their decision to teach online professional development. This was substantially higher than the results of the online participants: 10% selected the pre-packaged course materials and 26% selected the flexibility of the pre-packaged course materials as factors for participating in online professional development. Similar results given for the items related to preparation, time requirements, and confidence were also noted. This seems to indicate that a majority of the instructors feel that the pre-packaged materials influenced their decision; however, the use of these materials did not seem to be influential to the online participants (Group 2). It is possible that the instructors felt that the pre-packaged course would save them time in developing the course, but not necessarily in facilitating the course. It has been noted in other literature that the time required to facilitate online professional development is sometimes greater than expected (Tyre, 2002).

The online participants (Group 2) had three additional options from which to select. Self-improvement was selected by 68% of the participants, which was equal to the percentage for stipends and the ability to work from any Internet accessible computer. This is consistent with andragogy principles, which state that adults are intrinsically motivated and are ready to learn relevant topics (Knowles, 1980). Continuous improvement points and the variety of course offerings were selected by 56% and 50% of the participants, respectively. The importance of continuous improvement points is evidenced by the local school districts policy requiring the

attainment of CEUs and the state recertification requirements of CEUs (Bishop, 2006; McLain, 2009, Hall, 2005; Morrow, 2002). In light of the requirements for professional development, the available selection of courses is important; however, the participants may have not selected this item because they were satisfied with the number of courses currently being offered.

Research Question 5

What are the benefits noted by K-12 educators who teach or participate in online professional development?

The research participants were offered several benefits from which to select as many as they deemed beneficial and an area to write any additional information related to this topic. The results of this survey item and the item for Research Question 4 are summarized in Table 26. Similar to the responses to Research Question 4, all instructors (Group 1) and 90% of online participants (Group 2) selected the ability to work anytime as a benefit of online professional development. The companion statement, the *ability to work from any Internet accessible computer*, was also selected by the same number of online professional development instructors (90.9%), but a slightly higher percentage of participants (72%) indicated that this was a benefit. The high percentages for these two items further validated the “anytime, anywhere” statement that is commonly used in literature relating to online learning (Anderson, 2002; Bush, 2005; ETLO, 2004; Riddle, 2004; USDoe, 2009d).

More instructors (90.9% of Group 1) and online participants (78% of Group 2) selected lack of travel requirements as a benefit than as a motivator. As stated before, travel is affected by our current economy, restricted school budgets, and gasoline prices. *Less expensive* was also an option for this question and tied in with travel costs. More than half of the instructors (63.6%)

indicated that lower costs were a benefit for online professional development. Only 34% of the online participants felt the same way. It has been noted in other research that travel and cost limits the participation in professional development and that online professional development can be used to address this issue (Brown & Green, 2003; Flores, 2007; Piskurich, 2006; Tyre, 2002).

The instructors (Group 1) selected *venue for ongoing interactions* as a benefit more than the online participants (Group 2), 72.7% versus 32%. A similar discrepancy was found for the statement *asynchronous discussion*, 63.6% instructors (Group 1) compared with 26% of online participants (Group 2). It is possible that the online participants (Group 2) did not make positive connections with other class participants. This is an area of concern, because, according to other research, the development of learning communities is a component of effective professional development (Cavaalluzzo et al., 2005; Schrum et al., 2005).

Only the respondents in Group 2 were given the option to select *improved student achievement*. Thirty-eight percent of the participants selected this item, even though the majority of responses for Research Question 3 indicated that the online participants *agreed* or *strongly agreed* that the online professional development enhanced their teaching methods. Since the actual assessment of student learning was outside of the scope of this study, there was no accurate method for determining the impact of online professional development on student learning. A positive change in student learning is the ultimate verification of the effectiveness of professional development; therefore, it is important for future research to investigate the effect of online professional development on student achievement (Feiman-Nemser, 2001).

