CHARACTERISTICS OF EFFECTIVE ONLINE PROFESSIONAL DEVELOPMENT: A CASE STUDY ANALYSIS OF AN ONLINE PROFESSIONAL DEVELOPMENT COURSE OFFERED VIA BLACKBOARD

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The purpose of this study is to examine the nature of online professional development (OPD) for K-12 educators in the context of Blackboard, a web-based courses management system (WBCMS). Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of online professional development courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of online professional development courses available, it is important to study the characteristics of effective OPD courses in order for educators responsible for coordinating staff development to gain the knowledge to better create, facilitate, and select online professional development (OPD) courses and/or opportunities for K-12 educators.

This case study examined the factors impacting educator interest and engagement in OPD courses, the characteristics of OPD courses that educators (participants) perceived as effective, and how a specific OPD course addressed the characteristics of effective professional development.

The findings in this study identified three reasons for which the participants chose to enroll in an online professional development course. They are: (1) maintaining teacher certification requirements, (2) interest/relevance, (3) convenience (time). After engaging in the entire OPD course, participants reported three perceived characteristics of effective online professional development courses - instructional design, interactivity, and collaboration. These findings agreed with the research literature in that instructional design, interactivity, and collaboration are important characteristics in online professional development. It was determined in this case study that online professional development meets the four overarching characteristics of effective professional development of: (1) time, (2) collaboration, (3) content and pedagogy focused, and (4) relevance. The findings from this case study offer a description of the nature of effective online professional development and may be used as a foundation for discussing implementing online professional development courses in school districts.

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1.0   CHAPTER 1: INTRODUCTION

This is a case study of online professional development (OPD) that is delivered via a web-based content management system for K-12 teachers. This case study examines: (1) educator interest and engagement in OPD courses, (2) the characteristics of OPD courses that educators (participants) perceive as effective, and (3) how the "21st Century Teaching and Learning" OPD course addresses the characteristics of effective professional development.

In an era of public school system reform focused on high-stakes accountability initiatives, such as the United States Department of Education (USDOE) Race to the Top (RTTT) initiative and the federal mandates of the No Child Left Behind Act of 2001 (NCLB), many consider the education and professional development of teachers as the keystone to educational improvement (Hawley & Valli, 1999; King-Rice, 2008).

High-stakes accountability initiatives seek to instill dramatic improvements in school performance. These initiatives not only place an emphasis on increases in student achievement, but recognize the needs for improving teacher effectiveness through research-based professional development.

Elmore (2004) describes professional development as "any adult learning activities that are designed in some way to increase knowledge, skills, abilities, and understanding of educators" (p. 93). Gusky (2000) extends this description as "processes and activities designed to enhance professional knowledge, skills and attitudes of educators so that they might, in turn,

improve the learning of students" (p. 16). However, Schlager & Fusco (2003) describe typical professional development programs as disconnected from practice, fragmented, and misaligned. For many teachers, professional development consists of a passive process of listening to an expert in a one day workshop and is often referred to as a "one shot approach" (Boyle, While & Boyle, 2004). While attending these kinds of workshops may create teacher interest in a topic, it is not sufficient to influence teacher practice. Guskey (2000) purports that effective professional development is an intentional, ongoing, and systematic process to bring about positive change and improvement. In an effort to address the need for offering effective professional development, local and state governments have enacted legislation regarding professional education requirements of teachers since NCLB.

1.1   ACT 48 AND PROFESSIONAL DEVELOPMENT FOR K-12 TEACHERS

Signed into law in 2001, the No Child Left Behind (NCLB) Act provided an outline for addressing several areas for educational reform. One of the areas addressed in the law was the preparation and training of highly qualified teachers. Title II of the NCLB Act states that local educational agencies (LEA) should be accountable for "[increasing] student achievement through strategies such as improving teacher… quality and increasing the number of highly qualified teachers in the classroom." Since the inception of the NCLB, the Secretary of Education has released five annual reports (2002 to 2006) on teacher quality that outline the federal government's desire to recruit, prepare, and certify highly qualified teachers (U.S.

Department of Education, Office of Postsecondary Education, Office of Policy Planning and Innovation [USDOE, OPE, OPPI]).

The No Child Left Behind Act of 2001 specifically emphasizes the need to recruit, prepare, and certify new teachers; however, it does not address the need to retain beginning teachers. The statistics on teacher attrition are so astonishing that the National Commission on Teaching and America's Future (NCTAF) declared the high rate of teacher turnover and attrition as a "national crises" (NCTAF, 2003, p. 3). According to recent reports, 33% of qualified new teachers leave the profession within their first three years of service. Moreover, this percentage increases to 50% within the first seven years of service (United States Department of Education National Center for Educational Statistics [USDOE NCES], 2003). Because NCLB does not specifically address the issue of teacher retention, the responsibility for addressing the high rate of teacher turnover falls upon individual states and local school districts. As a result, individual states throughout the country have enacted laws defining the responsibilities of states, local school districts, and individual educators regarding the professional development of teachers.

Signed into law on November 23, 1999 by Pennsylvania Governor Tom Ridge, Act 1999-48 mandated specific professional development requirements for current and future certified educators. The law applies to any individual holding a Pennsylvania school certification, including Instructional I and II, Education Specialist I and II, Administrative, Supervisory, Letter of Eligibility and all vocational certificates, as well as any non-certified individual employed as an educator at a Pennsylvania approved charter school. Act 48 mandates that all PA certified educators acquire 6 credits and/or 180 hours of Continued Professional Education (CPE) every

five years in order to maintain an "active" certificate (24 P.S. ß 12-1205.2(a)). The credits/hours may include any combination of collegiate studies, CPE courses or other programs, activities or learning experiences (24 P.S. ß 12-1205.1(c.1)). Educators certified by the state of Pennsylvania prior to July 1, 2000 were given until June 30, 2005 to complete their initial credit hour requirement. The deadline for all educators certified as of July 1, 2000 is defined as five years from the month and year of certificate issuance. Those individuals who earn more than the 180-hour requirement may not transfer additional hours to their next cycle. Although the Pennsylvania Department of Education maintains each educator's CPE history, their records are expunged at the end of the five-year cycle. In essence, all of the professional development records are deleted and a new five-year cycle begins. Educators who do not meet the mandated CPE requirements by the established deadlines will have their certificates designated as "inactive." Inactive status disqualifies the educator from being employed as a full-time employee of any school entity in the state of Pennsylvania. An educator with an inactive certificate must meet the CPE requirements prior to reinstatement of an active certificate.

In order for CPE activities, courses, and learning activities to be approved for Act 48 credit, a Pennsylvania Department of Education provider must provide them. Organizations interested in providing PDE-approved CPE for Act 48 credits and/or hours apply to the Pennsylvania Department of Education to become an approved provider. The purpose is to "ensure that credits and hours of continuing professional education are of high quality and designed to significantly advance the goals of improving and updating the educational skills of professional educators in this commonwealth" (24 P.S. ß 12-1205.2(d)). In Chapter 2, a more in-depth examination of the types of professional development is presented.

1.1.1 Intermediate Units as Providers of Act 48 Credit

In Pennsylvania, many educators turn to intermediate units as a source for professional development to earn their Act 48 hours. In 1970, the Pennsylvania state legislature established 29 intermediate units as regional consortiums to collaborate with school districts and provide vital specialized support services for students (Intermediate Unit One, 2008). They are supported by member school districts, state funds, state and federal grants, and are structured to provide the following:

- Curriculum development and instructional improvement services
- Educational planning
- Continuing professional education (CPE) services
- Instructional material services
- Pupil personnel and state and federal agency liaison services
- Management consultation and advisory services
- Programs and classes in special education
- Other services requested by school districts, the Department of Education, and the Pennsylvania State Legislation (Intermediate Unit One, 2008).

Fayette, Greene, and Washington Counties in Pennsylvania served as a pilot site in the development of the Intermediate Unit concept. The three counties experimented with the idea of conducting joint meetings and staff development activities to serve educators in the tri-county area. In October of 1970, the county school boards of the three counties met to plan a convention to elect thirteen directors who would become the first Intermediate Unit 1 Board of Directors. During its first year of operation, Intermediate Unit 1 (IU1) rented space in California, Pennsylvania, and employed a total of 245 people (Intermediate Unit One, 2008).

In an effort to assist school districts and individual educators in meeting the mandates of Act 48, IU 1 provides continuing professional education through its Instructional Support Services department. Professional development is offered through workshops, courses, and online classes for Act 48 hours and credit. Professional development activities are generally customized to suit district needs and cover a wide variety of topics (Intermediate Unit One, 2008).

Mirroring nationwide trends, school districts in IU 1 identified high-attrition rates of teachers as an area of concern during monthly curriculum coordinator meetings. Through informal interviews with teachers, IU 1 identified that a lack of quality professional development was a factor in the teacher attrition rate. In order to address this issue, Intermediate Unit 1 sought to provide support to school districts to combat the teacher attrition rate.

In an attempt to address this issue, the Instructional Support Services department of IU 1 began planning online professional development opportunities to train teachers. Having designed and taught online courses for eight years at the collegiate level in addition to my experience as a high school principal, in the summer of 2006 the director of instructional support services at Intermediate Unit 1 contacted me and asked me to design and teach an online course entitled "21st Century Teaching and Learning." After several months of research and development, a two-credit CPE online course proposal was submitted to Intermediate Unit 1. As a Pennsylvania Department of Education Act 48 approved provider, IU 1 is required to submit all new Act 48 course proposals to PDE for approval before they can award Act 48 credit hours to educators. The "21st Century Teaching and Learning" online course proposal was

subsequently submitted to PDE for approval. A week after the course proposal was submitted to PDE, IU 1 was notified that the course was approved and was eligible to be offered to educators for Act 48 ~ equal to two CPE credits or sixty CPE Act 48 hours.

"21st Century Teaching and Learning" was offered as an online professional development course to the teachers who worked in the IU 1 school districts. The online course description for "21st Century Teaching and Learning" was listed in the IU 1 course catalog as:

> There is remarkable consensus among educators and business and policy leaders on one key conclusion: we need to bring what we teach and how we teach into the 21st century. This interesting and interactive course will address this issue by discussing the skills students need to master in order to be successful in a globalized society. Educators will discuss: engaging instructional methods for teaching digital natives, 21st century skills we will be teaching digital natives, and how educators can address the needs of the millennial generation of students. Selected excerpts from *The World is Flat*," "*A Whole New Mind*," and "*Millennial's Rising*" will be shared and discussed to validate the course's premise ~ educators must bring what we teach and how we teach into the 21st century. Participants will: participate in online discussions, summarize and analyze outsides readings, complete pre and post tests, create lesson plans, create action plans for implementation, and create a culminating project.

The objectives of the "21st Century Teaching and Learning" online course were made available to any educator who requested additional information. Potential participants were told that by the end of the course, the participant would be able to:

- Read and summarize the identified excerpts from "Millennial's Rising"

- Compare and contrast characteristics between baby boomers, generation X'ers, and millennial's as they relate to teaching and learning

- Identify teaching strategies that better serve the needs of millennial students

- Discuss the importance of integrating technology into teaching and learning for "digital natives"

- Evaluate best practices in pedagogy as it relates to technology integration

- Create a lesson plan that incorporates teaching strategies appropriate for millennial students

- Read and summarize the identified excerpts from "The World is Flat"

- Explain the impact globalization is having on public education

- Identify strategies for integrating globalization literacy into teaching and learning

- Discuss how cybercharter school competition is forcing schools to re-evaluate their organization

- Evaluate best practices in pedagogy as it relates to globalization literacy

- Create a lesson plan that incorporates teaching strategies that addresses globalization literacy

- Reflect upon what they have learned by writing in their journals

- Read and summarize the identified excerpts from "A Whole New Mind: Why Right Brainers Will Rule the World"

- Explain the impact that brain research has on teaching and learning

- Analyze the importance of right-brain-based teaching and learning as a result of the impact of globalization

- Identify the six senses as defined by Daniel Pink

- Evaluate best practices in pedagogy as it relates to right brain-based teaching and learning

- Create a lesson plan that incorporates teaching strategies that addresses right brain-based teaching and learning

- Reflect upon what they have learned by writing in their journals

- Read and summarize the identified excerpts from "Professional Development for the 21st Century"

- Identify 21st century skill themes as defined by "The Partnership for 21st Century Skills."

- Discuss the importance of integrating 21st century skills into teaching and learning

- Evaluate best practices in pedagogy as it relates to 21st century skills

- Create a lesson plan that incorporates teaching strategies that addresses 21st century skills

- Reflect upon what they have learned by writing in their journals

- Educators will complete the performance assessment

- Educators will complete the culminating project

- Educators will complete an action plan for implementation

Through online discussions with the course participants, I quickly realized the importance of teaching educators about 21st century teaching and learning strategies. Although many participants knew how to teach students, they were unfamiliar with teaching in a 21st century context. At the conclusion of the course, a number of participants contacted IU 1 to express their gratitude for offering the course. A participant suggested to their district's administration that the "21st Century Teaching and Learning" online course be made a requirement for all teachers in their district. The experience of teaching this course solidified my interest in online professional development.

1.2   ONLINE PROFESSIONAL DEVELOPMENT FOR K-12 TEACHERS

According to Internet World Stats (2009) 77% of people in the United States use the Internet. Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of OPD courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002).

As a precursor to examining online professional development for K-12 educators, it is helpful to first describe online learning. Moore, Winograd and Lange (2001) describe online learning in this way:

> "Online learning is distance learning modernized, akin to the rudimentary by mail correspondence course and the television satellite courses that have been alternative means of education for decades now because of the flexibility and convenience they offer students; but instead of letters and televisions being the instructional mediums, computers, modems, and the Internet are the means by which teachers and students connect." (p. 13)

The need for professional development that can fit into a teacher's busy schedule, that draws on powerful resources often not available locally, and that can create an evolutionary path toward providing real-time, ongoing, work-embedded support has stimulated the creation of these kinds of online professional development programs (Dede et al., 2009).

Online professional development environments can connect learners at different locations to work on a collaborative task or to discuss a complex issue. They create opportunities for learners to interact actively (Harasim, 2000; Lipponen, Rahikainen, Lallimo, & Hakkarainen, 2003) and remove the time and space constraints so that learners enjoy greater

flexibility and opportunities to process information pertaining to the discussed issues and problems (Hara, Bonk, & Angeli, 2000).

Online learning can be used to bridge distance and time. Teachers can participate in professional development activities via the Internet rather than travel to a specific site, and interactions can be asynchronous so that participants do not need to be available at the same time (Russell, Kleiman, Carey, & Douglas, 2009). In addition to logistical advantages, OPD can: provide expertise and resources to locations where they would not normally be available, provide new means to interact with experts and colleagues, enable educators to experience for themselves new forms of teaching and learning, and make participation in coaching, mentoring, and professional learning communities more accessible (Kleiman, 2004).

1.3   A STATEMENT OF THE PROBLEM

There is considerable research examining the nature of effective professional development for K-12 educators. However, there is limited research examining both the nature of online learning in the context of K-12 professional development and the qualities of effective online professional development courses offered via a web-based course management system. Therefore, a qualitative study of online professional development is warranted.

The purpose of this study is to examine the nature of online professional development (OPD) for K-12 educators in the context of a web-based course management system (WBCMS). Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a

proliferation of online professional development courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of online professional development courses available, it is important to study the characteristics of effective OPD courses in order for educators responsible for coordinating staff development to gain the knowledge to better create, facilitate, and select online professional development (OPD) courses and/or opportunities for K-12 educators.

1.4   STUDY QUESTIONS

The review of literature provides three areas regarding online professional development in need of further study: (1) reasons why teachers enroll and engage in OPD, (2) teacher perceptions regarding the characteristics of effective OPD, and (3) relationship between effective professional development and that of effective online professional development. These three areas have framed my research study.

Therefore, the three research questions in this study are:

1.   Why do educators enroll and engage in OPD courses offered via WBCMS?

2.   What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

3.   How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

1.5 SIGNIFICANCE OF THE PROBLEM

Online learning has the potential to fulfill many needs and provide opportunities for the professional development of K-12 teachers. Although online professional development is a relatively new field, the potential to expand learning beyond physical buildings is just being realized. While many research studies have explored online learning with both undergraduate and graduate students, few studies exist that examine the a K-12 teacher's perceptions regarding online learning [online professional development]. A deep and in-depth examination of (1) teachers' interest in OPD, (2) teachers' perceptions of effective OPD, and (3) how online professional development addresses the characteristics of effective professional development. This will inform the field of K-12 teacher professional development, online professional development, and the design, development, implementation, and evaluation of online professional development courses. I hope that this study will assist educators responsible for coordinating district professional development to gain the knowledge needed to better create, facilitate, and select online professional development (OPD) courses and/or opportunities for K-12 educators.

1.6 RESEARCHER'S ROLE

In this study, the *21st Century Teaching and Learning* online professional development course and its participants are the units of study. In addition to acting as the researcher, I also served

as the course developer and course instructor. Serving in all three roles follows Eisner's (1998) suggestions for conducting qualitative research.

Eisner (1998) suggests that there are common features to all qualitative research. By acting as (1) the researcher, (2) the course developer, and (3) the researcher, I am able to apply three of Eisner's suggestions. First, Eisner (1998) suggests that (1) *field focused* research allows the researcher to conduct in-depth and detailed observations of the people as they interact in their natural setting. By taking a field-focused approach, I observed the online environment in which the participants interact. Secondly, qualitative studies where the researcher makes meaning through personal interactions while providing personal insights into study uses (2) *oneself as an instrument*. As an active participant in the course, I acted as a research instrument in order to provide a rich and in-depth understanding of the interactions between the participants, as well as the data collected. Additionally, through interviews with participants, (3) *interpretive character* describes why certain phenomena is taking place, as well as determining the experiences and motives that led to the participant's actions. As the course instructor, I was better able to describe and interpret these types of data collected.

Therefore, it is my belief that by serving as the course instructor, the course developer, and the researcher – I am better able to describe the case study being presented.

2.0   REVIEW OF LITERATURE

Introduction

In an era of public school system reform focused on high-stakes accountability initiatives, many researchers consider the education and professional development of teachers as the keystone to educational improvement (Hawley & Valli, 1999). High-stakes accountability initiatives seek to instill dramatic improvements in school performance. While these policies, such as NCLB, take different forms, they generally try to strengthen the incentives for school improvement by issuing rewards to high achieving schools and/or by imposing stiff sanctions on low performing schools (King-Rice, 2008). High-stakes accountability initiatives, such as the federal mandates of the No Child Left Behind Act of 2001 (NCLB,) not only place an emphasis on increases in student achievement, but also recognize the needs for improving teacher effectiveness through research-based professional development opportunities. With such a focus on teacher professional development, it is important to more thoroughly describe what "professional development" means in the context of a K-12 educator.

In order to explore the topic of professional development for K-12 educators, this review of research literature examines what research says about: the characteristics of effective professional development, online learning, and online professional learning communities. Each topic is discussed in sequence and the essential points of each topic are

summarized at the end of each section in order to address the following three guiding questions:

1. What is the nature of effective professional development for K-12 educators?

2. What is the nature of online learning in the context of K-12 professional development?

3. What are the qualities of effective online professional development courses (OPD courses) offered via a web-based course management system for K-12 educators?

2.1   EFFECTIVE PROFESSIONAL DEVELOPMENT FOR K-12 EDUCATORS

Exploring the connections between effective professional development, online learning, and online learning communities will contribute to research and practice in order to provide guidance to K-12 administrators in charge of designing professional development programs for K-12 schools.

2.1.1   Describing Professional Development

There are many terms used to describe professional development for K-12 educators; they include in-service education, in-service training, staff development, and professional learning (Sparks and Hirsh, 1997). While these terms are often used interchangeably (NSDC, 2007; Sparks and Hirsh, 1997), some educators associate different meanings with these terms. For the purposes of this comprehensive exam, the terms in-service, staff development, professional

learning, and professional development will be used interchangeably and defined as professional development.

Elmore (2004) describes professional development as "any adult learning activities that are designed in some way to increase knowledge, skills, abilities, and understanding of educators" (p. 93). Gusky (2000) extends this description as "processes and activities designed to enhance professional knowledge, skills and attitudes of educators so that they might, in turn, improve the learning of students" (p. 16).

According to Gallagher (2009), professional development is the tool that is used to "strengthen teacher craft" in order to improve student learning. Zepeda (2008) states that this "craft" is enhanced when teachers learn from hands-on, real-world applications in the day-to-day operations that take place in schools. Jackson and Davis (2000) purport that professional development for teachers is the "range of formal and informal 'processes' and activities that teachers engage in both inside and outside of their school in order to improve their teaching knowledge and skills" (p. 198). The National Staff Development Council (n.d.) states that the range of professional development activities should be targeted, ongoing, and embedded into a teacher's workday. (Consistent with Jackson and Davis's (2000) assertion that professional development is a "process," the Michigan State Board of Education (2000) describes professional development as a "process" that promotes both high standards of academic achievement and responsible citizenship for all students.

2.1.2 Importance of Professional Development

There is substantial evidence that high-quality professional development can improve teacher practice, which ultimately, can positively impact student achievement (Cohen and Hill, 2001; Desimone, Porter, Garet, Yoon, and Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001). Gusky (2000) states that the ultimate goal of all teacher professional development programs is to improve student learning outcomes. Furthermore, Cohen and Hill (2001) state that effective professional development is the "most promising, cost-effective tool available to teachers, schools, districts, and states as they seek to improve the quality of teachers and subsequent student achievement" (p. 56).

According to *A Vision for Quality Professional Development in All Vermont Schools (2009)* , "quality professional development has the power to increase educator's knowledge of academic content and teaching skills, while changing what educators believe about student learning and how they interact with students." Strengthening this argument, Christie (2009) purports that quality professional development can transform schools into places in which all adults and students are deeply engaged in learning. With research demonstrating the connections that effective teacher professional development can be a powerful factor impacting student achievement and learning, the importance of effective professional development is paramount.

2.1.3 Costs Associated with Professional Development for K-12 Educators

Although many educators understand the importance of providing effective professional development to teachers, the costs associated with creating, sustaining, and evaluating effective professional development remains an obstacle for many school systems. According to the National Center for Educational Statistics, public schools are spending approximately $20 billion annually on professional development (NCES, 2008). However, these data do not consider the professional development provided by states or federal spending to support professional learning for teachers. For example, the National Science Foundation and U.S. Department of Education Math-Science Partnerships spent nearly $1.2 billion on mathematics and science pre-service and in-service teachers between the years 2002 and 2007 (NSF, 2007).

Even with the seemingly high aforementioned funds school districts are spending for professional development, many school districts find that they are still unable to fund effective professional development programs. Estimates place professional development spending at between 1% and 6% of district expenditures (Hertert 1997; Killeen, Monk, and Plecki 2002; Odden et al. 2002; Miles 2003). Whereas, according to the National Staff Development Council, schools should dedicate a minimum of 10 percent of their budgets, excluding salaries and benefits, to professional development and devote at least 25 percent of a teacher's work time to learning and collaborating with colleagues (NSDC, n.d.). This serious gap in funding impedes many teachers from participating in high-quality professional development opportunities.

In an effort to assist school districts with these costs, the federal government has played an important role in funding effective professional development programs for K-12 educators. The high-stakes accountability nature of the No Child Left Behind Act of 2001 allocated millions

of taxpayer's dollars for the implementation of professional development in public school systems (Zepeda, 2008) as a means to increase student achievement. However, in order to ensure that the funds allocated for effective professional development were being used appropriately, NCLB places restrictions on how school systems could use these funds. School systems had to utilize these restricted funds for professional development that: (1) related to the school improvement plan; (2) was research-based; (3) was connected to student achievement; (4) included activities related to the subject area of individual teachers; and (5) was evaluated (Zepeda, 2008).

In addition to the funds coming from NCLB to fund professional development in public schools, the federal government allocated additional funds in 2009 when President Obama directed $100 billion dollars to education in his economic stimulus plan (Moses, 2009). Within this amount, $200 million were allocated for the Teacher Incentive Fund, $650 million for more innovative programs; and $39 billion for professional development, school staff, after-school programs, and early-childhood education (Moses, 2009). In essence, the federal government along with state and local governments, has recognized the importance of providing effective teacher professional development as a means of improving student achievement.

2.1.4 Evaluation Needs of K-12 Professional Development

Although researchers generally agree with the importance of providing effective professional development for K-12 educators, the costs associated with providing effective professional development warrants an examination of the gap between our beliefs about the characteristics

of effective professional development and the evidence we have to validate those beliefs (Guskey, 2009). Analyzing the gaps between our beliefs and the evidence associated with effective professional development demonstrates a critical need to evaluate what it means for professional development to be "effective."

In *Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement* (Yoon et al., 2007), a team of researchers from the American Institutes for Research analyzed the findings from more than 1,300 studies and evaluation reports associated with the impact effective professional development has on student learning. The research team used the standards of credible evidence set by the What Works Clearinghouse (WWC), the branch of the U.S. Department of Education responsible for providing educators, policy makers, researchers, and the public with scientific evidence about "what works" in education (Yoon, et al., 2007). Using the WWC Evidence Standards to evaluate the quality of evidence presented in 1,300 studies, the researchers determined that only nine investigations, less than one percent, were sufficient enough to draw conclusions about the characteristics of effective professional development (Guskey, 2009). One of the most discouraging findings in the project was the discovery that all nine studies focused solely on elementary schools and were conducted between 1986 and 2003. No studies of professional development at the middle school or high school levels met the WWC standards, nor did any of the studies published between 2004 and 2006 (Guskey, 2009).

Similarly, a survey by the National Mathematics Advisory Panel (NMAP) in 2008 concluded that the majority of the research studies on professional development programs associated with mathematics lacked the methodological rigor to draw causal inferences (NMAP,

2008). After examining professional development programs associated with literacy, the National Center for Education Evaluation reached the same conclusion (Garet et al., 2008).

These findings highlight the gap between what educators "believe" effective professional development is versus the evidence that actually demonstrates "effectiveness." "Professional development leaders are generally reluctant to put themselves under the microscope and truly scrutinize the effectiveness of their efforts" (Guskey, 2009, p. 1). The reluctance to evaluate professional development effectiveness based on research leads educators to draw conclusions drawn from stories and anecdotes what teacher's perceive to be effective professional development. "Although stories and anecdotes can illuminate evidence, they are no substitute for it" (Duke, 2008, p. 2).

2.2   FACE-TO-FACE PROFESSIONAL DEVELOPMENT FOR K-12 EDUCATORS

Guskey (2009) describes the professional development trends from the past decade as: "university or college courses, district or regional workshops, district-sponsored pull-out professional development in which teachers had released days to participate in day-long workshops, conferences (local, state, national), and required professional development determined by the district for a specific curricular or program implementation"(p. 58). In these learning environments, teachers found the topics of focus tended to be disconnected from their daily instructional practices and generally designed to be applicable to all teachers regardless of their content area or experience level. As a result, teachers frequently expressed frustration with these forms of professional development saying that they wasted their time, insulted their

intelligence, and were irrelevant to their daily work (Curry, 2009). Generally, researchers have described these types of learning experiences for teachers as "face-to-face" professional development.

A number of studies have described common features associated with face-to-face professional development programs (Guskey, 2009; Yoon, Duncan, Lee, Scarloss, and Shapley, 2007; Garet, Porter, Desimone, Birman, and Yoon, 2001; Fisher, Gardner, and Wirsing, 2009; Guskey and Suk Yoon, 2009; Kerka, 2003; Atay, 2007; Hill, 2009). These face-to-face professional development features are listed below.

- Content determined by someone other than the teacher

- Occurred outside the school

- Engaged teachers as individuals

- Short-term, ranging from a few hours to one or two days

- No requirement for implementation of the learning

- Limited follow-up support

- Disconnected from ongoing classroom practice

- Teacher choice-driven

- Evaluated by the number of participants and their reactions to the   session

Based on these common features, advantages of face-to-face professional development may be identified. For example, face-to-face professional development opportunities such as workshops and conferences are advantageous because they provide an expedient way to build fundamental knowledge and skills associated with innovations in curriculum and instruction (Guskey, 2009). Additionally, popular with teachers, conferences and workshops provide

teachers with a break in routine, a chance to meet new colleagues and discuss their professional problems, and exposure to stimulating new ideas (Atay, 2007). Furthermore, conferences and workshops can accommodate large numbers of participants and are often chosen as a preferred format in surveys (Sabatini et al. 2000, Sherman and Kutner, 1998). Therefore, advantages of face-to-face professional development programs such as workshops and conferences may be summarized as:

1.   Providing an expedient way to share new ideas and skills

2.   Providing opportunities for collegiality

3.   Providing knowledge to large groups of teachers

Location, time, and costs are often barriers to participation in face-to-face professional development opportunities such as conferences and workshops. These barriers are exasperated when practitioners are not provided released time, compensation, or incentives for their attendance (Sheckley n.d.) Additionally, face-to-face teacher professional development programs, generally, consist of short-term or one-shot in-service programs conducted by outside experts who disseminate a "knowledge base" constructed exclusively by "the experts" (Cullen, 1997). However, this "knowledge base" transmitted by the experts, purports Cullen (1997), is generally conceptually and practically far removed from the contexts of the teachers, and the situational factors affecting their classroom practices are not taken into account. As a consequence, the aim of increasing teacher's professional development is rarely achieved (Atay. 2007). Wirsing, Fisher, and Gardner (2009) state that "while workshops [and conferences] were excellent in introducing me to new ideas and inspiring me, these activities did not provide the needed immersion into the subject matter that would result in meaningful

changes in my own classrooms" (p. 26). Therefore, disadvantages of face-to-face professional

development programs, such as workshops and conferences, may be summarized as:

1. Providing an inadequate amount of time needed for subject/topic immersion resulting in meaningful changes in classroom practices

2. Travel distance and costs associated with attending conferences and workshops

3. Disconnection between the conceptual knowledge of an expert speaker's and the contextual and situational factors of the classroom teacher's daily practices

In the U.S. Department of Education sponsored study, "*Reviewing the Evidence on How Teacher Professional Development Affects Student Achievement,*" Yoon, Duncan, Lee, Scarloss, and Shapley (2007) identify nine research studies confirming that sustained, high-quality professional development is associated with gains in student achievement. This study links the impact effective teacher professional development has on student learning. Furthermore, the study identifies two important qualities of effective professional development associated with gains in student achievement: sustainability (time) and quality.

The quality of professional development for teachers is important to examine. Perhaps because face-to-face interactions between professional development providers and teachers are considered paramount, professional development is mostly local (Hill, 2009.) In a 2005 survey, Hill (2009) determined that most professional developers lived in the state in which they provided services, often within 50 miles of the district. Local demands for providers means a large number of smaller firms (or individuals) enter the professional development market, often without special training or specific expertise. This, in turn, leads to professional

development products/services that are low-quality, offering teachers only quick fixes and, in some worst cases, misinformation (Hill, 2009).

Finding consensus in the research literature on a standard definition of "quality" professional development is difficult due to its inherent subjectivity. It seems that a professional development's quality, like beauty, is in the eye of the beholder. After all, school contexts differ drastically, and what professional development works well in one school setting may not work equally as well in another (Guskey, 2009). Furthermore, because the professional development needs of each school district, and by extension, each individual educator, are so varied and unique, providing a standard definition of "quality" professional development for K-12 educators may not be practical. Guskey (2009) supports this notion when he states "A far more productive approach would be to identify specific core elements of professional development that contribute to the effectiveness and then describe how best to adapt these elements to specific contexts" (p. 229). Therefore, instead of futilely attempting to describe "quality" professional development, I have opted to review the research literature in order to synthesize overarching characteristics of effective professional development. In the next section, I present my findings of the overarching characteristics of effective professional development based on a synthesis of the research literature.

2.3   CHARACTERISTICS OF EFFECTIVE PROFESSIONAL DEVELOPMENT

Effective professional development is described throughout the research literature in a multitude of ways; however, common themes and characteristics can be extrapolated. According to the National Staff Development Council (2009), "the term professional development means a comprehensive, sustained, and intensive approach to improving teachers' and principals' effectiveness in raising student achievement." Whereas, Judith Warren Little (1996) describes professional development as "a focus on and responsibility for student learning and the formation of professional community inside and outside the school" (p.1). Linda Darling-Hammond and Milbrey McLaughlin (1996) describe effective professional development as "deepening teachers' understanding about the teaching/ learning process and the students they teach," which "must begin with pre-service education and continue throughout a teacher's career" (p. 203). They state "effective professional development involves teachers both as learners and teachers, and allows them to struggle with the uncertainties that accompany each role" (p.203). According to Willis D.Hawley and Linda Valli (1996) effective professional development for educators "...calls for providing collegial opportunities to learn that are linked directly to solving authentic problems that are defined by the gaps between goals for student achievement and actual student performance"(p.1). In these descriptions of effective professional development, the following themes and/or characteristics can be extrapolated: time/sustainability, collaboration, teaching content/pedagogy focused, and relevance to authentic classroom experiences. Additionally, there is consensus among many researchers that characteristics such as: 1) time, 2)

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collaboration, 3) content and pedagogy focused, and 4) relevance are important components of effective professional development for K-12 educators (Abell and Lee, 2008; Ash, Brown, Kluger-Bell & Hunter, 2009; Blank & de las Alas, 2009; Atay, 2008; Christie, 2009; Colbert, Brown, Choi & Thomas, 2008; Curry, 2009; D. K. Cohen & Hill, 2001; Darling-Hammond, 1996; Desimone, Porter, Garet, Yoon, & Birman, 2002; Eun, 2008; Guskey, 2003; Guskey, 2009; Hanegan, Friden & Nelson, 2009; Hawley, 1996; Hill, 2009; Hord, 2009; Kariuki, 2009; Kennedy, 1998; Kerka, 2003; Lee, 2005; Mouza, 2009; National Reading Panel, 2000; Nelson, 2008; NSDC, 2009; Olson & Butler, 1991; Pearson, 1996; Seglem, Kiser, Wood & Gardner, 2009; Servage, 2009; Starkey, Yates, Meyer, Hall, Taylor, Stevens & Toia, 2008; Supovitz, 2001; Thompson, 2009; Toroff and Sessions, 2008; USDE, 1999; Wallace, 2009; Wasserman, 2009; Williams, 2008; Wirsing, Fisher & Gardner, 2009). For the remainder of this paper, the synthesized four overarching characteristics of effective professional development of 1) time, 2) collaboration, 3) content and pedagogy focused, 4) relevance will be collectively be referred to as the four characteristics of effective professional development.

In one of the most extensive K-12 professional development programs ever funded by the federal government, the Eisenhower program was established in 1984 and reauthorized as Title II of the Elementary and Secondary Education Act, as amended by the Improving America's Schools Act (IASA) of 1994 (USDE, 1999). In the fiscal year of 1999, $335 million was appropriated through the Eisenhower Program to states and school districts for professional development activities "designed to improve teacher practice, especially for students who are most at risk of school failure" (USDE, 1999, p. es-3). A subsequent multi-year evaluation of the Eisenhower Program was conducted by the American Institutes for Education in order to

ascertain the effectiveness of Eisenhower-Assisted professional development activities. The findings of the this national evaluation further supports the existence of four overarching characteristics of effective professional development in the following statement. Effective professional development should emphasize…

> "<u>sustained</u> and intensive professional development activities. More specifically, this evaluation suggests that professional development should focus on deepening teacher's <u>content knowledge</u> and <u>knowledge of how students learn</u> particular content, on providing opportunities for active learning, and on encouraging <u>coherence</u> in teacher's professional development experiences. Eisenhower professional development should pursue these goals using activities of <u>greater duration</u> and <u>collective participation</u>. While reform professional development is more effective than traditional professional development, the advantage to reform activities is explained primarily by <u>greater duration</u>" (1999, p. es-18).

By underlining the key points in this statement, it is clear that the Eisenhower Program's Evaluation for Effective Professional Development Activities supports my synthesis of four overarching characteristics of professional development including:

1. Time

2. Collaboration

3. Content and pedagogy focused

4. Relevance

In the next few sections, I will explore each of these four overarching characteristics of effective K-12 professional development in more detail.

2.3.1 Characteristic #1: Time

Considering the amount of time teachers spend engaged in professional development activities and the potential impact of those activities on student learning, it is important to examine the nature of time as it relates to effective professional development for K-12 educators.

Unfortunately, research indicates that teachers are not spending enough time engaging in professional development activities. For example, in 1999-2000, the most recent year available, National Center for Education Statistics (NCES) data showed that just over half of respondents to a NCES survey reported spending a day or less in face-to-face professional development programs over the past year; only a small minority reported attending four or more days within the past year (Hill, 2009). When asked about the impact of the past three years of professional development experiences, less than a quarter, on average, reported that professional development affected their instruction (Horizon, 2002). Most teachers, in fact, report that traditional professional development opportunities, such as in-service days and workshops, only reinforce their existing practices, and a minority reported no effect at all (Hill, 2009). These data demonstrate the relatively short amount of time that teachers engage in professional development activities. This is a cause for concern when research, such as data from the National Center for Education Statistics in 2001, shows that the number of hours teachers spend in professional development activities is related to increases in student achievement (Horizon, 2002). Furthermore, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) reviewed the evidence on how teacher professional development impacts student learning. After an extensive review, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) identified nine

studies confirming that sustained, effective professional development with 49 hours or more is associated with gains in student achievement. With research clearly describing the connection between time spent in effective professional development and increases in student achievement, school districts have a responsibility to re-evaluate their allocation of time for teacher professional development.

Shanklin (2009) purports that professional development can no longer simply consist of sessions on in-service days, after school, or on weekends that are disconnected from life in the classroom. Instead, professional development should increasingly become job-embedded. As a practical matter, many teachers are part of two-career families that need to be attentive to their own children after school or on weekends. Additionally, more teachers are involved in teaching before- or after-school interventions, serving on committees, coaching sports, or sponsoring clubs, and cannot attend professional development session scheduled during those times (Shanklin, 2009, p. 45). Researchers have also reported that one of the most formidable barriers in implementing new practices is the lack of time to implement a program that impacts teacher change (Abbott et al., 1999; Klinger et al., 2003).

It is suggested that the duration of professional development is related to the depth of teacher change (Shields, et al., 1998), which includes the span of time over which the activity takes place, as well as the number of contact hours that participants spend in the activity. Longer activities are more likely to provide in-depth discussions of issues dealt with in the professional development program, helping to understand new strategies, as well as to allow teachers to try new practices in their own classrooms (Desimone et al., 2002; Garet et al., 2001; Speck, 2002).

Professional development advocates have long lamented the lack of time teachers and school leaders have to engage in effective professional learning experiences. Obviously educators need time to deepen their understanding, analyze student's work, and develop new approaches to instruction. Reeves (2006) captured the essence of this notion when he said, "Time for teacher collaboration is essential for effective education" (p. 103). However, an analysis by Kenney (1998) showed that simply providing teachers with additional time for professional development activities did not relate to improved student outcomes. Presumably, doing ineffective things longer does not make them any better. Therefore, although time may be vitally important, simply adding more time for professional learning does not invariably make things better. What matters most is how that time is used. Effective professional learning time must be well-organized, carefully structured, clearly focused, and purposefully directed (Birman et al. 2000; Guskey 1999). In order to better address well-organized, carefully structured effective professional learning time, school leaders are breaking away from "traditional" professional development strategies, such as sessions on in-service days, and are planning "reform-oriented" professional development strategies.

In recent years, researchers have delineated the differences between "traditional" professional development and "reform-oriented" professional development. In terms of time, "traditional" professional development generally consists of short-term or one-shot in-service programming conducted by outside experts who disseminate a knowledge base constructed almost exclusively by "experts" (Cullen, 1997), whereas, "reform-oriented" professional development activities occur over a sustained period of time. Guskey (2000) identified specific

differences between "traditional" and "reform-oriented" professional development features. A summary of his findings is presented in the Table 2-1.

