STANDARDS BASED PRACTICES OF ONLINE TEACHER PROFESSIONAL DEVELOPMENT

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Online teaching and learning is evolving with technology as a new area of research; it is less than a quarter century old, and new terminology is constantly being added. Online teaching and learning is exponentially growing globally, especially in higher education. There is a strong need for research in all areas of online teaching and learning to deeply understand and connect ideas from the existing literature to practice.

The purpose of this study was to consider my own practices of asynchronous online teaching and align them with established standards to learn appropriate standards based practices of teacher professional development (PD) to mentor new online teachers. It is important to instill good practices in future online instructors to set the trend and tradition of standards based practices. The research, both literature and survey based, also aids in filling some gaps related to good practices of teaching online.

The standards for online teaching, courses, programs, and institutions were created by the International North American Council of Online Learning (iNACOL) in 2007, last updated in 2011. Constant updating of standards is needed to keep up with technological growth.

As a part of the methodology, I have integrated the iNACOL standards of online teaching with the National Staff Development Council (NSDC) standards for PD to establish criteria as a basis for survey items. Participants of an online course were surveyed with an online survey

system. The data were gathered and analyzed for standards based practices, cross tabulation of items of interest, and emerging themes from open-ended (OE) items.

Strengths and weaknesses of standards based practices are discussed. The themes from the OE items elucidated from the data were interaction, independent and self-disciplined learning, and enjoyment of online learning. The research concluded that online learning involves independent learning, which takes place in a discussion based socio-constructive online environment. This research will ideally help in establishing good practices of teaching and mentoring the first generation of online instructors, who will in turn set the trend and traditions for the future.

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1.0 INTRODUCTION

One of the most recent public school reforms, No Child Left Behind (NCLB), is a federal initiative, Public Law (PL) 107-110, started in January 2002. It requires stronger accountability for student achievements, proven educational methods, and more choices to parents, and it also provides more freedom to states and communities for local control, curriculum, and instruction. NCLB emphasizes student achievement improvement via improving teacher quality through PD. Accordingly, the Pennsylvania Department of Education (PDE) requires "highly qualified" teachers in all specialized areas such as English as a Second Language (ESL) to teach English Language Learners (ELL). ESL certification is an add-on certificate to existing Pennsylvania (PA) teacher certification. In order to be "highly qualified" to teach ESL, one has to have a Reading or English teaching certificate. Since 2003, Intermediate Units (IUs) have created a 12 credit PDE approved Program Specialist ESL certificate. IU1 was the first pilot IU formed in 1971 to serve school districts in Washington, Fayette, and Greene counties. It is located in the Southwestern corner of Pennsylvania and includes 25 school districts. IU1 offers all of the ESL certification courses via an asynchronous online learning environment to the teachers across the Pennsylvania state and beyond.

PD of teachers is a keystone to students' achievement improvement (Johnson, 2012). It is important to build PD capacity by focusing on the individualized needs of the teacher, providing

flexibility in their busy schedules and offering techniques that are easily implemented in the classroom. High quality PD that is ongoing and collaborative can make a difference in the quality of teaching and the achievement of students (Hawley & Valli, 1999).

1.1 BACKGROUND

Pedagogy, literally, means the art and science of teaching children. This simple definition was based on the original pedagogical model of monastic schools in Europe where monks were teaching reading and writing to very young children. In studies from the 1960's, the concept of the adult learner, andragogy, emerged. Andragogy is a Greek word meaning "man, not boy", though pedagogy is now used to describe teaching to both child and adult learner. It was found that there is a significant difference in child and adult learners. The teacher's role is different in teaching children and adults (Knowles, 1980). Traditionally teaching and learning was in a traditional, face-to-face classroom setting in universities until more recently.

Classroom teaching has evolved significantly in the past 200 years. In 1890 the International Correspondence School (ICS), started in Scranton, PA, used mail correspondence to connect the learner and instructor for the study-at-home school learners. Recently, with the evolution and use of technology, classrooms with self-learning online environments started becoming popular for adult learners. Advancements of technology, the internet, programming, and course management system (CMS) for sharing knowledge anywhere, anytime with anyone is shifting the use of traditional classrooms to blended online classrooms or completely online classrooms (Moore & Kearsley, 2012). Online learning is becoming an increasingly new addition

to university classrooms. In the mid 90's online learning started with internet and email. Then, with the evolution of programming, CMS evolved in early 2000. Meerts (2003) described CMS as the computer programs which provide a set of tools and framework that allow creation of online course content and teaching of the course.

Teaching and learning has evolved extensively from its simple one way transfer of knowledge to a much more complex system with the technological advances of the new millennium. With the emergence and advancements of technology, in recent years, pedagogy is evolving into various forms of remote teaching and learning, primarily online. Pedagogy is changing for adult learners based on the growing technology. The fast growth of online systems of teaching and learning in the past decade has changed the platform of PD for teachers (Moore & Kearsley, 2012). A variety of online teaching and learning management systems have been developed in the past decade. Universities and colleges started using them as an addition to their regular classroom instruction and began to explore alternative configurations. Synchronous classes have learners and teacher present at the same time; however, they are at different locations. Asynchronous classes do not have learners and teacher together at the same time and location. Asynchronous, 24/7 online classrooms, provide flexibility, self-paced access, convenience of scheduling and learning, reduced commuting time and resources, and easier differentiation for individual needs (Hrastinski, 2008). Online teaching and learning is a relatively new field of research across the globe, which has been drastically changing traditional teaching and learning to what it is today and will continue to change teaching and learning into what has not yet been imagined, based on the growth of technology.

1.2 PURPOSE

I have taught online classes from the initiation of the blackboard online CMS in 2003. There was limited research available about online teaching at that point. As a result, I have developed my own design of creating and teaching online professional development (OPD) courses. At that time, most of the PD was still completed face-to-face. For the past ten years, I have been teaching OPD courses, and for the past six years, I have also been mentoring and teaching new online instructors. The purpose of this study was to compare my online teaching practices with existing standards and best practices to identify the areas for improvement in my own teaching practices, and also to apply this knowledge to teach standards-based practices to budding online instructors.

As online education opportunities have expanded, identifying good practices of online teaching and learning has emerged as a need of the field. The creation of standards represented a major step towards that goal. This study was designed to add to those efforts. This study attempts to connect OPD and standards-based practices of online teaching.

1.3 RESEARCH QUESTIONS

This study explored OPD for teachers through literature review and survey. In order explore the topic of OPD; this study used a comprehensive review of literature to determine a framework to address the following two research questions (RQ) related to the evidence-based good practices of teaching PD classes.

RQ 1. What does the literature indicate regarding the history and evolution of technology and OPD?

RQ 2. What does the literature indicate regarding the evidence-based best practices and standards for OPD for educators?

Additionally, via an online ESL certification preparatory class, the study addressed a third research question:

RQ 3. How does a specific OPD course align with the established standards for OPD from the perspectives of students?

1.4 ORGANIZATION OF THE REMAINING SECTIONS

Briefly, the first two questions are addressed in Chapter 2 through a review of literature. The second chapter offers a comprehensive literature review of the recommended practices of teaching online to address the first two research questions, including the online teaching standards by iNACOL and PD standards by NSDC. Additionally, the review includes resources related to the development and analysis of the survey to address RQ3. Chapter 3 outlines the methods used for the development, conduct, and analysis of an online survey to address RQ3. The details of the specific course are discussed in chapter 4 specifically, description of the course, participants, and their demographic information. Chapter 5 includes data and data analysis from the survey responses. Chapter 6 includes conclusions, recommendations, and suggestions for the future research. The appendix includes survey, letter, course syllabus, tables, figures, and references.

1.5 STUDY

This study explores standards-based practices of asynchronous online teaching with a focus on design and instructional facilitation. The iNACOL standards for online teaching, which were created by North American Council of Online Learning (NACOL), and the NSDC standards for PD provided the framework for the study. This study provides a review of related literature to identify history, evolution, standards, and best practices in asynchronous online teaching, and then examines a specific course offered through the lens of those practices. In addition to the literature review, an online survey, based on the iNACOL and NSDC standards, was administered to approximately 88 students of a three credit, fully online, English as a Second Language Assessment course for teachers offered in Southwestern PA in 2012.

1.6 STANDARDS

The NSDC developed online teaching standards in 2001 based on their PD standards of 1995 (NSDC, 2001). The NSDC standards are categorized into context, process, and content standards. The context standards include leadership and developing learning community standards. The process standards include design and strategies, collaboration skills, research based study, data driven approach, continuous evaluation to improve, and focus on learning standards. The content standards include quality teaching, environment, and focus on the meaningful content standards (NSDC, 2001). Overall, the purpose of the standards is to establish and maintain the quality and best practices in the field of professional development.

In 2006, the Southern Regional Educational Board (SREB) developed standards for online teaching (SREB, 2006). The SREB standards were based on the existing research, technology, and experience of the 16 states of the southern region of United States of America (USA). SREB is a consortium of 16 southern states and was the first large educational group to consider the quality of online teaching and courses. The SREB had the most extensive experience in the development of online education and instruction at that time (SREB, 2006).

In 2007, NACOL developed International standards for online teaching based on SREB standards and other considerations from the field (iNACOL, 2008). In this process, iNACOL reviewed the National Education Association's (NEA) *Guide to Teaching Online courses (2002-2006), fifty one competencies for Online Instruction (2005), the Ohio Department of Education's Ohio Standards for the Teaching Profession (2005), and the Electronic Classroom of Tomorrow's Teacher Evaluation Rubric (2005).* There are four areas of iNACOL program standards, namely, institutional standards, evaluation standards, support standards, and teaching and learning standards. The last one, teaching and learning standards, includes concepts like technology skills, planning, design, interaction, collaboration, leadership, modeling, guiding, counseling, supporting, encouraging, understanding of special needs students, assessments, assignments, and use of data to improve the instruction.

1.7 LIMITATIONS

This is a literature and survey based study of an asynchronous online ESL assessment course which I taught from October to December 2012. The survey focused on the facilitation of the

course based on iNACOL and NSDC standards for online teaching and PD. The course had 88 course participants with the majority from PA State. The course participants completed a voluntary, anonymous online survey of 24 questions.

Survey issues such as reliability, validity, bias, and response rate were considered. In a class of 88 course students, there were three students who did not complete the course successfully for various reasons. I was the instructor for the course. As such, additional care was taken to address researcher bias. An independent review of the data, analysis, and findings was conducted by another researcher to assist in the process.

Due to relative newness of the topic of the research, instruments with proven reliability and validity are limited. As such, the construction of the survey items was closely aligned to the current iNACOL and NSDC standards and practices suggested by the literature review.

1.8 ABBREVIATIONS

The following abbreviations are used for in this dissertation document:

Abbreviation	Complete word/s
#	Number
%	Percent
Bb	Blackboard
BEC	Basic Education Circular
CALLA	Cognitive Academic Language Learning Approach
CBA	Curriculum-Based Assessment
CCMS	Commercial Courseware Management System
CCS	Common Core Standards
CMS	Course Management System
CoI	Community of Inquiry
CTB	California Testing Bureau
D2L	Desire to Learn

DC	District of Columbia
df	Degree of freedom
EdX	Electronic Data Exchange
ELL	English Language Learner
ESL	English as a Second Language
ICS	International Correspondence School
IDEA	Individuals with Disabilities Education Act
IPT	Individualized Proficiency Test
IU	Intermediate Unit
K-12	Kindergarten - 12
LAS	Language Assessment Scale
LASO	Language Assessment Scale Oral
LAS-R/W	Language Assessment Scale - Reading/Writing
M	Mean
MC	Multiple Choice
MOOC	Massive Open Online Courses
n or N	Number
iNACOL	International North American Council of Online Learning
NACOL	North American Council of Online Learning
NCLB	No Child Left Behind
NEA	National Education Association
NROC	National Repository of Online Content
NSDC	National Staff Development Council
OE	Open-Ended
OPD	OPD
p value	Probability value
PA	Pennsylvania
PDE	Pennsylvania Department of Education
PK-20	Pre-kindergarten – 20
PL	Public Law
PSSA	Pennsylvania School System of Assessments
RQ	Research Question
SC	South Carolina
SD	Standard Deviation
SIOP	Sheltered Instruction Observation Protocol
Sloan-C	Sloan Consortium
SREB	Southern Regional Educational Board
TESOL	Teachers of English to the Speakers of Other Languages
UK	United Kingdom
URL	Universal Resource Locator
USA	United States of America

USDOE	United States Department of Education
VOCAL	Visible Organized Compassionate Analytical Lead-by-example
WebCT	Web Course Tool
WIDA	World Class Instructional Design and Assessment
WVA	West Virginia
WWW	World Wide Web
X^2	Chi square
XML	Extensible Markup Language

2.0 LITERATURE REVIEW

The literature considered for the study includes scholarly writings, online and traditional publications, journal articles, books, published essays, and reports. A literature review is an overview of the major points of the topic to create a clear picture of what is available at a specific point in time. The literature review builds upon and extends the existing research. It provides background to and justification for the research (Bruce, 1994). Bruce (1994) described six elements of the literature review, which include: a search, a survey, a vehicle for learning, a research instructor, and a report. A literature review describes, summarizes, evaluates, clarifies, and/or integrates the resulting information. Literature-based research provides an account of what is published on a topic by the researchers and scholars. Literature-based research consists of information that is established on a topic and helps in the organization of the knowledge for the research questions, summarizing of the findings, identification of the gaps in the research, and formulation of questions that have not yet been posed. The first two research questions of this study use literature based research methodology.

The literature review for this study explores the two literature based questions. The first literature based question, regarding the history and evolution of technology and OPD, explores the history of correspondence and online courses, evolution of CMS, synchronous and asynchronous online courses, and the current status and barriers of online teaching. The second

literature based question explores the standards based practices for OPD courses. This includes the NSDC standards and iNACOL standards, models of online teaching and learning, and socio-constructive teaching in an online class with a focus on design and the facilitation. The second question offers the basis for the third question related to the alignment of an online course with the standards for PD by NSDC and standards for online teaching by iNACOL ("i" stands for international here).

2.1 WHAT DOES LITERATURE INDICATE REGARDING THE HISTORY AND EVOLUTION OF TECHNOLOGY AND ONLINE PROFESSIONAL DEVELOPMENT?

Most computer related technology evolved in the past three decades (1980s – 2010s). Now it is an integral part of everyday life at educational institutions to maintain data and information. Digital literacy is important for students and teachers to keep updated with growth and development of many areas of concern in the world.

2.1.1 Evolution of technology

The evolution and growth of computer technology took place in the past half-century. Computers were first developed in the 1960s. Computer science as a college major began in the 1970s. At that time, computer science courses were offered as part of the mathematics department. In 1980, personal computers were introduced and word processing and graphics programs started to become popular. Personal programming, the ability to connect via the internet, and data-based

software, began towards the end of the 1980s, and continued to expand and advance quickly in the following decade. During the late 1990s, email and web-based businesses, such as Google, became very popular which is only about 17 years old. With the new millennium, internet activity increased dramatically. Technology has changed how businesses operate, manage, and grow internationally. CMS for online teaching and learning started in early 2000s and have been growing ever since, allowing for numerous online courses/learning options. Education has changed from the face-to-face classroom to online models consisting of partially or fully online curriculum (Moore & Kearsley, 2012).

2.1.2 History of distance education

Distance education has evolved throughout history and with a fast pace with the evolution of technology. The oldest Correspondence school, ICS, was started in Scranton, PA in 1891, and is continuing at present. The communication of instructor and learner was via mail in the first generation of distance learning. The second generation of distance education involved the use of radio and television to broadcast the message. The third generations organized the learning system and have been referred to as "open universities". The fourth generation started in 1980s and included a group interaction at a distance using telephone, satellite, cable, and computers. The most recent fifth generation of distance education started in 1990s. It involves online teaching and learning in virtual classes and universities based on internet technology (Moore & Kearsley, 2012).

Online courses started in their simplest form in the 1990s by exchanging assignments via email and internet. The learning community concept of the online teaching and learning was at

the embryonic stage of development at that point. With the advancements of technology, it took the full form of a CMS in early 2000. They started to evolve and become popular very quickly in early 2000 with the advancements of programming and evolution of a variety of CMSs. This has continued through corporate mergers: "Commercial Courseware Management Systems (CCMS) have evolved significantly through the emerging open extensible markup language (XML). CCMS such as Blackboard integrated Web Course Tool (WebCT) and MapleNET content ranging from links to fully integrated features through dedicated windows applications like Maplets" (Stav & Tsalapatas, 2003, p. 264).

Currently, the online component can be a part of the face-to-face class, or totally independent synchronous or asynchronous learning environment. Online education options have been evolving very quickly since 2000 into fully or partially online options (referred to as hybrid or blended courses) to fit the need of a busy life and scheduling limitations of the learner.

2.1.3 Course management system

There are many cost and no-cost online teaching and learning systems such as Blackboard (Bb), Desire 2 Learn (D2L), Sakai, Moodle, Edmond, Udacity, Coursera, Electronic Digital Exchange (EdX), and others. Other than Bb and D2L, most of them are of no cost to the student. The CMSs were relatively simple in 2003 in terms of variety of assignments, assessments, and lessons in the online course. The simple CMS was good enough to support interactive, socio-constructive learning in the learning community of the online class. As a result, the constructivist approach grew globally about online teaching and learning. Garrison (2003) developed the first framework for online learning called the Community of Inquiry (CoI) framework. It describes online

educational experiences consisting of social, cognitive, and teaching presences, which are discussed later in detail (Garrison, 2003).

In the past ten years, Bb has evolved from its primitive form introduced in 2003 and has become the most popular online CMS for universities and colleges. Garland (2005) indicates that "Blackboard is considered to be a robust course management system. The software platform revolves around teaching, learning, and the ability to create a community of teachers and learners." (p. 71) Bb provides a collaborative–cooperative 24/7 learning platform for a self-regulated, self-paced, self-disciplined, independent learner who can build upon his/her knowledge from an existing level and to a desired level (Moore & Kearsley, 2012). Asynchronous online instruction provides flexible, focused, need-based PD for teachers and administrators. It allows the creation of learning communities in the class of students focused on similar needs, content areas, and interest. This technology provides OPD for adults and is changing how curriculum is delivered, the role of instructor, and the types of assessments available to make it meaningful, experiential, and relevant for the learner (Szabo, 2008).

2.1.4 Online courses

This section includes literature about traditional and online courses, synchronous and asynchronous online courses, and classification of online courses.

2.1.4.1 Traditional and online courses

Online courses can be fully or partially connected to internet-based activity. It depends on many factors, including but not limited to the needs of the learners and instructor, distance of the

learners and instructor, expertise and comfort level of the instructor, time, availability of technology, and other resources. (Sunal et al., 2003).

Traditional face-to-face classes are taught in a classroom with an instructor and students physically present together at a predetermined time and place. Most of the projects, assignments, assessments, and discussion take place during class time, which is scheduled ahead of time (Hrastinski, 2008). The problem with traditional classes is the scheduling, the location, lack of flexibility, the commuting time, and the resources (Goldberg, 2005).

Smith and Brown (2005) found the current trend was a preference of independent learning over traditional face-to-face classes. Online classes can add greatly to the face-to-face classes where "online learning environments become an integral means of creating and supporting learner activity and interactivity in the curriculum, rather than just a replicative add on to, or replacement of, traditional delivery of information in face-to-face settings" (p. 621).

More recently, traditional courses are being supplemented by an online component in most higher education institutions. The use of web-based class depends on many factors such as the need of an online component, faculty training with a course management system, comfort of the instructor, and support from technology and administrative departments. As the technology is evolving, a variety of online learning systems are evolving. Currently, there are many paid and no cost complex CMSs available to fulfill the needs of the institution and instructor.

2.1.4.2 Synchronous and asynchronous online courses

The independent online learning environment can be synchronous or asynchronous. A newer trend of totally independent learning online classes has started recently. Online classes can be totally or partly synchronous or asynchronous (Moore & Kearsley, 2012). Major differences of

synchronous and asynchronous are shown in the table 31 in the Appendix B. Asynchronous learning helps with the students' scheduling conflicts. For courses like aviation and specified advanced courses, one teacher can instruct a few interested students from many school districts simultaneously, reducing the shortage of instructors and providing maximum learning opportunities to the students. This is especially true for small districts where they cannot hire many advanced level teachers because only a few students want to take certain courses.

A synchronous online class is conducted at a prescheduled time when the instructor and students are present together at any online location. The instructor directs the activities and learning assignments (Hrastinski, 2008). This is closer to the traditional face-to-face approach to teaching.

Asynchronous online classes tend to be more student-centered where the instructor and students are located not only at different locations, but also engaged at different times. This is more of an independent learning class where the instructor is a facilitator of resources and supports independent learning of the students. Asynchronous learning is based on the constructivist theory where peer to peer interaction provides a large part of the learning (Hiltz & Goldman, 2005). Based on Hrastinski (2008) and Hiltz (2005), comparison of asynchronous and synchronous online class is discussed in the Table 31 in the Appendix B.

2.1.4.3 Classification of online courses

Many researchers have classified online courses by different criteria. Some of them are discussed here. A simple classification was done by Picciano and Seaman (2007). They classified online classes into three categories based on the percentage of content online; an "online" class has 80%

or more content online, a “hybrid or blended” class has 30-79% content online, and a “web facilitated” class has less than 30% of the content online.

Sunal et al., (2003) offered a detailed classification of online courses, when the use of internet was growing, and the Bb CMS had just started. They classified courses into five levels based on the amount of use of the internet.

1. Traditional face-to-face courses, where the presence of web is not required.
2. Web-presence courses that include some information about the courses on the website.
3. Web-enhanced courses that use the web to distribute course material assignments and assessments assist student-student and student-teacher communication, offer virtual meetings, and other resources. In web enhanced courses, the virtual class time is used for application, practice, and student and instructor interaction (Palloff & Pratt, 2001).
4. Web-centric courses that use the website to facilitate access to class material, support student-student and student-teacher communication, and allow student-material resource interaction. The main interaction is on the web instead of in the regular classroom.
5. Web courses that are completely independent courses and that can be accessed through the internet. These courses facilitate access to the course material and support three kinds of interactions: a. student-student: b. student-teacher communication: c. student-material-resource interaction. These kinds of courses can reach anybody, anywhere, anytime across the world (Foley, 2012). They can be synchronous, i.e. scheduled at a fixed time and different place for instructor and student meeting or asynchronous, i.e. student and instructor do not have to meet simultaneously at a predetermined time and place. It is flexible for the needs of students and instructors. There are three kinds of web courses:

a. Traditional: This type is centered on a traditional approach to instruction. It may include a website with lectures, notes, and synchronous discussion in a distance learning format.
b. Cognitive Approach: This approach centers on the activities involving students working with course materials. This includes a website with material and problems for students to work through asynchronous discussion. It is a kind of cooperative interaction between student and material.
c. Constructivist Approach: This method is centered on student-student activities. This may include a website with issues and problems for students to work through with resource material and discussion (asynchronous or synchronous). Learning takes place constructively through cooperative interaction among students and instructor. This is the highest level of online courses.

Each of the CMS based courses can be further classified as synchronous, asynchronous, or blended learning courses.

2.1.5 Current status of online teaching and learning

Distance education is a 21st century model that has significantly impacted the higher education community globally. The 21st century demands that lifelong, anywhere, anytime learning becomes a reality for learners. The United States Department of Education (USDOE) reports that online learning is more effective than traditional education based on student achievement (Aud et al., 2011). The study on K-12 distance learning showed that unavailability of courses, instructors, or students' scheduling conflicts are the main reason for its growth.

> The goal of enabling all young people to gain the knowledge and skill they need to succeed – resulting in much higher high school and post-secondary school graduation rates – requires the United States to think creatively and expand the use of online technology in education. As technology has revolutionized the way Americans get news, communicate, listen to music, shop, and do business, now is the time for American students in thousands of underperforming classrooms to realize the same gains. (Aud et al., 2011, p. 7)

Wise and Rothman (2010) discussed the current status of education in their book *A Solution to Three Looming Crises in Education*. It includes three crises, namely teacher shortage, funding concerns, and demand for global skills. They suggested that we are at a sociological tipping point, i.e. a level at which the momentum for change is unstoppable and a minor change can change the world dramatically. According to them, it is important to realize the current status and act accordingly. Other researchers are also indicating similar thinking about the major paradigm shift in teaching and learning with the internet and technology (Postman, 1992). The new technology, online systems, standards, and related terminology are evolving and also starting to stabilize to some extent (Moore & Kearsley, 2012).

2.1.5.1 Why online?

Technology skills are essential for students to be successful in a global world. Online courses provide flexibility in scheduling for the learner with the busy life; allow acceleration or remediation, as well as additional instructional support, and time. They also maximize student learning and achievement. These courses are helpful in fulfilling the shortage of qualified instructors too. Teachers need to know current technology and have updated PD in their area of

expertise to be able to lead and create interest in students. Online teaching and learning fits learners' individualized needs. Online teaching and learning is focused and student centered (Moore & Kearsley, 2012).

In order to maintain our academic standing and leadership position in the world, it is important to prepare future citizens with the appropriate technological skills and interest to meet the demand of the time for students and teachers (Foley, 2012). A new system of teaching and learning is evolving through technology, so it is important to create good quality first generation online instructors, who will teach future generations of online instructors.

2.1.5.2 Barriers to online teaching

Many academic leaders are very positive about a number of aspects of online education, including the belief that students are at least as satisfied with online instruction as they are with face-to-face classes (Bonk, 2012). Evaluation of the quality of online instruction shows that they are not more difficult than face-to-face classes with a high level of student satisfaction (Means et al., 2010). An increasing majority view the quality of online education better than or same as face-to-face instruction. Teaching online takes much more time and effort and students need more self-discipline to learn. Also, some faculty, who did not teach or take a good online course, still do not believe and see the value in online teaching and learning (Allen & Seaman, 2007).

Online learning is an innovation with an evidence-base of effectiveness in improving student achievement and educational outcome for K-12 students. In June 2008, the U.S. Department of Education released a study which compared online and face-to-face instruction, and found that "on average, students in online learning conditions performed better than those receiving face-to-face class" (Dawley, Rice, & Hinck, 2010, p. 12). The reasons included

increased learning time, innovative curriculum and pedagogy, opportunities for collaboration, and learner centered interaction.

Online learning is gaining more acceptances. As it is true with any change, people who are not well informed present the biggest barriers; however, online learning has picked up significant momentum over the last ten years across the world in both higher education and in K-12 education (Mikropoulos & Natsis, 2011).