Table 26

Comparison of Motivators and Benefits

	Instructor (Group 1)		Participants (Group 2)	
	Incentive	Benefit	Incentive	Benefit
	%	%	%	%
Ability to work anytime	100.0	100.0	90.0	90.0
Asynchronous discussions	na	63.6	na	26.0
Ability to work from any Internet accessible computer	90.9	90.9	68.0	72.0
Lack of travel requirements	81.8	90.9	64.0	78.0
Stipend	72.7	72.7	68.0	64.0
Pre-packaged course materials	63.6	54.5	10.0	18.0
Reduced time requirements due to pre-packaged course materials	45.5	72.7	16.0	22.0
Reduced amount of preparation due to pre-packaged course materials	54.5	63.6	16.0	10.0
Increased my confidence due to pre-packaged course materials	45.5	45.5	12.0	10.0
Flexibility of pre-packaged course materials	63.6	45.5	26.0	20.0
Venue for ongoing interactions	na	72.7	na	32.0
Less expensive	na	63.6	na	34.0
Variety of offerings	na	na	50.0	46.0
Continuous improvement points	na	na	56.0	66.0
Improved student achievement	na	na	na	38.0

Research Question 6

What are the barriers noted by K-12 educators who teach or participate in online professional development?

Both surveys contained an item related to barriers to online professional development. Respondents were asked to select an unlimited number of items from a list of barriers and provide any additional impediments in a free-response area. All but one instructor (90.9%), and 64% of online participants, selected *slow Internet* as a barrier to online professional development. This was the only item that was selected by more than half of the respondents. It is

important to note that the school district for which these respondents work was running on technology that, for the majority, was installed in 1999. One of the Group 2 respondents actually noted in the free response area that the school district was not providing consistent Internet access and another indicated inability to access the online professional development course from work was a barrier. It is possible that the age of the technology being used by the respondents may have impacted their selection of this item.

The only other notable item that was selected as an impediment by both groups of respondents was *lack of face-to-face interactions*. Nearly an equal percentage of instructors (45.5%) and online participants (46%) selected this item. The lack of face-to-face interactions is inherent to OPD; therefore, the selection of this factor as a barrier was a contradiction to the research participant's preference of OPD. The OPD courses did have an initial meeting, but no other visual contact among the participants and teacher. It would be of interest to include an interactive video component to the OPD course to address this barrier. It is important to note that none of the instructors (Group 1) and only 30% of the online participants (Group 2) selected *distanced feeling* as an obstacle to online professional development. Currently most literature suggests that a hybrid model of professional development, which combines both face-to-face interactions and online activities, is more effective than either face-to-face or online professional development (Bush, 2005; Treacy et al., 2002; Tyre, 2002; Zhao et al., 2005).

Most of the items listed as possible impediments on the surveys were selected by a nominal amount of instructors (Group 1) and online participants (Group 2). However several comments were entered in the free-response area for this question. One instructor expressed concern over who was actually completing the work. This correlates with Pittinsky (2005) who indicated that it is difficult to evaluate the student learning in a course offered from a distance

because it requires the honesty of students. Lack of hands-on experience was listed as a barrier. According Cavaalluzzo et al. (2005), a balance of activities, including hands-on experience, is essential to effective online learning. Excessive reading, lack of advanced notice of course availability, and lack of meaningful participation were also noted as barriers to online professional development.

Implications

The overall responses to the effectiveness of online courses as a delivery method for professional development were positive from both instructors and online participants. Additionally, the majority of respondents, both instructors and online participants, indicated that they preferred online professional development to traditional face-to-face professional development. This study also revealed that online professional development participants had an overall positive perception of the effects of the course on their teaching methods. In light of these results, school districts would be remiss if they did not investigate the implementation of an online professional development program. Research has shown that online professional development is a cost-effective solution for professional development, which is important to school districts in this economic downturn. Before implementing a new program for professional development, school districts must evaluate online professional development programs for alignment with the district goals (Joiner, 2002; Minkel, 2003). Additionally, the districts should request data-based documentation of the effect of the professional development on teachers and students (Lowden, 2005, Shaha et al., 2004).

In order to offer a successful online professional development program, school districts need to take into account the factors that the respondents indicated as influencers in their

decision to participate in online professional development. An overwhelming number of both instructors and participants indicated that the ability to participate “anytime and anywhere” without travel requirements both influenced them to participate and was a benefit of participation. This should be considered when the district advertises or promotes the professional development courses. Also funding should be sought to provide stipends to instructors and participants. Though the current economy may be problematic, districts can utilize federal funds, such as those recently made available through the ARRA, to provide additional incentives for participation in online professional development courses (USDoE, 2009a).