Table 2-1: Traditional vs. Reform-Oriented Professional Development

	Traditional Professional Development	Reform-Oriented Professional Development
Types of activities & strategies	- University and college courses - District or regional workshops selected from a catalog of offerings - District-sponsored pull-out professional development - Conferences (local, state, national) - Summer workshops	- Teacher study groups - Lesson study - Professional learning communities - Instructional coaching - Online learning communities
Common features:		
Content	Content determined by someone other than the teacher (passive engagement) resulting in a shallow depth of understanding	Content and pedagogy knowledge deepened from teacher active engagement
Location	Occurs outside of the school	Occurs at school
Engagement	Engages teachers as individuals	Engages teachers in collaborative teams where members share learning goals
Duration	Short-term, ranging from a few hours or a day or two	Long term, occurs over a sustained period of time
Link to classroom	Disconnected from ongoing classroom practices	Connects teacher learning to teacher practice and student learning
Follow-up	- Limited follow-up support - No requirement for implementation of the learning	Ongoing follow-up support to transfer learning to practice
Evaluation	Success evaluated/measured by the number of participants and their reaction to the session	Success evaluated/measured by results of students

According to Curry and Killion (2009) "traditional" professional development is "an expedient way to build the fundamental knowledge and skills associate with innovations in

curriculum and instruction. 'Reform-oriented' professional development, however, increases implementation and transformation of practice" (p. 58). Furthermore, Atay (2008) states that "traditional" professional development activities have historically been popular for providing "teachers with a break in routine, chances to meet new colleagues and discuss their professional problems, and exposure to stimulating new ideas" (p. 139). The knowledge transmitted in "traditional" professional development is generally conceptually and practically far removed from the contexts of the teacher's daily practices (Atay, 2008). Therefore, although "reform-oriented" professional development requires considerable more time than "traditional" development activities, researchers, such as Garet, Potter, Desimone, Birman, and Yoon (2001), agree that "reform-oriented" teacher professional is more effective in changing teacher practices than traditional approaches to professional development because they occur over sustained periods of time. Additionally, according to Curry and Killion (2009), extended periods of time for "reform-oriented" professional development are needed for teachers to:

- Reflect on, review or adjust classroom procedures and routines

- Analyze student data to determine strengths and areas of need to monitor student progress

- Plan interdisciplinary units and lessons

- Discuss problems of practice

- Share instructional strategies

Given the appropriate amount of time to participate in these, and other, "reform-oriented" activities, many researchers purport that sustained, effective professional development is associated with gains in student achievement (Cohen & Hill, 2001; Desimone,

Porter, Garet, Yoon, & Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001; Yoon, Duncan, Lee, Scarloss, and Shapley, 2007). In which, according to Guskey (2000), improving gains in student achievement is the ultimate goal of effective professional development.

The research literature discussed in this section supports the notion that a well-organized and carefully planned amount of time is an overarching characteristic for effective professional development. Like other teaching and learning processes, professional development cannot be handled as an isolated strategy. Teachers need time for continued practice to become comfortable with and to implement change. Extended periods of time for professional development, which are inherent in "reform-oriented" professional development activities, are required for teachers to develop and refine new practices. However, time alone is not the only factor in effective professional development. The notion of "time" must work in concert with other characteristics of effective professional development, such as collaboration, in order to be considered truly effective (Guskey, 2000). In the next section, I examine the concept of "collaboration," in concert with time, as a second overarching characteristic of effective professional development.

2.3.2 Characteristic #2: Collaboration

According to the National Staff Development Council (2001) some of the most important forms of professional learning occur in collaborative groups of educators within schools and school districts. The National Staff Development Council (2001) further purports that organized groups

provide the social interaction that often deepens learning and the interpersonal support and synergy necessary for creatively solving the complex problems of teaching and learning. In order to more fully examine collaboration, this section will: describe collaboration in professional development, examine the purposes of collaboration in professional development, and describe how collaboration impacts the professional development of K-12 educators.

According to Zeichner (2003) most educators at all levels value opportunities to work together, reflect on their practices, exchange ideas, and share strategies and expertise. The ability to work collaboratively on common goals, with the ultimate goal of improving student learning, is a key component of effective professional development (Zeichner, 2003).

There are a number of research studies supporting the notion that collaboration is a key characteristic of effective professional development. Many of the studies that investigated the role of collaboration in professional development found that collaborative activities amongst teachers were an effective method of professional development to improve teacher efficacy (Darling-Hammond & McLauglin, 1995; Holloway, 2003; Lieberman, 1995; Smylie & Hart, 1999; Zeichner, 2003).

Collaboration and collaborative professional development activities may be defined in a multitude of ways; however, common descriptions of collaboration regarding professional development emerge from the research literature. Darling-Hammond & McLauglin (1995) suggests that collaboration between teachers can include groups within the same school, same grade, or department. Darling-Hammond & McLauglin (1995) further suggest that these collaborative groups allow teachers to work together in a focused environment while dealing with issues of common interest. Forming groups of teachers that investigate educational issues,

based on common interest or need, serve to create the foundation for collaborative professional development activities in the K-12 setting.

Collaborative professional development, as described by Hord (2009), involves educators coming together in a group in order to: interact in meaningful activities, learn deeply with colleagues about an identified topic, develop shared meaning, and indentify shared purposes related to a topic. For collaboration to fully bring forth its intended benefits, professional development activities must be structured and purposeful, with efforts guided by clear goals for improving student learning (Hord, 2009).

Little (2003) refers to these collaborative professional development activities as "getting things done" and "figuring things out." These may include, but are not limited to, day-to-day practice or team-based activities such as:

- Reflecting on, reviewing, or adjusting classroom procedures and routines ("getting things done")

- Analyzing student data to determine strengths and areas of need ("getting things done")

- Monitor student progress ("getting things done")

- Planning interdisciplinary units and lessons ("getting things done")

- Discussing problems of practice ("figuring things out")

- Sharing instructional strategies ("figuring things out")

- Monitoring the application of learning in his or her own classrooms in order to improve student learning ("figuring things out")

When teachers collaboratively reflect about their practice using data to support and understand their practice, Curry (2009) believes that teachers deepen their individual and collective understanding and ultimately improve both teaching and student learning.

Like other teaching and learning processes, professional development cannot be handled by an isolated strategy (Lee, 2004). Collaborative efforts encourage teachers to become active and conscientious learners; based on the belief that public education must respond to and prepare students for a complex and rapidly evolving world (Cibulka & Nakayama, 2000; Hargroves, 2003). With the purpose of better preparing students in a constantly changing world, collaboration in professional development exposes teachers to multiple perspectives through refection, collaboration, negotiation, and shared meaning (Hord, 2009). By sharing these multiple perspectives with one another, the advantages of collaboration between teachers can be observed.

The research literature has identified a number of advantages to increasing collaboration through the professional development of K-12 teachers. Through collaborative professional development activities, teachers are afforded the opportunity to discuss concepts, skills and problems encountered during professional development (Lee, 2004). Additionally, Lee (2004) believes that educators may integrate what they learn from collaborative activities with other aspects of their instructional contexts such as common curriculum materials, course offerings, and assessment requirements. In doing so, educators have the opportunity to discuss student needs across classes and grade levels, as well as sustain changes in practice over time (Garet, 2001, p. 922). These types of collaborations help to create cohesiveness between educators. This cohesiveness assists teachers in keeping their enthusiasm about new

knowledge and revised instructional approaches at the forefront of their practice (Belcastro et al., 1992; Langberg, 1989).

Several research studies suggest that teacher learning is enhanced through opportunities for collaboration with other teachers (Abel, Lee, 2008). Several groups of researchers have investigated the impact of teacher professional development in collaborative settings. The following three examples are representative of a number of these research studies that show a positive impact on teacher learning as a result of collaborative professional development activities.

Briscoe and Peters (1997) worked with 24 elementary teachers from one schools district to assist them with implementing problem-centered learning in science. Teachers attended a three-week summer institute and follow-up sessions during the subsequent school year. The researchers found that collaboration among teachers in learning science and pedagogy facilitated change in their science teaching practices.

Luft and Pizzini (1998) involved 13 elementary teachers in a yearlong program to experience and implement science problem solving using the Problem Solving Demonstration Classroom model. The researchers found that seeing another teacher using the problem-solving model led to changes in his or her own use of specific teaching strategies.

In describing professional development for Japanese elementary teachers that employed a lesson study approach, Lewis (2002) found that by conducting and collaboratively studying each other's lessons about simple machines, teachers learned to better recognize their students' learning difficulties. As a result, the researcher found that this recognition led to

teachers reflecting upon their instructional strategies and, ultimately, resulted in an improvement in their teaching practice (Lewis, 2002).

Researchers found that teachers gained significantly through the collaboration between both the professional development facilitators and with their teaching colleagues. The results of these three examples demonstrate the advantageous impact that collaboration can have on the professional development of K-12 educators. In addition to these advantages, Supovitz (2002) suggests that these types of collaborations help to build a sense of community among teachers. However, as Little (1990) pointed out, there is nothing particularly "virtuous about collaboration per se (p. 8). Individuals can collaborate to block educational change or inhibit progress just as easily as they can to enhance the process. Recent investigations showed that many collaborative efforts led to enormous conflicts over professional beliefs and practices for which practitioners are generally ill prepared to find resolution (Achinstein, 2002). Therefore, in order for collaborative professional development to bring forth its intended benefits, it needs to be structured and purposeful, with efforts guided by clear goals for improving student learning (Hord, 2009).

The research literature discussed in this section supports the notion that collaboration is an overarching characteristic for effective professional development. Like other teaching and learning processes, professional development cannot be handled as an isolated strategy. Teachers need time to work collaboratively in order to better meet the needs of their students. Through structured, on-going, collaborative professional development activities, improvements in both teaching and student learning may be observed (Curry, 2009). However, like the characteristic of time, collaboration alone is not the only factor in effective professional

development. Collaboration, as a single characteristic, must work in concert with other characteristics of effective professional development, such as content and pedagogy knowledge, to be truly effective. In the next section, I will examine the concept of "content and pedagogy knowledge," in concert with time and collaboration, as a third overarching characteristic of effective professional development.

2.3.3 Characteristic #3: Content and Pedagogy Knowledge Focused

According to the Shulman (1986), professional development should center on three major areas. Shulman identifies the three major areas as (1) content knowledge, (2) pedagogical knowledge, (3) pedagogical-content knowledge. Guskey (2009) agrees with Shulman when he states that professional development activities should help teachers better understand both what to teach and how students acquire specific content knowledge and skills. From the context of professional development, this section will describe (1) the three areas of content knowledge, pedagogical knowledge, and pedagogical-content knowledge, (2) the purposes of each area and, (3) how each area impacts the professional development of K-12 educators.

A growing body of research shows that to be successful, teacher professional development needs to address both content and pedagogy aspects of teacher growth (Reeves et al., 2001; Wilson & Berne, 1999). Effective professional development has the power to increase an educator's knowledge of academic content and teaching skills (pedagogy,) while, simultaneously, changing an educator's beliefs about student learning and how they interact with students (Christie, 2009). Therefore, providing high-quality professional development for

teachers in subject-matter expertise (content) and instructional strategies (pedagogy) are vital to improving student learning.

Content knowledge, as described by Kennedy (1998) and Shulman (1986), is the knowledge about the actual subject matter being learned or taught; as well as, expectations for student performance. Teachers must know and understand the subjects they teach (Guskey, 2000). This includes: knowledge of central facts, concepts, theories and procedures within a given field; knowledge of explanatory frameworks that organize and connect ideas; and knowledge of the rules of evidence and proof (Shulman, 1986). Additionally, Christie (2009) suggests that teachers should also understand the nature of knowledge and inquiry in different fields. For example, how is a proof in mathematics different from a historical explanation or a literary interpretation? Teachers who do not have these understandings can misrepresent those subjects to their students (Ball, McDiarmid, 1990).

Pedagogical knowledge, as described by Kennedy (1998) and Shulman (1986), describes how content is taught. Pedagogical knowledge can be described as a deep knowledge about the processes and practices or methods of teaching and learning and how it encompasses overall educational purposes, values, and aims (Ball, McDiarmid, 1990). Pedagogy, or sometimes described as the way content is presented, can apply to many aspects of student learning including, but not limited to, classroom management, lesson plan development and implementation, and student evaluation (Shulman, 1986). It includes knowledge about techniques or methods used in the classroom such as the nature of the target audience and strategies for evaluating student understanding. Teachers with deep pedagogical knowledge understand how students construct knowledge and acquire skills (Kennedy, 1998).

National and state standards in mathematics and science, consistent with research on effective instruction, indicate that both content – especially core topics and complex performance goals – and pedagogy – especially active learning – are important to student learning (Kennedy, 1998). Clearly, content and pedagogy are interrelated. While active learning is student-driven, it is still coordinated around content. Effective teachers set instructional goals, monitor activities, and intervene when appropriate. Due to this interconnectedness, Shulman (1986) proposed a third category – pedagogical-content knowledge.

Pedagogical-content knowledge, as described by Shulman (1986), sparked a whole new wave of scholarly articles regarding a teachers' knowledge of their subject matter and the importance of this knowledge for successful teaching. The notion of pedagogical-content knowledge is especially important when content knowledge deals with the teaching process, including strategies for representing and communicating content and how it relates to the student's learning in that specific subject area. "If beginning teachers are to be successful, they must wrestle simultaneously with issues of pedagogical-content knowledge; as well as, general pedagogy or generic teaching principles" (Grossman, as cited in Ornstein, Thomas, & Lasley, 2000, p. 508). This underlies Shulman's (1992) contention of the need for the third category of pedagogical-content knowledge.

Therefore, according to Shulman (1986, 1992), the knowledge necessary for successful teaching lies in three domains:

1. **Content knowledge**- deep knowledge of the subject-matter (i.e. history and mathematics) and skills (i.e. reading and writing) that are to be taught

2. **Pedagogy knowledge** - expertise in instructional practices that are applicable across subject areas

3. **Pedagogical-content knowledge** - expertise in instructional practices that address the problems of teaching and learning associated with specific subjects and bodies of knowledge

In an era of public school system reform focused on high-stakes accountability initiatives, many consider content and pedagogy focused professional development for teachers critical for increasing student achievement (Cohen & Hill, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001). According to the results of the Eisenhower Professional Development Program, effective instruction can be characterized by content that is aligned with high standards and pedagogy focused on active learning (USDOE, 1999). Kennedy (1998) believes that professional development focused on content and pedagogy can help teachers develop a deeper understanding of the content they teach and develop lessons that are rich in challenging content, which in turn, may have a positive impact on student learning.

According to *A Vision for Quality Professional Development in All Vermont Schools (2009)*, "quality professional development has the power to increase an educator's knowledge of academic <u>content</u> and teaching skills (<u>pedagogy</u>,) while changing what educators believe about student learning and how they interact with students" (p. 1). With research demonstrating that content and pedagogy teacher professional development can be a powerful factor impacting student achievement and learning, the purpose of providing content and pedagogy focused professional development becomes clear.

Professional development, grounded by research-based instructional strategies (pedagogy,) not only informs participants about what works – it also describes under what conditions strategies may have that benefit student learning. "Quality professional development should be based on research and standards – concentrating on strategies that have proven value in improving student learning; (Norton, 2001, p. 31).

Recently, some researchers have argued that content and pedagogy-focused professional development based on classroom practice (including evidence around student learning and the study of curriculum materials) is most likely to affect teacher performance and student outcomes (Cohen and Hill, 2001; Garet et al. 2001; Hill and Ball, 2004).

Guskey (2003) conducted an analysis of thirteen of the most prominent research studies focused on teacher professional development with the goal of verifying the existence of common features of effective teachers professional development. The most frequently mentioned characteristic of effective professional development through Guskey's (2009) analysis was the enhancement of teacher's content and pedagogical knowledge. Eleven of the thirteen research studies analyzed emphasized content and pedagogical knowledge. Helping teachers to understand more deeply the content they teach and the ways students learn that content appears to be a vital dimension of effective professional development.

Commissioned by the U.S. Department of Education in 2000, a longitudinal study tracked the experiences of teachers participating in activities financed by the federal Eisenhower Professional Development Program (primarily for efforts in science and mathematics). The study found that professional development focused on "specific, higher-order teaching strategies" (pedagogy) – for example, the use of problems with no obvious

solutions – increased teacher's use of such strategies. That was particularly the case, the study found, if the professional development activity was collaborative in format; involved participation of teachers from the same subject, grade, or school; provided "active learning" opportunities for teachers; and was consistent with the teacher's goals and other activities (EPE Research Center, 2007).

Although researchers have determined that professional development activities specifically designed to enhance teacher's content and pedagogical knowledge are useful, it is important to note that the success of these activities is contingent upon context (Guskey, 2000). For example, schools in economically depressed areas that have trouble attracting and keeping well-qualified teachers and, as a result, have many teachers teaching subjects outside of their area of certification, may benefit greatly from such programs. Conversely, schools that serve more affluent populations and have sufficient resources to attract and retain well-qualified teachers with advanced training in the subject areas they teach may see little improvement from similar programs. These real-world contextual differences profoundly influence the effectiveness of professional development endeavors.

The research literature discussed in this section supports the notion that content and pedagogy focused professional development is an overarching characteristic for effective professional development. However, like the characteristics of time and collaboration, content and pedagogy focused professional development alone is not the only factor in effective professional development. Content and pedagogy knowledge, as a single characteristic, must work in concert with other characteristics of effective professional development, such as relevance, to be truly effective. In the next section, I will examine the concept of "relevance," in

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concert with time, collaboration, and knowledge of content and pedagogy as a fourth overarching characteristic of effective professional development.

2.3.4   Characteristic #4: Relevance

In order to develop an effective professional development program, the program's goals should respond to the potential participant's needs and expectations of a program. In other words, it should be relevant to the teacher (Abbott, et al., 1999; Bradley, 1996; Fuchs & Fuchs, 1998). In the context of teacher professional development, researchers agree that relevance refers to professional development programs and activities that are directly related, connected, and applicable to a teacher's ability to teach and improve student learning (Abbott, et al., 1999; Bradley, 1996; Darling-Hammond, 1995; Desimone et al., 2002; Fuchs & Fuchs, 1998; Garet et al., 2001; Guskey, 2000; Guskey, 2009; Zepeda, 2008).

In order to fully examine relevance in teacher professional development, it must be situated in the context of adult learners. Courtney et al. (1999) believe that teachers, as adult learners, should engage in an active process of discovery learning rather than relying on the second-hand interpretation of guest speakers or experts at conferences or workshops. Instead, relevant professional development programs should incorporate authentic tasks that mirror the day-to-day realities of the classroom teacher, thus incorporating the needs and interest of adult learners (Curry, 2009). Authentic professional development activities have real-world relevance and provide teachers with an opportunity to solve, complex problems over a sustained time period (Reeves, Herrington, & Oliver, 2002). Teachers, as adult learners, should work with

authentic tasks, use a variety of resources, consider diverse perspectives, and collaborate to

create worthwhile products designed to positively impact student learning (Brousseau, 1997;

Courtney et al., 1999; Reeves, Herrington, & Oliver, 2002). Unfortunately, relevant professional

development programs have not been prevalent in the history of our educational system

(Guskey, 2000).

"Just once I wish our staff development days could be used to meet some of my needs,

there are so many areas where I need help" (Olivero, 1976, p. 194). Unfortunately, although

this teacher's comment was made over three decades ago regarding a teacher's in-service day,

the sentiment still exists today. This is, at least partly, due to the lingering presence of

traditional professional development programs that are characterized as irrelevant to teacher's

needs. Traditional professional development activities such as workshops, conferences, and

district sponsored "one-shot" in-service days routinely focus on topics that tend to be remote

from a teacher's daily practice (Curry, 2009). These types of activities are typically designed to

apply to all teachers regardless of their content area of experience. As a result, teachers

frequently express frustration with these types of professional development activities because

they are not situated in their own classroom reality (Courtney et al., 1999). Dawson (1978)

concluded that:

> "Any service program imposed on teacher, which does not confront teachers at
> their own level of perception of reality, is destined to failure. In-service
> education, to be successful, to have permanent lasting effects on teacher and
> subsequently their students, has to be generated dynamically by the teachers
> themselves, from their view of the classroom reality" (p. 51).

This assertion was reinforced by a study conducted by Curry (2009) that determined

teachers felt these types of activities (traditional professional development programs) "were

irrelevant to their daily practice and considered a waste of their time and, in some cases, insulted their intelligence" (p. 58). In order to combat negative perceptions associated with traditional professional development programs, schools have made strides in involving teachers in the planning of their professional development. According to a research study conducted by Starkey, et al. (2009), in school districts where teachers had input in planning relevant professional development activities, 80% of the teachers surveyed felt that the professional development activities helped them to achieve their own professional goals or objectives.

According to research stemming from the Eisenhower study (Garet et al., 1999, 2001) and CCSSO's cross state study (Blank et al., 2007), a professional development activity or program is more likely to be effective if it is relevant to both the needs of the school and the individual teacher. In both of these two studies, relevant professional development activities were described as:

- Consistent with the curriculum

- Aligned with state or district standards for student learning or performance

- Congruent to the day-to-day operations of the school and teachers

- Compatible with the instructional practices and knowledge needed for the teachers' specific assignments

Personalizing professional development (i.e. making it more relevant) has been identified as being an important aspect of effective professional development (Garet et al., 2001; Mitchell & Cubey, 2003; Salas & Cannon-Bowers, 2001) Therefore, researchers have agreed that teacher professional development should be relevant or directly related, connected, and applicable to a teacher's ability to teach and improve student learning (Abbott,

et al., 1999; Bradley, 1996; Fuchs & Fuchs, 1998; Guskey, 2000; Guskey, 2009; Zepeda, 2008; Desimone et al., 2002; Darling-Hammond, 1995; Garet et al., 2001).

According to Brousseau (1997), effective professional development should be relevant to teachers. Curry (2009) agrees with Brousseau that relevant professional development activities should be purposeful and, therefore, have a better chance of transforming teacher behaviors and beliefs with the goal of improving student learning.

Hiebert, Gallimore, and Stigler (2002) state that professional development yields the best results when it is long-term, school based, collaborative, centered on student learning and linked to curricula [relevant]. In professional development programs such as these, teachers examine student work, develop assessments, standards, plan together, teach, and revise lessons (Hiebert, Gallimore, & Stigler, 2002). As these types of activities require time and collaboration, Brousseau (1997) believes that relevant professional development should be embedded in the day-to-day realities of teacher's classrooms and schools, and as such, provide a time and place where teachers can share real-life stories from colleagues that show the benefits of adopting new teaching strategies and techniques in situations similar to their own. Without that kind of local reassurance, there is little chance teachers will change prevailing classroom practices (Brousseau, 1997). Collins (2000), Guskey (2003), and Hirsh (2004) agree and contend that professional development must be embedded in to the day-to-day lives of teachers and directly tied to their work. This will, in turn, have a better chance of transforming teacher practices and positively impact student learning (Guskey, 2003).

Professional development programs or activities that meet the these descriptions of relevance are more likely to create a strong foundation and build a supportive environment

that encourages improvement in teaching practices and aids in the long-term sustainability of the changed practices (Grant, Peterson, & Shojgreen-Downer, 1996)

Through these relevant activities, teachers become active participants and have opportunities to reflect on their own practice. Hiebert, Gallimore, and Stigler (2002) agree with Guskey's (2000) idea that professional development should enhance teacher's professional knowledge, skills, and attitudes. They concluded that teacher knowledge linked with practice grounded in the context in which teacher's work is most effective (Hiebert, Gallimore, and Stigler, 2002).

In this section, the research literature supports the notion that relevance is an overarching characteristic for effective professional development. However, like the characteristics of time, collaboration, content and pedagogy, relevance alone is not the only factor in effective professional development. Relevance must work in concert with other characteristics of effective professional development in order to be considered truly effective. Providing quality professional development by integrating the characteristics of time, collaboration, content and pedagogy, and relevance may be a challenge to school districts where traditional forms of face-to-face professional development are prevalent. In the next section, current challenges with traditional face-to-face professional development will be examined.

2.4   CURRENT CHALLENGES WITH FACE-TO-FACE K-12 PROFESSIONAL

DEVELOPMENT

Although research literature from the previous sections indicate the benefits of embedding the four overarching characteristics of time, collaboration, content and pedagogy, and relevance into teacher professional development programs, several researchers determined that professional development activities frequently do not embed these four characteristics (Darling-Hammond, 2000; Guskey, 2002, 2003; Little 1989). Teacher professional development activities are often limited to conferences, workshops, or district sponsored in-service activities that are usually attended by frustrated and reluctant teachers who are mandated to attend (Darling-Hammond, 2000). Many of these workshops are often referred to as "drive-by workshops" and are presented by content area specialists such as outside consultants who do not provide the teacher with any follow-up support (Darling-Hammond, 2000; Guskey, 2002, 2003; Little 1989). The research literature is highly critical of these types of "drive-by workshops," for failing to have any enduring impacts on teachers and for leaving teachers feeling unprepared to change classroom practices in a meaningful manner (Birman, Desimone, Gaert, & Porter, 2000; Clair, 1998; Darling-Hammond, 2000; Elmore, 2002; Guskey, 2003). Additionally, studies published by federal organizations, such as the National Commission on Teaching and America's Future [N.C.T.A.F.] (2002), suggest that traditional forms of professional development (i.e. "drive-by workshops") have little effect on educational practices, organizational changes, and student learning outcomes. The report further states that even when there is a direct or indirect connection to classroom practices, inconsistency and a

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general lack of follow-up decreases the potential positive impacts on teaching and student learning (N.C.T.A.F., 2002).

With the research literature describing the ineffectiveness of traditional face-to-face professional development, it should be noted that many school districts do not have the expertise or resources to offer more effective professional development programs. Therefore, they rely on traditional face-to-face professional development activities. In addition to an overwhelming amount of research demonstrating the ineffectiveness of such programs, additional hurdles such as location, time, and costs are often barriers for school districts. These barriers are observed when practitioners are not provided released time, compensation, or incentives for their attendance at conferences or "drive-by workshops" (Sheckley n.d.) Furthermore, face-to-face teacher professional development programs offered by school districts on in-service days generally consist of short-term or "one-shot in-service programs" conducted by outside experts who disseminate a "knowledge base" constructed exclusively by "the experts" (Cullen, 1997). However, this "knowledge base" transmitted by the experts, purports Cullen (1997), is generally conceptually and practically far removed from the contexts of the teachers, and the situational factors affecting their classroom practices are not taken into account. As a consequence, the aim of increasing teacher's knowledge of content and pedagogy is rarely achieved. Therefore, current challenges of face-to-face professional development, traditional programs, such as "drive-by workshops," conferences, and "one-shot in-service programs" may be summarized as:

1. Providing an adequate amount of <u>time</u> needed for subject/topic immersion resulting in meaningful changes in classroom practices

2.   Minimal impact of <u>content and pedagogy</u> knowledge

3.   Lack of <u>collaboration</u> and follow-up

4.   Disconnect between the conceptual knowledge of an expert speaker's and the <u>relevant</u> contextual factors impacting classroom teacher's daily practices

In an effort to overcome these current challenges, school districts have started to move away from "traditional" professional development activities, generally characterized as short-term or one-shot in-service programming conducted by outside experts, to more "reform-oriented" activities, that are better suited in integrating the four overarching characteristics of effective professional development – time, collaboration, content and pedagogy focused, and relevance. Garet, Potter, Desimone, Birman, and Yoon (2001), agree that "reform-oriented" teacher professional is more effective in changing teacher practices than "traditional" approaches to professional development because they: occur over sustained periods of <u>time</u>, utilize <u>collaboration</u> as an integral strategy, focus on <u>content and pedagogy</u>, and are more <u>relevant</u> to teacher's day-to-day classroom practices. According to Curry and Killion (2009), extended periods of <u>time</u> for "reform-oriented" professional development are needed for teachers to:

- Reflect on, review or adjust classroom procedures and routines [relevance]

- Analyze student data to determine strengths and areas of need to monitor student progress [content and pedagogy]

- Plan interdisciplinary units and lessons [content and pedagogy]

- Discuss problems of practice [collaboration]

- Share instructional strategies [collaboration]

Given the appropriate amount of time to participate in these, and other, "reform-oriented" professional development activities, many researchers purport that sustained, effective professional development is associated with gains in student achievement (D. K. Cohen & Hill, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001; Yoon, Duncan, Lee, Scarloss, and Shapley, 2007). In the next section, the research literature of will be examined to provide a broad overview of some current practices in professional development that can be categorized as "reform-oriented."

2.5 CURRENT "REFORM-ORIENTED" PRACTICES IN K-12 PROFESSIONAL DEVELOPMENT

Current practices in teacher professional development demonstrate a paradigm shift from "traditional" activities, in which research indicates are ineffective, to more "reform-oriented" ones that many researchers purport are associated with improving student learning   (Cohen & Hill, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001; Yoon, Duncan, Lee, Scarloss, and Shapley, 2007). According to Guskey (2000), improving gains in student achievement is the ultimate goal of effective professional development. Therefore, there is a need to examine current practices in teacher professional development in order to address Guskey's (2000) assertion that effective professional development should lead to increases in student achievement. This section will examine and summarize current research literature on the following "reform-oriented"

professional development activities such as lesson study and professional learning communities. Each of these activities will be presented as a broad summary in order to provide an overview of current practices in "reform-oriented" teacher professional development activities.

2.5.1   Lesson Study

According to Fiszer (2004), a paradigm shift is needed in teacher professional development. Fiszer (2004) believes that educators should move from isolated teaching practices to ongoing, collaborative teacher professional development in order to improve student learning. Researchers purport that this shift away from traditional isolated teaching practices must be aligned with a specific focus and should include peer observation, consistent feedback, and reflective dialogue in order to benefit both teachers and students (Fiszer, 2004; Guskey, 2003). Fiszer (2004) and Guskey's (2003) statements accurately describe the "lesson study" model for teacher professional development. This section provides a broad overview that summarizes the lesson study model for teacher professional development.

Lesson study is a professional development process used by Japanese teachers to systematically examine their teaching practices with the goal of becoming more effective teachers (Fernandez, 2002). Teachers who employ lesson study work collaboratively on a small number of "study lessons" that involves: planning, teaching, observing, and critiquing each other's lessons (Lewis et al., 2006). In order to provide the teachers with focus and direction for their work, the teachers select an overarching goal and a research question in which they want

to explore. The research question selected serves to guide their work on all of the "study lessons" (Lewis, Perry, & Hurd, 2004).

The lesson study process can also be described as a "team" of teachers who work together in order to plan a lesson, observe the lesson being taught, debrief the lesson, revise the lesson for future presentations, and teach the new version of the lesson (Fernandez & Yoshida, 2004; Stepanek et al., 2007). Unlike other forms of professional development, lesson study focuses on the actual lesson instead of the individual teacher. The process the team uses to examine lessons includes regularly scheduled meetings on specific topics that are guided by the research question posed. The lesson study team works collaboratively to link lesson planning to classroom practices. This process encourages collaborative, comprehensive, and ongoing professional development (Stepanek et al., 2007).

A number of research studies illustrate that lesson study is an effective means for teacher professional development. Lewis et al. (2004) conducted a research study that investigated how teachers present lessons and how instruction was impacted after employing lesson study as a professional development strategy. Lewis et al. (2004) concluded that the benefits of lesson study included:

1. Increased understanding of the curriculum

2. Increased ability to observe students

3. Stronger collegial relationships

4. Stronger connection of classroom practices to long term goals

5. Stronger motivation

6. Increased quality of lesson plans

A similar research study by Watanbe (2002) affirmed the results reported by Lewis et al. (2004). Additionally, Watanbe (2002) reported that the following must take place for lesson study to be successful implemented as a form of professional development: (a) teachers develop a culture of lesson study, not professional development, (b) teachers develop a unit perspective, not a daily lesson perspective, (c) teachers anticipate students' thinking as part of lesson planning, (d) teachers learn to observe other teachers and collect data on the lesson, and (e) teachers are given the central role developing lesson study practices to improve teaching and learning (p. 37-39).

The lesson study model for teacher professional development incorporates all four of the overarching characteristics of effective professional development – time, collaboration, content and pedagogy focused, and relevance. Other reform-oriented professional development models exist that differ from lesson study, but include the four overarching characteristics. One of these models, professional learning communities, will be examined in the next section.

2.5.2 Professional Learning Communities

As with other "reform-oriented" forms of teacher professional development, collaboration, in concert with the other three overarching characteristics, is a key characteristic for effective teacher professional development. Some evidence demonstrates that collaboration during professional development activities fosters a sense of community and shared purpose among participating educators (Supovitz, 2002). Reeves (2006) states, that when "teachers collaborate

as a matter of course - not as an event, but as 'the way we do business' - then not only does the quality of collaboration improve but also the time required for collaboration will be reduced" (p. 104). Unfortunately, research indicates that schools are not consistently offering professional development activities that are collaborative in nature (Lee, 2004). Fullan (2001) argues, "It is one of life's great ironies: schools are in the business of teaching and learning, yet they are terrible at learning from each other. If they ever discover how to do this, their future is assured" (pp. 92-93).

By designing opportunities for purposeful and focused collaboration, forming communities of learners have the potential to address Fullan's (2001) assertion that schools must learn from each other in order to improve student learning. Barth (2001) depicts a community of learners as "a collection of youngsters and grown- ups working together to provide and sustain their own and one another's learning" (p. 31). Sergiovanni (1994) describes building communities of learners in schools as an adventure in developing relationships, creating connections, and making commitments. Vaill (1996) asserts that schools should act as learning organizations where "high-quality human learning goes on" not only for students, but for teachers as well (p. 52). These descriptions of communities of learners serve to describe the basis for professional learning communities.

Professional learning communities serve as a way of organizing a school based on staff development, instruction, community building, and leadership. A number of researchers believe that this model of professional development has potential to improve teaching and learning in schools based on how educators go about doing their work. (Barth, 2001; D. K. Cohen & Hill, 2001; Fullen, 2001; Dufour et al., 1998; Desimone, Porter, Garet, Yoon, & Birman,

2002; Sergiovanni, 1994; Pearson, 1996; Supovitz, 2001; Yoon, Duncan, Lee, Scarloss, and Shapley, 2007)

Researchers do not provide a clear and consistent definition of a professional learning community; however, DuFour (2004) describes a professional learning community as a group of educators that focus on learning rather than teaching. Furthermore, DuFour (2004) states professional learning communities "…work collaboratively and hold each other accountable for results" (p. 6). A review of the research literature indicates that a number of researchers suggest professional learning communities share five essential components: shared values and vision, collective responsibility, reflective professional inquiry, professional collaboration and promotion of group as well as individual learning (DuFour, 2004; Hord, 1997; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006; Hall & Hord, 2006). These five essential components assist educators if describing the purpose of professional learning communities.

Sergiovanni (2000) contended, "Communities are collections of people who come together because they share common commitments, ideas, and values" (p. 59). Sergiovanni went further to state "shared commitments pull people together and create tighter connections among them and between them and the school. And these factors count in helping students learn at higher levels" (p. 23). Sergiovanni (1994) also expressed that "a commitment to exemplary practice translates into a commitment to make the school a learning and inquiring community" (pp. 142 143). Sergiovanni's (1994, 2000) assertions are applicable to describing the purpose of professional learning communities in schools.

Researchers purport that the purpose of professional learning communities is to end teacher isolation and redefine teaching as a team endeavor that builds on instructional

synergies to maximize learning (DuFour et al., 2004). Stoll and Louis (2007) suggest the purpose

of professional learning communities is to shift the focus of professional learning from the

individual teacher to the context of a cohesive group focusing on collective knowledge. "The

possibilities for individual teacher learning increase greatly as professional communities move

from individualistic or 'balkanized' cultures to 'collaborative cultures,' and towards what can be

described as 'learning communities'" (Darling-Hammond & McLaughlin, 1999, p. 381).

Therefore, one may surmise, researchers such as Darling-Hammond and McLaughlin (1999),

DuFour et al. (2004), Stoll and Louis (2007), and Sergiovanni (1994, 2000) suggest that the

purpose of professional learning communities is to provide teacher professional development

that is <u>collaborative</u>, ongoing [<u>time</u>], focused on <u>content and pedagogy</u>, and <u>relevant</u> to day-to-

day classroom practices. Although the purpose of professional learning communities aligns well

with the goal of improving student learning, educators often find it difficult to implement this

model of professional development in an environment of high-stakes accountability (Guskey,

2000).

 In his book, *The New Meaning of Educational Change*, Fullan (2001) states:

Two ships have been passing in the night, stopping occasionally to do battle, in the
dark. One is named Accountability, the other Professional Learning Community.
Both have evil twins. One is called Name and Shame and the other Navel Gazing.
The future of educational change is very much a matter of whether these two
ships will learn to work through the discomfort of each other's presence until they
come to respect and draw on each other's essential resources (p. 179)

Fullan's (2001) metaphor is useful in describing the struggle between offering

"traditional" professional development, which is not aligned to the needs of teachers, and

"reform-oriented" professional development, such as professional learning communities, that is

aligned to those needs. DuFour, Eaker, and Karhanek (2004) argue that when schools truly begin to align their practices with a commitment to learning for all, the educators within them begin to function as a professional learning community, resulting in improvements in student learning.

Instead of a clear and consistent description of professional learning communities, researchers generally agree that professional learning communities are best described by their characteristics (Dufour, 2004; Fullan, 2001). Having worked with schools extensively on professional development, DuFour and Eaker (1998) identified six characteristics of professional learning communities based on their experiences. These characteristics include:

- A shared mission, vision, and values

- Collective inquiry

- Collaborative teams

- Action orientation and experimentation

- Continuous improvement

- Results orientation

DuFour (2004) observed teachers who were involved in a professional learning community: planned together, provided common assessments, analyzed assessment results, and developed new strategies for implementation. DuFour (2004) succinctly described professional learning communities when he stated "To create a professional learning community, focus on learning rather than teaching, work collaboratively, and hold yourself accountable for results" (p. 6).

Hall and Hord (2006) and Hord (1997) further describe professional learning communities by using five characteristics developed from their research. Hall and Hord's (1997, 2006) five characteristics, aligned with the four overarching characteristics of effective professional development, are presented in Table 2-2.

Table 2-2: Professional Learning Community Characteristics Aligned to the Four Overarching Characteristics of Effective Professional Development

Characteristics of Professional Learning Communities	Description of Professional Learning Community Characteristics
Ongoing shared personal practice [time]	Continuous feedback and support from colleagues provide a basis for improvement
Supportive relationships [collaboration]	Physical and human capacities that promote collaborative relationships and conditions that promote professional growth
Shared leadership [collaboration]	Shared authority for decision making
Shared values/vision for classroom expectations [relevance]	Shared commitment to improving student learning through improving teaching practices
Collective learning and application [content & pedagogy]	Application of new strategies in order to address student needs

Characteristics of professional learning communities, as described by Hall and Hord (1997, 2006), provide a means for teachers to continually reflect on their effectiveness as an educator. According to DuFour, DuFour, Eaker and Many (2006), "Members of a professional learning community must continually assess their effectiveness on the basis of results: tangible evidence their students are acquiring the knowledge, skills, and dispositions essential to their future success" (p. 117). Tangible evidence of student learning can be used to assess the effectiveness of the teaching strategies being employed and, by extension, the impact the professional learning community has on student learning.