2.1.6 Professional development, teacher quality, and student achievement

Some technology-enhanced PD of teachers started in 1990. NSDC, which changed its name more recently to Learning Forward, created its first standards for PD in 1995 for face-to-face courses and workshops. With NCLB, PD became a requirement for all of the teachers to become "highly qualified" (NCLB, 2002). Through improved teacher quality, the hope is that student achievement would improve as well. To be identified as "highly qualified teachers," these teachers had to be certified in their area of specialty along with content specific other requirements.

PD of teachers is very powerful to make systemic changes in the schools and district. What administrators do to the teachers to awaken their full potential is reflected in the teachers' teaching of the students. As Hilliard said, "we must change our intellectual structure, definitions, and assumptions; then we can release teachers' power" (Nobles, 2005, p. 3; Hilliard, 2006). As a result, the quality of PD of teachers is an important factor when considering a concern for student achievement.

According to NSDC recommendations, effective teacher PD is need-based, individualized, and classroom application focused. Effective PD includes four core areas, namely, content, curriculum, assessment, and instruction (NSDC, 2001). Generally, PD can be categorized into three types. Most common standardized PD uses a centralized approach to disseminate information and skills to a large group of teachers in the district during a single session. The site based PD involves a group of teachers or schools engaged in an extended and long term focus in an area of concern. Self-directed PD is seldom used but can be very effective in creating a change within the individual teacher for identifying and supporting their strengths or addressing weaknesses. PD in this form is focused to the individualized needs and schedule of the learner. School administrators or instructors support skill application and mastery and provide encouragement as the teacher directly engages in this type of learning environment.

2.1.7 Models of online professional development

OPD is congruent with the previously described category of self-directed PD. As technology has grown in the past 20 years, the trend for teaching and learning has changed as well. Today's learner is more independent in online classes. Asynchronous online classes provide a completely independent learning environment for the self-directed and self-disciplined course participant. The instructor facilitates the course but the learner takes the initiative in his/her own learning. Research indicates that it is successful because it is timely, flexible, relevant to the job, welcoming, more hands-on, and technologically appropriate (Song & Hill, 2007).

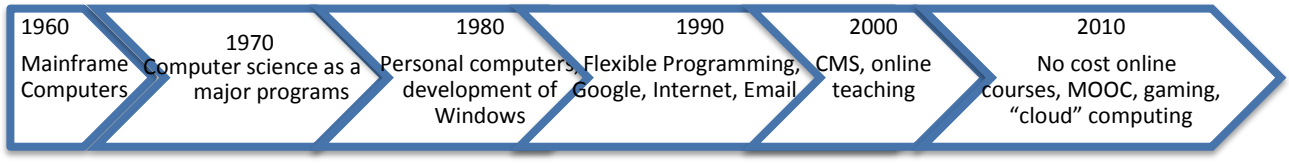
There are three major models of OPD, namely, self-directed courses, online courses, and online learning communities. The first model, self-directed PD is great for motivated individuals

with basic technological skills because they are almost completely on their own and do not need an instructor. For this particular method, the learner functions as an independent agent for his/her own learning. An independent learner takes the courses based on his/her own needs and interest. The second model of PD is online courses, which allow learners to benefit from the vast academic online resources and expert instructors. Participants in this type of learning are highly motivated, yet they still tend to prefer interaction with instructional faculty (Dede, 2006). Most online courses come under this category. The third and most advanced PD model is online learning communities. They provide a cost effective and focused means for teachers to engage in an academic discourse and study. This method is characterized by its long-term course duration enhanced by CMS, Yahoo Groups, and Google Teachers.

2.1.8 Conclusion: research question 1

Evolution of computers and technology accelerated in the 1960s with computers and more in the 1970s with computer science majors expanding in universities. The growth of technology increased even more in the 1980 and 1990s with increased usage of personal computers and advanced programming. New technology based CMS, digital content and video repository for online teaching started with the new millennium. New technology related terminology is constantly evolving and becoming part of the daily life. OPD has more recently begun and is still in its infancy. Applications of technology continue to grow and change education every day.

Figure 1: Timeline for the evolution of technology related to online teaching



OPD is a relatively new area for educational research (Mikropoulos & Natsis, 2011). A variety of CMSs facilitate OPD, gaining the interest of educators and researchers because of the individualized flexibility, focus, and applicability for students.

The goal of OPD is consistent with goals for face-to-face PD, that is, too develop teaching practice to support student achievement. Online classes provide a collaborative learning design where students explore multiple perspectives, while working in a flexible, individualized environment. The learner must take the initiative for learning in an online class. The role of the instructor is more of a facilitator, offering communication, responding to learners' needs, and in establishing a socially-constructive environment for learning (McLoughlin & Oliver, 1999).

2.2 WHAT DOES THE LITERATURE INDICATE REGARDING THE EVIDENCE-BASED BEST PRACTICES AND STANDARDS FOR ONLINE PROFESSIONAL DEVELOPMENT FOR EDUCATORS?

2.2.1 Best practices

Best practices are generally accepted, informally standardized techniques, methods, or processes that have proven themselves over time to accomplish a given task. The word "practice" means repeated work performed in order to improve a physical, mental, moral, or spiritual skill or ability. In education, best practices accomplish the task of teaching and learning for better student achievement.

2.2.1.1 Discussion of best practices from the literature

This section of the literature review focuses on the best practices of teaching that can be used in a variety of instructional environments; face-to-face and online, high school (children) and university (adults), as well as synchronous and asynchronous online options. A brief discussion of the top ten instructional best practices from seven studies is described in this section. At the end of this section, the most frequent best practices are discussed.

Marzano (2003) identified the ten best practices in a large study of about 400 experimental cases related to the pedagogy in conjunction with the student achievement from a sample of K-12 educators. These practices include identifying similarities and differences; summarizing and taking notes; reinforcing effort and providing recognition; providing homework and practice; using nonlinguistic representations of the content such as images and graphs; making a play of the content; encouraging cooperative learning; setting objectives and providing feedback; generating and testing hypotheses; and activating prior knowledge via questions, cues, and advance organizers. These practices are considered "best" for traditional (face-to-face) learning environment.

Based on findings garnered from a large survey-based study of 1,100 engineering and business students from Pennsylvania State University, Butt and Reutzel (2005) indicated that business and engineering students perceive the best practices as delivering clear and well-organized lectures; preparing students for exams; promptly reviewing homework, exams, assignments (preferred by engineering students and not by business students); explaining course expectations, goals, grading procedures, and rules of conduct; eliciting student input and suggestions for improving the course; providing examples of superior exam answers, excellent projects, and high quality papers; having a formal agenda with stated topics and goals for each

class session; giving students an opportunity to revise assignments before assigning them final grades; and making conversation and group discussion central to the learning experience. Themes central to participants' perceptions include the organizational capacity of instructors, their intent, and their abilities to interact with students. This indicates the best practices within a traditional, recitation-lecture oriented university learning environment. For the most part, the beliefs of both sets of participants, engineering and business, are similar.

As the technology evolved, CMS were created for online teaching and learning in the new millennium (Shea, Pickett, & Li, 2005). Ragan (2007) examined online class culture via a study he conducted at Pennsylvania State University, and published *10 Principles of Effective Online Teaching: Best Practices in Distance Education*. According to him, instructors can develop and nurture a learning culture by showing up and teaching consistently and systematically; practicing proactive course management strategies for engaging students; establishing logical progressions and patterns for course activities and assignments; always being prepared to teach by planning for the unplanned; always providing feedback and responding to learners; thinking before they write or disclose other information; helping to maintain forward progress among students; maintaining a safe and secure environment where all learners feel safe; providing premiums for the quality work; and utilizing cutting-edge relevant technology for enhancing instruction. Ragan (2007) also emphasized how online course designs can be feasible for establishing and maintaining solid learning cultures inside classrooms. In short, positive learning cultures are integral to productive, high yield online learning environments.

Grant and Thornton (2007) identified best practices by three main themes: design, instructional effectiveness, and interaction. The focus areas are student-staff connection; team effort by students and faculty; connection with daily life and experiences of students; copious

feedback; adherence to the notion that time plus energy equals learning; high expectations; and regard for individual differences, which can be evidenced through differentiated instruction. Purposeful course design and interaction are of utmost importance to best practices, especially in light of instruction and learning. Instructors must connect with learners and differentiate in order to inspire an appetite for learning and to help students to the highest levels possible. Overall, each student was the focus of the class (Grant, 2007).

Boettcher (2010) studied top 10 best practices for teaching online. He indicated current trend of focus of teaching and learning shifting towards reflective practices, learning community, and individual learning along with the group learning. The teacher should be present at the course site; create a supportive online course community; set clear expectations for students; provide opportunities for both meaningful group work and individual experiences; use synchronous and asynchronous activities for the best online learning experience; ask early for the informal feedback; be inviting, reflective, and responsive when orchestrating content-driven discussions; utilize content resources, applications, and links to current events that connect with relevant course topics; combine core concepts and customized and personalized learning strategies; and execute closers that adequately wrap up activities. The focus of learning was personalized to each individual student for a deeper learning with reflective practices.

Hammond (2005) addressed the importance of interaction in the asynchronous online class. According to him, "Researchers express broad agreement that the argument for using asynchronous online discussion rests in a commitment to interaction between learners and adherence to social constructivist approach to teaching and learning" (p. 18). He also posits that best practices include: design structure with formative and summative assessments; group participation, discussion, and product; problem based learning; and higher order learning. The

instructor draws upon his/her own experiences, learns from the research and other online instructors, is aware of new pedagogic approaches like imparting learners experience for the benefits of group work, and uses updated technology for threaded messages in a variety of forums make the class successful for all. Hammond (2005) believes that asynchronous online platform with threaded discussion is essential to socio-constructive learning at a distance.

Kerr (2011) researched online courses at the high school level, which resulted in the publication of "*Tips, Tools, and Techniques for Teaching Online*". Via this work, Kerr (2011) disclosed top 10 best practices for developing and maintaining online learning environments. His list accentuates the following main characteristics of effective online learning: autonomy, authentic learning, progress monitoring, social networking, timely feedback, and use of rubrics – all of which are considered critical to positive online learning experiences. At the core of his list are implications toward a collaborative framework that infuses socio-constructive learning with student-centered efficacy (Kerr, 2011).

The next section includes the comparison of all of the above mentioned best practices.

2.2.1.2 Comparison of the best practices of teaching

The research mentioned above focuses on the design, facilitation, interaction, and personalization of learning to the needs and style of the learner. Numerous researchers (Hammond, 2005; Ragan, 2007; Grant & Thornton, 2007) have closely studied the design of online classes. Hammond (2005) discussed the importance of the design with the culture of the online class for the interactive socio-constructive learning of the students. He has also discussed the use of updated technology-based design to foster communication among students and with the instructor. According to Grant and Thornton (2007), the effectiveness of the instruction and learning

depends on the online interactions, which in turn depends on online course design. There is a shift in the focus towards personalized and reflective learning in online classes (Boettcher, 2010). Authentic, differentiated learning based on the individualized student's needs and style makes the learning deeper in an online class (Kerr, 2011). The course design also depends on the existing technology and CMS. The online course design has to be appropriate for establishing good online culture for the best collaborative, socio-constructive learning by the independent learner. The instructor designs the online class based on his/her personal style, preference, and vision for class activities, collaboration, and construction of the knowledge (Kelly, 2010).

Some of the studies mentioned above had a sharper focus area, and others researched with a different pedagogical perspective. I have tried to include the studies which are most relevant to my area of research and are reputable for best practices. Also, an important point to note is that every researcher has looked at different aspects of the online teaching and some other aspects may not have surfaced in this study. My study is intended to connect some of the studies and potentially add to the literature. Another important point is that technology is evolving. As such, prior instructors were more limited in the level of student interaction in classes than what can be done today. No two online classes are the same; especially the discussion based interactive online classes. There are different learners in the class with their unique knowledge and experiences for socio-constructive learning (Moore & Kearsley, 2012). A variety of online teaching practices are included in my study to get a more generalized idea about the best practices of teaching online.

The course design supports and promotes the collaborative, interactive, socio-constructive learning of the independent learner in an online class. Some of the above mentioned studies are similar and focused and therefore help to identify best practices. Most importantly

online instructors have to understand the intended flow of knowledge before designing the course for an independent learner present at a remote location (Garrison, 2012).

The meaning of the word teaching is to remove ignorance. The best practices of any teaching open up the mind of the learner. The best practices of teaching focus on the message of the instructor going effectively to the student. I have summarized the best practices recommended through the literature. Many of these practices remain parallel for online teaching as they are for face-to-face teaching. The standards and best practices research focuses on the same concepts of interactive learning, though focused in a technology based socio-constructive learning environment.

Marzano (2003) suggests that face-to-face K-12 class should include tapping on the previous knowledge and experiences to connect with the objectives, cooperative activities with non-linguistic representation (graphics) and connecting with other learning experiences to develop the content, practice and feedback, recognition and reinforcements of learning, and closing with a good summary. Some of these practices are particularly challenging for online instructors to apply in an online environment which is changing rapidly with the evolution of technology. Hammond (2005) has discussed the changing role of the instructor and the evolution of a new online pedagogy. He valued the design of the online class through interactive threaded discussions to achieve high levels of student engagement. Grant and Thornton (2007) indicate the importance of individualization, experiential learning which is connected to the daily life of the students. Additionally, a supportive culture of the online class is very important for solid learning (Ragan, 2007). Kerr (2011) emphasizes importance of personalized learning based on the need and style of the learner. It is also suggested that a collaborative and supporting

community is important for synchronous and asynchronous online learning environments for personalized and reflective learning (Boettcher, 2010).

2.2.1.3 Summary and application

The best practices presented above are for traditional face-to-face classrooms and online courses for K-12 to university/adult students. The difference of traditional face-to-face and online classes is mainly shifting the focus onto the learner. In an online class, the learner is considered more independent and able to learn with peers in the online classroom learning community. In an online environment, the instructor takes the role of a facilitator. In the latest research, it was found that in a successful online class, learning is individualized as well as collaborative and socio-constructive within the learning community of the class. An interactive online class has to be designed in such a way to build the learning community within the class for the deeper discussions for socio-constructive learning. Evolving CMS technology has helped to facilitate a variety of channels of communication among course participants and instructor for the synchronous and/or asynchronous learning. Overall, the basics of teaching and learning may remain similar, but the control of learning shifts even more towards the learner in an online environment. This is especially true for a collaborative learning community of a socio-constructive class where the instructor takes on the role of a facilitator of learning and achievement of the students.

2.2.2 Benchmarking and standardization

Benchmarking is a process of comparing one's processes and performance to other's best practices or standards. Standardization is the process of development and implementation of technical standards. The goal of standards is to keep check on the quality of the process and product. Standards make a positive contribution to our life by helping to ensure quality, characteristics, reliability, and efficiency (Yates & Murphy, 2007).

In education, standards moment started in the last quarter century. The standards can contribute to the quality and quantity of achievement. Standards for teaching and learning were created by many researchers for a variety of reasons with the key focus of improvement of education and learning. Most recently, the development of Common Core Standards (CCS), which is not a part of this study, (CCS* please see the details in the publication of Wahlstrom (2011) or in the book http://edr.sagepub.com/content/40/3/103.short) is proposing to have national standards for K-12 learning. Pennsylvania started implementing its own standards for K-12 learning in the late 1990s and now developed Common Core State Standards (CCSS). The first major standards developed for online teaching came into existence in 2006 and were developed by NACOL. They were based on the Southern Regional Educational Board (SREB) standards, which were locally used standards by 16 southern states, and other existing research of that time. PD standards were developed by the NSDC in 1995 and were updated in 2001 to include OPD standards but not updated after 2001.

2.2.2.1 Standards for professional development by National Staff Development Council

The NSDC is a non-profit organization. It came into existence in 1969 in Minneapolis, Minnesota as a group of staff developers. Since then the program grew in many ways with educational research. They believe that what and how adults learn is a matter of serious study and dialogue and are committed to the quality of teacher learning. NSDC created standards for PD in 1995 for the face-to-face learning environment. These standards were updated in 2001 for online teaching and learning. Recently, NSDC was taken over by Learning Forward, a non-profit organization based in Ohio. Their mission is to improve student achievement with improvements of teacher effectiveness by standards-based quality PD. Their vision includes the professional learning of every educator, every day. NSDC is supported by Gates and other foundations, membership, services, donations, and volunteers.

NSDC standards are categorized into context, process, and content standards which are focused on improving learning for all students.

1. The context standards include:
    a. Adults organized into learning communities whose goals are aligned with the school and the district. This learning community practice operates with a commitment to the norms of continuous improvement and experimentation and engages their daily work to advance the achievement of students.
    b. Skillful school and district leaders who guide continuous instructional improvement. Leaders establish policies and organizational structure which supports ongoing professional learning and continuous improvements.
    c. Monetary resources and related policies to support adult learning and collaboration of all stakeholders.

2. The process standards include:
    a. Use of disaggregated students' data to determine teachers' learning priorities, monitor progress, and help sustain in continuous improvement based on student achievement data. Administrators and teachers need to be aware of data analysis and data driven planning for instruction.
    b. Use of multiple sources of information to guide improvement and demonstrate its impact.
    c. Preparation of educators to apply research to daily decision making.
    d. Use of learning strategies to design appropriate for the intended learning goal. This also includes any kind of technology-based strategies.
    e. Application of knowledge about students' learning and change.
    f. Providing educators with the knowledge and skills to collaborate. Ongoing social interaction that deepens learning, interpersonal support, and synergy helps in problem solving and growing together.
3. The content standards include the following:
    a. Preparing educators to understand and appreciate all students; create safe, orderly, and supportive learning environments; and hold high expectations for their academic achievement.
    b. Deepening educators' content knowledge, providing them with research-based instructional strategies to assist students in meeting rigorous academic standards and prepare them to use a variety of assessments.
    c. Providing educators with knowledge and skills to involve families and other stakeholders.

The NSDC created and updated PD standards to maintain the quality of the PD for an institution, programs, and courses for instructors. To establish best practices of online teaching, NACOL created iNACOL standards during the early year's online growth (2006). CMS evolved around 2003. These current standards need to be updated to better reflect the technological and instructional advancements; however, they still serve as the current and best guides for online learning.

2.2.2.2 Standards for quality online teaching by Southern Regional Educational Board

SREB standards were developed by a group of experienced resource persons representing national and regional organizations, SREB state departments of education, and colleges and universities. These standards have been supported by practice over time and by research (Smith, 2009). Continuing research at K-12 and post-secondary levels has created a growing body of evidence that quality online teaching is not only as good as traditional teaching, but in many ways it can be superior (SREB, 2006).

There are three major areas of SREB standards:

1. The academic preparation standard indicates that teachers should have appropriate certification and preparation to teach.
2. Online teachers should have content knowledge, skills, and temperament for technology to effectively teach online.
3. Additionally, the third area of SREB standards offers specific advice regarding online teaching and learning methodology, management, knowledge, skills, and delivery. These pieces of advice include the following.

i. The teacher plans, designs, and incorporates strategies to encourage active learning, interaction, and collaboration in the online environment.
ii. The teacher provides online leadership in a manner that promotes students' success through regular feedback, prompt response, and clear expectations.
iii. The teacher models, guides, and encourages legal, ethical, safe and healthy behavior related to technology use.
iv. The teacher has experienced online learning from the perspective of a student.
v. The teacher understands and responds to students with special needs in the online classroom.
vi. The teacher demonstrates competency in creating and implementing assessments in online learning environments in ways that assure validity and reliability of instruments and procedures.
vii. The teacher develops and delivers assessments, projects, and assignments that meet standards-based learning goals and assesses learning progress by measuring students' achievement of learning goals.
viii. 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.
ix. The teacher demonstrates frequent and effective strategies that enable both teacher and students to complete self- and pre-assessments.

(SREB standards for Quality Online Teaching, 2006, p. 2-7)

2.2.2.3 Standards for online learning by North American Council of Online Learning

NACOL is a non-profit, Washington, DC based organization that was started in 2006. Its mission is that every student everywhere should have access to a world class education irrespective of the location and economic situation. They advocate for student-centered, equal access learning environment. They have developed competency standards for online teaching and learning, online courses, programs, and institutions in recent years. NACOL is supported by grants, corporations such as Bb, individuals and institutions, online education and other advocacy groups and services, and also volunteers. NACOL developed the international standards for online teaching and learning.

NACOL created standards for K-12 online teaching by considering the SREB standards, the Fifty-one Competencies for Online Instruction, the Ohio Department of Education's Standards for the Teaching Profession, the Electronic Classroom for Tomorrow's Teacher Evaluation Rubric, and the NEA Guide to Teaching Online Courses. They adopted SREB standards with minor additions of two standards from Ohio Standards for the Teaching Profession and the Electronic Classroom of Tomorrow's Teacher Evaluation Rubric.

iNACOL standards for online teaching addresses teachers credentials, technology skills, incorporating strategies for interactive learning, providing warm and inviting learning environment, doing role modeling, developing valid and reliable assessments, using data for improvement, collaborating with other online educators, understanding special needs and ELL students, modifying, adapting, and differentiating instruction. There is an additional and optional standard for an instructional design. A specific list with details is included in Appendix C.

Technology and CMS are evolving quickly. Similarly, standards are evolving, and being revised. Online teaching and learning has grown to this level in only about ten years to its current

form. iNACOL standards are the most commonly used guidelines currently available for online courses. Educational research and new technology will assist in their refinement.

2.2.3 Challenges in online teaching and learning

Online teaching and learning includes a number of challenges for both students and instructors. Transferring classes to an online environment requires the instructor to have a level of mastery of the technology as well as content. The content and flow of an online course is typically more complex and less flexible than face-to-face, where adjustments can be made more quickly. The structure and organization of the content and the student interfaces are critical to support student engagement and content mastery. Additionally, online courses, by their nature, require working technology with both the instructor and students. Various components may hamper a smooth technologically integrated process. This may be a special consideration among a student population with fewer resources to support purchase and support of technology infrastructure. The instructor also serves to model interaction in courses. As Garrison (2005) suggested, a component to establishing a positive learning community is by the instructor being a role model of expected practices. Technology-enhanced learning offers many opportunities, but also, holds a number of challenges.

2.2.4 How does learning takes place in an online environment?

Online teaching and learning is evolving with newer technology. Initially, with the simple technology, online teaching was simply reorganizing course materials for online presentations.

Today, online courses incorporate many different techniques and activities, synchronously and/or asynchronously. As the literature review indicates, quality online learning is collaborative, socio-constructive, and individualized. The learning community of each class is unique with its own culture and dynamics of the learners' experiences and knowledge. The learning community of a quality online class provides the platform for deep discussion and expansion upon the existing knowledge. It is important to design the class based on the visualization of a smooth flow of information in the online class. It is also valuable to know the mechanism of the transfer of knowledge to the learner. Since the online teaching and learning field is relatively new, there are only a few models exists that specifically describe teaching and learning in an online class.

For example, in a discussion based asynchronous online class, the use of discussion areas is critical. The learners enter the discussion board forum when they are in a comfortable environment, have enough time, motivation, and ideas to share. Such an asynchronous discussion is centrally situated in this type of course and "learners and instructors can be more reflective, deepen dialogue, and experience multiple perspectives in this medium" (Haavind, 2006, p.220).

As much of the previously reviewed research literature indicates, quality online teaching creates a learning community for collaboration and socio-constructive learning. There are three models to explain the teaching and learning in an online class, namely, the "Community of Inquiry" model by Garrison, the "Sloan's pillars" by Sloan-consortium (Sloan-c), and "Brain Based Organic" model by Graham and Thomas. These models are complementary to each other and explain the online teaching and learning process from different and unique perspectives for different population. Their summary is discussed next.

2.2.4.1 Community of inquiry framework

The Community of Inquiry (CoI) framework, suggested by Garrison, describes the online learning experience as a socio-constructive activity which includes social presence (environment), cognitive presence (learner), and teaching presence (instructor). The first element of CoI, social presence, can be defined as "the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop inter-personal relationships by way of protecting their individual personalities" (Garrison, 2009, p. 352). Social presence is important for successful discourse and collaboration, hence for the success of the online course. Social presence creates surface and deep culture of the class. This is characterized by affective expression (humor, welcoming, emotions, self-disclosure), which is responsible for relationship building in the online class. This also allows open and purposeful communication (honest appreciation, encouragement, support, interaction, trust, and reflection), and group cohesion and identification, which are achieved by using names, salutations, and words like "we" and "ours" for the class (Garrison, 2009).

Garrison and Archer (2001) have defined cognitive presence, the second element of CoI, as "the extent to which the participants in any particular configuration of a community of inquiry are able to construct meaning through the practical inquiry model" (p. 3). Cognitive presence is marked by four phases including a triggering event (problem, question, or task given to start the inquiry), exploration (prompting the learner to search for the related information for solving the problem), integration (structured, focused, construction of meaning), and solution (construction of a meaningful framework or finding the solution to the problem).

The third element of CoI is teaching presence. Anderson (2009) has defined teaching presence as, "the design, facilitation, and direction of cognitive and social process of the purpose

of realizing personally meaningful and educationally worthwhile learning outcomes" (p.3). It brings all the CoI roles together in a balanced and functional way. There are three aspects of teaching presence including design and organization (structure of the course at a macro-level), facilitation of discourse, and direct instruction (Garrison, Anderson, & Archer, 2001).

Overall, CoI uses the commonly used triangle of teacher, learner, and environment and applies it to the new way of learning, i.e. online learning.

2.2.4.2 Sloan pillars

The Sloan-c is a nonprofit organization started in 1992 committed to quality online learning in higher education institutions. According to Sloan-c the quality of online teaching is based on the following five pillars:

1. Access: learners have opportunity and can achieve success,
2. Scale: improved services while reducing cost,
3. Learning effectiveness: outcomes meeting or exceeding the expectations,
4. Student satisfaction: students are successful and happy with the online learning experience,
5. Faculty satisfaction: faculty is pleased with teaching online, citing appreciation and happiness (SLOAN, 2005).

The Sloan-c has a rubric to evaluate the effective practices of teaching online based on these five pillars. Sloan's pillars are useful for evaluating the online teaching program of the institution and not necessarily for evaluating a single course. Overall, Sloan and CoI are

complementary to each other and together help good practice in understanding the online teaching programs and courses (SLOAN, 2005).