A major barrier to an online professional development program is the inability of instructors and participants to have reliable Internet access. Though participation from a district computer is not a requirement, hence the anywhere benefit, many educators do prefer to work on the course from school. Therefore, to ensure a successful online professional development program, school districts need to make certain that teachers have access to computers and Internet. Funding for technology hardware can also be sought through Federal sources and grants. Additionally, many school districts also qualify for e-rate funds, which can be utilized for partial funding of network and Internet connectivity.

Limitations

The response rate after elimination of invalid surveys for instructors (Group 1) was 22% and 12.2% for online participants (Group 2). While this is more than the standard minimum requirement, it is possible that a larger sample size would have resulted in different results. Prior research within the district related to online professional development resulted in response rates over 50%. It is possible that technology and technology ability may have limited the number of

responses. The current status of technology, including the ability to access the Internet and email, is unreliable in the district where the study was conducted. Additionally, if a potential participant was not comfortable with technology, they may have opted to not take a survey that was offered online. This possibly limited the number of unfavorable responses and potentially skewed the data.

Recommendations for Further Research

The limited research related to online professional development brings to the forefront specific questions for future research.

1. An investigation of how quality control in an online professional development course is established and maintained. The district in which this study was conducted purchased the right to offer courses developed by a well-known and respected company. The courses have been offered in many districts across several states. However, each course was not individually reviewed by the district and possibly did not align with the current direction of the district (Guskey, 2002; Guskey & Sparks, 1996).

2. Another area for future investigation is measuring the effects of online professional development on student learning. Specific data, other than opinion surveys, has not been collected to determine the effect on student learning, which is necessary for professional development to be considered effective (Feiman-Nemser, 2001). Meaningful data needs to be collected on the effects of online professional development on teacher learning and student learning (Guskey & Sparks, 1991; Shaha et al., 2004).

3. The state department is now offering online professional development courses free to all school district employees in the state where this study was conducted. A larger study

involving online professional development participants and instructors from across the state may reveal differences in opinions regarding online professional development.

4. This study only focused on online professional development participants who are also K - 12 teachers. Further study is needed to examine the opinions of administrators who participate in online professional development. Many administrators are turning to the free online professional development courses offered by the state to meet the new requirement of earning PLUs for administrative certification renewal. This will provide an entirely new point of view regarding online professional development.

5. A qualitative study regarding the opinions of online professional development participants in this could provide more insight to the participant's responses. Often educators are willing to share more in a conversation than through an electronic survey.

6. A study could be done to determine whether self-efficacy has an effect on the performance of first-time online professional development participants. Providing participants a pre-survey and post-survey to determine how their opinions have changed throughout the course could also provide additional data regarding the effectiveness of online professional development.

7. An investigation of the use of interactive video in an OPD course to determine whether this would serve as an adequate substitution for the face-to-face interactions of a traditional course would be useful. This would determine whether the visual and verbal interactions are the missing component of OPD or if participants really feel that they need to be in the same room together.

Summary

The overall results of this study were positive. Both online professional development instructors and online participants perceived that online professional development is effective. Additionally they indicated that they preferred online professional development to face-to-face professional development. When developing an online professional development program, attention should be given to items that motivated educators to participate. These factors included lack of travel, stipends, and the ability to work anytime, anywhere. The study respondents indicated that slow Internet and lack of face-to-face interactions were detriments to online professional development. Districts can address this by offering a combination of face-to-face and online professional development called hybrid courses. This is supported by research that suggests the best professional development solutions often involve hybrids courses (Bush, 2005; Treacy et al., 2002; Tyre, 2002; Zhao et al., 2005).

The demands on teachers' time, new programs and methods for instruction, limited funding, and requirements for certifications have necessitated the restructuring of professional development courses (Hall, 2005; Morrow, 2002). Online professional development appears to be a solution for teachers who are required to obtain continuing education credits to qualify for recertification. Accordingly, many school districts are utilizing a combination of face-to-face, online and hybrid professional development courses to address the needs of educators in a time of limited budgets. According to Killion (2000, ¶ 2), "this evolution is reshaping staff development in schools and districts worldwide."