2.5.2.1 Impact of Professional Learning Communities

As a model for teacher professional development, professional learning communities can "enhance professional knowledge, skills and attitudes of educators so that they might, in turn, improve the learning of students" (Guskey, 2000, p. 16). As many educators consider improving both student learning and the school's learning environment as critical goals, researchers have sought to investigate the impact professional learning communities have on the school's learning environment and increases in student achievement.

A number of research studies support the notion that teacher collaboration through professional learning communities can improve both student achievement and the school's learning environment. First, according to the Spiegal-Stroud's (2007) study identifying the characteristics of professional learning communities in elementary schools, when teachers share common planning time, collegiality and rich conversations develop and lead to improved learning. Secondly, McCune-Cohn's (2007) study of two high schools revealed that when teachers collaborate within and across disciplines, students succeed. Thirdly, research conducted by Bergevin (2006) found that teachers who focus on student learning and are expected to fully participate in the collaborative process of the professional learning community take greater responsibility for student performance. In a fourth study, Bunker (2008) determined that students demonstrate growth in reading and math when their teachers are vested in the collaborative process of a professional learning community. Additionally, in a study of high schools across the United States conducted by McLaughlin and Talbert (2001), it was determined that student achievement improves in schools where teachers apply the characteristics of professional learning communities to their professional practice. McLaughlin

and Talbert (2001) suggest that it is more likely to observe gains in student achievement where teachers work collaboratively in professional learning communities in order to address the student's learning deficiencies and then develop ways to improve classroom practices to address those deficiencies. Lastly, Walker (2006) conducted a mixed method study to investigate the impact of professional learning communities on student learning. The results of Walker's (2006) study determined that there are strong correlations between a teacher's participation in a professional learning community and student performance levels. A summary of these research findings, regarding collaboration in professional learning communities, is presented in Table 2-3.

Table 2-3: Summary of Research Findings Related to Professional Learning Communities, Student Learning and the School's Learning Environment

Author	Date of Study	Type of School	Findings
Spiegel-Stroud	2007	Elementary	Student learning improved when teachers shared common lesson planning time, collaborated through rich conversations focused on teaching and learning, and maintained supporting collegial relationships
McCune-Cohn	2007	High School	Students were more successful in classes where teachers collaborated via professional learning communities from both within their discipline and across other disciplines
Bergevin	2006	Elementary	School learning environment was improved when teachers who participated in professional learning communities focused on student learning that resulted in teachers taking on a greater responsibility for student performance.
Bunker	2008	Elementary	Student achievement scores in reading and math improved when teachers collaborated frequently through professional learning communities.
McLaughlin and Talbert	2001	High Schools	Gains in student achievement were more likely in schools where teachers participated in professional learning communities focused on creating action plans for specific student deficiencies.
Walker	2006	High Schools	Student learning was influenced and improved upon when teachers participated in professional learning communities, indicating a strong correlation between professional learning and student performance levels.

The results of these studies demonstrate the impact professional learning communities have on both student learning and the school's learning environment. Adopting professional learning communities as a model for teacher professional development in schools could result in more students learning at higher levels when compared with schools that adopt more "traditional" forms of professional development.

The research literature described in this section suggests that professional learning communities can end teacher isolation and redefine teaching as a team endeavor (DuFour et al., 2004). By participating in ongoing [time], collaborative cultures focused on improving the schools' learning environment, research suggest that teachers may better be able to identify the specific learning needs of their students [relevance] and apply instructional strategies [content and pedagogy] designed to improve student learning.

Similar to other models of "reform-oriented" models of teacher professional development, such as Lesson Study and Instructional Coaching, the professional learning community model for teacher professional development incorporates all four of the overarching characteristics of effective professional development – time, collaboration, content and pedagogy focused, and relevance.

2.5.3   Obstacles to Offering "Reform-Oriented" Face-to-Face Professional Development

Although research suggests the many benefits to offering "reform-oriented" professional development models, many schools find that a lack of time in the teacher's work schedule, a lack of financial resources, and a lack of personnel needed for meaningful

professional dialog are obstacles to adopting models such as: lesson study, instructional coaching, and professional learning communities (Abbott et al., 1999; Klinger et al., 2003; Shanklin, 2009). In this section, obstacles facing schools will be examined.

As research findings consistently show, time is critical for implementing effective professional development, and a lack of time is often one of the greatest barriers (Abbott et al., 1999; Klinger et al., 2003). Time is crucial not only for accumulating and applying new knowledge and skills, but also for engaging in the reflection, discussion, and formative assessment that are a part of this process. However, schools find it increasingly difficult to dedicate time during the teacher's workday for professional development (Noyce, 2006). Time for professional development is frequently dictated by a local school district's collective bargaining agreements constraints due to state or local funding (Noyce, 2006).

In addition to the time constraints of a teacher's workday, "many teachers are part of two-career families that need to be attentive to their own children after school or on weekends. Additionally, teachers are involved in teaching before- or after-school interventions, serving on committees, coaching sports, or sponsoring clubs, and cannot attend professional development sessions scheduled during those times" (Shanklin, 2009, p. 45). Therefore, schools and educators have searched for strategies to fill the void between the time needed to offer effective professional development and the reality that time is not provided during their workday. In an effort to fill this void, many schools have explored professional development opportunities delivered online as a way to address time constraints. Online professional development opportunities present teachers with a number of advantages such as: the ability to participate during times that are convenient, receive job-embedded support that addresses

immediate classroom needs, customize programs to better suit their own individual learning styles, interact with material through a variety of visual or other multimedia formats, and gain valuable computer and online technology skills (Docherty & Sandhu, 2006; Garrison & Cleveland-Innes, 2005; Ginsburg, Gray, & Levin, 2004; National Staff Development Council, 2001; Richardson, 2002; Spicer, 2002; Treacy, Kleiman, & Peterson, 2002). In the next section, online professional development opportunities will be examined through the research literature.

2.6   ONLINE LEARNING

As a precursor to examining online professional development for K-12 educators, it is helpful to first describe online learning. Moore, Winograd and Lange (2001) described online learning as:

> Online learning is distance learning modernized, akin to the rudimentary by mail correspondence course and the television satellite courses that have been alternative means of education for decades now because of the flexibility and convenience they offer students; but instead of letters and televisions being the instructional mediums, computers, modems, and the Internet are the means by which teachers and students connect. (p. 13)

According to Internet World Stats (2007) 71% of Americans use the Internet. Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of online professional development programs (OPD) for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of OPD's, it is helpful to understand the different types of online professional development available to teacher.

2.6.1 Types of Online Learning

Kleiman et al. (2000) categorized the types of online learning programs by the nature of how students communicate and interact with both the instructor and their fellow students. The five categories of online learning programs identified by Kleiman et al. (2000) are: broadcast approaches, self-paced independent study courses, college lecture course models, tutorial models, and learning community models.

Broadcast approaches utilize the power of the Internet to deliver streaming audio and video broadcasts to students. In this model, the instructor broadcasts content to the students usually in a linear, one-way communication manner. Although the instructor may allow for questions to be asked at the end of the broadcast; generally, very little interaction between the student and instructor takes place (Kleiman et al., 2000).

Self-paced, independent study courses provide content to students via the Internet. Student-to-student and student-to-teacher interactions are almost non-existent (Kleiman et al., 2000).

College lecture course models combine elements from broadcast approaches and self-paced, independent study models. The student receives content through audio and video streaming lectures along with online content. Typically, this model allows for students to communicate with each other and the teacher via email (Kleiman et al., 2000).

Tutorial models consist of content organized in a structured, tutorial fashion. This model allows for active communication and interaction between students and the teacher (Kleiman et al., 2000).

Learning community models are highly collaborative. Content is delivered in a manner that promotes a high degree of interactions between the students and the teacher. Students engage with the content by supporting each other's learning (Kleiman et al., 2000).

2.6.2   Advantages of Online Professional Development

The need for professional development that can fit into a teacher's busy schedule, that draws on powerful resources often not available locally, and that can create an evolutionary path toward providing real-time, ongoing, work-embedded support has stimulated the creation of online professional development programs (Dede et al., 2009).

Online professional development environments can connect learners at different locations to work on a collaborative task or to discuss a complex issue. They create opportunities for learners to interact actively (Harasim, 2000; Lipponen, Rahikainen, Lallimo, & Hakkarainen, 2003) and remove the time and space constraints so that learners enjoy greater flexibility and opportunities to process information pertaining to the discussed issues and problems (Hara, Bonk, & Angeli, 2000).

Online learning can be used to bridge distance and time. Teachers can participate in professional development activities via the Internet rather than travel to a specific site, and interactions can be asynchronous so that participants do not need to be available at the same time (Russell, Kleiman, Carey, & Douglas, 2009). In addition to logistical advantages, OPD can: provide expertise and resources to locations where they would not normally be available, provide new means to interact with experts and colleagues, enable educators to experience for

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themselves new forms of teaching and learning, and make participation in coaching, mentoring, and professional learning communities more accessible (Kleiman, 2004).

Online professional development provides teachers with the ability to: participate during times that are convenient, receive job-embedded support that addresses immediate classroom needs, customize programs to better suit their own individual learning styles, interact with material through a variety of visual or other multimedia formats, and gain valuable computer and online technology skills (Docherty & Sandhu, 2006; Garrison & Cleveland-Innes, 2005; Ginsburg, Gray, & Levin, 2004; National Staff Development Council, 2001; Richardson, 2002; Spicer, 2002; Treacy, Kleiman, & Peterson, 2002).

In summary, the following advantages of online professional development can be found in the research literature:

- Time – flexible and convenient

- Access to experts and resources that are not readily available locally

- Ongoing collaboration – addresses the practical needs of the teacher

- Interactivity with multimedia-rich content – addresses individual learning styles

2.6.3 Disadvantages of Online Professional Development

Online professional development has a number of disadvantages that may impact a teacher's professional growth. A primary disadvantage of online professional development can be categorized as the technological commitment required. Online professional development requires the use of a computer and the Internet for assignment retrieval, communication, and

accessing information. Instructors and participants must be trained on and be comfortable with the computer and its tools (Spodick, 1995, p. 6). Additionally, participants and instructors must be familiar with "Netiquette." These evolving rules for considerate behavior on the Internet should be used to communicate effectively (Harasim et al, 1998, p. 210). Network breakdowns and Internet connectivity failures make interaction difficult or impossible at times. Slow network connection speeds can be a source of participant frustration and can interfere with the ability to obtain assignments and communicate.

Since, typically, there is no set schedule for online courses, some participants lack the motivation or time to complete the required materials, resulting in high levels of participant attrition (Stanford-Bowers, 2008; Tyler-Smith, 2006). Online participants may also experience difficulties accessing online programs (Collins & Berge, 1996) or may miss the personal element that is common to a typical face-to-face professional development activity (Richarson & Swan, 2003; Rivera & Rowland, 2008). These negative components of online professional development can result in lower participation satisfaction ratings with respect to online professional development when compared to face-to-face professional development (Johnson, Aragon, Najmuddin & Palma-Rivas, 2000). Lastly, due to the increased demand for online professional development programs (OPD) for teachers, many online learning providers, including some college and universities, have experienced difficulty in producing quality online courses (Dede, 2006; Galley, 2002). Therefore, online professional development opportunities can range across the spectrum from ineffective, poorly designed online course lacking rigor to highly effective, well-designed online courses with rigorous and relevant course content (Dede, 2006; Galley, 2002).

In summary, the following disadvantages of online professional development can be found in the research literature:

- Technological proficiency – both instructors and students

- Motivation

- Inconsistent quality online course offerings

Therefore, in order to examine how these disadvantages can be overcome, the next section will review the research literature in order to identify common qualities of effective OPD courses.

2.7 QUALITIES OF EFFECTIVE ONLINE PROFESSIONAL DEVELOPMENT COURSES OFFERED VIA A WEB-BASED COURSE MANAGEMENT SYSTEM

Technology and online communications are dominant forces in teachers' lives. Teachers go online to find answers to their questions, communicate with colleagues, research best practices, and participate in online professional development courses (OPD courses). As technology continues to evolve and become user-friendlier, teachers have started to use web-based content management systems (WBCMSs) to either augment their traditional classroom interactions with students or offer fully virtual courses. As a result, teachers have increasingly become more comfortable participating in WBCMSs for their own learning through OPD courses (National Staff Development Council, 2001; Richardson, 2002; Spicer, 2002). However, some educators are concerned that some OPD courses may not possess the qualities needed to be truly effective (National Staff Development Council, 2001). Therefore, it is important to identify common qualities of effective OPD courses offered via web-based course management

systems (WBCMSs,) such as Blackboard, WebCt, Angel, eCollege, and Moodle. By identifying

what research says are the common qualities, school administrators, and educators alike, will

be better able to create and evaluate OPD courses for K-12 teachers offered via WBCMSs.

This brief overview of the research literature is divided into three sections: (a) describing

web-based course management systems (WBCMSs,) (b) describing the qualities of effective

online professional development courses offered via a WBCMS, and (c) describing the

importance of interactivity in effective online professional development courses offered via

WBCMS's. For the purposes of this review of literature, the terms "online courses" and "online

professional development courses (OPD courses)" will be used interchangeably. Furthermore, it

will be assumed that, in general, any qualities of effective online learning identified in the

research literature are also applicable to online professional development courses offered via

WBCMSs for K-12 educators.

2.7.1   Web-Based Content Management Systems (WBCMS)

According to the North American Council for Online Learning (NACOL) (2009,) a non-profit

organization that promotes online teaching and learning, a WBCMS can be described as the

technology platform used to deliver online learning. NACOL (2009) further states that a WBCMS

"included software for the creation and editing of course content, communication tools,

assessment tools, and other features design to enhance access and ease of use" (p. 6).

Similarly, Mann (2000), describes WBCMSs as a set of tools that allow non-technical individuals

to develop and provide "materials" for education or training over the World Wide Web

(hereafter referred to as the Web). The "materials" Mann refers to are typically items such as: PowerPoint presentations, lecture notes, study guides, and handouts. WBCMSs provide instructors of online professional development courses (OPDCs) with a graphical interface in order to maintain their course websites by easily uploading course "materials."

Boettcher (1999) provided a more detailed breakdown of WBCMSs by identifying four distinct levels of what he referred to as "Course Webness." Boettcher's four levels are:

1.   Web presence

2.   Web-enhanced

3.   Web-centric

4.   Web course

In the first level, web presence, a course instructor's site is comprised of only basic course information such as: name of course, name of course instructor, course description, and the time frame in which the course if offered. The second level, web-enhanced, takes better advantage of a WBCMS's capabilities to post course materials and resources for students such as: PowerPoint presentations, lecture notes, study guides, handouts, or any other instructional resources that may be beneficial to students outside of class. Boettcher's (1999) third level, web-centric, expands upon the second level by including tools for enhancing communications between student-to-teacher and student-to-student. These tools include, but are not limited to: announcements, voiceboards, online bulletin boards, email, threaded discussion boards, live chat rooms, voice emails, blogs, and wikis. Web-centric courses provide the means for both synchronous (communication occurring live and in real time) and asynchronous (communications not occurring live or in real time) learning opportunities. The fourth level,

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referred to by Boettcher (1999), is a web course. In a web course, all instruction is delivered entirely online. All course materials, learning activities, assessments, communications, and interactions are delivered exclusively via the web. Other researchers, such as Eastmen and Swift (2001), have categorized Boettcher's fourth level as a web-exclusive course. The web-course, or web-exclusive course, is considered the most advanced level of online learning (Boettcher, 1999; Eastman & Swift, 2001).

WBCMSs can provide instructors or online providers of professional development an avenue to provide any of the aforementioned four levels of online courses by offering a wide variety of common tools. These tools typically have proprietary names; therefore, Dabbagh and Schmitt (1998) created online instructional activity labels for describing the tools available in WBCMSs. The instructional activity labels are listed below followed by a brief description of each tool:

- Information delivery tools

- Organized access tools

- External participation tools

- Course interaction tools

- Content interaction tools

- Course communication tools

- Course assessment tools

- External resource tools

- Participant feedback tools

The first set of WBCMS tools, as described by Dabbagh and Schmitt's (1998), are referred to as "information delivery tools." These tools are used by the instructor to upload content to the course website via user-friendly, graphical web forms or textboxes. This type of graphical interface eliminates the need for an instructor to have any knowledge of web programming languages such as HTML or CSS to create and edit pages within the course website. Therefore, if an instructor for an OPD course wanted to post a reminder on the course's home page, he or she would simply add the content of his or her message into a textbox from within the courses' management portal. Once the reminder is saved, it is immediately available to the course participants online.

"Organized access tools" allow an instructor to arrange the content of the course into hierarchical groups system (Dabbagh & Schmitt, 1998). These groups can be separated by theme, chronological order of class meetings, or by the natural logic of the content. These tools provide the user with more depth in discovering the content. For example, an instructor may create hierarchal groups to represent each week in an OPD course. When the user clicks on the group, they are provided with a listing of all of the learning activities for that week.

Dabbagh and Schmitt (1998) describe another set of tools as "external participation tools." Examples of these types of tools include threaded discussion forums and voice bulletin boards. A threaded discussion board activity typically begins with the instructor posting a question or statement in which the class participants are asked to respond. Participants can post responses to the instructor's questions, create new messages on the topic, or view and respond to each other's posts. Voice bulletin boards are similar to discussion forums; however,

instead posting responses comprised of text, participants post voice recordings as their responses to the topic.

An additional set of WBCMS tools, as described by Dabbagh and Schmitt's (1998), are referred to as "course interaction tools." These tools are considered real-time, synchronous features where at least two participants can chat via text or voice online simultaneously. While communicating with each other via a text-based chat room, participants converse with each other by typing messages to each other. A transcript of the conversation is placed on the screen in order for each participant to view. Much like a telephone conversation, participants can also have real-time voice-based conversations with each other in order to discuss course content.

"Content interaction tools" refers to the availability of keyword searchable course glossaries and indexes system (Dabbagh & Schmitt, 1998). Participants needing clarification can search for specific terms while reviewing course lectures, readings, or study guides.

"Course communication tools" provide the instructor and participants with the ability to communicate with each other through a WBCM integrated email system (Dabbagh and Schmitt, 1998). An integrated email system does not require the participants and instructor to leave the course in order to access an external email system.

"Course assessment tools" afford the instructor with the ability to create online quizzes and exams in a user-friendly fashion system (Dabbagh and Schmitt, 1998). Exams and quizzes can be created using a series of web-based forms and textboxes. WBCMs typically allow instructors to create a variety of question types such as: multiple choice, true/false, and short answer completion. Once the instructor selects the type of question and indicates the correct answer(s), the WBCMS stores this information in a database. When accessing the quiz or exam,

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the WBCMS displays the question type and provides the participant with the opportunity to respond based on the question type. For example, if the question type is multiple choice, the WBCMS displays the possible answers with radio buttons, or another selection means, for the participant to select their response.

"External resource tools" allow the instructor to hyperlink to websites or files that are not housed within the WBCMS system (Dabbagh and Schmitt, 1998). For example, an instructor may want to provide participants with an opportunity to review a website that, due to copyright infringement, cannot be copied and pasted into the WBCMS. In this case, an instructor can use external resource tools to enter the text that will be displayed to the participants into one textbox and the URL of the website into a second textbox.

"Participant feedback tools" provide participants with the ability to view quiz and exam results, class grade averages, cumulative grades, attendance, summaries, and whether or not assignments have been successfully submitted system (Dabbagh and Schmitt, 1998). These tools can provide participants with ongoing feedback as they progress through the course.

Due to the wide variety of online instructional delivery tools inherent in WBCMSs , it is easy to understand the widespread usage of WBCMSs in both higher education and K-12 environments. However, when one considers Boettcher's (1999) four levels of "course webness" (web presence, web-enhanced, web-centric, and web course,) it is clear that the instructional delivery tools of a WBCMS alone cannot accurately describe the quality of an online professional development course. Therefore, the research literature will be examined in the next section in order to describe the qualities of effective online professional development courses offered via WBCMSs.

2.8 COMMON ELEMENTS OF EFFECTIVE ONLINE PROFESSIONAL DEVELOPMENT COURSES OFFERED VIA WEB-BASED MANAGEMENT SYSTEMS

Simply integrating the instructional delivery tools of WBCMSs into an OPD course does not automatically equate to an effective learning experience for K-12 teachers. Therefore, it is necessary for researchers to examine the literature to determine if certain elements exist in quality online courses and why they are necessary in the design of an online course offered via a WBCMS.

In following section, the research literature will be reviewed in order to address the question of whether or not there are common elements of quality in effective OPD courses. This section will summarize the findings of several researchers and research organizations regarding the quality and effectiveness of online courses and, by extension, online professional development courses offered via a WBCMS for K-12 educators.

2.8.1 SREB Standards

The South Regional Education Board (SREB) ,a non-profit, nonpartisan organization that works with 16 member states to improve public pre-K-12 and higher education, published a report entitled *Standards for Quality Online Courses* in 2006. The report outlines five broad categories containing five standards that states, school districts, and online professional development providers can use to guide their creation of online academic programs, courses, and other elements of quality online teaching and learning (SREB, 2006). The categories, standards, and list of specific descriptors to "look for" in each are outlined in Table 2-4.

Table 2-4: SREB's Standards for Quality Online Courses

Course Content	
Standard 1:	The course provides online learners with engaging learning experiences that promote their mastery of content and are aligned with state content standards or nationally accepted content.
	Descriptors: - Academic content standards and assessments - Course overview and introduction - Legal and acceptable use policies - Teacher resources

Instructional Design	
Standard 2:	The course uses learning activities that engage students in active learning; provides students with multiple learning paths to master the content based on student needs; reflects multicultural education and is accurate, current and free of bias; and provides ample opportunities for interaction and communication student to student, student to instructor and instructor to student.
	Descriptors: - Instructional and audience analysis - Course, Unit and Lesson Design - Instructional strategies and activities - Communication and interaction - Resources and materials

Student Assessment	
Standard 3:	The course uses multiple strategies and activities to assess student readiness for and progress in course content and provides students with feedback on their progress.
	Descriptors: - Evaluation strategies - Feedback - Assessment resources and materials

Technology	
Standard 4:	The course takes full advantage of a variety of technology tools, has a user-friendly interface and meets accessibility standards for interoperability and access for learners with special needs.
	Descriptors: - Course architecture and User interface - Technology requirements and interoperability - Accessibility - Technical support

Course Evaluation and Management	
Standard 5:	The course is evaluated regularly for effectiveness, using a variety of assessment strategies, and the findings are used as a basis for improvement. The course is kept up to date, both in content and in the application of new research on course design and technologies.
	Descriptors: - Assessing course effectiveness - Course updates - Accreditation - Data security

Framing SREB's (2006) standards for quality online courses within the proper context is an important consideration for online course developers and instructors. Several factors should be factored into creating an effective online course. For example, online courses must include rigorous content aligned with the appropriate state or national standards (SREB, 2006). Additionally, "Ease of use is also important so students can focus on the content of the course and not be unnecessarily distracted by extraneous information or graphic displays" (SREB, 2006, p. 2).

2.8.2   North American Council for Online Learning (NACOL)

The North American Council for Online Learning (NACOL) is well known for its research regarding online learning environments. In 2006, NACOL published two reports in the form of brochures that addressed quality in online learning. In the first report, *National Standards of Quality for Online Courses,* NACOL identifies a set of standards for ensuring the quality of online learning courses. In the form of a checklist, NACOL (2006) identified the following six major categories:

1. Content

2. Instructional Design

3. Student Assessment

4. Technology

5. Course Evaluation and Management

6. 21st Century Skills

Beneath each of the six major categories are sets of specific criteria framed as a series of declarative statements. The statements are designed for an evaluator to assign a numerical value ranging from a low of 0 to a high of 4. For example, under the category of Instructional Design, one of the statements is: "Course design reflects a clear understanding of student needs, and incorporates varied ways to learn and multiple levels of mastery of the curriculum" (NACOL, 2006, p. 4).

NACOL's (2006) second report, *National Standards for Quality Online Teaching*, identified 13 major categories that should be used to evaluate the quality and effectiveness of teaching an online course. These 13 major categories were "designed to provide states, schools districts, online programs, and other organization with a set of quality guidelines for online teaching and instructional design" (p. 2). Similar to NACOL's (2006) first report, the second report frames the standards in the form of a checklist. Each of the 13 major categories is sub-divided into a series of specific criteria as "look for's" in an online course which are rated based on a numerical value from a low of 0 to a high of 4. The 13 major categories are listed below:

1. The teacher meets the professional teaching standards established by a state-licensing agency or the teacher has academic credentials in the field in which he or she is teaching

2. The teacher has the prerequisite technology skills to teach online

3. The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment

4. The teacher provides online leadership in a manner that promotes student success through regular feedback, prompt response and clear expectations

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5. The teacher models, guides and encourages legal, ethical, safe and healthy behavior related to technology use

6. The teacher has experiences online learning from the perspective of a student

7. The teacher understands and is responsive to students with special needs in the online classroom

8. The teacher demonstrates competencies in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures

9. The teacher develops and delivers assessment, projects, and assignments that meet standards-based learning goals and assess learning progress by measuring student achievement of learning goals

10. The teacher demonstrates competencies in using data and findings from assessments and other data sources to modify instructional methods and content and to guide student learning

11. The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self- and pre-assessments

12. The teacher collaborates with colleagues

13. The teacher arranges media and content to help students and teachers transfer knowledge most effectively in the online environment

Table 2-5 provides an example of how a declarative statement is presented under a major category with a corresponding rating scale.

Table 2-5: An Example of NACOL's National Standards for Quality Online Teaching

Major Category 1 of 13: The teacher plans, designs and incorporates strategies to encourage active learning, interaction, participation and collaboration in the online environment.		Rating Scale:
Declarative Statement #1	Demonstrates effective strategies and techniques that actively engage students in the learning process (e.g., team problem-solving, in-class writing, analysis, synthesis and evaluation instead of passive lectures).	0 – Absent component is missing
		1 Unsatisfactory—needs significant improvement
		2 Somewhat satisfactory—needs targeted improvements
		3 Satisfactory—discretionary improvement needed
		4 Very satisfactory—no improvement needed

NACOL's Standards for Quality Online Teaching were developed after "…a thorough literature review of existing online teaching quality standards, a cross-reference of standards, followed by a research survey to NACOL members and experts to ensure the efficacy of the standards adopted (NACOL, 2006,p. 2). The 13 major categories identified in these standards, and their respective sub-divisions, appear to focus on the instructor's approach to the online course from both a developmental and operational standpoint; as well as, on the individual student's overall online learning experience.

2.8.3   The Sloan Consortium

Like NACOL, the Sloan Consortium is also well known for its research in online education. In 2002, the Sloan Consortium published a report entitled "The Sloan Consortium Report to the Nation: The Five Pillars of Quality Online Education" authored by George Lorenzo and Janet

Moore. In their report, Lorenzo and Moore (2002) established a set of standards for determining the quality of online courses. Lorenzo & Moore (2002) referred to these standards as the five pillars of quality online education. The five pillars are listed below followed by a brief description of each pillar.

1.   Pillar I -Learning Effectiveness

2.   Pillar II -Student/Participant Satisfaction

3.   Pillar III – Faculty Satisfaction

4.   Pillar IV – Cost effectiveness

5.   Pillar V -Access

In Pillar I, *Learning Effectiveness*, Lorenzo & Moore (2002) identified two major topics from which to assess the quality of an online course. The first topic describes whether or not the online course is designed with learning activities that actively engages the learner to think. The second topic describes whether or not the online course is designed with learning activities that require students to think at higher levels (as measured by Blooms Taxonomy) and whether or not students have the opportunity to relate their thoughts to other students (Lorenzo & Moore, 2002, p.4). The goals of Pillar I, *"Learning Effectiveness,"* are:

1. Interaction is key: with instructors, classmates, the interface, and via vicarious interaction

2. Metrics are used for comparing online and traditional courses

3. Online course design takes advantage of capabilities of the medium to improve learning via testing, discussion, and materials

4. Courses are instructor-led

5. Communications and community building are emphasized so that swift trust characterizes the online learning community

6. Distinctive characteristics of the program are highlighted to demonstrate improved learning

7. On-campus and online instruction achieve comparable learning outcomes, and the institution ensures the quality of learning in both modes by tracking instructional methods, student constituencies, and class size (Moore, 2002, p.2).

In Pillar II, *Student Satisfaction*, Lorenzo & Moore (2002) addresses whether or not the students are satisfied with the quality of education they received in the online course. As a measure of Student Satisfaction, students may be asked whether or not they would register for another online course or whether or not they would recommend an online course to their friends and colleagues (Lorenzo & Moore, 2002, p. 4). The goals of Pillar II, *"Student Satisfaction,"* are:

1. Students are pleased with their experiences in learning online

2. Discussion and interaction with instructors and peers is satisfactory

3. Actual learning experiences match expectations

4. Satisfaction for services is at least as good as on the traditional campus

5. Orientation for how to learn online is satisfactory

6. Outcomes are useful for professional, and academic development (Moore, 2002, p. 6).

Lorenzo & Moore (2002) describe Pillar III, "*Faculty Satisfaction*," as a series of topics including: (1) the presence of positive interactions between the faculty member and students,

(2) the relationship between teaching effectiveness in the online environment, and (3) the level

of faculty support from his or her colleagues (Lorenzo & Moore, 2002, p. 5). The goals of Pillar

III, *"Faculty Satisfaction,"* are:

1. Faculty are pleased with teaching online

2. Faculty satisfaction metrics show improvement over time

3. Faculty contributes to and benefits from online instruction

4. Faculty are rewarded for teaching online and for conducting research about improving

    teaching online

5. Sharing of faculty experiences, practices, and knowledge about online instruction is part

    of the instructional structure

6. There is parity in workload between classrooms and online teaching

7. Significant technical support and training are provided by the institution (Moore, 2002,

    p. 4).

Pillar IV, *Cost Effectiveness*, describes how costs are controlled in order for institution

offering the online course to remain competitive. This portion of the report focuses on the

business side of an online program and whether or not a school can provide online courses that

effective, yet, cost effective (Lorenzo & Moore, 2002, p. 6).

Lastly, Pillar V, "*Access*," describes the need to provide technical support services to

students. The intent of Pillar V is to ensure that "help" is available for students if the WBCMS

does not allow students to: access course content, submit assignments, complete assigned

learning activities, or participate in collaborative opportunities. Additionally, Pillar V, "*Access*,"

states that "help" should be made available to students who may be technologically challenged (Lorenzo & Moore, 2002, p.7). The goals of Pillar V are:

1. Diverse learning abilities are accounted for, including at risk students, disabilities, and expert learners

2. The delivery mechanism is continually evaluated for reliability and functionality

3. Learner-centered courseware instruction is provided

4. Student feedback is used for continuous improvement

5. Students are able to take the courses they want, when they want

6. Connects students to multiple learning opportunities (Lorenzo & Moore, 2002, p.7).

2.8.4   Quality Matters

Quality Matters (QM) is a faculty-centered, peer review process that certifies the quality of online courses. Sponsored by MarylandOnline, Inc., Quality Matters (2005) purports that the design of OPD courses can be assessed for quality and effectiveness <u>before</u> the course is actually taught.

Quality Matters (2005) identified 3 specific areas of online course design, (1) design plan, (2) design realized, (3) design in practice, that they believed to be extremely important. Rhodes (2003) suggests that the first area, "*design plan*," must be developed before the online course is actually taught. In the second area, "*design realized*" describes how the course should

be developed by following the design plan (Rhodes, 2003). Lastly, in the third area, *"design in practice,"* describes the point in which the course is actually ready to be taught (Rhodes, 2003).

In addition to identifying the three major areas that OPD courses can be evaluated *before* the course is actually taught, QM (2005) also describes seven broad categories with forty specific criteria that can be used to assess that quality of OPD courses *after* the course is ready to be taught. The seven broad categories and forty specific criteria are based on research literature and national standards in online learning. The seven categories identified by QM are:

1. Course overview and introduction

2. Learning objectives

3. Assessment and measurement

4. Resources and materials

5. Learner interaction

6. Course technology

7. Learner support

2.8.5 WebCT

WebCT, a major vendor of WBCMSs, created a rubric for evaluating assessing online courses entitled "WebCT's Exemplary Online Course Rubric" (WebCT, 2005). Using this rubric, WebCT has selected online courses to receive Debt's Exemplary Project Award since 2002. Although WebCT's rubric only includes criteria and not levels of quality, it is very thorough and could be

used as a model for assessing quality in online courses (WebCT, 2005). The rubric uses six major

categories for assessing quality in online courses:

1. Course design

2. Interaction

3. Collaboration

4. Technology

5. Assessment

6. Learner support

Although an in-depth review of the research literature was conducted in order to

identify common standards for quality and effectiveness in online learning, the following five

sources were emphasized in this section: (1) NACOL's National Standards for Quality Online

Education, (2) NACOL's National Standards for Quality Online Teaching, (3) Sloan Consortium's

Five Pillars of Quality Online Education, (4) Quality Matters, and (5) WebCT's Exemplary Online

Course Rubric. By grouping common categories and cross-referencing the major characteristics

and components from each of the five sources, commonalities emerged. These commonalities

represent a synthesis of what research literature identifies as the qualities of effective online

learning courses, and by extension, effective online professional development courses

delivered via WBCMSs.

The following qualities were identified as a result of a synthesis of the research

literature sources described in this section:

1. Instructional design

2. Student assessment

3. Access - *supporting the varied needs of the learner – technological needs, instructional needs*

4. Interactivity - *active engagement, collaboration, communication*

Table 2-6 represents a synthesis of the six sources cited in this section regarding the major characteristics and components of quality online learning. The common qualities of each source are highlighted in red.

Table 2-6: Synthesis of the Major Characteristics and Components of Quality and Effectiveness in Online Learning

Major Characteristics and Components of Quality and Effectiveness in Online Learning	SREB's Standards for Quality Online Courses	NACOL's National Standards for Quality Online Courses	NACOL's National Standards for Quality Online Teaching	Sloan Consortium's Five Pillars of Quality Online Education	Quality Matters	WebCT's Exemplary Online Course Rubric
Interactivity (active engagement, collaboration, communication)	Yes	Yes	Yes	Yes	Yes	Yes
Instructional Design	Yes	Yes	Yes	Yes	Yes	Yes
Student Assessment	Yes	Yes	Yes	Yes	Yes	Yes
Access/Support (supporting the varied needs of the learner – technological needs, instructional needs)	Yes	Yes	Yes	Yes	Yes	Yes
Course Evaluation and Management	Yes	Yes	No	No	No	No
21st Century Skills	No	Yes	No	No	No	No
Teacher Credentials and Prerequisite Skills	No	No	Yes	No	No	No
Instructional Strategies	Yes	Yes	Yes	Yes	No	No
Student Satisfaction	Yes	No	No	Yes	No	No
Faculty Satisfaction	Yes	No	No	Yes	No	No
Cost Effectiveness	Yes	No	No	Yes	No	No
Content	Yes	Yes	No	No	Yes	No
Technology usage	Yes	Yes	Yes	No	Yes	Yes

Although the synthesis of the research literature resulted in the four common qualities of: (1) instructional design, (2) student assessment, (3) access/support, and (4) interactivity as components of effective online courses, the dominant quality identified in each study was interaction. Every research literature source reviewed clearly identified the importance of interactivity in online learning environments. Therefore, in the next section, I will further examine the importance of interactivity in online courses.

2.9   INTERACTIVITY IN ONLINE LEARNING

Interaction is an important component in all forms of education (Anderson, 2003; Dewey, 1938; Moore, 1989). This is especially true in online learning environments where researchers suggest that interaction is the dominant factor in improving: motivation, learner satisfaction, perceptions of quality, and student learning (McIssac & Gunawardena, 1996; Moore, 1989; Wagner, 1994; Moore, 1989; Anderson, 2003; Lobry de Bruyn, 2004; Roblyer and Wienckle, 2004). A number of other researchers, such as Acker and McCain (1993), Baker (1995), Hillman, Willis, & Gunawardena, (1994), Moore (1989), Moore and Kearsley (1996), and Sutton (2001), state that interaction is pedagogically important and must be emphasized in all facets of education. To further support the importance of interaction, Chickerling and Garrison (1987) purport that interaction supports best practices in teaching and learning by: encouraging communications between instructors and students, promoting cooperation and collaboration among students, using active learning techniques, providing prompt feedback, emphasizing

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time of task, communicating high expectations, and respecting different ways of learning. As such, interaction is especially important in online learning environments due to the lack of face-to-face contact between the instructor and student; therefore, students must rely on online interactions with their instructor in order to receive feedback. Therefore, due to the suggested benefits of interaction, researchers have sought to describe the types of interactions necessary for effective teaching and learning in online learning environments.

Through her research on student interactivity, Swan (2003) stated that there are three types of interactions needed for learning to take place in an online environment. She further suggested that including these three types interactions is absolutely necessary in developing a quality online course. Swan's (2003) three types of interaction are:

1. Interacting with content

2. Interacting with the instructor

3. Interacting with peers/students in the course

The first interaction described by Swan (2003), "interacting with content" refers to the student's ability to understand the course's major concepts, big ideas, and essential questions through the purposeful design of the online course. The second interaction, "interacting with the instructor," refers to the student's ability to send and receive written communications with the instructor. These interactions can occur via email, discussion boards, synchronous chats, and written feedback on completed work. The third interaction, "interacting with peers/students," refers to the student's ability to communicate with other students in the course via email, discussion boards, voice bulletin boards, synchronous chats, online debates, peer review of student work, and group projects (p. 16).

Agreeing with Swann, Moore (1989) grouped interactions into three categories according to with whom, or what, they take place. These three groupings include those between:

1. Students and their instructors -the student and instructor interact to provide feedback and increase motivation

2. Students and other students – students interact with each other to exchange ideas and deliberate about course content

3. Students and content – student interacts with the subject being studied

Hillman et al. (1994) support the three types of interactions identified by both Swann and Moore; however, they added a fourth type of interaction called "learner-interface interaction" specifically for online learning environments. Learner-interface interactions occur when students use technologies, such as the tools of a WBCMS, in order to access content, ideas, and information; as well as, communicate with the course instructor and fellow students. Although the three types of interactions suggested by Swann and Moore are important in all forms of education, the fourth type of interaction, *"learner-interface interaction,"* suggested by Hillman et al. is especially important for online learning. Hilman et al. (1994) describe the importance of learner-interface interaction when they state "interaction requires the learner to operate from a paradigm that includes understanding not only the procedures of working with the interface, but also the reasons why these procedures obtain results" (p. 34). Moreover, Hilman et al. (1994) state that students "cannot begin to deal with the content of the instruction is he or she is unable to first interact with the interface" (p. 36).

Although researchers suggest the importance of providing four types of interactions in online courses, research also suggests the importance of identifying the <u>purpose</u> of these interactions. For example, Hirumi (2002) conducted a research study that analyzed interactions in online courses by investigating four basic categories: communication, purpose, activity, and tool-based interactions. In this study, Hirumi identified several purposes for online interactions such as: monitoring learning, conversation, coaching, collaboration, feedback, practice, help, confirmation, pacing, inquiry, navigation, elaboration, communication, and to support student learning performance. Hirumi (2004) concluded that if students did not see the purpose of the interactions, they simply saw them as irrelevant or merely busywork. Therefore, it can be deduced that clearly identifying the purpose of the interaction is just as important as including the four types of interactions in an online course. In the next section, the research regarding the types of interactions will be correlated to the online tools available in WBCMSs. Describing the characteristics of interaction in online learning, as well as its purpose, may provide educators with an opportunity to better understand the need to integrate interactive learning activities into online courses delivered via WBCMSs.