2.2.4.3 Organic model

Recently, Graham and Thomas (2011) created a brain based learning model, an organic model of online learning. The Oxford Dictionary defines organic as "producing or characterized by structural or other pathological change in an organ or organs especially brain" (p. 351). The instructional designer attempts to change how the brain organizes and accesses information by way of what is learned. It includes instructional design as a way of thinking and adds a sense of confidence and fearlessness into student engagement. They concluded that with proper modeling and course activities allowing engagement in differentiation and brain based learning techniques, learners will adopt these techniques as their own, which in turn will produce a change in the thought process. (Graham & Thomas, 2011)

In conclusion, at this point the research needs to be better connected to the processes of teaching and learning in an online environment. Current limited research includes CoI, Sloan's pillars, and the Brain based Organic model. Garrison's CoI model provides the explanation of the process of learning in an online class which includes teaching, cognitive, and social presences. Sloan consortium offers suggestions for online teaching programs and institutions based on the five pillars of student and faculty satisfaction, access to online class, learning effectiveness, and reduced cost with improved services. The Organic model reveals the mechanisms of learning in the brain of a student as a neurological change which takes place with online learning. These models are connected to the iNACOL standards that include four main areas of standards; for online institutions, programs, courses, and teaching standards. iNACOL standards for institutions

and programs are parallel, but not similar, to the Sloan's pillars. iNACOL standards for online courses and teaching are parallel to, but not similar to, the depth of CoI online class. There is no parallel to the brain based organic model which actually is not specific to online learning but can be generalized to any learning. This is the only model that provides a learner perspective; the others provide an educator's perspective

See Figure 3 in Appendix I.

2.2.5 Socio-constructive learning

The human being is social by nature. The process of learning is an active process and involves constructing knowledge. As Piaget (1969) suggested, individuals learn by interacting with the world. Learning takes place in a socially constructive way especially in a discussion-dominant online classroom environment. Each individual builds upon their own knowledge and experiences and tailors their process to their own interests and needs (Piaget & Inhelder, 1969).

2.2.5.1 Socio-constructive online learning

Many researchers including Gunwardena et al., (2006) suggest that online learning is a socio-cultural and socio-constructive process. According to constructivism reality is created in the mind of the learner. The learner constructs his own reality based on his/her perception and experience of it. The role of the instructor is to help the learner to construct their own meaning and concept of the external world (Akyol, Garrison, & Ozden, 2009). In socio-constructive courses, learners develop solutions to problems through sustained discourse and inquiry, making learning a function of interaction with other learners.

2.2.5.2 Learning community

The word community is derived from the French word “communite” which is derived from the Latin word “communitas”, (“cum” means together and “mumus” means gift), which means organized society or fellowship. Community is defined as a group of interacting people in an environment with the same goal. The community intent, values, beliefs, resources, preferences, trust, needs, risks are the same for all the members of the community. A community is a group of people who are brought together to share and generate knowledge in a mutually supportive and reciprocal manner. Its characteristics are ownership, social interaction, group identity, individual identity, participation, and knowledge generation (Newman, 2005). Originally a community was considered to be geographically limited, but with the evolution of the internet, it now has an extended meaning that dissolves geographical boundaries (Bonk, 2004).

Indicators of a learning community are students communicating at personal and academic levels. They work together towards a common goal, seek each other’s help, support, and advice and feel safe to speak openly where their ideas are welcomed. Collaboration is the key to the success towards a common goal with mutual investment.

A community has its own characteristics and requirements, where members share common goals, culture, beliefs and values. Selznick (1996) described seven elements of a community, namely, history, identity, mutuality (interdependence and reciprocity), plurality (social interaction), autonomy (individual identity), participation, and integration as important characteristics for a functioning community.

2.2.5.3 Elements of virtual learning community

In a virtual learning community, there are three more elements besides those previously mentioned by Selznick: technology, orientation to the future, and learning. The very fundamentals of a learning community require interdependence and reciprocity, which take place with interaction. The mutuality or collaborative and cooperative learning develops naturally (Swan & Shih, 2005). In the case of the virtual community, the participation is social and academic in a structured way designed by the instructor. Online course design has to be feasible for the socio-constructive learning for the best outcome (Garrison, Anderson, & Archer, 2001; Garrison & Anderson, 2005).

An online learning community is a group of people who share common values and beliefs and are actively engaged online in learning together from each other. Learning communities support and inspire the intellectual and personal development of all members of the community. There are four key factors that define the community: membership, influence, sharing and fulfillment of individual needs, and emotional connection (McMillan & Chavis, 1986). The discussion boards of my online classes are the seat of online learning communities where the students help, support, inspire, share, and care for each other.

Palloff and Pratt (2005) studied online learning communities and collaborations over a long period of time. They found that an online learning community has a "rhythm" (p. 2). Once the learner becomes accustomed with the rhythm, it becomes easier to engage. For example, "Promoting active asynchronous discussion is the best means to support interactivity and the development of community in an online course. Once students establish a rhythm and begin to actively interact with one another online, they will take the ongoing responsibility to sustain,

either through social interaction or response to discussion questions posted by the instructor" (p. 3).

Johnson and Dyer (2005) studied user defined content and development of "self" in online learning. The online community builds the confidence and self-esteem in each learner to take charge of their own learning. The learner develops critical and independent thinking skills when their "interests are aroused and their pathway meets their needs. …and benefit from community membership where they are involved in dialogue, exchange, and collaboration" (p. 1).

Asynchronous interaction is important for social-construction of knowledge, which takes place via the discussion board. In a study, Carr et al., (2003) investigated the effects of online asynchronous interaction on learning. He analyzed over 500 online postings in light of social constructivism and found that significant scaffolding takes place during online interaction. He stated that, "message boards are most effective when students with a broad range of conceptual development participate in the discussion, activity sharing, experiences and ideas, and questioning their own understanding and that of others throughout the interaction" (p. 15).

He concluded that the availability of interaction likely plays an important role in online learning. The participants are at a different conceptual level of knowledge and experience in the class proposed for investigation. As Carr learned from his study, this is very effective for discussion and socio-constructive learning. (Carr et al., 2003)

According to Beldarrain (2006) a custom designed, learner-focused classroom promotes authentic, real life, task-oriented collaborative learning. The learner works at his/her own pace and utilizes a variety of communication and collaboration tools According to Lebron and Miller, (2005) online learning takes place in the following way. The purpose is to promote the

application of course theory to certain realities of schooling; promote the construction of knowledge through peer interaction; address a general common problem from diverse problem-solving perspectives; tackle issues in modes demanding consensus building and confrontation; promote a sense of community among the student role players; promote student awareness of possibilities of peer interaction in online learning; and promote enjoyment and celebration at the end of the course. He emphasized the importance of culture in the sense of community building, peer interaction, and celebration for successful teaching and learning.

2.2.5.4 Constructivism, online learning, and learning community

According to constructivism, multiple perspectives are acceptable. Jonassen (1991), a Penn State researcher, has studied constructivism, behaviorism, and cognitivism. He offers that: "Constructivism builds upon behaviorism and cognitivism in the sense that it accepts multiple perspectives and maintains that learning is a personal interpretation of the world. ……An individual's knowledge is a function of his or her prior experiences, mental structure, and beliefs that are used to interpret objects and events" (p. 12).

In an online class, learner-instructor contact (asynchronous and/or synchronous) helps the independent learner in guiding the learning in the proper direction. Authentic and meaningful tasks are important for the learning community of the online class to learn. The knowledge is embodied in the experience, perceptions, imaginations, and mental and social construction of the online learning community. The learners build the meaning of the world around them based on sharing experiences and dialoguing with their peers (Jonassen, 1995).

The discussion board of an online class with an interactive learning community makes it a good platform for socio-construction of knowledge. Learners can share, care, and support for

each other. The learners share their own knowledge and experiences on the discussion board with the learning community of their online class, and they construct their own reality based upon learning from others and a variety of other resources. Johnson and Dyer (2005) investigated the online learning communities and how they function. He concluded from his extensive research that there is a pull in the online learning community, which attracts the independent learner in a variety of ways including generation of the content. According to him the common goal and needs of the community provide support, sharing of knowledge, and sharing of experiences with each other. The key to successful online teaching and learning is to establish a great culture of the class for the best socio-constructive learning. A classroom is a socio-cultural system of constructing knowledge by action and interactions with peer, instructor, text, and media. Thinking process and the growth of knowledge are the outcomes of the personal interaction in a social context of the discussion of the online class (Brufee, 1993). Meaningful learning in the discussion-dominant online class involves willful, intentional, active, conscious, and constructive practice that engages reciprocal intention – action – reflection cycles (Jonassen, Hernandez-Serrano, & Choi, 2000). In conclusion, Jonassen and many other researchers indicated that the knowledge construction, multiple perspectives, and interaction are the keys to the successful socially constructive online teaching and learning (Moore & Kearsley, 2012).

DESIGN

The basic components of effective teaching are the same as those in a face-to-face class. Wiggins and McTighe (2007) have shared the components of Best Learning Design for a face-to-face class, which includes high expectations, effective instruction, appropriate learning activities, appropriate sequence, coherence, and assessment. Universal design for learning includes these

components for the highest rates of student achievement (2007). The design of the online class requires the same components in an online course management system in order to provide a socio-constructive platform for interactive online learning.

Online learning is changing quickly with technological advancements. The instructor has to keep a close watch for updates and change the design accordingly. Learning scientists are actively engaged in online system design. Learning scientists apply theories to the design of technology-enhanced learning environments. These learning environments use learning by doing approach that conceives learning as a practice where learners are engaged in some complex, authentic activity that poses real world challenges. These environments are inquiry based or project based. They start with a problem to be solved by interactions with others, such as researching. Learning environments are interactive and keep the learner engaged in learning. The environments use combinations of multimedia, multiple perspectives, artificial intelligence, and computer support for collaboration. Learning environments designed by learning scientists also tend to be more collaborative, with learners working in knowledge-building learning communities, or working in practice communities to solve problems. Outcomes of collaboration include socially co-constructed knowledge and socially mediated meaning making.

Online teaching and learning uses learning objects, which are common threads among all items in the course. The learning objects weave throughout the course from online lessons, assignments, assessments, and activities. They should be measurable and written in terms of observable behavioral outcome of the course for the best learning. Design has to be appropriate to facilitate the communication between instructor with learner and also among the learners. In an interactive discussion based class, instructional design facilitates the easy flow of knowledge for socio-constructive learning. High levels of interconnectedness between learners leading to

higher levels of knowledge construction must be explicitly built into the discussion assignments and nurtured by the instructor. The design and questioning are very important too.

Knowledge construction occurs with careful planning, clear, well-crafted questions, and meaningful discussion topics. With correct planning and subsequent guidance, a high level of cognitive engagement occurs. Anderson focused on design and instructor's behavior for the success of an online class (Anderson, 2009). Asynchronous discussion forums attain a higher proportion of higher phases of knowledge creation. This happened because most of the communication is task oriented and for long time periods (Schellens & Valcke, 2005). Bringing the learners frequently into action by asking questions, encouraging student presentations, getting students to talk to each other, and in other ways that fully involved them in the teaching-learning process makes the discussion deeper for higher level of learning (Moore, 2005).

The course design promotes interaction within the learning community of the class, which is the key for socio-constructive learning. A simple, focused, coherent, and well organized course design maintains and promotes best independent learning. An instructor has to design the course from the angle of the learner. While writing the course, one has to think about which CMS will be used, philosophy, course content, and audience. Planning, designing, activities, and assignments should be organized in such a way that the classroom would be a learning community for the best socio-constructive learning (Gaspar, Longevin, & Boyer, 2009).

Grant and Thornton (2007) found that the most valuable elements are a focus on design, interactivity, and instructional effectiveness. The emphasis was on the encouragement to cooperate, foster active learning, have contact with the students, prompt feedback, allow increased time on tasks, have high expectations, respect diverse talent, and does everything well.

Akyol, Garrison, and Ozden (2009) studied the teaching and learning within an online class and found that it is important to create an affective learning community that enhances and supports deep learning. As discussed previously, Garrison's CoI framework explains social, teaching, and cognitive presences in an online class in detail. The online class makes a learning community, which is helpful in learning at a higher level of inquiry because of community cohesion.

In a large study of 370 online instructors for the design of OPD courses, it was found that the socio-constructive course design promoted learning by doing with peers. Their courses were discussion based, interactive, practical, and somewhat flexible. The design connects people's experiences with the purpose, projects, and assessment. A focused design of the activity and discussion makes the students look deeply within themselves and then interact with classmates without writing a large number of big size posts. The activity promotes the experiential, relevant, and collaborative peer learning. Each individual learner of the learning community makes the meaning for himself/herself by constructively learning from others in the class. Interestingly, it was also found that motivation and enthusiasm of the instructor played a major role in learning of the students (McDonald, 2010).

The instructor designs the course based on the learning objects, audience, course-topic, needs, personal style etc. The design has a major impact on the culture and collaboration of the class. The kinds and creation of discussion board forums depend on how the instructor/designer sees the flow of learning activities in terms of the depth and scope of the class. It is the goal of the collaboration to create, encourage, and spark the lively, meaningful dialogue in the online learning community. The discussion board provides a place for sharing the application, analysis, synthesis, evaluation, and reflection of learned knowledge from online lessons, research, and the

text book. A simple, focused, practical, flexible, research oriented course design offers the perfect place for openly sharing the information. Using Bb as a tool to create the learner centered class and not technology centered class is important.

Garrison (2006) found in a CoI related research study that social and cognitive issues are more important than many other issues in a text based collaborative class indicating "the dominant mode of collaboration is text-based (reading and writing) communication. Educational designers must adjust to the strengths and weaknesses of the medium. The ultimate goal is to create a community of inquiry where learners are fully engaged and are responsible learners. The challenge is to create and sustain a sense of community" in an online class (p. 26). He further indicates that online learning design takes special consideration of social and cognitive issues on the front-end, issues that go well beyond deciding what content would be covered.

In conclusion, the course design should be simple, easy, and comfortable on the focused on the course objectives to support and foster the discussion based learning community of the online class.

FACILITATION

The role of an instructor in an online class is to be the facilitator of independent learning. The instructor is the designer of the course, discussion, assignments, and assessments. There is a transactional distance, meaning the distant relationship of instructor and learner, which requires understanding in order to facilitate the communication between the instructor and learners. The instructor must be the one to bridge the gap through special teaching techniques, distinctive procedures in instructional design, and the facilitation of interactions (Moore & Kearsley, 2012).

In another study of online classes, it was concluded that, in a collaborative learning environment, instruction is learner-centered rather than teacher-centered and knowledge is viewed as a "social construct" facilitated by peer interaction, evaluation, and cooperation. Therefore, the role of teacher changes from transferring the knowledge to students, to being a facilitator in the students' construction of their own knowledge. The collaborative learning designs are more effective than students working individually (Garrison & Archer, 2007). The instructor must mold, model, and encourage the desired behavior, and the students must be able and willing to participate regularly. The goal is to build a learning community to facilitate the exchange of ideas, information, and feelings among members of the community. This kind of daily interaction requires constant attention from the instructor (Hiltz, Turoff, & Harrasim, 2007).

Constructivist learning environments engage students in activities, which make them, apply the content knowledge to learn collaboratively. Collaboration creates a socio-constructive learning in an online learning community, which has its base in a deep and strong culture of the class created by the instructor (Jonassen, 1995). Constructivism has changed the emphasis of the instructional design process. It has resulted in a shift from attempts to communicate to students in different ways, to attempts to create learning situations that promote the engagement or immersion of learners in practice fields (simulations, project-based, inquiry-based, problem-based activities) and fields of practice (communities of practice, apprenticeships, workplace activities) (Jonassen, 2005). There is a shift from direct instruction to an approach that focuses on coaching and scaffolding of meaningful experiences, as well as providing opportunities to reflect on those experiences. The design of the course has to be conducive to such a way of teaching (Jonassen, 2005).

Beldarrain (2006) believed in contribution-oriented pedagogy and emphasized the instructor's role as a partner in learning. He stated, "Besides being a resource manager, the future instructor may have to be more of a 'partner in learning' than a facilitator. The instructor must view the student as contributors of knowledge, and thus allow them to participate in the creation of content" (p. 149). This is the evolution of a new, contribution oriented pedagogy where everyone in the class creates the content together. This is possible with the deep content and pedagogical knowledge of the course instructor.

The instructor's role is to design and create various instructional activities for the best socio-constructive learning using technology that will deepen learners' understanding, application, analyses, syntheses, and evaluation skills. The instructor has to establish a culture of openness, trust, honesty, and helpfulness for the best interactive learning. Culture plays a role in the smooth functioning of the class interaction. Social constructivism is the way learning takes place in an online classroom where the focus is jointly developing the useful content, the practicality of the information, and the knowledge orientation.

The instructor's personality is an essential course component. An instructor's digital personality can influence student achievement, retention, completion, and satisfaction with online courses. Conway (2010) suggests ways to improve the digital personalities. One can infuse digital personality by writing biographical information, offering a web page with pictures, exploring and using new technology such as videos, chat, wimba, and Skype, and considering students' expectations. Simple things like using "we" instead of "I", working as an instructor facilitating socio-construction of knowledge not as a keeper of knowledge, one on one contact, calling by name, specific, and individualized responses helps greatly (Kelly, 2009). The instructor's personality plays a major role in creating socio-constructive course design and

learning community of the class, where “we would choose to stay in environments that feel safe, comfortable, and rewarding” (Kelly, 2009, p. 1).

The instructor’s role in an online class is very different from a normal teacher’s role in a face-to-face class in establishing and maintaining the class culture. There are a variety of titles of instructor being considered such as co-learner, guide, learning partner, team leader, and facilitator. Morris, Xu, and Finnegan (2005) have categorized instructor’s roles as social, pedagogical, managerial, and technical (p.70). The research about the online culture is mostly embedded with the instructor’s role, collaboration, environment, effective practices of teaching online, and community of learning. There is some research about the instructor’s role in online classes to establish culture and collaboration in partly synchronous online class. In online courses, the instructor’s role is to design the course content, assignments, and discussion for a meaningful learner centered experiences. The facilitator becomes part of the team and does not have total control of learning environment.

The instructor’s roles include designing, promoting professional aspirations, providing timely and quality feedback, and facilitating discussions. The instructor promotes three key types of online interactions: student-content, student-student, and student-teacher. The instructor also sets the social norms of the class by modeling the interactions. Liu and Bonk (2005), one of the leaders of online teaching, studied the role of instructor and concluded that there could be a wide range of facilitation, moderation strategies, and frequency of interactions are possible. In the lower quality online classes, Liu and Bonk (2005) analyzed that about half of the instructors rarely moderated online discussions versus the few instructors in the high quality online classes who participated extensively in online discourse through a variety of facilitating techniques.

They used questioning, prompting responses, recognizing, requesting responses, and modeling social presence (Liu & Bonk, 2001-2010).

Palloff and Pratt (1999) have extensively studied the interaction and relationship building in the online learning communities. They concluded that the learning depends on the relationships and interactions of the community where knowledge is being "constructed not only by interacting with the content but also by working together with colleagues and instructors….It is a relationships and interactions among people through which knowledge is primarily generated; attention needs to be paid to developing a sense of community in the group of participants in order for the learning process to be successful" (p. 7).

Building learning communities in an online environment is a must for the success of online teaching. There are seven elements of a community, namely, history, identity, mutuality, social interaction, individual identity, participation, and integration. According to Misanchuk and Anderson (2001), a successful learning community has students exchange at a personal and academic level, seek each other's counsel, feel safe to share in a public forum, and share their concerns too.

Shea's (2006) global study of about 2300 students in 32 colleges on the students' perspective of a good online class concluded that directed facilitation, effective instructional design, and organization contribute to students' sense of shared purpose, trust, connectedness, and learning within the learning community where "…the student feels the instructor is drawing in participants, creating an accepting climate for learning, keeping students on-track, and changing students' misconceptions" (p. 41). According to Shea (2006), good online classes are highly connected learning communities, which are guided and lead by the instructor.

Rovai (2002) shared Shea's beliefs about user-led and peer-generated content in the community of learning where "The most effective learning occurs where the learners' interests are aroused and their pathway meets their needs" (Rovai 2002, p. 16). Students benefit from collaboration with peers in an accepting and welcoming learning environment (Rovai, 2002). For the best learning, the instructor reinforces student contributions, adds to their own knowledge, and creates a learning community in the class (Rovai, 2008).

Savery (2005) studied and described the instructor's role in creating a well-organized, encouraging, positive, focused, and supportive learning environment or discussion board. He suggested the VOCAL approach as key characteristics of an online instructor for creating a good learning culture of an online class. VOCAL is an acronym for Visible, Organized, Compassionate, Analytical, and Leader-by-example (VOCAL). The ability of the teacher to effectively infuse these characteristics into their instructional practice promotes a supportive, challenging, constructive, rigorous, and effective instructional environment. Instructors who practice a VOCAL approach will have more productive learning environments, fewer management problems, and more positive learning experiences with their students (Savery, 2005).

Garrison (2010), a leader of online learning, explained online learning experience and called Community of Inquiry (CoI), which consists of three elements as described previously. First, social presence includes cohesive, affective, and open communication. Second, cognitive presence, includes a trigger event, exploration, integration, and resolution. Third, teaching presence includes design, facilitation, and direct instruction (in partly synchronous online class) (Garrison, Anderson, & Archer, 2010). Garrison (2005) has classified four major roles for an

online instructor, design, facilitation, direct instruction (for synchronous or partly synchronous classes), and assessment. They are as follows:

1. A good design should have social and cognitive presence, and discourse reflection components.
2. The facilitation or instructor's social presence is needed for group cohesion and cognitive presence is needed for encouragement and support.
3. The direct instruction for synchronous classes includes collaboration and meta-cognitive presence of the instructor.
4. The last role is of assessment which depends on the needs for grading for pass/fail or A, B, C, D, and F grade. It is advised to have a clear rubric in the latter case.

The ultimate goal for the instructor is to create an online community of inquiry. But the challenge is to create and sustain a sense of community. This can be done while designing an online class (Garrison, 2006). The most important role of online instructor is to keep the discussion focused and on track, to contribute special knowledge, and to provide insights that weave together various discussion threads and course components, and to maintain group harmony (Berge, 1995).

2.2.5.5 Interactive, socio-constructive teaching and learning

Interactive design is a very important part of the role of the instructor for a socio-construction of knowledge in an online class. Learning involves interaction with the content, the instructor, and other participants, which is easily possible even when geographically separated in an asynchronous online class.

Palloff and Pratt (2001) extensively studied the value of creating a learning community in the class for the best socio-constructive learning. According to them, the learning community is the vehicle through which learning occurs in online environment. Community members depend on each other to achieve the learning outcomes for the course (Palloff & Pratt, 2001).

The learning process in an online class is important. The best socio-constructive learning takes place in an online class where the instructor has established a learning community and members are open, honest, supportive, helpful, and able to build knowledge together. The basic principle in setting up a constructivist learning environment is to establish the minimum structure, which allows maximum degree of dialogue among the members of the learning community to build the knowledge together (Moore & Kearsley, 2012).

2.2.5.6 Discussion based socio-constructive learning in an online class

As stated previously, many researchers have shared the socio-constructive learning in the online learning community. Collaborative dialogue on the discussion board creates a socio-constructive learning in an online learning community, which has its base in a deep and strong culture of the class. The knowledge is co-constructed by the learner when interacting and learning from each other's experiences and knowledge within the online learning community (Jonassen, 2005).

2.2.5.7 Model for socio-constructive teaching and learning

Garrison (2003) developed the Community of Inquiry framework to describe the process of teaching and learning in an online class. It includes social presence, cognitive presence, and teaching. Social presence is defined as "the ability of participants to identify with community, communicate purposefully in a trusting environment, and develop inter-personal relationships by

way of protecting their individual personalities" (Garrison, 2009, p. 352). It is important for collaboration and discourse. There are three categories of social presence: affective expression, open communication, and group cohesion. According to Garrison (2009) social presence is the key to the success of online class. This model is discussed in detail previously along with the Sloan pillars and brain based organic model in the section of explanation of how the learning takes places in an online class. Three models or frameworks that exist are considered for this study: community of inquiry framework, Sloan's pillars, and brain based organic model of online teaching and learning.

2.2.6 Conclusion: research question 2

The literature review discusses some of the best practices of teaching. The evolution of NSDC standards of PD and iNACOL standards for online teaching are discussed in detail. These standards make the conceptual basis for the survey for the course participants to learn about their perception of the online course which is discussed in Chapter 3. This section also includes the discussion of the current models of online institutions, programs, courses, and teaching. The most thoroughly studied model is CoI framework, which describes the socio-constructive learning in an online class based on teacher presence, cognitive presence, and social presence. The Sloan's pillars are more for institution and programs. The brain based model is for the changes within the student or the learner. All three models are complementary and together help us in understanding online teaching and learning. The research in this area is relatively new and continuously evolving with time and technology.

2.2.7 Literature review as a research method

Literature review is a process of knowing comprehensive understanding about what is known about a topic. It provided a rationale and base for the remainder of the study. The literature of the field consists of scholarly articles, books, dissertations, journals, and reports providing information related to what is known in the field of online teaching and learning. The literature review is the primary method used for the first and second research questions. Additionally, the literature review provided an overall framework for the third research question through a basis for the development of the survey focused on iNACOL and NSDC standards. Mertens (2010) described literature review as a nine step process. Literature review includes development of a focus of the research, review of secondary sources, developing a search strategy (including identification of a preliminary and primary) research journal networks, conducting the research, obtaining full text resources (journal article or books), reading and preparing a bibliographic information and notes on each article. The review of the literature formed the conceptual basis of the survey, and further advised the researcher about collecting data, performing analysis, and drawing conclusion from the findings (Merten, 2010).

I have used literature to address two of the research questions, #1 and #2 since online teaching and learning is a newly evolving area of study.

2.3 CONCLUSION

Online teaching and learning is a relatively new area of research. The first question of the research highlights the history and evolution of technology and OPD. Online teaching is evolving on a daily basis with the technology. The second question discusses the evidence-based best practices of teaching and standards for OPD. iNACOL and NSDC standards are discussed along with the related models for the explanation of online teaching and learning process. There are three main areas of NSDC standard, namely, content, process, and context standards. There are 12 main standards and one optional standard of iNACOL teaching standards. They include information related to planning and preparation for teaching, assignments, assessments, use of data and technology, academic credentials, technology skills, interaction in the class, leadership, attitude, understanding special needs students, collaboration, and instructional design. These standards have a rubric of 0-4 for online teacher evaluation.