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APPENDIX A

COVER LETTER FOR POTENTIAL
GROUP 1 PARTICIPANTS

Dear Potential Participant:

You are being asked to participate in a research project exploring teacher perceptions of online professional development. Your participation in this project involves completing an online survey located at <http://bama.ua.edu/~scrug002/dissertation>. It should take you approximately 30 minutes to complete the survey online. The survey contains scale and demographical items such as *online courses provide opportunities for professional development* and basic demographics such as *the approximate number of hours spent per on online professional development*. The survey will be self-administered via the Internet.

Your participation in this study is completely voluntary. Refusal to participate will involve no penalty. You may skip any question or stop at any time. There are no known risks or discomforts involved. To assure anonymity of responses, I am asking that you not provide your name or other identifying information on the survey. While participation in this research will provide no direct benefit to you, the knowledge gained will benefit entities that provide professional development and online courses.

By completing the online survey, you are consenting to be a research participant. If you have any questions about this study, you may contact Teresa Scruggs Thomas at (205) 680-4466 or via e-mail at scrug002@crimson.ua.edu.

Thank you in advance for your participation

Sincerely yours,

Teresa Scruggs Thomas

Questionnaire

Online Professional Development Opinion Survey (Group 1)

The purpose of this survey is to examine your perceptions about Online Professional Development. The Online Professional Development materials mentioned in this survey include the courses assignments, discussions, resources and delivery platform.

For the purposes of this study Online Professional Development (OPD) refers to a course provided entirely via the Internet for the attainment of continuing improvement points. Face-to-Face Professional Development refers to a course provided entirely in a setting in which the instructor is present with the participants. Asynchronous refers to items that occur at different times. Pre-Packaged course refers to a course that was developed by a company and purchased for use by the school district.

I. General Assessment

Questions 1 - 10 relate to your general assessment of professional development and online courses as a delivery method for professional development from an instructor position.

Please select the answer that best describes your opinion about the following statements:

Strongly Disagree SD	Disagree D	Agree A	Strongly Agree SA
1. I have a more positive perception of Online Professional Development than Face-to-Face.			
SD	D	A	SA
2. I prefer teaching an Online Professional Development course to teaching a Face-to-Face Professional Development course.			
SD	D	A	SA
3. It is more convenient for me to teach Face-to-Face Professional Development courses than Online Professional Development courses.			
SD	D	A	SA
4. I would recommend Online Professional Development to others more than Face-to-Face Professional Development.			
SD	D	A	SA

Strongly Disagree	Disagree	Agree	Strongly Agree
SD	D	A	SA
5. I would prefer teach a Face-to-Face Professional Development course again more than an Online Professional Development course.			
SD	D	A	SA
6. Online professional development is more effective method for training teachers than face-to-face professional development.			
SD	D	A	SA
7. Online Professional Development provides a more effective forum for continuous training than Face-to-Face Professional Development.			
SD	D	A	SA
8. Face-to-Face Professional Development provides a more effective forum for collaboration than Online Professional Development.			
SD	D	A	SA
9. Online Professional Development provides a more effective forum for networking than Face-to-Face Professional Development.			
SD	D	A	SA
10. The online professional development design is more effective for training teachers than face-to-face professional development design.			
SD	D	A	SA

II. Factors for Teaching

Items 11 - 13 relate to your general assessment of factors influencing your decision to teach an Online Professional Development course.

11. Which of the following factors influence you to teach online professional development courses? Select all that apply.

- Ability to work anytime
- Ability to work from any Internet accessible computer
- Lack of travel requirements
- Stipend for teaching
- Pre-packaged course materials
- Reduced time requirements due to pre-packaged course materials
- Reduced amount of preparation due to pre-packaged course materials
- Increased my confidence due to pre-packaged course materials
- Flexibility of pre-packaged course materials

Please list any other factors that influence you to teach online professional development.