2.10   SUMMARY

A review of the related literature illustrates that there is benefit to providing teachers with professional development. However, not all professional development is the same. A synthesis of the research literature identifies four overarching characteristics of effective professional development. The four characteristics include: (1) time, (2) collaboration, (3) content and

pedagogy focused, and (4) relevance. Although these four characteristics can be included in "traditional" professional development, such as conferences, workshops, and in-service days, current challenges such as cost and time present obstacles for participation. Therefore, school districts are moving toward offering more "reform-oriented" oriented professional development opportunities such as lesson study and professional learning communities. However, once again, obstacles such as cost and time impact a teacher's ability to participate. Therefore, schools are investigating online professional development in an effort to overcome cost and time factors. As a result, a need exists to examine the characteristics of effective professional development and online professional development. Therefore, I am proposing to study this phenomenon. In the next chapter, I will describe my proposed study's methodology.

3.0   METHODOLOGY

Introduction

There is considerable research examining the nature of effective professional development for K-12 educators; however, there is limited research examining both the nature of online learning in the context of K-12 professional development and the qualities of effective online professional development courses offered via a web-based course management system for K-12 educators. Therefore, a qualitative study of online professional development was warranted and further described in the following paragraphs.

The purpose of this study was to examine the nature of online professional development (OPD) for K-12 educators in the context of a web-based content management system (WBCMS). According to Internet World Stats (2009) 77% of Americans use the Internet. Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of OPD courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of OPD courses available, it is important to study the characteristics of effective OPD courses in order for educators responsible for coordinating staff development to gain the knowledge to better create, facilitate, and select online professional development (OPD) courses and/or opportunities for K-12 educators.

High-quality, effective OPD has the potential to increase student achievement (Guskey, 2000). As such, when one considers the current environment of high-stakes testing, an important need to examine effective OPD emerges.

This study examined three areas of online professional development delivered via web-based content management systems (WBCMSs). They were addressed through the following research study questions:

1. Why do educators enroll and engage in OPD courses offered via WBCMS?

2. What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

3. How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

3.1 RATIONALE FOR CASE STUDY RESEARCH

Due to the nature of this study's exploration into participant's perceptions, experiences, and interactions, a qualitative research approach was selected to support the development of a holistic picture of the various data collected. "Qualitative research is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a social or human problem" (Creswell, 1998, p. 15). Qualitative research can provide a holistic picture using a variety of data collected from the natural setting (Creswell, 1998). Additionally, after

reviewing Eisner's (1998) six features common to all qualitative research, I believe a qualitative research perspective best served to answer the research study's questions. Each of Eisner's (1998) six common features is listed below with a brief explanation of how they were used in this research study.

Eisner (1998) suggests six features common to all qualitative research. This research study applied all six features in order to provide a rich and deep description of study. First, Eisner (1998) suggests that (1) *field focused* research allows the researcher to conduct in-depth and detailed observations of the people as they interact in their natural setting. By taking a field-focused approach, educators will be observed in the online environment in which they are interacting. Secondly, qualitative studies where the researcher makes meaning through personal interactions while providing personal insights into study uses (2) *oneself as an instrument*. As an active participant in the OPD course, I acted as a research instrument in order to provide a rich and in-depth understanding of the interactions between the participants, as well as the data collected. Additionally, through interviews with participants, (3) *interpretive character* will describe why certain phenomena is taking place, as well as determine the experiences and motives that led to the participant's actions. Furthermore, through interviews, observations, and artifact reviews, I coded the (4) *expressive language/voice* in order to explore patterns in the data that better informed the research study. Eisner (1998) contends that studying the expressive language/voice allows researchers to demonstrate their personal attachment and empathy in a study, which can enhance human understanding through emotions and personal connections. Eisner (1998) suggests this (5) *attention to particulars* provides researchers with unique and aesthetic details about their research study. Lastly, data

was gathered from multiple sources (i.e. artifact review, interviews, direct observation) in order to provide consistency, insights, and instrumental utility in the study. Using these data helped to (6) *determine criteria for judging success* of the study.

Case study methodology can be difficult because "case study strategies and techniques are not as well-defined when compared to other forms of qualitative research" (Yin, 2003, p. 109). In order to address this difficulty, case study researchers can create "well-defined case study analytic strategies in order to define priorities for what is being analyzed and why" (Yin, 2003, p. 109). Yin (2003) submits that relying on theoretical propositions is the most preferred strategy to follow for case study data analysis. However, Stake (1995) proposes that either categorical aggregation or direct interpretation will best allow for a researcher to reach new meanings about the case study. This study employed a categorical aggregation and direct interpretation of the phenomena being observed in order to reach "new meanings" of the data collected.

In reaching new meanings, a social constructivist case study approach was used due to the social and interactive characteristics inherent in WBCMSs used in many OPD courses. Vygotsky (1978) describes social constructivism where learning occurs through interactions between people. Vygotsy (1978) purports that discourse between individuals is required for deep learning to occur. Through these interactions, learners can challenge each other's understandings and beliefs leading to a deeper understanding or constructing new understandings through these interactions.

A social constructivist case study approach allows the researcher to "examine the case at hand in a holistic, noninterventionistic manner, to focus progressively on interpreting the

observed phenomena to answer the "how" and "why" questions, and to honor multiple realities (relativism) versus a single view" (Stake, 1995, p. 47). Furthermore, such an approach allows the researcher to focus on providing an in-depth description allowing for an interpretation to be made by the people most knowledgeable about the case at hand. Citing the work of Vygotsky, J. L. Lehman (2008) states,

> "Learning does not occur within isolation but requires the type of interactivity dialog generates. Dialogue is part of an overall process. Learners think or reflect, and then they participate in dialogue or speech, which leads to more reflection and thinking, followed again by dialogue" (p. 11).

This type of dialogue is a core element of nearly all online professional development courses offered via web-based course management systems. OPD courses in WBCMSs can present lesson content through interactive tools that are social in nature. Interactive tools such as discussion boards, blogs and wikis allow learners to actively engage with one another in order to deepen their content knowledge.

Unlike traditional face-to-face classroom settings for professional development, where learners may listen to, but not actually participate in the class discussions, online discussions allow more time for discourse. In many cases learners are constrained by the amount of time allotted for discussions or the amount of time needed to reflect upon what is being said before offering a response in face-to-face discussions. However, in online professional development settings, learners can respond to the points made by all of their colleagues without the constraints of time. The dialogue can be captured through interactive tools such as discussion boards and be available in perpetuity. This provides the learner with the additional time that some learners require for critical thinking, processing of information and reflection, before re-

engaging in the deliberations. Therefore, due to the interactive and social nature of learning in OPD courses offered via WBCMSs, a social constructivist case study approach was the most effective for this research study.

This deep and comprehensive case study, conducted through the participant's perspective, serves to better understand the nature of (1) why educators enroll and engage in OPD, (2) what educators perceive as effective characteristics of OPD, and (3) how the "21st Century Teaching and Learning course applies the four overarching characteristics of effective professional development.

In order to gain a holistic view of this study, the next section will provide an overview of the study's purpose and data collection and analysis strategies. Subsequent sections will provide more in-depth explanations of each portion of the study.

3.2   PARTICIPANT RECRUITMENT

The participants targeted for this study were K-12 educators from southwestern Pennsylvania who are certified to teach in the commonwealth by the Pennsylvania Department of Education and who have not been required to enroll in an OPD course. The targeted educators chose to enroll in *21st Century Teaching and Learning* online professional development course in order to enhance their skills, abilities or content and pedagogy knowledge during the summer of 2011.

The researcher sent an email message to the K-12 educators enrolled in the OPD course with the purpose of recruiting participants for the research study. The email message that detailed the purpose and significance of the study may be found in Appendix B. Additionally, a

message was posted in the general class announcements section of the course (see Appendix C). The researcher sent follow-up emails to the individuals who expressed an interest in the research study for the purpose of soliciting their participation and included an informed consent form for their review (see Appendices D and E). Participation in the study was voluntary; however, a monetary incentive was offered as a recruitment strategy in the form of a $25 gift card to a local retail establishment.

3.3 CONTEXT OF THE STUDY

The purpose of this study was to examine the nature of online professional development (OPD) for K-12 educators in the context of a web-based courses management system (WBCMS). The unit of analysis in this study was an OPD course ("21st Century Teaching and Learning") and its participants. In order to better understand the context of this study, this section will describe: (1) the online learning environment of the course, (2) the general course design, and (3) the course tools being studied.

3.3.1 Online Learning Environment

The online learning environment for the participants in the OPD course took place in *Blackboard*, a proprietary web-based course management system. Blackboard is provided to Intermediate Unit One through Blendedschools.net, a non-profit organization comprised of a network of schools, faculty and learners providing collaboration, consortium purchasing and

community events that hosts the Blackboard web-based course management system. With the exception of the course's general information; such as the course name, course description and dates offered which are all available on the Intermediate Unit One's public website, all course specific information can only be accessed from within Blackboard.

Once participants were enrolled in their online course, they were sent a welcome letter in the form of an e-mail message with the web address (URL) of where to login to Blackboard and their individual login and password information (see Appendix A). The Blackboard interface utilizes a user-friendly icon/folder metaphor for navigation that with which regular computer users will be familiar. Once logged in, participants were able to view a list of the classes in which they were registered, information about their online institution (Intermediate unit one), and other broader Blackboard system-wide resources (see Figure 3–1). The environment offers students the opportunity to interact with people through e-mail, asynchronous discussion boards, blogs, synchronous chats and a number of other collaborative tools should they choose to do so.
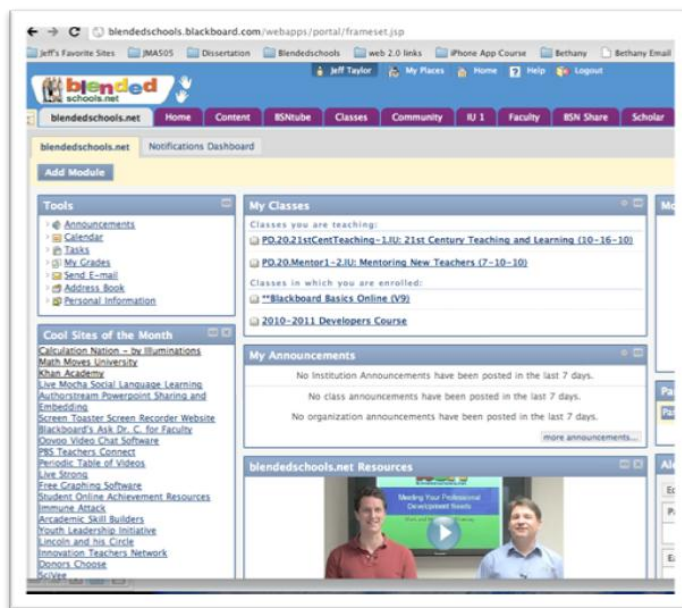
Figure 3-1: Blackboard Interface

On the first day of class, participants were able to login to Blackboard, enter their online course and view the course structure. The course was structured as an asynchronous course, meaning that the participants were able to work on their lessons from different locations during different times. The content of the course was organized inside of folders, which was represented by eight navigational buttons on the left hand side of the screen (see Figure 3-2). The names and brief descriptions of the contents of each of eight navigational buttons were:

1. **Announcements:** Contains all of the course's general announcements. Announcements may include reminders of assignment due dates, tips, technical support information, etc.

2. **Class Outline:** Contains the course syllabus and an outline of the course content. Additionally, course policies (i.e. course withdrawals) are located in this section.

3. **Intro to Class:** Contains general information about the course such as: the learner's responsibilities, how to contact the instructor, information regarding software and technical requirements for the course and instructions on how to use the tools in Blackboard.

4. **Lessons:** Contains a list of folders for each week's lesson.

5. **Discussion Boards:** Contains a list of the course's discussion boards where the learner can click a hyperlink to enter the discussion board of their choice.

6. **Course Tools:** Provides a comprehensive list of the Blackboard tools available in the course. Learners can click on an icon to use any of the course tools listed.

7. External Links: Contains a list of external hyperlinks to various websites that may be helpful to the learner. For example, a hyperlink is provided to the learner where he or she can download a free version of Adobe Reader in order to open PDF documents.

8. Evaluation: Contains a course wrap-up survey and a course evaluation document.

All course information, lesson content, and course tools will be accessible through these eight navigational buttons as identified in Figure 3-2.

Figure 3-2: Course Navigational Buttons

3.3.2 Design

The course was designed as an asynchronous course with four lessons where each lesson represented one week's worth of study. The lessons were organized in folders identified by the lesson number with a brief description of the learning activities encompassed in that week's lesson (see Figure 3-3). The participants were able to move freely through the weekly lessons and corresponding learning activities, assignments and assessments.   Each weekly lesson contained assessments and course assignments designed to assess the participant's understanding of the content. Assessments were in the form of quizzes, pre-tests and post-tests. All assessments were submitted to the course instructor internally through the Test Tool in Blackboard.
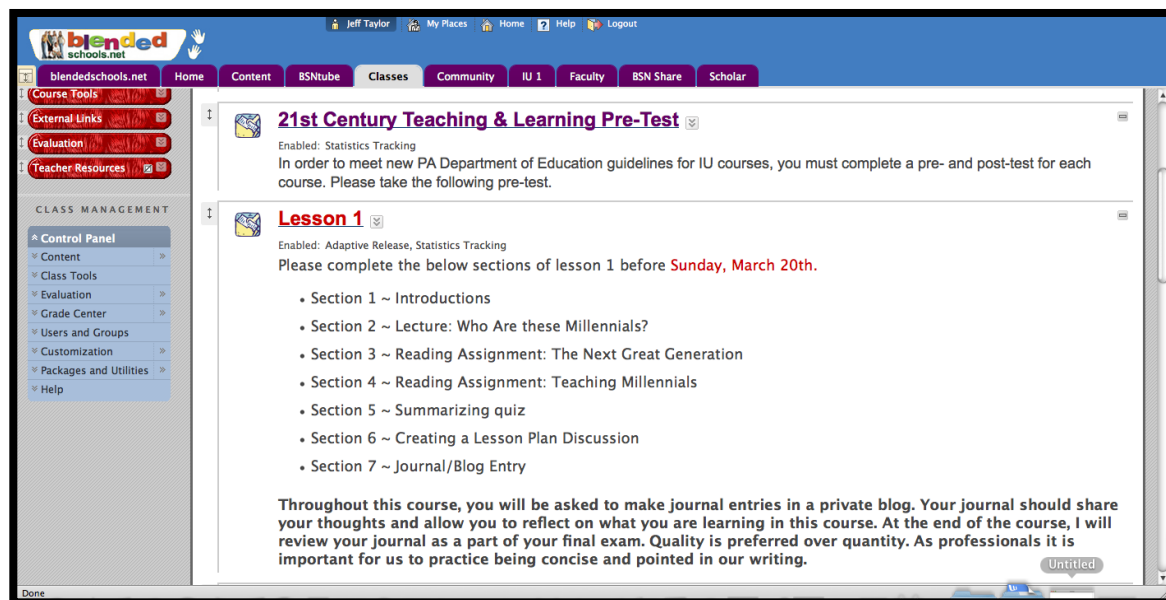
Figure 3-3: Course Lesson Structure

In addition to quizzes and tests, the learner participated in learning activities throughout the weekly lessons that included collaborative activities and/or written assignments. All written assignments were submitted to the course instructor via the Assignment Tool in Blackboard; whereas, collaborative activities were assessed through a variety of tools in Blackboard (i.e. discussion boards).

3.3.3   Course Tools

Online professional development courses that use web-based course management systems have access to a variety of course tools that can enhance the learner's overall learning experience. In order to explore the qualities of effective OPD courses offered via a WBCMS for K-12 educators, an examination of the online course's learning tools is necessary.

For the purposes of this case study, the researcher examined two course tools in great depth. The first tool to be examined is the Discussion Forum tool. The Discussion Forum tool is an asynchronous tool where the learners can answer instructor created questions, collaborate with the instructor, and deliberate with classmates over course content. This tool is categorized as an asynchronous tool because participants are not required to access the course on any specific date or at any specific time in order to complete their assignment. Instead they are provided a date range that they must complete their assignment and discussions. The other tool examined was the Wimba Live Classroom tool. It is classified as a synchronous course tool because the learner is required to access the course at a pre-determined date and time to participate in the lesson.

An in-depth investigation of: (1) the purpose of these tools, (2) how learners utilize these tools and (3) how the learner perceives the effectiveness of these tools will help to describe the qualities of effective OPD.

3.4 THEORETICAL FRAMEWORK

In order to begin conducting this case study, a theoretical framework was required. The theoretical framework acted as a foundation from which to build and connect concepts and theories throughout this study. In this section, I will provide a general overview of the theoretical framework and then describe each component of the framework in more detail.

3.4.1 Overview of the Theoretical Framework

This case study examined more than one aspect to an online professional development course and its participants in three phases. As such, several components comprised my theoretical framework as the foundation for each phase of the study.

In Phase 1 of the study, I examined artifacts from the OPD course. The first artifact, course design features, was examined using the NACOL Standards for Quality Online Courses as a foundation. A copy of the NACOL Standards for Quality Online Courses can be found in Appendix H. The second artifact in phase 1, discussion board posts, was examined by using the Garrison Four Stage Cognitive Processing Model as a frame of reference. A copy of the Garrison

model can be found in Appendix I. Each of these two models will be examined in further detail in the next section.

In Phase 2 of the study, I examined a synchronous online lesson. Once again, I began by using the Garrison Four Stage Cognitive Processing Model as a frame of reference to examine the types of critical thinking that participants exhibit during the lesson. In addition to the Garrison model, data was coded and categorized for levels of engagement, interest, and supports needed to assist participants in the learning process.

Lastly, in Phase 3 of the study, I conducted semi-structured, open-ended interviews using an open coding strategy and the Kirkpatrick Model of Training Program Evaluation as a frame of reference. Like the other components comprising my theoretical framework, I will examine the Kirkpatrick model in more detail in a later section. Additionally, data was coded and aligned to the NACOL Standards of Quality Online Courses and the characteristics of effective professional development as identified in Chapter 2.

The theoretical framework for this study consisted of three main components. They were: (1) NACOL Standards for Quality Online Courses, (2) Garrison Four Stage Cognitive Processing Model, and (3) Kirkpatrick Model of Training Program Evaluation. In the next three sections, I will describe each of these three components in more detail.

3.4.2   NACOL Standards for Quality Online Courses

As described in Chapter 2, The North American Council for Online Learning (NACOL) is well known for its research regarding online learning environments. In 2006, NACOL published a

report that addressed quality in online learning. In this report entitled *National Standards of Quality for Online Courses,* NACOL identifies a set of standards for ensuring the quality of online learning courses. In the form of a checklist, NACOL (2006) identified the following six major categories:

1.   Content

2.   Instructional Design

3.   Student Assessment

4.   Technology

5.   Course Evaluation and Management

6.   21st Century Skills

Beneath each of the six major categories are sets of specific criteria framed as a series of declarative statements. The statements are designed for an evaluator to assign a numerical value ranging from a low of 0 to a high of 4. For example, under the category of Instructional Design, one of the statements is: "Course design reflects a clear understanding of student needs, and incorporates varied ways to learn and multiple levels of mastery of the curriculum" (NACOL, 2006, p. 4). A copy of these standards can be found in Appendix H.

3.4.3   Garrison Four Stage Cognitive Process Model

The Garrison Four Stage Cognitive Process Model has been used in research to measure critical thinking skills in online discussion boards (Meyer, 2004). The model identifies four indicators that classify discussion board posts into a four-stage process. The four stages are: (1) triggering,

(2) exploration, (3) integration, and (4) resolution. A copy of the Garrison model can be found in Appendix I.

In the first stage, <u>triggering</u>, an issue or problem that emerges from the discussion is identified or recognized. In the context of an OPD course, triggering could result from the instructor presenting a learning challenge or task. However, in an online discussion board conversation, a trigger could just as easily come from a fellow classmate through the deliberation process causing an individual to self-reflect on a topic or task (Garrison, 2006).

The second stage, <u>exploration</u>, begins when participants transition from the private, reflective world of the individual to the social, exploration world of online discussions. Participants move back and forth from self-reflection and shared knowledge that becomes the basis for online academic discourse (Garrison, Anderson, & Archer, 2001). Brainstorming, questioning, or exchanging ideas with one another can characterize this stage.

In the third stage, <u>integration</u>, the idea generated from the exploratory stage begins to have meaning. During this stage, participants begin to evaluate whether or not ideas discussed apply or connect to the issue or event under consideration (Garrison, 2006). Participants continue to move repeatedly between reflection and discourse. As a result, without the careful guiding of the instructor (or a classmate), a participant can easily get stuck in the exploratory phase and never move to an advanced stage of critical thinking.

Lastly, the fourth stage of the model is <u>resolution</u>. This is characterized by the resolution of the dilemma or problem by mans of direct or vicarious action (Kirkpatrick, 2006). In an OPD course, this stage could indicate that the participant may be ready to move on to a new problem or dilemma with the assumption that new knowledge was gained.

The Garrison model was used in Phase 1 of this study's data collection in order to measure critical thinking and interactions in the discussion boards in the OPD course.

3.4.4 Kirkpatrick Model of Training Program Evaluation

Between 1959 and 1960 Donald Kirkpatrick published series of articles outlining four levels of measurement for training programs in the Journal of the American Society of Training Directors (Kirkpatrick, 1959a, 1959b, 1960a, 1960b). This series of articles became the basis for what is known as the Kirkpatrick model for evaluating training programs. This model is one of the most commonly used training program evaluation models used by corporations across the globe (Hacket, 1997). In addition, it has been recognized as an effective form of evaluation for web-based training programs (Driscoll, 2002; Lee & Owens, 2000; Stone & Koskinen, 2002; Walker, 1998). The four levels of evaluation in the Kirpatrick model are: reaction, learning, behavior, and results. For the purposes of this study, this model will be applied to phase three of the data collection, the interviews.

The first level of the Kirpatrick model is <u>reaction</u>. Reaction measures how participants feel about and react to various aspects of an OPD course (Kirkpatrick, 1998). Kirkpatrick provided four reasons why reaction is important. They are: (1) it can provide valuable feedback for the improvement of the OPD course, (2) it lets participants know that their learning is important to their instructor and their feedback is important, (3) important information is collected for those concerned with the overall success of the OPD course, and (4) it provides information that can improve the standards of performance in subsequent OPD course offerings (Kirkpatrick, 1998).

In applying his evaluative model, Kirkpatrick offered the following implementation guidelines for reaction:

- Identify what needs to be determined

- Design a form that will quantify reactions

- Encourage written suggestions

- Attain an immediate response rate of 100%

- Seek honest reactions

- Develop acceptable standards

- Measure reactions against standards

- Communicate the reactions as appropriate

- Use a control group when possible.

The second level of Kirkpatrick's model is <u>learning</u>. Learning can measure changes in the knowledge, skills, and attitudes of the participants as a result of the OPD course. Without learning, there cannot be any changes in the participant's knowledge, skills, and attitudes, which are the three things that should be changed in an OPD course (Kirkpatrick, 1994). According to this model, specific learning objectives should be identified prior to the start of the OPD course. Kirkpatrick (1994) recommended that knowledge and skills be evaluated both before and after the OPD course if the participants already possess some of the knowledge and skills that will be presented. Kirkpatrick (1996) suggested the following implementation guidelines for measuring learning: (a) assess participants knowledge and skills both before and after the OPD course, (2) attain a 100% response rate, and (3) use evaluation results to make changes for future offerings of the OPD course.

The third level of Kirkpatrick's model is <u>behavior</u>. Behavior measures the degree in which the participant's behavior changes as a result of the OPD course. According to Kirkpatrick (1994), changes in behavior are evidenced by four conditions on the part of the participant. These conditions include: (1) desire to change their behavior, (2) acquire knowledge and skills of what to do and how to do it, (3) working environment must include a supportive supervisor who encourages the behavior change, and (4) rewards for positive changes in behavior.

The fourth, and final, level of Kirkpatrick's model is <u>results</u>. Measuring results can provide many positive returns on investment such as: (a) showing participants that their input is appreciated, (b) offering ways to improve the OPD course for future offerings, and (c) increasing productivity (Kirkpatrick, 1994). Kirkpatrick (1996) offered the following guidelines for implementation:

- Provide ample time to achieve results

- Measure via pre-tests and post-tests

- Repeat measurements when possible

- Consider the cost of evaluation with potential benefits

This section described the components that comprise this study's theoretical model. The NACOL Standards for Quality Online Courses and the Garrison Four Stage Cognitive Processing Model served as the foundations for Phase 1 of the study. In Phase 2, the Garrison Four Stage Cognitive Processing Model was used to frame data collection for the direct observation data collection. Lastly, Phase 3 utilized the Kirkpatrick Model of Evaluating Training Programs, along with open coding strategies, during the interview process. In the next section, I will describe this study's data collection and analysis strategies.

3.5   DATA COLLECTION AND ANALYSIS

As individual methods of data collection each have their own unique strengths and weaknesses, I utilized multiple methods of data collection with the intention of having each method complement each other. This strategy concurs with Yin's (1994) recommendation to use multiple sources of evidence in case studies in order to connect the questions asked to the data collected, and conclusions drawn. Furthermore, according to Yin (2003), collecting data from multiple sources is the major strength of case study methodology because it assists the researcher in developing converging lines of inquiry that strengthens the study's validity. Therefore, this study employed four methods of data collection: (1) artifact collection, (2) direct observation, (3) interviews, and (4) field notes via a journal. The first three methods of data collection were the main tenants of my three-phase data collection approach as identified in Figure 3-4. Whereas, the fourth method, a journal of field notes, was kept throughout the data collection process. The journal allowed me to capture my thoughts and feelings as an added data source in order to provide a richer and deeper description of the case study; as well as, assisted me in synthesizing the various data throughout the data collection process.
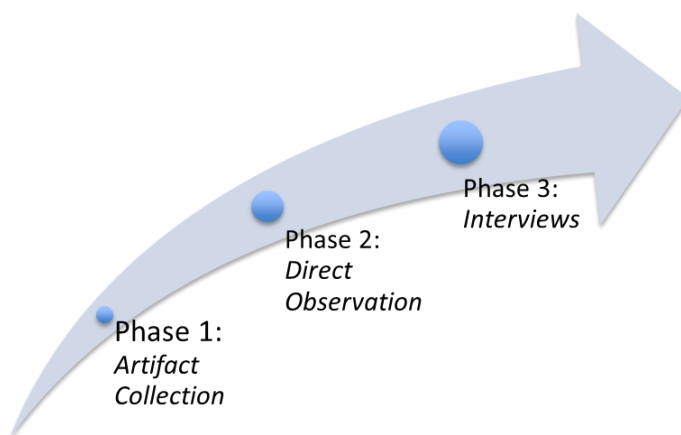
Figure 3-4: Three-Phase Approach to the Study

3.5.1 Phase 1: Artifact Data Collection and Analysis

When artifacts are considered relevant and collected as a data source, they can be an important component in developing a more precise understanding of the phenomena being studied (Yin, 2003). Artifacts can be described as documents, objects, devices, or some other type of physical evidence that provides insight into the lives, experiences, and perceptions of the subjects being studied (Babbie, 2007; Stake, 1995; Yin, 2003;). Artifact collection and its subsequent analysis has become a prominent methodology for studying text and graphical information displayed on the Internet (Herring, 2004; McMillan, 2000). By reviewing artifacts present in the OPD course, I was able to understand and describe the online learning environment in which the study participants were engaged while participating in the OPD course. Additionally, the data collected also allowed me to better understand the context of the study. For the purposes of this case study, I collected and reviewed two artifacts from the OPD courses: (1) course design features, and (2) discussion board posts.

3.5.1.1 Artifact #1: Course Design Features

Good online course design begins with a clear understanding of specific learning outcomes and ways to engage participants, while creating activities that allow them to take some control of their learning (FacultyFocus, 2011). As described in *"Online Course Design: 13 Strategies for Teaching in a Web-based Distance Learning Environment,"* (FacultyFocus, 2011) quality online course design also requires extra effort upfront to minimize two of the most common frustrations of online learning:

1. confusing course organization (how course elements are structured within the course); and

2. unclear navigation (what links or buttons are used to access these elements).

When learners are unable to find what they need or are confused about where to go and what to do, it is harder for them to learn. Therefore, course design can become an important factor in determining the effectiveness of an online professional development course.

Data was collected regarding the course design in the "21st Century Teaching and Learning" online professional development course. Course design data collected included:

1. Course organization

2. Descriptions of units, lessons, and activities

3. Activities designed to actively engage learners

4. Types of online interactions available

5. Resources available to learners

These data were collected and then coded using the NACOL Standards for Quality Online Courses as a foundation. After the data were coded using the NACAOL standards as a foundation, certain categories of contextual factors arose during the data collection process that were not expected. In his explanation of an interactive approach to qualitative research design, Maxwell (1996) suggests that qualitative methodology, including data analysis methods, may need to be adapted in the process of data collection itself. Delamont (1992, p. 151) agrees that "the analysis of qualitative data is a process that continues throughout the research: it is not a separate, self-contained phase." As such, several codes of contextual factors that

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appeared throughout the data analysis portion of Phase I that were either not intended, but

beneficial; or not intended but deemed irrelevant.

According to the NACOL standards (2007), one of the features of course design is

creating opportunities for interactivity and learner collaboration. As such, the second artifact

that was examined in this case study were discussion board posts.

3.5.1.2 Artifact #2: Discussion Board Posts

Online discussion boards or forums are asynchronous tools that promote community building,

collaborations, and deliberations in an online environment. Discussion boards allow learners

and the instructor to interact with each other regardless of time or location. In the OPD course

being studied, the discussion boards allowed learners to engage in conversations with their

peers around the content of the course. According to Brookfield (1995),

> "Our colleagues serve as critical mirrors reflecting back to us images of our
> actions that often take us by surprise. As they describe their own experiences
> dealing with the same crises and dilemmas we face, we are able to check,
> reframe, and broaden our own theories of practice" (p. 35).

In order to allow for an appropriate amount of dialog around the course content for

discussion board assignments, the learners were asked to post one original message to the

discussion board and then respond to at least two of their classmate's posts in thought-

provoking ways. By making this a requirement, learners were able to fully engage in discussions

with their classmates in order to "check, reframe, and broaden" their own theories of practices

as Brookfield (1995) suggests. Additionally, this discussion board requirement generated more

data that were be coded and categorized in a more in-depth manner than if the learner was only required to submit one discussion board post.

Data were collected from discussion boards by transforming the posts into transcripts. The transcripts will then be categorized by topic as an organizational strategy. I then began coding the discussion board transcripts using a content analysis coding strategy based on the Garrison Four Stage Cognitive Processing Model (as identified in Appendix J).

The Garrison model has been used in research to evaluate critical thinking skills in online discussions (Meyer, 2004). This model identifies indicators that classify discussion board posts into a four-stage process: (1) triggering, (2) exploration, (3) integration, and (4) solution/resolution. Using these four indicators, I created a coding mechanism to analyze the discussion board transcripts. The analysis was then aligned to this study's second research question: (2) What characteristics of online professional development courses offered via WBCMS do educators (participants) perceive as effective? The alignment of the discussion board transcript analysis was compared to interview questions in Phase 3 of this study in order to assist in the triangulation of the data.

Although data collected and analyzed from an asynchronous tool such as a discussion board is helpful, it was limited by the lack of spontaneity in the levels of engagement and interactivity between: (1) course participant interactions with each other and, (2) course participant interactions with the course instructor. Therefore, Phase 2 of this included a direct observation of a synchronous online lesson.

3.5.2   Phase 2: Direct Observation Data Collection and Analysis

Data collected from an observation is often useful in providing additional information about the topic being studied (Yin, 2003). Participant-observation is a unique mode of observation in which the researcher is not merely a passive observer, but may actively participate in the event(s) being studied (Babbie, 2007; Yin, 2003). This strategy is useful as it allows the researcher to perceive the reality from the viewpoint of someone inside the case study rather than external to it. Therefore, the opportunity to experience the event(s) with the study's participants may provide an invaluable perspective in producing an accurate portrayal of the phenomena being studied.

For the purpose of this case study, I conducted a participant-observation in the OPD course through a synchronous learning session via the Wimba Live Classroom tool in Blackboard. Through the use of this tool, course participants were able to interact with one another in real-time using: (1) a shared interactive whiteboard, (2) synchronous chat features and, (3) voice features that allowed the participants to speak to one another using microphones and speakers attached to their computers.

By observing and participating in a synchronous lesson, I gained a sense of the experience through the participant discussions that may have been missing from the asynchronous component (discussion board) of the OPD course. The synchronous lesson was digitally recorded and archived so that I was able to properly lead the lesson while interacting with the participants as a case study researcher simultaneously. During, and immediately after

the observation, I wrote extensive field notes in my journal to facilitate future reflection and sense making.

Because the entire synchronous lesson was digitally recorded and viewable as a video file, I was able to create a transcript of the lesson in order to collect data. Data collected from the direct observation included: (1) frequency of interactions and (2) types of supports needed to assist in the learning process.

In order to code the data, I employed two coding mechanisms. First, I used the Garrison Four-Stage Model to begin coding the data from the transcripts for levels of critical thinking in their interactions. Secondly, I read the transcripts multiple times and coded them with labels describing either categories or responses that emerged. The categorization of the data and themes that emerged was used not only for the analysis of artifact #2 – direct observation, but it was also used in Phase 3 when interviews were conducted as a mechanism for triangulation.

3.5.3   Phase 3: Interview Data Collection and Analysis

Interviews can be one of the most important sources of case study information (Yin, 2003). An interview in case studies may appear more conversational in nature rather than structured inquires (Stake 1995; Yin, 2003). The actual flow of questions and responses in a case study interview may appear more fluid rather than rigid (Rubin & Rubin, 1995). Therefore, this case study employed a semi-structured, open-ended interview protocol.

Merriam (1998) defined semi-structured, open-ended interviews as interviews that evolve from inquiry composed of a mixture of both structures and unstructured questions. The

unstructured questions are open-ended; allowing respondents more freedom and creativity to respond to the question (Sowell & Casey, 1982).

After the conclusion of the "21st Century Teaching and Learning" course, as suggested by Rubin and Rubin (2005), each participant contacted via phone in order to establish a rapport and to identify a date, time, and location for the interview. During this phone call, the participants were informed that their online classrooms, assignments from their online course, and any discussion board postings relevant to the topics of the interview may be reviewed.

As the participants of this online professional development course and I resided in different locations across the state of Pennsylvania, participants had concerns regarding childcare, time away from students, and travel expenses. Therefore, interviews were conducted either through telephone calls or through Wimba Live Classroom, an embedded online communication tool in *Blackboard*.

Although telephone interviews are not the preferred way to conduct semi-structured, open-ended interviews, according to Rubin & Rubin (1995), they are acceptable when travel, time, and expenses are an issue. Using the Wimba tool was preferred over a traditional telephone interview due to the tool's capability for digitally recording and archiving the entire interview. A digital record of the interview assisted in the transcription process. An Audio/Digital recording consent form was "snail" mailed to the participant. A request was made for the participant to sign the consent form and "snail" mail it back to me in a pre-postage paid, self-addressed envelope. A copy of the Audio/Digital Recording consent form can be found in Appendix G.

Following a semi-structured, open-ended interview protocol (as seen in Appendix H), I recorded the audio of the interview while taking notes. The participant's responses led to additional follow-up questions, which served to provide a thicker description of the data collected. At the conclusion of the interview, I reviewed the Audio/Digital Recording consent form and asked if they had any questions or concerns that needed to be addressed.

Extensive field notes and summaries were created in my journal for each interview. As suggested by Hesse-Biber and Leavy (2006), the data was organized by date, time, and place to assist with the organization for analysis. A folder was created for each participant that included the interview summary notes, coursework, discussion board posts, and notes from the online classroom observation as an organization strategy. Participant confidentiality and anonymity was assured by assigning each participant a pseudonym with which only the researcher was familiar. The interview summary was reviewed several times to check for errors and possible omissions. Once the accuracy of the interview summary was confirmed, coding of the interview summaries began.

Interview summaries were first coded using the Kirkpatrick Model of Training Program Evaluation. Although the Kirkpatrick model is more commonly used in corporate departments, it has been recognized as an effective form of evaluation for online learning (M. Driscoll, 2002; Lee & Owens, 2000; Stone & Koskinen, 2002; Walker 1998). Using the Kirpatrick model to begin coding the interview summaries assisted in categorizing the data into the model's four levels of evaluation. The four levels are: reaction, learning, behavior, and results. After coding the interview summaries using these four levels, I created sub-categories of codes based on emerging themes and responses. Throughout this coding mechanism, axial coding: "the process

of relating categories to their subcategories, termed 'axial' because coding occurs around the axis of a category, linking categories at the level of properties and dimensions" took place (Strauss & Corbin, 1998, p. 123). The process of axial coding served as the beginning of theory building, where relationships among categories emerged.

Additionally, I read and marked the interview summaries with labels describing either the categories or responses while comparing the notations across interview summaries. In doing so, themes were identified. Using these themes, a table of codes and sub-level codes was created as a coding key. This method of coding and thematic analysis of interview responses provided categorization. After identifying the codes based on themes, each interview summary was coded using the coding key. The interview summary was read and reread several times over to allow for a comprehensive analysis and to ensure a rich and deep depiction of the information offered by the interviewees.

Color coding the data within the transcripts allowed for a further depiction of the relationships between the categories. I developed a matrix to link the codes and the data to my research questions. Using codes and themes and a matrix to assist with analyzing data allowed for a rich and detailed description of the data and identification and depiction of the range of meanings experienced and shared by each of the interviewees.

After coding the interview summaries, I reviewed both the artifact analysis from Phase 1 and the direct observation analysis from phase 2. I hypothesized that similar categories and themes would be present. At this point, I began the process of selective coding. "Selective coding is the process of integrating and refining the theory" (Strauss & Corbin, 1998, p. 161) by integrating and organizing categories around a central concept (Glaser & Strauss, 1999; Strauss

& Corbin, 1998). This cross-coding analysis across the first three phases of data collection helped to refine the theory-building process.

Finally, theory building concluded when "indicators representative of theoretically relevant concepts are compared for their properties and dimensions, always looking for dimensional range or variation (Strauss & Corbin, 1998, p. 215). All of the relevant concepts were aligned to the case study's three research questions in order to prepare for reporting and interpreting of case study data as seen in Table 3-1.

Table 3-1: Data Collection and Evidence

Data Collection Methods and Evidence		
Data to be Collected	Evidence Gathered	Methods of Data Collection
Participant Demographics	Name Age School and District Position and years of teaching experience Highest degree earned Total number of OPD courses previously taken	Interview
Study Question #1		
Why do educators enroll and engage in OPD courses offered via WBCMSs?	Primary reasons for taking an online professional development course	Interview
	Previous experiences in online professional development courses	Interview
	Motivations to participate in OPD	Interview
	Time spent on coursework	Interview
	Content of course	Interview Artifact review
	Advantages of online professional development course	Interview
	Disadvantages of online professional development course	Interview
	Perception of an effective OPD course	Interview
	Perception of a "perfect" OPD course	Interview
	Level of engagement	Artifact review Direct Observation Interview
Study Question #2		
What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?	Course characteristics perceived as effective	Interviews
	Course characteristics perceived as ineffective	Interviews
	Online design and organizational features	Interview
	Online learning activity effectiveness (i.e. discussion boards)	Interview
	Changes in future course offerings	Interview

	Synchronous lesson	Direct observation
	Perception of an effective OPD course	Interview
	Perception of a "perfect" OPD course	Interview
	Level of engagement	Artifact review Direct Observation Interview
Study Question #3		
How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of (1) time, (2) collaboration, (3) content and pedagogy focus, and (4) relevance ?	Amount of time spent in course	Artifact review
	Level of engagement during collaborative activities	Artifact review
	Application of knowledge gained to position	Interview
	Relevance to their position	Interview
	Synchronous lesson	Direct observation
	Perception of an effective OPD course	Interview
	Perception of a "perfect" OPD course	Interview
	Level of engagement	Artifact review Direct Observation Interview

3.6   REPORTING AND INTERPRETATION OF THE DATA

This case study reported the findings of four methods of data collection: (1) artifact review, (2) direct observation, (3) interviews, and (4) field notes via a journal using a combination of reporting conventions appropriate for case studies. Yin (2003) states that "reporting a case study means bringing its results and findings to closure" (p. 141). In this section, I will briefly describe how I reported the case study findings in order to bring closure to the study.