There are three models related to online teaching and learning is also discussed in this section. Garrison (2009) did the most extensive research about the process of teaching and learning in an online class. According to his CoI model, online learning is socio-constructive learning process. In a socio-constructive class each individual builds their own knowledge with the help of the online learning community. Socio-constructive learning based on online interaction is the heart of online learning. Learning activities have to fit the learning style of individual learners for the best learning achievements. The course has to be designed for the best interaction among all students, the instructor, and the content which could be online and/or text book based. A course instructor can also use the best practices by sharing with other online systems, such as the National Repository of Online Content (NROC) and Khan Academy. The

role of the instructor changes to more of a course facilitator to establish and support the learning community of the independent learners. The second model is by Sloan-C. It has a rubric to evaluate effective practices of online teaching for higher education institutions. The rubric is based on its five pillars, access, scale, effectiveness, and satisfaction for students and faculty (SLOAN, 2005). The third model, brain based organic model, considers that all of the teaching and learning causes a structural change in the brain of the learner (Graham & Thomas, 2011). Overall, the CoI framework describes online learning as a process in an online class. The Sloan's pillars are more applicable to an institution and program. The brain based organic model describes the changes within the brain of the learner while engaged in learning. The standards are more detailed to assess the teaching and learning processes along with the learners' satisfaction in class. Overall these models, standards, and online teaching are evolving with time and technology, and their current status needs more research to build connections to clarify and understand better.

3.0 METHODOLOGY

Technology has evolved rapidly over the past few decades. CMS became available around 2003 and Bb CMS based online teaching and learning software has been in existence for nearly a decade. iNACOL standards are offered by the NACOL which came into existence in 2006. Their initial form was updated later to better match current technology and CMS programs at that time. While expanding over the past few years, online teaching and learning is relatively new and is an evolving area of educational practice and research around the world.

I have studied the history, evolution, and current standards of online teaching through a comprehensive literature review in Chapter 2. Additionally, I have surveyed students of a recent online course to explore the alignment of important course characteristics with the most current standards for online teaching and learning.

3.1 RESEARCH QUESTIONS

In order to conduct the research I have examined the following two research questions using literature review as a method of research.

1. What does the literature indicate regarding the history and evolution of technology and OPD?
2. What does the literature indicate regarding the evidence-based best practices of online teaching and standards for the OPD of educators?

Additionally, via a constructed survey, I addressed a third research question:

3. How does a specific OPD course align with the established standards for OPD from the perspectives of students?

This study has included the literature review and also includes survey based research focusing on a data collection from students who have completed the Assessment and Support for the English Language Learner course during the fall of 2012.

Table 30 (attached in appendix) presents a summary of the study, by research question, of the alignment of data, analysis, and generated results. It describes the study briefly by each of the three research questions. The first two questions are situated in the literature. The first question, history and evolution of OPD provide the basis of this research. It connects this research with the newly evolving area of online education. The second literature based question, standards and best practices of online teaching, provides the international standards for online teaching and also the national standards for the PD. The combination of these two sets of standards (online teaching and PD) forms the basis for the development of the survey for the research. The table further describes the planned data analysis and reporting for the research questions.

By surveying the course participants, I have learned more about how the collaborative learning is facilitated by the instructor; and how the design and culture of the online learning community is established. These questions also provide the details to further discuss the

outcomes of the survey in the later chapters of the dissertation to include interpretations, conclusions, and suggestions for additional research.

3.2 RESEARCH METHODS

As discussed before, the first two questions are literature based and the third question is survey based.

3.2.1 Literature review as a research method for question 1 and 2

A literature review is used as a method of researching for the first and second research questions. A discussion of the review of the published information from publications, scholarly writings, journal articles, books, reports, and dissertations related to the online teaching and learning was performed and discussed in Chapter 2. It also includes the overview of the topic, current status of the research, and shows the relationships of the ideas from the research which is related to the topic of this study.

Online teaching and learning is still a relatively new area of educational research. The technology associated with online learning is constantly evolving, and continuously changes how online teaching and learning is delivered. There is only limited research exists. It does not give a complete and clear picture of the status of online teaching and learning. The first two research questions related to the history and evolution of OPD (question 1) and the standards and evidence-based good practices of online teaching (question 2) have explored the review of the

literature. The literature review to address these questions then forms the foundation for the study of the alignment of an OPD course with the standards and best practices as delineated in question three.

3.2.2 Survey

The Oxford dictionary defines the word survey as a "general view, examination, or description of someone or something" (1996, p. 514). Survey can also be defined as to taking a general or comprehensive view of a situation or area of study. It also means to view in detail, especially to inspect, examine, or appraise formally or officially in order to ascertain condition and value.

Surveys are the most common type of quantitative and qualitative research methods (Fowler, 1993). There are different kinds of surveys: online questionnaire, traditional paper-pencil/hard copy questionnaire, face-to-face interviews, and telephone interviews. There are various types of surveys, including written, oral, or electronic. Electronic surveying has become very popular recently due to the growth of the internet, technology, and programming (Raynolds, Woods & Baker, 2007).

There are many existing paid and free online survey programs. I used an online product called SurveyMonkey to conduct the online surveys from the website https://www.surveymonkey.com/home/. A simple membership of SurveyMonkey's account is fully capable of surveying 100 people for 24 multiple choices, open-ended, and Likert type questions. It can also collect the data and send the survey multiple times to the course participants who have not replied to the survey's initial attempts. I emailed the link to the survey to course participants and then collected and analyzed the data.

3.2.2.1 Strengths and weaknesses of electronic survey

Electronic surveys are easy to create, send, collect, and analyze the data. There is less risk of human error in data transfer, coding, and/or decoding. They transfer quickly to and from the surveyor to the person taking the survey. In general, they have a higher response rate with more honest responses that are not influenced by the presence of a surveyor. The weaknesses include the technical problems and technological literacy of the person taking the survey. Another weakness in using the survey method is that if people do not take the survey as soon as they receive it, they may forget about it.

As stated above, online survey system using SurveyMonkey is utilized for this study since the course participants took the online course titled "Assessment and Support for English Language Learners" perhaps indicating a preference for online technology based survey versus hard-copy survey.

3.2.2.2 Conceptual basis for the survey

I have used the PD standards created by the NSDC in 1995 and revised in 2001 for the OPD of teachers to frame some of the survey items. The standards are categorized into context, process, and content areas. The context standards include leadership and development of learning community standards. The process standards include design and strategies, collaboration skills, research based study, data driven approach, continuous evaluation to improve, and focus on the learning standards. The content standards include quality teaching, environment, and meaningful content standards (NSDC, 2001).

I have also used iNACOL standards for online learning created by NACOL in 2006 to inform survey development. There are four areas of iNACOL standards that determine the

quality of an online program: institutional standards, evaluation standards, support standards, and teaching and learning standards. I have also used the teaching and learning standards for this study. Teaching and learning standards include the following concepts: technology skills, planning, design, interaction, collaboration, leadership, modeling, guiding, counseling, supporting, encouraging, understanding of special needs students, assessments, assignments, and use of data to improve. The other areas of standards (institutional, evaluation, and support) are less applicable to the focus of this study. The quality online teaching standards are rated based on a five point scale of zero to four where zero indicates the absence of a component and four indicates satisfactory performance. There is no category as "not applicable" on the standards.

I have designed the survey by cross referencing the NSDC and iNACOL standards. Survey questions were created by combining three categories: context, process, and content of NSDC standards for OPD, and twelve categories of iNACOL standards, as mentioned above, for online teaching.

The conceptual basis of survey items was created by cross referencing PD standards by NSDC and online teaching standards by iNACOL. The table 32 (Appendix E) describes the three main areas, context, process, and content standards of NSDC, with their total of nine categories, which were corresponded to the best possible iNACOL standards. This made the basis of the concepts for the survey items #9-18.

Survey items #9-18 are based on the concepts generated in the above manner (see Table 32). Table 32 (attached in the Appendix E) helped me keep the content and concepts well organized for developing the specific survey items. The survey is also attached in the Appendix G along with the introductory letter in Appendix F. The letter, with an embedded link to the survey was emailed to the course participants.

3.2.2.3 Structure and deployment of survey

The survey included 24 Likert type, multiple choice, yes/no, fill in the blank, and open-ended items. The SurveyMonkey link/URL was emailed to all of the 88 course participants. It was re-sent to potential participants who did not reply to the first request after two weeks. The online survey was based on the NSDC standards and the iNACOL standards prepared by NACOL as discussed earlier.

3.2.3 Data collection

The data was collected electronically via online the SurveyMonkey system. Responses were organized to keep track of response rate in a table, and follow up was then conducted through SurveyMonkey. The survey was emailed first to all of the course participants. Then a follow up survey was emailed to the participants who did not take the survey the first time. A follow up was sent with the intention of increased reliability of the outcome of research based on larger responses.

3.2.4 Data analysis

The results were analyzed for all ten major categories of standards for course facilitation and design such as syllabus, learning environment, encouragement of independent learning, opportunities for self-growth, course facilitation, differentiated instruction, instructor relationship with students, empowerment of students, and modification/adaptations made in the course. Comparison of frequency and frequency percent of each category will indicate the areas of

alignment with the NSDC and iNACOL standards and will help me to inform my online teaching practices.

Frequency distribution and related measures of central tendency of the data (mean and standard deviation) for each major category of items were calculated. Cross tabulation of items within three different parts of the survey (demographic, course/facilitation, and learning/suggestions) were further considered to explore interesting and useful information that emanates from the survey.

Open-ended items were organized into categories and analyzed to find the themes of interest, to consider with data from other parts of the survey, and to learn additional information beyond the closed ended terms.

For example,

1. I wanted to know the suggestions offered by learners about what to do differently (#20) organized by number of online courses completed (#5). This would help me look into the needs of novice, middle level, and advanced level learners for the future.
2. Overall comparative rating of #12 opportunities for the development of self-development and the quality of answers in item (#21). This was based on the assumption that when the self of the learner was directly involved, the quality of learning is better.
3. I was curious to know how gender (#7) may or may not relate to some items, especially environment, instructor rating (#10), relationship (#17), and suggestions to instructor (#21).

I would like to know what else is important to the learner which is not included by the standards (open-ended item #19, 20, 22, 23, and 24, involving anything important). This information may be unique to the class.

4.0 THE COURSE TO BE STUDIED

Online teaching and learning is a more recent area of study. It is important to know what is currently being done in the field and what is needed to generate appropriate questions for further study. Through the literature review, the conceptual framework has been developed for this study, and the survey has been developed. The NSDC and iNACOL standards represent state-of-the-art thinking regarding PD and online teaching and learning. The course was studied in detail with the online survey.

4.1 WHY STUDY THIS COURSE?

According to the NCLB requirements, PDE requires English as a Second Language (ESL) certification for teaching English Language Learners (ELL). It is an add-on Program Specialist certificate to the existing Pennsylvania teacher certificate. The ESL certificate consists of 12 graduate level, PDE approved credits in four areas, namely, language acquisition, culture, instructional material, and assessment. IU1 offers all of these courses online. IU1 has been offering Bb based online ESL certification courses. I have been teaching nine of the 12 credits needed for certification for the past ten years. All of the ESL certification courses are one or two credit courses except the Assessment and support course which is the only three credit course.

Each credit of a course requires two weeks of discussion time. A three credit course is appropriate for this study because it involves six weeks of discussion time in which learners develop trust and comfort within the learning community of the class for sharing, caring, and openly discussing the content deeply with each other.

I am utilizing this course because this is the only course with credit-bearing, graduate level course in online ESL certification. It included discussion for four weeks followed by two weeks to complete the final assignment. Four weeks provides enough time to establish a good learning community in an online environment to establish comfort, trust, and confidence to openly share knowledge and experiences on the discussion board. The online learning community affords a good platform for socio-constructive learning of the participants on the discussion board. Also, this course is a typical ESL course, which includes balanced ESL and non-ESL components.

4.2 COURSE INFORMATION

An online ESL course titled "Assessment and Support for English Language Learners," session #7843 will be utilized for this research. It was taught from October to December 2012. It was a three credit graduate level course approved by the PDE for ESL certification. The syllabus is attached in the Appendix D.

The Assessment and Support for the ELL course is designed to expand the participant's knowledge of effective assessment practices and support services available to ELLs. As a part of the effective assessment practices, the purpose of assessment, multiple assessment models,

authentic assessments, use of rubrics, use of evaluation techniques, scaffolding of assessments, and formal and informal assessment tools were discussed. Participants also learned the availability of school support services to assist ELLs in language acquisition, and content learning and ways to promote family involvement. Participants also learned about PA ESL standards and Teachers of English to the Students of Other Language (TESOL) standards, Basic Education Circular (BEC), Cognitive Academic Language Learning Approach (CALLA), Sheltered Instruction Observation Protocol (SIOP), Idea Proficiency Tests (IPT), World-class Instructional Design and Assessment (WIDA), and Language Assessment Scale (LAS) tests. Overall, the course included a variety of testing for the language proficiency level, diagnostic classroom performance level, and state testing.

4.3 COURSE PARTICIPANTS

About 99% of the 88 course participants of the course were Pennsylvania certified teachers. There were a few college professors, a school administrator, a counselor, and a librarian. Some participants have taught or lived abroad in other countries at some point during their life time. At the time of course offering, they were residing mostly in PA, and one in South Carolina (SC), and another in West Virginia (WVA). The survey link was emailed to all of the 88 course participants using the email they have shared when registering for the course, using registration information provided by IU1, who sponsored this course. If they did not respond to the first survey, there was a follow up email with the survey link requesting them to respond to the survey.

Table 1: Distribution of the placement of the course participants

Job Assignment	Participants	
	Number	%
Administrator	1	1.1
Teachers	60	68.2
Substitute teachers	2	2.3
Speech related educator	3	3.4
Paraprofessionals	3	3.4
Other	2	2.3
N/A	17	19.3
Total	88	100

4.4 COURSE DESIGN

The course announcements connect all of the parts of the course such as lessons, assignments, assessments, discussion, and other activities. Announcements directed the learner to what to do. The course under study has six units for a total of six weeks including final assignment. Each week there was a set of announcements, lessons, assignments, assessments, activities, and discussions to achieve the learning objectives for the week. Lessons were connected with appropriate discussion board forums. There were usually 10-14 forums for each week for the four weeks of discussion of the learned knowledge from the lessons, text book, research, and activities. There was always a problem solution forum and a reflection forum for each week. There was also an introduction forum for the first week to learn from and about each member of the learning community of the online class. The design was specifically developed to facilitate the discussion as a major activity in the online class.

By considering this course through the survey I hoped to learn more about how the collaborative learning was facilitated by the instructor; and how the culture of the online learning

community was established. These questions also provided the details to further discuss the outcomes of the survey in the later chapters of the dissertation to include interpretations, conclusions, and suggestions for additional research.

5.0 RESULTS

As mentioned previously, this study included three research questions. The first two questions were literature based. The first question focused on the history and evolution of technology and OPD, and the second question focused on the evidence-based best practices of online teaching and standards for OPD for teachers. The third question, "how does a specific OPD course align with the established standards for OPD from the perspective of students?" explores the student perspective of an online course they had taken about a year ago.

The 88 participants of the course titled "Assessment and support for English Language Learners" were sent an online survey powered by SurveyMonkey. The survey included 24 items (Appendix G) of multiple choice, fill in the blank, open-ended, and Likert scale type items divided into three parts. Part I included demographic information with eight multiple choice or fill in the blank items, #1-8. Part II included course and instructor related items. The course related item areas (#9-14 and #18) and the instructor related item areas (#15-17) were developed by integrating the iNACOL standards of online teaching and the NSDC standards for PD as discussed in the literature review in Chapter 2. The course related area consisted of a total of 30 items and the instructor related area consisted of a total of 13 items. All of these 43 items were Likert scale type of items. Part III of the survey was focused on student learning and suggestions

for improvement. Five of these items were open-ended items and one item (#21) was a multiple choice item.

5.1 RESPONSE RATE

The survey link was emailed to all 88 course participants of the above mentioned course. Two of the emails came back as undeliverable. After the initial email was sent, a follow up survey was sent two weeks later to 64 participants who had not yet replied to the survey. The survey was closed one week after the follow up. A total of 34 participants replied before the survey was closed at the end of third week.

Only 25.6% (n=22) of participants responded to the survey from the 86 delivered emails, and only 18.8% (n=12) of participants of the 64 delivered emails responded to the survey during follow up. The total response rate for the survey was 39.5% (n=34) as indicated in the Table 2.

Table 2: Response rate of the survey

Sent/Reached	Initial Response	Follow up Response	% Responded
88/86	22	NA	25.6
64/64	NA	12	18.8
Total responses	**22 (25.6%)**	**12 (18.8%)**	**34 (39.5%)**

All 34 participants responded to most of the multiple choice, Likert scale, and fill in the blank items of part I (demographics) and part II (course and instructor) except for two items, "prior online experience" (#4), completed by only 94.1% (n=32) and "course being student-centered" (#13a), completed by 97.1% (n=33) of participants. Some participants did not respond to some open-ended items of part III (learning and suggestions). Specific response data are

presented in the following Table 3, where OE indicates an open-ended item and MC indicates a multiple choice item. As the table indicates, 50% (n=17) of participants responded to the open-ended item (#24) of "sharing anything else." The numbers of open-ended responses were relatively higher. It may be an indication of the respondents being highly motivated.

Table 3: Response rate for open-ended items (part III of the survey)

# Item. Description	# Responded (%)	# Skipped	Total
19. What would you do differently, as a student, the next time you will take an online course? (OE)	30 (88.2%)	4	34
20. What would you suggest the instructor should do differently the next time she teaches online course? (OE)	32 (94.1%)	2	34
21. How successful do you feel you were in this online course? (MC)	34 (100%)	0	34
22. How was the experience of taking an online course different from taking face-to-face course? (OE)	33 (97.1%)	1	34
23. How was the experience of taking an online course similar to taking face-to-face course? (OE)	32 (94.1%)	2	34
24. Sharing of anything else regarding course, instructor, and your experience in the course. (OE)	17 (50%)	17	34

OE is open-ended item and MC is multiple choice items.

There were 11.4% (n=10) males and 88.6% (n=78) females registered in the course. Respondents were more heavily female (94.2%) with only two (5.8%) male respondents. Since only two male responded to the survey, disaggregated analysis by gender was not performed.

Table 4: Gender distribution of the course participants and respondents

Gender	# Survey emailed (%)	# Survey reached (% out of 88)	# Responded to the survey (% out of 34 respondents)
Female	78 (88.6%)	76 (86.3%)	32 (94.2%)
Male	10 (11.4%)	10 (11.4%)	2 (5.8%)
Total	**88 (100%)**	**86 (97.7%)**	**34 (100.0%)**

5.2 DATA ANALYSIS AND INTERPRETATION

5.2.1 Demographic responses (part I, survey item #1-8)

All of the 34 respondents replied to the first item about "why did they take the course" (#1) with four options and could check more than one option. The most common response choices were personal development, PD, requirement for certification, and requirement for the Act 48. Only 32.4% (n=11) of respondents indicated personal development, 58.8% (n=20) selected PD, 64.7% (n=22) of respondents took the course as a requirement for the certification, and 14.7% (n=5) of respondents took the course for satisfying Act 48 requirements. Most of the course participants took the course for multiple reasons. This course was the last in the series of ESL certification courses, and 64.7% (n=22) of participants took the course for certification.

Table 5: Purposes for taking the course

#1. Why did you take the course?		
Brief item description	N	%
Personal development	11	32.4
PD	20	58.8
Required for certification	22	64.7
Required for Act 48	5	14.7

When asked about the "number of years as a practicing educator" (#2), 52.9% (n=18) responded 1-3 years, 14.7% (n=5) responded 4-6 years, 11.8% (n=4) responded 7-10 years, 17.6% (n=6) responded 11-15 years, and 2.9% (n=1) responded 16+ years of experience. All 34 respondents replied to this survey item. Interestingly, more than the majority of respondents (67.6%, n= 23) indicated 1-6 years of experience, indicating that many of the course participants

were younger and newer teachers. New teachers are required to have 24 graduate level credits for level II professional certification in the first six years of working as a teacher, perhaps explaining this demographic finding.

Table 6: Number of years as a practicing educator

#.2 At the time you took the course, how many years had you been practicing as an educator?		
# of years as educator	N	%
1-3 years	18	52.9
4-6 years	5	14.7
7-10 years	4	11.8
11-15 years	6	17.6
16+ years	1	2.9
Total	**34**	**100.0**

All 34 respondents indicated a Bachelors or Masters as a "highest degree" (#3), with the majority (55.9%, n=19) respondents with a Bachelor's degree and 44.1% (n=15) respondents with a Master's degree.

Table 7: Highest degree

#3. What was your highest degree at the time of taking this course?		
Degree	N	%
Bachelor level degree	19	55.9
Master level degree	15	44.1
Total	**34**	**100.0**

When asked about the respondents' "prior online experience" (#4), they could select any number of choices among the six options: college courses, PD courses, teaching in an online program, independent study online, personal growth, and certification program (Table 8). Almost all (94.1%, n=32) respondents replied to this item. The highest percentage, 65.6% (n=21) had

taken online college courses. Few (50.0%, n=16), though, had taken online professional development courses, and very few currently teach in an online school (6.2%, n=2) or did online independent study (9.4%, n=3). A small group had done online education for personal growth (21.9%, n=7) or had taken the course for a certification program (28.1%, n=9). Nearly a third (34.4%, n=11) "took the course for personal development" (#1). This is further indicated by "number of years as practicing educator" (#2), that 52.9% (n=18) respondents were practicing educator for only 1-3 years.

Table 8: Prior online learning experience

#4. Please indicate your prior learning experience.		
Online experience	N	%
College courses	21	65.6
Professional development (post degree) course	16	50.0
Teaching in an online program or school	2	6.2
Independent study via online experiences	3	9.4
Personal growth experiences	7	21.9
Certification program	9	28.1

Respondents were asked about "how many online, fully or partially, courses taken" (#5). The responses for fully online courses ranged from 0-13 courses and for partially online or hybrid courses ranged from 0-5 as indicated in the tables below.

Table 9: Fully online courses taken by respondents

# 5. Number of fully online courses taken.					
Number of fully online courses taken	Number of respondents	%	Cumulative		
			# of Courses	%	N=
0	4	11.8%	0	11.8	4
1	5	14.7%	1-5	61.8	21
2	5	14.7%			
3	6	17.6%			
4	1	2.9%			
5	4	11.8%			
6	4	11.8%	6-10	17.6	6
7	1	2.9%			
8	0	0.0%			
9	0	0.0%			
10	1	2.9%			
11	1	2.9	11 or more	8.8	3
12	1	2.9			
13	1	2.9			
All 0-13	**34**	**100**	**0-13**	**100**	**34**

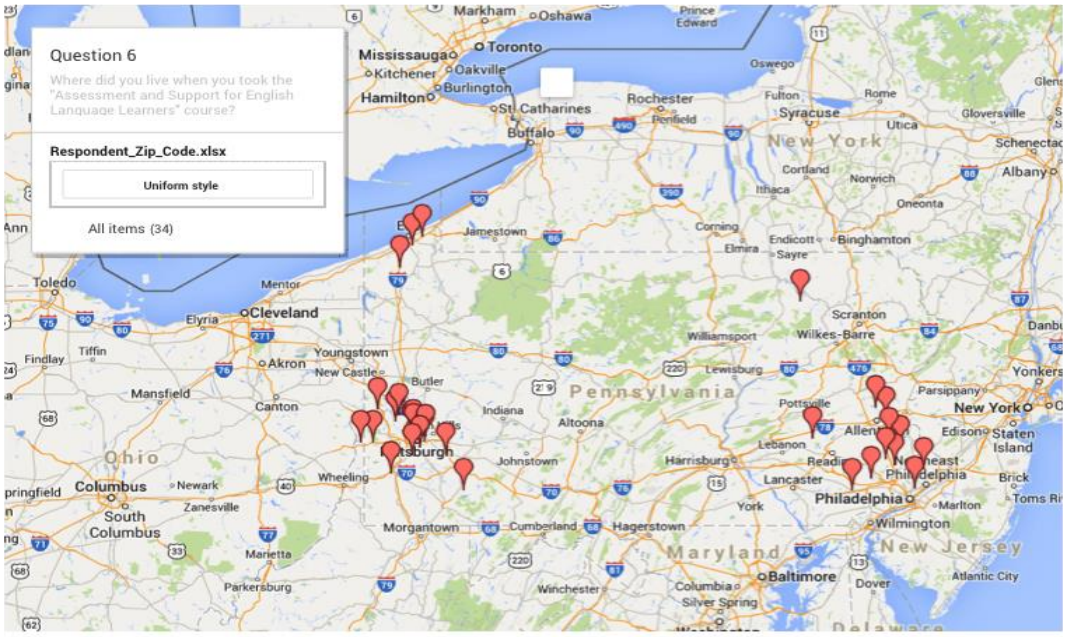
All participants responded to the "fully online course taken" (#5) and the answer ranged from 0-13. Four course participants did not take any fully online courses meaning they were new online learners or may have taken hybrid online courses. Of the 20 people who indicated a response to this question, 12 indicated never having taken a partially online course (though they may have taken a fully online course).

Table 10: Partially online (hybrid) courses taken by respondents

# 5. Number of partially (hybrid) online courses taken.	
Number of partially online courses taken	Number of respondents
0	12
1	2
2	1
3	1
4	1
5	3
All 0-5	**20**

Respondents were asked about "where they lived at the time they took the course" (#6). The response choices were the zip codes and the country, if it was out of the United States. There were two participants who lived outside of the state of Pennsylvania, one in South Carolina and another in West Virginia. No one lived outside the country. The map in Figure 1 shows the location of students with Pennsylvania zip codes.

Figure 2: The Geographic Information System (GIS) map showing the residential locations of PA respondents



The vast majority of respondents were female (94.1%, n=32) and few (5.9%, n=2) were male. There were 11.4% (n=10) males registered for the course and 88.6% (n=78) females in the course, indicating a slightly higher representation of females among survey respondents than were registered in the course.