12. What are the benefits of teaching online professional development courses? Select all that apply.

- Ability to work anytime
- Asynchronous discussions
- Ability to work from any Internet accessible computer
- Lack of travel requirements
- Stipend for teaching
- Pre-packaged course materials
- Reduced time requirements due to pre-packaged course materials
- Reduced amount of preparation due to pre-packaged course materials
- Increased my confidence due to pre-packaged course materials
- Flexibility of pre-packaged course materials
- Venue for ongoing interactions
- Less expensive

Please list any other factors that influence you to teach online professional development.

13. What are the barriers to teaching online professional development courses? Select all that apply.

- Limited by constraints of pre-packaged course materials
- Increased time requirements
- Asynchronous discussions
- Slow Internet
- Lack of face-to-face interactions
- Lack of participation
- Distance

- Increased preparation time
- Lack of confidence
- Lack of familiarity
- Lack of flexibility
- Limited professional development titles
- Lack of convenience
- Lack of continuity
- Expensiveness

Please list any other factors that influence you to teach online professional development.

14. Please provide any additional comments regarding online professional development.

Demographics:

Please type or circle your answer.

Total Years Teaching Experience (including this year)

1 – 3 4 – 10 11 – 20 21 – 29 30+

Total Years Teaching Experience in this School District (including this year)

1 – 3 4 – 10 11 – 20 21 – 29 30+

Grade level Currently Teaching: (check all that apply)

Pre-K – 2 3 – 5 6 – 8 9 – 12 Other _____

Subject or Content Area: _____

How many Online Professional Development courses have you completed? _____

How many Online Professional Development courses have you taught? _____

How many hours did you spend each week working on the last online professional development course in which you participated? _____

How many hours did you spend each week working on the last online professional development course, which you taught? _____

Do you have a computer access at home?

Yes No

Do you have Internet access at home?

Yes No

Please rate your ability to use a computer.

Beginner Intermediate Advanced

Please rate you ability to use the Internet.

Beginner Intermediate Advanced

APPENDIX B

COVER LETTER FOR POTENTIAL
GROUP 2 PARTICIPANTS

Dear Potential Participant:

You are being asked to participate in a research project exploring teacher perceptions of online professional development. Your participation in this project involves completing an online survey located at <http://bama.ua.edu/~scrug002/dissertation>. It should take you approximately 30 minutes to complete the survey online. The survey contains scale and demographical items such as *online courses provide opportunities for professional development* and basic demographics such as *the approximate number of hours spent per year on professional development*. The survey will be self-administered via the Internet.

Your participation in this study is completely voluntary. Refusal to participate will involve no penalty. You may skip any question or stop at any time. There are no known risks or discomforts involved. To assure anonymity of responses, I am asking that you not provide your name or other identifying information on the survey. While participation in this research will provide no direct benefit to you, the knowledge gained will benefit entities that provide professional development and online courses.

By completing the online survey, you are consenting to be a research participant. If you have any questions about this study, you may contact Teresa Scruggs Thomas at (205) 680-4466 or via e-mail at scrug002@crimson.ua.edu.

Thank you in advance for your participation

Sincerely yours,

Teresa Scruggs Thomas

Questionnaire

Online Professional Development Opinion Survey (Group 2)

The purpose of this survey is to examine your perceptions about Online Professional Development. The Online Professional Development materials mentioned in this survey include the courses assignments, discussions, resources and delivery platform.

For the purposes of this study Online Professional Development (OPD) refers to a course provided entirely via the Internet for the attainment of continuing improvement points. Face-to-Face Professional Development refers to a course provided entirely in a setting in which the instructor is present with the participants. Asynchronous refers to items that occur at different times. Pre-Packaged course refers to a course that was developed by a company and purchased for use by the school district.

I. General Assessment

Questions 1 - 10 relate to your general assessment of professional development and online courses as a delivery method for professional development.