Reporting case studies is different than other types of research in that the report, itself, is a significant communication device. In many ways, reporting a case study can communicate research-based information about a phenomenon to a variety of non-specialists who may be unfamiliar with the content, but have an interest in the phenomenon (Stake, 1995; Yin 2003).

Therefore, this case study was reported in a manner in which will be easily understandable to non-specialists.

This study was reported through a questions and answer format. Yin (2003) suggests this strategy when he states, "the advantages of reporting a case study in a question and answer format are potentially enormous" (p. 148). Using this reporting strategy, a reader will only need to review the answers to the questions in order to cross-compare the data from the four methods of data collection to make sense of the case. In order to crystallize the data, throughout the question and answer format, I includes tables, figures, and graphics to emphasize key findings for the reader.

3.6.1 Triangulation

Triangulation is a prominent strategy to establish internal validity in research studies (Merriam, 2002). Maxwell (1996, p. 87) defines validity as "the correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account." According to Maxwell (1996), validity can be conceptualized by asking the questions, "'How will we know that the conclusions are valid?'" and "'Why should we believe it?'" Additionally, Seidman (1998, p. 17) submits that validity questions may ask "How do we know that what the participant is telling us is true?", "is it true for anyone else?", and "if another person were doing the interview, would we get a different meaning?" As a way to address these questions, which can be a threat to validity, the process of triangulation was used. Stake (1995) defines triangulation as "working to substantiate an interpretation or to clarify it different meanings (p. 173). Although Stake (1995)

describes several methods of triangulation (data source triangulation, investigator triangulation, theory triangulation, and methodological triangulation,) I employed data source triangulation. Stake (1995) describes data source triangulation as a way to "see if the phenomena or case remains the same at other times, in other spaces, or as other persons interact differently" (p. 173). As I used direct interviews of participants, I believed this to be the best method of triangulation for this particular case study. Additionally, I employed a secondary triangulation method by initiating "member checking." Member checking is a process by which the "actor is requested to examine rough drafts of writing where the actions or words of the actor are featured, sometimes when first written up but usually when no further data will be collected from him or her" (Stake, 1995, p. 115). In doing so, I requested that several interviewees review my interview summaries to ensure that my interpretations accurately depicted the interviewee's responses.

In the context of this research study, an attempt to achieve triangulation occurred by comparing the information collected from each of the following data sources: interviews, online classroom observations, and artifacts such as discussion board transcripts, and course assignments completed by the participants, to ensure that the information obtained was consistent across all four methods of data collection and then meeting with a trusted colleague for peer debriefing.

3.6.2   Peer Debriefings

Peer debriefing involves a researcher meeting with a trusted colleague who is not directly involved with the research, but has a general understanding of the context of the research study. Peer debriefing was conducted to provide trustworthiness to the readers. The researcher met with a trusted colleague who was experienced in the same study methods. The researcher met with this colleague after the data was collected to debrief and corroborate understandings and analysis.

3.6.3   Transferability

Transferability is achieved through thick description of the data (Lincoln & Guba, 1985). This technique to achieve transferability "involves providing an adequate database, that is, enough description and information that readers will be able to determine how closely their situations match, and thus whether findings can be transferred" (Merriam, 2002, p. 29). In an effort to achieve transferability, this research study provided as many details as possible to enable other readers to follow the research and understand the context of the situation of these particular participants. This effort also allows readers to decide if their context would be appropriate for utilizing these data findings for their individual purposes. As data was collected from participants, and if the findings were found to be relevant to others, one may consider the data of this study as an appropriate alternative to traditional professional development opportunities and may result in an attempt to participate in online professional development courses themselves.

3.6.4 Dependability and Confirmability

Dependability and confirmability may be achieved through the creation of an audit trail (Lincoln & Guba, 1985). In an audit trail, the following records are suggested by Lincoln and Guba (1985):

1. **Raw Data:** This study will provide the details concerning raw data. For this, raw data was based on interview summaries, synchronous classroom transcripts, and artifact reviews (i.e. discussion board transcripts.)

2. **Field Notes via a Journal:** Field notes included categories, findings, and reports based on data such as connections to literature. In addition, process notes were recorded. Process notes included methodological notes concerning the procedures and design of the research study along with the rationale and any notes relating to credibility, dependability, and confirmability.

3.6.5 Limitations

There are some limitations to this research study. First, the study investigated learners who were taking or have taken online professional development course(s) developed and taught by a single person – the principal researcher. Because there are numerous online professional development courses in the market today and not every online professional development course is designed the same way, one will be cautioned against generalizing the findings of this study to learners in other OPD courses that are dissimilar to the one investigated in the present study. Additionally, this study was conducted where the unit of analysis is from only one online

professional development course provider, Intermediate Unit 1, which limited the number of participants. Lastly, the data collection in this study was constrained to a relatively small sample size of targeted participants in a single online professional development course.

3.6.6   Changing Context of the Study

When proposing this study I assumed that approximately 25-30 people would register and participate in the study. This assumption was based on past experiences in offering the same course over the course of several years. Unfortunately, only eight people registered and participated in this study. I hypothesize the significant decrease in enrollment was a result of two reasons. First, the Pennsylvania Department of Education placed a moratorium on Act 48 credit requirements in 2011. Therefore, there was less of a need for educators to earn Act 48 credits by enrolling in online professional development courses offered through intermediate units. Secondly, due to the economic climate during the summer of 2011, I hypothesize that people had less disposable income to spend on professional development courses.

With the decreased number of expected participants, the context of the study changed. With only eight participants, data collection was limited in the artifact analysis, direct observation, and interviews. As a result, the data analysis and interpretations may not have been as rich as they could have been had there been 25-30 participants. Additionally, I had originally wanted to explore professional learning communities in the study. However, due to the limited number of participants and the fact that they had little in common in terms of place

of employment or certification area – the ability to study professional learning communities in the context of an online professional development course was not possible.

3.7   SUMMARY

This chapter described the purpose of this study, which was to examine the nature of online professional development (OPD) for K-12 educators in the context of a web-based courses management system (WBCMS). The unit of analysis was the "21st Century Teaching and Learning" online professional development course and its participants offered via Intermediate Unit 1, a provider of professional development courses and workshops in southwestern Pennsylvania.

A social constructivist case study approach was used due to the social and interactive characteristics inherent in WBCMSs used in many OPD courses. A social constructivist case study approach allowed the researcher to "examine the case at hand in a holistic, noninterventionistic manner, to focus progressively on interpreting the observed phenomena to answer the "how" and "why" questions, and to honor multiple realities (relativism) versus a single view" (Stake, 1995, p. 47).

Using a social constructivist case study approach, data was collected in order to address the three research study questions. They are:

1.   Why do educators enroll and engage in OPD courses offered via WBCMSs?

2.   What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

3. How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

In order to address the three research study questions, I used four methods of data collection: (1) artifact collection, (2) direct observation, (3) interviews, and (4) field notes via a journal. Coding the data began by using a theoretical framework. Additional categories and themes were coded as they emerged. The data was reported using a question and answer format in order to be easily understood by a non-specialist.

Upon conclusion, I am hopeful that this case study will be able to inform and/or describe online professional development offered via web-based content management systems, such as *Blackboard,* in a manner that will lead educators to make well informed decisions regarding whether or not online professional development.

4.0   RESULTS

This study examines the nature of online professional development (OPD) for K-12 educators in the context of a web-based content management system (WBCMS). This chapter presents an analysis of the data and findings that pertain to the three specific research questions posed in the study:

1. Why do educators enroll and engage in OPD courses offered via WBCMS?

2. What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

3. How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

The research questions were addressed using four types of data collection strategies. The four data collection strategies used in this study included:

1. Artifact analysis of course design features and discussion board posts,

2. Direct observation of a synchronous online class session,

3. Interviews of participants,

4. Researcher's journal.

Data collected from each of the four collection methods were analyzed qualitatively using the following methods. The NACOL Standards for Quality Online Courses were used for

the artifact analysis of course design features. The Garrison Four Stage Cognitive Process Model was used to analyze the artifact analysis of discussion boards; as well as, the direct observation of a synchronous online class session. The Kirkpatrick Model of Training Program Evaluation was used to analyze of the data gleaned from the interviews of participants. Lastly, a journal of field notes was kept throughout the data collection process. The journal allowed the researcher to capture his thoughts and feelings as an added data source in order to provide a richer and deeper description of the case study; as well as, assist in synthesizing the various data throughout the data collection process. The data analyzed from each of the data collection methods will be presented and integrated with one another as they relate to the research study's three questions.

This chapter begins by providing the characteristics of the interview participants from this study. Next, it provides information on why educators enroll and engage in OPD courses offered via WBCMS. It will then provide information on the characteristics of OPD courses offered via WBCMS that educators (participants) perceive as effective. Lastly, it reports on how the "21st Century Teaching and Learning" OPD course addresses the four overarching characteristics of (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance.

4.1   DEMOGRAPHICS

The participants targeted for this study were K-12 educators from southwestern Pennsylvania who are certified to teach in the commonwealth by the Pennsylvania Department of Education

and who have not been required to enroll in an OPD course. The targeted educators chose to enroll in *21st Century Teaching and Learning* online professional development course in order to enhance their skills, abilities or content and pedagogy knowledge. Eight participants enrolled in the *21st Century Teaching and Learning* OPD course. All eight participants agreed to be a part of this research study; therefore, eight interviews were conducted. Pseudonym designations were assigned in order to maintain the anonymity of the participants.

At the beginning of each interview, demographic information was collected from each participant. Information was collected in the following areas: (1) age, (2) highest degree obtained, (3) years of teaching experience, (3) total number of online courses taken, and (4) teaching position. Table 4-1 below provides an overview of the participant's characteristics in each of these categories, which included 1 male and 7 females.

Table 4-1: Participant Characteristics

Name	Age	Highest Degree Obtained	No. of Years of Teaching Experience	No. of Online Courses Taken	Teaching Position
Bev	34	M.S.	8	1	K-6
Bob	49	B.S.	6	1	7-12 Sp. Ed.
Jane	57	M.S.	35	2	7-12 Library
Missy	46	B.S.	5	1	K-6
Sandy	47	Ph.D	23	7	Higher Ed.
Selena	32	B.S.	10	3	K-8 Music
Sharon	56	M.S.	34	1	K-6 Phys. Ed.
Talisha	33	B.S.	5	1	K-6

The average age of the participants was 44 years old and 50% of the participants had earned a graduate degree. The *21st Century Teaching and Learning* course was the first online professional development course for 66.6% (n=5) of the participants; whereas, 33.3% (n=3) of the participants had previously taken an online professional development course.

4.2 FINDINGS RELEVANT TO RESEARCH QUESTION #1

Research Question #1: *Why do educators enroll and engage in OPD courses offered via WBCMSs?*

The data related to this question were drawn from interviews, research journal entries, and artifact reviews. The artifact review consisted of an analysis of the overall online course design. This section will first describe the findings related to why educators <u>enroll</u> in online professional development courses offered via WBCMSs. Next, it will describe the findings related to why educators <u>engage</u> in online professional development courses.

4.2.1 Reasons for Enrolling in an OPD Course

This section reports the findings of why the participants chose to enroll in the 21st Century Teaching and Learning online course. Three themes, which include primary and secondary reasons, for enrolling in the course are identified in this section; as well as, the participant's perspectives on the advantages and disadvantages of taking an online professional development course as they relate to enrollment.

During interviews, each participant was asked why he or she enrolled in an online professional development course. Responses were collected and interview summaries were created from both the researcher's notes and listening to the audio recordings of the interviews. The interview summaries were marked with labels that described either the categories or responses while comparing notations across interview summaries. From this analysis, primary and secondary reasons for enrolling in an online professional development

course were identified. The data were then categorized into three themes based on the responses provided and the researcher's field notes.

The primary reason participants enrolled in the OPD course was for maintaining teaching certifications. Seventy-five percent of the participants (6 out of 8) indicated that his or her primary reason for enrolling in an online professional development course was related to maintaining his or her teaching certification. Of the six participants, 50% indicated that they enrolled due to the need for continuing education credits, while the other 50% needed to earn credits toward their Level II teaching certification. Secondary reasons for enrolling in the OPD course were identified as either "interest/relevance to teaching" (33%) and "convenience (time)" (27%).

After identifying the primary and secondary reasons for enrolling in an online professional development course, common responses were identified across respondents. These commonalities were then coded and categorized into three distinct themes. They are: (1) teacher certification requirements, (2) interest/relevance, (3) convenience (time). Table 4-2 summarizes these data by identifying each participant's primary and secondary reason for enrolling an online professional development course and then identifying the three themes that emerged by color-coding the primary and secondary reasons.

Table 4-2: Reasons for Enrolling in an OPD Course

Name	Primary Reason	Secondary Reason
Selena	Level II certification credits	Convenience (Time)
Bob	Level II certification credits	Interest/Relevant to Teaching
Talisha	Interest/Relevant to Teaching	*None provided*
Bev	Act 48 credit	Interest/Relevant to Teaching
Jane	Act 48 credit	Convenience (Time)
Sharon	Interest/Relevant to Teaching	Convenience (Time)
Sandy	Act 48 credit	Interest/Relevant to Teaching
Missy	Level II certification credits	Convenience (Time)

Table Key – Emerging Themes	
	Theme #1: Teaching Certification Requirement
	Theme #2: Interest/Relevance
	Theme #3: Convenience (Time)

Theme #1, Teaching Certification Requirement, was a combination of two categories of responses. The first category of responses included an educator's need to maintain their Level II teaching certification by fulfilling their Act 48 requirement of acquiring 180 professional development hours every five years. The second category of responses included an educator's need to reach their level II teaching certification by successfully completing 21 credits past their bachelor's degree.

Theme #2, Interest/Relevance, was a combination of responses that included the participant's belief that the topics of the course were going to be interesting to them or have some relevance to their teaching practices.

Theme #3, Convenience/Time, was a combination of responses related to the participant's need to either work at a time convenient to them or the ability to work at their own pace. Figure 4-1 represents a graphical representation of how the findings were organized into themes.
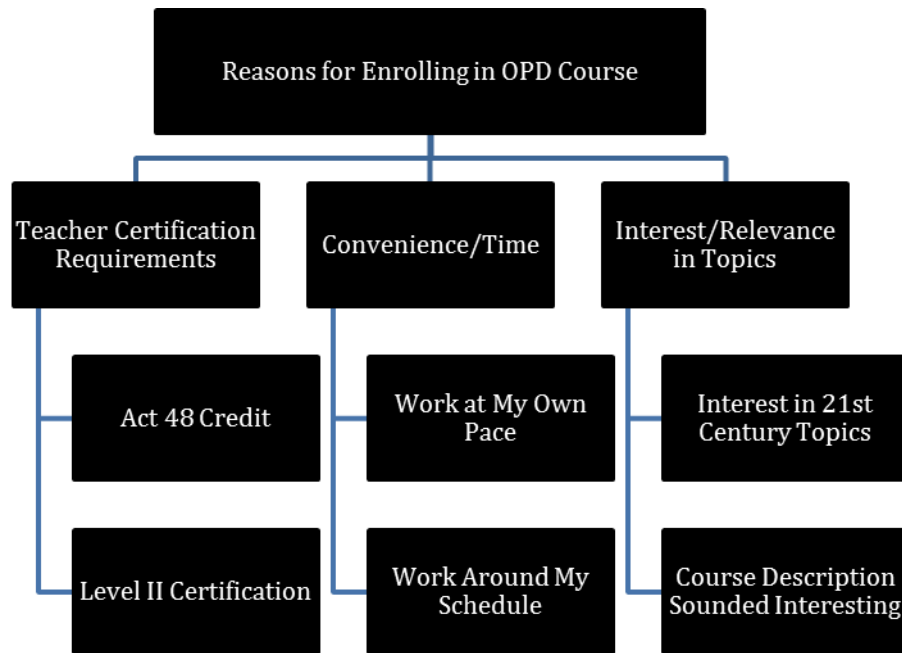
Figure 4-1: Reasons for Enrolling in OPD Course

In addition to identifying three themes as reasons why educators chose to enroll in the 21st Century Teaching and Learning course, data was collected from the participants regarding their perceptions of the advantages and disadvantages of online learning as it relates to enrolling in an online professional development course.

4.2.1.1 Perceived Advantages of Online Professional Development

This section reports the findings of the perceived advantages of enrolling in online professional development courses. Data from participant interviews identify four main perceived advantages to enrolling in an online professional development course. These four perceived advantages are identified and described in this section.

Study participants were asked to identify what they believed to be the advantages of participating in online professional development courses. A total of twenty-two responses were

collected from the study participants. The responses were first coded and categorized through a color-coded labeling strategy. Categories were then analyzed and then re-categorized in order to properly identify the common themes associated with the responses. An analysis of the codes resulted in four distinct categories that identified the perceived advantages of online professional development that include:

1. Time

2. Pacing

3. Collaboration

4. Convenience of Working from Home

Table 4-3 identifies the categories of perceived advantages of OPD courses, the number of responses aligned to each category, and the percentage of each category. The two most prevalent categories are time (32%) and pacing (32%).

Table 4-3: Categories of Perceived Advantages to Online Professional Development Courses

Categories of Perceived Advantages	Number of Responses	Percentage of Responses
Time	7	32%
Pacing	7	32%
Collaboration	3	14%
Convenience of Working from Home	3	14%
Other	2	9%
Total	22	

Time. Time was a dominant theme throughout the interview responses. Participants reported that they perceived time as an advantage to online learning for a number of reasons. First, time was identified as an advantage to online learning because participants said that they

were able to save time in their personal lives. Bob stated that he appreciated the fact that he did not have to drive to and from a physical classroom setting on a regular basis to participant in professional development. Secondly, time was identified as an advantage to online learning as participants described their ability to spend more time: drafting their responses in discussion boards, engaging in the deliberations with their fellow classmates, reflecting on their learning in journal entries, and spreading out their reading assignments over the course of the week. Participants reported that spending time thinking carefully about what they intended on submitting in their discussion board posts and then reading and re-reading posts of their classmates before submitting a response was an advantage to online learning.   Sharon concurred when she stated:

> Online [professional development] classes provide me with more time to read the material and reflect on it. I like that I can revisit the topics in a discussion board and review them before responding. It gives me additional time to post a meaningful response.

Pacing. The ability to work at your own pace was another dominant theme throughout the interview responses. Study participants described the need to be able to begin working on a lesson on one day and then finish it on another day in order to better fit into their schedule. Many of the study participants described an inability to find time during their normal work day to participate in the online professional development course due to the demands on their teaching schedules. In addition to the time constraints of a typical teacher's workday, many teachers have other commitments that preclude them in participating in professional development offered at specific times.   Therefore, the ability for a participant to design his or

her own pacing through an online lesson was an important consideration when choosing to enroll in online learning.

Collaboration. According to the National Staff Development Council (2001) some of the most important forms of professional learning occur in collaborative groups of educators within schools and school districts. Zeichner (2003) states that most educators at all levels value opportunities to work together, reflect on their practices, exchange ideas, and share strategies and expertise. The findings in this section concur with Zeichner in that 63% of the study participants reported that collaboration was an advantage of online professional development. Talisha reported that:

> I think that the collaborations that take place in the discussion boards are an advantage of online professional development. I enjoy picking up ideas from others where they left off in a discussion board.

The in-depth conversations that take place in online professional development courses using collaborative tools, such as discussion boards, help teachers to understand new strategies, as well as to allow teachers to try out new practices in their own classroom (Desimone et al., 2002; Garet et al., 2001; Speck, 2002). Sharon stated that she appreciated the opportunity to be exposed to other people's opinions on issues discussed in the course. She explained that she lives and works in a very rural area and that, due to her location; she may not have those opinions and ideas had she not been enrolled in an online professional development course.

Convenience of Working From Home. 38% of the study participants reported that working from the convenience from home was an advantage to online professional development courses. Sandy reported that she enjoyed being able to work from the privacy of

her home on a course. Additionally, both Bob and Bev agreed with Sandy when they reported they were much more engaged in learning from the comfort of their homes where they could wear comfortable clothes and be in a familiar setting from which to learn.

This section reported the findings of why the participants chose to enroll in the 21st Century Teaching and Learning online course. Three themes emerged from the findings. They are (1) teacher certification requirements, (2) convenience/time, and (3) interest/relevance in the topics of study. Additionally, the findings identified four advantages to participating in online professional development courses as they relate to enrollment. They included: (1) time, (2) pacing, (3) collaboration, and (4) convenience of working from home.

4.2.2   Reasons for Engaging in an OPD Course

This section reports the findings of why participants engage in the 21st Century Teaching and Learning online course. In order to properly report how and why educators choose to engage in online professional development courses, it is important to first describe the word "engagement" in the context of this study. For the purpose of this case study, engagement will be described as the types of interactions (or levels of interactivity) a participant has with: the overall online course, fellow course participants, and the course instructor.

After analyzing the data from the artifact reviews, the direct observation, and the interviews, two themes emerged that address the reasons in which participants engaged in the 21st Century Teaching and Learning OPD course. The two themes are:

1.   Engagement – as a matter of interest in the course topics

2. Engagement – as a matter of course design

4.2.2.1 Engagement – As a Matter of Interest in the Course Topics

The *21st Century Teaching and Learning* course topics included four major topics of study. The four major topics were: (1) the millennial generation of students, (2) globalization, (3) right-brain versus left-brain thinking, and (4) the 21st century skills framework. All of the study participants (n=8) reported that they engaged in the course because they were interested in the course topics presented. Table 4-4 identifies the specific topics that the study participants mentioned as "interesting" during the course of the interviews.

Table 4-4: Course Topics Identified as Interesting by Study Participants

Course Topics	Study Participants Who Identified the Topic was Interesting as a Reason for Engaging in the Course	Percentage Study Participants Identifying Course Topics as Interesting as a Reason for Engaging in the Course
Millennial Generation of Students	Bev Sandy Sharon Jane	50%
Globalization's Impact on Education	Bev Talisha Sandy Sharon Jane Bob	75%
Left-Brain/Right-Brain Thinking in Education	Bev Talisha Selena Sandy Sharon Jane	75%
21st Century Framework	Bob Bev Missy Sandy Sharon Jane	100%

| | Talisha | |
| | Selena | |

The findings indicate that 100% of the study participants were engaged in the course partially due to their interest in the "21st Century Framework" topic. Seventy-five percent of the study participants specifically mentioned two topics of interest as a reason for engaging in the OPD course. They were "Left-Brain/Right-Brain Thinking in Education" and "Globalization's Impact on Education." Fifty percent of the participants identified that studying the "Millennial Generation of Students" was a topic of interest to them.

Bob reported that he was very interested in globalization's impact on education. He reported that his interest in the topic kept him engaged in the course. During his interview, he reflected on one of the assignments where he was required to watch a video streaming lecture of Thomas Friedman presenting on the impact globalization is having on education. Bob indicated that, normally, he may not have been able to pay attention to an hour-long video lecture; however, the content of the presentation was so interesting that he watched the entire lecture. He reported,

> Sometimes I have a difficult time watching long videos [professional development videos] during in-service days because they aren't very interesting. But, the video that you made us watch on globalization was very interesting. I ended up watching the whole thing.

He further stated that he intended on sharing the information gleaned from the lesson on globalization with his school district's administration with the hope of having the information shared with his colleagues during a professional development day.

Selena, a band teacher, spoke at length about her interest in left-brain/right-brain thinking during her interview. The researcher noted in his journal that Selena displayed a lot of

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interest and excitement when she spoke of left-brain/right-brain thinking. The tone and inflection in her voice indicated that she was very engaged in the topic. Additionally, she used the information from the lesson topic as examples in her responses to interview questions. She stated,

> The lesson on right-brained, left brained thinking was very interesting to me. As a band teacher, I can easily see how that type of thinking is applied in the arts. I can apply that type of thinking in my classroom in order to better reach each student.

Jane agreed with Selena when she reported how the lesson on left-brain/right-brain thinking was interesting to her as well. She explained the lesson provided her with a new perspective on how students learn. Jane further reported that she plans on revising her teaching practices to include left-brain/right-brain thinking as a result of her newfound interest in the topic.

Although the findings identify that interest on the course topics kept study participants engaged in the "21st Century Teaching and Learning" course, data also identified that study participants engaged in the course due to how the course was designed.

4.2.2.2 Engagement – As a Matter of Course Design

The 21st Century Teaching and Learning course was designed to provide participants with opportunities to _engage_ both with each other and with the content. Good online course design begins with a clear understanding of specific learning outcomes and ways to engage participants, while creating activities that allow them to take some control of their learning (FacultyFocus, 2011). As described in "Online Course Design: 13 Strategies for Teaching in a

Web-based Distance Learning Environment," (FacultyFocus, 2011) quality online course design effects how participants <u>engage</u> in the course. Additionally, quality online course design requires extra effort upfront to minimize two of the most common frustrations of online learning:

1. confusing course organization (how course elements are structured within the course); and

2. unclear navigation (what links or buttons are used to access these elements).

When learners are unable to find what they need or are confused about where to go and what to do, it is harder for them to engage in the course. Therefore, course design can become an important factor in determining the how a participant <u>engages</u> in the course.

Found in Appendix H, the *National Standards of Quality for Online Courses* published by NACOL (2006) were used in order to describe the design of the *21st Century Teaching and Learning* online course in order to identify relationships between online course design and participant engagement.

As stated in Chapter 2, the *National Standards of Quality for Online Courses* (NACOL, 2006) are published in the form of a checklist that contains the following six major categories:

1. Content

2. Instructional Design

3. Student Assessment

4. Technology

5. Course Evaluation and Management

6. 21st Century Skills

Beneath each of the six major categories are sets of specific criteria framed as a series of declarative statements. The declarative statements are used to describe specific components of the online course design. In order to specify the degree in which the course addresses each declarative statement, a numerical value is assigned to each statement ranging from a low of 0 to a high of 4. The numerical values are described in Table 4-3: Numerical Value Descriptions for NACOL's National Standards for Quality Online Courses.

Table 4-5: Numerical Value Descriptions for NACOL's National Standards for Quality Online Courses

Numerical Value Descriptions for NACOL's National Standards for Quality Online Courses		
0	Absent	Component is missing
1	Unsatisfactory	Needs significant improvement
2	Somewhat Satisfactory	Needs targeted improvements
3	Satisfactory	Discretionary improvement needed
4	Very Satisfactory	No improvement needed

Using NACOL's National Standards for Quality Online Courses checklist, the researcher conducted a comprehensive analysis of the course design features. The researcher acknowledges the fact that bias may exist in the findings as the researcher also serves as the course instructor. However, a sincere effort was put forth to be as objective as possible in conducting the analysis of the course design features.

Each of the six major reporting categories listed in the NACOL National Standards for Quality Online Courses was used to analyze the "21st Century Teaching and Learning" OPD course. Each declarative statement from each of the six major reporting categories was assigned a numerical value that aligned to the descriptions listed in Table 4-3. Based on these

ratings, strengths and weaknesses of the overall course design were identified in the following six categories: (1) content, (2) instructional design, (3) student assessment, (4) technology, (5) course evaluation and management, and (6) 21st century skills. A detailed table that identifies the ratings for each declarative statement in each of the six categories can be found in Appendix K. A summary of the findings from each of the six categories is presented in the following paragraphs.

Content. This category describes how the content of the course is presented to the students. There are 14 declarative statements in this category labeled A1 through A14. Statements A7, *"A clear, complete course overview and syllabus are included in the course,"* and A9, *"Information is provided to students, parents and mentors on how to communicate with the online teacher and course provider, including information on the process for these communications,"* were the only two statements to receive a "4 – very satisfactory" rating in this reporting category. The instructor reported that these two areas were purposely included in the design of the course in order to provide the study participants with clear and concise information regarding the course information and how to contact the instructor. The instructor reported that he felt these areas would help the participants to engage with the course content. Selena agreed with these ratings when she shared how important it was to her that the instructor provided an "organized and easy-to-read course syllabus." Missy concurred with Selena when she stated, "everything I needed to know about the course was easy to find."

Statements A10 – A14 (listed in Appendix K) received rating of "0 – absent" because those components were not present in the design of the course. There was no specific reason

that these components were not included in the course other than he never thought to include them; however, he indicated that he would include them in a future revision of the course.

Instructional Design. This category describes how the instruction was designed to meet the needs of the students. The findings show that statements B5, *"The course is designed to teach concepts and skills that students will retain over time,"* and B12, *"Readability levels, written language assignments and mathematical requirements are appropriate for the course content and the students,"* were the only two statements to receive a "4 – very satisfactory" rating in the reporting category of instructional design. Whereas statements B3, *"The course unit overview describes the objectives, activities and resources that frame the unit. It includes a description of the activities and assignments that are central to the unit,"* and B16, *"Students have access to resources that enrich the course content,"* were the only two statements to receive a "0 – absent" rating. The "21st Century Teaching and Learning" course was not designed using units and lessons. Instead, the course is designed into lessons where each lesson represents one week of instruction. As such, there are no unit overviews describing the objectives, activities, and resources to frame the unit of instruction as described in statement B3. Additionally, the course does not provide participants with access to resources that enrich the course content as described in statement B16. However, Sharon stated that she "liked the way that the course was organized into lessons, and each lesson was one week in length." She went on to share how the organization and structure of the course made it easier for her to learn in the course.

Student Assessment. This category describes how students are assessed in an online course. Statement C7, *"Grading policy and practices are easy to understand,"* was the only

statement to receive a rating of "4 – very satisfactory." This is due in part to the fact that the grading policy is fully described in the course syllabus. Statements C5, *"Assessment materials provide the teacher with the flexibility to assess students in a variety of ways,"* and C6, *"Grading rubrics and models of partially to fully completed assignments are provided to the teacher,"* received ratings of "0 – absent." However, the instructor noted that since he was the only person who teaches the course, he did not see a need to include assessment materials that provide the teacher with the flexibility to assess students in a variety of ways. Neither did the instructor see the need to include grading rubrics and models of partially to fully completed assignments to help the instructor to grade assignments as is suggested in statements C5 and C6. As the sole instructor for the course, when a situation warrants flexibility in an assessment practice, the instructor simply makes the change as a differentiated instruction strategy in the course.

Technology. This category describes how technology is used in the online course. Statements D1 – D5 and statements D7 - D9 received a rating of "4 - Very Satisfactory." The lowest rating in this category was D10, which is due to the fact that the course does not meet all of the universal design principles, section 508 standards and W3C guidelines to ensure access for all students. For example, the course does not have audio voiceovers for all text items in case a hearing impaired participant were to enroll in the course. Table 4-4 details the ratings of the course design features aligned to technology.

Table 4-6: Course Design Features - Technology

Coding	Technology	Present	Rating
D1	The course architecture permits the online teacher to add content, activities and assessments to extend learning opportunities.	Yes	4
D2	The course accommodates multiple school calendars; e.g., block, 4X4 and traditional schedules	Yes	4

D3	The course is easy to navigate.	Yes	4
D4	The course makes maximum use of the capabilities of the online medium and makes resources available by alternative means; e.g., video, CDs and pod casts.	Yes	4
D5	Hardware, Web browser and software requirements are specified.	Yes	4
D6	Prerequisite skills in the use of technology are identified.	Yes	3
D7	The course utilizes appropriate content-specific tools and software.	Yes	4
D8	Interoperability technical standards allow sharing content among different learning management systems.	Yes	4
D9	Interoperability technical standards ensure sharing of questions, assessments and results with others.	Yes	4
D10	The course meets universal design principles, Section 508 standards and W3C guidelines to ensure access for all students.	Yes	2
D11	Online textbooks used in a course meet nationally endorsed standards (NIMAS) for publishers to ensure distribution of accessible, alternative versions of textbooks and other instructional materials.	N/A	N/A
D12	The course provider offers the course teacher, school coordinator assistance with technical support and course management.	N/A	N/A
D13	The course provider offers orientation training.	Yes	3

In addition to the course design analysis completed by the researcher, interview participants also identified technology as a strength in the "21st Century Teaching and Learning" OPD course. One hundred percent of the study participants shared favorable views on the types technology used in the course as well as how it was used. Sandy found a lot of value in participating in her first synchronous class online. She stated that she really enjoyed the opportunity to see my facial expressions as I was presenting the content during the virtual lecture via a webcam and that it helped her stay engaged in the content.

Course Evaluation. This category describes how an online course is evaluated for effectiveness. Statements E5, *"The course provider is authorized to operate in the state in which the course is offered,"* and E6, *"The teacher meets the professional teaching standard established by a state licensing agency or the teacher has academic credentials in the field in which he or she is teaching and has been trained to teach online and to use the course,"* received ratings of "4 – very satisfactory." Statements E2, *"Course provider uses multiple ways*

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of assessing course effectiveness," and E3, *"The course is evaluated regularly for effectiveness, and the findings are used as a basis for improvement,"* received ratings of "0 – absent" because the course provider, Intermediate Unit 1, does not provide multiple ways of accessing course effectiveness nor does it require the online professional development courses to be re-evaluated regularly as a basis for improvement. However, the interview process in and of itself proved to be an extremely helpful device in measuring course effectiveness and providing the instructor with valuable feedback for future course revisions. For example, one theme that arose from the interviews was the study participants' desire to have more individualized feedback from the instructor on assignments and in discussion boards.

21st Century Skills. Lastly, this category describes how the online course addressed the 21st Century Skills Framework. F1, *"The course intentionally emphasizes 21st century skills in the course, including using 21st century skills in the core subjects, 21st century content, learning and thinking skills, ICT literacy, self-directed learning, global awareness, and include 21st century assessments, as identified by the Partnership for 21st Century Skills,"* is the only statement in this category and it received a rating of "4 – very satisfactory." This rating is partly due to the fact that there is an entire lesson dedicated in the course to the 21st century framework. In addition to having a entire lesson on the 21st century skills framework, many aspects of it where integrated into the content presentations. For example, one discussion board assignment focused on how globalization was impacting education that addresses the "global awareness" component of the 21st century skills. Additionally, "learning and thinking skills" was embedded into the discussion board assignments where study participants were required to respond to at least one of their classmate's posts in a "meaningful, thought-provoking manner."

4.2.3   Summary of Findings Related to Research Question #1

This section reported the findings of why the participants chose to enroll and engage in the 21st Century Teaching and Learning online course. Three themes emerged from the findings regarding why the study participants chose to enroll in the OPD course. They are (1) teacher certification requirements, (2) convenience/time, and (3) interest/relevance in the topics of study. Additionally, the findings identified four advantages to participating in online professional development courses as they relate to enrollment. They included: (1) time, (2) pacing, (3) collaboration, and (4) convenience of working from home. Additionally, this section reported the findings of why participants chose to engage in the 21st Century Teaching and Learning online course. After analyzing the data from the artifact reviews, the direct observation, and the interviews, two themes emerged that address the reasons in which participants engaged in the 21st Century Teaching and Learning OPD course. The two themes are (1) engagement – as a matter of interest in the course topics and (2) engagement – as a matter of course design. In the next section the characteristics of OPD courses that participants perceived as being effective will be examined.

4.3   FINDINGS RELEVANT TO RESEARCH QUESTION #2

Research Question #2: *What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?*

The data related to this question were drawn from interviews, researcher journal entries, artifact reviews, and a direct observation. Through the process of coding and cross categorizing between each of the data sources, three themes emerged as three overarching characteristics of online professional development courses. This section will describe the three overarching characteristics that the study participants perceived as effective, which are: (1) instructional design, (2) interactivity, and (3) collaboration.

4.3.1 Effective Characteristic #1 – Instructional Design

The findings of the artifact analysis show that the content of the "21st Century Teaching and Learning" course is organized inside of folders, which are represented by eight navigational buttons on the left hand side of the screen (see Figure 4-2). The names and brief descriptions of the contents of each of eight navigational buttons are:

1. **Announcements:** Contains all of the course's general announcements. Announcements may include reminders of assignment due dates, tips, technical support information, etc.

2. **Class Outline:** Contains the course syllabus and an outline of the course content. Additionally, course policies (i.e. course withdrawals) are located in this section.

3. **Intro to Class:** Contains general information about the course such as: the learner's responsibilities, how to contact the instructor, information regarding software and technical requirements for the course and instructions on how to use the tools in Blackboard.

4. **Lessons:** Contains a list of folders for each week's lesson.

5. **Discussion Boards:** Contains a list of the course's discussion boards where the learner can click a hyperlink to enter the discussion board of their choice.

6. **Course Tools:** Provides a comprehensive list of the Blackboard tools available in the course. Learners can click on an icon to use any of the course tools listed.

7. **External Links:** Contains a list of external hyperlinks to various websites that may be helpful to the learner. For example, a hyperlink is provided to the learner where he or she can download a free version of Adobe Reader in order to open PDF documents.

8. **Evaluation:** Contains a course wrap-up survey and a course evaluation document.

All course information, lesson content, and course tools will be accessible through these eight navigational buttons as identified in Figure 4-2.

Figure 4-2: Course Navigational Buttons

The course is designed as an asynchronous course with four lessons, where each lesson represents one week's worth of study. The lessons are organized in folders identified by the lesson number with a brief description of the learning activities encompassed in that week's lesson (see Figure 4-3). The participants are able to move freely through the weekly lessons and corresponding learning activities, assignments, and assessments. Each weekly lesson contains assessments and course assignments designed to assess the participant's understanding of the content. Assessments are in the form of quizzes, pre-tests and post-tests. All assessments are submitted to the course instructor internally through the Test Tool in Blackboard.
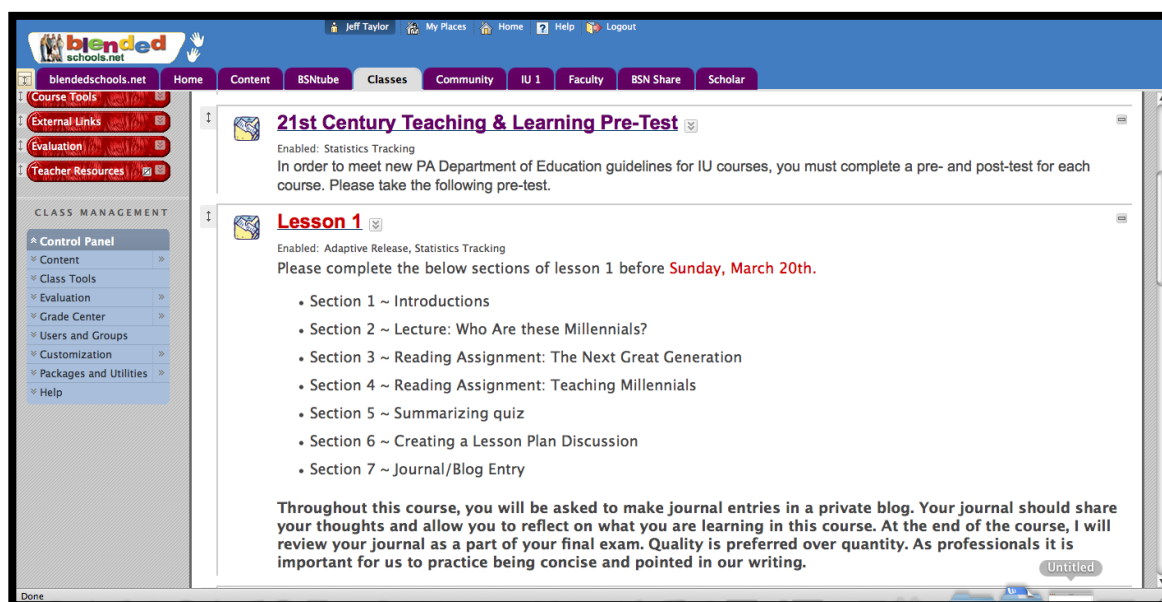
Figure 4-3: Course Lesson Structure

In addition to quizzes and tests, the learner participates in learning activities throughout the weekly lessons that may include collaborative activities and/or written assignments. All written assignments are submitted to the course instructor via the Assignment Tool in

Blackboard; whereas, collaborative activities may be assessed through a variety of tools in Blackboard (i.e. discussion boards).