Table 11: Gender of respondents

#7. What is your gender?		
Gender	N	%
Female	32	94.1
Male	2	5.9
Total	**34**	**100.0**

When asked about the "age groups" (#8) of the respondents, 26.5% (n=9) of respondents were less than 25 years of age, 38.2% (n=13) of respondents were 26-35 years of age, 14.7% (n=5) of respondents were 36-45 years of age, 11.8% (n=4) of respondents were 46-55 years of age, and 8.8% (n=3) of respondents were 56-65 years of age. All of the 34 participants replied to the age group related item. A total of 64.7% (n=22) of respondents were less than 35 years of age. Similarly, 67.6% (n=23) of respondents had less than six years of teaching experience.

Table 12: Age group of respondents

#8. Which category below includes your age?		
Age group	N	%
25 or less	9	26.5
26-35	13	38.2
36-45	5	14.7
46-55	4	11.8
56-65	3	8.8
Total	**34**	**100.0**

In conclusion, respondents were mostly from Pennsylvania. Twenty two (64.7%) respondents were 35 years of age or less. Twenty three respondents (67.6%) have within six

years or less of professional experience as a teacher. Among the respondents, 55.9% (n=19) teachers had a bachelor degree. In Pennsylvania, teachers need to take 24 graduate level credits after a bachelor's degree as a requirement for the professional level II certificate. ESL certification credits fulfil the requirements of graduate level credits. The characteristics of respondents to the survey were similar to those of students in the course, indicating the non-respondents were likely to respond in similar ways.

5.2.2 Course and instructor rating (part II, survey item #9-18)

As mentioned previously, iNACOL standards for online teaching and NSDC standards for teacher PD were integrated together to serve as the basis for survey items # 9-18. The responses were based on a five point Likert scale similar to iNACOL rating scales for the quality of online teaching. Participants from one of the courses, which I taught from October 2012 to December 2012, took the online survey. The data from the survey was analyzed for the alignment of the course with the iNACOL and NSDC standards.

The data from Likert scale items #9-18 were analyzed into two categories, the course and the instructor. Seven item areas (#9-14 and 18) namely syllabus, learning environment, independent learning, opportunities for self-development, course, adjustment, and modification formed the cluster for the "course" category for the data analysis. Three item areas (#15-17) namely instructor, facilitation, and helpfulness to students were used to form the "instructor" category for the data analysis. Course related item areas included a total of 30 items. Three instructor related areas included 13 items. A scale of 1-5 was used for the closed-ended items of part II of the survey. The following sections offer detailed results of each area (course and

instructor) with the mean (M) and standard deviation (SD). All of the 34 participants responded to all of the items of the course and the instructor categories except the item "course being student-centered" (#13a) for which was responded by 33 participants.

Since the distributions clustered toward the top of the range, 3.5 and above on a 5.0 scale; a score of 4.5 or above (90% or more) was considered good or high quality, a mean between 4.0 and 4.4 (between 80%-90%) was considered medium quality, and below 4.0 (less than 80%) was considered lower quality rating.

5.2.2.1 Course

Each item of the course area (items #9-14 and #18) is presented below.

The area "syllabus" (#9) included four items requesting participants to rate whether the course provided: (a) reasonable objectives (M = 4.5, SD = 0.66) (b) adequate content description (M = 4.5, SD = 0.71), (c) appropriate resources (M = 4.5, SD = 0.62), and (d) adequate assessments (M = 4.5, SD = 0.79). This area received positive ratings with each of the above mentioned items averaging 4.5 on a 5 point rating scale with standard deviation ranging between 0.62 and 0.79. The data indicates there were no variation in the mean and some variation in standard deviation for these items. Respondents indicated that the syllabus offered appropriate resources and provided reasonable objectives. Overall the syllabus was of high quality based on the components described by iNACOL.

Table 13: Ratings for course syllabus

#9. Online Syllabus:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/ Agree n (%)	Agree/Strongly Agree n (%)	N	Mean	SD
Provided reasonable objectives	1 (2.9%)	0 (0.0%)	33 (97.1%)	34	4.5	0.66
Described course content	1 (2.9%)	1 (2.9%)	32 (94.2%)	34	4.5	0.71
Offered appropriate resources	0 (0.0%)	2 (5.9%)	32 (94.2%)	34	4.5	0.62
Described the course assessments	1 (2.9%)	0 (0.0%)	33 (97.1%)	34	4.5	0.79

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "learning environment" (#10) included two items of environment being (a) friendly (M = 4.7, SD = 0.54) and (b) supportive (M = 4.6, SD = 0.55). The area was highly rated with an average rating of 4.7 and 4.6 on a five point scale with a relatively low standard deviation of 0.54 and 0.55, indicating that respondents found the online class environment very friendly and supportive for learning. Many participants provided positive comments about the environment in the open-ended items.

Table 14: Learning environment of the online class

#10. The learning environment of the class was:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/Agree n (%)	Agree/Strongly Agree n (%)	N	Mean	SD
Friendly	0 (0.0%)	1 (2.9%)	33 (97.1%)	34	4.7	0.54
Supportive	0 (0.0%)	1 (2.9%)	33 (97.1%)	34	4.6	0.55

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "encouragement of independent learning" (#11) included learning through (a) text book or online course material (M = 4.5, SD = 0.83), (b) discussion of the concepts and material (M = 4.6, SD = 0.70), (c) independent research projects (M = 4.3, SD = 0.96), and (d) assignments (M = 4.4, SD = 0.89). There was relatively more variation among the responses of these four items as compared to others in the "course" category. The first two items, course material and discussion were rated higher with a mean of 4.5 and 4.6 with standard deviation of 0.83 and 0.70. The last two items, research projects and assignments, were rated lower, with a mean of 4.3 and 4.4. The standard deviation of these two items was relatively higher, 0.96 and 0.89, indicating a more varied response. This indicates that based on the standards for the encouragement of independent project and assignments, the course may need to be improved in the areas of assignments and projects. The course was rated at high quality for the online material and discussion of the concepts.

Table 15: Encouragement of independent learning

#11. The course encouraged independent learning through the following:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/Agree n (%)	Agree/ Strongly Agree n (%)	N	Mean	SD
Text book or material available online	2 (5.9%)	1 (2.9%)	31 (91.1%)	34	4.5	0.83
Online discussion of the concepts and material	1 (2.9%)	1 (2.9%)	32 (94.2%)	34	4.6	0.70
Independent projects	2 (5.9%)	3 (8.8%)	29 (85.3%)	34	4.3	0.96
Weekly assignments via announcements	2 (5.9%)	0 (0.0%)	32 (94.2%)	34	4.4	0.89

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "learning opportunities" (#12) was related to the opportunities for self-learning and self-development. It included six items; (a) self-reflection and self-evaluation (M = 4.4, SD = 0.70), (b) growth in the area of the learner (M = 4.3, SD = 0.67), (c) self-paced learning (M = 4.3, SD = 0.84), (d) collaboration with peers (M = 4.3, SD = 0.80), (e) collaboration with instructor (M = 4.1, SD = 0.89), (f) exploration with resources (M = 4.5, SD = 0.56). The mean of the six items fell between 4.1-4.5 with a standard deviation of 0.56-0.89. The mean collaboration with instructor rating was the lowest, 4.1, with a standard deviation of 0.89 indicating collaboration with the instructor may need to improve to provide better learning opportunities. All of the items of this area were relatively lower rated and need to be considered as potential areas for improvement.

Table 16: Opportunities for learning

# 12. During the course, there were ample opportunities for:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/ Agree n (%)	Agree/ Strongly Agree n (%)	N	Mean	SD
Self-reflection and self-evaluation	1 (2.9%)	1 (2.9%)	32 (94.2%)	34	4.4	0.70
Growth in areas of interest to the course participants	0 (0.0%)	4 (11.8%)	30 (88.2%)	34	4.3	0.67
Self-paced learning	1 (2.9%)	2 (5.9%)	31 (91.1%)	34	4.3	0.84
Collaboration with peers	2 (5.9%)	1 (2.9%)	31 (91.1%)	34	4.3	0.80
Collaboration with instructor	1 (2.9%)	9 (26.5%)	24 (70.6%)	34	4.1	0.89
Exploration of materials/ resources	0 (0.0%)	1 (2.9%)	33 (97.1%)	34	4.5	0.56

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of overall "course" characteristics (#13) requested responses to six survey items. The items were: (a) student centered (M = 4.3, SD = 0.74), (b) discussion based (M = 4.6, SD = 0.66), (c) interactive (M = 4.4, SD = 0.70), (d) collaborative learning with others (M = 4.4, SD =

086), (e) effective use of project based learning (M = 4.0, SD = 1.02), and (f) effective use of real world applications (M = 4.2, SD = 0.89). The items' ratings showed more variance with a relatively lower mean in this area. A mean of 4.0 (SD = 1.02) for effective use of project-based learning, 4.2 (SD = 0.89) for real world applications, and 4.3 (SD = 0.74) for a student centered course indicate that these are potential areas for improvement. The data for the other items indicates that the students felt the course was very interactive and discussion based, which was further supported by open-ended comments.

Table 17: Rating for the course

# 13. The course:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/ Agree n (%)	Agree/ Strongly Agree n (%)	N	Mean	SD
Was student centered	1 (3.0%)	2 (6.1%)	30 (91.0%)	33	4.3	0.74
Was discussion based	1 (2.9%)	0 (0.0%)	33 (97.1%)	34	4.6	0.66
Was interactive	0 (0.0%)	4 (11.8%)	30 (88.3%)	34	4.4	0.70
Supported interactive learning with other students	2 (5.9%)	2 (5.9%)	30 (88.3%)	34	4.4	0.86
Effectively used project based learning	3 (8.8%)	5 (14.7%)	26 (76.5%)	34	4.0	1.02
Effectively used practical applications you might face in your work	1 (2.9%)	4 (11.8%)	29 (85.3%)	34	4.2	0.89

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "adjustment based on the individualized or specialized needs of students" (#14) consists of three items: (a) ELL (M = 4.0, SD = 1.06), (b) technologically challenged (M = 3.7, SD = 0.95), and (c) new online learner (M = 3.8, SD = 0.91). All three require individualized, need-based extra attention and support from the instructor and also from the learning community of the class. The item 14a, relating to the adjustment of instruction based on the needs of the ELL as a course participant, had a much lower mean rating. Ten respondents

(29.4%) rated "adjustment of instruction to ELL" (#14a) as a neutral or rating 3 because there was no option as "none/not available." Similarly, eleven respondents (32.3%) rated "adjustment of instruction for technological challenge" (#14b) as neutral, or rating 3, most likely because this course was at the end of a series of courses and respondents were used to technology by then. Nine respondents (26.5%) rated "new online learner" (#14c) category as neutral because of the above reasons. This issue is further discussed in the Chapter 6. These three items were part of iNACOL standards but really were not applicable to the class under study at the point course was offered because it was the last course in the series.

Table 18: Adjustment of the instruction based on the learner's needs

# 14. Instruction was adjusted based on student needs related to being a/an:						
Brief item description	Strongly Disagree/Disagree n (%)	Neither Disagree/Agree n (%)	Agree/Strongly Agree n (%)	N	Mean	SD
English Language Learner	3 (8.8%)	10 (29.4%)	21 (61.7%)	34	4.0	1.06
Technologically challenged learner	4 (11.8%)	11 (32.4%)	19 (55.9%)	34	3.7	0.95
New online learner	3 (8.8%)	9 (26.5%)	22 (64.7%)	34	3.8	0.91

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

All respondents (n=34) indicated ratings in the area of "modification of the course" (#18). The area included five items: (a) discussions/feedback (M = 3.8, SD = 1.11), (b) interactions (M = 3.8, SD = 1.03), (c) progress and challenges (M = 4.0, SD = 1.09), (d) quizzes and exams (M = 3.6, SD = 1.13), and (e) assignments (M = 3.8, SD = 1.12). In conclusion, items in this area had relatively lower mean ratings (below 4) and higher standard deviations (above 1) than other areas in the course category. The data indicate that the course most likely needs to be adjusted better for ELL, technologically challenged, and new online students. In reality, participants may or may

not have realized what was done to adjust or modify the course because such activities were performed backstage to online teaching. The rating of 3 was selected by many course participants and was indicative of the problem of the absence of a "not applicable" category of the survey, which is discussed in more detail in Chapter 6.

Table 19: Modification of the course

#18. The instructor modified the course based on:						
Brief item description	Strongly Disagree/ Disagree, n (%)	Neither Disagree/ Agree, n %)	Agree/ Strongly Agree n (%)	N	Mean	SD
Discussion board conversations and feedback	6 (17.6%)	6 (17.6%)	22 (64.7%)	34	3.8	1.11
Learners' input and/or interactions	3 (8.8%)	12 (35.3%)	19 (55.9%)	34	3.8	1.03
Student progress and challenges	4 (11.8%)	8 (23.5%)	22 (64.7%)	34	4.0	1.09
Quizzes and exams	7 (20.6%)	9 (26.5%)	18 (52.9%)	34	3.6	1.13
Assignments	6 (17.6%)	7 (20.6%)	21 (61.8%)	34	3.8	1.12

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

In conclusion for the course category, syllabus, environment, and independent learning item areas were rated high, i.e. above 90% rating. The opportunities for self-growth and the course item areas were rated medium, i.e. between 80%-90%. And the adjustment and modification item areas were rated low, i.e. below 80%.

5.2.2.2 Instructor

The instructor rating included three areas (#15-17); (a) instruction, (b) instructor, (c) instructor's helpfulness. All 34 participants responded to all of the 13 survey items in the three areas.

The area of "instruction" **(**#15) included six items: (a) facilitation (M = 4.3, SD = 0.79), (b) feedback (M = 4.3, SD = 0.83), (c) helpfulness with technological problems (M = 4.2, SD = 0.82), (d) handling of behavior problems (M = 3.8, SD = 0.87), (e) positive attitude (M = 4.5, SD = 0.56), and (f) adequate content knowledge (M = 4.6, SD = 0.50). The first three items, facilitation, feedback, and helping with technological problems (a-c), were rated at a medium level with a mean rating around 4.3 and standard deviation around 0.81. The item of addressing the student behavior effectively was rated lower than the other three items. This item had 16 respondents selecting a neutral rating (3), most likely in the absence of "not applicable" rating. The last two items, positive attitude and content knowledge of the instructor, had a higher mean around 4.5 and relatively lower standard deviation around 0.53 meaning these areas were perceived as having a higher quality. The instructor was perceived as having a positive attitude towards online teaching and a strong content knowledge of the ESL course.

The rating for "instructor resolved the technological problem in a timely fashion" (#15c), was not very appropriate for this course because the course was offered at the end of a series of ESL certification courses, when most of the participants were less troubled by technology. Nine respondents selected a neutral rating (3), that is most likely because no "not applicable" choice was provided. Similarly, the rating for "instructor addressed inappropriate student behavior in an effective way" (#15d), showed that 16 participants selected a neutral rating (3). Additionally, there were no apparent discipline problems in this particular course. These findings are further discussed in chapter six.

Table 20: Rating of the course instruction

#15. The instruction of this course:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/ Agree n (%)	Agree/ Strongly Agree n (%)	N	Mean	SD
Facilitated interactions among students	1 (2.9%)	4 (11.8%)	29 (85.3%)	34	4.3	0.79
Provided appropriate feedback as needed	2 (5.9%)	2 (5.9%)	30 (88.2%)	34	4.3	0.83
Resolved technological problems in a timely fashion	0 (0.0%)	9 (26.5%)	25 (73.6%)	34	4.2	0.82
Addressed inappropriate student behavior in an effective way	0 (0.0%)	16 (47.1%)	18 (52.9%)	34	3.8	0.87
Had a positive attitude related to online teaching and learning	0 (0.0%)	1 (2.9%)	33 (97.1%)	34	4.5	0.56
Possessed adequate content knowledge to teach the course	0 (0.0%)	0 (0.0%)	34 (100.0%)	34	4.6	0.50

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "instructor" (#16) included four items: (a) instructor's availability (M = 4.4, SD = 0.75), (b) high expectations (M = 4.4, SD = 0.82), (c) supported collaboration (M = 4.4, SD = 0.78), and (d) encouragement of open and honest student input (M = 4.5, SD = 0.66). Overall this area had a medium-high quality related to the instructor's availability, high expectations, supporting collaboration, and encouragement of honest input.

Table 21: Rating of instructor

# 16. The instructor of the course:						
Brief item description	Strongly Disagree/Disagree n (%)	Neither Disagree/Agree n (%)	Agree/ Strongly Agree n (%)	N	Mean	SD
Was readily available to students	1 (2.9%)	2 (5.9%)	31 (91.2%)	34	4.4	0.75
Established high expectations for students	1 (2.9%)	4 (11.8%)	29 (85.3%)	34	4.4	0.82
Supported students working collaboratively	0 (0.0%)	6 (17.6%)	28 (82.4%)	34	4.4	0.78
Encouraged honest and open input from students	0 (0.0%)	3 (8.8%)	31 (91.2%)	34	4.5	0.66

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

The area of "instructor being helpful" (#17) included three items for helping students to be (a) independent and self-disciplined learners (M = 4.4, SD = 0.78), (b) persistent in times of challenge (M = 4.4, SD = 0.78), and (c) comfortable with online participation (M = 4.5, SD = 0.79). This area also received a medium-high rating. Perceptions indicate the instructor helped students to be self-disciplined about independent learning and in feeling comfortable with the online discussion or interaction. Also, the instructor was perceived as supportive of students for experiencing challenges.

Table 22: Instructor's helpfulness

# 17. The instructor helped students to be:						
Brief item description	Strongly Disagree/ Disagree n (%)	Neither Disagree/Agree n (%)	Agree/Strongly Agree n (%)	N	Mean	SD
Independent, self-disciplined learners	1 (2.9%)	3 (8.8%)	30 (88.3%)	34	4.4	.78
Persistent in times of challenge	1 (2.9%)	3 (8.8%)	30 (88.3%)	34	4.4	.78
Comfortable with online participation	1 (2.9%)	0 (0.0%)	33 (97.1%)	34	4.5	.79

(1=Strongly Disagree, 2=Disagree, 3=Neither Disagree/Agree, 4=Agree, 5=Strongly Agree)

In conclusion, the item "instructor helping students" was rated highly, i.e. above 90%. The instruction and the instructor areas were rated medium, i.e. between 80%-90% and needs improvements in the future. The item areas #15-17 originated from the iNACOL and NSDC standards for course facilitation and instructor. The lowest rating of all of the 43 items across both the course and instructor categories of the survey concerned modification of the course as a result of quizzes and exams (16d). This item had a very low mean rating of 3.6 with a very high standard deviation of 1.13 indicating this as a potential area for improvement. This is further discussed in Chapter 6. On the other hand, the overall the best rating of all of the 43 items across the course and instructor categories of the survey, was for the "instructor possessed adequate content knowledge to teach the course" (#15f). All 34 participants either agreed (n=14) or strongly agreed (n=20) that the instructor had adequate content knowledge.

5.2.3 Learning and suggestions (part III, item #19, 20, 22, 23, and 24)

The third research question concerns alignment of the course with the International Standards of Online Teaching by iNACOL and the PD Standards by NSDC. Online teaching is a newly evolving area and the standards are being updated to reflect technology and newly emerging ways of online teaching. As a result, I wanted to ask some open-ended items to reveal what respondents think about the course, the instructor, and other issues related to online teaching as part of the survey. Part III included the items which were not included in the standards such as comparison (similarities and differences) of online course with the face-to-face courses. The last item, #24, was totally open-ended to share anything else that was not covered in the earlier sections of the survey.

Part III of the survey was mostly about the "learning and suggestions about the course, instructor, and the learner's experiences about online learning". There were five open-ended (OE) items (items #19, 20, 22, 23, 24) and one multiple choice (MC) item (#21) as provided in Table 23.

Table 23: Response rate survey items #19-24 (part III)

Item #. Description	% Responded (n)	Type
19. What would you do differently, as a student, the next time you will take an online course?	88.2% (n=30)	OE
20. What would you suggest the instructor should do differently the next time she teaches online course?	94.1% (n=32)	OE
21. How successful do you feel you were in this online course?	100% (n=34)	MC
22. How was the experience of taking an online course different from taking face-to-face course?	97.1% (n=33)	OE
23. How was the experience of taking an online course similar to taking face-to-face course?	94.1% (n=32)	OE
24. Sharing of anything else regarding course, instructor, and your experience in the course.	50% (n=17)	OE

The range of the response rate was between 50% and 100% for the open-ended items. As shown in Table 23, two items (#19 and #20) asked respondents to indicate what they suggest be done differently by the student (#19) or the instructor (#20) if participating in an online course in the future. The other two items (#22 and #23) compared the similarities and differences of face-to-face and online courses. All participants responded to the multiple choice item (#21) about how successful the course participant felt and how much s/he learned in the course. The last item (#24) was entirely open-ended to "share anything else, which was not covered in the survey", and was responded to by only 50% (n=17) of respondents. The detailed analysis of each item is discussed below.

5.2.3.1 Open-ended items

The main content of the open-ended responses of each item were organized into a table and categorized into emerging themes by coding each response into a theme category. The responses were copied (as they were in the attached appendix) from the SurveyMonkey open-ended response data. Only one main theme was given to each of the response, though some of the responses could be categorized into more than one category. The emerging themes were: course, discussion or interaction, enjoyment of online learning, instructor, self-development and/or independent learning, and time.

Item #19: What would you do differently, as a student, the next time you take an online course?

Thirty participants (88.2%) responded to the question "what would you do differently if you take an online class again" (#19). Half of the respondents (n=15) indicated issues related to time. In this item, other themes such as self-development, interaction, course, assignments, and

enjoyment were also represented to a lesser extent, only 2-3 times each. Additionally, a few people indicated that no change was suggested. Time related responses included managing time better, allowing more time to read, research, and respond to discussion posts, staying on top of the work, saving information and printing to save time, scheduling challenges, setting up own schedule to study, and using a helper for household work to be able to maximize the time for learning especially when approaching deadlines.

There were a variety of responses about the self-development and independent learning and time. A respondent wrote, "S/he would think twice before signing up for another online course." Another respondent noted that "having taken numerous online courses in the past, I look for 100% online course, [but the] workload [in this course] was ridiculous." One interesting response was that "I did have issues with time constraints. At times I felt that not enough time was allowed to cover the volume of material."

Other than the negative responses already listed numerous responses to item #19 were positive and constructive indicating the self-development and growth on the learner's part. As online learners put the responsibility of learning on themselves, the learner develops in a variety of ways, such as personally and academically. One respondent stated, "You have to have good time management skills and be motivated as it is all on you to complete." Someone mentioned, "To be honest, nothing [is recommended for changing the course]. I worked very hard and did the best that I could. I really enjoyed the course!" Another respondent shared that "I didn't think I would like it [online learning] but it was actually great. I could work ahead when I needed to, which was nice. I liked being able to go at my own pace, more or less." The theme of time surfaced in other open-ended items also. For example, it appeared five times in response to another question, "how the experience of taking online course was different from taking face-to-

face course" (#22). Please see Table 34 in the Appendix H for the verbatim responses to item #19.

Item #20: What would you suggest the instructor should do differently the next time she teaches an online course?

Almost all participants (94.1%, n=32) responded to "what should the instructor do differently when teaching online class next time" (#20). One main theme emerged from the data of this open-ended item along with numerous "no change" suggestions. The emerging theme of instructor/instruction included specific suggestions related to assessment, course design, and interaction, as well as comments related to time, enjoyment, and self-development. There were some ideas about what was good and what was needed to improve instruction such as giving varied assignments, having some video in the course, fixing broken links (URLs to other resources), and giving more detailed feedback. A one respondent noted, "… I prefer a hybrid set-up. I believe learning isn't as powerful in online courses and the learning that is done is by and large superficial." Another respondent shared, "This instructor was very good at teaching online courses. If you had technical difficulties (typically) at the beginning of the course, she would respond in a timely manner, but still held the same expectations to complete the work." Another participant shared that "The instructor was very supportive and gave good direction and interesting and relevant coursework." One student mentioned that the class is a community of learners for helping and sharing with each other and added, "I was new to current assessment tools, so I would have enjoyed a video overview especially since I am a visual learner. The students helped by pointing out great resources to each other and talking about experiences through the assignments and posts. [Good] for people I don't even know!!"

Please see Table 35 in Appendix H for all of the responses to item #20.

Item #22: How was the experience of taking an online course different from taking a face-to-face course?

Thirty three respondents (97.1%) replied to the item asking "how was your experience of taking an online course different from a face-to-face course" (#22). The responses were categorized into two main themes: first, self-development and independent learning; second, discussion/interaction. The first theme, self-development and independent learning, was evidenced in a comment written by a respondent, "You, as the student, are responsible for the amount of information you learn. It takes a disciplined person." Another participant stated, "At first, I was hesitant as I was not really accustomed to an online course, but grew to realize how convenient it was and now I am actually very interested in online learning much more than prior to this class." Someone noted, "I prefer face-to-face but an online class requires a great deal of discipline in order to get the most out of the course." Another participant wrote, "We learned all of the information from reading it ourselves. In a traditional class, someone presents it to you and is there to clarify questions and students are able to share-out in the moment. It's also more flexible."

The second theme, interaction and discussion, was also a major iNACOL standard. The respondents had mixed reactions about whether or not they liked the online interaction. For example, one response indicated, "It is harder to communicate with others," while another response was, "There was comfort level in order to express opinions and feelings that you may not have in a face-to-face environment." Yet another respondent added, "I feel like the peer and educator interactions are a strong component of an education [online] experience."

Please see Table 36 in Appendix H for all of the verbatim responses to item #22.

Item #23: How was the experience of taking an online course similar to taking a face-to-face course?

Thirty two respondents (94.1%) replied to this item, which requested information about "how your experience of an online course was similar to a face-to-face course" (#23). One main theme was emerging with this item- interaction. Many responses were about interaction making the course similar to a face-to-face course. One respondent stated, "We were constantly interacting with the teacher and classmates through discussion board prompts, so it felt was as if we were sitting in an actual classroom together." One respondent noted, "They were able to communicate with professor like face-to-face." Another respondent mentioned, "The discussion made it similar, even though it was online. However, there was quick feedback constantly throughout the course, which made it feel like a face-to-face course. Also through this constant discussion, I came to know many of the others participating, as if it were a face-to-face class." On the other hand, someone wrote, "This class was horrible."

"Interaction" emerges as a main theme in both items (#22 and #23). Together it is the strongest theme across all of the open-ended items. This complements closed-ended item data discussed earlier that indicated as mentioned previously that the course was very interactive and discussion based. Collaborative learning with peers and the instructor were also considered a valuable, strong component of online learning. One respondent shared that "I feel like the peer and educator interactions are a strong component of an education experience." Many students indicated that they felt comfortable in openly sharing in online environment.