Please select the answer that best describes your opinion about the following statements:

Strongly Disagree SD	Disagree D	Agree A	Strongly Agree SA
1. I have a more positive perception of Online Professional Development than Face-to-Face.			
SD	D	A	SA
2. I prefer Online Professional Development to Face-to-Face Professional Development.			
SD	D	A	SA
3. It is more convenient for me to participate in Face-to-Face courses than Online Professional Development.			
SD	D	A	SA
4. I would recommend Online Professional Development to others more than Face-to-Face Professional Development.			
SD	D	A	SA
5. I would prefer to participate in Face-to-Face Professional Development again more than an Online Professional Development course.			
SD	D	A	SA
6. Online Professional Development is a more effective way for me to learn than Face-to-Face Professional Development.			
SD	D	A	SA
7. Online Professional Development provides a more effective forum for continuous training than Face-to-Face Professional Development.			
SD	D	A	SA

Strongly Disagree	Disagree	Agree	Strongly Agree
SD	D	A	SA

8. Face-to-Face Professional Development provides a more effective forum for collaboration than Online Professional Development.

SD	D	A	SA
----	---	---	----

9. Online Professional Development provides a more effective forum for networking than Face-to-Face Professional Development.

SD	D	A	SA
----	---	---	----

10. The online professional development design is more effective than face-to-face professional development design.

SD	D	A	SA
----	---	---	----

II. OPD Course

Questions 11 - 16 relate to your general assessment of the impact of the online professional development course on your teaching.

Please select the answer that best describes your opinion about the following statements:

Strongly Disagree
SD

Disagree
D

Agree
A

Strongly Agree
SA

11. Online Professional Development provided skills that I utilize in my classroom.

SD

D

A

SA

12. The Online Professional Development course enhanced my teaching methods.

SD

D

A

SA

13. I use practical instructional strategies in my classroom obtained by participating in online professional development.

SD

D

A

SA

14. After participating in online professional development I implemented new instructional strategies.

SD

D

A

SA

15. After participating in online professional development I made long-lasting changes in my teaching.

SD

D

A

SA

16. Online professional development improved my classroom management.

SD

D

A

SA

III. Factors of Participation

Items 17 - 20 relate to your general assessment of factors relating to your participation in Online Professional Development.

17. Which of the following factors influence you to participate in online professional development courses? Select all that apply.

- Ability to work anytime
- Ability to work from any Internet accessible computer
- Lack of travel requirements
- Continuous improvement points
- Self-improvement
- Stipend for participating
- Pre-packaged course materials
- Reduced time requirements due to pre-packaged course materials
- Reduced amount of preparation due to pre-packaged course materials
- Increased confidence due to pre-packaged course materials
- Flexibility of pre-packaged course materials
- Variety of course offerings

Please list any other factors that influence you to participate in online professional development.

18. What are the benefits of participating in online professional development courses? Select all that apply.

- Ability to work anytime
- Asynchronous discussions
- Ability to work from any Internet accessible computer
- Lack of travel requirements
- Stipend
- Pre-packaged course materials
- Reduced time requirements due to pre-packaged course materials
- Reduced amount of preparation due to pre-packaged course materials
- Increased my confidence due to pre-packaged course materials
- Flexibility of pre-packaged course materials
- Venue for ongoing interactions
- Less expensive
- Variety of offerings
- Continuous improvement points
- Improved student achievement

Please list any other factors that influence you to participate in online professional development.

19. What are the barriers to participating in online professional development courses? Select all that apply.

- Limited by constraints of pre-packaged course materials
- Increased time requirements
- Asynchronous discussions
- Slow Internet
- Lack of face-to-face interactions
- Lack of participation
- Distanced feeling
- Increased preparation time
- Lack of confidence
- Lack of familiarity
- Lack of flexibility
- Limited professional development titles
- Lack of convenience
- Lack of continuity
- Expensiveness

Please list any other factors that barriers from participating in online professional development.

20. Please provide any additional comments regarding online professional development.

Demographics:

Please type or circle your answer.

Total Years Teaching Experience (including this year)

1 – 3 4 – 10 11 – 20 21 – 29 30+

Total Years Teaching Experience in this School District (including this year)

1 – 3 4 – 10 11 – 20 21 – 29 30+

Grade level Currently Teaching: (check all that apply)

Pre-K – 2 3 – 5 6 – 8 9 – 12 Other _____

Subject or Content Area: _____

How many Online Professional Development Courses have you completed? _____

How many hours did you spend each week working on the last online professional development course in which you participated? _____

Do you have a computer access at home?