Study participants commented positively on organization of the course in Blackboard and identified that clear course organization is an effective characteristic of online professional development courses offered via a web-based content management system (Blackboard). Missy described the course organization as

> …easy to navigate and find anything I wanted in the course. I was able to find each of the assignments easily and always knew where I was to submit them. The course was just so well organized, everything was easy to find.

Bob concurred with Missy as he, too, stated that the course was easy to navigate and organized in a way that he was not confused on where he was in the course or what he was supposed to do for each assignment.

Sharon further elaborated on the course organization when she stated she liked how each lesson was arranged around one week. She was able to budget her time and pace herself throughout the week due to how the lessons were organized. She further stated that "I am a list-maker, so I liked how everything was organized by bulleted lists so I could check things off as I completed them."

Jane explained that she felt organizing the lesson assignment deadlines on a weekly deadline was very helpful to her. She felt that it gave her enough time to complete the assignments, but it did not provide an open-ended window of time where she could procrastinate for a couple of weeks.

Talisha stated that the organization of the course provided her with an easy way to locate both the general information that she needed to know about the course; as well as,

specific information regarding each lesson's specific assignments. She described the organization of the course as "…detailed and descriptive."

Bev described the organization of the course when she stated:

I liked how a reading assignment was presented first, then it was followed by a lesson presentation of some kind. Then, we had to participate in a discussion board around a topic from the reading assignment or lesson presentation. I felt this was organized well and that each learning activity was building on top of each other with the final culminating assignment of describing how we were to apply our newfound knowledge in our classrooms.

Overall, the study participants reported, either directly or indirectly, that organization of an online professional development course is an important characteristic of an effective online professional development course.

4.3.2 Effective Characteristic #2 - Interactivity

All of the study participants identified the importance of interactivity as an effective characteristic of online professional development. This section will describe the findings regarding the types of interactivity in the 21st Century Teaching and Learning course.

Through her research on student interactivity, Swan (2003) stated that there are three types of interactions needed for learning to take place in an online environment. She further suggested that including these three types interactions is absolutely necessary in developing a quality online course. Swan's (2003) three types of interaction are:

1. Interacting with content

2. Interacting with the instructor

3. Interacting with peers/students in the course

The findings from this study support Swan's (2003) assertion that three types of online interactions exist should exist in an online professional development course. All of the study participants commented on the importance of being able to interact with (a) the course content, (b) the instructor, and (c) classmates.

Interacting with Course Content. The study participants described a number of ways in which they interacted with the course content in both positive and negative ways. In one example, study participants reported how they interacted with a reading assignment from two different perspectives. On a positive note, Bev described how much she enjoyed the course reading assignments that were presented on the screen as a embedded Adobe PDF file. She liked the fact that she did not have to download the document and then open it in another program before she could review the content of the reading assignment. She also reported that she liked the fact that it was "right there" for her to start reading. However, Bob reported a negative view of the same capability. He reported that he had a difficult time reading the text on the screen and that it was too small for him to review on his computer. Therefore, he downloaded the file and printed it so that he could read it at home. He felt that he needed to have the document "in my hand" to read.

In addition to the reading assignments, the study participants identified a number of other ways in which they interacted with the course content including: video lectures, written assignments, reflective journal entries, discussion boards, synchronous lessons, projects, and collaborations with their classmates and their instructor.

Interacting with the Instructor. At the beginning of the course, the study participants were provided their instructor's name, email address, home phone number, work phone number, and cell phone number. They were encouraged to contact the instructor at anytime throughout the course if they had questions or concerns. The instructor reported that student-instructor interactions occurred in the following ways: (a) texting, (b) phone calls, (c) emails, (d) discussion board posts, and (e) web conferencing during the synchronous lesson.

The study participants reported both positive and negative comments regarding the interactions that they had with the instructor. First, on a positive note, the majority of the study participants (75%) reported that they interacted with their instructor in a number of ways and that those interactions were helpful to their learning. However, 25% (2 out of 8) of the study participants reported that they did not have enough interaction with the instructor and that it may have negatively impacted their learning. Upon reviewing these findings, the instructor reported that the study participants who reported a negative view of the student-instructor interactions did not participate in the live, virtual lesson where the students were able to interact with the instructor using a webcam and a microphone which may, or may not, have influenced their perception.

Interacting with Classmates. All of the study participants reported that the interactions that he or she had with their peers positively impacted his or her learning. Table 4-9 identifies the ways in which the study participants reported interacted with each other in the course.

Table 4-7: Types of Student-Student Interactions

Types of Interactions	Number of Study Participants who Reported Using a Specific Type of Student-Student Interaction	Percentage of Study Participants Using Each Type of Student-Student Interaction Tool
Discussion Boards	8	100%
Live Virtual Class	6	75%
Email	4	50%
Telephone	3	38%
Instant Messaging	2	25%

Wimba Pronto, an online instant messaging tool, was made available to all of the study participants at no charge while they were enrolled in the "21st Century Teaching and Learning" course. Wimba Pronto allows a student to log in and view a list of the students enrolled in the course in which they are enrolled. Students are then able to chat with each other about the course or any topic of interest. While 100% of the study participants reported interacting with their classmates through a discussion board, only 25% reported using instant messaging to do so.

4.3.3 Effective Characteristic #3 - Collaboration

All of the study participants identified the importance of collaboration as an effective characteristic of online professional development. This section will describe the findings regarding collaboration in the 21st Century Teaching and Learning course.

One of the course design strategies utilized in the "21st Century Teaching and Learning" course was a discussion board requirement where course participants were required to collaborate with each other in order to receive full credit for the assignment. Throughout the

course, participants were required to answer and address questions and discussion board prompts as a means to interact with one another and the content of the course. There were a total of 9 discussion board assignments in the course. In 6 of the 9 discussion board assignments, participants were required to post one original response that addressed the question or discussion board prompt and then respond to at least two of their classmates' posts in "meaningful, thought-provoking ways." Therefore, in 66% of the discussion board assignments, participants were required to interact and collaborate with one another.

Talisha's comments on collaboration as a course requirement. Talisha reported that she enjoyed the discussion board conversations and that they were "engaging" to her. She also reported that the requirement to collaborate with each other in order to receive full credit for the assignment was helpful in "guiding" her thinking. She stated, "they [discussion board posts] were a guide for me. If I did not understand something, I read what others wrote to help guide my thinking. The requirement forced me to engage with others in my thinking." She then reported that if there were no requirements to collaborate with her fellow students, she may not have done so and that her fellow students probably would not have done so either. Furthermore, she indicated that, without the requirement to collaborate with each other in the discussion board, she might not have learned the content as well due to a lack of other perspectives being presented.

As collaboration in discussion board assignments was a course requirement, 100% of the study participants collaborated with one another at various points throughout the course. As previously described in Chapter 3, the Garrison Four Stage Cognitive Process Model was used in order to measure the critical thinking skills and levels of collaboration in the discussion

board assignments. The four stages are: (1) triggering, (2) exploration, (3) integration, and (4) resolution. A copy of the Garrison model can be found in Appendix I.

Transcripts from each discussion board assignment were created in Microsoft Excel where each discussion board post was assigned one of the four stages from the Garrison Framework. An analysis of the discussion board transcripts demonstrated that the majority of the collaborations taking place where either at stage 2 – exploration or stage 4 – resolution. During stage 2 – exploration, study participants are transitioning from the private, reflective world of the individual to the social, exploration world of online discussions. Participants move back and forth from self-reflection and shared knowledge that becomes the basis for online academic discourse (Garrison, Anderson, & Archer, 2001). Stage 2 – exploration can be characterized in posts where the study participants are brainstorming, questioning, or exchanging ideas with one another. Whereas stage 4 – resolution is characterized by the resolution of a dilemma or problem by means of direct or vicarious action (Kirkpatrick, 2006). This stage can be identified when study participants demonstrate that they are ready to move on to a new problem or dilemma with the assumption that new knowledge was gained. Table 4-10 summarizes the findings of a single discussion board transcript analysis where stage 2-exploration and stage 4 – resolution were the most prevalent types of discussion post responses. A copy of the full transcript analysis can be found in Appendix J.

Table 4-8: Discussion Board Transcript Analysis - Millennials Assignment

Garrison Framework Stage	Number of Discussion Board Posts	Percentage of Discussion Board Posts
Stage 1 - Triggering	2	4%
Stage 2 - Exploration	21	45%
Stage 3 - Integration	8	17%
Stage 4 - Resolution	16	34%
Total	*47*	*100%*

The data in this section was drawn from interviews, researcher journal entries, artifact reviews, and a direct observation. Through the process of coding and cross categorizing between each of the data sources, three themes emerged as three overarching characteristics of effective online professional development courses. The three overarching characteristics that the study participants perceived as effective are: (1) instructional design, (2) interactivity, and (3) collaboration. In the next section, the findings relevant to research question #3 will be presented.

4.4 FINDINGS RELEVANT TO RESEARCH QUESTION #3

Research Question #3: *How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?*

A review of the research literature illustrates that there is benefit to providing teachers with professional development. However, not all professional development is the same. A synthesis of the research literature identifies four overarching characteristics of effective

professional development. The four characteristics include: (1) time, (2) collaboration, (3) content and pedagogy focused, and (4) relevance. Although these four characteristics can be included in "traditional" professional development, such as conferences, workshops, and in-service days, current challenges such as cost and time present obstacles for participation. Therefore, school districts are moving toward offering more "reform-oriented" oriented professional development opportunities such as online professional development in an effort to overcome cost and time factors. This section will describe how the "21st Century Teaching and Learning" online professional development course addresses the four overarching characteristics of effective professional development.

4.4.1   Time

Time, an overarching characteristic of effective professional development, was addressed in the 21st Century Teaching and Learning OPD course in a number of ways; however, time alone is not the only factor in effective professional development. The notion of "time" must work in concert with other characteristics of effective professional development, such as collaboration, in order to be considered truly effective (Guskey, 2000). As the characteristic of time will be interwoven throughout the remaining sections of the chapter, the focus of this section will be to describe the duration of time associated with the 21st Century Teaching and Learning OPD course.

Duration of Time Spent in the Course

It is suggested that the duration of professional development is related to the depth of teacher change (Shields, et al., 1998), which includes the span of time over which the activity takes place, as well as the number of contact hours that participants spend in the activity. Longer activities are more likely to provide in-depth discussions of issues dealt with in the professional development program, helping to understand new strategies, as well as to allow teachers to try out new practices in their own classroom (Desimone et al., 2002; Garet et al., 2001; Speck, 2002). After an extensive review, Yoon, Duncan, Lee, Scarloss, and Shapley (2007) identified nine studies confirming that sustained, effective professional development with 49 hours or more is associated with gains in student achievement. In which, according to Guskey (2000), improving gains in student achievement is the ultimate goal of effective professional development.

The duration of the "21st Century Teaching and Learning" OPD course was designed to provide participants with enough time to engage in in-depth discussions related to the content presented. Additionally, the duration of the course allowed teacher participants time to try out new strategies gleaned from the course and then report back to the course participants through discussion boards on their progress. In order to provide enough time to do so, the "21st Century Teaching and Learning" OPD course was designed to be 6 weeks in length and worth 2 continuing education credits, which equates to 60 hours of professional development. The lessons were structured to provide approximately 10 hours of professional learning activities per week for each of the 6 weeks of the course.

During interviews, participants were asked if they felt as if they spent an appropriate amount of time and energy meeting the course requirements. Of the eight participants interviewed, 100% responded that they, indeed, spent an appropriate amount of time and energy meeting the course requirements. Selena stated:

> I actually think that I spent more time completing the assignments than what was required for the course. Although I felt the time was well-spent, it did take me a long time to go through all of the assignments each week.

Sandy concurred with Selena when she stated:

> Yes, I definitely spent enough time and energy for a 2 credit course. I took advantage of the fact that I could choose times that were convenient to me to complete assignments. I liked the readings on globalization and spent more time than I probably needed to in the globalization discussion board postings. I just really enjoyed talking about it after what I read.

The duration of the course was also identified in the interviews as a perceived effective characteristic of the course. Bev explained:

> I believe one of the ways this course was effective was that it provided the proper amount of time needed to work at your own pace and at a time that was convenient. I liked that, throughout the course, I had time to think about my discussion board posts before I submitted them. I had time to read other people's discussion board posts and reflect a little bit on them before I responded. Sometimes you don't have that time in a regular classroom setting. Once that part of the classroom discussion is over, its over. Having the time in this course to truly think about how I wanted to respond to others in the discussion board was helpful.

Sharon agreed with Bev and further explained that she felt the duration of time helped her to be more reflective in her discussion board posts. She stated that she did not feel rushed to post a response. She was able to think about what she wanted to write and, therefore, put more time into her writing.

As stated previously, the notion of "time" must work in concert with other characteristics of effective professional development, such as collaboration, in order to be considered truly effective (Guskey, 2000). In the next section, I will examine the how the 21st Century Teaching and Learning OPD course addresses the concept of "collaboration," in concert with time.

4.4.2 Collaboration

Collaboration, an overarching characteristic of effective professional development, was addressed in the 21st Century Teaching and Learning OPD course by providing opportunities for participants to work together and share ideas. Reeves (2006) captured the essence of this notion when he said, "Time for teacher collaboration is essential for effective education" (p. 103). Furthermore, according to Zeichner (2003), most educators at all levels value opportunities to work together, reflect on their practices, exchange ideas, and share strategies and expertise. The ability to work collaboratively on common goals, with the ultimate goal of improving student learning, is a key component of effective professional development (Zeichner, 2003).

The 21st Century Teaching and Learning OPD course provided opportunities for participants to collaborate through synchronous and asynchronous online learning. Synchronous online learning occurs when the instructor and the students [participants] are logged in to a shared portion of the course simultaneously using a tool such as Wimba Live Classroom. Whereas, asynchronous online learning occurs when the instructor and students are

not logged in to the course simultaneously. Instead, students are able to post responses to prompts or questions using a tool such as a discussion board, blog, or wiki. In the 21st Century Teaching and Learning OPD course, discussion boards were used for asynchronous collaborations and Wimba Live Classroom was used for synchronous collaboration. The data collected from this study revealed that, although there were appropriate amounts of interactions during the synchronous lesson, examples of collaboration were very limited. Therefore, the focus of this section will be to describe how the 21st Century Teaching and Learning OPD course utilized asynchronous online learning sessions for participant collaboration.

Collaboration via Asynchronous Online Learning

One of the course design strategies utilized in the "21st Century Teaching and Learning" course was a discussion board requirement where course participants were required to collaborate with each other in order to receive full credit for the assignment. Throughout the course, participants were required to answer and address questions and discussion board prompts as a means to collaborate with one another and the content of the course. There were a total of 9 discussion board assignments in the course. In 6 of the 9 discussion board assignments, participants were required to post one original response that addressed the question or discussion board prompt and then respond to at least two of their classmates' posts in "meaningful, thought-provoking ways." Therefore, in 66% of the discussion board assignments, participants were required to collaborate with one another.

As collaboration in discussion board assignments was a course requirement, 100% of the study participants collaborated with one another at various points throughout the course.

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As previously described in Chapter 3, the Garrison Four Stage Cognitive Process Model was used in order to measure the critical thinking skills and levels of collaboration in the discussion board assignments. The four stages are: (1) triggering, (2) exploration, (3) integration, and (4) resolution. A copy of the Garrison model can be found in Appendix I.

Transcripts from each discussion board assignment were created in Microsoft Excel where each discussion board post was assigned one of the four stages from the Garrison Framework. An analysis of the discussion board transcripts demonstrated that the majority of the collaborations taking place where either at stage 2 – exploration or stage 4 – resolution.

The discussion board transcript analysis identified Stage 2 – Exploration as the most prevalent type of discussion board post present. In the analysis, 45% of the discussion board posts were identified as stage 2 – exploration posts. During this stage, study participants were transitioning from the private, reflective world of the individual to the social, exploration world of online discussions. Participants moved back and forth from self-reflection and shared knowledge, which becomes the basis for online academic discourse (Garrison, Anderson, & Archer, 2001).

Stage 2 – exploration can be characterized in posts where the study participants are brainstorming, questioning, or exchanging ideas with one another. Jane, a high school librarian, posted the following example of a stage 2 – exploration response in a discussion board assignment. In her post, Jane stated:

> In the library, students are constantly checking their grades. I have learned that this is important to Millennials. Is there such a thing as too much feedback? Millennials like boundaries. We as teachers can't hover like helicopter parents. As a senior high instructor, I often hear complaints that the student knew he had to do X. Was I supposed to remind him every day? When he got to the end and discovered he was failing, he wanted extra credit to pass when they didn't do the

class requirements in the first place. I am contemplating the difference between feedback and coddling.

As a characteristic of stage 2 – exploration discussion board posts, Jane moved back and forth from self-reflection to shared knowledge. She demonstrated self-reflection when she stated: *"I know I have room for improvement when providing feedback for my lessons."* Additionally, instead of just presenting statements, Jane presented questions in her post. For example, Jane posed the questions *"Is there such a thing as too much feedback?"* and *"Was I supposed to remind him every day?".* These questions reflected a state of self-reflection. In the same post, Jane shared her knowledge as she presented a relevant anecdote to the posting. Jane shared:

> I saw a former student a few weeks ago. She had a job at Pechins last summer and that was her last job. After she worked there a few weeks, she took a week off to go on vacation with her family as always. She came back and found she had no job. Perhaps Pechins should have told her; again, maybe they didn't want to tell her.

Collaboration was evident in the transcript following Jane's post. Responses to Jane's posts varied in the levels of Garrison's Four Stage Model; however, all of the response demonstrated some level of collaboration through shared experiences. Representing another stage 2 – exploration post, Selena submitted the following response to Jane's post.

> I love your use of the term "coddling." It's exactly what's happening. I learned to lay out the consequences of not completing the work their given on time right at the beginning of any assignment. I've also learned that when they don't hold up their end of an expectation, to give them consequences that exactly match their lack of commitment. For an example of each of these, in the case of the assignment, I gave a term paper to my jazz band. I gave them exact guidelines, the consequences for perjury, and the consequences for the assignment not being turned in late. I had several students perjure themselves. One student so severely that I found that he had just cut and pasted the entire paper directly

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from wikipedia. His mother agreed that he should automatically fail, and he got in twice as much trouble at home as he had by perjuring himself. I another student fail the class because he never turned in a paper. His mother emailed me after grades were issued to tell me I should have contacted her about his not turning in the paper. I had talked to him about it directly on at least 3 occasions. She demanded that I accept a paper that was over a month late (she agreed to the late penalty terms), and adjust his grade. My administration backed her instead of me. No teacher should have to contact the parent of a junior in high school when a paper isn't turned it. It does nothing to teach students responsibility. I guarantee that if he refused to do something in the work force, he'd no longer have a job. The millennial generation needs to have clear-cut guidelines, but they also need to be taught something about personal responsibility. They'll take responsibility for the world, but not for themselves.

Whereas the most prevalent category of discussion board post was in stage 2 – exploration, the transcript analysis identified stage 4 – resolution as the second most prevalent type of discussion board post. Stage 4 – resolution is characterized by the resolution of a dilemma or problem by means of direct or vicarious action (Kirkpatrick, 2006). This stage can be identified when study participants demonstrated that they were ready to move on to a new problem or dilemma with the assumption that new knowledge was gained. Unfortunately, none of the discussion board posts collected could be classified as stage 4 – resolution.

Data reported in this section described how asynchronous online learning collaborative activities provided participants with opportunities to collaborate through reflection, exploration of ideas, sharing of experiences, and providing possible resolutions to identified dilemmas. As stated previously, "collaboration" must work in concert with other characteristics of effective professional development, such as "content and pedagogy knowledge," in order to be considered truly effective (Guskey, 2000).

Collaboration via Synchronous Online Learning

A second course design strategy for collaboration utilized in the "21st Century Teaching and Learning" course was a synchronous class session where course participants were able to participate simultaneously through the use of webcams and microphone headsets. As this OPD course was advertised as an asynchronous course, participation in the synchronous session was voluntary.

A participant-observation was conducted n the OPD course through a synchronous learning session via the Wimba Live Classroom tool in Blackboard. Through the use of this tool, course participants were able to interact with one another in real-time using: (1) a shared interactive whiteboard, (2) synchronous chat features and, (3) voice features that allow the participants to speak to one another using microphones and speakers attached to their computers.

Unfortunately, as the synchronous session was not a course requirement, only 3 course participants were in attendance. Due to technical difficulties with her computer's audio and video features, one of the participants was unable to use any of the voice or video tools for the session. Therefore, only two participants were able to fully participate in the class session's learning activities. I hypothesize that there may be two reasons why other participants did not attend the synchronous session. First, I hypothesize that due to family and personal commitments, participant's time was limited and they were unable to commit to attending an online class on a prescribed date and time. This hypothesis relates to one of the findings of this study in that participants enroll in OPD courses for the flexibility of time in which they offer. Additionally, I hypothesize that some participants may have been intimidated by the

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technological complexities involved in using a webcam and microphone headset, which are needed for a synchronous class session. If participants are not comfortable using these types of technological devices, participation in a synchronous may be perceived as a frustrating and fearful experience (Spodick, 1995, Harasim et al, 1998).

The synchronous class session began with the instructor conducting audio checks with each participant. Next, the instructor presented the lesson orally while using PowerPoint slides displayed in the interactive whiteboard for participants to follow. During the presentation the instructor tried to engage the two participants who had audio capabilities, but their responses were limited. At the end of the lesson presentation, the instructor asked the participants if they had any questions or comments and, once again, their responses were very limited. There were no questions asked; however, each shared one comment regarding the content of the lesson presentation that they found interesting. As a result of the limited number of participants and the limited interactions between the instructor and the participants, not enough data were collected for any meaningful analysis. However, when the researcher later interviewed the participants who were present in the synchronous class session, 100% of the participants indicated that they enjoyed the synchronous session. Missy commented that she enjoyed how the synchronous session offered "instant feedback" during the lesson. Selena stated that the synchronous session was "the next best thing to being in a regular class." She further stated that she liked how she could respond to a question during the lesson presentation and receive both verbal and nonverbal feedback by seeing the instructor's facial expressions while hearing him respond.

4.4.3 Content and Pedagogy Knowledge

A growing body of research shows that to be successful, teacher professional development needs to address both content and pedagogy aspects of teacher growth (Reeves et al., 2001; Wilson & Berne, 1999). Effective professional development has the power to increase an educator's knowledge of academic content and teaching skills (pedagogy,) while, simultaneously, changing an educator's beliefs about student learning and how they interact with students (Christie, 2009). Therefore, providing high-quality professional development for teachers in subject-matter expertise (content) and instructional strategies (pedagogy) are vital to improving student learning. This section will focus on how the "21st Century Teaching and Learning" OPD course addressed content and pedagogical knowledge as a characteristic of effective professional development.

Content Knowledge. Content knowledge, as described by Kennedy (1998) and Shulman (1986), is the knowledge about the actual subject matter being learned or taught; as well as, expectations for student performance. Teachers must know and understand the subjects they teach (Guskey, 2000). This includes: knowledge of central facts, concepts, theories and procedures within a given field; knowledge of explanatory frameworks that organize and connect ideas; and knowledge of the rules of evidence and proof (Shulman, 1986). Additionally, Christie (2009) suggests that teachers should also understand the nature of knowledge and inquiry in different fields.

The "21st Century Teaching and Learning" OPD course was not a subject-area or content specific course. Instead the course focused on broad issues effecting education in the 21st century where the content of the course fell into the following four categories:

1. Millennial generation of students

2. The impact of globalization on education

3. A shift from left brain to right brain thinking in education

4. The 21st Century Skills Framework

In order to address the content from each of these categories, a variety of instructional strategies were employed in order to present the content to the participants. For example, in "Lesson 1: The Millennial Generation," the content was presented in the forms of video lectures and reading assignments. Participants were then required to participate in a discussion board assignment where they were able to expand their knowledge of the content through discussion and deliberation. Assessments such as quizzes, reflective journal entries, and quizzes were administered to ensure the participants were able to demonstrate mastery of the content presented in the lesson. One of the reflective journal entry questions for lesson 1 was: *"What is your greatest challenge/fear as you try to alter your teaching to meet the needs of Millennials?"* By asking this question, the participant had to first understand the content of the lesson and then apply it to a new situation, demonstrating a higher level of thinking. Bev provided the below response to this question. She stated:

> I think that my greatest challenge is going to be dealing with the parents ("helicopter parents") and the students. I agree that the parents should be aware and help their child/ren to perform their best in school. What I do not agree with is that the parents put no responsibility on their child/ren. The child should at least have some responsibility! Responsibility makes the student feel good inside, and makes them feel that at least contributed something. When

the Millennial student grows up and becomes an adult, what to they expect--that their parents are going to hand everything to them??

Also, my teaching strategies will have more classroom discussions, group work with brainstorming, and provide more feedback to them. As an elementary school teacher, I know that the students love it when I let them have to chance to do group work they are all for it. They like moving around the room to "talk" with each other. At the end of the day, I make sure that I "star" or "smiley face" their paper/ test/ or student assignment booklet in green (green means great day) to let them know that I approve of their paper/ test/ behavior test of the day. They love the feedback! :)

Throughout the "21st Century Teaching and Learning" OPD course, content was provided through a variety of instructional methods. In each of the four lessons, the participants were required to apply their newfound content knowledge in various assignments where they described how they were going to change their teaching practices as a result of what they gleaned from the lesson, resulting in new pedagogical knowledge. The next section will describe how the "21st Century Teaching and Learning" OPD course addressed pedagogical knowledge.

Pedagogical Knowledge. Pedagogical knowledge, as described by Kennedy (1998) and Shulman (1986), describes how content is taught. Pedagogical knowledge can be described as a deep knowledge about the processes and practices or methods of teaching and learning and how it encompasses overall educational purposes, values, and aims (Ball, McDiarmid, 1990). Pedagogy, or sometimes described as the way content is presented, can apply to many aspects of student learning including, but not limited to, classroom management, lesson plan development and implementation, and student evaluation (Shulman, 1986). It includes knowledge about techniques or methods used in the classroom such as the nature of the target audience and strategies for evaluating student understanding. Teachers with deep pedagogical knowledge understand how students construct knowledge and acquire skills (Kennedy, 1998).

In the context of the 21st Century Teaching and Learning OPD course, participants were required in each lesson to describe how their pedagogical knowledge changed as a result of the new content knowledge. This was accomplished through a variety of assessment strategies including, but not limited to, quizzes, written assignments, discussion board submissions, journal entries, and blog entries. For example, in Lesson 2 – The Impact of Globalization on Education, participants were presented the content through video lectures, readings, and discussions. As one of the assessment strategies, participants were required to write an essay that answered the following two questions:

1. "Explain how you will revise a current lesson plan to integrate globalization literacy into your classroom."

2. "Discuss what you will specifically do differently in your lesson to integrate globalization literacy into the lesson."

In order to address these two questions, participants had to; first, fully understand the content that was presented. Secondly, they had to apply that content knowledge in order to integrate it into their lesson. Lastly, they had to demonstrate a change in pedagogical knowledge in order to address what they would "specially do differently" in their lesson.

Selena's response to the two aforementioned questions demonstrates a combination of changes in her pedagogical knowledge. First, she integrated the concepts of globalization into the teaching of elementary music. Secondly, she describes changes in her pedagogical knowledge as a result of a combination of her newfound content knowledge from Lesson 1 – The Millennial Generation; as well as, her content knowledge of globalization from lesson 2. Selena responded:

A current lesson plan of mine involves a "storyboard" music history lesson on specific composers. The final product of the lesson was that the class created books on different composers to learn about their life, their music, and what made them "tick." When I first started doing this lesson, they students went home, found 10 facts, and brought in a paper (typed or hand written) with their facts the following week. The only facts they were not permitted to give me were birth and death dates. Then I compiled all of the answers into a list, and as a team we worked to put them into chronological order. We then created a colorful booklet that we taped the facts inside of in order, and I printed out a title page for it. We bound it with yarn, and the students had a final product to show to their parents when they came into school. It was housed in my classroom. I did this project with 2nd and 3rd grades.

To make it a globalized project, I plan to implement the following . Students will work in class to find the facts on the composer. They'll upload the 10 facts to a discussion thread link on our class wiki page. We'll still figure out the chronology together, but the final product, instead of being a hard copy booklet will be a Digital Story using either Photostory or Animoto to upload pictures that we'll choose together to go with our facts. We'll set it to the music of the composer and upload the final project to both the wiki and the class blog. That way, the parents can go online with their kids in the evening and see the projects that we're doing in class. We can also share these projects with music classrooms around the country and the world.

I'll specifically train the students on how to utilize the wiki space (posting to the discussion threads, uploading the project), how to design the Digital Story (choosing and saving pictures, selecting music, adding captions), and how to safely search for the facts they need. We'll discuss the difference between "search" and "research" by talking about what makes a site credible and how to know if information is accurate. All of these skills will serve the students well in our digital world.

Selena's response identified her ability to transform one of her current lessons into a 21st century lesson plan that included changes in her pedagogical knowledge as demonstrated by new teaching strategies. In addition to addressing content and pedagogical knowledge, Selena's response demonstrated how she made the project relevant to both her students and her subject area by having the project shared with parents and on a global scale. In the next

section, <u>relevance</u>, the fourth overarching characteristic of effective professional development will be described.

4.4.4 Relevance

In order to develop an effective professional development program, the program's goals must respond to the potential participant's needs and expectations of a program. In other words, it must be relevant to the teacher (Abbott, et al., 1999; Bradley, 1996; Fuchs & Fuchs, 1998). In the context of teacher professional development, researchers agree that relevance refers to professional development programs and activities that are directly related, connected, and applicable to a teacher's ability to teach and improve student learning (Abbott, et al., 1999; Bradley, 1996; Fuchs & Fuchs, 1998; Guskey, 2000; Guskey, 2009; Zepeda, 2008; Desimone et al., 2002; Darling-Hammond, 1995; Garet et al., 2001).

Relevance, an overarching characteristic of effective professional development, was addressed in the 21st Century Teaching and Learning OPD course by providing online learning activities that were directly related, connected, and applicable to the study participant's ability to teach and improve student learning.

"Just once I wish our staff development days could be used to meet some of my needs, there are so many areas where I need help" (Olivero, 1976, p. 194). This sentiment was shared by most of the study participants. When asked which was a more effective form of professional development for them, a district-sponsored in-service program or the "21st Century Teaching and Learning" OPD course, 100% of the respondents identified the "21st Century Teaching and

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Learning" OPD course as more effective. As a follow-up to that question, participants were asked why they perceived the OPD course more effective. Although the responses varied, one theme emerged in their responses – relevance to their daily teaching practices. Fifty percent of the respondents specifically referenced relevance in their responses while the other 50% described situations that were categorized as being relevant to their individual professional development needs. Sharon stated, "I never learn anything relevant in my district-sponsored in-service programs." In comparison, Sharon that the she was going to apply what she learned from the OPD course directly into her teaching practices because they were "relevant" to her. Furthermore, Sharon went on to describe specific references to lesson topics in the "21st Century Teaching and Learning" OPD course and how she intended on applying them in her lesson planning.
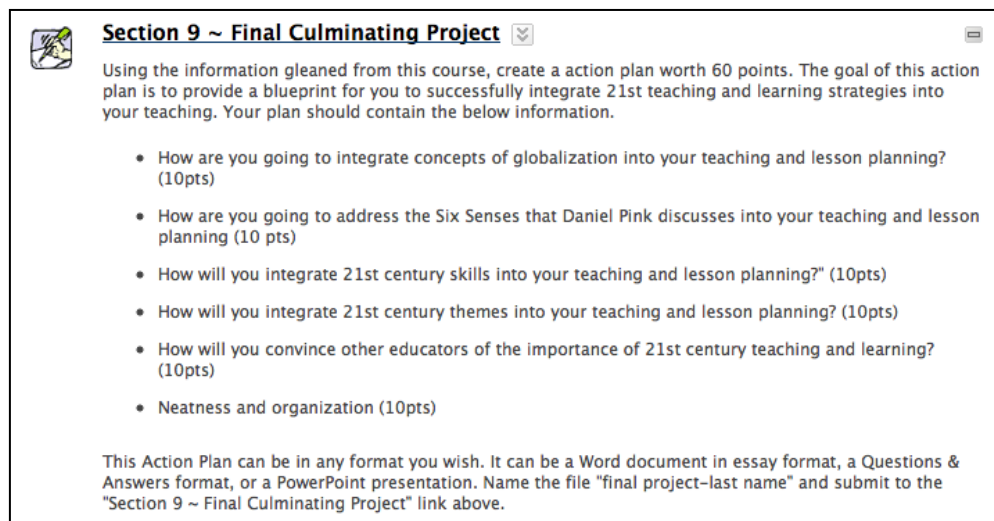
Agreeing with Sharon, Selena stated "District in-service days are never relevant to what I do in my classroom." She then described how she intended on using the information she learned about right-brain and left-brain thinking from Lesson 2 when she went back to school in her classroom.

Bob concurred when he stated "Online professional development is much more relevant than an in-service day. It [21st Century Teaching and Learning OPD course] provided me with more direction and focused my energy on incorporating new teaching strategies for my classroom."

The sentiments expressed by the study participants describing their perception that the "21st Century Teaching and Learning" OPD course was relevant to their professional development needs was due in part to the types of assignments that were required in the

course. In each of the lessons, participants were required to first demonstrate their content knowledge on a variety of assessments. Next, they were required to describe how they were going to apply their newfound content knowledge to their classroom – making it relevant to them. Lastly, the participants were required to compose a reflective journal entry describing their thoughts on how they were going to change their teaching practices based on what they had learned.

In addition to building "relevance" into each lesson of the course, the final culminating project consisted of creating an action plan for integrating 21st century teaching strategies into their classroom and being able to persuade some of their colleagues to do the same. A partial copy of the final project description can be found in Figure 4-4.

Section 9 ~ Final Culminating Project

Using the information gleaned from this course, create a action plan worth 60 points. The goal of this action plan is to provide a blueprint for you to successfully integrate 21st teaching and learning strategies into your teaching. Your plan should contain the below information.

- How are you going to integrate concepts of globalization into your teaching and lesson planning? (10pts)
- How are you going to address the Six Senses that Daniel Pink discusses into your teaching and lesson planning (10 pts)
- How will you integrate 21st century skills into your teaching and lesson planning?" (10pts)
- How will you integrate 21st century themes into your teaching and lesson planning? (10pts)
- How will you convince other educators of the importance of 21st century teaching and learning? (10pts)
- Neatness and organization (10pts)

This Action Plan can be in any format you wish. It can be a Word document in essay format, a Questions & Answers format, or a PowerPoint presentation. Name the file "final project–last name" and submit to the "Section 9 ~ Final Culminating Project" link above.

Figure 4-4: Final Culminating Project Description

Using the information gleaned from this course, participants created an action plan worth 60 points. Although the final project addressed other overarching characteristics of effective professional development, such as content and pedagogy knowledge, it best represents the theme of relevance because it directly connects the participant's learning to

their teaching practices. It provides them with a blueprint to begin applying what they learned from the "21st Century Teaching and Learning" OPD course as soon as they wish to do so in their classrooms.

4.5   SUMMARY OF RESULTS

Chapter 4 presented the results of this case study's description of the nature of online professional development. The data presented provided responses to the study's three research questions. A summary of each question is provided below.

Research Study Question #1: Why do educators enroll and engage in OPD courses offered via WBCMS?

The data indicated that the study participants enrolled in the "21st Century Teaching and Learning" OPD course for two reasons. First, the study participants wanted to acquire credit to help them maintain their teaching certifications. Secondly, they had a genuine interest in the content of the course. Two themes emerged from the data regarding why the study participants engaged in the course. First, they engaged as a matter of interest in the course topics. Additionally, they engaged as a matter of course design – where there were requirements for them to actively engage with the content, the instructor, and their classmates in order to receive credit for assignments.

Research Study Question #2: What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

The data related to this question were drawn from interviews, researcher journal entries, artifact reviews, and a direct observation. Through the process of coding and cross categorizing between each of the data sources, three themes emerged as three overarching characteristics of online professional development courses that the study participants perceived as effective. They were: (1) instructional design, (2) interactivity, and (3) collaboration.

Research Study Question #3: How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

The "21st Century Teaching and Learning" OPD course addressed each of the four overarching characteristics of effective professional development. Although each of the four characteristics have individual merits, the researcher noted in his journal that it appears that the "21st Century Teaching and Learning" is perceived as effective by participants due to a synergy of the four characteristics; where they are all interwoven together seamlessly. Therefore, although each of the characteristics was addressed in the OPD course, a combination of the characteristics may increase the course's perceived effectiveness.

The first characteristic, time, was addressed in the course in a variety of ways. However, a reoccurring theme was the amount of time, or duration, spent in the course, The duration

[time] of the OPD course was designed to provide participants with enough time to engage in in-depth discussions related to the content presented.

The second characteristic, collaboration, was addressed through asynchronous learning opportunities. The data reported described how asynchronous online learning collaborative activities provided participants with opportunities to collaborate through reflection, exploration of ideas, sharing of experiences, and providing possible resolutions to identified dilemmas.

Content and pedagogy knowledge, the third characteristics of effective professional development, was addressed in the course by embedding learning activities and assignments that required the participant to demonstrate their understanding of the content being presented. Additionally, participants were required to describe changes in their pedagogy as they related to the knowledge gained from the content presented in each lesson.

Lastly, relevance, the fourth characteristic, was addressed through a variety of assignments. Participants were required in each lesson through reflective journals and writing assignments to describe how the content presented was relevant to their individual teaching situations. As a culminating final project, participants were required to create an action plan that directly connected the participant's learning to their teaching practices. It provided them with a blueprint to begin applying what they learned from the "21st Century Teaching and Learning" OPD course as soon as they wish to do so in their classrooms.

Overall, the data from each of the four data collection strategies indicated that the study participants perceived online professional development as an effective means for professional development. In the next chapter, the results will be discussed and implications for future study will be described.

5.0   DISCUSSION AND IMPLICATIONS

In the preceding chapter, the presentation and analysis of this study's data was reported. Chapter 5 consists of a summary of the study, discussion and interpretation of the findings, implications for practice, suggestions for further study, and conclusions. The purpose of the latter sections is to expand upon the concepts that were studied in an effort to provide a further understanding of their implications on practice, and to present suggestions for further research targeting the development of online professional development courses. Finally, a synthesizing statement is offered to capture the substance and scope of what was realized as a result of this research study.