Please see Table 37 in the Appendix H for verbatim responses to item #23.

Item #24: Sharing of anything else regarding course, instructor, and your experience in the course.

This item allowed respondents to add any further comments or suggestions. Only half of the total respondents i.e. 50% (n=17) offered input. The main themes that emerged were the enjoyment of online learning and the instructor.

One participant stated, "The online course would be completed while my son was napping or after he went to bed at night. The content was very engaging and the instructor was very supportive." Another course participant stated that s/he enjoyed the challenge and realized the benefits of online learning and, as a result, plans to take more online classes. Students indicated that they enjoyed the 24/7 interaction of meaningful content in an enjoyable teaching format along with high expectations, work load, and hard work at a flexible time and place.

The second theme, instructor, emerged in item #24. This response aligns with items #15-17 in the part II of the survey. A respondent stated that "I really enjoyed this class. As a student of many assessment classes, this was one of the most fulfilling because I felt challenged with the amount of work to be done, but also that it was very relevant." Another respondent noted, that "This was an excellent course. The content was really interesting for a course I thought would be boring. This was my last ESL class to take because I didn't want to take a class on assessments. I learned a lot and really looked forward to each lesson. I commend the instructor for creating such an interesting course – I was VERY pleasantly surprised by how much I enjoyed the class." Another respondent mentioned:

> I thoroughly enjoyed all the ESL IU 1 courses. Assessment was the most challenging to me because I had less up to date experiences to reference. So, I may have learned the most from this course, but also realized how much more I have yet to learn. On a previous page, it asked if the instructor modified the course based on assignments, etc. I feel the correct answer was neither, yes or no.

> The course needed to hold tight to requirements in order for the students to reach and grow. The time frame and perhaps angle might change as the instructor saw it fit for the individual, but not outright changed. [The instructor] was [in touch with] her students and their needs and learning!

Yet another respondent wrote, "This was a very helpful, engaging, and straight forward class. Other online teachers could use advice from [this instructor]."

See Table 38 in Appendix H for verbatim responses to item #24.

5.2.3.2 Summary of open-ended items and emerging themes

The top six emerging themes in the order of most to least times selected were interaction/discussion, course, time, self-development and independent learning, instructor, enjoyment of online learning, and assignments. These themes are discussed below.

The discussion and interaction theme appeared in every open-ended item except in the last item of allowing for other suggestions. Students indicated the similarity of interaction in online and face-to-face classes (#23), and yet at times online classes were indicated as more interactive than face-to-face classes. Garrison (various sources) indicated that online learning is socio-constructive learning where learning occurs through interaction. Peer and instructor interaction was planned as a strong component of this online course. Students seem to have responded positively to this aspect of the course. Garrison (2008) indicated that a major value of online classes is the formation and use of learning communities to extend a shared wealth of knowledge.

The next theme, course, was represented in all five open-ended items especially in item #23 which asks about "the similarities of online and face-to-face courses." Respondents shared

that the course components such as high expectations, assignments, content, and assessments were similar to face-to-face courses. This aligned with the data from items #9-14 and #18, which reflected iNACOL and NSDC standards for teaching online course.

The theme of time emerged often when asked about "what would you do differently next time." The responses indicated that students feel a need to better schedule their engagement with the course by utilizing time in a creative way, managing their time, realizing the time at hand and acting accordingly, and taking time to read the informative posts. Individuals also indicated a need to be self-disciplined and responsible about the time and course work. They shared that a lot of time was required to fulfill the course work such as learning online content, researching, reading, taking tests, completing quizzes, projects, and assignments, and writing papers, project reports, and posts.

Another important theme that appeared was the self-development and independent learning in online course. This theme appeared most often when respondents discussed the difference between online and face-to-face courses. They felt responsible to learn on their own, at their own pace and to schedule their time, and they also enjoyed the convenience of the online class. Starting to learn the CMS was more challenging for a few but the online discussion seemed to have alleviated some anxiety. They shared that the online interaction tended to encourage deeper learning. The "ownership" of independent learning, responsibility, self-initiative, self-discipline, self-management, and self-determination were required to finish the course successfully. This theme of independent learning and self-development connects dual focus of individualized responsibility coupled with collective learning in online courses.

Students indicated that the instructor provided timely feedback and directions for the assignments, and was encouraging, calm, flexible, supportive and helpful. These themes were

aligned with items #15-17 in the prior sections of the survey, based on iNACOL and NSDC standards.

One of the emerging themes was student enjoyment of online learning, which is not often mentioned in the literature. A number of students shared their enjoyment of online learning, indicating that the experience inspired them, led them to appreciate online learning, came as a pleasant surprise, and brought them to a realization of how much there is to learn.

Students offered suggestions for more variety of assignments which would be easily possible with today's technological advancements.

Table 24: Summary of coded responses of open-ended items #19, 20, 22, 23, and 24

Item #	Assignment (A)	Course (C)	Discussion/ Interaction (D)	Enjoyment (E)	Instructor (I)	Nothing Or Not applicable (N)	Self-discipline and/or independent learning (SD)	Time (T)	Total # Responded (N)
19	2	2	3	2	0	3	3	15	30
20	4	4	4	1	9	9	0	1	32
22	0	3	8	2	0	0	15	5	33
23	3	10	14	2	1	1	1	0	32
24	0	3	0	6	5	3	0	0	17
TOTAL	**9**	**22**	**29**	**13**	**15**	**16**	**19**	**21**	**144**

5.2.3.3 Feeling of being successful, multiple choice item #21

An additional item was a multiple choice format with a 100% (n=34) response rate that asked students to indicate how successful they felt in the course. Over three quarters (76.5%, n=26) of the respondents indicated that they "passed and learned a great deal." Five respondents (17.6%) indicated that they "passed and learned what they needed to." Two students (5.9%) selected the choice of "I may have passed or not, but did not learn much." No students indicated that they "did not learn much and had a difficult experience." Overall, this item helps to frame all other responses to the survey. Nearly all students felt that they learned a lot or what was needed. The

other survey items help to indicate the strengths and challenges of the experience that seem to have led to this perception of success.

Table 25: Learning satisfaction

#21. Learning satisfaction:		
Response choices	N	%
I passed and learned a lot.	26	76.5
I passed and learned what I needed to.	6	17.6
I may have passed or not, but did not learn much.	2	5.9
I may have passed or not, but did not learn much and had a difficult experience.	0	0.0
Total	**34**	**100.0**

5.2.4 Cross tabulations of items of interest

The respondents varied in their number of years teaching, number of online courses taken, gender, and highest degree. These variables were compared to patterns of responses to see if there were any significant differences between groups. Chi-square tests were run to check for significance of years of experience with all of the variables. The online syllabus providing "appropriate resources" ($p=0.029$) and "describing the course content" ($p=0.029$) were significantly different. Overall, syllabus area ratings were significantly higher for the teachers with four or more years of experience than the teachers with three years or less experience (see Table #26 and #27).

Table 26: The online syllabus offered appropriate resources

Category	Years of Experience as an Educator		
	% 1-3 years	% 4-6 years	%7 or more years
Strongly Disagree	0.0%	0.0%	0.0%
Disagree	0.0%	0.0%	0.0%
Neither Disagree nor Agree	11.1%	0.0%	0.0%
Agree	55.6%	0.0%	16.7%
Strongly Agree	33.3%	100.0%	83.3%

***x*=10.830, d.f.=4, *p*=0.029**

Table 27: The online syllabus described course content

Category	Years of Experience as an Educator		
	% 1-3 years	% 4-6 years	%7 or more years
Strongly Disagree	0.0%	0.0%	0.0%
Disagree	5.6%	0.0%	0.0%
Neither Disagree nor Agree	0.0%	25.0%	0.0%
Agree	55.6%	25.0%	16.7%
Strongly Agree	38.9%	50.0%	83.3%

***x*=14.018, d.f.=6, *p*=0.029**

The years of experience cross tabulated with the instructor's addressing of inappropriate behavior lead to a significant difference although there were no inappropriate behaviors in the online class, indicating spurious findings. There were only two males who responded to the survey and hence the gender related items were not disaggregated and not calculated.

5.3 CONCLUSION OF RESULTS

In conclusion, the higher ratings across the course areas of the survey focused on the fact that the learning environment of the class was welcoming and supportive, this included discussion of

concepts and exploration of material and adequate resources. High ratings were also reported regarding the online syllabus, encouragement of independent learning, and discussion based collective learning. The course received medium high ratings for interaction and learning opportunities for self-development. The course was rated lower in the areas of course adjustment and modification to various conditions. This particular issue is further discussed in detail in the Chapter 6. In conclusion, the strength of the course was its discussion based, independent learning within the community of learners. This finding was further reinforced by respondents in open-ended items.

The highest ratings in the instructor category were indicated for the attitude and content knowledge of the instructor, encouragement of honest and open student input, and student comfort with an online learning environment. The only item with less than a 4.0 rating was about addressing inappropriate behavior. No inappropriate behaviors occurred, so these data are not reported. All other items in the instructor category were rated medium high with the mean rating above 4.0.

There were a number of themes that emerged from the open-ended items' responses. In order of frequency of comments they included discussion and interaction, course, time, self-development and independent learning, instructor, enjoyment, and assignments. An unexpected theme was the level of enjoyment indicated by six of the seventeen respondents.

Comments from open-ended items indicate that course participants enjoyed being part of a learning community of the online class. They interacted with each other extensively about the content, problems, resources, clarification, and assignments. Everyone learned individually, as

well as collaboratively. They discussed, argued, supported, and assisted each other. Independent learning promoted self-development through their self-characteristics such as self-discipline, self-management, self-confidence, and self-initiative. The collective knowledge of the class was created and shared across participants. A content-rich deep discussion, variety of resources, activities, research, and extensive knowledge sharing was available via the interactive online discussion. They valued interaction as the most important factor for online learning, besides the flexibility to learn at any time and place. A course participant shared, "Being part of a community of learners is always interesting and enjoyable. Even online, we could identify with each other as teachers and learners!" Finally, they found online learning in the course to be open, interactive, enjoyable, and meaningful. Also, they seemed to be inspired to take more online courses.

A number of course participants mentioned that their attitude changed about online learning after taking this course. Many course participants shared that they plan to take more online courses in the future. A course participant wrote, "I still learned a lot, I was not sure what it would be like, but I enjoyed the readings, and discussion even though they were in a different format (text)." Another participant mentioned that s/he was not sure if s/he would like it initially, but "I could work ahead when I needed to which was nice. I liked being able to go at my own pace more or less." Another course participant shared that "at first I was hesitant, as I was not really accustomed to an online course, but grew to realize how convenient it was, and now I am actually very interested in online learning much more than prior to this class."

6.0 CONCLUSIONS AND RECOMMENDATIONS

This study included three research questions. The first question focused on the history and evolution of technology and online professional development. The second question focused on the evidence-based best practices and standards for online professional development of educators. These two questions were addressed in the literature review and were presented in Chapter 2. The third question focused on the alignment of a course with the PD standards and online teaching standards.

A survey gathering student perspectives was developed by integrating standards from iNACOL and NSDC. The survey used the online SurveyMonkey program to deploy to participants. The survey included three parts: demographic information, course and instructor information, and learning and suggestions. The survey response was 39.5% (n=34). The data were tabulated, analyzed, and aligned with the standards-based practices of OPD and online course instruction. This chapter presents an overall summary of results and suggests recommendations for the future research.

6.1 SUMMARY OF RESULTS

This section includes the results from generalized summary of demographics, standard based Likert items, and open-ended items.

6.1.1 Literature based research questions 1 and 2

The first and second research questions were based on literature review. The first question was about the history and evolution of technology and OPD. Online teaching and learning is a relatively new area of educational research. The literature indicates that technology (software and hardware) is constantly growing and adding to the milieu of online teaching and learning. New technology related terminology is coming into daily life of learners. Some of the basic terminology is becoming common and used globally. Research related to online teaching and learning is limited locally and globally. There is a strong need of basic research and connecting research related to online teaching and learning. There are many directions where there is a knowledge gap. Some of these are mentioned later in this chapter. The online teaching and learning will continue to evolve with technological advances.

The second research question was about the evidence-based best practices and standards for OPD. The best practices from a variety of research areas were discussed and summarized in Chapter 2. The three NSDC standards for PD and thirteen iNACOL standards for online teaching, including an optional standard of design, were integrated to develop the basis for the survey items for the course and the instructor rating.

6.1.2 Survey based research question 3

The third research question was survey based question of aligning a specific online course with the established standards for OPD. The survey included three parts; demographics; course and instructor; and learning and suggestions.

6.1.2.1 Demographics

The demographic data indicated that about two third respondents took the course for certification (n=22), were within first six years of their teaching career (n=23), had taken online college courses (n=21), and were less than 35 years of age (n=22). All but two respondents (one in West Virginia and one in South Carolina) lived in Pennsylvania. There were 32 female respondents and only two male respondents.

6.1.2.2 Course

Among the course category, the classroom environment, syllabus, and independent learning items were rated highly. The data also indicated that the course adjustment and modification areas were rated low. The course adjustments and modifications were made on an as-needed behind the scene, and course participants could not see what adjustments and modifications were made most of the time. This may have been reflected in the rating of the items regarding the course adjustment and modification. The following table summarizes level of agreement ratings of the course related item areas:

Table 28: Summary of the data by Course category by items

Item # with a brief description	Total # of agree and strongly agree rating (4+5)	Total # of responses	% of Agreement
9. Syllabus (a-d)	130	136	95.6%
10. Environment (a-b)	66	68	97.1%
11. Independent learning (a-d)	124	136	91.2%
12. Opportunities for self-development (a-f)	181	204	88.7%
13. Course (a-f)	178	204	87.3%
14. Adjustment of instruction (a-c)	62	102	60.8%
18. Modification of instruction (a-e)	102	170	60.0%

6.1.2.3 Instructor

In responses from the "instructor" category, the choice of "instructor helped students" was rated the highest followed by "the instructor" and "the instruction" areas. The survey responses may have been more precise if participant had been given a choice of an item being "not applicable". The iNACOL standard of course adjustment based on the needs of ELL, technologically challenged learner, and/or being new online learner was not appropriate for this course. This is also discussed later in this chapter. The following table summarizes instructor related items with the level of agreement ratings.

Table 29: Summary of the data for Instructor category by items

Item # with a brief description	Total # of agree and strongly agree rating (4+5)	Total # of responses	% of Agreement
15. Instruction (a-f)	169	204	82.8%
16. Instructor (a-d)	119	136	87.5%
17. Instructor helped (a-c)	93	102	91.2%

6.1.2.4 Emerging themes from comments

Analysis of open-ended items revealed the following themes in order of most to least commonly mentioned. They include interaction, course, time, self-development and independent learning, and enjoyment. The themes of instructor and course were more fully explored through the main sections of the survey and were based on the NSDC and iNACOL standards for the PD and the quality of online teaching and hence are not discussed here. The theme of "nothing or no change" does not give any significant data and hence it is not discussed further. The other main themes such as interaction, time, independent learning and self-development, and enjoyment are discussed here.

INTERACTION

Interaction emerged as a theme in open-ended items. It was also a part of the standards-based items in part II of the survey, which were rated highly. Several participants shared that the course was very interactive and discussion based. Collaborative learning with peers and the instructor was considered a valuable, strong component of online learning. A participant stated, "I thoroughly enjoyed the online participation of the class as much as the teacher. I looked forward to working through the problems daily with the people I had never met and may not ever meet."

Course participants used discussion to clear up points and information needed. They found the content very interesting and well connected with the concepts from the online lessons and the textbook. Someone shared that asynchronous discussion provided great interaction and fun learning among all students in the class. A course participant noted, "The interaction between the students seemed as though we were face to face." An interesting observation of a learner was that "there were less personality issues in the online class with 24/7 access to the class." A few

other participants shared that s/he felt that the interaction was as good as a face-to-face class. Another participant noted, "We are constantly interacting with the teacher and classmates through discussion board prompts, so it felt as if we were sitting in an actual classroom together." Another participant added that the online class was a community of learners who learned together in an enjoyable and fun manner. Another learner even said that there was a comfort level in the class to openly express opinions and feelings that may not exist in a face-to-face class.

Overall, interaction was mostly with peers and less with the instructor. Interaction was enhanced because of the 24/7 access of the asynchronous online class. This timing easily fits everyone's schedule and needs. Participants can interact with the classmates on the discussion board from any place and any time during the course. Participants also interacted independently with the online learning activities such as research, lessons, quizzes, tests, projects, reports, reading material, and outside media. They shared information in 12 to 16 discussion forums every week.

If any student had a problem, it was shared in the "problem/solution" forum where students could help each other in finding solutions to their problems. Most of the time, veteran course participants helped new ones or someone who had gone through the same problem helped other learners of the community. The instructor watched over the problem-solutions and discussion forums but did not help the learners too quickly so that learners would help each other and explore options to find the solutions for themselves. This strategy gave students confidence to the independent learner with technological issues for troubleshooting and also helping other members of the online community of the course. The instructor helped only when she could

foresee that the problem was beyond the student's capability/access or needed individualized help for a unique problem.

The second forum in the beginning of the course was the "tips" forum where students shared anything (tips) they found helpful to be organized for online learning. This helped the newer online learners to learn from the veterans and assisted students in building relationships for help and support.

The third forum in the beginning of the course was "introduction." The students introduced themselves to the class just like in a face-to-face class. There were some strategies included for students to remember and know more about other students. For example, one item asked the students if they could be an animal, which animal would they be and why. This gave a little insight into the nature of the student. This strategy helps students see themselves as a part of the community and how they are similar and dissimilar to and from each other. It generated a simple dialogue and helps them overcome the fear of openly sharing.

There were 10-14 "content forums" every week. These were discussions to apply learned knowledge of that week from the textbook, online lessons, and research. This was the main area of interaction where learning activities were happening 24/7. For example, questioning, suggesting, supporting, arguing, helping, discussing, and clarifying were constantly going on via the discussion board. This exemplified the learning community of the online class for sharing, learning, growing, and moving towards the goal together. Discussion tended to move toward higher level of Bloom's taxonomy such as application, analysis, synthesis, and evaluation.

Every week second-to-last forum was "reflection and plan of implementation" forum. In this forum, students shared the main concepts of the week, their application, and made a plan for

implementation for the classroom. This was the closing forum of each week's learning activities and was done in a constructive, meaningful way and completed individually.

The very last forum was the "coffee and chat" forum where anything else of significance was shared. This forum kept the class socially and emotionally united together with the items for fun or even online celebration such as birthdays, welcoming new babies/grandbabies of the learners, world festivals, recipes, sports, and news. This area provided a community feeling for participants by allowing them to relax, inform, share, celebrate, enjoy, and be with other course participants in a less academic way.

"Discussion based interactive online learning" is a form of socio-constructive learning as studied by Garrison (Garrison, Anderson, & Archer, 2010). Interaction is the heart of socio-constructivism in a learning community of an online course. It connects individual learners to the community of learners, all of whom have the same goal and engage in similar activities to reach the goal, collaboratively and collectively. The discussion board formed this cove of the individual, collaborative, and collective learning via a variety of actions and interactions. Socio-constructivism is essential to online learning.

TIME

Time is a theme for which most course participants noted something in one or more of the open-ended items. It was not a part of the survey items and also was not a part of the standards, although it should be. The flexibility of timing, 24/7 availability of the course, and independent learning at their own pace were aspects of the course that were appreciated by most of the participants. Using time effectively, time management, organizing the work to meet the deadlines of assignments, and self-scheduling of time were also shared by many respondents in

the open-ended items of the survey. An independent learner of the course needed to be creative about making time for the course work. Another participant shared that "there was ridiculous amount of work so need to allot more time for the course work." Indeed, the flexibility of time for learning is a benefit of online learning. The "tips" forum helped students to learn from their classmates about what helped them to stay organized and maximize their learning time while not get lost in exploring the World Wide Web (www).

The course was completed in an accelerated manner in half of the usual time for the course because of the holidays and the deadline for state certification. The learners became creative about how to maximize their time for online learning activities individually and collaboratively as an online learning community.

INDEPENDENT LEARNING AND SELF-DEVELOPMENT

Numerous course participants shared the value of self-development and independent learning in an online class. A participant wrote, "I felt much more responsible to learn all I could learn. It was easier in that I could do it on my own time. I learned about more online resources than I would in a face-to-face course." Course participants enjoyed working at their own pace at a comfortable time, mindset, and place. A respondent shared that the online learning required a great deal of self-discipline in order to get the most out of the course. Another respondent affirmed that it is more work on the student's part and requires a lot of self-discipline. Other respondents noted that they could work at their own pace and time and learn a lot from peers in a collaborative learning community environment of a student centered online class. Online learning seems capable of practicing values like self-discipline, self-management, self-control, self-confidence, determination, and the desire to learn, which promotes self-development. This

option seems a hallmark of online learning and has the power to change how a person manages their learning.

ENJOYMENT

Enjoyment surfacing as a theme was a pleasant surprise. There were no survey items (the survey was based on iNACOL and NSDC standards) that requested explicit information about the enjoyment of learning. The Sloan consortium (2005) has suggested "learning satisfaction" as a major pillar of the quality online class. Many course participants shared their enjoyment of online learning in one of the five open-ended items and mostly in the totally open-ended item where they could write anything. Enjoyment comes from accomplishments, hard work, and from within. One participant stated, "The online course would be completed while my son was napping or after he went to bed at night. The content was very engaging and the instructor was very supportive." Another course participant shared that s/he enjoyed the challenge and realized the benefit of online learning and planned to take more online classes in the near future. Students indicated that they enjoyed the 24/7 interaction of meaningful content in a fun learning environment, with the flexibility of the time, pace, and place of the workload.

Since online learning is still a newly evolving area of education, it is important to note the change in attitude about online learning. There were no open-ended survey items that directly requested information about a change in attitude. Many course participants shared that they plan to take more online courses in the future. A course participant wrote, "I still learned a lot, I was not sure what it would be like, but I enjoyed the readings, and discussion even though they were in different format (text)." Another participant mentioned that s/he was not sure if s/he would like it initially, but it turned out to be great: "I could work ahead when I needed to which was

nice. I liked being able to go at my own pace more or less." Another course participant shared that "at first, I was hesitant as I was not really accustomed to an online course, but grew to realize how convenient it was and now I am actually very interested in online learning much more than prior to this class." A participant shared, "this was a very helpful, engaging, and straight forward class. Other online teachers could use advice from [instructor's name]."

6.1.2.5 Conclusion of themes

Participants enjoyed being part of the learning community of the online class. They interacted extensively about the content, problems, resources, clarification, and assignments with each other. Students learned individually as well as collaboratively. They shared, helped, discussed, argued, supported, and cared for each other while moving towards the same goal. Independent learning promoted their self-characteristics such as self-discipline, self-management, self-learning, self-control, self-confidence, self-initiative, and self-desire to learn. The collective knowledge of the class was created and shared by all of the participants. The content-rich deep discussion, variety of resources and activities, and extensive knowledge were the strengths of this online interactive discussion based course. The students valued interaction as the most important factor for online learning along with the flexibility of learning at any time and place. A course participant shared, "Being part of a community of learners is always interesting and enjoyable. Even on-line, we could identify with each other as teachers and learners!" They found online learning to be open, enjoyable, meaningful, interactive, and independent. Many were inspired to take more online courses.

Finally, online learning is a form of socio-constructive learning (Garrison & Vaughan, 2008). It involves the construction of knowledge independently, collaboratively, and collectively with the community of learners of the online class. The philosophy of independent online learning is that the doer is the learner and the learner is the doer. Instructor is only a facilitator of their learning. Each individual learner has to individualize their own learning in the best possible and in a meaningful way for themselves. This works well in the online environment because each learner knows himself/herself best and knows what works for himself/herself. He/She is his/her own instructor to orchestrate his/her own learning. In this way, the learner becomes the master of his/her own learning.

6.1.2.6 Learning satisfaction

An item in the survey inquired about the feeling of being successful in the online course. Twenty-six respondents indicated that they were successful and learned a lot in the course. Six respondents indicated that they passed the course and learned what they needed to. Two respondents reported that he may have passed or not but did not learn much. Thirty-two (94.1%) respondents were satisfied with the course. Student satisfaction is one of the five pillars of Sloan's criteria (2005) for rating an online program or institution, which were discussed in detail in Chapter 2. The other four pillars of Sloan are access, scale, learning effectiveness, and faculty satisfaction. In this study, nearly all students were satisfied with the learning.

6.2 CRITIQUE OF THE SURVEY

As stated previously, the survey was based on the standards for online teaching and PD by iNACOL and NSDC. The standards are generalized standards to online teaching. There were a few problems in the survey, which led to less useful results. One problem was that the survey was built based on the generalized standards and not custom built for the specific population of this course. There was no "ELL in the course" although the course was for ESL teachers. This was an item from the iNACOL standards, which was not really applicable for this particular class. As a result, this item was irrelevant. Among the options to this item, there was no option as "not applicable." Ten respondents rated this item as a neutral or rated 3. I should have thought about my population and customized the survey items to my needs. This was a mistake in the design of the survey. A "not applicable" response category across most variables would have been helpful.

The course was offered at the end of all of the ESL certification courses. By this time, learners were less "technologically challenged." Most of the participants were well versed with the technology related to the Blackboard online learning system and were not challenged by the time they took the course under study. The distribution of responses among five ratings varied greatly. Eleven respondents selected the neutral rating or three, probably due to the same reason mentioned above. The item was used in accordance with iNACOL standards but was not really as applicable for this particular course.

The item "new online learner" had a similar problem in the design of the survey as the two items mentioned above. This course was the last course of the ESL series of courses. There

were nine respondents who selected rating 3 (neutral) when they more likely would have chosen "not applicable" had that option been available.

There were a number of specific examples of this issue. It was clear in a statement written by a respondent, "I thoroughly enjoyed all the ESL IU-1 courses. Assessment was the most challenging to me because I had less up to date experiences to reference. So, I may have learned the most from this course, but also realize how much more I have yet to learn. On a previous page, it asked if the instructor modified the course based on assignments, etc. I feel the correct answer was either yes or no."

Item #18, table 19 also indicates that having a "not applicable" category would have revealed more useful data for some areas and items. I have considered neutral as 3 in between agree (4 and 5 ratings) and disagree (1 and 2 ratings), which was incorrect.