Yes No

Do you have Internet access at home?

Yes No

Please rate your ability to use a computer.

Beginner Intermediate Advanced

Please rate you ability to use the Internet.

Beginner Intermediate Advanced

APPENDIX C

ETLO ONLINE PROFESSIONAL DEVELOPMENT
COURSES WITH ENROLLMENT

Online Professional Development Course	Year										Total Offerings	Total Participants
	2005		2006		2007		2008		2009			
	Offerings	Participants										
Approaches & Tools for Developing Web-Enhanced Lessons	1	15	0	0	1	15	2	23	0	0	4	53
Classroom Assessment Enhanced by Technology	2	29	1	15	1	18	1	7	0	0	5	69
Data-Based School Reform	0	0	0	0	0	0	1	6	1	17	2	23
Designing a Virtual Field Trip	3	32	2	26	3	47	1	16	2	18	9	139
Differentiating Instruction To Accommodate Learning Styles	4	44	1	14	3	51	2	15	1	2	10	126
Finding the Best Educational Resources on the Web	3	33	2	27	1	15	2	31	0	0	8	106
Getting Ready for Algebra by Using Virtual Manipulatives	0	0	0	0	0	0	1	4	0	0	1	4
Helping Struggling Middle School Readers Comprehend	0	0	1	14	0	0	0	0	0	0	1	14
Helping Struggling Readers Improve Comprehension	0	0	0	0	0	0	1	6	0	0	1	6
Improving Reading & Writing in the Content Area	2	19	0	0	0	0	2	34	0	0	4	53
Inquiry in the Science Classroom Using Internet-Based Data Sources	2	13	0	0	0	0	0	0	0	0	2	13
Integrating Primary Sources in the Social Studies Classroom	0	0	0	0	1	18	1	9	0	0	2	27
Learning & Teaching with Web 2.0 Tools	0	0	0	0	1	11	2	29	0	0	3	40
Making the Most of Adolescent Literature	0	0	0	0	0	0	2	12	0	0	2	12
Planning for Curriculum Integration of Technology	1	4	0	0	0	0	0	0	0	0	1	4
Reading First: Supporting Early Reading Instruction with Technology	1	11	1	13	2	25	0	0	0	0	4	49
Safeguarding the Wired Schoolhouse	0	0	0	0	1	3	0	0	0	0	1	3
Smart Budgeting for Technology: An Introduction to	0	0	0	0	0	0	1	3	0	0	1	3

Online Professional Development Course	Year										Total Offerings	Total Participants
	2005		2006		2007		2008		2009			
	Offerings	Participants										
TCO												
Special Student in Regular Classrooms: Technology, Teaching & Universal Design	4	32	0	0	3	39	2	34	0	0	9	105
Strategies & Tools for Teaching the Writing Process	0	0	0	0	0	0	1	18	0	0	1	18
Supporting Literacy Development in Lower Elementary Classrooms	0	0	1	15	1	15	1	12	0	0	3	42
Supporting Literacy Development in Upper Elementary Classrooms	0	0	1	15	0	0	0	0	0	0	1	15
Teaching Electricity & Circuits through Inquiry	0	0	0	0	0	0	1	4	0	0	1	4
The Role of Literacy in Teaching Students about Organisms & Their Habitats	0	0	0	0	0	0	1	12	0	0	1	12
Transforming the Classroom with Project Based Learning	2	21	0	0	1	19	4	41	0	0	7	81
Using Handheld Computers in the Classroom	0	0	0	0	0	0	1	21	0	0	1	21
Using Observable Phenomena to Make Sense of the Earth, Moon & Sun	0	0	0	0	1	3	0	0	0	0	1	3
Using Portfolios to Foster Student Learning	0	0	0	0	1	12	0	0	0	0	1	12
Using Technology in the Elementary Math Classroom	0	0	0	0	3	39	1	15	0	0	4	54
Using Technology to Support Literacy Development in Primary Level Classrooms	3	30	0	0	0	0	0	0	0	0	3	30
Using Technology to Support Research & Presentation	2	23	0	0	1	16	2	17	0	0	5	56
Total	30	306	10	139	25	346	33	369	4	37	103	1197