5.1   SUMMARY OF STUDY

The need for professional development that can fit into a teacher's busy schedule, that draws on powerful resources often not available locally, and that can create an evolutionary path toward providing real-time, ongoing, work-embedded support has stimulated the creation of online professional development programs (Dede et al., 2009).

There is considerable research examining the nature of effective professional development for K-12 educators. However, there is limited research examining both the nature

of online learning in the context of K-12 professional development and the qualities of effective online professional development courses offered via a web-based course management system.

The purpose of this study was to examine the nature of online professional development (OPD) for K-12 educators in the context of a web-based courses management system (WBCMS). Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of online professional development courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of online professional development courses available, it was important to study the characteristics of effective OPD courses in order for educators responsible for coordinating staff development to gain the knowledge to better create, facilitate, and select online professional development (OPD) courses and/or opportunities for K-12 educators.

The study reported here was a case study analysis of the "21st Century Teaching and Learning" online professional development course. As a case study, this research used a qualitative perspective attempting to discern the perceptions and characteristics regarding effective online professional development. The case study covered a period of six weeks, the length of the "21st Century Teaching and Learning" online professional development course. This course and its participants were the units of analysis of this case study.

Data were collected from the participants of the "21st Century Teaching and Learning" course in an effort to address the research study questions. As Yin (2003) suggests, data was collected using multiple methods in order to provide a thick description of the case. Four methods of data collection were employed: (1) artifact review, (2) direct observation, (3)

interviews, and (4) research journal entries. All data collections occurred after the course concluded in order to ensure that the participants were assured that participation in this study in no way impacted their success in the course.

First, an artifact review was conducted with a focus on two components: (1) course design features, and (2) transcripts of discussion board posts. Data collected regarding the course design features was coded and analyzed using the NACOL Standards for Quality Online Courses. While, the data collected from the discussion board transcripts was coded and analyzed using the Garrison Framework.

Secondly, a direct observation was conducted during a live, synchronous lesson in the course using the Wimba Live Classroom tool in Blackboard. This lesson was digitally recorded and archived as a video for coding and analysis purposes. Data collected during the direct observation were coded into categories for levels of engagement using the Garrison Framework.

Thirdly, interviews were conducted with course participants as "the interview is the main road to multiple realities" in a case study (Stake, 1995). In-depth interviews were conducted using open-ended questions with a variety of question types such as: descriptive questions, structural questions, contrast, and "grand tour" questions. Interviews were coded using a combination of open coding strategies along with the Kirkpatrick Model for Training Program Evaluation Framework.

Lastly, the researcher utilized a research journal to capture his thoughts and feelings as an added data source in order to provide a richer and deeper description of the case study; as well as, assist in the synthesis of the various data throughout the data collection process.

The analysis of the data and findings pertain to the three specific research questions posed in the study:

1. Why do educators enroll and engage in OPD courses offered via WBCMS?

2. What characteristics of OPD courses offered via WBCMSs do educators (participants) perceive as effective?

3. How does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: (1) time, (2) collaboration, (3) content and pedagogy knowledge, and (4) relevance?

5.2   DISCUSSION AND INTERPRETATIONS OF FINDINGS

This section will discuss the findings from this study and provide insights on: why educators enroll and engage in OPD, perceived effective characteristics of OPD, and how OPD can address the four overarching characteristics of effective professional development.

5.2.1   Reasons for Enrolling and Engaging in Online Professional Development

There is substantial evidence that high-quality professional development can improve teacher practice, which ultimately, can positively impact student achievement (D. K. Cohen & Hill, 2001; Desimone, Porter, Garet, Yoon, & Birman, 2002; Kennedy, 1998; National Reading Panel, 2000; Pearson, 1996; Supovitz, 2001). Gusky (2000) states that the ultimate goal of all teacher professional development programs is to improve student learning outcomes. Furthermore,

Cohen & Hill (2001) state that effective professional development is the "most promising, cost-effective tool available to teachers, schools, districts, and states as they seek to improve the quality of teachers and subsequent student achievement.

Reasons for Enrolling. The findings of this study reported that the most prevalent reason for enrolling in the "21st Century Teaching and Learning" OPD course was to acquire Act 48 credit in order to <u>maintain their teaching certification</u>. (Act 48 is described in detail in Chapter 1). In addition, the secondary reason reported for enrolling in the OPD course was that they found the course description interesting and felt the course would be <u>relevant</u> to their teaching practices. Lastly, participants reported that enrolling in an online professional development course was <u>convenient</u> regarding their time.

Enrolling to Maintain Teaching Certification. Teacher professional development activities are often limited to conferences, workshops, or district sponsored in-service activities that are usually attended by frustrated and reluctant teachers who are mandated to attend (Darling-Hammond, 2000). This notion was affirmed by this study's findings where 100% of the study participants had a negative view of their district sponsored in-service programs. Although teachers have negative views of their district sponsored professional development programs, many times teachers feel obligated to attend these sessions in order to receive Act 48 credit so that they may maintain an active status on their teaching certifications. Therefore, in the absence of other professional development opportunities, teachers often sit passively in district sponsored in-service days where the content presented is irrelevant to their individual needs.

Enrolling for Relevance. Study participants described district in-service programs as a waste of their time and irrelevant to their teaching practices. Study participants affirmed this

position when they made the following statements: *"District in-service days are never relevant to what I do in my classroom,"* and *"I never learn anything relevant in my district-sponsored in-service programs."* Therefore, teachers can become disenfranchised with the professional development opportunities offered at their school districts. As a result, they begin to explore other professional development opportunities that are more relevant to their individual teaching practices and offer the Act 48 credits that they need to maintain their teaching certification. This notion affirms the findings of this study that indicate the study participants were looking for professional development that was relevant to their individual teaching practices.

Enrolling for Time/Convenience. In addition to the time constraints of a teacher's workday, many teachers have other commitments that preclude them from participating in professional development opportunities offered at specific times after work hours. Therefore, teachers search for strategies to fill the void between the amounts of time needed to participate in effective professional development and the reality that time is not provided during their workday. In an effort to fill this void, many teachers turn to online professional development courses as a way to address time constraints. Study participants reported that they found the "21st Century Teaching and Learning" OPD course very convenient for their professional development needs. In some cases, participants were able to attend to all of their family responsibilities and then complete their course assignments later in the evening after their children went to sleep. This was evidenced in some of the discussion board transcripts where posts were time-stamped after 11:30pm and into the early hours of the morning.

Reasons for Engaging. After analyzing the data from the artifact reviews, the direct observation, and the interviews, two themes emerged that address the reasons in which participants engaged in the "21st Century Teaching and Learning" OPD course. The two themes were (1) engagement – as a matter of interest in the course topics [content], and (2) engagement – as a matter of course design.

Based on previous teaching experiences, I believe that learners tend to be more engaged in learning when they are interested in the content being presented. This study's findings affirmed my belief when it reported that 100% of the participants found most of the topics presented in the OPD course to be interesting which, therefore, led them to be more engaged in the course. In addition to being interested in the content presented, participants reported that the design of the OPD course was an important factor for being engaged in the course. Therefore, online professional development course developers should ensure that course design engages participants and meets their individual needs. NACOL (2006) concurs when it reported "Course design reflects a clear understanding of student needs, and incorporates varied ways to learn and multiple levels of mastery of the curriculum" (p. 4).

5.2.2   Characteristics of Online Professional Development Perceived as Effective

Technology and online communications are dominant forces in teachers' lives. Teachers go online to find answers to their questions, communicate with colleagues, research best practices, and participate in online professional development courses (OPD courses). As technology continues to evolve and become user-friendlier, teachers have started to use web-

based content management systems (WBCMSs) to either augment their traditional classroom interactions with students or offer fully virtual courses. As a result, teachers have increasingly become more comfortable participating in WBCMSs for their own learning through OPD courses (National Staff Development Council, 2001; Richardson, 2002; Spicer, 2002). However, some educators are concerned that some OPD courses may not possess the qualities needed to be truly effective (National Staff Development Council, 2001). Therefore, a need exists to identify what characteristics of OPD that teachers perceive to be effective.

This study identified three overarching characteristics that the study participants perceived as effective, which are: (1) instructional design, (2) interactivity, and (3) collaboration. In addition to being identified by the study participants, these three characteristics are also identified in the research literature as well as being important factors in effective OPD courses (NACOL, 2006; Boettcher, 1999; Eastman and Swift, 2001; SREB, 2006).

Instructional Design. The study findings identified several specific features of the instructional design of the "21st Century Teaching and Learning' OPD course that they perceived to be effective. Course navigation and course organization were frequently identified in the data as common themes of effectiveness. The study participants felt the course was easy to navigate because of the eight main navigational buttons present and how content was categorized into folders. Closely related to course navigation, the organization of the course contained folders categorized into "lessons". Organizing content into lessons agrees with the recommendations from NACOL's (2006) *National Standards for Quality Online Courses*.

Interactivity. Interaction is an important component in all forms of education (Anderson, 2003; Dewey, 1938; Moore, 1989). This is especially true in online learning environments where

researchers suggest that interaction is the dominant factor in improving: motivation, learner satisfaction, perceptions of quality, and student learning (McIssac & Gunawardena, 1996; Moore, 1989; Wagner, 1994; Moore, 1989; Anderson, 2003; Lobry de Bruyn, 2004; Roblyer and Wienckle, 2004). Chickerling and Garrison (1987) purport that interaction supports best practices in teaching and learning by: encouraging communications between instructors and students, promoting cooperation and collaboration among students, using active learning techniques, providing prompt feedback, emphasizing time of task, communicating high expectations, and respecting different ways of learning. As such, interaction is especially important in online learning environments due to the lack of face-to-face contact between the instructor and student; therefore, students must rely on online interactions with their instructor in order to receive feedback. Therefore, due to the suggested benefits of interaction, researchers have sought to describe the types of interactions necessary for effective teaching and learning in online learning environments.

The findings of this study identified that study participants perceived interactivity to be an important factor in their online learning experience. All of the study participants commented on the importance of being able to interact with (a) the course content, (b) the instructor, and (c) classmates. These findings are in agreement with the research literature regarding interactivity in online learning (Swann, 2003; Moore, 1998).

Collaboration. According to the National Staff Development Council (2001) some of the most important forms of professional learning occur in collaborative groups of educators within schools and school districts. Through collaborative professional development activities, teachers are afforded the opportunity to discuss concepts, skills and problems encountered

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during professional development (Lee, 2004). The findings of this study identified collaboration as a key characteristic of effective online professional development. Collaboration in an online environment can occur in a number of ways. An OPD course can be designed where participants are required to collaborate on specific topics in order to reflect, discuss, and negotiate using collaborative online tools such as discussion board, blogs, wikis, etc.. Study participants reported that collaborating in discussion board assignments guided their thinking and exposed them to new ideas and perspectives, positively impacting their learning in the OPD course.

5.2.3   Addressing the Four Characteristics of Effective Professional Development

A synthesis of the research literature identified four overarching characteristics of effective professional development. The four characteristics include: (1) time, (2) collaboration, (3) content and pedagogy focused, and (4) relevance. Although these four characteristics can be included in "traditional" professional development, such as conferences, workshops, and in-service days, current challenges such as cost and time present obstacles for participation. Therefore, school districts are moving toward offering more "reform-oriented" oriented professional development opportunities such as online professional development in an effort to overcome cost and time factors. This study analyzed data to determine how the "21st Century Teaching and Learning" OPD course addresses the four overarching characteristics of effective professional development.

The study findings identified that the "21st Century Teaching and Learning" OPD course addresses all four overarching characteristics of effective professional development. Although each was present in the course, none of them were isolated characteristics. Each of the four worked in concert with each other in a synergistic manner to meet the individual needs of the learner. For example, a reoccurring type of assignment in the course was to read a discussion board prompt and then submit one original post followed by responding to at least two of their classmate's posts in meaningful, thought-provoking ways. This type of assignment allowed participant extended periods of <u>time</u> to respond to the prompt and each other. By posting and re-posting, participants <u>collaborated</u> with each other to find answers or resolutions to problems or issues presented. In many cases, participants were required to describe how they would change their <u>content and pedagogy</u> as a result of what they learned in the lesson. Because participants were describing how they would make changes in their individual teaching practices as a result of what they learned in the discussion board, the assignment was <u>relevant</u> to their professional development needs.

5.3   IMPLICATIONS FOR PRACTICE

The ultimate goal of all teacher professional development programs is to improve student-learning outcomes. Furthermore, Cohen & Hill (2001) state that effective professional development is the "most promising, cost-effective tool available to teachers, schools, districts, and states as they seek to improve the quality of teachers and subsequent student achievement" (p. 56). Therefore, the importance of providing effective professional

development opportunities during an era of high-stakes testing cannot be understated. This study has contributed to educational practice by building upon the previous research on effective professional development and online learning.

There are a number of possible implications of the current study that could be used for practice. In this section, six possible implications will be described. The first two implications describe how conducting this study will impact my own professional practice as an online course developer and online instructor. The remaining implications describe how the data from this study may be applied to the field of education.

First, as an online instructor/course developer, I have learned considerably from this study on how an online professional development course should be constructed. As a result of this study, I plan on re-designing the "21st Century Teaching and Learning" OPD course before it is offered again in a number of ways that address research-based online course development standards. As a result of this study's course design artifact analysis, certain deficiencies were identified using NACOL's (2006) *National Standards for Quality Online Courses,* such as the fact that the course does not contain an instrument that allows the course to be evaluated regularly for effectiveness, and where the findings of that evaluation are used as a basis for improvement. When revising the course, research-based standards will be used as a guide in order to improve course effectiveness.

If I were advising a colleague on how to develop an online professional development course, I would share the lessons I learned from this study regarding the need to use research-based standards from which to begin building a foundation for the content to rest upon. I

would also strongly recommend that the course be constructed with collaborative and interesting learning activities in order to maintain a participant's engagement in the course.

Secondly, once again from my perspective as an online instructor, I have identified areas in my online teaching that need to be improved upon. For example, data from this study identified the need for online instructors to more regularly and frequently interact with course participants. I plan on instituting my own personal and professional standards for interacting with OPD course participants that significantly increase communication and collaboration. I will make it a standard practice to interact with each student on an individual basis through email, voiceboards, discussion boards, or other strategies at least once every 72 hours. Additionally, I will make it a standard practice that I respond to each course participant's original discussion board submission within 48 hours of it being posted. In doing so, interactions with students will significantly increase and provide foundations for more in-depth online discourse. I also intend on applying the Garrison framework to how I facilitate collaborative assignments such as discussion board, blog, voiceboards, and wikis. By asking and re-asking questions at different levels of Garrison's framework, participants will be obligated to respond at higher levels of thinking and, subsequently, will hopefully find more meaning in the topic being discussed. I will also place a description of Garrison's framework in my revised course syllabus and describe the expectations for using it in collaborative assignments.

As a result of this study's findings, I plan on sharing the merits of using the Garrison framework with colleagues both informally and formally. I believe there is a need to better educate online course instructors in structuring online discourse at higher levels of thinking.

Although there may be a number of ways to accomplish this, using the Garrison framework as an initial strategy would be a good start.

Third, the relevance of the "one size fits all" district sponsored professional development programs must be examined for their worth. What works well for one teacher may be completely irrelevant to another teacher. Online professional development courses may be able to resolve this problem by allowing groups of teachers with similar needs to participate in professional development that is relevant to their needs. This would require school districts to conduct a comprehensive needs assessment of their faculties in order to identify, analyze, and evaluate their individual needs. Once identified, OPD courses could be developed using the four overarching characteristics of effective professional development of time, collaboration, content and pedagogy focused, and relevance in order to meet those specific needs. Teachers could then choose which OPD course to enroll in to meet their individual professional development needs. For example, if a district sponsored professional development day consists of a speaker on the state of math and science instruction in the country, many teachers in the audience may not see the relevance in this topic. Instead, an OPD course could be created for math and science teachers for this topic while a different OPD course could be created for art teachers that focus on teaching creativity through writing assignments in art classes. Instead of teachers sitting in a classroom or auditorium listening to a presenter speak about something irrelevant to their professional development needs, the teachers could be given the opportunity to "flex" the six hours of professional development time over the course of several weeks in an online professional development course. Through the use of web-based content management system, such as Blackboard, tools exist to hold

teachers accountable for their learning in the OPD course. Holding teachers accountable for their professional development in an OPD course would be easier than determining whether or not they are paying attention to a speaker in an auditorium in a "traditional" district-sponsored professional development day. A study participant commented regarding this reality when she stated: "I looked around the auditorium and people were doing crossword puzzles during the presentation. It had nothing to do with our needs." School districts should explore online professional development opportunities that are relevant to their teacher's individual needs. However, caution should be taken when designing these types of online learning opportunities. Both the research literature and the findings of this study indicate that in order for an OPD course to be effective, it must be designed in an effective manner.

Fourth, an implication of this study on practice is a need for school districts to use research-based online course development standards when creating OPD courses. Simply posting a reading assignment online and asking teachers to respond to their reading in a blog does reflect an effective online professional development activity. Online professional development courses must be designed to include the four overarching characteristics of effective professional development; as well as, it must contain the components of effective online course design. OPD courses should be designed in a collaborative, relevant manner that focuses on content and pedagogy while providing teachers with enough time for the learning to meaningful. Additionally, OPD courses must contain learning activities that allow for the participant to interact with the content, the course instructor/facilitator, and each other in relevant ways. These types of learning activities must also be organized in a coherent fashion where the content and learning activities are organized into "lessons" and navigating to and

from the learning activities is intuitive and easy to follow. Identifying and implementing online course development standards would help school districts to develop effective online professional development courses. In order for this to happen, there needs to be at least one administrator or identified faculty member who understands all of these course development needs.

As a result of this study's findings, I am planning a professional development workshop for administrators on how to create a customized set of online course development standards. Using NACOL's national standards as a guide, I will lead a team of administrators in the school district in which I am employed in designing online course development standards that focus just as much on the structure of the online learning experience as the content that is being presented. In doing so, I believe a richer, more meaningful professional development experience will be presented to the participants.

A fifth implication of this study to practice is the need for administrators to understand the characteristics of effective online professional development so they may properly monitor OPD course development to ensure that high standards are being maintained. Administrators also need to understand the importance of using a tool, such as the Garrison Framework, for designing, monitoring, and evaluating discussion board assignments. Simply posting a sentence or two as a response to a colleague in a discussion board post does not reflect the type of professional learning that one expects to gain from an effective OPD course. Therefore, the administrator or course facilitator needs to understand the hierarchy of discussion board posts and be able to redirect teachers to respond in more appropriate, constructive ways. However, a possible hurdle exists for school districts in that they must either find administrators who know

how to create and monitor effective professional development or train existing administrators to become proficient in doing so.

Sixth, an implication of this study is the need to investigate the role professional learning communities play in online professional development. As described in chapter 2 professional learning communities have great potential for offering meaningful professional development for educators. When combined with effective online professional development, professional learning communities could create meaningful learning opportunities for its participants. Unfortunately, an effective online professional learning community did not evolve in the 21st Century Teaching and Learning course. This was probably due to two factors. First, there was an unexpected and uncharacteristically low enrollment in the course. Secondly, course participants had little in common in terms of common school districts or common certification areas from which to build shared experiences. School district administrators and providers of online professional development should explore how professional learning communities can be embedded into online professional development opportunities in order to provide a richer, more meaningful learning experience.

5.4   SUGGESTIONS FOR FURTHER STUDY

The following recommendations for further study are based upon the discussion and interpretation of the data collected in this study.

This study could be conducted with other online professional development courses offered in the region. This study was limited to a single case study involving a single online

professional development course. It would be beneficial to add new data to the current study by expanding the number of online professional development courses studied.

This study could be conducted using a survey research instrument to increase the number of participants of online professional development courses throughout different regions of the country. As a single case study, the number of participants was limited. Using an online survey research instrument would encompass a broader audience and provide additional data on the perceptions of participants taking an OPD course.

This study could be modified to focus on online professional development course instructors to compare and contrast their perceptions versus the participants. This study was limited to describing the perceptions of the participants in an online professional development course. Adding the perceptions of the instructors may provide a new perspective and add to the depth of the study.

Research should be conducted on online professional development course standards for course and instructional design. Although there NACOL (2006) published National Standards for Quality Online Courses, a need exists for specific standards for OPD courses that take into consideration the needs of teachers and adult learners.

This study could be conducted using a web-based course management system other than Blackboard. This study was limited by the use of only one course management system. Other systems, such as Moodle, Angel, etc., exist and could be studied for similarities and differences four course design and online instructional tools offered.

Research could be conducted to compare and contrast the benefits of asynchronous versus synchronous online professional development. This study was limited by the fact that

only three participants chose to take part in the synchronous class session. A study could be conducted to determine the advantages and disadvantages of offering synchronous class sessions in an OPD course that is primarily structured as an asynchronous course.

School district administrators need to develop a proficiency in developing and supervising online professional development courses. A need exists for school districts to either find administrators or train administrators in developing and supervising online professional development courses. A study could be conducted to determine best practices in training administrators to serve in these roles.

Research could be conducted to determine the financial implications of offering online professional development courses in school districts. Although there are benefits to online professional development courses, there are financial obligations required to do so. Finding ways to offer OPD courses in a cost effective manner should be investigated.

Research on the long-term efficacy of participant in online professional development courses would add to the research literature. This study was limited in that it did not follow-up with participants after any prescribed amount of time to determine if changes in teaching practices were implemented with fidelity.

Finally, a need exists to study the leadership qualities that are required to implement effective online professional development courses. As this study did not focus on leadership, a study could be conducted to determine personal and professional characteristics needed for an educational leader to initiate and sustain effective online professional development programs – either in a school district or for a professional development provider such as an intermediate unit.

5.5   CONCLUSION

The need for professional development that can fit into a teacher's busy schedule, that draws on powerful resources often not available locally, and that can create an evolutionary path toward providing real-time, ongoing, work-embedded support has stimulated the creation of these kinds of online professional development programs. However, traditional, face-to-face professional development programs are frequently categorized in the research literature as disconnected from practice, fragmented, and misaligned (Dede et al., 2009). For many teachers, professional development consists of a passive process of listening to an expert in a one-day workshop and is often referred to as a "one shot approach" (Boyle, While & Boyle, 2004). While attending these kinds of workshops may create teacher interest in a topic, it is not sufficient to impact teacher practice. Several researchers have suggested that online professional development offers vibrant and interactive communities for classroom teachers that are often unavailable in traditional professional development (Dede, 2006; Richardson, 2001).

The purpose of this study was to examine the nature of effective online professional development (OPD) for K-12 educators in the context of a specific web-based courses management system, Blackboard. Considering the widespread access to the Internet, an increased demand for teacher professional development, and the advances in information and communication technologies, a proliferation of online professional development courses for teachers has emerged in recent years (Dede, 2006; Galley, 2002). With such a wide variety of online professional development courses available, it was important to study the characteristics of effective OPD courses.

This study identified the reasons in which participants chose to enroll and engage in the "21st Century Teaching and Learning" OPD course. After engaging in the entire OPD course, participants reported three perceived characteristics of effective online professional development courses. These findings agreed with the research literature in that instructional design, interactivity, and collaboration are important characteristics in online professional development. It was determined in this case study that online professional development meets the four overarching characteristics of effective professional development of: (1) time, (2) collaboration, (3) content and pedagogy focused, and (4) relevance. The findings from this case study offer a description of the nature of effective, online professional development and may be used as a foundation for discussing implementing online professional development courses in school districts.

APPENDIX A: WELCOME LETTER TO COURSE WITH LOGIN INFORMATION

Welcome to the Mentoring New Teachers online course from Intermediate Unit 1!

Intermediate Unit 1 is committed to providing an enjoyable and enriching online experience for each of our participating teachers. If at any time you have a suggestion or comment that could improve our course, feel free to discuss your ideas with your instructor.

IMPORTANT: READ NEW ONLINE COURSE POLICY Registrants for online courses must access the course within the 1st week or get the instructor's approval for a delayed start of the course. Work must begin a minimum of five (5) days before the course ends. Failure to do so will result in forfeiting the tuition fee. No tuition credit will be issued and you will be assessed the $20.00 cancellation fee along with the tuition fee.

Before you begin, I would like to go over the information needed to access the course through Blendedschools.net. You are assigned a unique username and password for the duration of the course. If you are a teacher within the IU1 service area (or you have taken an online course at IU1 since Sept. 2004), you will have the following username & password:

Username = iu99.first initial last name ex. Pam Hupp = iu99.phupp
Password = welcome (unless this is your 2nd class, then it will be your old password)
(if you have forgotten your previous password, email phupp@washjeff.edu to reset it to welcome,)

If you are teaching in a region served by another Intermediate Unit, you will have the following username & password:

Username = iu66.first initial last name ex. Pam Hupp = iu66.phupp
Password = welcome (unless this is your 2nd class, then it will be your old password)

Once you enter the Blendedschools.net website, you will need to update your personal information and Change Your Password to something that you will remember.

To enter the website, go to http://blendedschools.blackboard.com , the Blendedschools.net Logo will be at the top of the page. At this point, bookmark this page in your Favorites List to make it easier to logon in the future. The page will prompt you to enter your username and password. If you are successfully logged into the website, the next screen will have the Intermediate Unit 1 logo and welcome you by your first name.

Note: You are not in the Mentoring New Teachers course at this point. Instead, this is your personal Home Page and you will be able to arrange the information on the page to suit your needs. The "Content" button on the top right allows you to add and remove information or entire sections. The "Layout" button allows you to move the information around so you see your important sections first. Choose the items you want on your home page, but make sure to include announcements, report card and Courses: quick view. You can use the "quick view" to select your course name and open the course. (You will appreciate this feature since you will be working on the lessons several times during a week.)

When you open the Mentoring New Teachers course, you will view the current announcements first. Your instructor will post important messages here periodically. If this is your first online class with IU1, make sure you read the Introduction to an IU1 Online Class before you begin working in the class. It is found under the LESSONS button.

Your course will be from INSERT DATES and a new instructional unit will be completed each week. During the course, if you have any questions you may contact your instructor through the course email tool or by calling his cell phone at 412-969-6986.

We hope you find online professional development a rewarding experience.

Date: _____
Dear: _____,

My name is Jeff Taylor and I work at the North Hills School District as a Director of Curriculum and Assessment. I am currently working on my doctorate in education at the University of Pittsburgh and am interested in learning more about online professional development. As a result, I would like to conduct a study about online professional development (OPD).

In order to conduct the study I need volunteers. If you are, or have been, a participant in an online professional development course it is likely that you can participate in this study. Individuals willing to participate in this study will receive a $10 gift card to a local retail establishment upon completion of the study courses offered via Blackboard.

The purpose of this study is to examine (1) educator interest in OPD, (2) characteristics of OPD perceived as effective, and (3) how does the "21st Century Teaching and Learning" OPD course address the four overarching characteristics of: time, collaboration, content and pedagogy knowledge, and relevance?. It is hoped that this study will provide suggestions for creating online professional development courses and a better understanding of online learning environments that are conducive for K-12 professional development.

There are no foreseeable risks associated with this project, nor are there any direct benefits to you. Participation in this study will in no way influence your success in this course. Each participant will receive a copy of the study report once it is completed. The data collected will only be labeled with and assigned research code numbers. Only I will have access to the link between this code number and your identity. All responses are confidential and will be kept under lock and key. Your participation is voluntary, and you may withdraw from this project at anytime.

If you are interested in participating in this study or would like more information, please contact me. Any concerns regarding this study can be addressed to my research faculty advisor or the University of Pittsburgh Institutional Review Board at:

Dr. Cindy Tananis	Institutional Review Board
University of Pittsburgh WWPH 4316 Pittsburgh, PA 15260	University of Pittsburgh 3500 Fifth Ave. Hieber Building, Suite 106 Pittsburgh, PA 15213
(O) 412-648-7171	

Thank you for your time and consideration.
Jeff Taylor
116 Drood Lane
Pittsburgh, PA 15237
Home: 412-367-1392
Email: jmt63@pitt.edu

APPENDIX C: COURSE ANNOUNCEMENT REQUESTING PARTICIPATION IN STUDY

Hello. My name is Jeff Taylor and I will be the instructor for this course. I am currently working on my doctorate in education at the University of Pittsburgh and am interested in learning more about online professional development. As a result, I would like to conduct a study about online professional development (OPD) courses offered via Blackboard.

In order to conduct the study I need volunteers. As a participant in this online professional development course it is likely that you can participate in this study. Individuals willing to participate in this study will receive a $10 gift card to a local retail establishment upon completion of the study.

The purpose of this study is to examine (1) educator interest in OPD, (2) characteristics of OPD perceived as effective, and (3) the supports needed in OPD to assist educator participation and learning. It is hoped that this study will provide suggestions for creating online professional development courses and a better understanding of online learning environments that are conducive for K-12 professional development.

There are no foreseeable risks associated with this project, nor are there any direct benefits to you. Participation in this study will in no way influence your success in the course. Each participant will receive a copy of the study once it is completed. The data collected will only be labeled with and assigned research code numbers. Only I will have access to the link between this code number and your identity. All responses are confidential and will be kept under lock and key. Your participation is voluntary, and you may withdraw from this project at anytime.

If you are interested in participating in this study or would like more information, please contact me. Any concerns regarding this study can be addressed to my research faculty advisor or the University of Pittsburgh Institutional Review Board at:

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Thank you for your time and consideration.
Jeff Taylor
116 Drood Lane
Pittsburgh, PA 15237
Home: 412-367-1392
Email: jmt63@pitt.edu

APPENDIX D: FOLLOW-UP CORRESPONDENCE TO PARTICIPANTS OF THE STUDY

Date: _____
Dear: _____,

Thank you for your interest in my study on online professional development. I have attached copies of the informed consent forms. If you would like to participate in the study please complete and return the informed consent forms. You may send the forms in the attached self-addressed stamped envelope provided. Once the form is received I will make a copy of it and mail it back to you. If you have any questions about the study please contact me. You may also contact my faculty advisor Dr. Cindy Tananis or the University of Pittsburgh Institutional Review Board.

Thank you for your time and consideration.

Researcher	Faculty Advisor	Institutional Review Board
Jeff Taylor	Dr. Cindy Tananis	University of Pittsburgh
116 Drood Lane Pittsburgh, PA 15237	University of Pittsburgh WWPH 4316 Pittsburgh, PA 15260	3500 Fifth Ave. Hieber Building, Suite 106 Pittsburgh, PA 15213
(H) 412-367-1392 (W) 412-318-1017 (C) 412-969-6986	(O) 412-648-7171	
Jmt63@pitt.edu	tananis@pitt.edu	

Jeff Taylor

Home: 412-367-1392
Email: jmt63@pitt.edu

APPENDIX E: INFORMED CONSENT FORM FOR PARTICIPATION IN THE STUDY

INFORMED CONSENT FORM
Online Professional Development: A Case Study Analysis

The purpose of this study is to examine (1) educator interest in OPD, (2) characteristics of OPD perceived as effective, and (3) the 21st Century Teaching and Learning online course addresses the four overarching characteristics of effective professional development. It is hoped that this study will provide suggestions for creating online professional development courses and a better understanding of online learning environments that are conducive for K-12 professional development.

If you choose to participate in the study, you will be interviewed. Interviews will be conducted either: face-to-face, online using Wimba Live Classroom, or via the telephone. The purpose of the interview is to: (1) identify educational background and experiences, (2) identify perceptions of online professional development courses offered via web-based content management systems (i.e. Blackboard,) and (3) identify previous online professional development experiences, and (4) review the overall online professional development course (21st Century Teaching and Learning) and to ask follow-up questions relevant to artifacts collected, such as discussion board postings.

There are no foreseeable risks associated with this project, nor are there any direct benefits to you other than a $25 gift card as a token of appreciation for your participation. Participation in this study will in no way influence your success in the course. Each participant will receive a copy of the study once it is completed. The data collected will only be labeled with and assigned research code numbers. Only I will have access to the link between this code number and your identity. When the results are published or discussed, no information that could reveal your identity will be used. All responses are confidential and will be kept under lock and key. Your participation is voluntary, and you may withdraw from this project at anytime.

Please check one:

_____ I **do** give consent to Jeff Taylor to include me as a participant in this study

_____ I **do not** give consent to Jeff Taylor to include me as a participant in this study

Signature	Date

Any concerns regarding this study can be addressed to my research faculty advisor or the University of Pittsburgh Institutional Review Board at:

Dr. Cindy Tananis	Institutional Review Board
University of Pittsburgh	University of Pittsburgh
WWPH 4316	3500 Fifth Ave.
Pittsburgh, PA 15260	Hieber Building, Suite 106
	Pittsburgh, PA 15213
(O) 412-648-7171	

Thank you for your time and consideration.
Jeff Taylor
116 Drood Lane
Pittsburgh, PA 15237
Home: 412-367-1392
Jtaylor422@gmail.com

APPENDIX F: INTERVIEW PROTOCOL

Date of Interview: _____/_____/_____
Background information:

1.   Do you have any questions for me regarding the informed consent form?

2.   What is your name?

3.   What is your birth date?

4.   What is the name of the school district or organization in which you work?

5.   What is your current position?

6.   How many years of experience do you have teaching?

7.   What is the highest level of education that you obtained?

8.   Why did you enroll in this OPD course?

9.   Do you perceive online professional development courses as effective? Why or why not?

   a.   If yes, what are the characteristics of an online professional course that you perceive are effective?

      i.   Why are they effective?

      ii. How are they effective for you?

   b.   If no, what are the characteristics of an online professional course that you perceive are ineffective?

      i.   Why are they ineffective?

      ii. How are they ineffective for you?

10.   What online design and organizational features of this course did you find helpful to your learning?

   a.   Why were they helpful to you?

11.   How did you engage with others in this course?

12.   Do you perceive the following online learning activities effective? Why or why not?

   a.   Discussion board posts

b.   Synchronous online session (via Wimba Live Classroom)

13.   What online learning activities were not just mentioned that you perceived as effective?

14.   Do you feel that you spent an appropriate amount of time and energy in meeting the course requirements?

15.   Which is more effective: (1) time spent in an OPD course or (2) time spent in a district-sponsored in-service day? Why?

16.   How will you apply the information gained from this course?

17.   How was the content of this course relevant to your position?

18.   What are the advantages of taking an online professional development course?

a.   How are they advantageous to you as a learner?

19.   What are the disadvantages of taking an online professional development course?

a.   How are they disadvantageous to you as a learner?

20.   Take me on a grand tour of what the "perfect" online professional development course would it look like.

21.   If you could take this course over again, what would you would you like to see changed? Why?

22.   What else would you like to share not already covered in this interview?

APPENDIX G: Audio/Digital Recording Consent Form

AUDIO AND DIGITAL RECORDING CONSENT FORM

I agree to the audio recording during the session conducted in the online 21st Century Teaching and Learning course. I also agree to the audio recording at other locations outside of the online 21st Century Teaching and Learning course where interviews involving this study may occur an through the telephone conversations arranged for the purpose of this study.

Signature	Date

I have been told that I have the right to hear the audio recordings before they are used. I have decided that I:

_____ want to hear the audio recordings

_____ do not want to hear the audio recordings

Sign now below if you do not want to hear the audio recordings. If you want to hear the audio recordings, you will be asked to sign after hearing them.

Jeff <u>may</u> / <u>may not</u> use the audio recordings made of me. The original audio recordings may be used for:

_____ this research project
_____ teacher education
_____ presentation at professional meetings

Signature	Date

Address: _____

APPENDIX H: NACOL NATIONAL STANDARDS OF QUALITY FOR ONLINE COURSES

Content
The course goals and objectives are measurable and clearly state what the participants will know or be able to do at the end of the course.
The course content and assignments are aligned with state's content standards or nationally accepted content standards set for Advanced Placement courses, technology, computer science, or other courses whose content is not included in state standards.
Course tasks and assessments align with the required local, state, and national assessments that are associated with the course.
The course content and assignments are of sufficient rigor, depth, and breadth to teach the standards being addressed.
Information literacy and communication skills are incorporated and taught as an integral part of the curriculum.
Sufficient learning resources and materials to increase student success are available to students before the course begins.
A clear, complete course overview and syllabus are included in the course.
Course requirements are consistent with course goals, representative of the scope of the course, and clearly stated.
Information is provided to students, parents and mentors on how to communicate with the online teacher and course provider, including information on the process for these communications.
Issues associated with the use of copyrighted materials are addressed.
Academic integrity and netiquette (Internet etiquette) expectations regarding lesson activities, discussions, e-mail communications and plagiarism are clearly stated.
Privacy policies are clearly stated.
Instructor resources and notes are included.
Assessment and assignment answers and explanations are included.

Instructional Design
Course design reflects a clear understanding of student needs, and incorporates varied ways to learn and multiple levels of mastery of the curriculum.
The course is organized into units and lessons.
The course unit overview describes the objectives, activities and resources that frame the unit. It includes a description of the activities and assignments that are central to the unit.
Each lesson includes a lesson overview, content and activities, assignments, and assessments to provide multiple learning opportunities for students to master the content.
The course is designed to teach concepts and skills that students will retain over time.
The course instruction includes activities that engage students in active learning.
Instruction provides students with multiple learning paths to master the content, based on student needs.
The teacher engages students in learning activities that address a variety of learning styles and preferences.
The course provides opportunities for students to engage in higher-order thinking, critical-reasoning activities and thinking in increasingly complex ways.
The course reflects multicultural education and is accurate, current and free of bias.
The teacher can adapt learning activities to accommodate students' needs.
Readability levels, written language assignments and mathematical requirements are appropriate for the course content and the students.
The course design provides opportunities for appropriate instructor-student interaction, including timely and frequent feedback about student progress.

The course provides opportunities for appropriate instructor-student and student-student interaction to foster mastery and application of the material and a plan for monitoring that interaction.
The course provides opportunities for appropriate student interaction with the content to foster mastery and application of the material.
Students have access to resources that enrich the course content.

Student Assessment

Student evaluation strategies are consistent with course goals and objectives, representative of the scope of the course and clearly stated.
The course structure includes adequate and appropriate methods and procedures to assess students' mastery of content.
Ongoing and frequent assessments are conducted to verify each student's readiness for the next lesson.
Assessment strategies and tools make the student continuously aware of his/her progress in class and mastery of the content beyond letter grades.
Assessment materials provide the teacher with the flexibility to assess students in a variety of ways.
Grading rubrics and models of partially to fully completed assignments are provided to the teacher.
Grading policy and practices are easy to understand.

Technology

The course architecture permits the online teacher to add content, activities and assessments to extend learning opportunities.
The course accommodates multiple school calendars; e.g., block, 4X4 and traditional schedules
The course is easy to navigate.
The course makes maximum use of the capabilities of the online medium and makes resources available by alternative means; e.g., video, CDs and pod casts.
Hardware, Web browser and software requirements are specified.
Prerequisite skills in the use of technology are identified.
The course utilizes appropriate content-specific tools and software.
Interoperability technical standards allow sharing content among different learning management systems.
Interoperability technical standards ensure sharing of questions, assessments and results with others.
The course meets universal design principles, Section 508 standards and W3C guidelines to ensure access for all students.
Online textbooks used in a course meet nationally endorsed standards (NIMAS) for publishers to ensure distribution of accessible, alternative versions of textbooks and other instructional materials.
The course provider offers the course teacher, school coordinator assistance with technical support and course management.
The course provider offers orientation training.