Another item, "instructor addressed inappropriate student behavior in an effective way", had a rating of three selected by 16 participants, which is in between agree and disagree ratings since there was no available option of "not applicable." There was no discipline problems in the course on which I needed to take action. As a result, it would have been appropriate to have an option of "not applicable." Similarly, the item "instructor resolved the technological problem in a timely fashion", was not really appropriate for this course because it was offered at the end of certification when most of the participants were used to the technology. Nine respondents selected a rating of three in the absence of a "not applicable" option.

Additionally, the standards used to inform the survey need to be updated constantly by experts in the field to keep up with the evolving technology. This has not been done as often as needed. For example, the iNACOL design standard is considered an optional standard, however a simple and focused course design contributes greatly to the flow of learning in the course and

smooth learning of the participants, and should not be “optional”. Appropriate course design facilitates communication between facilitator and learners and among learners. Also, time, a theme that has surfaced this study, could be included in the standards for best learning. Time spent on online learning should outcome focused on individualized, meaningful learning time.

6.3 RECOMMENDATIONS

The survey data reveals the quality of the online course from the perspective of learners. The open-ended items added a few themes to the findings from the survey. The course and the instructor theme also came up in open-ended items. The other major themes that emerged were interaction, time, enjoyment, independent learning, and self-development. For effective online teaching, an online class should be a learning community for the collaborative, collective socio-constructive learning. The course design makes the basis for the facilitation of learning in a socio-constructive online environment.

I would recommend any online class to be a learning community where the learners have the same goal, guidance, help, support, resources, and course related activities. Each individual student learns independently, collaboratively, and collectively in the learning community of the class. This is possible only by establishing a collaborative online learning community culture. The facilitator should be a role model and foster a caring, helpful, supportive culture in the class.

The instructor has to design the course and activities by weaving the learning objectives through the lessons, text, research, projects, discussion, and assignments. S/he has to envision the flow of knowledge and course outcomes through various activities and all of the online course

components. The discussion board serves as the heart of the socio-constructive activities of the course. A variety of discussion forums add student support and foster applicable active learning in the online class. The Community of Inquiry framework by Garrison (2003) offers a way of considering teaching, learning, and having a social presence in a successful online learning community. Use of discussion forums provides for these elements by allowing the learners to socially, academically, and emotionally share and support each other. Having an appropriate design and infrastructure to foster the open, collaborative culture of the class to sustain a deep, meaningful discussion of the content is important consideration.

The role of the online instructor changes into more of a facilitator of the independent learning of the learner and not like the traditional course where the instructor is more of a manager and director of class. "Availability" of the facilitator is one of the characteristics of a good online class as indicated by iNACOL and the literature. A facilitator adopts a supportive role with the philosophy that the "learner is doer and doer is learner." S/he should design the online class, considering the appropriate flow of knowledge and activities focused on the learning objectives, and support of the independent learner is a key element of online teaching. In conclusion, online teaching is a cultural and philosophical shift to change the roles of the student as the doer and learner, and instructor as a facilitator of independent learning of the student.

Part of the purpose of this research was also to establish the standards-based and research-based practices to mentor first generation online instructors in this evolving area of technology-based education. We want to create a first generation of good quality online instructors and courses, who will set the trend and carry the tradition into the future generations.

It is the need of the time as technology and online teaching and learning have just begun to evolve.

6.4 FUTURE RESEARCH

Online teaching and learning is an evolving area of education, which co-exists with the evolution of technology. There are many directions where there is a need of research. This study can be furthered by looking in many directions of online teaching and learning. Some of them could be about the interaction, culture and collaboration, discussion-based online teaching, facilitation and role modeling, socio-constructive learning in an online learning community, flow of information in an online course and independent online learner, learning focused design for independent learner, and holistic approach for the facilitation of the course for individualized learner. Additionally, mentoring first generation of online instructors, constantly updating standards, developing policies for promising practices of online education, collaborating with global online education efforts to provide support and access for online education are important to topics for research. Some of the ideas are discussed below. I look forward considering these areas of research in my own online teaching practice. Some research questions that are of interest include:

What is the *process of teaching and learning* in an online environment? First, what would be "the process of teaching" in an online class? Garrison (2005) has done some research on this topic but research needs to go deeper into the whole process for online learning to capture the full depth of understanding for the activities and the flow of knowledge from the point of

teacher's input to the students' output. How an independent learner does learn in an online environment? What, where, and how does the actual process of transfer of knowledge takes place from the instructor to the independent online student? I think, the research tend to be more on teaching aspect of the education. In online environment, the "independent learner" is the focus of all of the activities. So there is a need to look more into the "learner" aspect of education.

How does *socio-constructive learning* take place in online classes? Study of the socio-constructive online learning communities of different courses and with different online facilitators will reveal the promising practices to create such online courses. The value and depth of online interaction in socio-constructive learning community process could be an extremely deep and valuable research topic. How to establish and maintain an *online learning community* in the online class? This research could focus on what actions of the facilitator and course designer cause what reaction in the learner and ultimately in the learning community of online learners. This will be based in the content, culture, and design of the online class. This involves developing a vision of the flow of knowledge to designing an online class for an independent learner and the learning community. It would involve looking at the flow of objectives, actions, knowledge, and thoughts from the instructor's mind to the behavioral changes in the learner. Every element has to be well thought out and aligned with the objectives before designing the course from the time that the course will be in session till the end of the course and everything in between.

The *online learning design and the instructor's teaching/facilitation style* would be a great area to research. The instructor of a course can write the best course that will fit his nature, philosophy, and teaching style but more important is to fit the learning style of an independent learner. Also, how does this fit into the independent learning of the learner? How can the

facilitator and learner differentiate an online environment for each learner? Study of a few online courses for differentiations would reveal some valuable information about this. How can learners differentiate for themselves based on their own needs? What is the role of facilitator in differentiating the instruction for independent, individualized learner? The instructor's personality and online teaching style is another area that has started to be researched recently by Kelly (2009). There would be a study of different online courses and their facilitators' personality and style. What makes the learning focused on objectives, meaningful, and suitable for an online learner? How does the students' personality play a role? What are the barriers of online learning for an independent learner? There is a strong need to fill the currently existing wide gap of knowledge about online learning and teaching.

Facilitation of an online course involves role modeling and leading the online course in unique way. Every course has its own group dynamics based on the unique group of learners. It is an art to assess the learner for their unique needs, strengths, weaknesses, and foster the desire to learn and share, which is a must for an online facilitator. Time constraint is the biggest problem. How to organize the work and time is very important topic of research because the online instructor's role is more of a facilitator. The learner learns independently. How does role modeling by the instructor help the learner? How does a facilitator modify and adjust the course to the needs of the independent learner? Some online courses and instructors can be studied for this purpose. Organization is the key to successful online teaching. An instructor does not see the students, but needs to know information about each one of their individuality. This area of research could include techniques and strategies for appropriate organization, actions, and handling multiple large online classes at a time.

How to facilitate *online interactions* in an online class? What to an instructor do for the first day, week, and first online course? When, how much, and who to support as independent learner when and how should an instructor slow down the pace of the class and when to? When should an instructor give the leash into the learner's hand learners for them to be totally independent? What is the role of a facilitator in an online class? The current research has only touched upon this topic. Facilitators are unique just like each traditional instructor is unique and different. Each one can look into their own unique style of facilitation and share with the online world.

Standards-based facilitation and mentoring of online courses could be done for many courses, instructors, and institutions. By comparing learning outcomes with the student learning goals and achievement and also with the existing standards would be revealing promising practices of online facilitation. Customization of the International standards to the specific area related needs of teaching is to be done. Another important area of research could be *how* to *mentor* budding online instructors? By role modeling the standards based best practices, and keeping the focus on learning, and student achievement along with learning satisfaction (Sloan, 2005). Currently, we are building the history of trends and traditions for the first generation of online educators and education. Developing standards for online courses for higher education will help in building and maintaining good quality online certification programs and courses.

In online education, there is a *cultural shift* of instructor becoming facilitator and the learner is more of an independent learner. In general, there is more research about the instructor and instruction aspect and not the learner and learning aspect. Since the balance in online class is more on the independent learning, it is important to do more research about the *independent*

learner, his/her needs, characteristics, individualized learning challenges, and empowering independent learner. Another very important topic of research could be – How does the "self" of *a learner* develops in an online class? This, to me, is the utmost interesting and needed topic to be researched. If a child started learning online in elementary school, one could link the topic to the future of the child, especially to see if the child develops into more of an independent adult learner. How to maximize the learning of every learner with an online system? The role of giving the freedom and trust in independent learning and growth of the learner would help us in giving the power in learner's hand and become facilitator of their learning.

The *future of online learning and teaching, nationally:* is another possible direction for research. Where we have come from? Where are we going? Where we want to be? Developing standards for online courses of higher education will help in building and maintaining good quality online teaching certification courses and programs. What is the past, present, and future of online education for the adult and K-12 learner? There is a strong need to create a *National agenda, policy, and practice* for online teaching and learning for all K-12 students and teachers.

Future of online learning and teaching, globally: could assist online learning to grow where we have come from? Where we want to be? Studying the past, present, and future of online education for all of the PK-20+ learners all over the world will help in setting the goal and will help in moving forward with online education. *Global Future of Online Learning and Teaching:* Making world-wide goals for online learning and teaching could help us to take a leadership position and improve the access and availability of online education around the world from anywhere to anywhere. This will help in developing mutual understanding and relationship among people in the world by direct communication without political and geographical

boundaries. One such project could be a “math and verbal project for K-12” where K-12 students from West can teach verbal to the students from East. In turn, students from East can teach mathematics to the students from West. Teaching and learning online around the world about culture, social studies, and languages can be very interesting and valuable to all students. This will globalize the world quickly and develop mutual understanding which will contribute to the peace in the world. I really am interested in doing such a project. Technology could provide a media to improve future of learning and teaching via online classes for higher achievements in the districts, state, nation, and the world.

These and other topics will continue to evolve with technology in the research literature and practice of online teaching and learning.

6.5 CONCLUSION

The first research question highlights the current status of online teaching and learning at this early stage of development of technology and online teaching. Currently, there is exponential growth of online teaching and learning across the world. Technology, computer, online teaching and learning related terminology is also evolving. The current research is patchy and relatively superficial. There is a need of research in this area to build connections, go deeper into online teaching and learning processes, and do more research about the independent learner. The second question highlights the standards and offered a basis for the survey and indicates that the standards need to be constantly updated to reflect the current technology and most effective way of teaching in an online system. The third question aligned a course with a standards based

survey to learn about the students' perspective of online teaching and learning. Based on the survey, online learning environment, independent learning, syllabus, and instructor helping students were rated highly for the course under study. Opportunities for self-growth, course, instruction, and instructor were rated at a medium level. The course adjustments and modifications were rated poorly. There were a few themes that emerged from the open-ended item responses which included interaction, time, self-discipline and independent learning, and enjoyment.

APPENDIX A

Table 30: Plan of the study: Research questions, data, planned data analysis, and outcome

	Research Question	Concepts/Data	Data analysis	Generated Results
1.	What does the literature indicate regarding the history and evolution of technology and OPD?	Literature review of history and evolution of technology and OPD	Thematic summary of evolution of technology, PD for teachers, online PD	Summary of current status of OPD (see Chapter 2)
2.	What does the literature indicate regarding the evidence-based best practices of online teaching and standards for OPD of educators?	Literature review of the best practices and standards for OPD	Summary of NSDC standards and iNACOL standards	Summary of NSDC and iNACOL standards of PD and online course; framework for survey development (see Chapter 2)
3.	How does a specific OPD course align with the established standards for OPD from the perspectives of students?	Survey based on the framework from NSDC and iNACOL standards. Survey of course participants (Attached in appendix).	Qualitative summary and thematic analysis of open-ended items. Frequency distribution and related statistics (mean and standard deviation) of all quantitative items. Cross tabulation of items to allow for disaggregated analysis based on relevant variables that emerge; for example, student participation level and prior experience with online PD.	Summary of comparison of survey data to the NSDC and iNACOL standards. Potential disaggregate results summary and discussion

			Cross tabulation will be determined by examining the overall data from the survey that may indicate potential interest.	

APPENDIX B

Table 31: Synchronous and asynchronous online class

Synchronous	Asynchronous
Student and instructor present simultaneously at a different locations.	Student and instructor are present at different locations and different times.
Fixed date and time for the online class.	Flexible hours of class means student and instructors present at different, unscheduled times which are convenient to them.
Instructor and other learners are available at a scheduled time.	Instructor may/not immediately be available.
Instructor directs the flow of the class.	Learner directs his/her own exploration and co-creates the content with peers and the instructor who is more a facilitator of the student's learning.
Learning is partially dependent on the instructor.	Independent learning is self-paced, self-disciplined, self-reflective, and self-motivated.
Learning environment may be more instructor rather than relationship oriented; instructor directed learning is reinforced.	Peer/learning connections may be more fully developed; self-directed learning reinforced.
There may be a little technical help at the time needed.	There is a possibility that instructor may not be available for technical help.

APPENDIX C

INACOL STANDARDS

This appendix includes 12 iNACOL standards and an optional standard for the design. They are as follows:

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 s/he is teaching. This includes the facilitation of construction of knowledge through an understanding about how students learn. S/he has content knowledge and understanding of how to teach. The teacher continues to update academic knowledge and skills.
2. The teacher has the prerequisite technology skills to teach online. This involves knowing updated technology and trends. And also being able to troubleshoot daily problems of an online class.
3. The teacher plans, designs, and incorporates strategies to encourage active learning, interaction, participation, and collaboration in the online environment. This includes demonstrating effective strategies and techniques to actively involve students in learning; facilitating

interaction; building community of learners by creating a relationship of trust; displaying effective facilitation skills; leading the learning to be goal oriented, focused, project-based, and inquiry-oriented; responding appropriately to English Language Learners and their needs; differentiating the instruction based on students' learning styles and needs; creating a warm and inviting learning environment to develop a learning community; encouraging students to share real life examples; directing the conversation in a goal focused direction; providing structure but allowing negotiation and flexibility; using best practices to promote participation; starting the lesson with primary benchmarks and goals; and providing extended resources and activities.

4. The teacher provides leadership to promote student success through feedback, prompt response, and clear expectations. S/he does this by modeling effective communication skills; encouraging student interaction and cooperation and respecting diversified talents and learning styles; persisting until students are successful; establishing and maintaining frequent teacher-student and student-student interaction; providing a syllabus with objectives, learning outcomes, grading criteria, and clear and high expectations; monitoring learner's progress and developing appropriate interventions for needy learners; providing timely feedback; encouraging interaction and mastery of content; and personalizing the feedback.

5. The teacher models, guides, encourage a safe, legal, ethical, and healthy use of technology. This includes following copyright laws, discouraging academic dishonesty, understanding the acceptable use policy, and respecting privacy rights.
6. The teacher has experienced online learning from the perspective of a student. This includes that teacher has taken online class and applied the strategies learned for successful teaching; anticipated challenges and problems; and demonstrated a supportive attitude towards students and their learning in the new environment.
7. The teacher understands and is responsive to students with special needs. This includes understanding students with varied needs, talents, and skills; modifying activities as needed; adapting and adjusting instruction; encouraging collaboration and interaction among all students; assessing students' knowledge in a variety of ways; providing student-centered activities and lessons with the real world applications; developing strategies for ELLs; expanding students' thinking and a variety of learning styles; and using the team teaching concept.
8. The teacher demonstrates competencies in creating and implementing valid and reliable assessments in online learning environments. This includes creating fair, adequate, valid, and reliable assessments.
9. The teacher develops and delivers assessments, projects, and assignments that meet standards-based learning goals and measure

students' achievement of learning goals. This includes authentic assessments, pre and post-tests, and continuous evaluation.

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. This includes planning instruction based on students' background and knowledge; reviewing test items and their instructional effectiveness; using a variety of data to monitor course effectiveness; using self-reflection and other assessments to see teaching effectiveness; addressing multiple intelligences; using effective learning strategies; and evaluating instructional strategies to determine their accuracy and usefulness in presenting the concept.
11. The teacher demonstrates frequent and effective strategies that enable the teacher and the students to complete self and pre assessments. This includes assessing student readiness; using students' self-assessment and evaluation; understanding student success as a teaching success; and empowering students to be independent learner.
12. The teacher collaborates with colleagues, which includes networking with other online educators and leading the collaborative planning of instruction and assessments to meet the needs of the students.
13. Instructional Design standard is an optional standard since it does not always fall under the online teaching responsibility. The teacher arranges the media and content for the best transfer of knowledge in an online environment. This includes the ability to modify and add to the

content and assessments; incorporate multimedia and visuals; effectively use appropriate software; review all the material and its alignment with the course objectives and standards; create assignments and projects for a variety of multiple intelligences and ways of learning; and arrange media and content with activities in such a way which will help in the easy transfer of knowledge.

APPENDIX D

COURSE SYLLABUS

Class Schedule: Four weeks of online instruction, plus two weeks for completion of Final Project

Course Content: This course is designed to expand participant's knowledge of effective assessment practices and support services available for ELL students. In addition to effective assessment practices, purposes for assessment, multiple assessment models, use of evaluation techniques, scaffolding of assessments, and formal/informal assessment tools will be discussed. Participants will learn the availability of school support services to assist ELL students in language acquisition, content learning, and ways to promote parental/family involvement with their children's educational program. Participants will gain experience in test administration, interpretation, and learning.

Required assignments include: written summary papers, reading assignments, extensive discussion board participation and a final project in the form of a written paper, a power point or video presentation.

Competencies to be developed: After completing this course the participants will be able to develop:

1. Knowledge of effective assessment tools/practices to identify levels of language proficiency, acquisition and content learning, as well as monitoring student progress.

2. Knowledge of available school support services that can assist the ELL's in language acquisition/content learning.

3. Knowledge of multiple assessment models to document ELLs progress in various curricular and instructional activities.

4. Knowledge and use of evaluation techniques to assess the various curricular and instructional activities used for the ELL student.

5. Knowledge to promote parental/family involvement and participation regarding their children's accomplishments and educational needs and to assist in the development of ELLs projected services.

6. Knowledge of formal/informal assessment tools, and an Individualized Education Plan, to use with ELLs who have been identified as special education students.

7. Knowledge of educational program/instructional activity adaptations required for ELLs who require specially designed instruction pursuant to the Individuals with Disabillities Education Act (IDEA).

Course Outline: The course consists of the following six units of lessons

Unit 1:

1) Overview of the purpose of assessment
    a) Principles of assessment
    b) Purposes of specific tests
    c) Kinds of assessments
2) Principles of assessment
3) Planning of assessment
4) Collecting and recording data
5) Reporting and sharing test data
6) Multiple assessment models
    a) Report card
    b) Pennsylvania School System of Assessments (PSSA)
    c) Standardized tests
    d) Authentic assessments

Unit 2:

7) Oral language assessment
    a) Authentic assessment
    b) Oral Language Proficiency Tests (IPT, LAS-O and WOODCOCK)
8) Reading Assessment
    a) Authentic assessment including CBA, CTB
    b) Reading Proficiency Tests (IPT, LAS-R/W)

c) Group Testing in Reading

d) Reading Comprehension Strategies for ELL

Unit 3:

9) Writing assessment

a) Authentic assessment including rubrics and prompts

b) PSSA writing

c) Writing proficiency tests (IPT, LAS)

d) Group testing in writing

e) Assessing the writing

Unit 4:

10) Content area

a) Assessment

b) Support

c) Collaboration

d) Bloom's Taxonomy and Web's Depth of Knowledge

11) Use of technology to help ELL

12) Research and discussion of CALLA

Unit 5:

13) Working with parents of literacy learners

a) Research and progress monitoring

b) Collaboration and assessment charts

c) Self-examination and discussion

14) Discuss classroom experience

a) Instructional implications

Unit 6:

15) PSSA tests and PA standards

a) Resources

b) Needs

16) ELL and Special education services

a) Adaptations

b) Modifications

c) Discuss and share experiences

17) Use of assessment to derive instruction

18) Online sharing of classroom experiences

Final Assignment:

Teachers will choose one of the following options to complete the final assignment for this course. There will be two weeks to complete the final paper. They will receive three (3) credits after completing IU1 evaluation, all assignments and appropriate classroom participation on discussion board. All papers should be written using #12 size fonts and double-spaced.

Option 1: Make a unit plan that includes 3-5 lessons with authentic assessment learned in this course. List the objectives from the PA ESL standards and/or TESOL Standards.

Option 2: Write a summary paper (4-5 pages) or create a PowerPoint presentation about how you would apply the information from this course to the assessment in your classroom. List how the application of this information will allow you to meet specific PA ESL standards or TESOL Standards.

Option 3: Make a video of testing with IPT, LAS or WOODCOCK. Write a summary of the testing procedure.

Assessments: Description of Performance Standards and Assessment Method:

All participants will:

1. Read all of the online Units of instruction.
2. Complete all quizzes and tests within the online lessons.
3. Complete a class project which involves application of class competencies.
4. Participate in discussions to present, demonstrate or display projects which show the application of the course competencies.
5. Share websites / technology resources, lesson plans and classroom experience.

Grading: Course will be graded on a pass/fail basis as approved by PA Department. of Education.

Continuing Education Credits: In order to earn 45 hours of Certification Credit or 90 Act 48 hours for this course, students must participate in advanced discussions and complete assignments outlined in the syllabus within the allotted time.

APPENDIX E

Table 32: Conceptual basis of the survey items

NSDC Area	NSDC Category	iNACOL Standard	Concept for Survey	Survey Item #
Context	Learning community	Encouragement and support	A. Encouragement to each learner	16a 16b 16c 16d
			B. Build a network for collaboration	12e 16c
	Environment	Collaborative, supportive culture of online class	C. Develop relationship building and a supporting community feeling	16a 16b 16c 16d
			D. Create a warm and inviting atmosphere	10a 10b
			E. Establish and maintain a positive, open, honest climate of learning and sharing	16a 16b 16c 16d
	Leadership	Modeling, guiding, and counseling	F. Timely, effective communication. Personalized support and feedback to the learner.	15a 18a 19a
			G. Takes control of the situation appropriately in case of a discipline problem. Anticipates problems ahead of time.	15d
			H. Persistent in helping the student till they feel successful	17b
			I. Supporting every learner's with their individual needs	14a 14b 14c 17a 17c

			J. Attitude towards quality of online teaching and learning	15e
			K. Empower students for independent learning and self-discipline	12a 17a
			L. Self-reflective learning with self-evaluation and monitoring of assessments	12a 12b 12c 18c
			M. In case of technological challenges, keep morale up and find a quick solution to the problem	14b 14c 15c
Process	Design, strategies, and collaboration	Plan and design	N. Focusing on the goals of the course	9a 11b 13b
			O. Provide personalized, timely and constructive feedback	14b 18a
			P. Appropriate technology and design	14b
			Q. Alignment of course objectives, design, standards, and strategies for deeper learning	9a 9b 9c 9d 11a 11b 11c 11d
			R. Interactive, engaging, and reflective teaching style	12a 13b 13c 13d
			S. High and clear expectations	16b
			T. Differentiate the instruction	14a 14c
		Interaction	U. Encourage interaction	16d
			V. Facilitate frequent instructor-student interaction	15a
			W. Believe in the learner and their abilities	13a 14a
			X. Project based, group and inquiry oriented interaction	13e
	Focus on Applicability	Focus of assignments and assessments	Y. Use of real life examples	13f
			Z. Simplicity and focus of learning into applicable knowledge	11d 13e 13f

			AA. Focus of learning is on the applicability into the classroom	11c 18d 18e
			BB. Assessment and evaluation in a variety of ways based on different learning styles and multiple intelligences	9d 11c 18d 18e
	Evaluation and data for improvement	Use of data and evaluation to improve instruction	CC. Continuous evaluation with the goals and objectives of the course	9a 9b 9c 9d
			DD. Pre and post tests	18d
	Research based approach	Focus on applicable instruction and project based learning	EE. Project and research based instruction	13e 13f
			FF. Authentic, valid, and reliable assessments based on the course objectives	9d 18d
Content	Quality of teaching	Teaching skills and teacher credentials	GG. Standards, data, and research based, high quality, and focused instruction	11a 11b 11c 11d
			HH. Understand each individual learner and their needs in depth	15a 15b 15c
			II. Focus on individualized and collective learning of the student centered class	12c 12d 12e
	Content knowledge	Updated practical knowledge and learning for ESL classroom	JJ. Facilitate the construction of knowledge	11a 11b 12d 12e 12f
			KK. Updated knowledge of ESL and online instruction	15f
			LL. Rigorous, updated, in-depth content of the course based on the objectives and course competencies	9a 9b 9c 9d
			MM. Appropriately adapt and modify instruction	14a 14b 14c 18a 18b

				18c 18d 18e

APPENDIX F

LETTER TO THE COURSE PARTICIPANTS

Hello,

I was your instructor for online ESL Assessment and Support for English Language Learner course which you took from October - December of 2012.

I am doing dissertation research for the doctoral program in the School of Leadership at the University of Pittsburgh's School of Education. My research aims to find out the standards based best practices of teaching online in a professional development (PD) course. The PD standards of the National Staff Develop Council (NSDC) and quality online teaching standards of the North American Council of Online Learning (iNACOL) provide the basis of the survey items. At the conclusion of the study, I will be able to share the standards-based best practices of teaching online with future online instructors as well as refine my own practice.

I am requesting your help and support for the online survey for this study. Your participation is completely voluntary. You do not have to participate in this study, if you choose not to. There will be no monetary compensation or other benefits to you but if you want, you will be able to get a copy of the results. Not taking the survey will not have any negative effect on you in any way. The survey is also completely anonymous. You will not need to write your name

and/or disclose any other identifying information in the survey. The data will be completely confidential and will be used only for this study.

I will email you a link to the SuveryMonkey website with specific directions. The survey has 24 multiple choice, matrix, and open-ended items. The survey will take about ten minutes of your time. After receiving your reply, I will not send you any follow up survey or questions in the future, though you are free to email me, requesting a copy of the completed study.

I greatly appreciate your valuable time and contribution in supporting this study for the betterment of the future of online education globally. Thank you very much.

Sincerely,

Su Verma

APPENDIX G

SURVEY ITEMS

Part I: Demographics

During October - December, 2012, you were enrolled in the online ESL course titled, "Assessment and Support for English Language Learners" through Intermediate Unit 1 in Pennsylvania. Consider your experience of that course when responding to this survey.

1. Why did you take the course? (Check all that apply)

- o Personal development
- o Professional development
- o Required for certification
- o Required for act 48 (per Pennsylvania Department of Education of teacher professional development)

2. At the time you took the course, how many years had you been practicing as an educator?

____ Years

3. What was your highest degree at the time of taking this course? (Check one)

- o Associate level degree
- o Bachelor level degree
- o Masters level degree
- o Doctoral level degree

4. Please indicate your prior online learning experience (check all that applies).

- o College courses
- o Professional development (post degree) courses
- o Teaching in an online program
- o Independent study via online program

- Personal growth experiences
- Certification program

5. How many (#) online professional development courses had you completed at the time you took this course? (not counting this course)

    - Fully online _____
    - Partially online _____

6. Where did you live when you took the "Assessment and Support for English Language Learners" course? (Check one)

    - U.S. Zip code _____
    - Country, if other than U.S._____

7. Gender

- Female
- Male
- Other identified gender status

8. Age (check one)

- 25 or less
- 26-35
- 36-45
- 46-55
- 56-65
- 66 or more

Part II: Course and Instructor

Directions:

The following items refer to the "Assessment and Support for English Language Learners" course and instructor during October - December, 2012.

For the following items, please indicate your LEVEL OF AGREEMENT with each statement, using the scale

1 = Strongly Disagree
2 = Disagree
3 = Neither Disagree nor Agree

4 = Agree
5 = Strongly Agree

Table 33: Part II of survey items #9-18

Question and Components	Strongly Disagree (1) to Strongly Agree (5)				
9. Online syllabus	1	2	3	4	5
a. Provided reasonable objectives					
b. Described course content					
c. Offered appropriate resources					
d. Described the course assessments					
10. The learning environment of the class was:	1	2	3	4	5
a. friendly					
b. supportive					
11. The course encouraged independent learning through the following:	1	2	3	4	5
a. Text book or material available online					
b. Discussion of the concepts and material					
c Independent Research projects					
d. Assignments					
12. During the course there were ample opportunities for:	1	2	3	4	5
a. Self-reflection and self-evaluation					
b. Growth in areas of interest to me					
c. Self-paced learning					
d. Collaboration with peers					
e. Collaboration with instructor					
f. Exploration with material/resources					
13. The course was	1	2	3	4	5
a. Student Centered					
b. Discussion based					
c. Interactive					
d. Supported learning with others					
e. Effectively used Project based learning					
f. Effectively used Real world practical applications					
14. Instruction was adjusted based on student needs related to being a/an:	1	2	3	4	5
a. English Language Learner					
b. Technologically challenged learner					

c. New online learner					
15. The instruction of this course:	1	2	3	4	5
a. Facilitated interactions among students					
b. Provided appropriate feedback as needed					
c. Resolved technological problem in a timely fashion					
d. Addressed inappropriate student behavior in an effective way.					
e. Had a positive attitude related to online teaching and learning					
f. Possessed adequate content knowledge to teach the course					
16. The instructor of this course:	1	2	3	4	5
a. Was readily available to students					
b. Established high expectations for students					
c. Supported students working collaboratively					
d. Encouraged honest and open input from students					
17. The instructor helped students to be:	1	2	3	4	5
a. Independent and self-discipline learners					
b. Persistent in times of challenge					
c. Comfortable with online participation					
18. The instructor modified the course based on	1	2	3	4	5
a. Discussion board conversations and feedback					
b. Learner's input and/or interactions					
c. Student progress and challenges					
d. Quizzes and exams					
e. Assignments					

Part III: Learning and Suggestions

19. What would <u>you do differently</u> as a student next time you take an online course?

20. What would you suggest the <u>instructor do differently</u> the next time she teaches an online course?

21. How successful do you feel you were in this online course? (Check one)

a. I passed and learned a great deal.

b. I passed and learned what I needed to.

c. I may have passed or not, but did not learn much.

d. I may have passed or not, but did not learn much and had a difficult experience.

22. How was the experience of taking an online course different from taking a face-to-face course?

23. How was the experience of taking an online course similar to taking a face-to-face course?

24. Please feel free to add any other comments regarding the course, the instructor, and/or your experiences in the "Assessment and Support for English Language Learners" course.

APPENDIX H

RESPONSES TO OPEN-ENDED ITEMS #19, 20, 22, 23, and 24

The main content of the response to the item (first column in the table below) is copied (as is) from the SurveyMonkey open-ended response data. One of the following code categories was added to each of the response (in the column on the right side) though some of the responses could be categorized into more than one category. These themes have emerged from the open-ended responses and were also discussed previously.

A = Assignments (It is an iNACOL category for the quality of online teaching)

C = Course (The course involves all of the components of a standard course)

D = Discussion and Interaction (This makes the online learning socio-constructive learning)

E = Enjoyment (Course participants shared enjoyment of online learning in a virtual learning community environment)

I = Instructor (iNACOL standards include the standards for the course facilitator)

N = Not applicable, no change, nothing (Respondents wrote NA as their open-ended response)

SD = Self-development and Independent Learning (In an online independent learning class the self of the learner develops)

T = Time (The time as a theme was discussed by many respondents)

Item #19: What would you do differently, as a student, the next time you take an online course?

- Answered: 30
- Skipped: 4

Table 34: Categorized responses to Open-ended items of item #19

Time (n=15)	
Manage my time better	T
Make more time for myself to be able to read more Discussion Board questions/answers.	T
Try to pace my learning more and not wait to completely all assignments in large chunks.	T
Probably try to pace my time a little bit more.	T
Allow more time for reading and research paper writing.	T
I feel I was very on-time and ready to learn.	T
Take more time to read more posts by peers, there were way too many to go through	T
Take one course at a time.	T
Manage time more effectively	T
I would devote more time to the course.	T
It was very challenging because I took this course in an accelerated manner, so too much information was crammed into too short of a time period. I would try to avoid taking multiple classes next time if possible.	T
1. I would try and set up a family helper if possible during deadline times. 2. I would remind myself that part of the learning in the course was just learning "to take" the course. Frustration is natural and I would acknowledge that I would get through it just like I did last time. The instructor's course sequence was set up with this in mind and I so appreciated her foresight.	T
Use better time management to accomplish tasks in a less rushed fashion.	T
The only problem with these courses was the compressed time frame. Everything was so rushed. I wished I had more time to research and discuss.	T
Allot more time in my schedule	T
Discussion or Interaction (n=3)	
Print discussion board conversations.	D
This was one of a series of courses I took towards ESL Specialist Certification, as a result as I took the courses I planned completing readings and assignments in a timely manner and used the class discussions to clear up points and information I needed clarification on.	D
Print more materials for later use.	D
Self-development and/or Independent Learning (n=3)	
This was second online course so I understood how the system worked which made it easier to complete this class (and it made it less stressful)	SD
I would think twice before taking another online course	SD
Take them all at one IU	SD

Enjoyment (n=2)	
Stay on top of the course but I enjoyed it :)	E
To be honest, nothing. I worked very hard and did the best that I could. I really enjoyed the course!	E
Assignments (n=2)	
Ask about changing assignments to be more relevant to myself.	A
I would complete and save more assignments prior to the date due.	A
Course (n=2)	
This online course was very successful.	C
Having taken numerous online courses in the past I look for 100% online courses buthe workload bin this one was ridiculous.	C
Not Applicable/No Change/Nothing (n=3)	
Nothing	N
Nothing	N
Same thing	N

In conclusion, item #19, what would you do differently when you take an online course next time, includes Assessments (2), Course (2), Discussion (3), Enjoyment (2), Not applicable or neutral (3), Self-Discipline (3) and Time (15) responses. There were a total of 30 responses.

Item #20: What would you suggest the instructor do differently the next time she teaches an online course?

- Answered: 32
- Skipped: 2

Table 35: Categorized responses to open-ended items of item #20

Instructor (n=9)	
I think the instructor did an excellent job teaching the course. I don't think any changes are necessary.	I
Interact more with the students.	I
Keep on truckin! Su was excellent!	I
She did a great job. We had many students in the class so I'm sure it was overwhelming at times! They let us join so that we could get our certfication in time whichmeant allowing so many students. But I appreciate everything! Thanks, Su/	I

This instructor was very good at teaching online courses. If you had technical difficulties (typically) at the beginning of the course, she would respond in a timely manner, but still held the same expectations to complete the work.	I
It was impractical in the environment that she lead the class, but I prefer a hybrid set up. I believe learning isn't as powerful in online courses and the learning that is done is by and large superficial.	I
She was excellent. The only thing I found confusing was the phrasing in some of the questions in the pre- and post-tests. Ms. Verma was incredibly helpful and encouraging!	I
The instructor was wonderful. I was new to current assessment tools, so I would have enjoyed a video overview especially since I am a visual learner. The students helped by pointing out great resources to each other and talking about experiences through the assignments and posts. YA for people I don't even know!!	I
The instructor was very supportive and gave good direction and interesting and relevant coursework.	I
Assignments (n=4)	
Develop ways to check for understanding throughout tie course. It seemed the only way we would know of we were on the right track was of we did well on the final exam or assignment.	A
Give more specific feedback to students about the assignments and answers to discussion questions.	A
Update sources to be more recent. Many were outdated. (However, the textbook for this course was excellent.) More variety in assignments would be nice, too.	A
Create more varied and engaging assignments; use more varied materials for course content	A
Course (n=4)	
Some sections had links that dis not work, clear them out and replace with ones that worked if there were ones	C
No suggestions, I thought the course was very challenging and student-centered. As a result, I learned many new ideas throught this course that are relevant to my teaching and helped to promote more excitiement and interest in the subject.	C
Update the syllabus to reflect immediate technology. Links were down, it was suggested we look, but when we could not find it was time ineffective even though we may have been looking in the right place, we didn't know what we were looking for. Updates are easy by the person designing the course initially.	C
Use more videos for learning and a skype chat here and there.	C
Discussion or Interaction (n=4)	
Less discussion topics. Some were repetitive.	D
Provide more materials that do not need to be printed and create different types discussion learning so students are not repeating the same information.	D
More interaction. Also encourage others to actively contribute to discussion groups with thoughtful responses	D
Not require 30+ discussion boards a week AND change deadlines	D
Enjoyment (n=1)	
I actually really enjoyed this class and cannot think of anything I would change.	E
Time (n=1)	

I did have issues with the time constraints. At times I felt that not enough time was allowed to cover the volume of materials.	T
Not Applicable/No Change/Nothing (n=9)	
Nothing	N
Nothing. I thought the classes were great.	N
No changes	N
N/A	N
N/A	N
Nothing. The course was wonderful!	N
N/A	N
Nothing	N
Nothing, it was great!	N

In conclusion, the students shared their ideas about how to improve the learning next time for the instructor. The item #20 includes a total of 32 responses, assessment (4), course (4), Discussion or interaction (4), enjoyment (1), instructor (9), not applicable, no change or neutral (9), and time (1).

Item #22: How was the experience of taking an online course different from taking a face-to-face course?

- Answered: 33
- Skipped: 1

Table 36: Categorized responses to open-ended items of item #22

Self-development and/or Independent Learning (n=15)	
It is more work on the student's part and requires a lot of self-discipline.	SD
You as the student are responsible for the amount of information you learn. It takes a disciplined person.	SD
You don't get the immediate interaction with your classmates, and it's a little bit harder to develop a relationship with your instructor or ask questions when you need help. On the plus side though, it's much more convenient and it is very much independent learning that relies on self-discipline.	SD
More independent learning, go at your own rate	SD
I prefer face-to-facebut an online class requires a great deal of discipline in order to get the most out of the course.	SD

Frustrating in the beginning, very similar once I got the gist.	SD
I could work at my own pace and learn from peers. Much more student centered	SD
More convenient	SD
Your own pace, more independent work	SD
The technology end of it was more challenging, however, necessary to keep up in this fast changing society. I love being able to stay home on cold winter nights and complete the class discussion online. I could also fit this into an already busy schedule.	SD
At first, I was hestitant as I was not really accustomed to an online course, but grew to realize how convenient it was and now I am actually very interested in online learning, much more than prior to this class.	SD
We learned all of the information from reading it ourselves. In a traditional class, someone presents it to you and is there to clarify questions and students are able to share-out in the moment. It's also more flexible.	SD
You aren't learning based on what you want to learn and learn form others only based on what you want to explore & take into your brain.	SD
I felt much more responsible to learn all I could learn. It was easier in that I could do it on my own time. I learned about more online resources than I would in a face-to-facecourse.	SD
Convenience of being at home, flexibility	SD
Discussion or Interaction (n=8)	
Simply, you were not able to see and interact with your teacher and classmates.	D
I personally prefer the face-to-facecourses much better because I think you're able to build a better connection with your classmates and instructor.	D
I do not like the discussion board part of online courses. I find that most people repeat the same comments so it gets tedious trying to find someone to comment on. I emjoy a face-to-face class for the discussions	D
I missed the personal interaction. Fortunately I took this course with a colleague and we were able to have some lively discussions regarding information presented.	D
I feel like the peer and educator interactions are a strong component of an education experience.	D
Less engaging; I took it less seriously	D
There was a comfort level in order to express opinions and feelings that you may not have in a face-to-faceenvironment.	D
It's harder to communicate with others	D
Time (n=5)	
I could go at my own pace when I had time.	T
I didn't think I'd like it, but it was actually great. I could work ahead when I needed to, which was nice. I liked being able to go at my own pace, more or less.	T
With my ridiculous schedule, this was a great way to do the course.	T
You have to have good time management skills and be motivated as it is all on you to	T

complete.	
I was able to complete the class according to my schedule.	T
Course (n=3)	
Taking an online course is different because there are no parking issues, no time restraints, no parking issues and less personality presence issues. In addition, being able to access the course materials at any time is liberating.	C
The online course could be completed while my son was napping or after he went to bed at night. The content was very engaging and the instructor was very supportive. Since then I have taken an online course with a university which I have been very disappointed with.	C
More challenging due to the structure of the class.	C
Enjoyment (n=2)	
I enjoy taking online classes. I feel you learn just as much online than you do face-to-face.	E
I thoroughly enjoyed the on-line participation of the class as much as with the teacher. I looked forward to working through problems daily with people I had never met and may not ever meet. I don't even know what they look like!	E

Item #22, difference of experience of online and face-to-face class, includes 33 responses with course (3), Discussion or interaction (8), enjoyment (2), self-development (15), and time (5).

Item #23: How was the experience of taking an online course similar to taking a face-to-face course?

- Answered: 32
- Skipped: 2

Table 37: Categorized responses to open-ended items of item #23

Discussion or Interaction (n=14)	
We were constantly interacting with the teacher and classmates through Discussion Board prompts, so it felt was as if we were sitting in an actual classroom together.	D
There was still plenty of assignments to complete, reading material and research to educate yourself about the topic, and discussion with classmates, just through a message board format.	D
Taking s online course is similar to a face-to-face course in that the reading and discussion and research paper writing requirements are similar.	D
You are provided with the same material and have peer discussions in both areas.	D
Peer interactions	D
There was student interaction, assignments, quizzes, tests, and papers to write.	D
Class work and exercises were similar. Discussion was completed in a typing session.	D

Students responded to one anther in a typing format. I was probably forced to respond to more people and in more detail due to the online format.	
The discussion made it similar, even though it was online. However, there was quick feedback constantly throughout the course, which made it feel like a face-to-face course. Also, through this constant discussion, I came to know many of the others participating, as if it were an online class.	D
We interacted with other students a lot, took part in discussion (asynchronous), did readings and completed assignments.	D
We still had class discussions and assignments.	D
Terewill always be learning, time to do assignments, and gain information from others.	D
The interaction between the students seemed as though we WERE face to face.	D
There was interaction between all involved	D
Several great student discussions, supportive	D
Course (n=10)	
The necessary material is learned.	C
Work.	C
The course content is the same.	C
The reading materials and projects were similiar.	C
The workload and expectations are the same.	C
We had quizzes and tests and were expected to learn material just like in a face-to-facecourse.	C
More convient.	C
The course content was the same.	C
There was a lot of interesting information.	C
This class was horrible.	C
Assignments (n=3)	
The syllabus and assignments were similar to that of a face-to-facecourse.	A
Assignments, quizzes	A
Assignments, readings	A
Enjoyment (n=2)	
I still learned a lot! I wasn't sure what it would be like, but I enjoyed the readings and the discussions, even though they were in a different format.	E
Being part of a community of learners, is always interesting and enjoyable. Even on-line, we could identify with each other as teachers and learners! Fun and work! I learned I love the value graphic can play to spice up text!	E
Instructor (n=1)	
Able to communicate with professor like face-to-face	I
Self-development and/or Independent Learning (n=1)	
I had to be disciplined with my time.	SD
Not Applicable/No Change/Nothing (n=1)	
Not similar at all	N

Item #23, similarities of the experience of online and face-to-face, had 32 responses in assessment (3), course (10), Discussion or interaction (14), enjoyment (2), instructor (1), not applicable, no change or neutral (1), and self-development (1).

Item #24: Please feel free to add any other comments regarding the course, the instructor, and/or your experiences in the "Assessment and Support for English Language Learners" course.

- Answered: 17
- Skipped: 17

Table 38: Categorized responses to open-ended items of item #24

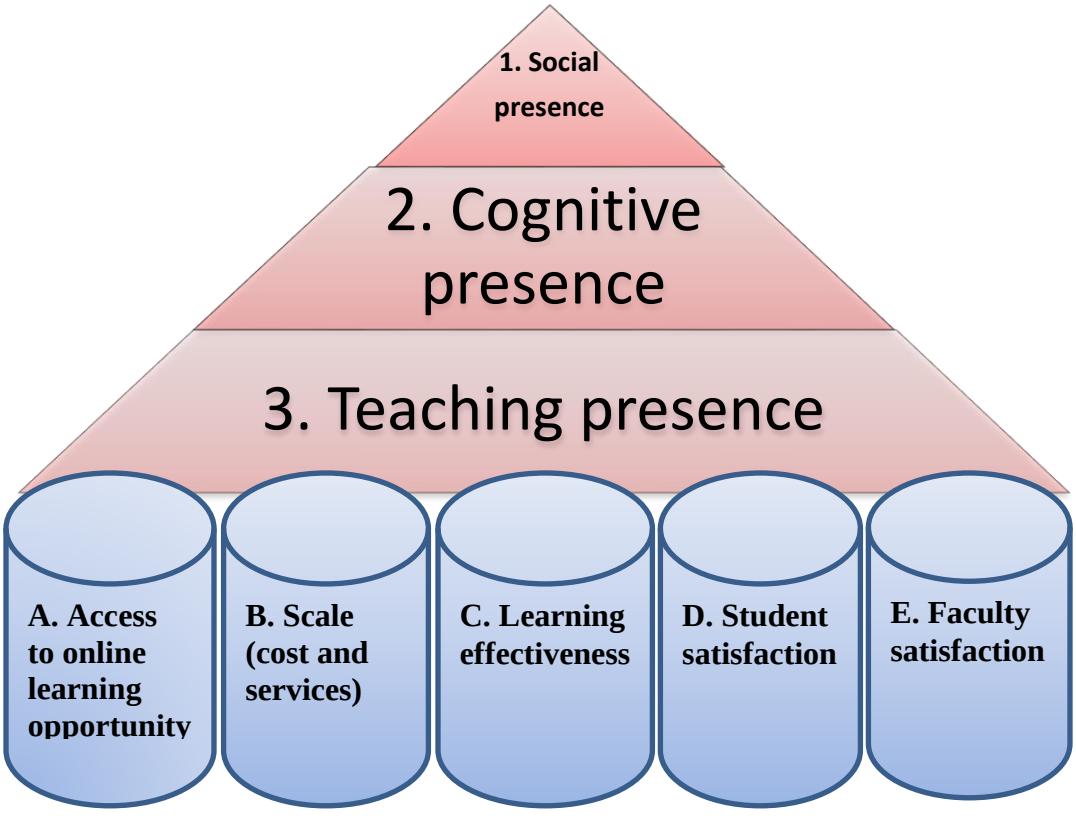
Enjoyment (n=6)	
This was an excellent course. The content was really interesting for a course I thought would be boring. This was my last ESL class to take because I didn't want to take a class on assessments. I learned a lot and really looked forward to each lesson. I commend the instructor for creating such an interesting course - I was VERY pleasantly surprised by how much I enjoyed the class.	E
I learned a lot and enjoyed this class.	E
I enjoyed the online learning experience and will take more online courses in the future.	E
I enjoyed taking these classes, Su! Thanks so much for everything. and please stay in touch.	E
I really enjoyed this class. As a student of many assessment classes, this was one of the most fulfilling because I felt challenged with the amount of work to be done, but also that it was very relevant.	E
I thoroughly enjoyed all the ESL IU-1 courses. Assessment was the most challenging to me because I had less up to date experiences to reference. So, I may have learned the most from this course, but also realize how much more I have yet to learn. On a previous page, it asked if the instructor modified the course based on assignments, etc. I feel the correct answer was neither yes or no. The course needed to hold tight to requirements in order for the students to reach and grow. The time frame and perhaps angle might change as the instructor saw fit for the individual, but not outright changed. Su Verma was well in to her students and their needs and learning! Tom Iwinski may have some instructional design thoughts & software topics he would be willing to share on the ESL classes. Thanks for all your hard work!!	E
Instructor (n=5)	
I had an excellent experience with this online course. I learned several forms of	I

assessment that I can use for the ELLS in my classroom. The instructor was fantastic! Any time I had a problem or question about an assignment, she quickly provided an answer.	
Instructor was awesome. She was calm and reassuring, when you user name and password would not work, or you could not log on due to a power outage. She would extend assignment dates if you contacted her and could not get logged on. I like how she was always calm, when I was upset because my user name and password would not log me onto blackboard.	I
Instructor was very positive, flexible and encouraging.	I
Getting my ESL certification through the on-line process was awesome. I was concerned because I was VERY technology challenged, but the teachers AND other students were wonderfully supportive.	I
This was a very helpful, engaging and straightforward class. Other online teachers could use advise from Su Verma.	I
Course (n=3)	
Overall it was a good course	C
I appreciated having this course focused solely on assessment and found it to be one of the most helpful in the program's curriculum.	C
I would highly recommend these courses to anyone interested in ESL. I had a wonderful experience, learned a lot, and was able to get an teaching position because of it!	C
Not Applicable/No Change/Nothing (n=3)	
Na	N
N/A	N
-	N

Item #24, "sharing anything about the course, instructor, and/or the experiences", had a total of only 17 responses; 6 in enjoyment, 5 in instructor, 3 in course and 3 in not applicable or no change or nothing themes.

APPENDIX I

Figure 3: Relationship of CoI and Sloan models and standards of teaching and learning



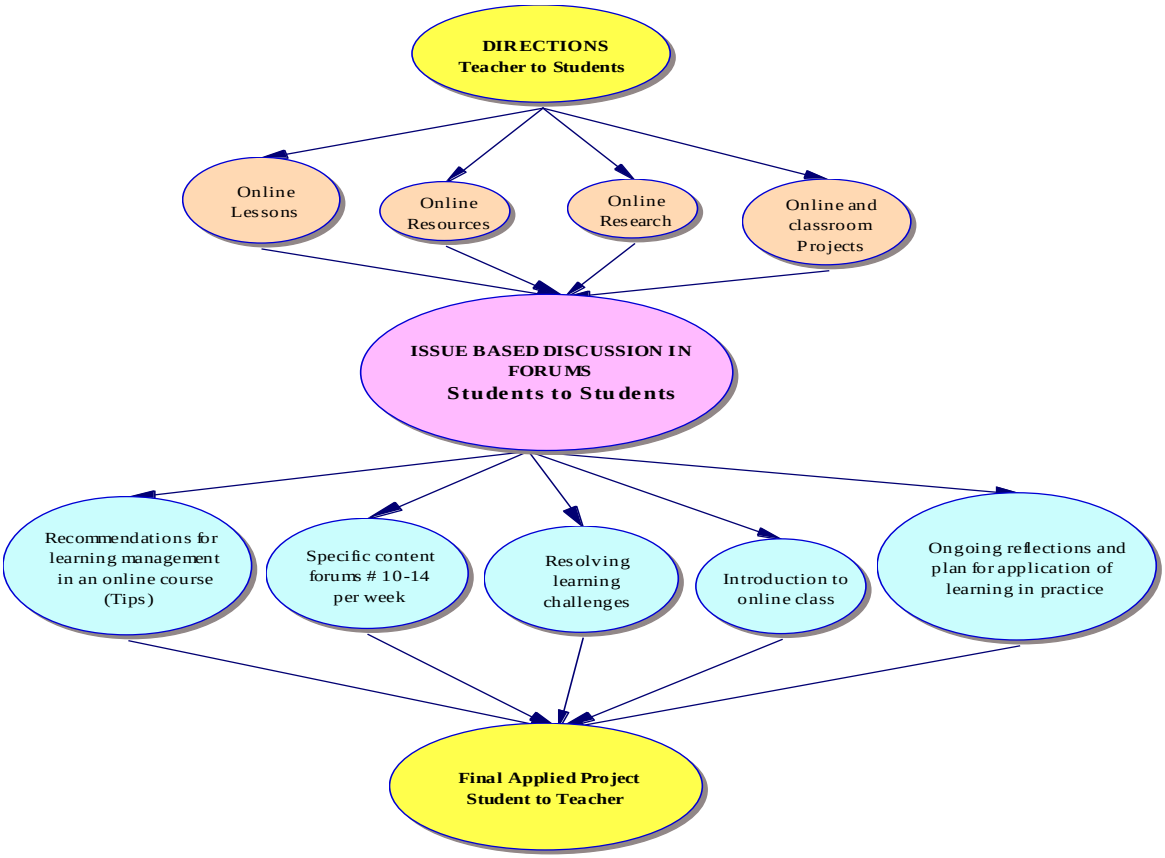
1-3 (red color) **CoI model** is to explain learning in an online class.

A-E (blue color) **Sloan pillars** are for online institutions and programs.

iNACOL standards are categorized into four kinds; for online teaching (1, 2, 3, C, D), courses (1, 2, 3, D), programs (A, B, C, D), and institutions (A, B, C, D, E). Online teaching standards are considered for this study. Items in parenthesis are parallel but not exactly the same in different models and standards.

APPENDIX J

Figure 4: Flow of learning in a socio-constructive online class



Tan color indicates individual student's gathering basic knowledge
Blue color indicates weekly discussion mostly among students
Yellow color indicates beginning and end of the course

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