Course Evaluation

The results of peer review and student evaluations of courses are available.
Course provider uses multiple ways of assessing course effectiveness.
The course is evaluated regularly for effectiveness, and the findings are used as a basis for improvement.
The course is updated periodically to ensure timeliness.
The course provider is authorized to operate in the state in which the course is offered.
The teacher meets the professional teaching standard established by a state licensing agency or the teacher has academic credentials in the field in which he or she is teaching and has been trained to teach online and

to use the course.
Student information remains confidential, as required by the Family Educational Rights and Privacy Act (FERPA).

21st Century Skills

The course intentionally emphasizes 21st century skills in the course, including using 21st century skills in the core subjects, 21st century content, learning and thinking skills, ICT literacy, self-directed learning, global awareness, and include 21st century assessments, as identified by the Partnership for 21st Century Skills.

APPENDIX I: GARRISON'S FOUR-STAGE COGNITIVE PROCESS MODEL

Category	Indicators	Socio-cognitive Process
1. Triggering	Recognizes the problem	Presents background information the culminates in a question
	Exhibits a sense of puzzlement	Asks questions
		Posts messages that can take the discussion in a new direction
2. Exploration	Divergence within the online community	Personal narratives, descriptions, and facts (not used as evidence)
	Divergence within a single message	Author explicitly characterizes message as exploration. Example: Does that seem right?
	Information exchange	Adds to established points but does not systematically defend, justify, or develop
	Suggestions for consideration	Offers unsupported opinions
	Brainstorming	
	Leaps to conclusions	
3. Integration	Convergence among group members	Reference to previous message followed by substantiated agreement. Example, "I agree because…"
	Convergence within a single message	Building on, adding to other's ideas
	Synthesis – connecting ideas	Justified, developed, defensive, yet tentative hypotheses
	Creating solutions	Integrating information from various sources such as textbooks, articles, and personal experiences
		Explicit characterization of message as a solution
4. Resolution	Vicarious application to real world	No examples provided
	Testing solutions	
	Defending solutions	

APPENDIX J: TRANSCRIPT OF MILLENNIALS DISCUSSION BOARD ASSIGNMENT

Topic of Discussion Post	Stage	Date/ Time	Discussion Board Post
Lesson plans for Millennials	Integration	7/6/11 9:38	As a high school librarian, I teach research processes,and citation guidelines. Most of the time I try to relate this to real life as much as possible. For example, when I taught the research process for a health project, my research example was for the type of cancer that my brother-in-law has. The challenge is making a topic like the play, *Macbeth* relevant to their lives. So, my first priority for the fall is to try to make all things relevant, as much as possible. If relevant isn't possible, making it *personal* would appeal to a Millennial. I have a set of clickers(responders) that I rarely use. I think using them would appeal to the Millennial. The obstacle is getting the clickers to work effeciently.
RE: Lesson plans for Millennials	Integration	7/6/11 3:27 PM	Love technology as long as it works. Good luck on the use of the clickers your students will be more engaged. I agree try to make the lessons real. Sharon
RE: Lesson plans for Millennials	Exploration	7/6/11 8:14 PM	I think it is great that you're trying to take something and have to the students make it realistic for their understanding. It will hold their interest and make more sense to them doing it that way!!!
RE: Lesson plans for Millennials	Exploration	7/9/11 8:34 AM	Jane, I bet the students really love the clickers. They are very engaging. Good post! Jeff
RE: Lesson plans for Millennials	Exploration	7/9/11 11:27 AM	Jane, Making things relevant and providing instant feedback would be right on target for the milennials. The clickers are great, but your are right they are often a struggle to use. I guess the more you would use them the less problems you might have. Also, training in the use of technology could be more intensive.
RE: Lesson plans for Millennials	Triggering	7/9/11 2:38 PM	Training is also a big request where I teach. There is so much out there available, and we are challenged to keep up with what is new. If we want to reach and connect with Millennials, I feel we have to keep up with the technology.
RE: Lesson plans for Millennials	Exploration	7/13/11 4:30 PM	training is very important. I feel we need all we can get our hands on.
Millennials love feedback	Exploration	7/6/11 10:10 AM	In the library, students are constantly checking their grades. I have learned that this is important to Millennials. Is there such a thing as too much feedback? Millennials like boundaries. We as teachers can't hover like helicopter parents. As a senior high instructor, I often hear complaints that the student knew he had to do X. Was I supposed to remind him every day? When he got to the end and discovered he was failing, he wanted extra credit to pass when they didn't do the class requirements in the first place. I am contemplating the difference between feedback and coddling. I saw a former student a few weeks ago. She had a job at Pechins last summer and that was her last job. After she worked there a few weeks, she took a week off to go on vacation with her family as always. She came back and found she had no job. Perhaps Pechins should have told her; again, maybe they didn't want to tell her. Was her problem Millennial bias, stupidity or lack of knowlege of the current economic situation? I know I have room for improvement when providing feedback for my lessons. Like I said in my other post, using the clickers can provide instant feedback. This year when I taught parenthetical citations, I gave a short quiz at the end of the lesson which I checked while they began their research. I can continue this practice. It is more

			challenging when you are not the person giving a grade directly.
RE: Millennials love feedback	Integration	7/7/11 1:46 PM	I think you are right about them seeking feedback. What happens when it doesn't come immediately? with my college kids, they seem to be in a fog. Students sometimes do not realize they need to complete all exams on the syllabus to get a passing grade. I am floored with this! I can not give them a passing grade without all exams taken... I get the feeling that they do not understand I can not give feedback with their participation. Sandy
RE: Millennials love feedback	Exploration	7/7/11 1:57 PM	I think we are doing our children a disservice when we don't allow them to suffer the consequences of their action. Do they come to you to ask why they didn't pass? Do they ask for exceptions? That seems like something a Millennial would do. Did you ever see the movie, "Clueless" with Alicia Silverstone? She told her Dad that her first report card with just a negotiating point. She talked to her teachers and got several of her grades changed. Maybe that's where the Millennials got the idea.
RE: Millennials love feedback	Resolution	7/8/11 12:52 PM	I also wonder sometimes about the feedback and coddling. Although I teach elementary, I have worked a summer job as a pool supervisor. I have experience working with Millennials. When I read the article, I was glad to hear all of the positive aspects of Millennials, however I cant help but think about their expectations and work habits that I have experienced. Some of the lifeguards dont care if they show up on time for their shift or not. They dont always realize the consequences that other people have to deal with if they dont keep up their end of the deal. Another problem in the workforce is constant use of cell phones. I love the conveniences of modern technololy, however I have witnessed where some Millennials cant put their phones down to effectively do a job. They also have a need for instant gratification, everything has to be quick, quick, quick. As an educator, we want to embrace technology and use it to reach our students, but I feel it is still necessary to teach them appropriate use and consequences.
RE: Millennials love feedback	Exploration	7/13/11 12:07 AM	I love your use of the term "coddling." It's exactly what's happening. I learned to lay out the consequences of not completing the work their given on time right at the beginning of any assignment. I've also learned that when they don't hold up their end of an expectation, to give them consequences that exactly match their lack of commitment. For an example of each of these, in the case of the assignment, I gave a term paper to my jazz band. I gave them exact guidelines, the consequences for perjury, and the consequences for the assignment not being turned in late. I had several students perjure themselves. One student so severely that I found that he had just cut and pasted the entire paper directly from wikipedia. His mother agreed that he should automatically fail, and he got in twice as much trouble at home as he had by perjuring himself. I another student fail the class because he never turned in a paper. His mother emailed me after grades were issued to tell me I should have contacted her about his not turning in the paper. I had talked to him about it directly on at least 3 occasions. She demanded that I accept a paper that was over a month late (she agreed to the late penalty terms), and adjust his grade. My administration backed her instead of me. No teacher should have to contact the parent of a junior in high school when a paper isn't turned it. It does nothing to teach students responsibility. I guarantee that if he refused to do something in the work force, he'd no longer have a job. The millennial generation needs to have clear cut guidelines, but they also need to be taught something about personal responsibility. They'll take responsibility for the world, but not for themselves.

Lesson Plan for Millennials	Resolution	7/6/11 11:52 AM	As a substitute teacher, I have worked with many students in kindergarten-sixth grades. In the upper elementary grades (fourth-sixth), I have had lesson plans from the teachers to teach students on how to write a papers/ letters. Students look at me with "blank-stares". In their eyes, this is a huge assignment because they have never written anything probative before other than learning to write their full given names. I tell them to first to relax, and we will work together and break this assignment down in pieces. I usually have the class open up their books to an outline of a sample paper/ letter. Next, I break up the class in teams of three or four people (group work), and have them write down what interests them or who (for a letter) they want to write to. (Sometimes we use venn-diagrams or outlines here.) They always love this! This gives them a chance to talk with friends, and it relieves stress. I walk around the class to make sure they all understand the assignment. After this, we come together as a class, and talk with each other to see what we come up with. So, we begin to write a "sample" on the board together. Finally, I have the class start to write their first drafts of their papers/ letters. I tell them not to worry because these are just drafts, and they will have more chances to improve their papers/ letters. If we have the chance, (because of being a sub) we look over the paper/ essay together, and discuss how we can improve it to make it better. This eases their anxieties in this huge assignment. I also write a note to the teacher to tell them that we went over the paper/ letter together. The teacher is always very apprecative of this.
RE: Lesson Plan for Millennials	Exploration	7/6/11 8:16 PM	I think it's helpful when you brainstorm before you begin anything so the wealth of ideas are available to the students. It's great that things are broken down into sections also.
RE: Lesson Plan for Millennials	Exploration	7/9/11 8:34 AM	Hi Bev, Graphic organizers such as Venn Diagrams are great learning tools! Thanks for sharing. Jeff
actions/ consequences	Exploration	7/6/11 12:11 PM	As I mentioned I am a sub for the Laurel Highlands School District. The students know the consequences if they misbehave. Most of the time it is the normal consequence-- minutes off of recess or a phone call home to mom/ dad. What the student also knows is that the teachers also give detention during recess time. The number of days depends on what they did. e.g. homework not done/ incomplete for one day-- one day detention; two days homework not done-- two days; etc. The student just does not sit and do nothing. The teacher gives them extra work to do. The work is usually two math worksheets and two language arts worksheets. These are worksheets that the student has done before in class. It helps them review what they learned in the past. **If the student is confused as to why they have detention; the teacher in charge of the detention reads the slip and discusses it with them.
A star for the day!	Resolution	7/6/11 2:07 PM	To let a student know that I approve of their behavior of the day, I usually try to make an attempt to show them I care by looking over their assignment booklets. I write on the board what they need to write in them of what is necessary for that night's homework. Plus, I might add if tomorrow gym class or library day, etc. I give them time to write the things down.Finally, to show them that I know how they were for the day, I look at their behavior charts. Most classes have three smiley faces or some form of a chart on the wall somewhere in the classroom. Each of their names are on it.. e.g. using clothes pins with their names on them. The clothes pins are moved according to behavior in class. One being green, one being yellow or blue, and

			one being red. Green is good day, yellow or blue is OK day, and red is bad day. If a student is on red by the end of the day; one day of detention-- no questions asked. The student knows of the consequences. Sometimes the teacher also calls home to tell of the behavior of the day. I leave a note to the teacher to tell them how the class was for the day. By using these charts, the students usually have no questions about their behaviors for that day. I leave a little note or make a star in the color they were for the day-- green, yellow or blue, or red. (I here use a smelly marker to make my stars-- the student loves these!!) Mom and dad can see the note of the behavior or star and the color it is when they get home. Plus, the homework their child has for that night.
Physical Education Millennial	Resolution	7/6/11 5:09 PM	Physical Education Millennial students enter my room very excited and motivated. My goals need to be clear and meet the state standards. My task is in a short period of time, 35 minutes, to get my students engaged. They will start with a beginning warm-up designed for their level of fitness choosing to do less or more in a given amount of time. A variety of stretches, quick easy exercises and aerobic movements will be designed. Music will be used so students feel comfortable, ready to go and free to choose what their body needs to get ready for class. Encouragement and demonstrations will be given by peers and teacher.
RE: Physical Education Millennial	Exploration	7/9/11 8:36 AM	Sharon, Providing students with encouragement and modeling demonstrations are great teaching strategies. Thank you for sharing. Good work, Jeff
RE: Physical Education Millennial	Exploration	7/9/11 11:32 AM	Sharon, I like the use of music in class. I have used music in a few reading classes and the students seem to relate more to the assigments or to the teacher. Also, using a variety of exercises and letting the students choose which exercise is right for them. Great ideas!
Feedback for the Millennial	Resolution	7/6/11 5:41 PM	Feedback for the Millennial Generation????? I guess this is the generation where everyone is great or wants to be. I will incorporate in my skill lesson plans "how to give feedback", standard 10.5.6.B, types of feedback. I will demonstrate to my students examples of feedback phrases that they could say to their peers. Students will practice by repeating and making up feedback phrases of their own. Students will practice how to positively encourage correct basic movement and skill. Students will describe the concepts of motor skill development using appropriate vocabulary. I will notice through repetition and practice that feedback will become routine. The student and their peers will gain confidence and be able to enjoy and apply the basic movement skills and concepts to create and perform movement sequences and advanced skills.
Life's Experiences	Resolution	7/6/11 6:01 PM	Life's Experiences--- Many factors affect childhood physical activity preferences; enjoyment, personal interest, social experience, opportunities to learn new activities, parental preference and environment, standard 10.4.6.D. I try to start each lesson with what the student can connect with or what they may know from their childhood. I like to use a word, piece of equipment, demonstration, quick quote or story, a smell, sound.... to try and trigger their life's experience and how the skill we are going to work on can connect to them. I will allow students to respond, discuss, watch a demonstration and of course correct any false ideas. Next, students will explore, practice and discuss the skill or concept using cues and peer feedback. The goal is to lead my students to identify factors that

			have an impact on the relationship between regular participation in physical activity and the degree of motor skill improvement, standard 10.4.6.E.
RE: Life's Experiences	Exploration	7/6/11 8:31 PM	Sounds like a good plan.
RE: Life's Experiences	Triggering	7/7/11 2:22 PM	So, during a given class is everyone working on the same skill in the same way?
RE: Life's Experiences	Exploration	7/8/11 6:53 PM	Yes students would be working on the same skill, but at individual levels of success. Physical repetition is very important. I like peers helping peers it seems to keep everyone motivated.
Creating a Lesson Plan for the Millenials	Resolution	7/6/11 8:12 PM	As a Science teacher, I often begin my class with a bell-ringer/warm-up. After reading the information on the Millenials, I would like to engage my students in a greater discussion on a particular topic and them being able to share their thoughts and ideas. For example, I might ask them about environmental waste, what they could do as a community to help reduce or even reuse what has been put out. I would, then want to students to collaborate and decide on what they could create or do now to help the environment. This idea would then develop into a "real-world" project/ idea that would could implement into our communities and surrounding areas. They would get immediate feedback either from the school or communities. The students would feel a real connection to this project. Not only did they share their concerns, but they created something to potentially help their environment.
RE: Creating a Lesson Plan for the Millenials	Exploration	7/7/11 1:37 PM	After reading the article, I can see why you decided to use real-world examples. These kids seem to be more engaged with these exercises. Sandy
RE: Creating a Lesson Plan for the Millenials	Integration	7/7/11 2:06 PM	Your lesson example of your real world project gave me an idea. Our students are entirely too wasteful when printing in the library. I think I will try to find a picture of a landfill and post it near the printer. If I can think of a clever slogan to put with it, perhaps it will remind them to think before they print. Even if it prevents one child from wasting paper, it will help. We recycle our paper, but still it wastes our resources, paper and ink.
RE: Creating a Lesson Plan for the Millenials	Exploration	7/9/11 8:37 AM	Hi Talisha, Engaging students in real-world discussions relating to an authentic experience is a great strategy. It should really engage those students who may not normally get engaged in a science class. Thanks for sharing, Jeff
Creating a lesson plan for the Millenials #2.	Resolution	7/6/11 8:25 PM	In my class, I teach my students about different biomes. After we are done learning about these biomes as a class, a break the students up into groups (you may choose or the students may pick their own groups.) I have them begin by finding further research on a particular biome. If they pick ex: the Tropical Rainforest, they are to find particular plants, animals, trees, fruits, etc., that may be native to the particular area. After they have compiled their information, the next part of their project is to actually create the biome as if they were living in it. I tell them to first picture themselves living their, what would they want it to look like, what do they want to include in the home. I call it the "Biome Home Project." I give them popsicle sticks to build they structure and they may add anything to the project to make it as realisitc possible. They have several days to complete this project. My students really enjoy completing this. Not only are they having fun, but they are learning at the same time!!
Create a Lesson plan for the Millenials #3	Resolution	7/6/11 8:30 PM	Any time after my students complete a project, I would like begin holding group discussions with them. I would like to pull each group

			to a designated area of the room and just hear their thoughts/insights on the projects. I want them to know that I am listening and I care about what they are doing in class. I want them to feel engaged in the class. By creating a discussion or asking questions, I feel that they student can get that.
RE: Create a Lesson plan for the Millenials #3	Integration	7/7/11 2:12 PM	Since millennials like structure, I suggest you give them guidelines for discussion in advance. At my school, we had learning communities to prepare for the PSSA. One of our activities was to watch some videos and discuss them. The group I was assigned was diverse and the discussion periods were stressful. Guidelines would have been helpful for all.
Creating a lesson plan for the Millenials #4	Resolution	7/6/11 8:42 PM	I teach the Scientif Method. Sometimes it's hard to relate the information to the students. After reading about Millenials, I came up with the idea of grouping the students together in smaller sections. To understand what Scientific Method is, they are going to complete a hands-on project, that will help them relate to how it is used in the real-world. I will put an item in a bag that would be sealed tightly. They would then, as a group, have to work as a unit to begin the Scientific Method developing each step. This would create discussion and relate it to real-world problems. The students would then develop their 8 steps to discover what they object is, developing their ideas, create discussion, solve a problem. After the experiment was over, I again would break them up based on their groupings and hold a discussion about their thoughts/insights on the project, what they learned/discovered, and how they felt. Again, I want them to know I am listening to their thoughts and ideas. I want them to feel important but also engaged.
Library as a kitchen	Integration	7/7/11 2:39 PM	Joyce Valenza, a nation leader in librarianship and a PA librarian, says that libraries should be more like kitchens than grocery stores. They should be places where things are created, put together, mashed up, blended, like a kitchen. They shouldn't be places where things are just taken off the shelves, like a grocery store. I am taking another online class where we are learning to use Web 2.0 tools. I will help my Millennials by learning to use a wider variety of tools. Then, as teachers come to the library to complete projects, we can use those tools to create more than just powerpoints and term papers. Below is a link to her blog. http://blog.schoollibraryjournal.com/neverendingsearch
RE: Library as a kitchen	Exploration	7/8/11 6:58 PM	I like this idea, "that libraries should be more like kitchens than grocery stores. They should be places where things are created, put together, mashed up, blended, like a kitchen. " Sometimes I feel my gym room could be like this.
each goal is achieved step by step...	Resolution	7/7/11 4:29 PM	Hello, I am thinking about how I will change lesson plans to meet the needs of the Millennials. The article talked about millennials highly valuing standardized testing and earning credentials so I thought I would make my lessons more valuable to them by attaching points for each and very assignment. Lesson assignments would have more clarity and tests would be more clear in terms of type of testing as well as content. I might includea practice tests to be done in a group as well as more computerized testing for vocabulary assignments. I think these students like to work together so engaging them in the testing process together may lessen test anxiety too. I like the idea of students doing things in groups.
RE: each goal is achieved step by	Exploration	7/8/11 1:11 PM	I have seen , Sandy, when I taught sixth grade, how differently students would treat an assignment when they knew it would be for

step...			a "grade". Many times when I would assign something, the first question would be, "Are you grading this?" I guess I am old fashioned for thinking they should do their best work regardless. I make it a point to let my students know when I give an assignment that I will be checking it. They seem to catch on quickly, and if they know you won't follow up with a grade or comments, then they won't give their best efforts.
RE: each goal is achieved step by step...	Exploration	7/9/11 8:39 AM	Sandy, Students do enjoy working together, so creating collaborative learning groups is a great teaching strategy. Thanks for sharing! Jeff
developing personal responsibility...	Resolution	7/7/11 4:41 PM	The Millennials need to develop a "do it on your own attitude." I do not want to foster a lack of personal responsibility for these students. I can not understand why their parents would call up to 15 times per day. I would try to work on the development of personal responsibilty because this really is freedom in some respect. I hope that lack of personal responsibility does not mean lack of need for personal freedom. If so, the world is in trouble with a whole group of these kids. Anyway, I would change my lesson plan to force personal effort for individual gain. I will add an in-class essays and/or assignments related to the days lesson. It must be done independently and give personal opinions.
RE: developing personal responsibility...	Integration	7/9/11 11:42 AM	Sandy, I struggle with this too. It seems as though we must hover over our students. If they don't complete an assignment or if they miss something somehow this turns into someone else's fault. I, the teacher, didn't sign the assignment book. I didn't mention a test was going to be tomorrow. even though it has been on the board for two weeks. At some point we must teach personal responsibility, maybe when they include it on a standardized test? I like your idea of a refection of the days assignment done individually and with a personal opinion. It would not only help the students, but it could also help you when reflection on your day.
RE: developing personal responsibility...	Exploration	7/13/11 12:16 AM	There is a definite lack of personal responsibility. I directed the band for our Commencement Ceremony this spring. Three students did not attend any rehearsals (not even the one during the school day), and then showed up for graduation in shorts, t-shirts, and ball caps and expected to be permitted to play. They were not. I think that some members of this generation have such an attitude of entitlement that they expect that no matter what, they'll be able to do exactly as they please. I explained to them that it was not only disrespectful to me, but also to the graduation class, and to the rest of their classmates who had attended rehearsals. I think giving them ways to express themselves that pull them into learning and establish responsibility for their education within them is the best way to reach them. Personal journal entries will certainly accomplish that!
RE: developing personal responsibility...	Exploration	7/13/11 4:28 PM	I like the fact that you will force students to take responsibility for their own learning and maybe decrease some of the entitlement attitude that many students have.
be heard and be seen...	Resolution	7/7/11 4:53 PM	Millennials place a powerful value on being heard. I think that they need more authentic opportunies to express themselves so I would arrange eating out with speaking Spanish. Take the langauge students to Mexican resturant and talk to classmates in Spanish. They must be heard in Spanish. The course syllabus would include speeches in class with a group presentation. Students would report on a real life experience they had helping someone in a third world country. This makes things real

			as well as promotes independent and group learning.
Lesson Plans for Milennials	Resolution	7/9/11 11:24 AM	The part of the Milennials that I struggle with is there need to know what is exactly on the test, when is the test, and how soon can I get my score. I feel that this is largely due to the pressures of standardized tests and parent who may be "to involved" with a student's learning. This was discussed as the helicopter parent is the previous article. Are we giving our student the opportunity to think and learn for themselves? When teaching a lesson you will get at least a couple of questions from the students like "is this going to be on the test?" Almost like if you were to say no they would not pay attention to the lesson. As far as planning lessons, I would like to incorporate more technology into the process. For example: using a camera or cell phone to take pictures of geometric shape in their community when lesson about polygons in math class. Have students present a power point using the pictures or somehow forward pictures to an email address for their individual folder? My idea is to incorporate technology that they have access to and are more willing to use.
RE: Lesson Plans for Milennials	Integration	7/9/11 12:33 PM	I agree, are we giving our students the opportunity to learn and think for themselves. Everything seems to be question and answer. What's on the test? The rest I won't pay attention. I do worry about this group of students, with all their potential. Love the hands on idea with using more technology.
Lesson Plans for Millennials	Resolution	7/9/11 2:33 PM	Last year I taught third grade and this year I will be teaching second grade. My main plan for teaching these Millennials is to start exposing them to the technology available. My students come from a rural area, in these primary years I feel it is important to show them what is available to them. One of the most useful tools I have in my classroom is a projector linked to my computer. For example, when I introduce new vocabulary in Reading, I can instantly look up a word and provide a visual picture for my students. When the topic allows, I can combine across the curriculum lessons. Once we were reading a story and the state of Washington came up in the reading. I was able to project a map and show my students that this state of Washington is a long way from the city of Washington, PA (which happens to be very close to our school). I was able to include Geography into our Reading lesson. The students could relate because they learned we weren't talking about the close by city. I will also use real world experiences such as when we are learning money in Math class, students will use play money to "buy" certain things. For example, I can give each student a ticket to go to recess with a certain price on it. The student will have to count out their play money to buy their ticket to recess. This gives them a hands-on opportunity to count out the money, which is much more effective than doing a worksheet. I also will provide discussion times in class. I have found that my former Millennials were very social. Students are expected to do silent reading everyday. I will allow some class time after the silent reading for students to share what book they are reading, their likes and dislikes, etc. This discussion time will allow them to interact with each other. Their input can help other students decide if they want to chose that same book. It also fulfills their need to be social and help each other out. I will even include what I am reading at the time, so they get a more personal connection to me.
Teaching Millennials	Resolution	7/12/11	I think in order to better teach Millennial students I will be

		11:52 PM	integrating much more high tech and high touch experiences in my classroom. I already utilize Smart Music Technology which is a very high tech instrumental music experience. The students love it, and it's a full instrumental experience whether I'm working with one student or fifty at a time. I also be utilizing my classroom wiki and blog to present ongoing dialogues about musical experiences, music itself, and upcoming events. My wiki will also begin to house the projects that the students will be assigned. The goal is to cut back on the pencil and paper experience (not that I'll eliminate it all together), but give them more of an opportunity to express themselves through technology. Additionally, I'm going to make sure they have very clear cut guidelines, while allowing them to be creative through project based learning and collaboration. I'll be doing a number of projects using primary and secondary resources that will have attached rubrics so that the students know the exact expectations while being able to take control of their learning. I was always a student who, given basic guidelines, would be able to formulate a creative project, but most learners today want to know exact expectations and requirements. My goal is to give them what they need, but to also foster creativity by letting them have a greater hand in their learning experience.

APPENDIX K: COURSE DESIGN ANALYSIS USING NACOL STANDARDS

Coding	Content	Present	Rating
A1	The course goals and objectives are measurable and clearly state what the participants will know or be able to do at the end of the course.	Yes	3
A2	The course content and assignments are aligned with state's content standards or nationally accepted content standards set for Advanced Placement courses, technology, computer science, or other courses whose content is not included in state standards.	Yes	3
A3	Course tasks and assessments align with the required local, state, and national assessments that are associated with the course.	Yes	3
A4	The course content and assignments are of sufficient rigor, depth, and breadth to teach the standards being addressed.	Yes	3
A5	Information literacy and communication skills are incorporated and taught as an integral part of the curriculum.	Yes	3
A6	Sufficient learning resources and materials to increase student success are available to students before the course begins.	Yes	2
A7	A clear, complete course overview and syllabus are included in the course.	Yes	4
A8	Course requirements are consistent with course goals, representative of the scope of the course, and clearly stated.	Yes	3
A9	Information is provided to students, parents and mentors on how to communicate with the online teacher and course provider, including information on the process for these communications.	Yes	4
A10	Issues associated with the use of copyrighted materials are addressed.	No	0
A11	Academic integrity and netiquette (Internet etiquette) expectations regarding lesson activities, discussions, e-mail communications and plagiarism are clearly stated.	No	0
A12	Privacy policies are clearly stated.	No	0
A13	Instructor resources and notes are included.	No	0
A14	Assessment and assignment answers and explanations are included.	No	0

Coding	Instructional Design	Present	Rating
B1	Course design reflects a clear understanding of student needs, and incorporates varied ways to learn and multiple levels of mastery of the curriculum.	Yes	3
B2	The course is organized into units and lessons.	Yes	2
B3	The course unit overview describes the objectives, activities and resources that frame the unit. It includes a description of the activities and assignments that are central to the unit.	No	0
B4	Each lesson includes a lesson overview, content and activities, assignments, and assessments to provide multiple learning opportunities for students to master the content.	Yes	2
B5	The course is designed to teach concepts and skills that students will retain over time.	Yes	4
B6	The course instruction includes activities that engage students in active learning.	Yes	3

B7	Instruction provides students with multiple learning paths to master the content, based on student needs.	Yes	2
B8	The teacher engages students in learning activities that address a variety of learning styles and preferences.	Yes	2
B9	The course provides opportunities for students to engage in higher-order thinking, critical-reasoning activities and thinking in increasingly complex ways.	Yes	3
B10	The course reflects multicultural education and is accurate, current and free of bias.	Yes	2
B11	The teacher can adapt learning activities to accommodate students' needs.	Yes	3
B12	Readability levels, written language assignments and mathematical requirements are appropriate for the course content and the students.	Yes	4
B13	The course design provides opportunities for appropriate instructor-student interaction, including timely and frequent feedback about student progress.	Yes	3
B14	The course provides opportunities for appropriate instructor-student and student-student interaction to foster mastery and application of the material and a plan for monitoring that interaction.	Yes	3
B15	The course provides opportunities for appropriate student interaction with the content to foster mastery and application of the material.	Yes	3
B16	Students have access to resources that enrich the course content.	No	0

Coding	Student Assessment	Present	Rating
C1	Student evaluation strategies are consistent with course goals and objectives, representative of the scope of the course and clearly stated.	Yes	3
C2	The course structure includes adequate and appropriate methods and procedures to assess students' mastery of content.	Yes	3
C3	Ongoing and frequent assessments are conducted to verify each student's readiness for the next lesson.	Yes	3
C4	Assessment strategies and tools make the student continuously aware of his/her progress in class and mastery of the content beyond letter grades.	Yes	3
C5	Assessment materials provide the teacher with the flexibility to assess students in a variety of ways.	No	0
C6	Grading rubrics and models of partially to fully completed assignments are provided to the teacher.	No	0
C7	Grading policy and practices are easy to understand.	Yes	4

Coding	Technology	Present	Rating
D1	The course architecture permits the online teacher to add content, activities and assessments to extend learning opportunities.	Yes	4
D2	The course accommodates multiple school calendars; e.g., block, 4X4 and traditional schedules	Yes	4
D3	The course is easy to navigate.	Yes	4

			Present	Rating
D4	The course makes maximum use of the capabilities of the online medium and makes resources available by alternative means; e.g., video, CDs and pod casts.		Yes	4
D5	Hardware, Web browser and software requirements are specified.		Yes	4
D6	Prerequisite skills in the use of technology are identified.		Yes	3
D7	The course utilizes appropriate content-specific tools and software.		Yes	4
D8	Interoperability technical standards allow sharing content among different learning management systems.		Yes	4
D9	Interoperability technical standards ensure sharing of questions, assessments and results with others.		Yes	4
D10	The course meets universal design principles, Section 508 standards and W3C guidelines to ensure access for all students.		Yes	2
D11	Online textbooks used in a course meet nationally endorsed standards (NIMAS) for publishers to ensure distribution of accessible, alternative versions of textbooks and other instructional materials.		N/A	N/A
D12	The course provider offers the course teacher, school coordinator assistance with technical support and course management.		N/A	N/A
D13	The course provider offers orientation training.		Yes	3

Coding	Course Evaluation	Present	Rating
E1	The results of peer review and student evaluations of courses are available.	Yes	1
E2	Course provider uses multiple ways of assessing course effectiveness.	No	0
E3	The course is evaluated regularly for effectiveness, and the findings are used as a basis for improvement.	No	0
E4	The course is updated periodically to ensure timeliness.	Yes	2
E5	The course provider is authorized to operate in the state in which the course is offered.	Yes	4
E6	The teacher meets the professional teaching standard established by a state licensing agency or the teacher has academic credentials in the field in which he or she is teaching and has been trained to teach online and to use the course.	Yes	4
E7	Student information remains confidential, as required by the Family Educational Rights and Privacy Act (FERPA).	N/A	N/A

Coding	21st Century Skills	Present	Rating
F1	The course intentionally emphasizes 21st century skills in the course, including using 21st century skills in the core subjects, 21st century content, learning and thinking skills, ICT literacy, self-directed learning, global awareness, and include 21st century assessments, as identified by the Partnership for 21st Century Skills.	Yes	4

21ˢᵗ Century Teaching & Learning

Intermediate Unit 1
2 continuing education credits

Online course

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Course Description

There is remarkable consensus among educators and business and policy leaders on one key conclusion: we need to bring what we teach and how we teach into the 21st century. This interesting and interactive course will address this issue by discussing the skills students need to master in order to be successful in a globalized society. Educators will discuss: engaging instructional methods for teaching digital natives, 21st century skills we will be teaching digital natives, and how educators can address the needs of the millennial generation of students. Selected excerpts from "The World is Flat," "A Whole New Mind," and "Millennial's Rising" will be shared and discussed to validate the course's premise ~ educators must bring what we teach and how we teach into the 21st century. Participants will: participate in online discussions, summarize and analyze outsides readings, complete pre and post tests, create lesson plans, create action plans for implementation, and create a culminating project.

Learning Materials

Textbooks:
➢ *There are no textbooks for this course. All materials will be presented in Blackboard*

Course Objectives

General Objectives of *21ˢᵗ Century Teaching & Learning:*

By the end of the course the educator will be able to….

- Read and summarize the identified excerpts from "Millennial's Rising"
- Compare and contrast characteristics between baby boomers, generation X'ers, and millennial's as they relate to teaching and learning
- Identify teaching strategies that better serve the needs of millennial students
- Discuss the importance of integrating technology into teaching and learning for "digital natives"
- Evaluate best practices in pedagogy as it relates to technology integration
- Create a lesson plan that incorporates teaching strategies appropriate for millennial students

- Read and summarize the identified excerpts from "<u>The World is Flat</u>"
- Explain the impact globalization is having on public education
- Identify strategies for integrating globalization literacy into teaching and learning
- Discuss how cybercharter school competition is forcing schools to re-evaluate their organization
- Evaluate best practices in pedagogy as it relates to globalization literacy
- Create a lesson plan that incorporates teaching strategies that addresses globalization literacy
- Reflect upon what they have learned by writing in their journals
- Read and summarize the identified excerpts from "<u>A Whole New Mind: Why Right Brainers Will Rule the World</u>"
- Explain the impact that brain research has on teaching and learning
- Analyze the importance of right-brain-based teaching and learning as a result of the impact of globalization
- Identify the six senses as defined by Daniel Pink
- Evaluate best practices in pedagogy as it relates to right brain-based teaching and learning
- Create a lesson plan that incorporates teaching strategies that addresses right brain-based teaching and learning
- Reflect upon what they have learned by writing in their journals
- Read and summarize the identified excerpts from "<u>Professional Development for the 21st Century</u>"
- Identify 21st century skill themes as defined by "The Partnership for 21st Century Skills."
- Discuss the importance of integrating 21st century skills into teaching and learning
- Evaluate best practices in pedagogy as it relates to 21st century skills
- Create a lesson plan that incorporates teaching strategies that addresses 21st century skills
- Reflect upon what they have learned by writing in their journals
- Educators will complete the performance assessment
- Educators will complete the culminating project
- Educators will complete an action plan for implementation

Perspective and Skills

21st Century Teaching & Learning dynamically bridges the distance between where an educator is and where they should be to meet the diverse needs of their students. Through a course that is flexible, progressive, and robust with an ever expanding reach into the dynamic world of education, the course provides the tools, the knowledge and encouragement you need to build a bridge into the future.

Through an progressive curriculum geared toward the challenges of a rapidly changing educational world, this course ensures educators are prepared for the challenges of 21st century classroom. Participants should be able to think, write, and speak both clearly and critically.

Course Requirements

Reading Assignments. Reading assignments are listed weekly in Blackboard. You should complete all assigned readings before the posted deadlines, as indicated on the schedule. Reading assignments cover the conceptual aspects of the course. It is very important for you to keep up with the readings so that you obtain a conceptual understand of topics, which may or may not be covered in the course discussions.

Class Format and Participation. The course will be a mixture of demonstration, discussion, and hands-on experiences. Much of the class will be spent sharing your thoughts in discussion boards based on class assignments. Topics from the assigned readings will be discussed in these discussion forums and you should actively participate in these class discussions.

Learning Activities*.* Assignments are due throughout the courser as indicated on the weekly schedule. The assignments represent a significant portion of your course grade. They are intended to help you learn a variety of topics relative to 21st century teaching and learning.

Due Dates. Assignments are typically due on the following Sunday morning as indicated on the course schedule. Assignments may be handed in up to one week late without penalty. After that, a 10%/week penalty will be assessed, up to a maximum of 30%.

E-mailing assignments. There may be times when you need to send an assignment as an e-mail attachment. All e-mail attachments (assignments) must include your name, e-mail address, and the title of the assignment. You should also label the subject of the e-mail message with your name and the assignment title. If you do not label assignments and e-mail messages appropriately, the assignment may get lost.

Quizzes. Short activities and quizzes will be given during class throughout the semester. Quizzes cannot be made up.

Test. A pre-test and post-test (final exam) is scheduled at the beginning and end of the course. The exam will be made up of objective-type questions.

Evaluation and Grading Policy

Your performance in the course is measured by the points you accumulate on all quizzes, tests, and learning activities. The aforementioned specific course objectives will be evaluated by a combination of the activities below.

Outcomes Assessment	%
(A) Assignments	40
(B) Class participation/online cussions	10
(C) Quizzes	10
(D) Final Project	25
(E) Final exam	15

Grading scale is A = 90 – 100%, B = 80 – 90%, C = 70 – 79%, D = 60 – 69%.

Course Policies

Attendance. Students should demonstrate professional behavior by attending online classes and actively participating in class activities. Your time spent in the course is tracked.

Make up tests. Makeup tests can only be given if you provide appropriate documentation (e.g., a note from a physician) indicating the reason for your absence. Planned absences should be arranged prior to the test.

I-Grade policy. Students must complete 80% of the coursework to warrant a grade of incomplete ("I"). The I-grade policy states that "I" grades must be removed within one year or else the class must be repeated.

Academic integrity. Students are expected to adhere to the standard rules and regulations on academic integrity. Below are my expectations:

Individuals who seek or receive credit for intellectual work that is not their own violate Academic Integrity, as do individuals who falsify or ignore data to reach a predetermined conclusion or who destroy or contaminate another person's data or intellectual property. Violations of Academic Integrity may include, but are not limited to, the following:

Cheating. Cheating on quizzes, tests, examinations, or projects may include giving, receiving, or using unauthorized assistance or material. (Unauthorized material may include, but is not limited to, notes or other written documents, unauthorized calculators and/or formulas, computer programs, software, data, or text.) In other contexts (e.g., group projects, labs), cheating may include forms of deception intended to affect grades or other outcomes. Cheating may include, but is not limited to, student use of sources beyond those authorized by the instructor in fulfilling assignments such as writing papers, preparing reports, developing course projects, or solving problems. Cheating may also include student acquisition, without permission, of tests or other academic material belonging to an instructor.

Plagiarism. Plagiarism in papers or other written, electronic, or oral work (including essays, research papers, theses, presentations, class projects, or work for publication) may include, but is not limited to, student use--whether by summary, paraphrase, copying, direct quotation, or a combination--of the published or unpublished work or specific ideas of another person or source without full and clear acknowledgment (including the use of quotation marks to indicate the source's specific language). Plagiarism may include the submission of material from sources accessed through the Internet or by other means, or from other individuals, without proper attribution. Also, plagiarism may include the submission of a paper prepared in whole or in part by another person or agency engaged in providing or selling term papers or other academic materials

Assistance in the violation of Academic Integrity. Assistance may include, but is not limited to, any knowing facilitation of intellectual dishonesty by another person or persons.

Violations of Academic Integrity--whether or not they are the result of a deliberate intent to deceive--are subject to academic sanctions, including (but not limited to) oral and/or written reprimand; lowered grade or failure on an assignment; lowered course grade; failure of a course.

E-mail. Students and instructor will often communicate electronically. Some assignment instructions may be given using e-mail. Students should check e-mail regularly.

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